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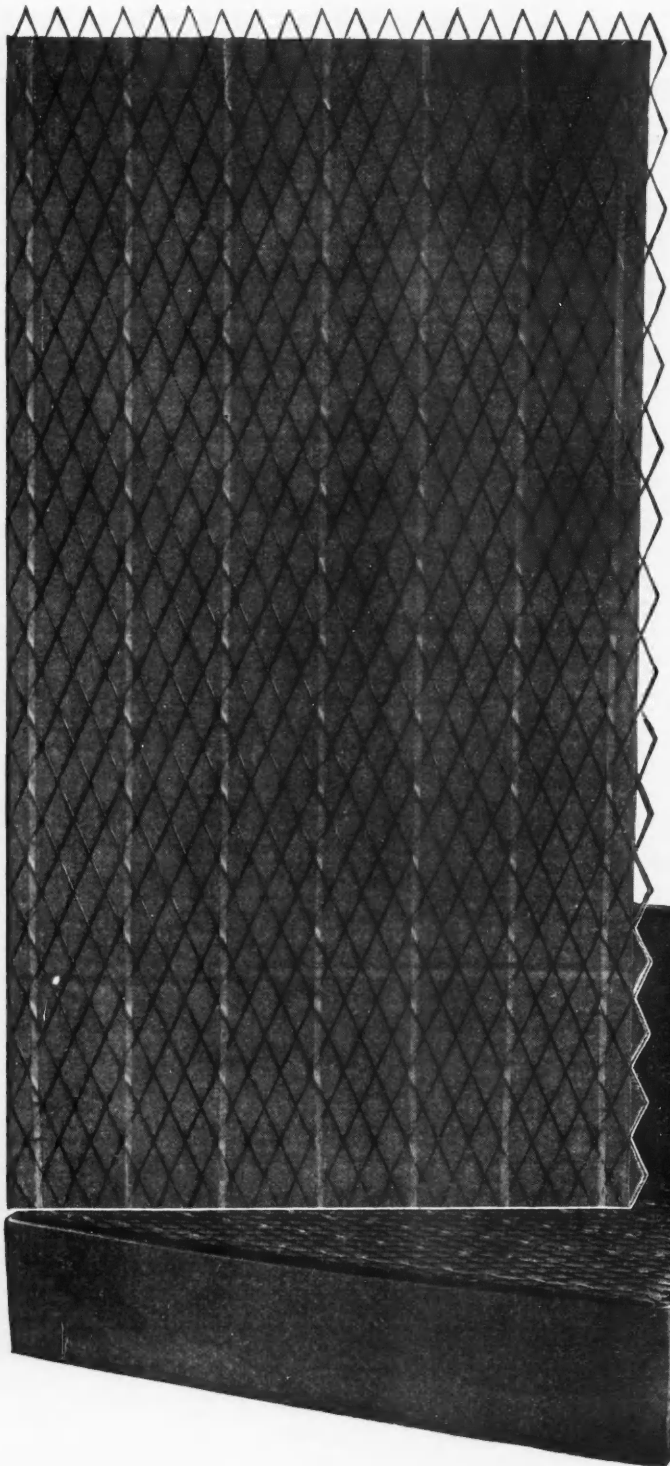
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## AMERICAN BUILDER AND BUILDING AGE

# The Revolution in Business Sentiment

**A** REVOLUTION in sentiment regarding business has occurred within the last month. Fear has been succeeded by optimism. Bank deposits have increased by hundreds of millions of dollars. Advances have occurred in the prices of securities and commodities.

The reasons for the change are plain. Freight car loadings and every other measure of business activity show that the decline of general business ended last summer. The trend of business continued downward after the summers of both 1930 and 1931; but its trend has been upward ever since July, 1932, and, excepting in January, the total volume of business done weekly has been greater in every month since than it was last July. Even in February, 1933, it was larger weekly than in July, 1932, although almost invariably it is less in February than in July, and was about 25 per cent less in February, 1932, than in July, 1931.

Such facts show that general business had been struggling to get on its feet for more than seven months. It was hindered in doing so principally by two influences. One was the drain upon the banks caused by the constant withdrawal of money for hoarding. The other was the persistent failure of government agencies, and especially of Congress, to take constructive action adequately to reduce government expenditures and taxes.

The banking moratorium and the measures adopted, especially by the

federal government under the leadership of President Roosevelt, to stop withdrawals from banks and hoarding of money have reestablished confidence in all banks that are open. Legislation to provide additional currency adequate for all business needs has been enacted. The fact that numerous banks are still closed is a drag upon business in many communities, but additional banks are being opened daily and every increase in banking facilities will help business. Congress has passed an "economy" act which will enable the President to reduce federal govern-

ment expenditures at least 500 million dollars annually. The economic value of the so-called "beer" bill which has been passed may be exaggerated, but it will produce revenues which will help to balance the federal budget.

These important measures have had an excellent effect upon public and business sentiment. Business leaders seem to be almost unanimous in believing that the improvement in general business which began some months ago will be more rapid in future and that the restoration of real prosperity at last has begun.

The building industry cannot fail to share in the improvement. The extent to which it will share will depend upon the initiative, ability and energy shown by manufacturers of building materials, and local dealers and contractors, in increasing their efforts to revive new construction and the improvement of existing homes and other buildings.

### "Highways—or Homes and Schools?— a Woman's View"

By MRS. WALTER FERGUSON

in New York World-Telegram, March 9, 1933

Last week I drove through what used to be a wealthy farming community, a land of vast wheat fields. Several times during the journey we were detoured, and huge trucks filled with sand and gravel rumbled and thundered toward a dust cloud that marked the spot where another stretch of pavement was being laid.

A smooth, splendid highway—cutting through a country that is stricken with poverty. Unpainted houses, like slattern women, stare bleakly at the glittering road. Barns sag emptily. At the corner is the schoolhouse, its doors barred shut. The wind sways the idle swing ropes; rain has already obliterated the children's footprints in the dust before the threshold.

Yet the road-building goes on. The number of people who can afford to drive over the highways is daily diminishing. The cars grow fewer. Presently the unemployed hitch-hikers may have this costly improvement all to themselves, and the passenger trucks can lord it alone down the magnificent United States highway systems.

\* \* \*

The argument goes that all the road building departments, which annually spend millions, give employment to many people. True, but when the taxpayers are broke it is high time to put our money into things that are necessary. To the man from Massachusetts who wishes to make a quick automobile trip to California the fine roads may be all-important, but to the farmer whose children are out of school they will not appear so vital.

A nation that closes its schools and builds roads is not blessed with any overabundance of foresight.

For, after all, the day will always come when there are enough fine highways, enough macadam, enough facilities for accommodating car owners, even in the great United States. And it seems to me that that day is here. The motor machine has gulped down enough of our gold. Before it is too late let's invest what little we have left in the children.

## INFORMATION IN GOOD REPAIR

**N**CESSITY being the well-known mother of invention, recent months have seen many new products, models and improvements schemed out by manufacturers in their effort to keep in step with the ideas of today's fast moving public.

The building industry has had its share of these changes and improvements—making it essential for builders, architects, dealers, to overhaul their stock of ideas and knowledge, if their work and recommendations are really to be up to date in this new age.

Your information has to be kept in good repair; otherwise, your clients and customers may find their new homes lacking in some present day efficiency, or old fashioned even before they are completed.

In this "Style-Show Number" the *AMERICAN BUILDER* offers a graphic outline of some of the new things and of the restyled old things now in demand. The manufacturers are eager to serve and co-operate with the readers of this publication so that business can be created. Write to these manufacturers for their catalogs, samples and specification data. Study your business in the light of these new developments. New opportunities and new profits for you may be in some of these new styles.

## BUILDING LESSONS FROM THE EARTHQUAKE

**S**OUTHERN CALIFORNIA'S earthquake shock of March 10, with a loss of life of 119 persons and property loss of 50 million dollars, demonstrates anew the need for strict building codes rigidly enforced.

Early inspections revealed that all the large buildings which had been constructed upon modern, scientific lines escaped with only minor damage.

James I. Ballard, member of the American Society of Civil Engineers, inspected in detail the damaged structures in the shaken area and said, "None of those properly constructed was structurally damaged. In fact, I noted that by far the greater loss of life resulted from persons on sidewalks and in parked automobiles being struck by overhanging cornices and other architectural treatments not part of the structures proper. This was not new in this earthquake, however. The fact that such adornments should be secured fast to the structure has been demonstrated many times."

Dr. John P. Buwalda, professor of structural geology at the California Institute of Technology, states, "The lesson of the earthquake as related to construction is that buildings should be properly designed and built of earthquake-resistant materials. The loss of life is related to weak walls tumbling down, loose cornices and collapse of some weak structures."

It is of national interest that, although the vast majority of California buildings are considered safe against

such shocks, the California legislature now is considering measures to require even safer structures in the future. For the past four years a group of technical men has been evolving a new quake-proof building code, which is soon to be enforced throughout the state. The construction industry knows how to build structures which will not collapse. Even though earthquakes come but seldom, the vigilance of those responsible for safety in construction must not relax.

## MONEY FOR HOMES

**T**HE breadth of the investment base on which American home owning rests is not realized by builders generally. They usually think of mortgage funds as coming from "wealthy bankers"—whom they "cuss out" roundly when mortgage money is scarce. In reality the average lender of home mortgage money in the United States is less wealthy than the man whose home he is financing. The usual type of home borrower has at least \$1500 for a down payment on his property, while the man who loans the money has an average investment of only \$742, according to the records of the United States Building and Loan League.

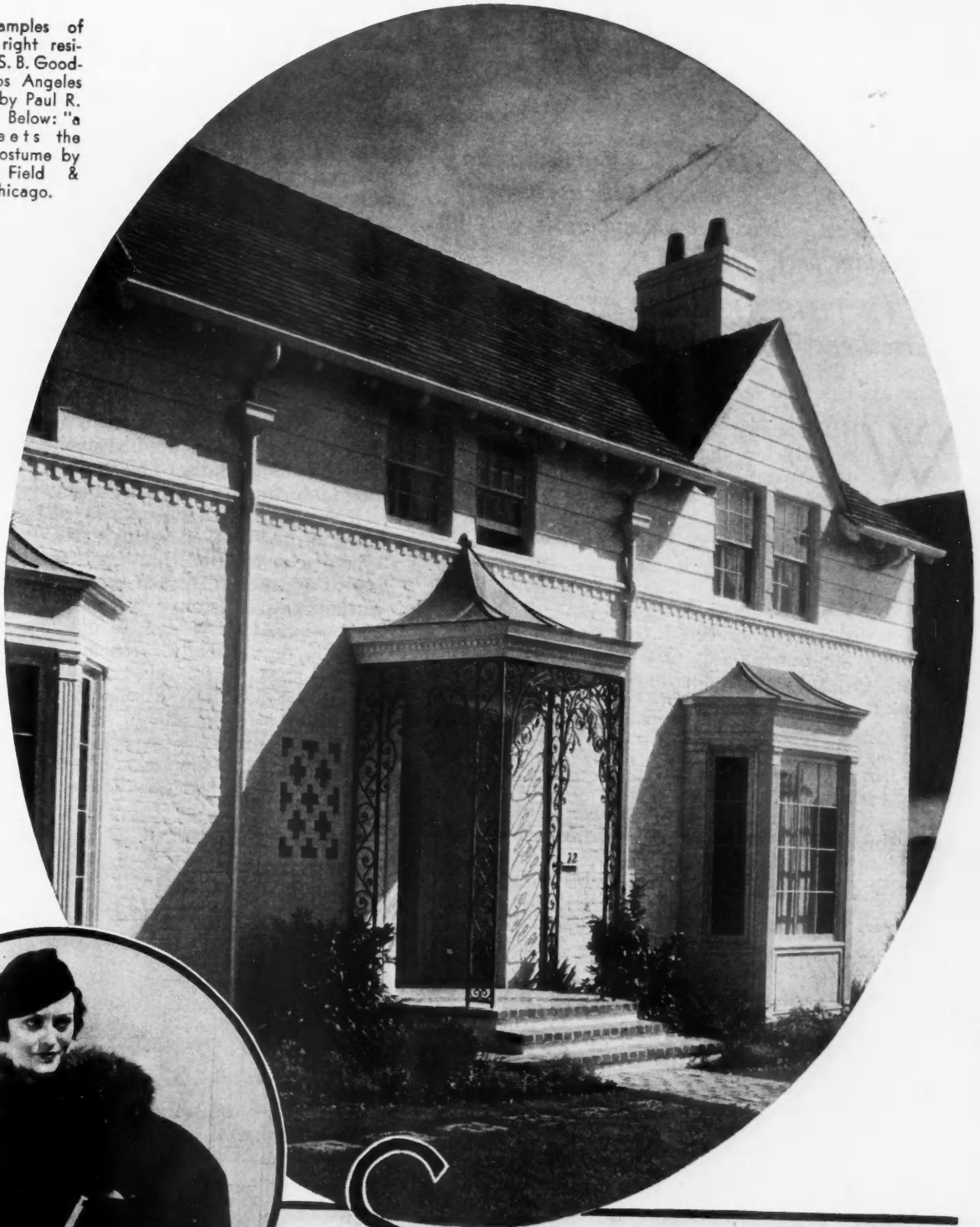
To explain this paradox, bear in mind that much of the home financing in the country is done by savings institutions, which really are lending the money of their investors to home borrowers, thus making the investors the actual mortgage lenders in the long run. The average building and loan shareholder has \$742 in the association, and it takes five investors of this type to get together enough money to finance one moderate-sized home, with a mortgage, say, of \$3500.

As to the other agencies which make small home loans, such as savings banks and insurance companies, the average savings bank depositor, who is the mortgage lender in the case of every savings bank home mortgage loan, has only \$811 on deposit. The 65,000,000 insurance company policy holders have a maximum share of the companies' assets averaging a little over \$300.

In addition to these large sources of home mortgage money, there are in normal times a great many individuals who buy small mortgages on homes in their own community. While no accurate record is obtainable of these local loans, it is known that they average small in size but immensely large in total amount.

All of this merely emphasizes the necessity which the building industry faces of doing such good work at such reasonable costs that the confidence of both large investment companies and of the average man with a little money to invest will be re-established in home mortgages as the safest of all investments. It also emphasizes that a solution of the problem of financing a general revival of home building would be rapidly advanced by an increase of general business and of employment which would increase the incomes of the many persons who would then put more money into savings banks and invest more of their savings in building and loan association stock and life insurance policies.

Two examples of style: at right residence of S. B. Goodwin in Los Angeles designed by Paul R. Williams. Below: "a lady greets the spring," costume by Marshall Field & Co., Chicago.



# STYLE . . .

**A** NEW element—style—has entered the building picture. Styles in buildings and building materials are changing rapidly. Builders are beginning to realize the need for a greater interest in style, a revival which would pave the way for the modernizing and re-styling of millions of houses, apartments and other buildings. It is to these purposes—an informed and style-conscious building industry—that this April issue is dedicated.

# STYLE REVIEW—new and test-e

**A DAZZLING ARRAY** of new and approved products is ready for the spring building market. Modernizing materials play an important part.

**IN THIS ARTICLE** a few of the best current offerings are listed and described.

**W**HILE construction activity has been extremely low the past few years, the research departments of manufacturers have been very active. As a result, a dazzling array of building materials has been put on the building market. Old products have been re-styled and improved. New uses for many standard materials have been found. There has been a great strengthening and improving of building materials and equipment in general.

It is the purpose of this article to call attention to some of the outstanding new developments and old friends in established lines that meet today's needs.

The major trend in building products and equipment has been for greater stability, firesafeness, permanence, sanitation, protection.

In summarizing, it seems that the most important trend in home building is towards more efficient control of noise, humidity and temperature. These features call for improved insulation, weathertightness, construction efficiency.

Great progress has been made in framing, wall and floor construction. There is a trend towards more complete perfection of building products in the shop or factory, which simplifies work on the job.

**FOUNDATIONS**—Of foremost interest in this field is the perfected waterproofed portland cement. Integral waterproofing compounds, or portland cement with the waterproofing ground in at the mill, are now highly satisfactory for producing watertight basements. Concrete first floors forming a monolithic unit with the foundation are on the increase. Another new development, reinforced brick, has created interest this past year. Foundation timbers and wood members treated with wood preserving preparations are on the increase.

**OUTSIDE WALLS**—Materials and methods for wall construction are undergoing great changes. Thick, heavy walls are in some cases being replaced by lighter weight insulating materials that also reduce the thickness. One of the interesting new developments is an aluminum foil sheathing paper which provides insulation of a new type. A large manufacturer of metal foil produces the product, which is 5/1000 of an inch thick, yet provides effective insulation against heat or cold. This foil insulation comes in rolls like building paper and is easy to apply. Aluminum is also having a wide use in the priming of lumber as a protection against moisture.

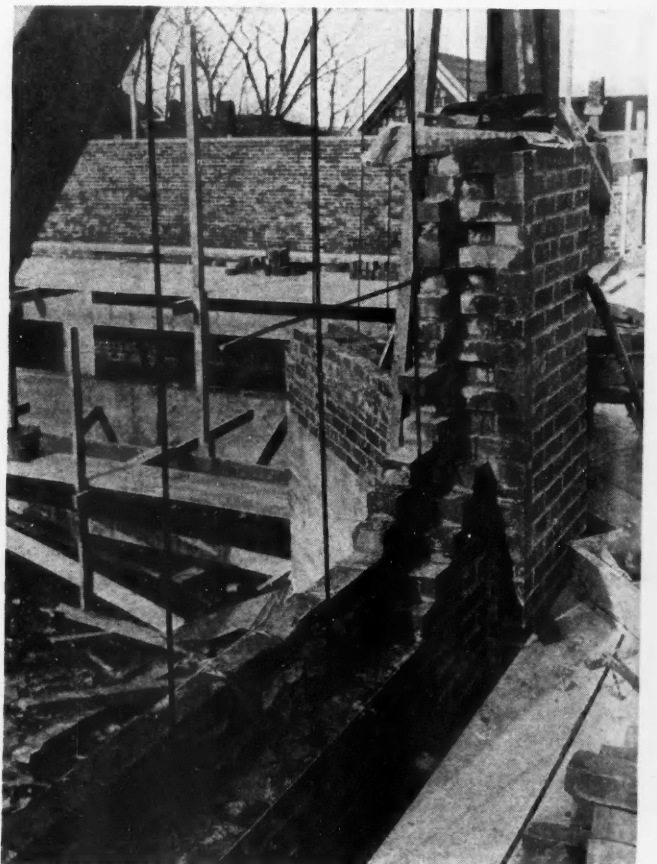
Plywood sheathing is another wall material that is attracting attention. The large sized sections reduce time and labor costs and speed up work. The plywood sections are strong; built-up formation prevents warping.

In exterior treatment of homes, combinations of materials are proving very effective. In this connection, stained shingles in attractive styles play an important part. Combinations of shingles and stone, shingles and wide siding, and shingles and stucco are effective in many of the new types of homes.

In stucco construction, the reinforced steel lath has been further developed to provide a high type wall. Reinforced steel lath to which waterproofed building paper is attached is nailed to fireproof wood studding, both inside and outside. Loose fill insulation is put in between. Stucco is then applied directly to the outside mesh of zinc coated, copper bearing steel wires. On the inside, plaster is applied in the usual way direct to the ribbed steel lath. This type of construction is also adaptable for use with face brick veneer.

Reinforced brick masonry is the brick industry's contribution to the 1933 spring styles. This is an ancient type of construction that has been revived and is proving of unusual interest at this time. The reinforcing is a comparatively simple operation and is done with steel rods from  $\frac{1}{4}$  to  $\frac{3}{8}$  inch in diameter, laid either horizontally or vertically. Recent tests have shown surprising strength for this type of construction.

Another use of common brick in many of the new style homes revives the old idea of whitewashing. The whitewashed brick provides an inexpensive but attractive wall when properly handled in the newer architectural styles and in combination with other materials.



**REINFORCED BRICK**—vertical and horizontal steel bars are used, giving the brick wall greatly increased strength.

# sted products

An increase in identified quality masonry and masonry cements is noted. Tests of leaky brick walls during the past year threw much light on the important part cement mortar plays in good brickwork.

Light weight face brick veneers have come into prominence during the past year, especially for modernizing work. Several very practical types are on the market. The basic principle is a thin brick veneer which is applied in strips or sheets over the old surface. One of the popular types in this class is a thin, hard burned brick unit that is attached to metal reinforcing strips nailed to the old surface.

Modernizing is also helped by the new lines of asbestos and asbestos-cement shingles and sidings which have been developed for the overcoating and restyling of old exteriors. The units are laid over the old exterior. Cost of application is low, and the surface is weatherproof and fireproof.

One of the popular products of this type is a brick-like asbestos cement siding that comes in 6" x 30" strips, has colors and textures like brick and provides a permanent, inexpensive exterior. Pieces are self-spacing.



**MINERAL WOOL BAT**—this is one of the insulation advances of the year. Bats are easily and quickly tucked into place.

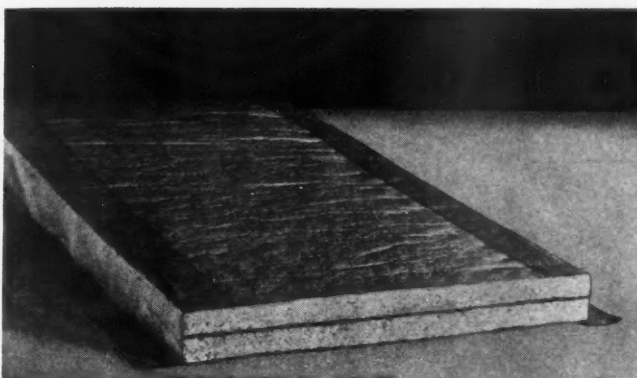


**ALUMINUM FOIL SHEATHING PAPER**—new insulating building paper comes in rolls, is quickly applied as shown above.

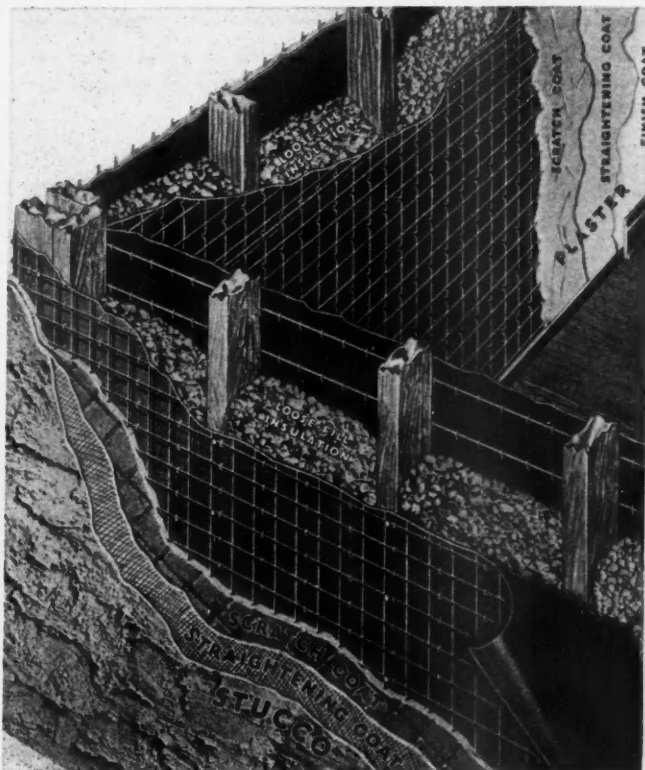
**INSULATION**—Progress in insulation materials has been probably the most marked of any line. It is apparent that the building industry and the general public are sold on the value of insulation in the modern home, and the fact that so many firms have brought out new or improved types of insulating materials in the past year indicates how important this field is.

Several new types of blanket insulation of improved styles that are easy to apply have been produced. One of these is a thick wood fiber blanket that is flexible, sealed against moisture, and provides maximum insulating efficiency.

Mineral wool bats and loose mineral wool that can be packed or blown in place are being more actively recognized and widely used. Several large manufacturers have recently brought out improved insulation of this type. Fiber and composition insulation boards in a wide range of types and finishes are also available. One of the interesting developments of the year was aluminum surfaced gypsum board, which adds insulation to a useful type of wall board. A thin aluminum foil is cemented to one side of the board.



**WALL-THICK WOOL BLANKET**—new insulation of two thick layers of fluffy wood fibre with edges sealed against moisture.



**REINFORCED STUCCO**—a crack proof stucco wall of improved design built up on reinforced metal lath over waterproofed paper.



**BRICK-TYPE SIDING**—asbestos cement product comes in strips 6" x 30", looks like real brick, is quick to apply over old exterior, comes in natural textured brick colors.



**OVERCOATING**—view showing modernizing of an old house with sheet material that looks like brick. A number of low cost overcoatings of this type are available.



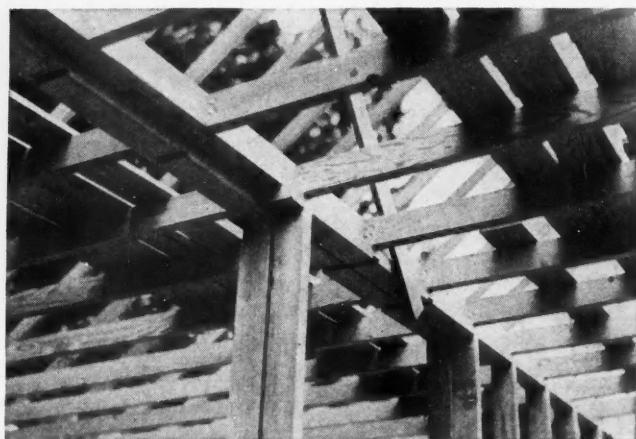
**GUIDE-LINE LUMBER**—house under construction with new square-end framing lumber. Every piece is accurately squared and every inch marked with guide lines for better work.

**FRAMING**—Greater efficiency, rapidity and simplification of construction are indicated by new framing and construction methods developed recently. Of outstanding interest is the enterlocking fabricated building lumber. After a number of years of thorough tests, a large lumber sales corporation has decided to promote actively this new type of pre-cut or fabricated lumber on a national scale. Ten basic framing members are used. Joists, sills, studs and plates fit together with an enterlocking joint produced by a machine-made, wedge-shaped dovetail which is a modern adaptation of the old time mortised and tenoned construction.

Another outstanding development being sponsored by one of the largest lumber firms is square end framing lumber, with every piece accurately squared on the ends and cut to exact standard lengths. In the better grades every inch of this lumber is marked with guide lines, and numerals at the footmarks make each piece its own rule and square. This new type of precision lumber is contributing greatly to better workmanship.

In floor construction, firesafe steel and concrete is on the increase. One manufacturer is featuring an open truss light weight joist that is shop-fabricated and ready to install. A nailer joist is also provided with wood nailing strip attached to the top course, which permits wood flooring to be nailed directly to the steel joists.

Another development of the light weight steel truss is a new product in which the steel truss is fireproofed at the factory by being encased in gypsum. Another new product is the light-weight rolled copper-bearing



**ENTERLOCKING LUMBER**—framing detail showing use of new fabricated building lumber that comes to job ready for carpenter to put in place. Ten basic pieces are used.



**COPPER ASPHALT ROOFING**—a new product consisting of thin, flexible layer of copper with heavy asphalt saturated fabric back. Comes in rolls, is durable, strong, easy to apply.

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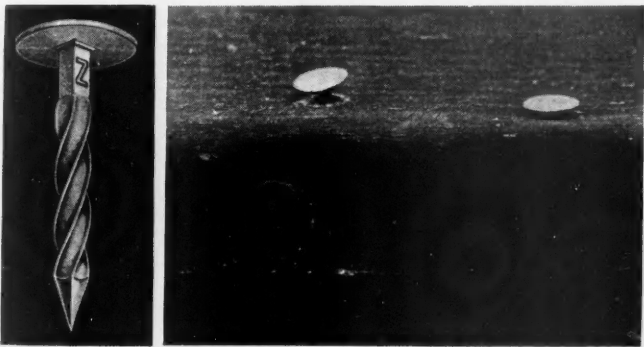


steel I-section produced by a large steel corporation used as part of an economical steel and concrete floor system. The light weight steel truss is undoubtedly going to play an increasing part in firesafe floor construction for residences and light occupancy buildings. A pre-cast concrete floor joist has also been developed for use in this type of floor.

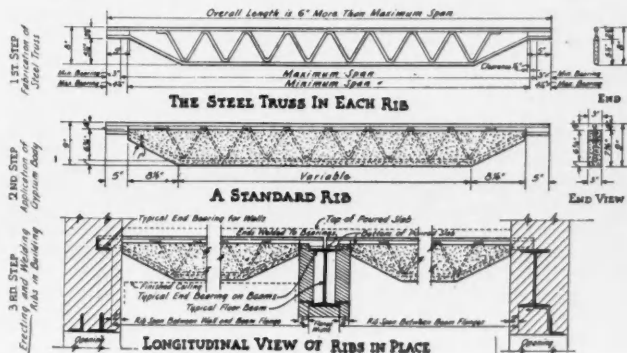
**ROOFING**—Greater beauty and a trend towards permanence and firesafety are to be seen in the newer roofing materials. Wood shingle manufacturers have made a definite advance in quality by adopting registered, guaranteed markings and the builder and owner are protected by this scientific way of identifying the shingles. Stained shingles in more attractive colors than ever before are available.

One of the outstanding developments in roofing materials is the new non-tearable asphalt made possible by a new, exceedingly strong cellulose fiber. A number of manufacturers of asphalt roofing have adopted this fiber construction, and the result is a roofing that has an almost unbelievable resistance to tear. It is extremely difficult to puncture, and will mold around sharp corners without breaking, and—of great importance—will not pull away from nails.

Rigid asbestos cement shingles in Colonial and other patterns have been perfected and are finding wider use. They are firesafe, and attractive. A complete line of weathered effect, asbestos shingles is also available and in readiness for spring remodeling and modernization. These textured shingles come in warm shades of red, green, pearl grey and black. They are highly attractive and at the same time fireproof and long lived. Hexagonal shingles are made in a rough surface; the American method and the Dutch lap shingles are made in a simulated wood grain which allows many pleasing variations.



**RUSTLESS SPIRAL NAILS**—new type nail designed to prevent loosening process that causes leaks. Section of test roof above shows spiral nail (bottom) firmly in place while ordinary nail has worked loose.



**FIREPROOFED TRUSS**—lightweight steel truss designed for residence use is encased in gypsum at factory. Use of the steel truss in residence construction is on the increase.

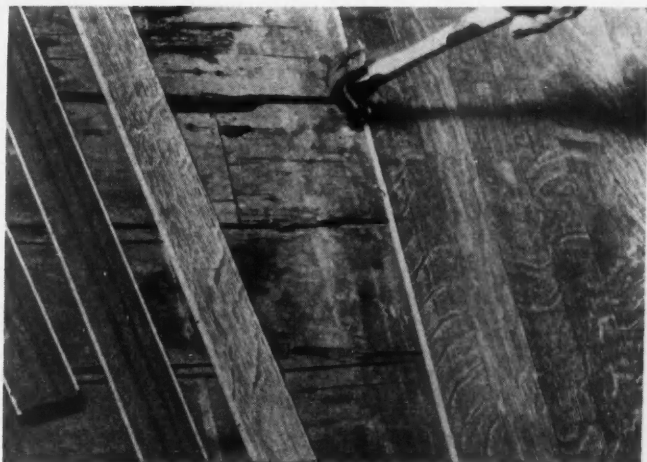
Another new product, the result of scientific research, is a copper asphalt roofing. A new process of electro-depositing copper on asphalt has been developed. A flexible covering or roofing consisting of a continuous layer of rustproof copper reinforced by asphalt saturated fabric back has been produced. This combination of copper and fabric produces a flexible roofing that is easy to apply and has great strength and resistance to weather and tear. Various thicknesses of copper weighing from 1 to 3 ounces per square foot are available. The product is one that should contribute greatly to better roof construction.

Perfecting of rustless spiral nails for roll roofing is an important advance in better roofs. Roofing men have long pointed out that loosening of nails was a principal cause of roof trouble. The new type nail has a spiral shaped shank which causes it to rotate when driven and is less likely to loosen than the ordinary nail. One manufacturer has been conducting tests of this type of nail over a period of years with results that justify the belief that this type of nail will reduce loosening and pulling out.

**WINDOWS AND FRAMES**—Several new ideas in window construction have been perfected which will work towards better construction. One of these is the factory pre-fit window unit perfected by a large mill-work manufacturer. All parts of the windows come accurately cut, ready to be assembled and quickly installed on the job. This makes for a tighter, better looking window. More mill priming of window frame materials is reported.

The tendency is undoubtedly toward the complete window unit, which comes ready to install and is designed to accommodate screens and storm windows which are provided as part of the unit. Weatherstripping is done in keeping with the tendency to provide tight windows that prevent air leakage and heat loss.

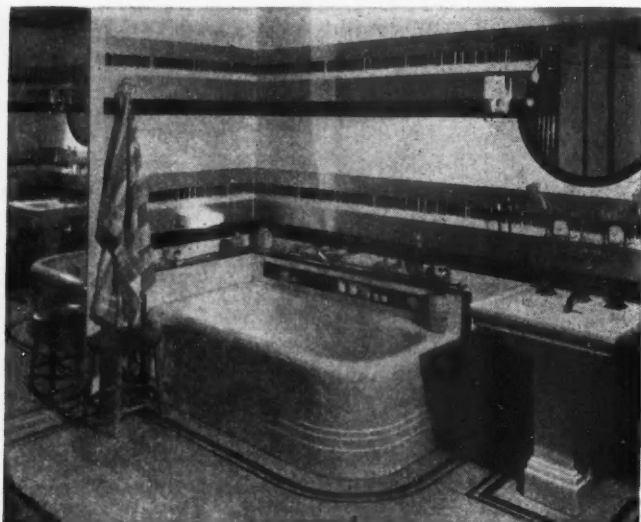
A noteworthy advance of the year was the new narrow trim double-hung window in which the space required for counterbalancing weights has been greatly reduced by specially designed weights with pulley wheels. The inside casings may be as narrow as 2 1/4 inches. New devices for locking, opening and closing and removing windows have greatly simplified and improved this important part of the home construction. Wood casement with aluminum muntins are among the newer products.



**PRE-FINISHED FLOORING**—comes ready to lay and ready to use. Special joint and drilled nail holes prevent marring as it is laid. Floor can be laid and used same day.



**WINDOW UNIT**—new type window comes complete with screen units and removable double glazing. Double glass is important for houses having air conditioning equipment.



**MODERN BATHROOM**—showing trend toward modern use of materials to give unusual effect as well as practical use.



**KNOTTY PINE INTERIOR**—one of the popular trends of the time is paneled interiors and built-in features of knotty pine as shown in this pleasant dining room in Early American architectural style.

**FLOORINGS**—The builder of homes this year has a wide variety of fine floorings to choose from. A definite trend toward quality is apparent. This means the use of a strong, rigid subfloor, properly insulated. Good quality building paper or insulation of the filler or flexible type is being used. For modernizing work, one of the most interesting developments of the past year has been the pre-finished flooring which comes to the job ready for use. It is primed on both sides and holes are bored for the nails. A special joint makes it impossible to mar the surface in nailing. Sanding, polishing and a high grade of lasting varnish finish are done at the factory. The flooring can be laid from the center both ways, and is ready for use the same day. It is especially valuable in modernizing as the workmen can come in in the morning, shift the furniture around, lay the floor, move it back and leave the house ready for use without further muss or disturbance. The finish on floor is very durable.

Another type of flooring that has gained popularity is the wood block type laid in mastic. The blocks are available in various interesting patterns, and are laid rapidly to produce an unusual and interesting floor. The advent of plywood flooring is a new development of special merit. The plywood floor opens a new field; it is practically non-splitting, can be produced in thin sections, is not likely to warp, and can be produced in practically any size, shape or section. One especially interesting field is that of the parquet floor which can be produced in plywood and laid at low cost. The use of heavy plywood sections for subflooring has also been developed and will undoubtedly find increasing use. It is in line with the trend in building practice.

New types of flooring of compressed wood fiber or other composition materials have been perfected the



**SCENIC WALLPAPER**—a new idea in interior decorating. The outdoor view gives a feeling of spaciousness and charm. Landscapes in charming colors are being used with high artistic success.

FOR M  
material

ATTRAC  
are place

past year, and there has been further progress in rubber tile and linoleum. The concrete first floor with rubber tile or linoleum cemented down upon a resilient cushioned material provides a high type of floor with comfort and long wearing qualities.

**INSIDE WALLS AND WALL COVERINGS—**

Spring styles in wall coverings reveal surprising advances. There is more work for the craftsman in producing attractive paneling of knotty pine, walnut and other attractive woods. A room end with fireplace and built-in bookcases surrounded by paneled wood is a popular feature. Washable cloth wallpaper has been perfected in new patterns, and an interesting advance is the new scenic wallpaper which is available in a wide selection of attractive patterns. This scenic paper gives the room greater size and, in effect, brings the outdoors inside.

A new product of interest is gypsum wallboard covered with a surface resembling wood. In some types, real wood of paper-like thinness is cemented directly to the gypsum board. Board of this type is placed in large sections, and produces attractive wood-like paneled interiors.

Plywood has been developed in new and interesting ways for interiors. It is now obtainable in any wood veneer surface desired. One of the most recently popular types is a heavy plywood panel covered with attractive knotty pine surface.

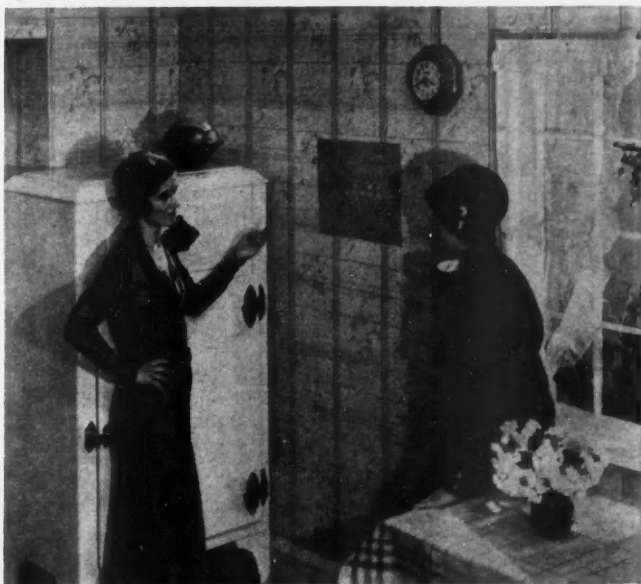
Wood veneers are used in many new and interesting ways. One surfacing of this type is a thin wood veneer mounted on flexible, heavy canvas. This provides a pliable wood veneer surface in any desired wood which can be mounted on any smooth surface. It provides a very inexpensive type of interior. Two other new products are wood veneer applied to metal and metal applied to plywood. Veneer products show great progress.

*(Continued to page 56)*

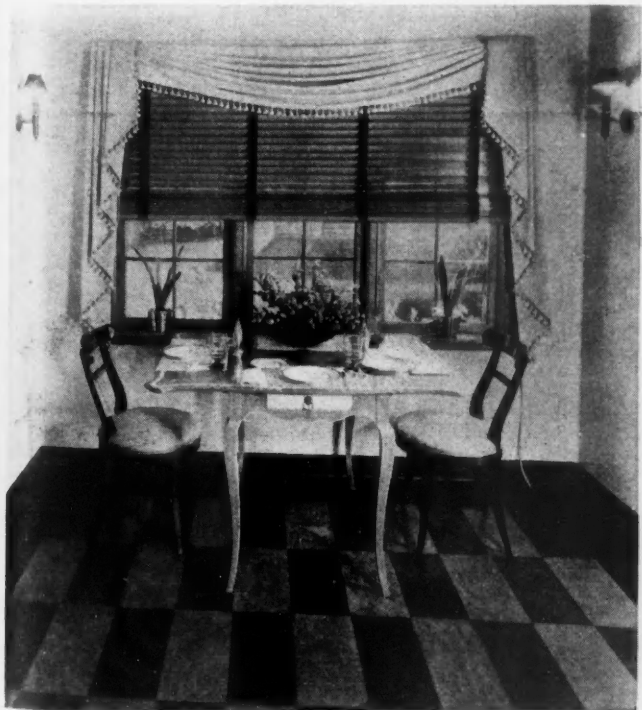
**FOR MANUFACTURERS DATA** on new building materials and equipment see bibliography, page 48



**WOOD SURFACED GYPSUM BOARD**—light weight gypsum board panels used in library. Wood-like surface resembles mahogany, and provides inexpensive paneled effect.



**FUSELESS LOAD CENTER**—new circuit breaker does away with blown out fuses. All circuits controlled by central switch. A flip of finger restores circuit.



**ATTRACTIVE** new linoleum design in breakfast nook. Venetian blinds are placed at window. Interior is colorful and attractive.



**FLEXIBLE WOOD**—an interior covered with thin wood veneer mounted on canvas backing, cemented to wall



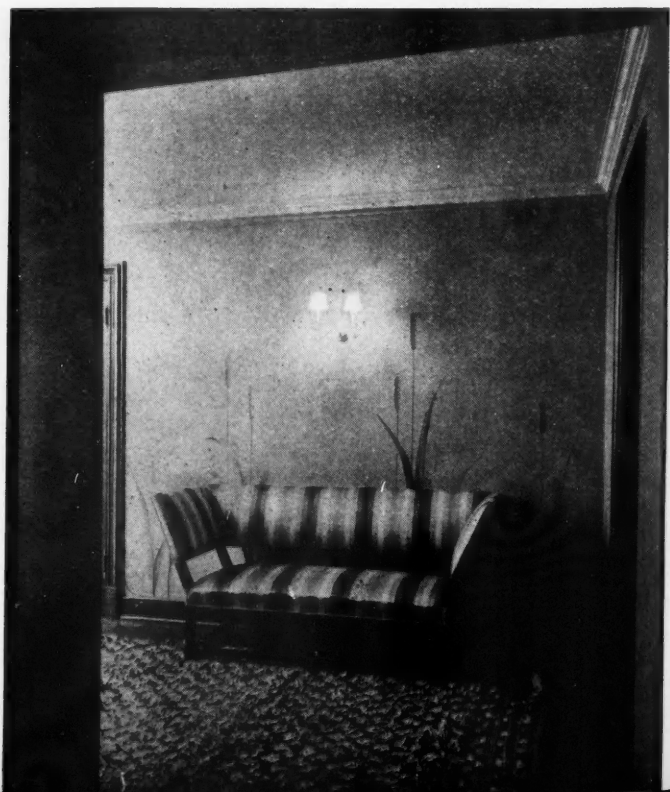
**EARLY AMERICAN**—a room of charming and authentic design decorated and furnished by Marshall Field and Company of Chicago. The simple early American furniture is well set off by the panelled walls and beamed ceiling.



**MEDITERRANEAN**—molded plaster decorations, a wrought iron gate, give character. Interior decorations by W. R. Moore, member of the American Institute of Interior Decorators, Chicago.

**CONTEMPORARY**—(at right) beige colored walls with cat-tail decoration in brown. Anne Forster Inc., American Institute of Interior Decorators.

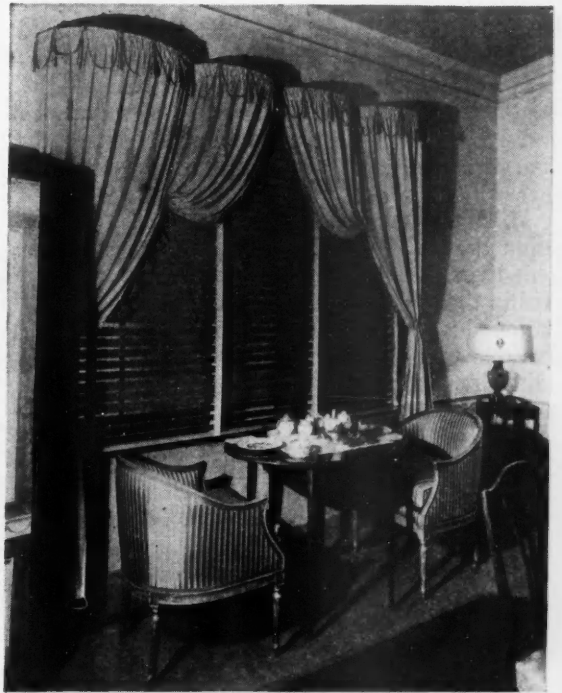
## NEW INTERIORS IN





**COLONIAL**—the fireplace dominates this fine Colonial bedroom decorated by Mrs. Ralph Small, American Institute of Interior Decorators, Chicago. The room is authentic in style, and all details are carefully worked out.

## PERIOD STYLES



**EMPIRE**—cream walls, a brownish marble dado, cream madras curtains, venetian blinds are pleasant features of this room by Marshall Field and Company.



**FRENCH PROVINCIAL**—tile floors, attractive curtained windows, authentic period furniture give charm to dining room (left). Interior decoration by Watson and Boaler Inc., American Institute of Interior Decorators.

# Taxation and Building\*

By J. B. BERRYMAN

President of Crane Co.

**I**NTELLIGENT and beneficent taxation is desirable, but excessive taxation resulting from waste or extravagance or graft or stupidity, or all of them together, is oppression in its worst form. It stifles progress and robs every citizen.

It is estimated that the sum of Federal, State and Municipal taxes is in excess of fourteen billion dollars, and the aggregate income of all the people, out of which this sum has to be paid, was somewhere between forty and forty-five billion dollars in 1932. If these figures are correct, then 33 cents out of every dollar of income goes to pay the cost of Government.

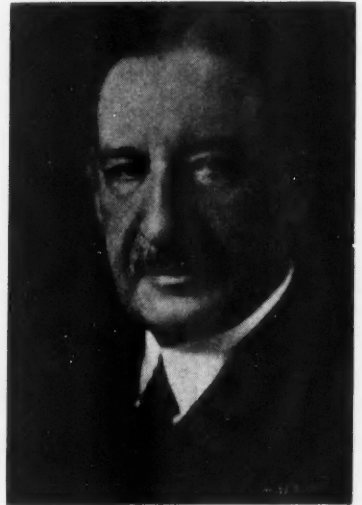
We must have economy and intelligence in high places. All of us are being forced to retrench, not from choice, but necessity, and we must carry the gospel of our own economy to Congress, State Legislatures and City Halls. Taxation is the barometer of established government. Almost without exception, if you have low taxes you have good government; if you have high taxes, you have poor government. When you experience a great reduction in your income and see no corresponding reduction in the cost of government, you know that something is wrong.

Today, the property owner is tax-conscious because his tax is the most important single source of tax revenue in this country and approximates five billion dollars of the National tax bill. In many instances, the property tax burden has reached the point of virtual confiscation and has imperiled our economic structure through the charge upon homes, upon agriculture, land and business properties.

My talk tonight is particularly directed to those who think they pay no taxes—that vast body of people who rent their homes, whose income is not sufficient to come within the scope of the Federal Income Tax, whose occupation does not bring them into contact with the innumerable taxes of one kind or another which have to be paid directly to governmental taxing bodies. Every moment of your daily life you help to pay this tax bill. When you pay your rent the invisible hand of the tax gatherer reaches over the landlord's shoulder to take a portion. Your bills for food, clothing and everything else, all have a portion of it hidden in the purchase price. Your voice today is needed to help break this strangling hold of taxation. You have not only a patriotic impulse to urge you on to do your share, but also a selfish one; reduce the tax bill and you will find your dollar increase in purchasing power.

It is evident that the great body of our people, who think that they are not interested in taxation because they do not own real property, or make an income return, not only pay their share of taxation indirectly, but do actually pay a large amount directly. This being so, why not be honest in our taxation methods; cut out the bunkum about soaking the rich (if there are any now), and have it understood that inasmuch as every citizen is a taxpayer in one way or another, taxes will be spread on the basis of expenditures rather than on thrift? The present idea of taxation is false; it puts a premium on extravagance and penalizes saving. If the people realize

\*Portions of an address over the Blue Network of the National Broadcasting Company on March 11, 1933.



J. B. BERRYMAN

WALINGER

what taxation means to them, we may have better government.

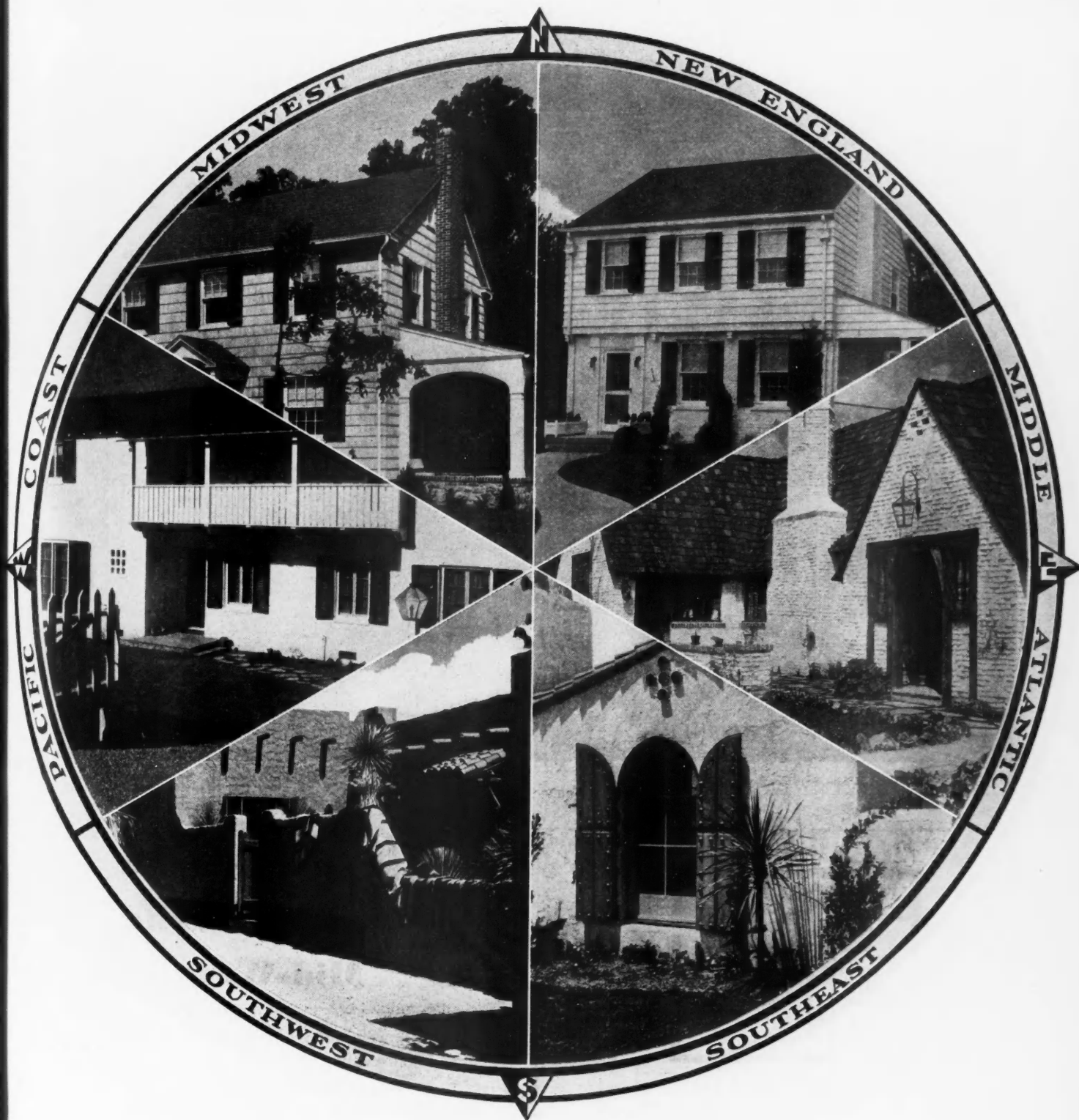
The building industry is a major one. More than 2½ million people are directly dependent upon it for a livelihood and many more indirectly. It not only employs local labor, but quickens commerce by creating a demand which goes back to the forest, the quarry, the mine and the railroad. A building is nearly all labor because the raw materials, the trees, the rock, the clay and iron ore, are, in the raw state, of little value; the final value is impressed on them by labor. When building is stagnant, as it is today, every one suffers. The dearth of building is accentuating the present depression and we shall not begin to go up the hill again until this industry revives. The state of this industry today may be judged from the fact that in 1928 there was expended in the United States more than \$3,000,000,000 (three billion) in residential construction. In 1932 the expenditure was less than \$300,000,000—a decline of 90 per cent.

Such a condition is nothing short of a calamity, not only in that the building trades are adversely affected, but once the homes are erected, a secondary demand is created for all kinds of furnishings and household utilities. This industry provides more employment to labor than any other except agriculture, and is vitally important. When the building market is active, the country is prosperous.

But the building market cannot be active if the shadow of constantly rising taxes lies over it.

Every one desires a comfortable place in which to live, and the more home owners there are, the better. The home and family are the rocks upon which our civilization is founded. Home building should be encouraged in every way. We were making progress in this direction when something hit us—among other things, waste in government and disorganized public expenditure. When we remove this obstacle, we help to open a large market in which every one shares. Last year, with the increase in population creating a need for 225,000 home quarters, only 60,000 were built. Meantime, the ravages of fire alone accounted for the destruction of considerably more building than the total value of residential structures which were erected.

If the Federal Government will balance the budget by drastic economies, if that is possible; if the State and Municipal bodies will follow suit, and if all the quack economists are segregated where they can talk themselves to death, the people of this country have brains and courage enough to work out their own salvation within a comparatively short time.



## Styles Favored Regionally

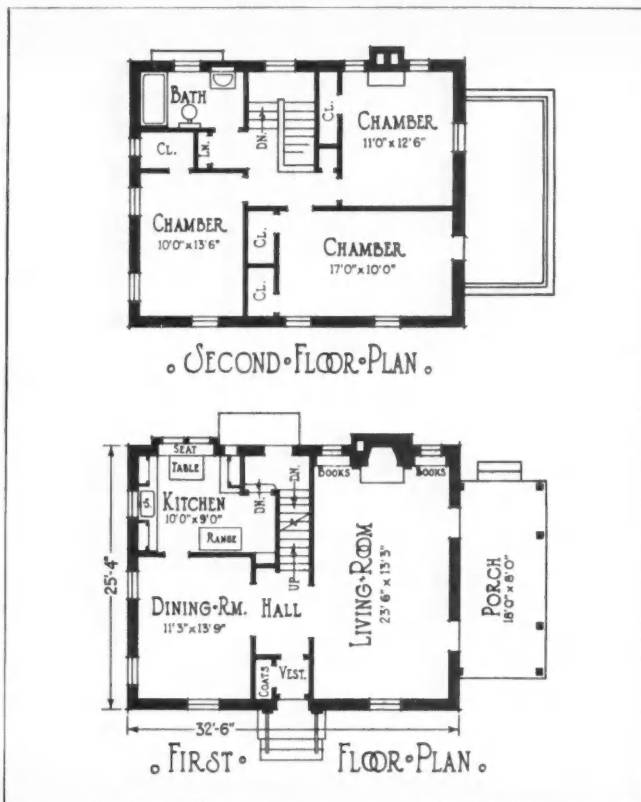
"North, South, East, West  
Choose the Style You Like Best—"

Styles in architecture, like those in clothes, are changing rapidly. Better design is the order of the day. Certain types have won for themselves a well deserved popularity in various sections. The style compass above is a guide to the popular

trends. On the following pages the architectural styles favored regionally in the United States today are shown. Because of the importance of the modernizing market, the following designs are presented also as a guide to the restyling and improving of old homes. Architectural details are skillfully executed in appropriate style for each region and are adaptable to old or new work.



© Architect's Small House Service Bureau



## Early American Popular in The Mid-West

This is a well proportioned, efficiently laid out and conservative type of home that continues to be popular in the midwest because it is so well suited to that region. The sun porch is a very desirable feature.

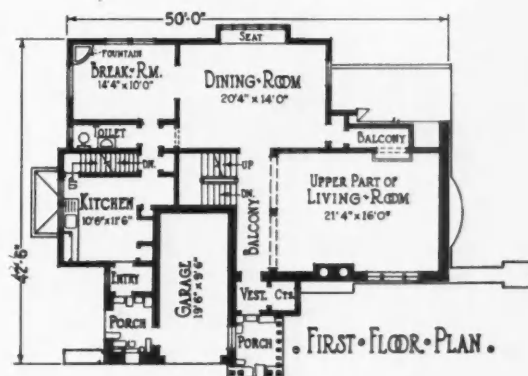
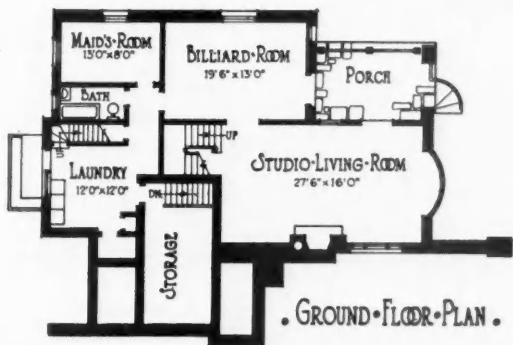
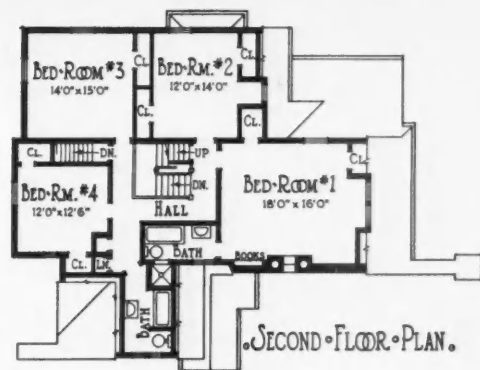
The center hall plan has proved itself many times over and the entire layout is conservative and good. The design is by the Architect's Small House Service Bureau, No. 6-A-54. The Cost Key is 1.759-132-967-41-23-14.





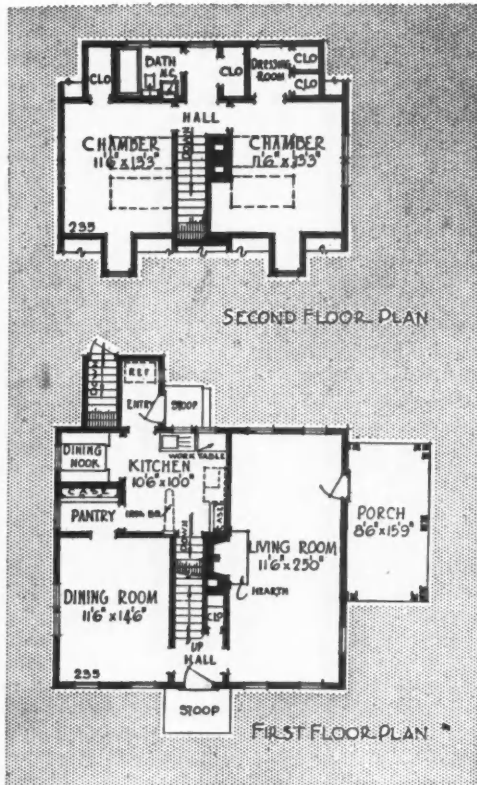
## English For The Middle Atlantic

The gables and half timber work of the English style make it a close second to the Colonial in national popularity. It is especially liked in the middle Atlantic states. This studio design is by R. C. Hunter, New York architect, and located on a hillside, making several floor levels possible.



# A CAPE COD COLONIAL

The illustration shows convincingly how truly American is the Cape Cod home. We do not need to look for foreign precedent when such a home has reigned in our country.



FRONT ENTRANCE

### DIMENSIONS

SIZE OF MAIN BUILDING	30'0" x 26'0"
SIZE OVER ALL	39'0" x 38'6"
CEILING HEIGHT 1ST FLOOR	7'3"
CEILING HEIGHT 2ND FLOOR	7'3"
CEILING HEIGHT BASEMENT	7'0"



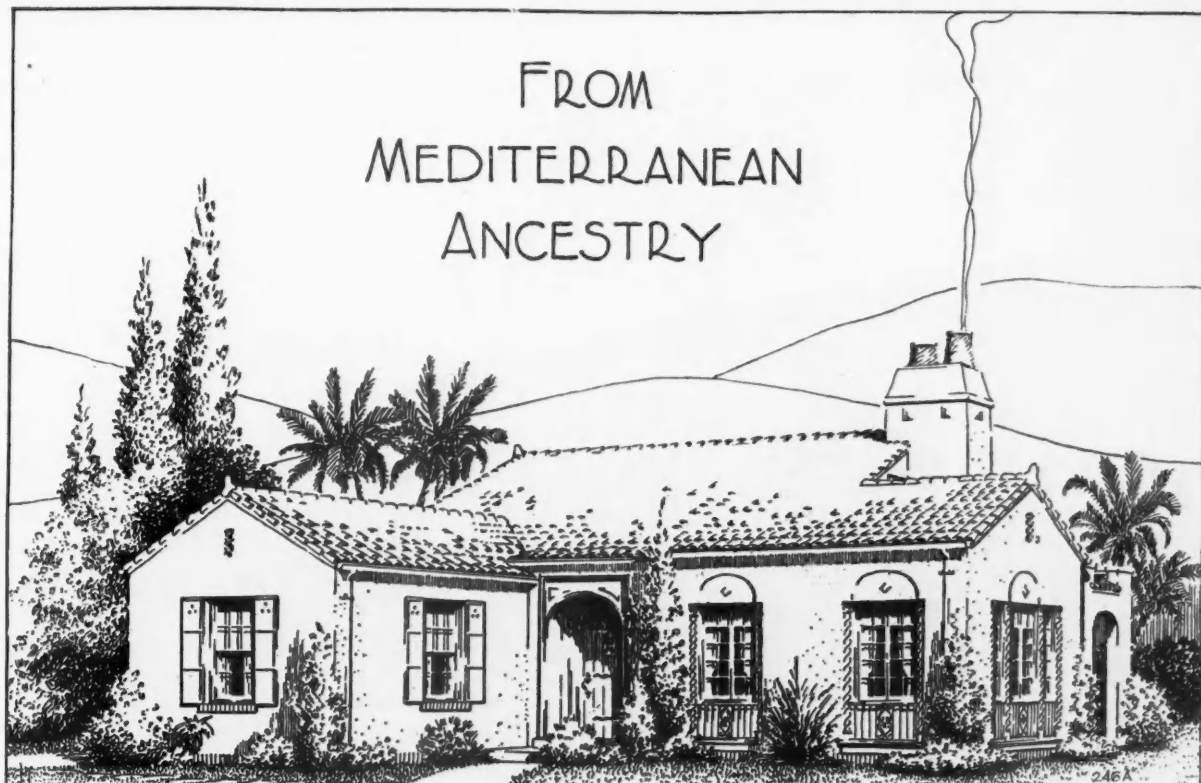
### CUBAGE

HOUSE	19000	CU. FT.
PORCH	950	" "
TOTAL	19950	" "

Not only in New England, but in practically every corner of the country, the simple Cape Cod Colonial has gained in popularity the past few years. This design by National Plan Service (No. 235-A) is especially fine. Cost Key is 1,730-136-844-37-19-15.

## Colonial Is Popular Through New England

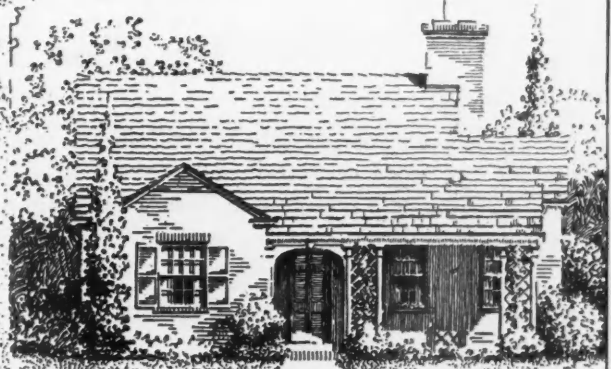
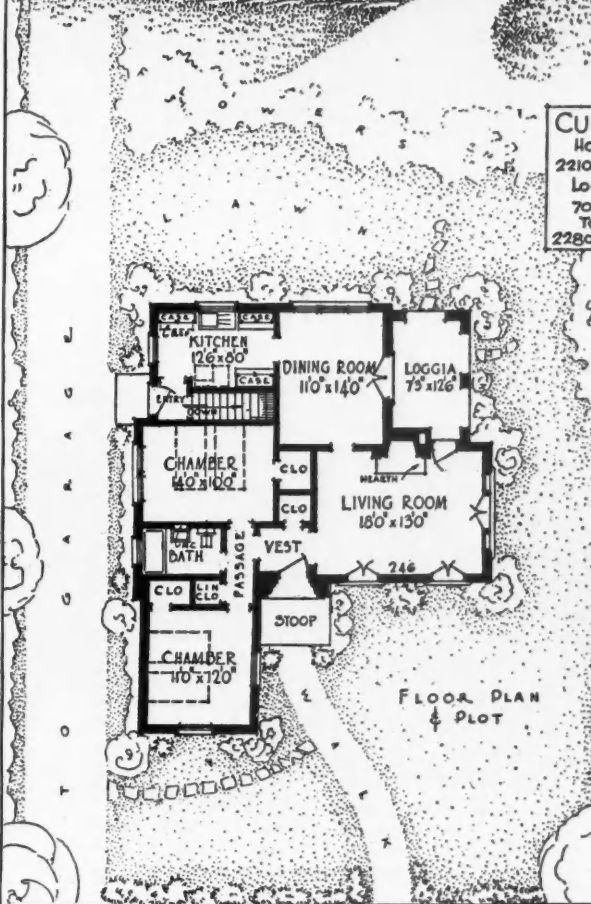
# FROM MEDITERRANEAN ANCESTRY



246A

**CUBAGE.**  
HOUSE  
22100 CU. FT.  
LOGGIA  
700 CU. FT.  
TOTAL  
22800 CU. FT.

The design presented here incorporates much of the charm of the Spanish style. The large studio living room is pleasingly executed, having a lofty beam ceiling and exposed rafters.



BRICK CONSTRUCTION  
ALTERNATE IN COLONIAL DESIGN KNOWN AS PLAN B

### DIMENSIONS

SIZE OF MAIN BUILDING 38'0" x 44'3". SIZE OVER ALL 39'0" x 45'0".  
CEILING HEIGHT...8'0"..... HEIGHT OF BASEMENT.....7'0".  
AVERAGE CEILING HEIGHT IN STUDIO LIVING ROOM...11'0".

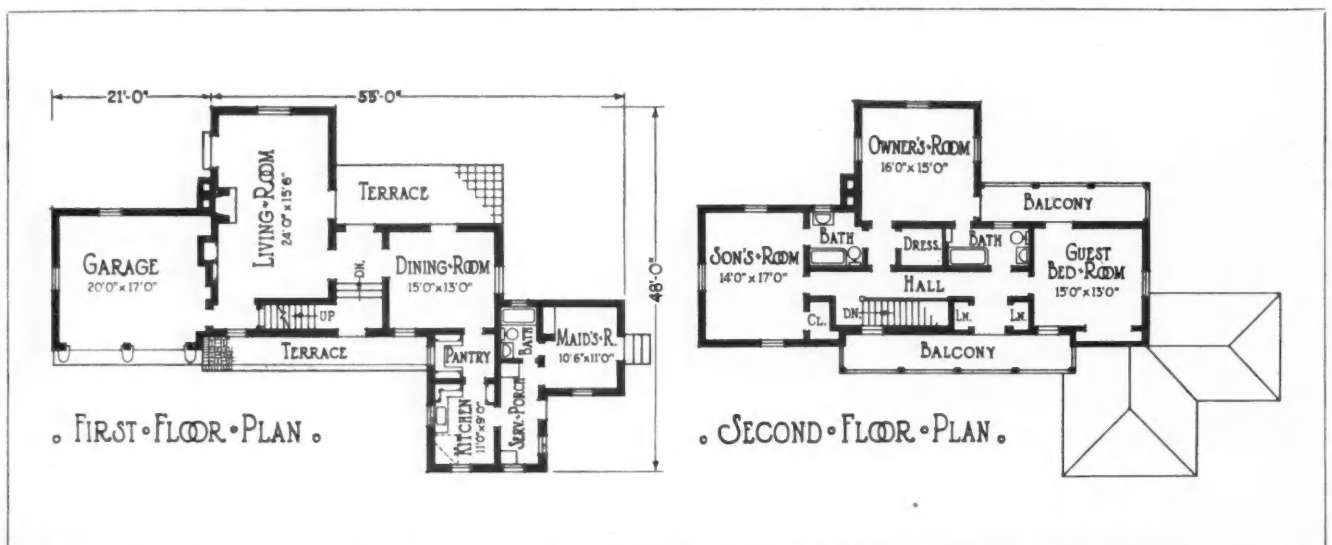
**In The Southeast The  
Mediterranean Is Liked**

The colorful Mediterranean architecture is well suited to Florida and the Southeast and its popularity there is justified. This is a practical plan and pleasing exterior by National Plan Service (No. 246-A). Cost Key is 1.385-164-1150-49-18-15.



## Monterey Style Popular On The Pacific Coast

Supplanting the Spanish in California is a new and thoroughly American style, the Monterey pictured above. Features of the Spanish and Colonial are combined in an appealing way. Witmore and Watson, Los Angeles, are the architects for this house. Cost Key is 2.595-246-1638-70-39-26.

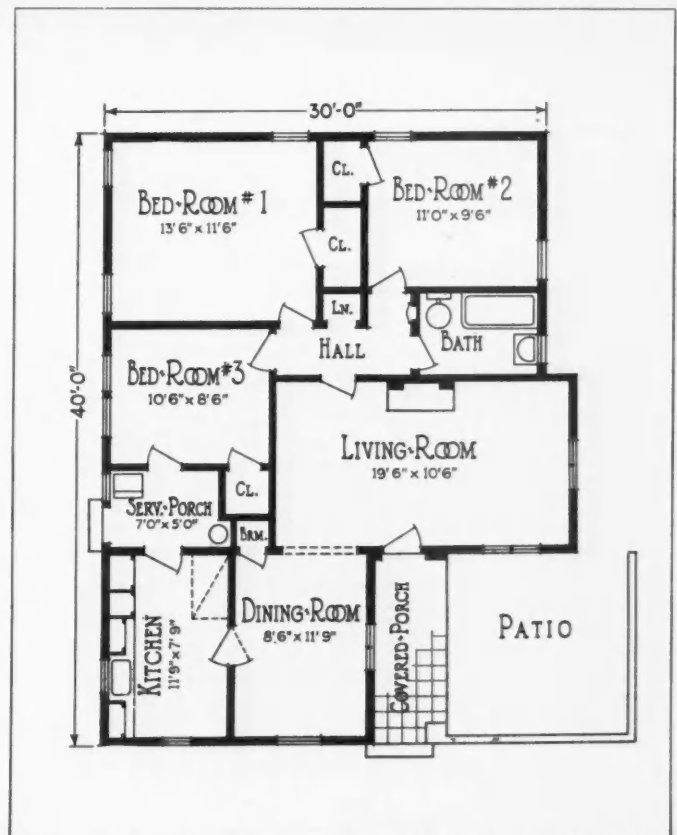




## The Southwest Likes Spanish-Mexican Type

The Mexican influence has had great effect on the architecture of the Southwest. The house of the type shown above is suited to the climate, and is attractive in its simple, straightforward lines.

The open porch and patio, shuttered windows, tile roof, stucco walls that resemble adobe are features of this house. Cost Key is 1.265-144-1156-48-16-8





A swing-up type door of rigid construction that harmonizes well architecturally with house.

# New Styles in Garages and Equipment

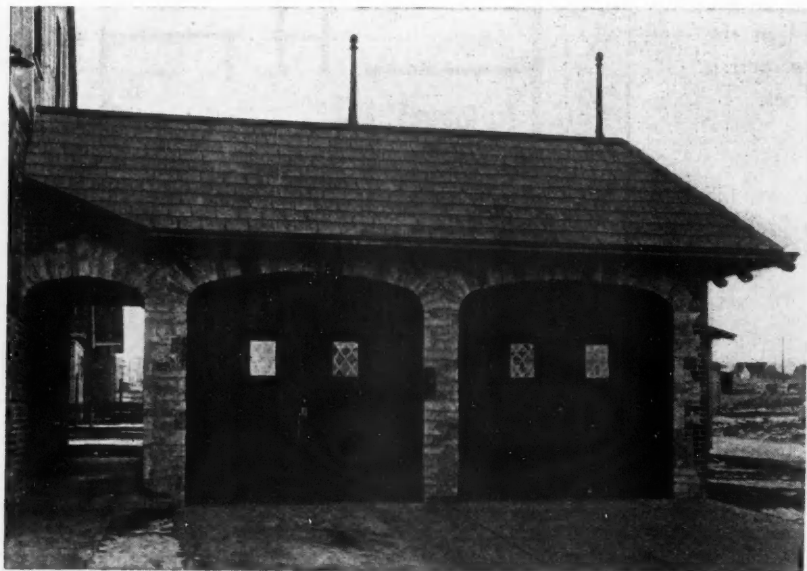
## Attached Garage Brings Quality Trend

**T**HE MOST pronounced trend in residential garage construction is towards making the garage an integral part of the house. The depression has amply demonstrated that the American family will not give up its car. The automobile has become an important member of the family—a place for it must be provided in the house to the same extent that a separate room is provided for other members.

Making the garage a part of the house has resulted in a trend toward better design and appearance. Architecturally, the garage has been elevated out of the back yard into front door society. It has been dressed up.

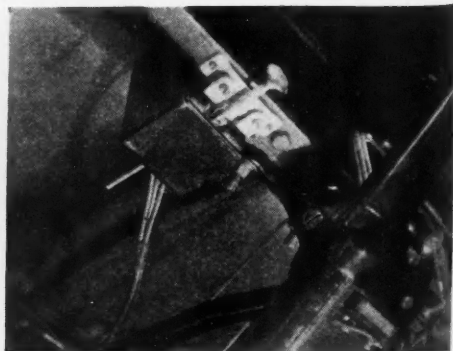
Heavier doors of pleasing architectural design are more common. The more solid construction calls for increasing use of counter-balancing equipment, springs or weights to make handling of the doors easier. The upward-acting type of door has increased in popularity.

Analysis of the mechanical features of the various types of upward-acting, overhead and swing-up doors shows considerable strengthening and simplification of equipment. Several of the best known makers of standard equipment have brought out lower priced units which fill a need for this type of equipment in the great bulk of residential garages in average sized homes.



Vertical V-grooves, leaded glass windows and an arched opening are features of this overhead in semi-detached garage.

Below is the radio control of an efficient type of new equipment, mounted to instrument board of car. A touch of the knob opens or closes the garage door.



A few of the improved features of the newer types of garage doors include smoother, easier performance; doors can be elevated to any desired height or raised overhead leaving full clearance; snow and ice cannot check quick opening and closing; doors fit tightly at top, sides and bottom, are braced to prevent sagging or warping, are easy to lock or unlock from either side and conserve space.

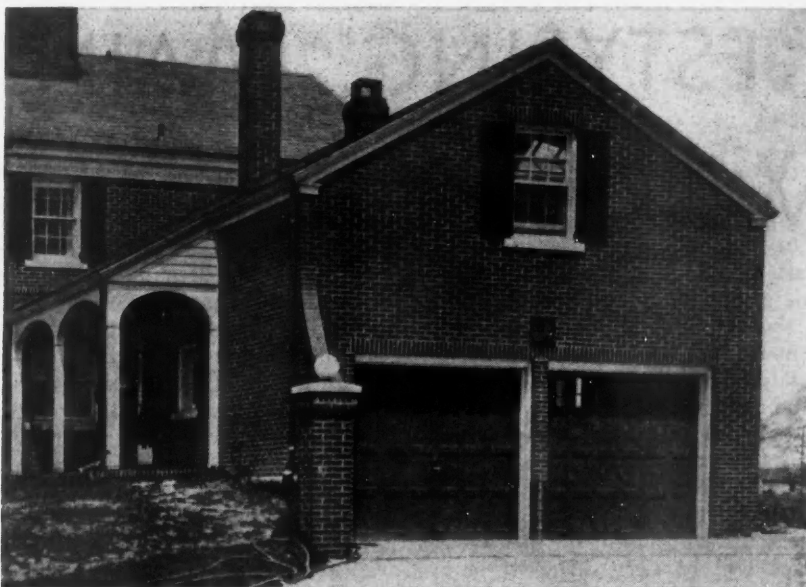
Architecturally, there has been great improvement. Well proportioned panels with windows placed for efficient lighting and attractive appearance are important features. Doors are available in any style to conform with the architecture of the house.

One of the developments of the year has been a new overhead-acting door made of tubular steel that is light and strong. The doors are weatherstripped, sapproof and firesafe.

Automatic control and the newer type of radio control are both still very live subjects in the residential garage field. The perfected radio control is a very simple apparatus which is no more unusual than the average radio set. The small control located in the car is operated by a push button which acts on the garage door equipment, quickly opening or closing the doors.

Other types of automatic equipment are operated by push buttons or trips which save the driver annoyance and unpleasantness in getting out in stormy weather to open or close his garage door.

Perhaps the biggest market in the garage field is the modernizing of the average type of detached garage of run-down condition. Re-styling and modernizing small residential garages offer a big field for individual effort. New concrete floors, insulation, a tight roof, a new exterior harmonizing with the house, and new door equipment are improvements widely needed and offering a



The garage with overhead doors is an integral part of this attractive house designed by Harry J. Garceau, architect. The doors are standard stock pattern and design.

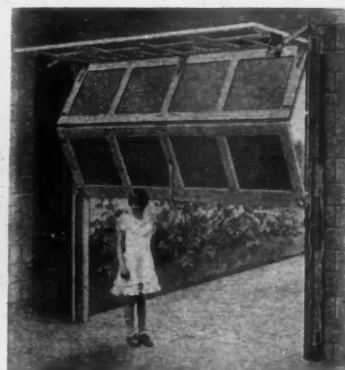
profitable market. Higher insurance rates are an incentive toward keeping the automobile in a garage, a fact which offsets the tendency toward outdoor parking that prevailed for a time. One of the sales arguments presented by aggressive builders specializing in garage work is a statistical comparison of costs that effect the non-garaged car as compared with the one properly housed. Items include higher insurance, cost of upkeep, extra refinishing, more frequent cleaning and polishing, danger of dents and damage. Use of such figures leads to sales.

FOR MANUFACTURER'S DATA on garage equipment see bibliography, Page 48



The upward acting doors of the attached garage at left are of white pine with 3-ply fir panels. Rigid construction, smooth performance, easy installation are features.

Below is a triple fold door brought out last year which is delivered with hardware attached to track and door ready for installation.



# RESTYLING MAIN STREET FOR T

**W**ITH the return of legalized beer, thousands of stores, cafes and taverns will be remodeled, restyled and re-equipped, furnishing employment and opportunity to many architects, builders and craftsmen, and requiring quantities of building materials and much special equipment. It is estimated that, on the average, \$2,000 will be spent on each establishment to put it into proper shape to retail the new post-Volstead beverages in the proper style and amid the proper surroundings.

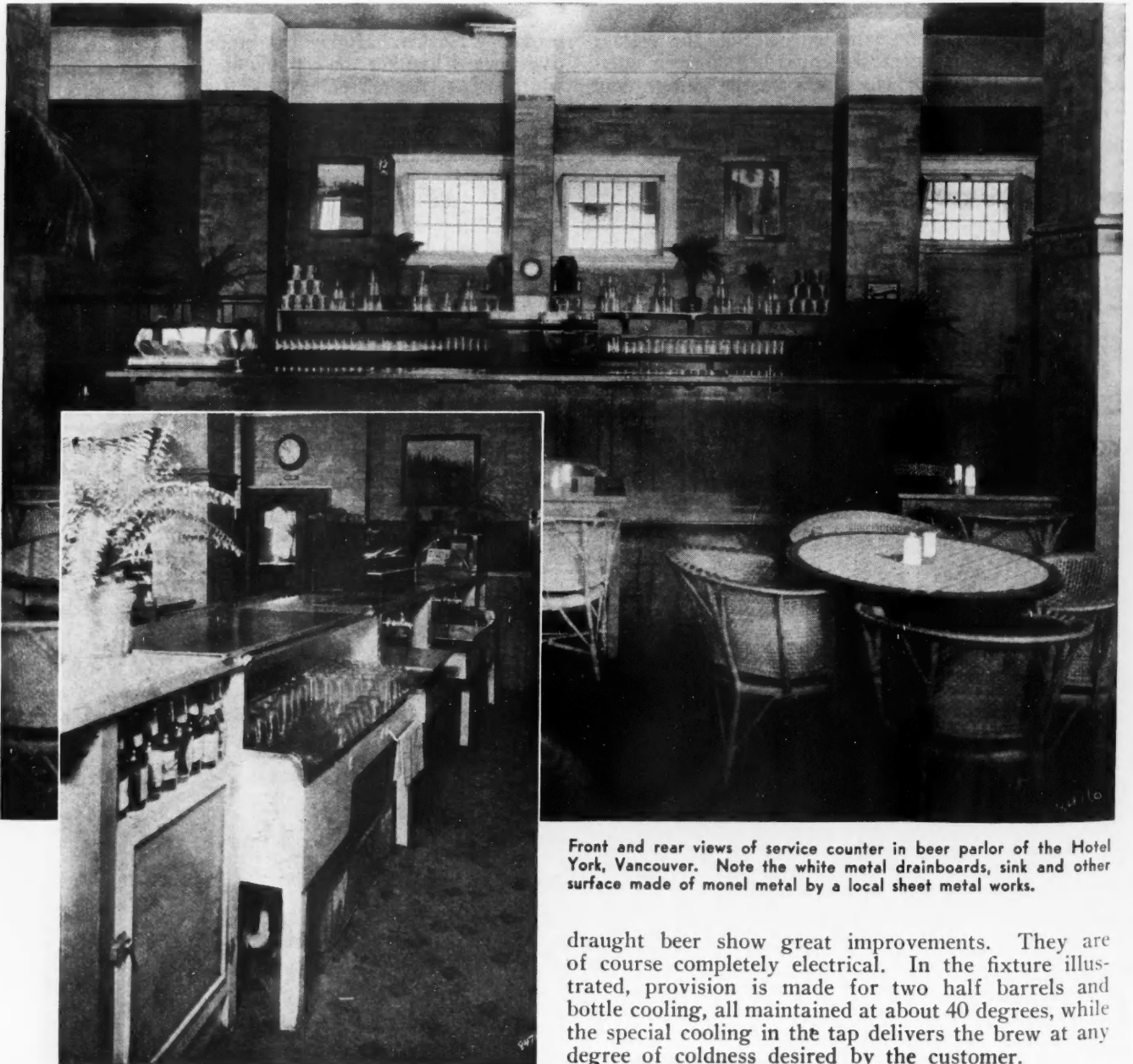
Just how many of these retail dispensing shops will be opened remains to be seen. Before prohibition (in 1920) there were in the United States 177,000 licensed places for retailing beer. The idea now of those close to the brewing industry is that the new retail dispensaries will be very different in appearance and atmosphere from the tap-rooms of old. Something lighter, brighter, more sanitary, more like the modern popular

soda fountain, or the European beer garden is looked for. An efficient, cleanly designed, electrically cooled service fixture will take the place of the old time massive bar; and whether it will generally be supplied with a "brass rail" is rather doubted. Service at tables, more in the European manner, is expected; and this will call for extensive remodeling and decorating throughout the entire space.

New store fronts, new lighting fixtures, new sanitary walls and floors and new furnishings all in the clean cut modern style will be in demand.

Probably a good many store spaces on Main Street, now vacant, will be leased and remodeled. Restaurants, clubs and hotels also will be enlarging and modernizing their beer service rooms. Many unique decorative effects will be devised to give individual character to these establishments.

The new service fixtures for cooling and dispensing



Front and rear views of service counter in beer parlor of the Hotel York, Vancouver. Note the white metal drainboards, sink and other surface made of monel metal by a local sheet metal works.

draught beer show great improvements. They are of course completely electrical. In the fixture illustrated, provision is made for two half barrels and bottle cooling, all maintained at about 40 degrees, while the special cooling in the tap delivers the brew at any degree of coldness desired by the customer.



# OR THE NEW DEAL IN BEVERAGES

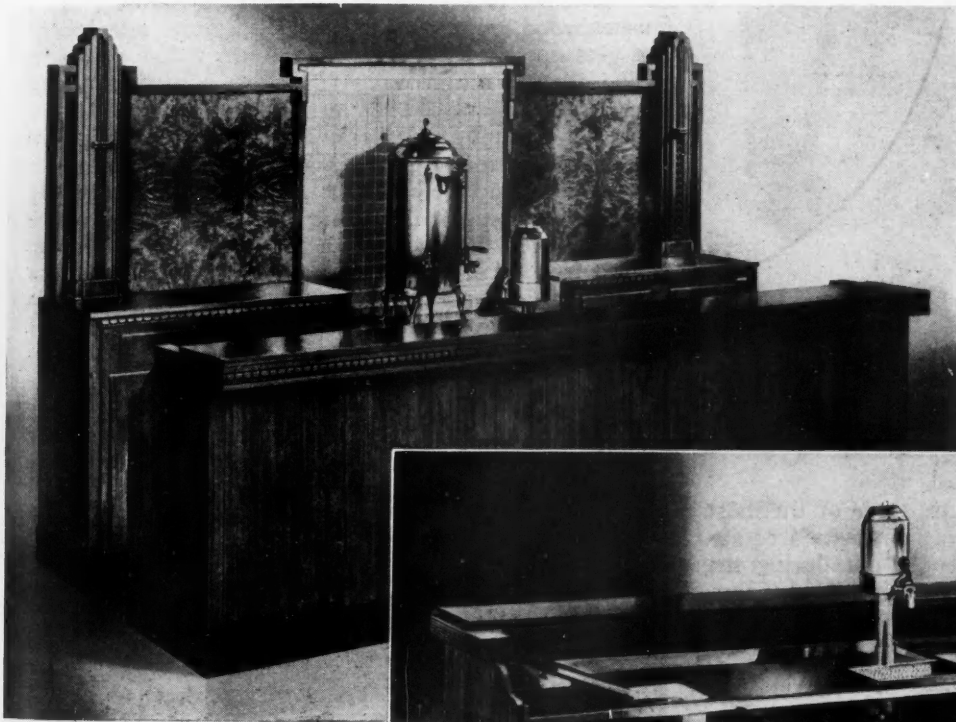
"Beer dispensing will be done in a moderne atmosphere, devoid of huge mirrors and the old brass rail," according to R. W. Jackson, an official of one of the prominent draught service fixture concerns. "The great expanse of mirrors and gaudily carved posts and pillars will be completely done away with in the new setting. Instead, the counters will be shorter, of the buffet type, for service to table, with or without meals as regulations will permit. Special attention has been given in detail to the requirements and needs of hotels and private clubs in the way of service fixtures, keeping in mind the necessity for compactness."

As typical of what this new beer business is doing to relieve unemployment, more than 1500 workmen, the majority of them skilled craftsmen, have been called to the Muskegon, Michigan, plant of The Brunswick-Balke-Collender Company for the manufacture and assembly of such new fixtures. This, it was pointed

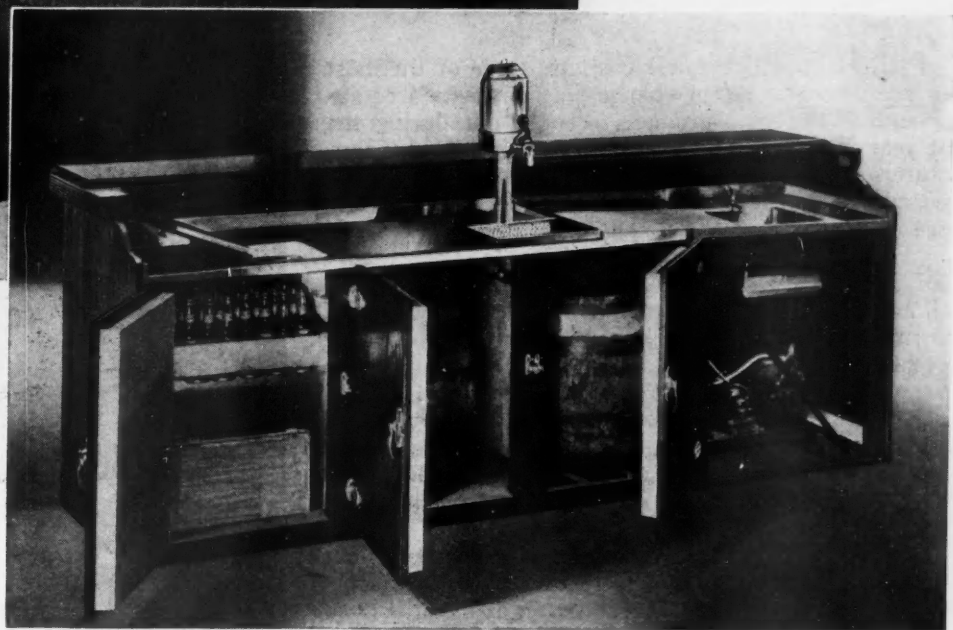
far as the builder and contractor are concerned. Throughout the country there will be thousands of vacant stores or units of space suitable for remodeling for the dispensing of beer, opening up new channels for the employment of surplus labor in decorating, renovating and rebuilding. Entrances, store fronts, floors, lighting fixtures, various decorating schemes in general will be changed. To the building contractor, who is on his toes and is watching the newspapers for licenses issued and will follow these up making proper contact with the individual who has the license, suggesting to him various ways of modernizing the vacant space available, this will mean big business."

In considering the possibility of adapting present restaurant and hotel service equipment to the new needs of beer dispensing, the utility of monel metal comes to mind. If the experience of hotels and restaurants in Canadian cities may be taken as a guide, many hotels

and restaurants will find that local sheet metal contractors will be able to accomplish wonders. Outstanding illustrations of remodeling of this sort across the border may be found in Vancouver, B. C. There are approximately 45 beer parlors in that city and in practically all of them, local metal contractors have provided satisfactory equipment. The F. W. Dodge Corporation estimates that more than \$65,000,000 will



Front and rear views of new style electrically cooled service fixture for dispensing beer.

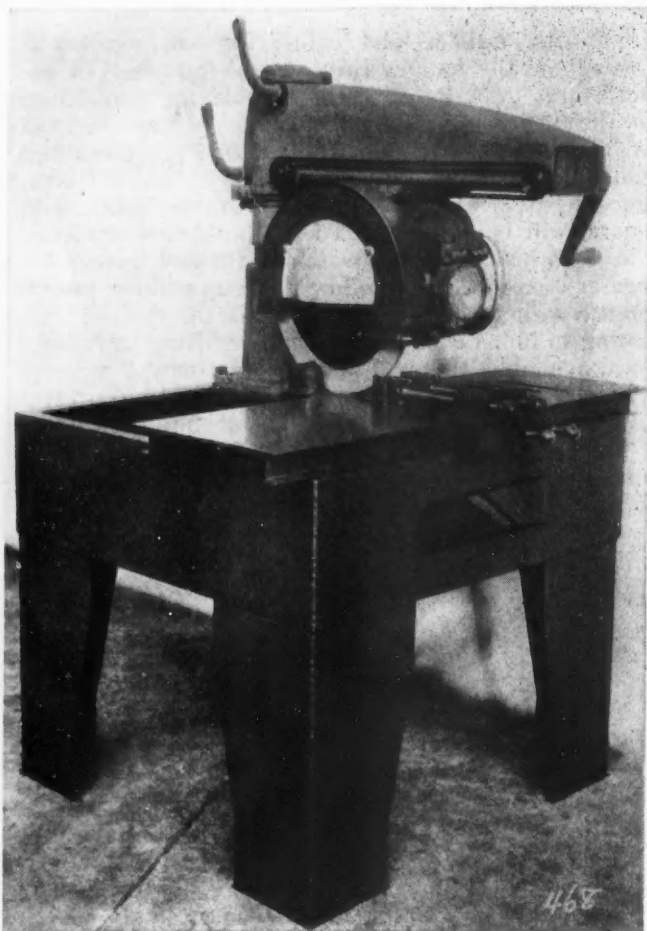


out, will reduce the present unemployment in Muskegon by about thirty per cent.

Commenting on this, C. L. Ellison of the Brunswick Company said, "As I see it, our increase in the factory has, no doubt, a direct bearing on outside activities so

be spent for new breweries and for alterations and additions to old ones. This does not include probable expenditures for building and rehabilitating retail establishments. This total has been estimated by the United States Brewers Association at 400 million dollars.

# Review of New Contractors' Equipment



Re-designed model of overhung type saw which is built for greater accuracy in cutting wood, metal or stone.

**S**PEED, durability, lower cost, are three of the most characteristic recent changes in contractor's equipment. The new products brought out during the past year indicate that conditions have prompted manufacturers to figure prices more closely and at the same time add new features that increase the efficiency and cost-saving points of their equipment.

**ELECTRIC SAWS**—The trend in hand saws is illustrated by an announcement recently by a well known manufacturer of equipment of this type of a new portable electric steel saw that weighs only 8 pounds, has a 6-inch saw blade, and cast aluminum frame. It is specially designed for fast, light work, for sawing one-inch lumber and cross-cutting up to 2x12-inch pieces. The price is under \$40.00 which will surprise building men who used to pay three and four times that much for an adequate electric hand saw.

A new manufacturer in the field has just brought out a compact home workshop which provides a lathe capable of swinging pieces up to 24 inches in diameter, a combination cross cut and rip circle saw 8 inches in diameter, a band saw 12 inches, a disc-type jointer and a sander. All of this in a very compact, low priced machine, requires a space only 4'10"x2'9 1/4". The machine is soundly engineered, with legs and lathe bed of cast iron.

Another woodworking machine, a well known product that has been re-designed for maximum ruggedness, is

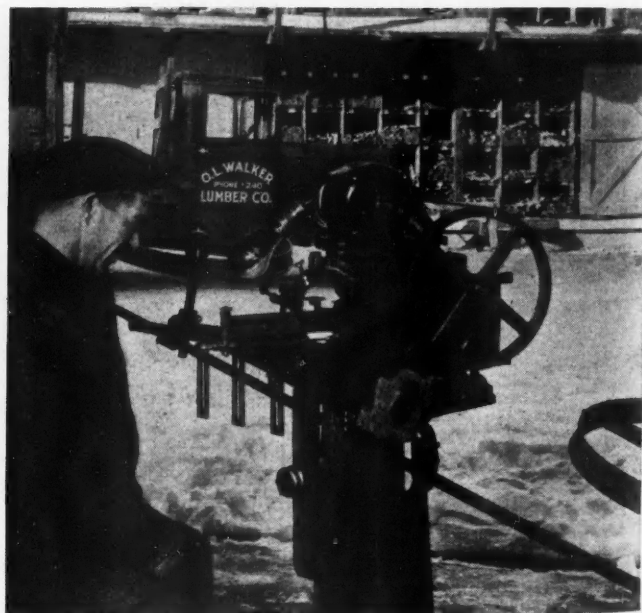
one with an overhung type of saw, with the saw blade directly driven and designed for great accuracy in cutting metal and stone, in addition to wood. The cantilevered arm can be extended from a single post so that cuts may be made up to 36 inches. The machine is ruggedly built, with a heavy structural steel table, and maintains accurate, sure adjustment.

A lighter all-purpose saw rig is a new machine with a patented tilting table and rigid, welded steel frame. Ripping, cross-cutting, dadoing, mitering, bevel cross-cutting, double mitering and bevel ripping are ordinary cuts for this portable rig, which has a straight line cutoff and an adjustable arbor shaft. It is operated by a compact 10 HP, four cylinder gasoline engine, built to provide a smooth flow of power.

**SANDERS**—A number of new, powerful floor sanding machines have been brought out in improved models the past year. The most interesting of the smaller machines are two new portable, hand-operated sanders. One of these is a small belt type which sands, grinds, finishes wood, metal or stone. It has a noser attachment that gets up close to the edges, and a new low price.

The other is a light weight machine with a revolving disc. It weighs only 20 pounds, has a speed of 3200 revolutions per minute. A major feature is a smooth metal guard placed just above the disc that revolves as the sander is moved along the baseboard, thereby overcoming any danger of scraping or damaging the wood. The abrasive disc protrudes far enough beyond this guard to reach the last fraction of an inch. The machine has a rapid cut and should do much to eliminate laborious handwork on floors. Other features include swivel rollers at rear of machine, dust collector, light-weight aluminum alloy frame 3/4 HP motor.

**MIXERS**—Improvement in concrete mixers has been extensive. One new handy trailer type has been brought out that is easy to get on the job, and yet delivers a large volume. A new drum type mixer has also



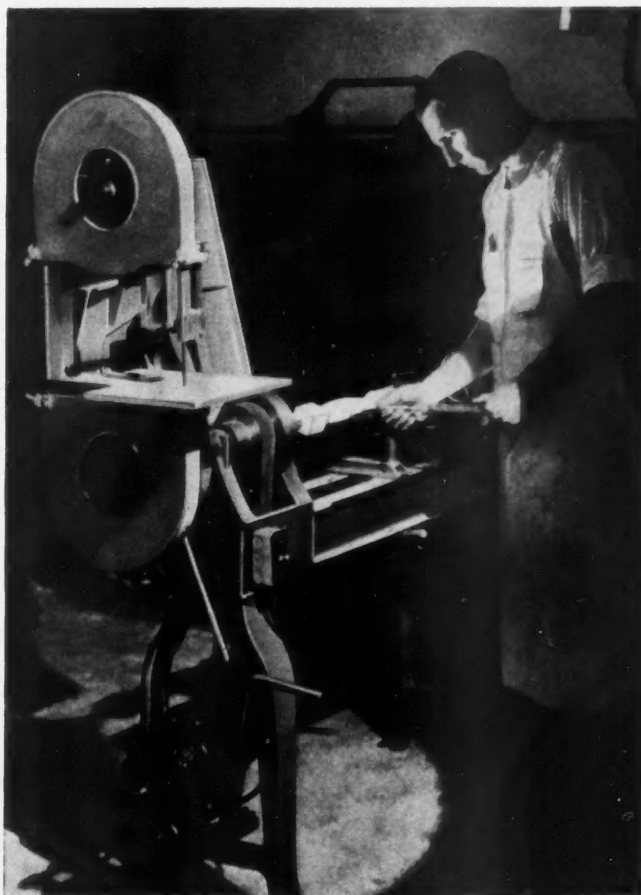
Automatic saw filer which handles work with great rapidity in use in yard of O. L. Walker Lumber Co., Casper, Wyoming.

been announced for 1933, with a lower, narrower and lighter construction. Anti-friction bearings are used, the drive is effected through high speed roller chains running over machine-cut sprockets in a bath of oil, shafts are self-aligning. The machine is all-steel, electric welded and hot riveted and bolted into a rigid unit. It is equipped with a calibrated water tank with dial indicator, showing both pounds and gallons.

A new spindle-shaper that enables the builder to produce his own moulding of scrap material at low cost is of interest. The shaper is built with a heavy cast iron table 24 inches in diameter and the spindle is fitted with new felt-sealed ball bearings. A choice of speeds from 6,900 to 13,800 is provided.

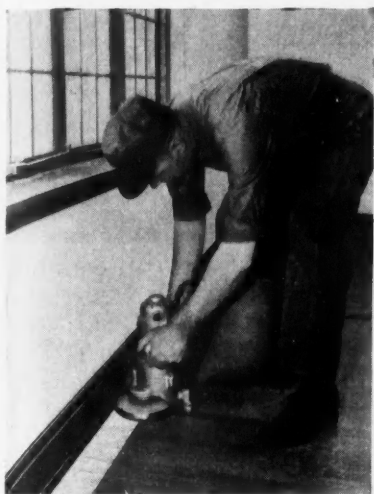
Another new specialty of value is an improved screen tacker that fastens screens on quickly and securely. It is equipped with hardened steel replaceable claws and a special cap which improves efficiency and ease of operation. The danger of hurting one's hand is eliminated.

FOR MANUFACTURER'S DATA on contractor's equipment see bibliography, page 48.

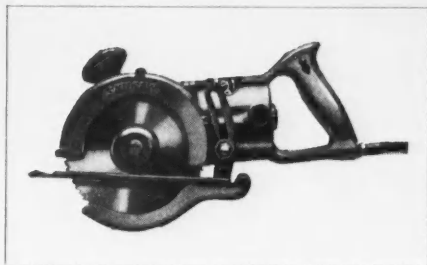


At right is new home workshop machine engineered to handle five basic operations.

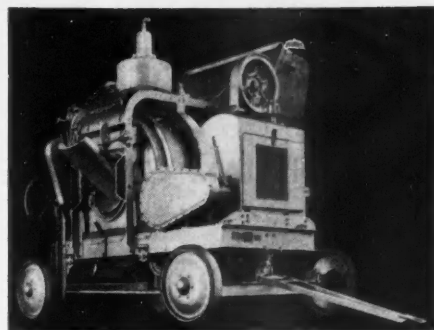
Below—new low-priced electric hand saw with 6" blade. Weighs only 8 pounds.



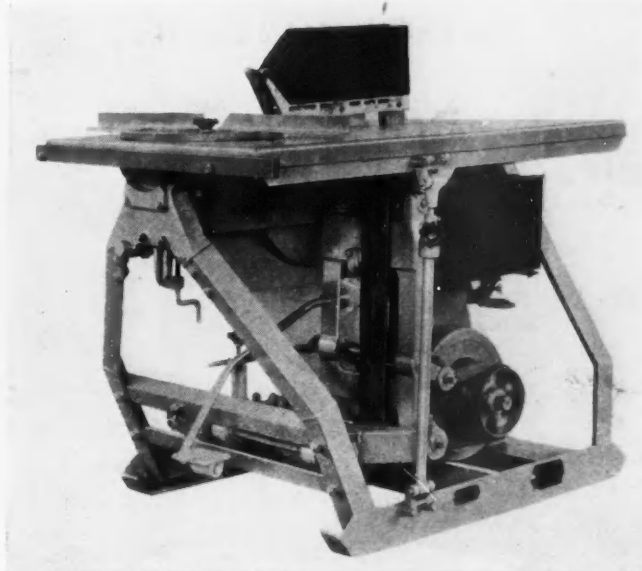
A spinner type sander of improved design that works up close to baseboards and eliminates expensive, laborious hand work on floor sanding job.



At right is shown new two-bagger mixer of improved design with split-hair water control.



Spindle shaper with 24" cast iron table. Spindle is reversible; drive is new V belt type. Speeds of 6900, 8625, 10350 or 13800.



Ball bearing saw rig with tilting top, welded steel frame, 10 HP gasoline engine. Will rip, cross cut, dado, mitre, bevel.



## THE HOUSE OF THE MONTH

WILLIAM CAIN, Architect

THE HOMELAND COMPANY  
BUILDER

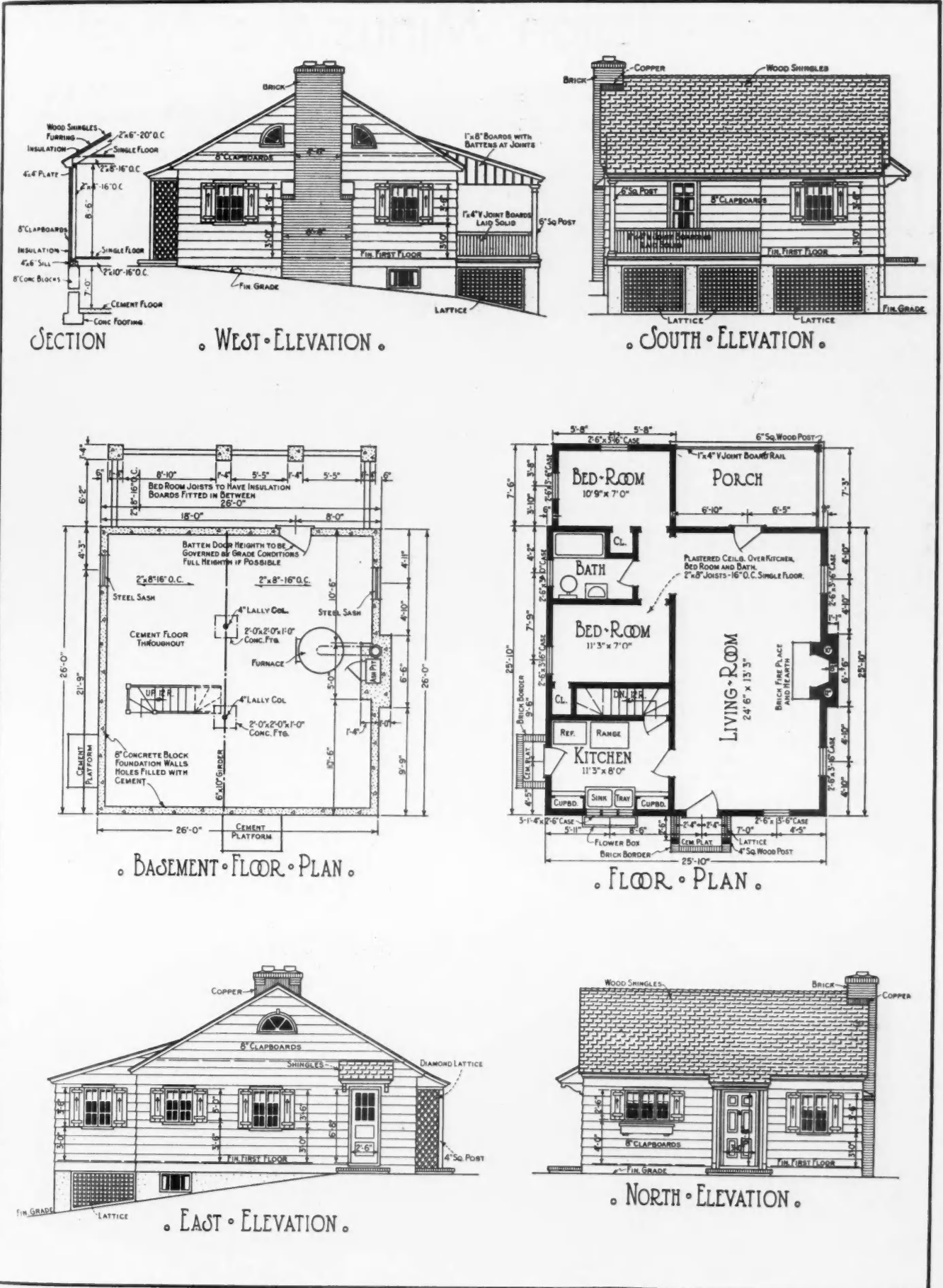
Cost Key .958-104-676-29-14-11

Interior is finished in knotty pine.



### A New England Farmhouse to Meet Today's Market

Now comes the four-room home that can be completed within six weeks from breaking ground—the first of several to be built in Westchester County, N. Y., this spring. Most interesting is the cost of these houses to the ultimate owner, namely \$3950, including a 40x100-foot plot on a paved city street with sewer, water, gas and electricity and near transportation. The house is constructed with fiber board, laid on the outer side of studs and rafters, the roofing layer acting as inside finish on stained rafters, for no ceiling is hung in the twenty-five foot living room and a mezzanine over the other rooms (all on one floor) permits the carrying through of this feature for the entire length of the building. No plaster is used. The entire interior is finished (both sides of partitions) in oiled knotty pine reproducing an authentic early American interior. The ceilings of the rooms other than the living room are of fiber board treated with a plastic paint giving all the appearance and texture of plaster. Following the newer trend, the living room is very large with log-burning fireplace. The kitchen is roomy and the chambers are smaller than average though permitting of full sized beds and other furnishings and sufficient closet space. A porch which can readily be enclosed or be converted into an extra room is at the rear.



SECTION . WEST ELEVATION .

. SOUTH ELEVATION .

. BASEMENT FLOOR PLAN .

. FLOOR PLAN .

. EAST ELEVATION .

. NORTH ELEVATION .

Reduced plans of four-room New England farmhouse with extra large studio type living room—A leader this spring with the Homeland Company, New York

# Sound Insulation Minus the Mystery

## How to Correct Noise-Leaking Walls, Floors and Ceilings

By D. P. FALCONER  
Chief, Acoustical Department,  
The Consumers Company,  
Building Material Dealer, Chicago

THE WRITER recently inspected a doctor's office where, at considerable expense, a sound insulating partition had been built so that conversation in his examination room would not reach the adjoining waiting room. You could sit on the "mourners bench" and hear every word in the examination room. The sound came through a light connection with outlets on each side of the partition. The whole expense of the wall had been offset by this bit of carelessness.

An example you can multiply by hundreds. People are moving out of apartments because their next door neighbors above, below or beside them operate their radio or conduct their private fights in such a way as to cause serious disturbance. This applies not only to shoddy

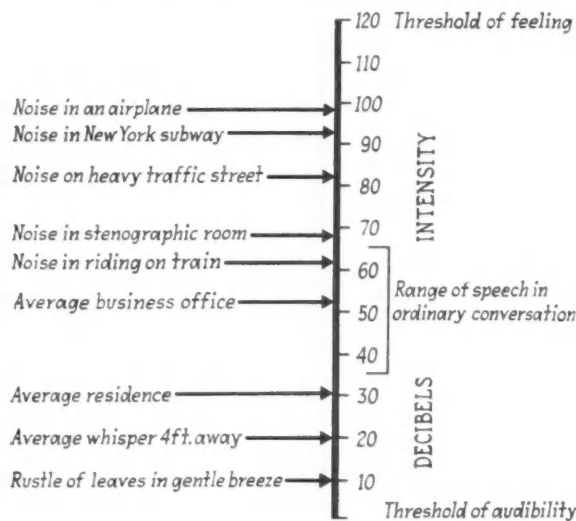
pands to fill the room; if pumped into a room it builds up a pressure, it leaks out through the key-hole, around the door, back of the casing, through holes in the wall, etc. If you open the door it rushes out to fill the next room. Sound is much like that, it will leak through a key-hole, back of the casing or through electric light plugs on opposite sides of a wall. You can build up a sound pressure or intensity and in order to be heard you must talk as loud or louder than the noise level in the room.

This brings up the subject of relative sound intensities. You can hear the bird song above the rustle of the leaves and you can hardly hear your own shout above the noise of a printing press or a passing "L" train. This is what they call "noise level" and there is a scale the units of which are called "decibels." These units relate to the way we hear, not the actual physical intensity of the sound.

This decibel scale is of interest because it is being used more and more to indicate the relative sound insulating value of a partition, floor or other part of a building. Each unit in the scale is one step louder as the ear hears the sound. The first diagram gives the scale with average values, we all know.

"Sound proofing" is largely relative. If there is a sound intensity of 60 decibels in a room and a partition providing a 40 decibel drop you can expect about a 20 decibel intensity in the adjoining room. If the noise level in this room is below 30 to 35 decibels the noise leakage is very apt to be disturbing. It takes a 10 to 15 decibel difference between the direct and the masking sounds for the latter to become non-disturbing. Test this out; next

EAR SENSATION UNITS OR DECIBEL SCALE

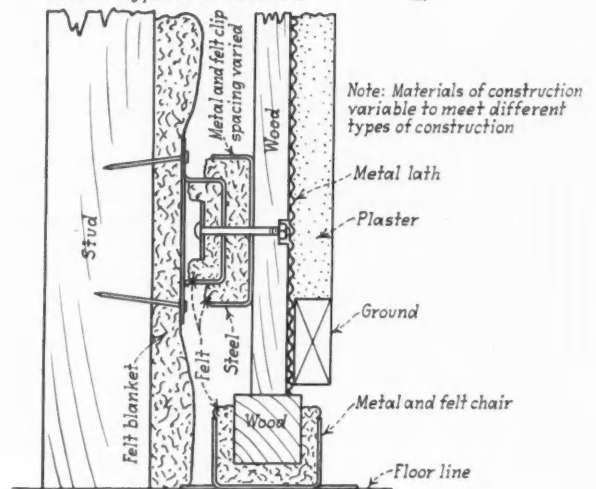
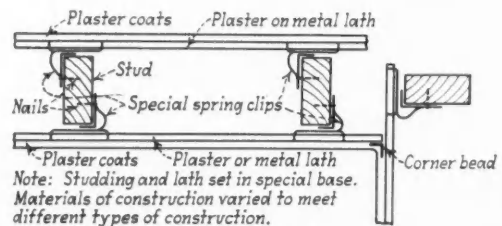


construction but to high class apartments of so-called fireproof construction. Many a buyer of an expensive co-operative apartment has found to his sorrow that he has purchased more than a beautiful suite of rooms.

Sound control is a serious problem. It is assuming greater importance in the remodeling work now under way. Properly done this remodeling can overcome much of these defects and bring these buildings "up to date" in reality. It is the purpose of this article to tell in simple language something about sound and sound insulating construction. With an understanding of the principles involved and methods used, the ordinary builder can apply them in everyday work.

There are two general phases of sound control, the first relates to the use of sound absorbing material in a room for the purpose of creating better hearing conditions or for comfort and health, like churches, theatres, etc., or offices, restaurants, etc. The second, the subject of this article, relates to sound insulation, i. e. preventing sound from being transmitted from one room to another such as is illustrated in the opening paragraph. To puncture a popular fallacy, the first has little if any value in the second.

Sound is an elastic fluid energy. "Elastic" and "fluid" suggest the properties of a gas, air for instance. It ex-



Sections through walls showing two efficient forms of sound insulating construction.

## \*DATA ON SOUND INSULATING VALUE OF COMMON TYPES OF CONSTRUCTION

Construction	Weight per sq. ft. lbs.	Ave. decibel Reduction
8" Brick wall, 1" plaster.....	38.0	47.5
4" Clay Tile, 1/4" plaster.....	28.6	35.6
3" solid Gypsum Tile, 1/4" plaster.....	25.4	34.3
2" solid Gypsum Tile, 1/2" plaster.....	15.0	27.2
2" solid Gypsum Tile, unplastered.....	10.4	22.8
2" Double Solid Gypsum Tile, unplastered, 2" separation.....	20.4	49.3
2" Double Solid Gypsum Tile, unplastered, 4" separation.....	20.4	51.3
Same as above, 4" separation, inner surfaces lined with 1" felt.....	22.3	57.3
Staggered 2"x4" Wood Studs, metal lath, 1/2" Gypsum plaster.....	19.8	39.1
Staggered 2"x4" Wood Studs, 1/2" fibre insulation board, 1/2" Gypsum plaster.....	13.0	36.6
2"x4x Wood Studs, wood lath, lime plaster.....	17.4	38.1
2"x4" Wood Studs, wood lath, Gypsum plaster.....	18.0	29.4
2"x4" Wood Studs, 1/2" fibre insulation board, gypsum plaster 3/8".....	16.0	38.0

time your neighbor's radio is disturbing, turn your own on louder.

Another principle of sound transmission and conversely of insulation is illustrated in the experiment in which a long wood rod was placed so as to rest on the sounding board of a grand piano but not touching the strings. The rod was extended up two floors and the openings in the ceiling packed with felt to prevent sound leakage. When the piano was played it could not be heard in the upper room until a violin was rested on the end of the rod and then the piano was heard perfectly. The vibrations of the piano sounding board were transmitted upward but it required a second sounding board to reproduce the music. By cutting the rod and inserting a piece of felt, a steel spring or a plastic cement the transmission of the vibrations would be stopped or greatly reduced. The writer once inspected a home where the noise of the heating plant was not noticeable on the first floor but became a nuisance in a bed room above. It involved the above principle. This also explains why a single stud partition is so excellent a conductor of sound, vibrations are transmitted through the studding.

One more principle and you have the picture, the  
(Continued on page 52)

\*Taken from paper by Dr. Paul E. Sabine before the Acoustical Society of America. See also "Acoustics and Architecture" by the same author for additional data.

## Precast Joists for Low Cost Concrete Floors

**P**RECAST concrete joists are a new development recommended for use in building low-cost concrete floors. They are adaptable for residences, apartment buildings and other structures of light occupancy designed for live loads of about 60 pounds or less per square foot.

In centers where this type of construction has been introduced experience shows that costs are almost the same as for wood joist floor construction. This is particularly true for first floor construction where the underside of the concrete floor is not plastered whereas the underside of the wood construction is lathed and plastered.

This method of construction appeals to contractors because the advantage of concrete floors are now available at low cost for small structures. Contractors like the ease with which this type of concrete floor is built. The joists are delivered to the job ready to be set in place. For average spans, the joists are handled by two men and set in much the same manner as wood joists, except that fewer joists are required because they are generally spaced on about 30" centers.

After the concrete joists are set in place, forms for the concrete slab are erected. Wood spreaders are wedged between the joists and 1" sheathing lumber is lightly nailed over the spreaders. The concrete slab 2" or 2 1/2" thick is then placed over the entire area. The joists project into the slab 1/2" or 3/4", resulting in a rigid bond between the joists and the slab. After the floor slab has hardened, the spreaders and sheathing are easily stripped, the lumber being re-used for forms or for roof sheathing. Before concrete slab is placed, the form boards are generally covered with building paper so that they may be kept clean.

When a nailed hardwood finish floor is desired, wood screeds are either embedded in the concrete slab or are attached to the slab by the use of metal clips anchored into the slab. The hardwood floor is nailed to these screeds. For all other finishes such as hardwood laid in mastic, linoleum, all-over carpet, tile, terrazzo or stained surfaces, no screeds are required. Among the most popular as well as the most economical finishes are those which may be given to the concrete slab which may be plain or colored concrete and marked off in tile, flagstone or other interesting patterns.



Precast concrete joists are made by many concrete products plants.

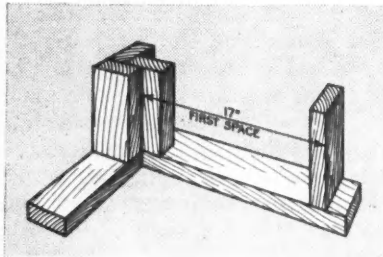
# PRACTICAL JOB POINTERS

A READERS' EXCHANGE of tested ideas and methods, taken from their own building experience. Two dollars is paid for each contribution published.

## Three Piece Corner Post

IN my experience in carpentering, I have often had arguments about the best corner post with 2x4's on frame dwellings.

I take pleasure in offering this sketch of my own invention in this district to your readers. I find there is very little shrinkage in a well nailed three stud corner like this, and it gives the full thickness of the stud for nailing inside wall. You will also notice that I start my spacing on the inside of the wall instead of outside, which eliminates the odd spaces for lath or wallboard.—L. LAPOINTE, Sherridon, Man., Can.

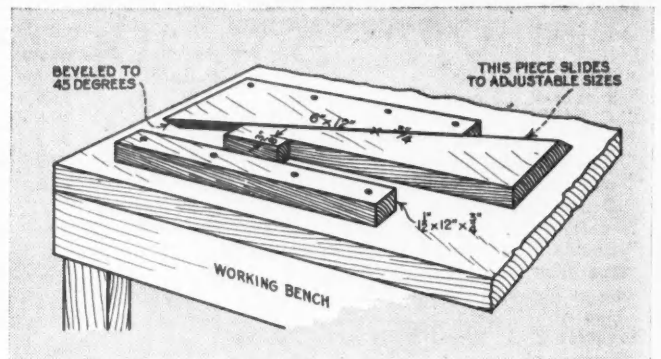
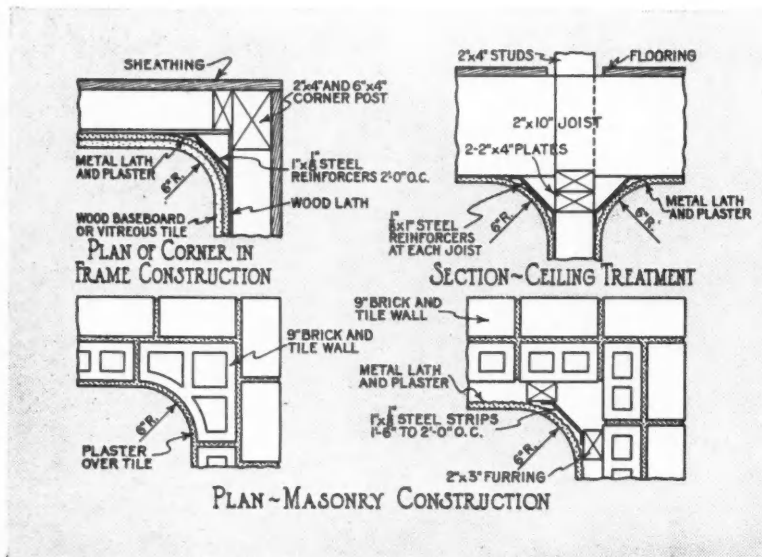


The method of placing three 2x4's for corner post used by L. LaPointe.

## Eliminates Angle Corner

SINCE there has been a tendency in recent dwelling construction to make the home easy for the housewife to care for, I wish to call attention to a simple method of improving the dirt-catching, angular, room corner. The idea, I believe, has been used to some extent in hospital construction.

I have enclosed a sheet of sketches to illustrate this idea which seems to be fairly practical but has not been properly tested. Referring to the drawings, in some instances it might be more advantageous to reduce the radius of curvature from 6" to 4 or 3. With a large radius one cleaning a floor with a mop would find it easy to get at the dirt that collects in the corner without digging for it.—GEO F. JACKSON, Anaconda, Mont.



Simple table or work bench vise that is easy to make and holds wood firmly in place.

## Simple Bench Vise

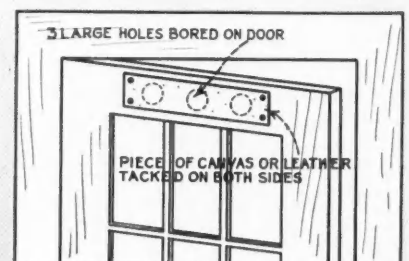
I AM sending in a sketch of a vise I find very useful on a work bench. I believe I have described it in the drawing so readers can understand just how it is made. It is an old idea, but still very useful.—FRANK HARSH, Osakis, Minn.

## Home Drafting Board

TO make a home drafting board out of an ordinary kitchen table, bore holes in the legs on the wall side and insert metal rods of proper length to give the desired slant. A higher stand-up board can be made in the same way by boring all four legs and using shorter rods for the front side. Round glass bases or cups can be placed under the rods to protect the floor. Rods can be removed when not in use.—P. C. HOLAHAN, Chicago, Ill.

## Escape Valve For Storm Door

THE compression between a tight storm door and the regular door causes some delay in closing. This may be overcome by using the simple valve illustrated. It is made by boring three large holes in the top of the door and covering them with a strip of canvas or leather. The strip is held, not too tightly, by tacks on either end. When the door is being closed, the strip bulges with the escaping air, and when closed, cold air can not enter from the outside because the action is reversed and the strip is pushed against the holes. If the regular door is equipped with a similar valve, no difficulty will ever be experienced in opening or closing the door either from suction or compression.—L. P. YOUNG, Culver, Indiana.



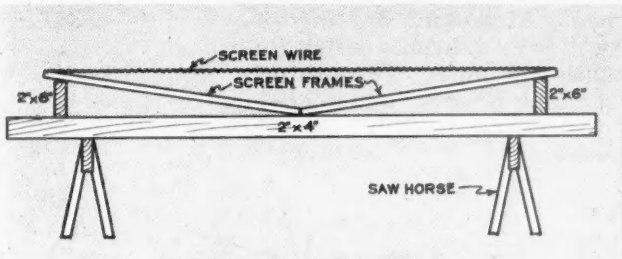
Above is improvised valve for storm door to enable it to shut without delay from air pressure.

At left is method of eliminating corner angle to make cleaning more easy for housewife.



### Getting Tight Screen

USE this method to stretch screen wire: put frames end to end, raise ends up 4" or 6", tack wire and stretch to other end of opposite frame. Tack and put on moulding on ends. Take out 2 x 4 or 2 x 6 and let frame lie flat. Wire will be tight, but if not tight enough, put block in center, raise up and nail inside ends and cut off wire.—G. R. OTTER, Dupo, Ill.



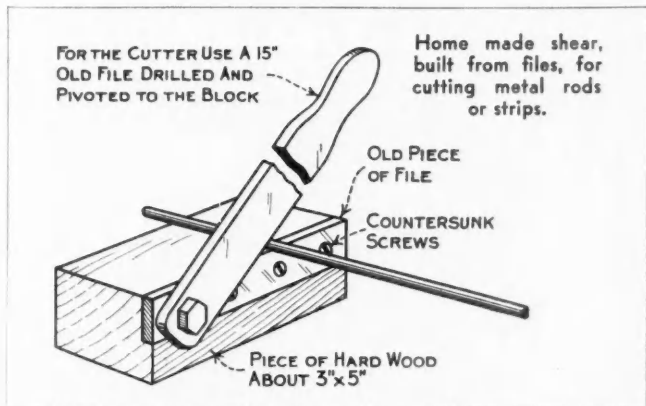
Two frames are nailed at same time, and screening is stretched tight by elevating ends in this fashion.

### Cutting Iron With Saw

A GOOD way to cut corrugated iron: Place enough planks on a pair of tressels to support the sheet of iron well. Lay the iron on the planks so the line to be cut is directly over a crack between the planks. Then with a common eight-point saw, saw down through the iron and the crack between planks. Enough pressure should be placed on the saw so it will not slide over the iron, but will cut its way through. The sheet may be cut lengthwise, crosswise or diagonally, with very little effort, and without distorting the sheet.—WILLIAM B. STAPP, Norton, Kans.

### To Cut Steel Rods

IN the sketch below I am showing the method I have developed to cut light rods or reinforcing. Others may be doing the same thing but it is new in this section at least to me. I use two old files of large size, firmly mounted to a block or bench. The important point is to get a firm connection between the cutting file and the stationary one. It must be tight but not too firmly fastened to make it difficult to move up and down. A swift, quick stroke is used to shear off the rods or strips to be cut.—R. H. HENDERSON, Chicago, Ill.

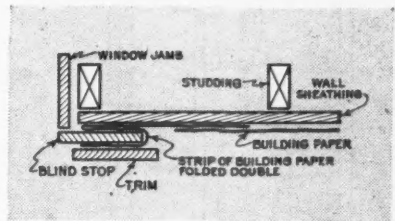


result will be the width of the tread in inches. For example, assume the height of the riser is 7"; then 7 plus 5 is equal to 12, and 5 times 2 is equal to 10, the width of the tread in inches.—ROMEO LAROSE, Rochester, N. H.

### Keeps Out Wind

DESCRIBED below is a method I employ on windows exposed to much wind, in frame houses. The surface of the wall is never perfectly flat, consequently the blind stop does not make a good joint and press tight on the tar paper strip usually inserted. One can generally insert a knife blade in places in the crack, which causes drafts (serious in a N. E. gale such as we get every winter).

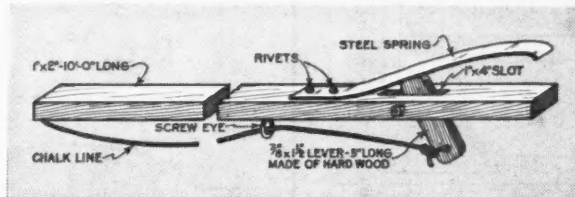
By using a wide folded strip as illustrated, well lapped under the tar paper on the walls with the other edge between the blind stop and trim, a pocket is formed under the blind stop and the crack sealed.—W. T. WALKER, Victoria, B. C.



W. T. Walker shows how he wraps building paper to keep out wind leakage around window frame.

### Picks Up Spreaders

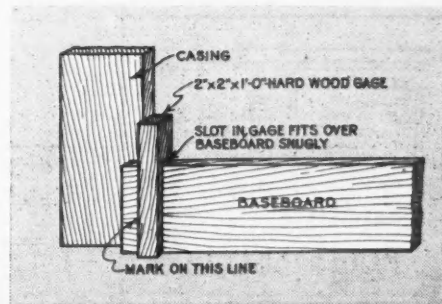
I AM enclosing a sketch of a method I use and find very practical for removing spreaders from deep concrete forms. I take a 7/8" x 2" piece about 10' long, and at about 10" from one end I cut a slot 1" x 4" in the center for the lever which is about 5" long and made from a piece of hardwood, and 1 1/2" wide. I insert this piece in slot, bolting about 1" from end to form a lever. Next I rivet a stiff spring on the side of the 1 x 2 that will set up close to the 1 x 2 when closed. By pushing down on the lever, it will open the spring which clamps the spreader when released by the trigger. Any handy man can readily see the principle by studying the sketch.—C. A. GRIFFIN, Chapin, Ill.



Home made device for picking up spreaders from deep concrete forms.

### Baseboard Gauge Makes Good Fit

PLACE baseboard so it passes the edge of casing as shown in my sketch. Slide gauge over baseboard, pushing up snugly against casing and mark as indicated on drawing. A perfect fit is obtained without block plane, etc. I have used this idea with a lot of satisfaction, and find it a real time saver.—L. H. SHERMAN, Dayton, Wyo.



Baseboard gauge used for getting a good fit quickly.

### Cutting Stair Stringers

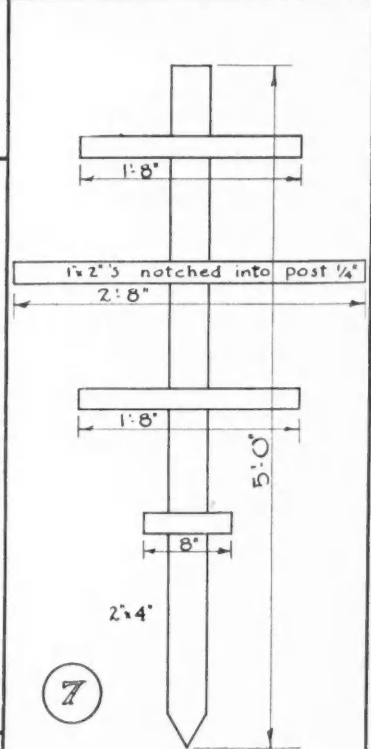
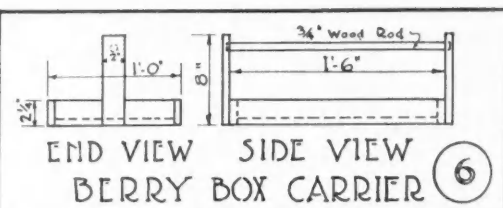
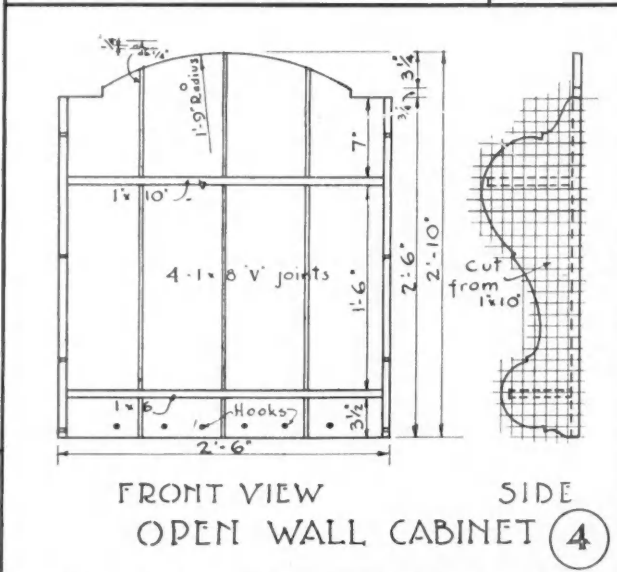
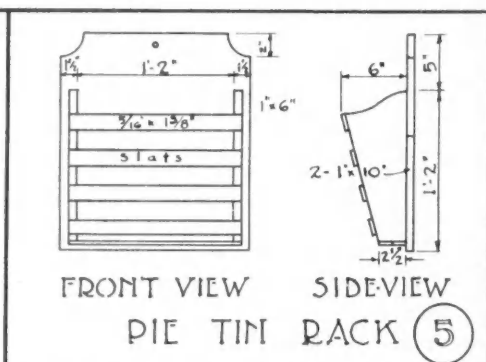
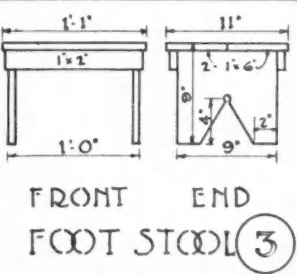
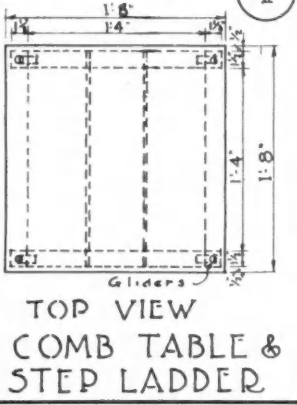
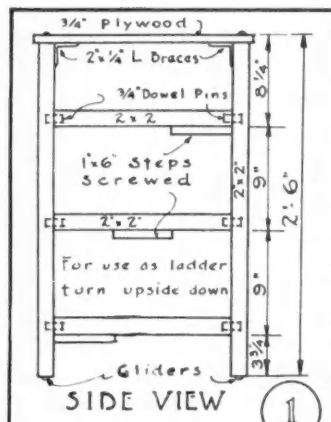
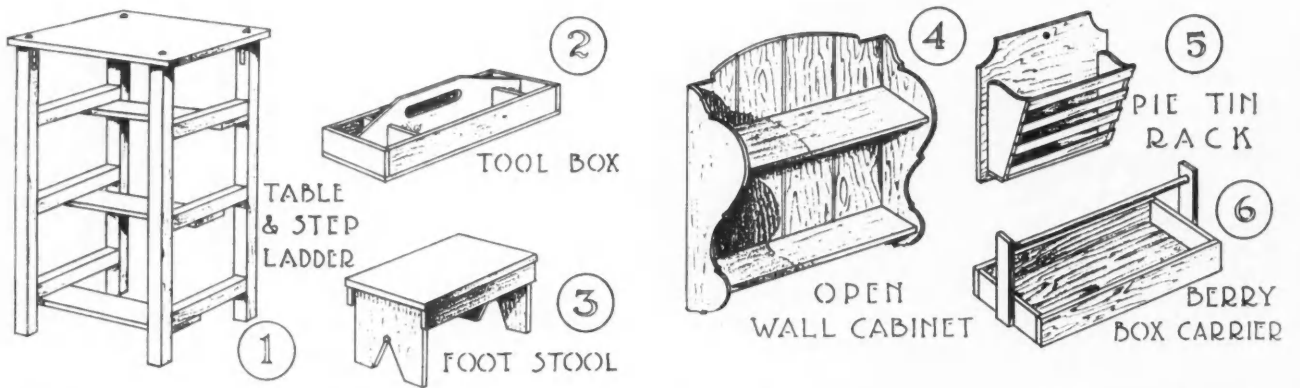
I AM submitting here two methods of cutting stair stringers with a good proportion between the tread and riser, which might prove of interest in the "Practical Job Pointers" Department:

Method 1—Let the product of the tread and riser equal the number 66. For example, suppose the riser is 8" high, then the tread will be 66 divided by 8 which is 8 1/4". The height of the riser may be found in the same way by dividing 66 by the width of tread.

Method 2—To the height of the riser in inches, add a number that will make the sum of 12; double the number added, and the

# What to Make of Wood—and HOW

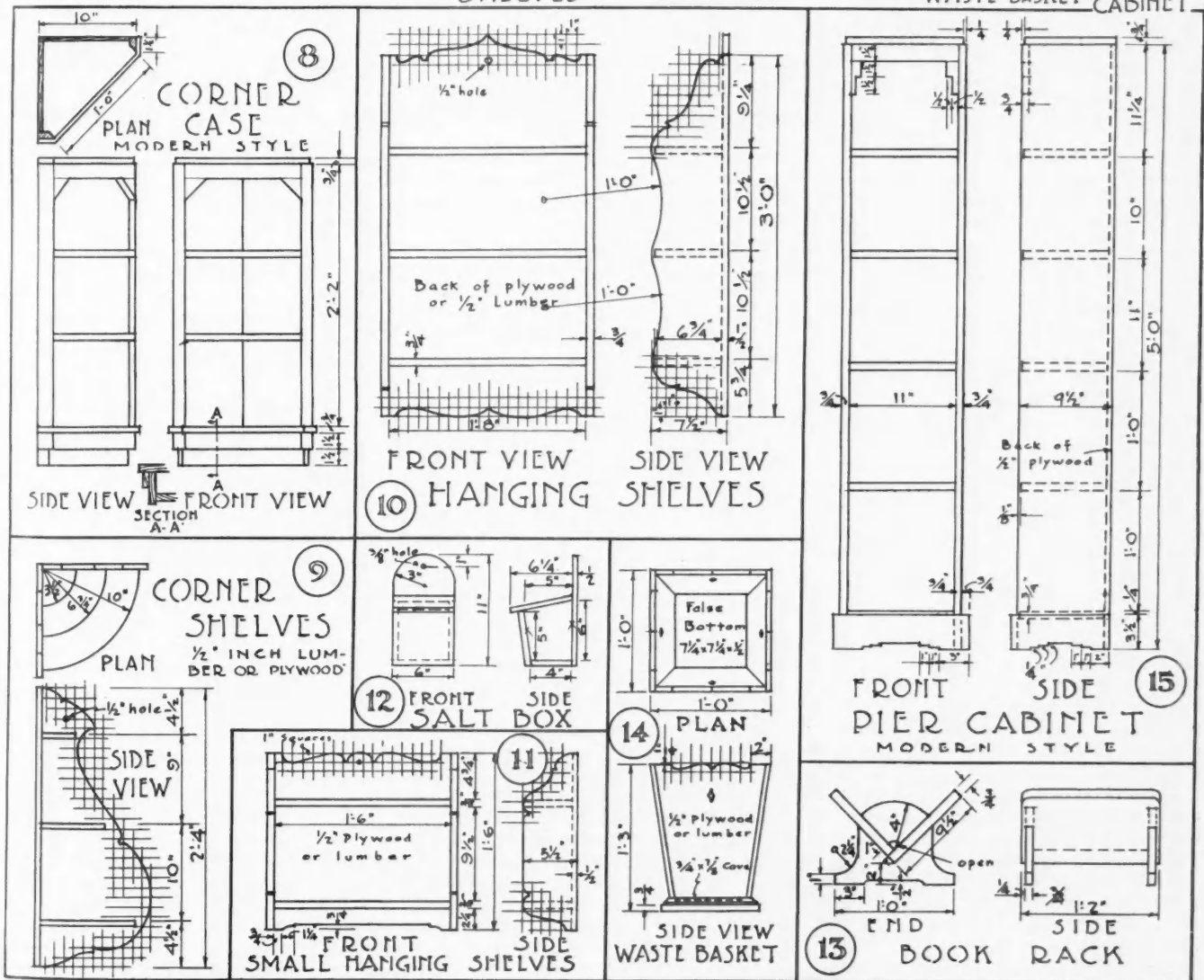
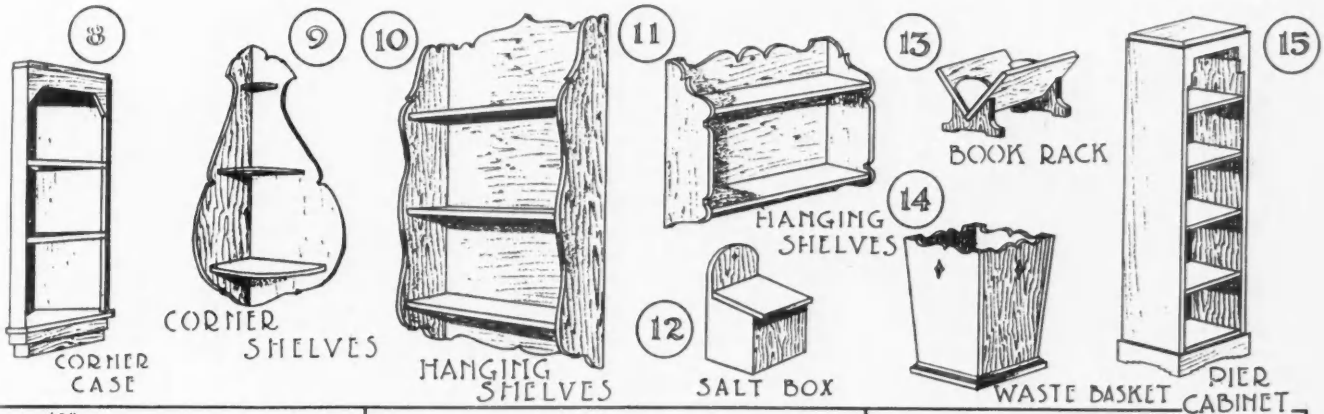
THE Northwestern Lumbermen's Association, through its secretary, Ormie C. Lance of Minneapolis, has prepared a booklet illustrating 42 articles of simple wood construction, useful in and around the home, together with detailed and dimensioned working drawings of each. These instructions are sold at a small price to lumber dealers for distribution to carpenters, home craftsmen and others. Through the courtesy of Mr. Lance and members of this association, we are privileged to present this complete series of drawings, the first 15 being shown this month, the remainder to follow.



POST TRELLIS  
For tomatoes or other plants or vines.

# Simple Designs for All Craftsmen

IN EXPLAINING the profit possibilities of these designs, Mr. Lance writes, "This has been the most popular folder we have gotten out for several years. During the past year or so we have tried to popularize the idea of the 'home craftsman' who works in wood at a workbench in his own home or shop. In addition to making needed repairs around the house he also is enabled to make, through the use of our little folder, small pieces of furniture such as are shown therein, which come in very handy and at the same time give him something to do in his leisure hours, of which many have had too much."



# NEWS—building activities of the month

## Tax Changes in Many States Help Building

A TAX REVOLUTION is now actively in progress. This the National Association of Real Estate Boards points out in summarizing bills now before state legislatures which are closely in line with its recently adopted six-point program for real estate tax relief. This program is:

1. State control of local tax levies and bond issues, under proper safeguards.
2. Limitations of the property tax by state constitutional provisions.
3. Spread of school costs to a wider tax base.
4. Expenditure of funds from state gas and vehicle taxes upon city streets as well as upon rural highways.
5. Restriction of use of special assessments for financing public improvements.
6. Consideration of the income or use value of property as one of the major factors in arriving at fair assessment for tax purposes.

At least three states, Illinois, Oregon and California, have bills up which embody limitation of property tax by state constitutional provision.

Illinois has a proposal to limit general property tax to 1½ per cent. It has also a second proposal to assess property at one-third cash valuation and limit tax to 1 per cent of assessment. Oregon has a bill (H. 4.) to limit local tax levies, and another (H. J. R. 1) to eliminate the ad valorem tax on tangible property.

California's legislature, which has before it more than 100 bills on tax relief, is considering a proposed constitutional amendment which would fix the limit of taxes that may be assessed on property for all purposes, local or otherwise, at \$1.50 per \$100.00 assessed value.

Tax limitation and broadening of the tax base are central principles of the "Riley Plan" (S. C. A. 30, et al.—A. C. A. 68), also before the California legislature. This is a plan for revising the entire revenue system of the state sponsored by Ray L. Riley, State Controller and the State Board of Equalization. The plan would limit real estate's contribution in taxes for state and county governments to 50 per cent of the total of such taxes. To make up the other 50 per cent the plan proposes a new type of tax, a transactions tax, at a low rate, upon gross receipts of every person, firm, corporation or joint stock association receiving money for goods, services, exchanges or otherwise.

Sales taxes as a means of broadening the states' tax base are the dominating feature of early 1933 state legislation. It is significant that in a number of cases, notably in Illinois and South Carolina, sales taxes proposed are definitely allocated either to unemployment relief or to state support of local schools.

The Illinois bill is for a 3 per cent tax on retail sales, the proceeds to be returned to the several counties. It is to be applied exclusively for unemployment relief or, if not needed in the county for such relief, is to be distributed to the common school districts of the county to take the place of the property tax.

The South Carolina bill, for a 2 per cent

## RESIDENTIAL PERMITS JUMP 35.8 PER CENT

ALTHOUGH February permits for all building operations in the United States decreased 46.4 per cent from January, there is unusual significance in the fact that residential permits showed a 35.8 per cent increase.

The figures as now furnished by the U. S. Bureau of Labor Statistics cover building permits in 758 cities.

A drop in volume of U. S. Governmental work accounted for the decrease in total building. There is usually a seasonal decrease in February from January. The fact that residential permits increased is taken as a favorable sign, as it is generally conceded that future building volume must come from this source.

ESTIMATED COST OF NEW RESIDENTIAL BUILDINGS IN 758 IDENTICAL CITIES, AS SHOWN BY PERMITS ISSUED IN JANUARY, 1933, AND FEBRUARY, 1933, BY GEOGRAPHIC DIVISIONS.

Geographic division	Cities	New residential buildings			
		Estimated cost		Families provided for in new dwellings	
		Jan., 1933	Feb., 1933	Jan., 1933	Feb., 1933
New England.....	108	\$ 764,070	\$ 363,921	173	97
Middle Atlantic.....	167	1,732,751	4,272,991	382	818
East North Central.....	181	530,802	225,490	115	58
West North Central.....	74	181,558	177,700	70	63
South Atlantic.....	75	657,377	535,674	209	173
South Central.....	72	437,704	355,282	248	174
Mountain and Pacific.....	81	981,925	1,248,161	314	359
Total.....	758	\$5,285,187	\$7,179,219	1,511	1,742
Per cent of change.....			+35.8		+15.3

sales tax with an exemption of \$1,200.00, is almost identical with the Mississippi sales tax law. Funds raised would go entirely to the support of schools.

North Carolina, which state more than a year ago took over the entire cost of the six months required school term, drawing this from income taxes, franchise taxes, license taxes, and as an emergency measure from ad valorem taxes, has a bill before the present legislature to meet this state school cost entirely from other than ad valorem taxes. In Pennsylvania Governor Pinchot has outlined to the legislature without recommendation a plan for a larger unit of school organization which would put all school districts with less than 10,000 population under county school boards.

The department of public instruction estimates this would save not less than \$3,150,000 a year, or 4.4 per cent of the school costs.

### Sales Taxes to Replace Property Tax

Among sales tax bills now before state legislatures are the following: Connecticut (gross sales tax); Georgia (2 per cent tax); Ohio (bill for retail sales tax, and a bill for a 20 per cent tax on sales of soft drinks); Nebraska (gross sales tax, of 1 per cent); California (one bill for gross sales tax, one for tax on selected articles); Texas (gross receipt sales tax of 3 per cent aimed at production, manufacture, and sale of commodities, brokerage, common carriers, inn-keeping, advertising—including radio broadcasting—contracting, printing and publishing); Oregon, (emergency tax on sales of taxable personal property and personal service).

### Realtors to Avoid Long Term Leases

REALTORS of Chicago were recently cautioned, in an official statement issued by the Chicago Real Estate Board, to avoid long term leases. According to Henry R. Spiekerman, chairman, the realty organization expects increased employment and rising prices in building materials to bring about greater costs in building operation.

"In urging short term leases," said Mr. Spiekerman, "we have in mind that there is a normal increase of 70,000 population yearly in Chicago. In the face of this gain, there has been practically no building for the last four years.

"Now, however, there has been a marked change in economic conditions throughout the country. National programs for the employment of thousands are being launched. Already we are noticing a decrease in vacancies.

"With a reduction of vacancies and increased employment, we will soon witness rising prices in building materials and higher costs of building operation. Therefore we are advising all members of the Chicago Real Estate Board to avoid entering into long term leases at present rental prices."

**J-M Advances Ken Dyke**—Ken R. Dyke, advertising and sales promotion manager of the Johns-Manville Sales Corporation, has been appointed executive vice-president in charge of sales promotion and merchandising.



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## Huddleston Plan to Prevent Bid Peddling Recommended as Cure for Building Evils

**E**LIMINATION of bid peddling through the adoption of the Huddleston plan is recommended by William Orr Ludlow of New York, chairman of the Committee on Industrial Relations of the American Institute of Architects.

"Bid peddling, one of the worst features of the building industry today, is cheap business, unfair and indefensible," says Mr. Ludlow, who urges that every architect and builder study the Huddleston plan, formulated by Prof. Eric T. Huddleston of the University of New Hampshire. The new procedure, Mr. Ludlow adds, is being put into practice and already has met with success.

"The plan," he explains, "simply provides that a general contractor's bid shall be in two parts—the first containing a figure for his own work and profits, and the second embodying a list of sub-contractors with their bids, which the general contractor desires to submit as making up the remainder of his total contract price.

"The sub-contractors are notified that they may have a list of the general contractors bidding. They are also notified that their bids are to be sent to the architect as well as to the general contractors.

"They are further told that their original bids will be accepted or rejected without modification or change, except for additional or less work required by the owner. Their bids as filed should therefore be the lowest figures at which they are willing to do the work.

"The general contractor is selected on the basis of the first part of his bid—his own work and profits—and the sub-contractors are selected at their stated price from the entire list of those submitting bids, provided that those chosen must have the approval of the general contractor with whom they are to work in the usual relationship."

Under the Huddleston plan, according to Mr. Ludlow, the standing and ability as well as the prices of the general and sub-contractors will be given due weight and the owner will reserve the right to reject any or all bids and to accept at the prices submitted any bid that he believes is best.

### Most Building Done In June and August

**C**ONTRARY to general belief, the late summer and not the spring is the big building season of the year, the 1929 Census of Construction shows. However, the increase from March to April in building employment is greater than between any other two months.

In 1929, building employment under contractors and builders was 59 per cent in January of what it was in August, and residential building was 56 per cent of what it was in its peak month, June. Comparison is shown above in percentages of employment by contractors and builders for general building, and for residential building, to show seasonal trend:

PER CENT OF MAXIMUM MONTH—EMPLOYMENT

Month	General Bldg.		Residential Bldg.	
	General Bldg.	Residential Bldg.	General Bldg.	Residential Bldg.
January	58.6	56.4	56.4	56.4
February	59.6	57.3	57.3	57.3
March	67.7	67.5	67.5	67.5
April	79.8	84.6	84.6	84.6
May	87.5	92.6	92.6	92.6
June	93.2	100.0	100.0	100.0
July	98.3	99.4	99.4	99.4
August	100.0	95.6	95.6	95.6
September	95.7	91.5	91.5	91.5
October	91.9	85.1	85.1	85.1
November	84.2	77.9	77.9	77.9
December	72.1	64.4	64.4	64.4

Of all construction covered by the 1929 Construction Census, for which nearly 150,000 establishments of contractors and builders reported, 30,597 establishments each doing an annual business of more than \$25,000, showed 828,772 as the average number of wage earners employed, \$1,467,541,901 as the amount of wages paid; \$2,055,595,482 as cost of materials and \$4,794,772,665 as the value of all construction work done.

### Roosevelt Proposes Bill to Cut Mortgage Interest

**R**EDUCTION of interest rates on farm and home mortgages from 6 and 7 per cent to perhaps 3 per cent is promised by a bill President Roosevelt is expected to present to Congress in the near future.

There will be no attempt to enforce acceptance of the lower rate on any private holders of mortgages, it is said, but the government will offer holders an opportunity to exchange their present frozen paper for more liquid government securities.

The form which the plan is expected to take is for the government to issue a bond to the holder in exchange for his mortgage. The farmer or home owner will then make interest and principal payments to the government. The maturity date of the bonds has not been decided, but may fluctuate between 20, 30, or even 40 years.

Government appraisers and agents will make appraisals before any transfer of a mortgage can be made and the value of a land under mortgage ascertained.

After the valuation has been made the government's risk acceptance may be lower than the face value of the mortgage, in which event the holders would be required to accept the loss or hold on to the mortgage.

Estimates as to the amount of farm mortgages in the country run as high as 9½ billion dollars. There are 6 million such mortgages in existence, according to the estimates.

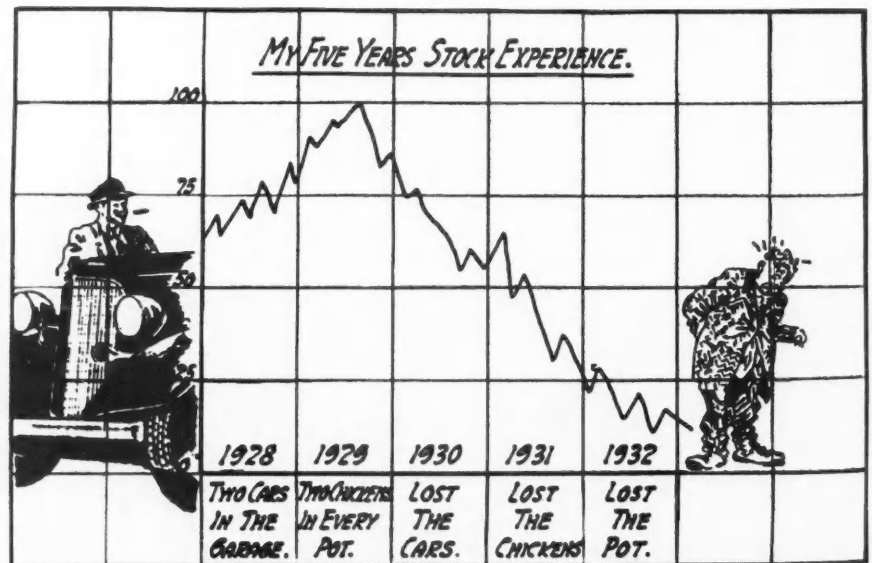
The Roosevelt plan is first to submit the scheme for adjusting farm mortgages, and then, by the same type of legislation, apply the same method to lowering interest rates on home mortgages.

The work will be done, according to early reports, under the direction of Henry Morgenthau, Jr., chairman of the federal farm board, who will be chief of a new board which is to embrace a consolidation of eight agencies which at present handle various farm and home credit operations of the government.

**Capital Renovizing**—A carefully planned home repair and remodeling campaign is now under way in Washington, D. C., through the enlisted support of leading business, civic and other interested local organizations. The District of Columbia Bankers Association has created a \$500,000 credit pool for the granting of small loans for improvements and repairs. A dilapidated small house is to be rebuilt on a prominent down town site and figures showing actual cost of the work as it progresses will be made public as a guide to home owners.

**70-Acre Tourist Camp**—Plans are being prepared by Olsen & Urbain, Chicago architects, for 700 small four-room units, which are to comprise A Century of Progress Exposition housing project, to be located at the junction of 147th Street and the Dixie Highway, Chicago, to be known as Fair City.

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- 7—"Four Keys to Success," opportunities in cement brick by the W. E. Dunn Mfg. Co., Holland, Mich.
- 8—"New Standards of Roofing Quality for Asphalt Shingles and Prepared Roofings," describes a product supplied to leading roofing manufacturers to make good roofs better, by the Brown Co., Portland, Me.
- 9—"Let's Bring the Kitchen Up to Date," advice on scientifically planned kitchens; also contains diagrams and photographs of modern kitchens; the International Nickel Co., Inc., New York City.
- 10—"The New Style in Lawns," of the "Fence Garden" treatment in home landscaping, and showing line of Pittsburgh lawn fences and gates; "New Values for Old Houses," dealing with the use of Pittsburgh Steeltex products in home modernizing; the Pittsburgh Steel Co., Pittsburgh, Pa.
- 11—"Low-Cost, Fireproof Concrete Homes," ranging in cost from \$2,700 to \$6,000; "Here's THE Low Cost, Fireproof Home," describes the structural features of fireproof concrete home; "Concrete Facts for Concrete Contractors," a manual on methods for making quality concrete; Portland Cement Assn., Chicago, Ill.
- 12—"Apollo Best Bloom and Keystone Copper Steel Galvanized Sheets," a booklet for builders; "Better Buildings," a booklet on farm and industrial buildings; and "Steel Sheets Applied to Modern Construction," a booklet on heating and ventilating; American Sheet and Tin Plate Co., Pittsburgh, Pa.
- 13—"The Sunny Side of the House," portfolio of remodeling suggestions showing what can be done by building on glazed porches, bay windows and solaria; the American Window Glass Co., Pittsburgh, Pa.
- 14—"Porcelite Wall Tile," folder on steel wall tile and its application; Columbian Enameling & Stamping Co., Terre Haute, Ind.
- 15—"National Garage Hardware," a booklet on garage hardware offered by the National Mfg. Co., Sterling, Ill.
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- 18—"Modernistic Steel Ceilings," catalog of steel ceilings for modernizing store entrances; Edwards Mfg. Co., Cincinnati, O.
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- 20—"A Million Dollars to Lend," a booklet describing the new Johns-Manville non-recourse deferred payment plan for financing home modernizing work and improvements; the Johns-Manville Corp., New York City.
- 21—"Eternit Brick Type Siding for Modernizing," information on asbestos cement siding applied in 6" x 30" strips, colored and textured like brick; the Ruberoid Co., New York City.
- 22—"Selecting the Right Glass," a description of flat glass, flat drawn, polished plate, safety, figured and wire glass for all uses; Libbey-Owens-Ford Glass Co., Toledo, O.
- 23—"Brixment for Better Masonry," a description of mason's cement and its uses; Louisville Cement Co., Louisville, Ky.
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- 28—"Double Profit Business in Rubber Tile Floor," an instruction booklet showing profit possibilities in selling and installing rubber tile floors; the Wright Rubber Products Co., Racine, Wis.
- 29—"Standard Specifications for House Framing," a comprehensive handbook of details, drawings and specifications for modern frame construction. Prepared by architects and engineers of General Timber Service, Inc., St. Paul, Minn.
- 30—"Majestic Quality Building Products," catalog on full line of garage doors, coal chutes and garbage receivers; The Majestic Co., Huntington, Ind.
- 31—"The National System of Concrete Pottery Manufacture," cost data and details of a new money-making business, by National Potteries Co., Minneapolis, Minn.
- 32—"Portable Electric Planes, Lock Mortisers, Butt Mortisers and Weatherstrip Tools," a folder offered by the R. L. Carter Co., New Britain, Conn.
- 33—"Folders on American High Production Floor Sander, Spinner Disc Edge Sanding Machine, Low Boy Maintenance Machine, and Pentra-Seal Permanent Floor Finish; the American Floor Surfacing Machine Co., Toledo, O.
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- 42—"Aluminum Paint—Uses and Application," handbook prepared by Aluminum Company of America, Pittsburgh, Pa.
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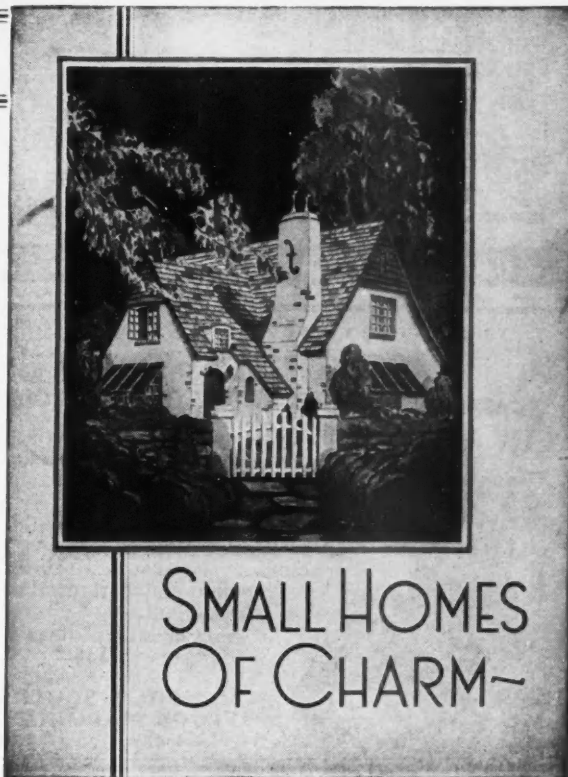
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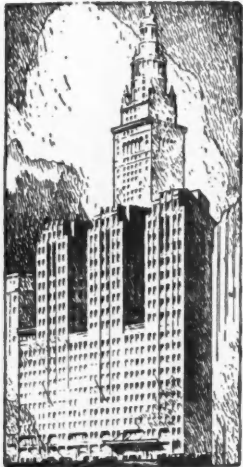
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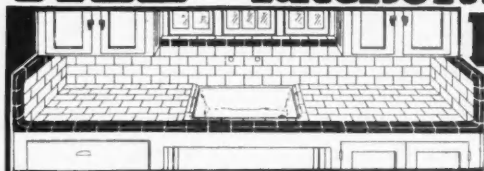
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GEORGE T. OVEROSE

Answer:

You are right in considering that the roof is a very important part of the structure and worthy of careful study to choose the type of roof covering that will serve you best. It has been the experience of all that the extra cost of some of the more durable types of roof coverings has proved justified in the long run. The important consideration for the home owner or builder is to make sure that he gets the best grade or a durable, serviceable grade of the type of roof covering he decides upon. This is more important than the type, if a poor quality of that type is then chosen.

In other words, there is a high quality wood shingle available, of red cedar or cypress, a heavy shingle, stained and durable. If applied with rust-proof nails, such shingles will give a very satisfactory roof. The same can also be said for asphalt shingles; there are heavy quality shingles on the market that will produce a thoroughly good job when properly applied. Rigid asbestos, natural slate, clay tile, copper, all make good roofs when materials of the right quality are selected and applied by someone who understands the business and can produce and guarantee a good job.

The relative costs of these various materials will have to be taken into consideration, and these costs will vary for different communities. We suggest that you consult with your local building material dealers so as to get the local prices and then decide in view of the architectural design of your house, the appearance to be achieved and the local cost range. A few extra dollars invested in extra quality on the roof will bring you untold satisfaction during the many years of the useful life of such a roof covering.

EDITOR

**Wanted: A Major Catastrophe**

Evanston, Ill.

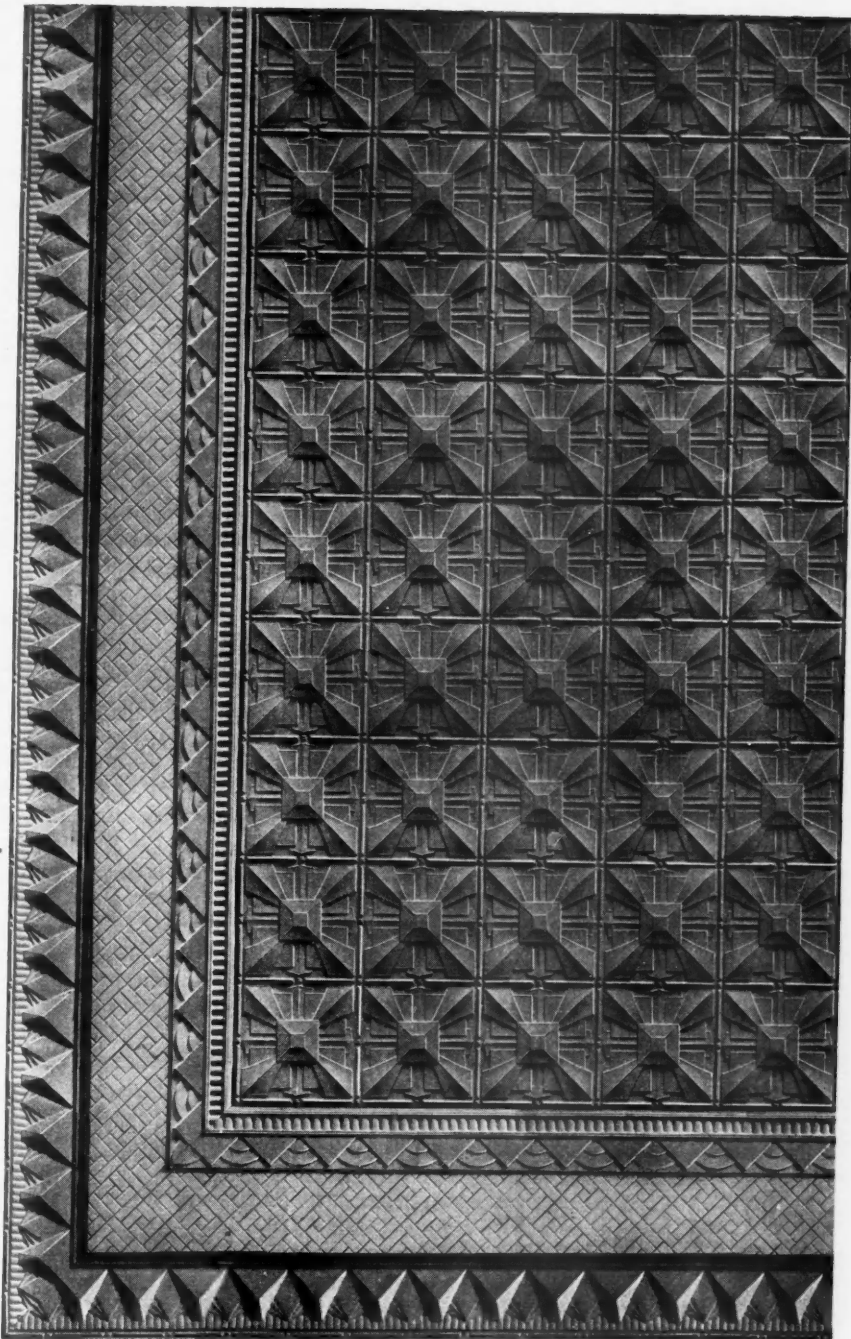
To the Editor:

For the last few weeks my wife and I have been house-hunting. I know of no more agonizing pastime.

For some years, now, we have been living in a wholly conventional, unpretentious but comfortable apartment. Good enough, but certainly not conducive to any particular pride of home. So, with the expiration of our lease impending, we have been looking around to see if it is at all possible for us to rent or even to buy a small house that would provide equal comfort and the additional style which one might reasonably expect in a house.

To date, we have not found a single small house attractive enough to make us leave our apartment. We are prepared to

(Continued to page 52)

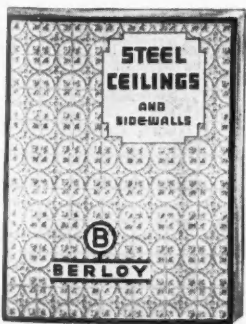


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(Continued from page 50)

expand our housing budget if we find the right place. So far, we haven't even been tempted.

The average small house within our possible reach is, first, obviously shoddy in construction. It mumbles apologies for its existence as soon as you see it. It is patently unsafe from fire hazards. It has neither style nor vitality. Architecturally it is an illegitimate son.

Inside, it is utterly depressing. The lay-out of rooms is designed to make life as uncomfortable as possible. Living rooms are cramped and ill-shapen. Plumbing is just one or two degrees removed from the facilities celebrated by Chic Sale in his story of the Specialist.

Such things as cross ventilation, insulation, window-spacing, stair lighting had obviously not been heard of when these sad structures were built—and that wasn't so long ago, either.

From any standpoint, they offer poor economy. Heat costs money in the best of houses; in these poor structures it costs extravagantly.

The construction industry, it seems to me, faces its worst handicap in the fact that the average present-day small house offers no incentive whatever to home buying. Until you get into the more impressive money brackets, you are repelled rather than attracted by the houses offered you.

CLAYTON WOODMAN

## Sound Insulation

(Continued from page 39)

"energy" side of the definition of sound as an elastic fluid energy. Take say 5 short pieces of wood and square the ends so that there will be a good contact when placed end to end. Place these pieces on the floor end to end, stand on piece No. 1 and strike its free end with a hammer, piece No. 5 bounces off. Replace them and remove piece No. 3 and strike as before. Piece No. 2 slides across the open space striking No. 4 and No. 5 bounces off but not so far due to a loss of energy. Place a piece of felt or a steel spring between two of the blocks and No. 5 will bounce very little if any when No. 1 is struck. Sound travels about ten times as fast in wood or other solids as it does in air. Making sound pass through different mediums having different speeds of transmission always results in a loss of energy. Hence a double wall with an air space gives better sound insulating value than a similar square foot weight of solid wall.

To summarize the principles, we have the elastic and fluid properties of sound with consequent leakage. In addition there is the energy which is easily transmitted through solids as well as air, the transmission of which may be stopped or reduced by the insertion of different materials which change the speed of transmission or absorb the energy.

It should be remembered that the general subject of sound control in relation to building work is far from an exact science. Laboratory and research work have pointed the way and the following may be set down as fundamental in practical building construction.

1. To stop the transmission of sound stop all leaks because as explained its elastic and fluid properties are similar to those of air. In laying tile or block partitions see that all joints are filled with mortar and that there is no space between the blocks and the wall, floor or ceiling to transmit the sound. Also guard against leaks around openings of any kind, if such openings cannot be avoided.

2. The heavier the square foot weight of the wall the greater the sound insulating value. This factor is of little importance in practical building because of the dead load involved and the present tendency towards factory production of building units and the necessity of light weights to reduce transportation costs. This explains, however, why some of the old heavy construction of

(Continued to page 54)

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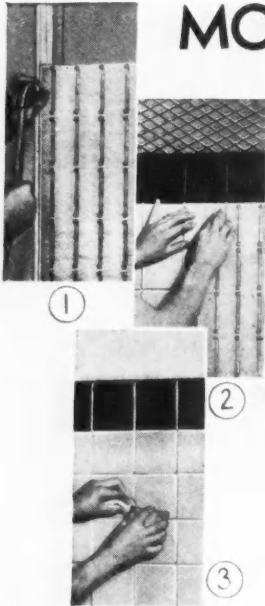
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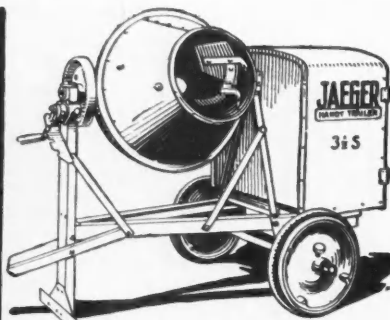
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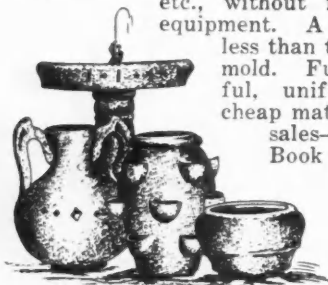
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(Continued from page 52)

masonry and brick was satisfactory from the standpoint of sound insulation.

3. The use of two independent walls with an air space of 2" or more increases the insulating value of the partition. This construction is improved by the use of two different weights of wall, such as a 3" block, a 2" air space and a 4" block. Each unit of the wall seems to react to the insulating of certain pitches so that each screens out its part and covers the entire range better than two walls of the same thickness. This may suggest new combinations of materials in wall construction and it might be well here to call attention to the data given in the table showing the sound insulating value in decibels of various types of construction.

Felt or insulation board, etc., installed in the space between two walls, if lapped or placed to prevent leakage, will add to the sound insulating value provided there is no "bridging" action connecting the two independent walls. The use of fills such as slag, sawdust, cinders, prepared insulating materials, etc., is not recommended because the "bridging" action in some cases actually decreases the sound insulating value of the wall so filled.

4. Research has shown that a wall of two parts of widely different weights and fastened together by means of resilient connections provides a practical and efficient means of sound insulation. Two commercial systems have been developed on this principle. In one case the fasteners include the use of felt as the vibration absorbing medium, in the other special steel springs of a vibration frequency outside the audible range furnished the absorbing medium. Details of these are illustrated.

Approaching this latter system or systems is the use of a permanently plastic cement for applying plasterboards, wallboards and similar prefinished wall coverings. This scheme is particularly applicable to remodeling work and gives promise of considerable value although the writer has no knowledge of laboratory tests which give definite decibel values to such construction. One advantage of this method is that wallboards, etc., can be applied with a plastic cement at about one half the labor cost of nailing. By removing base boards, mouldings, etc., all "leaks" may be stopped up before the application of the wallboard which can be paneled to suit the space without regard to the studding or otherwise decorated to suit. Ceilings may be applied in smaller and more easily handled units and finished as desired. The two present drawbacks to this method are, first, a lack of definite information as to their sound insulating value and, second, there are numerous so called plastic cements on the market but very few which will remain plastic permanently. If over a period of 3 months to 2 years a cement sets hard the vibration absorbing value is lost with consequent loss of sound insulating properties. This hardening also causes structural failures not found with the permanently plastic adhesives. A new type of floor construction consisting of steel runners to which are attached the wood flooring and the whole floating on a felt blanket is of interest in connection with sound insulation of floors. Not a nail is used in this type of floor construction and recent tests at the Century of Progress are reported to have found this method very satisfactory.

Once the principles of sound insulation are understood the designers and builders will be keen in the adaptation of new materials and methods. Sound control then becomes a matter of (first) attention to details, (second) adaptation of fundamental principles, and (third) methods and details are of more importance than materials. Check your designs thinking of sound as an elastic fluid energy.

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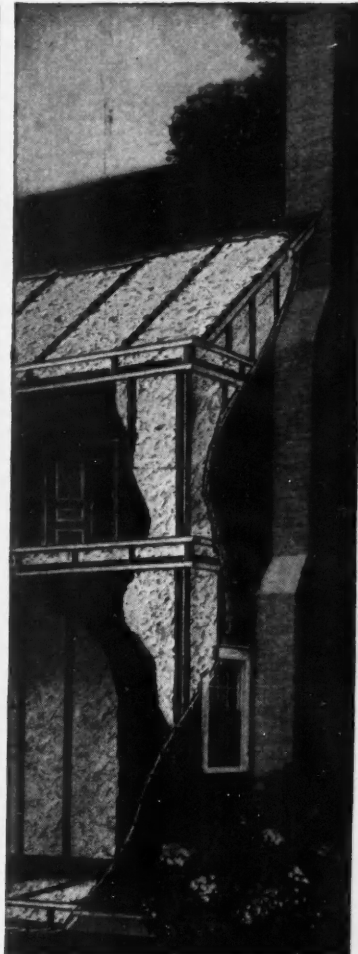
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## Style Review—New and Tested Products

(Continued from page 19)

For bathroom and kitchen modernizing, new types of tile and imitation tile surfaces have been developed this past year that reduce tile costs. One of these is an enamel steel tile which provides a porcelain-like tile wall inexpensively. The metal tile are mounted on a foundation or clip board, over which the tile are snapped with a sliding motion.

For modernizing, the Bartels method of tile laying has been perfected. Reinforced steel wire mesh is nailed over the old surface and a one-half inch cement float coat laid. Tile is then applied in usual fashion.

Other tile-like materials of asbestos, compressed fibre and composition products are available in sheet form. One of the best of these is an asbestos and cement wainscoting with a colorful, wear resisting surface. It is sold in 32" x 48" sheets in tile design or smooth finish. Sheets may be sawed or scribed to fit. A wide range of colors including green, ivory, blue and mottled effects are available and base and cap mouldings to match.

Another development of note the past year has been a thin linoleum covering for walls which is especially adaptable for kitchens and bathrooms.

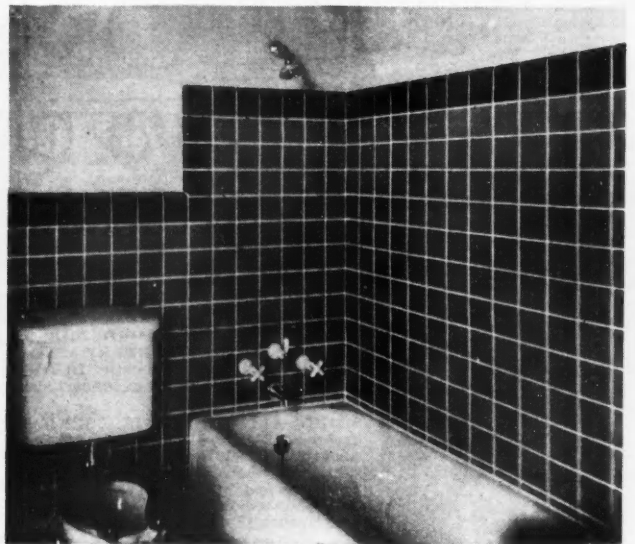
### HEATING AND AIR CONDITIONING

Technical advances during the past year have been rapid in the field of air conditioning especially. The tendency toward better air control of homes is undoubtedly an important one, but thus far little has been done by the manufacturers to acquaint builders and dealers with advances in this field.

Improvements in heating equipment have developed along four important lines, which may be mentioned briefly as follows:

1. Perfection of standard heating equipment in steam, hot water, warm air, coal, oil, gas. While cost has been reduced, efficiency has been increased. Boilers have been improved in appearance, making for more attractive basements. Concealed or cabinet type radiators of fin or extended surface construction have been made more attractive and efficient. In installing the regular type of heating equipment today, it is well to provide space for addition of automatic equipment or air conditioning equipment at a later time.
2. Automatic heating has become almost a necessity to modern home owners, and is provided by the addition of an oil, gas or coal-fired device with automatic control.
3. Automatic heating with forced circulation of air, humidification and, in some cases, air cleaning.
4. Complete air conditioning with mechanical refrigerating and dehumidifying equipment, in addition to forced circulation and cleaning of air.

The difference between these various types should be clearly (Continued to page 58)



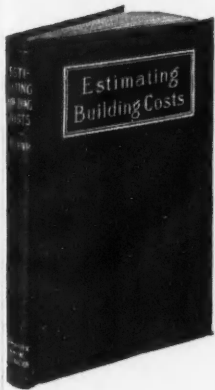
Bathroom finished in porcelain enamel tile which is rapidly applied by attaching to metal clips fastened to clip board.



# Estimating Building Costs

By WILLIAM ARTHUR

THIRD EDITION  
Revised and Enlarged



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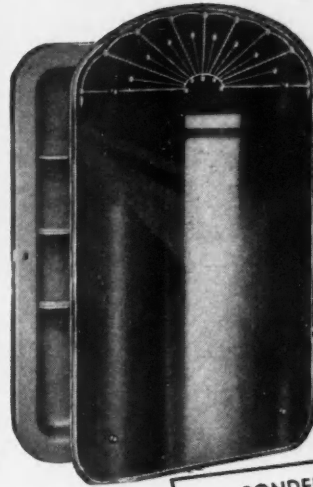
It contains a collection of material data covering all classes of building construction and arranged for quick reference. There are ninety-one tables showing the actual number of hours of labor and quantities of material on work done. These examples are all worked out on the basis of \$1.00 per hour for mechanics, and 60 cents per hour for laborers. The quantities are given and any change of rates can easily be adjusted by simple proportion.

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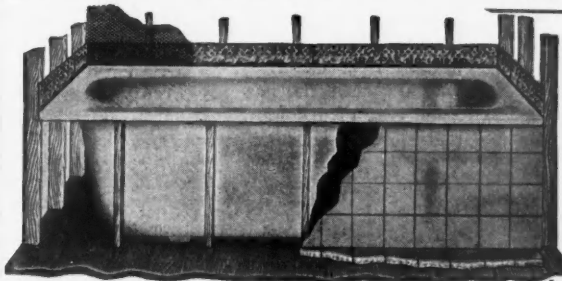
"PRISCILLA" (21" x 30" Mirror Size) The Colonial idea exemplified in a charming design that adds to the attractiveness of the bathroom.

**—BONDERIZED—**  
Exclusive feature provides permanent bond with finish so that it will not crack, flake or peel.

A Style for Every Purse and Purpose

**The Corcoran Manufacturing Company**  
Norwood P. O. Cincinnati, O.

Send at once for complete details of Corcoran fine Cabinets contained in interesting, helpful general catalogue.



Patented U. S. A. and Canada

## LUCKE LEAK PROOF BATH TUB HANGERS

**NO LEAKS—Will Overcome Your Biggest Bath Tub Problem—NO CRACKS**

Will Prevent Bathtubs from settling. Will avoid cracks and leaks around edges of bathtubs. Easy to install and guaranteed. Insure a tight and solid tub installation.

Catalog on request

**WILLIAM B. LUCKE, Manufacturer**

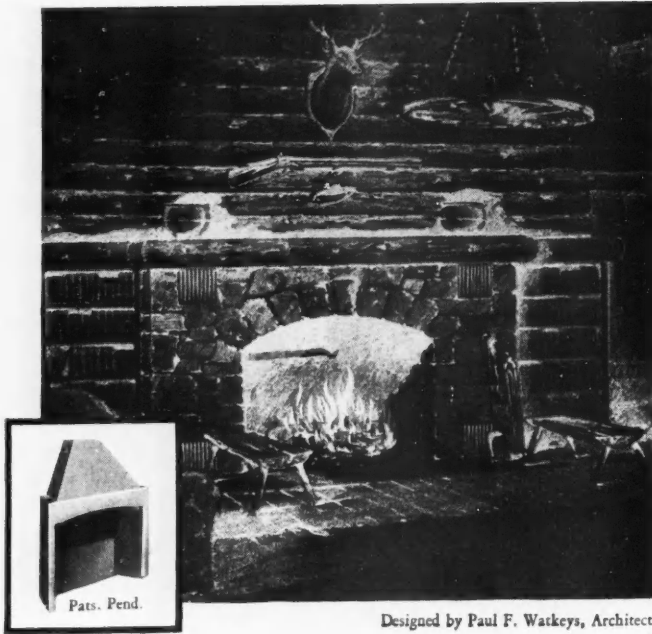
Box 130, Dept. "A"

Wilmette, Ill.

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**NOTICE TO ADVERTISERS**  
Forms for the May Number of the American Builder and Building Age will close promptly on April 15. New copy, changes, orders for omissions of advertisements must reach our business office, 105 W. Adams St., Chicago, not later than the above date. If new copy is not received by the 15th of the month preceding date of publication the publishers reserve the right to repeat last advertisement on all unexpired contracts.  
**AMERICAN BUILDER AND BUILDING AGE.**



Another Successful  
Builder Says:

**"Spring means Heatilator business  
in Summer Homes and Camps"**

"TALK to anybody about their summer home and what do they say? They dread the thought of dampness and cold and as a result they delay opening their home, close it weeks before they want to leave—because they haven't enough heat.

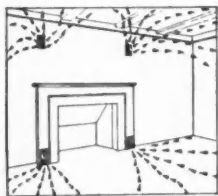
"I ask them how they'd like to add several weeks to their summer season and still be comfortable. They think I'm fooling. It's then I talk about the Heatilator Fireplace—tell them how it's not like the ordinary fireplace—but an honest-to-goodness heating plant. Heatilator, you know, works on a circulating heat principle—just like a warm air furnace. The warmth is spread out over the entire room and those adjacent. Let a prospect get that picture once, and you've just about made a sale.

"There's another thing about the Heatilator that means a lot to many people. It's *guaranteed* not to smoke. And there's a money back guarantee that says so. That's another selling point. Lastly, you can use the Heatilator in any type of fireplace without altering its design.

"I'm convinced that any builder who first gets this Heatilator story himself and then tells it half-way completely is bound to make some sales. I know because that's my own experience."

\* \* \*

We'll gladly send full particulars without cost or obligation. Mail the convenient coupon below. Heatilator Company.



Warm air rises—spreads over room. Air currents return to fireplace along floor.

# Heatilator Fireplace

Heatilator Company,  
814 Brighton Avenue,  
Syracuse, N. Y.

If what successful builders say about Heatilator is true, tell me more.

Name.....

Company.....

Address.....

(Continued from page 56)

understood. The term "air conditioning" has been used, and still is being used, very loosely to mean most anything having to do with the air in the home. A number of thoroughly satisfactory types of equipment under No. 4 are on the market. In view of the misstatements and exaggerated claims being made, builders should be cautious in selecting so-called complete air conditioning equipment for their clients. Strictly speaking, complete air conditioning should involve mechanical refrigeration to cool the air and also dehumidifying equipment in addition to features listed under group 4.

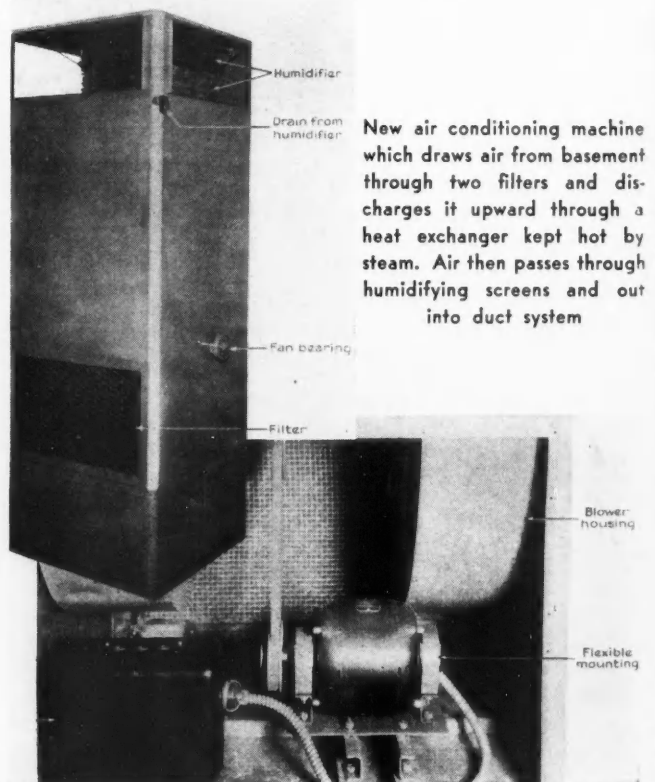
**SPECIAL EQUIPMENT**—One of the most outstanding new specialties that gives sales appeal to the house is the fuseless load center. This device does away with the fuse box and its blown-out fuse troubles. All circuits of the home are controlled by the combined switch and circuit protector, with control located in a convenient place, often the kitchen. A full circuit can be switched on and off as desired, and in addition, the mechanism has an automatic switch which opens if the current exceeds the maximum for which it has been set. A flip of a finger is all that is necessary to re-establish a broken circuit.

That old favorite, the bathroom cabinet, has been restyled, and is getting special attention in modernizing. One firm has recently designed three new mirror cabinets with full top chromium frame doors, floral etched mirrors, plated sidelight fixtures which do away with the necessity of sidelight brackets. Lasting strength has been built into the cabinet, and the mirror is installed in a heavy, chromium-plated steel frame backed with heavy gauge sheet metal, making an extremely rigid door.

With houses growing more compact and the demand for low cost space-saving equipment on the increase, the folding stairway is an important item in 1933 equipment. A new, low cost stairway has recently been brought out which folds into a very small space. Technical improvements have been made which make the action very easy and the operation simplified.

Another piece of special equipment is a shower bath compartment provided ready to install at low cost. Of interest is a two-way mirror which looks like an ordinary mirror from the front but from the rear is transparent glass so that anyone looking through it can see the person standing in front of the mirror. A bath bracket that supports the built-in tub and preventing sagging and pulling away from walls is useful.

Another space-saving device is the new plywood or metal cabinet that attaches to the rear of a door providing an extra closet or cabinet for the bathroom, kitchen or elsewhere.



New air conditioning machine which draws air from basement through two filters and discharges it upward through a heat exchanger kept hot by steam. Air then passes through humidifying screens and out into duct system