AMERICAN BUILDER

Including "BUILDING DEVELOPER" and "HOME BUILDING"

A SIMMONS-BOARDMAN PUBLICATION

Vol. 49. COPYRIGHT, 1930, BY AMERICAN BUILDER PUBLISHING CORPORATION No. 3

CONTENTS FOR JUNE, 1930

Published on the first day of each month by the American Builder Publishing Corporation. *President,* Edward A. Simmons; *Vice-Presidents,* Henry Lee and Samuel O. Dunn; *Secretary,* Elmer T. Howson; *Treasurer,* John T. DeMott; *Editors,* Bernard L. Johnson and Charles G. Peker; *Associate Editors,* P. W. Hanna, E. B. Quigley, L. E. Arent; *Business Manager,* Robert H. Morris; *Advertising Staff,* Delbert W. Smith, C. R. W. Edgcumbe, L. H. Reich, O. H. Sutter, Cecil W. Blashill, R. E. Clement, Homer Beach.

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Entered as second-class matter July 1, 1905, at the postoffice at Chicago, Ill., under the Act of March 3, 1879. Additional entry as second-class matter at Binghamton, N. Y.

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Including "Building Developer" and "Home Building"

BERNARD L. JOHNSON AND CHARLES G. PEKER, *Editors*

MODERNIZING to the Fore

BY a policy of diverting demand for housing into the field of ready built houses, the oversupply of the latter has been definitely absorbed and the way cleared for a healthier and more stable residential market than at any time in recent years, in the view of officials of the National Building Survey Conference.

A recent check of reports to the Conference covering all sections of the country, indicates that the 1929 carry-over in new residences has already disappeared in many cities, and may be definitely eliminated nationally before the end of the summer.

Building and loan associations, savings banks and other small mortgage sources have quite generally adopted the policy urged by the Conference, it is understood, and while standing ready to finance home buying, have urged borrowers before building new houses to try to find satisfactory homes already built. While this, in some instances may have been responsible for a reduction in new construction, it is believed to have contributed materially to a better balance between supply and demand.

But even discounting the effects of this policy, new construction figures for the first third have been sharply disappointing to those interested in residential building, and the impetus given modernization and remodeling operations through the work of the Conference has come to be regarded as of increasing importance. The resumption of pressure in this direction during the summer after the spring new construction peak shall have been reached, is expected to further mitigate the effects of small new construction totals, and contribute an imporant item to the total figures for the year.

A number of business leaders have commented favorably on the program of the National Building Survey Conference in statements made recently.

H. S. Wherrett, president of the Pittsburgh Plate Glass Company, says, in this connection:

"I have read with considerable interest the plans of the National Building Survey Conference to stimulate residential construction at this time and to encourage modernization and repair work in the off-season periods of summer and late fall. The work in contemplation is important and I trust will work out advantageously for the entire building industry."

Wharton Clay, Commissioner of the Associated Metal Lath Manufacturers, declared:

"The movement to specialize in repairs and alterations during the off-season in construction work is a very important movement because it removes from the building trade unions, the pressure that is always put upon them to supply enough men for the peak period.

"It is not normally possible to do this without leaving men out of work in the slack season. Further, it introduces into the field mechanics who are not by nature qualified to do the work properly and provide good craftsmanship, and it makes a very satisfactory employment that tends to attract a lower grade of men into the building trade unions than if seasonal unemployment was prevented."

William M. Kinney, general manager of the Portland Cement Association, in an analysis of the general situation in the construction industry, declared:

"Any business that has permitted itself to operate as the construction industry operates cannot escape serious consequences. For, as things are—and have been—the construction industry runs at top speed only about half the year. During that half year labor is at a premium, materials are in heavy demand and consequently harder to get, and everybody works in a sort of fever of activity. And then, during the rest of the year, construction generally slackens, the demand for men and materials falls off and the whole country feels the effect of the slump.

"Obviously, the solution of a matter of co-operative effort among all the branches of the construction industry to spread construction activity uniformly over the entire year. It is not merely a matter of winter construction, although that is important. It is the common responsibility of the building industries to promote modernizing, remodeling and all other supplementary activities as well as new construction. For the next few years I believe modernization, particularly in the residential field, will be as important as new building.

"Hence, if the building industry is to fulfill its function as 'the balance wheel' of the nation's industrial life, there must be united, cooperative effort to stabilize activity. Our activity at present may be likened

4 Important Modernizing Features Presented in this issue of AMERICAN BUILDER —More Next Month—Business and Profits here for Every Reader!

to that of a 'hit and miss' gas engine. What we must achieve is the smoothness of a steam turbine."

There are many methods that can be profitably used by the local building interests to stimulate home modernizing. A number are presented in this issue, and more will follow.

April Shows Increase

CONSTRUCTION contract figures for the month of April have been completed and indicate an encouraging trend in the industry. The total of building and engineering contracts for the month, in 37 states east of the Rocky Mountains, amounted to $483,251,700. This was 6 per cent greater than the total for March and greater than for any month since August of last year.

Although there was a loss of 25 per cent from April, 1929, and though the first four months of 1930 show a loss of 17 per cent from the same period last year, the steady monthly gain since the first of the year seems to indicate the early recovery of a normal building volume.

The gain was not consistent in all sections of the country, some even showing a loss. This spotty condition is one which can be overcome by consistent effort on the part of the industry with particular attention to the important problem of financing residential construction.

The improved trend in building activity is further indicated by the figures for contemplated construction reported in April. This amounted to $954,617,400, as compared with $732,735,900 for March, and $940,249,100 for April, 1929.

During April public works and utilities contracts were, for the fourth consecutive month, the most important class, amounting to $149,669,900, or 31 per cent of the total. Residential contracts totaled $123,141,900, or 25 per cent; commercial buildings $73,241,100, or 15 per cent; and industrial buildings $38,120,600, or 8 per cent.

Against Lower Costs

IN spite of the fact that much building is being done on such a narrow margin that a profit is hardly visible to the naked eye, we hear from time to time outbursts of opinion that building costs should come down and must come down.

We hear apparently well informed men advocating a concerted effort to find means of producing housing and other construction on a factory plan basis. Sometimes we would like to answer these men. What arguments have we?

Building construction costs have remained at approximately the same level now over a period of eight years. During that time billions of dollars worth of construction has been erected. Regardless of what kind it is, there is definite investment in it.

What would happen to this investment if building costs should suddenly be lowered twenty-five per cent? The answer is in terms of reduced income and of reduced capital value. If one man puts up an apartment costing $100,000 just before building costs drop twenty-five per cent and then another party taking prompt advantage of the drop puts up an adjoining apartment identical except in price, which will be $75,000, it is easy to see what the effect on the first man will be. If both men want to sell equally bad, the one who built at bargain prices can take $25,000 less and still break as good as the other man. If both hold, the man who built at the higher cost has, on a six per cent interest basis, a carrying charge of $1,500 annually more than the other man.

Any sudden fluctuation in construction costs is detrimental, not alone to the construction industry, but is bad also for general business. The vast capital invested in buildings is really the foundation capital for all kinds of business. Sudden changes in the buying power of the building dollar are more harmful than are sudden changes in values of other things because building is fixed and of greater duration. If construction costs fluctuate like the stockmarket does, everyone would be scared to death when undertaking to figure out a venture in improving real estate. The shock of changes in construction costs is directly proportional to the suddenness of the change. It is easily seen that an upward or a downward movement progressing slowly over a period of several years, gives a chance for interested parties to maintain an equilibrium.

Three major causes for fluctuation in building costs outside of the bargaining of contractors through competitive bidding or other competitive processes are (1) fluctuation of wages of labor (2) fluctuation of material prices (3) introduction of more effective methods and alternate cheaper materials.

Each of the three offers its own problems for control. Wage levels in quiet times have a way of lowering. This, however, is almost always a gradual process. Lowering of average wage rates at this time will not be of benefit to the industry or to general business. Material prices and equipment prices have been subjected to such constant hammering that they cannot well take any sudden drop. The introduction of more effective processes and the use of new or of established materials in new ways making for more economy in costs would be of benefit to the industry providing not all the economy or an overly large share of it is passed on to the consumer.

But let us consider mass housing or some major plan which will suddenly cut costs an appreciable per cent and we are playing with fire.

Modern Trends in Home Financing

Are Local Building Loan Associations Nearing the End of Their Usefulness?

WE think not. But a new era has come about and it will be necessary for them to change their methods of doing business so as to meet successfully the coming competition.

A chain system of mortgage loaning offices is now more than a mere possibility.

Keen business men have made fortunes by installment selling with practically no security except faith in mankind and the knowledge that the great majority of our people are honest.

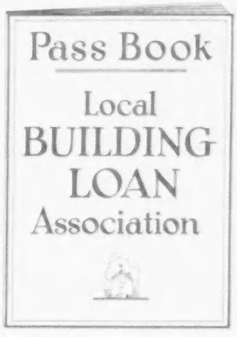
Next to one's own family, the average man's dearest possession is his home. He will do everything possible to defend and retain it. The small home's decline in value is slow and yet its purchase is harder to finance than almost any other commodity.

THE security for a home loan is its land which is always there, and the house itself which can be insured against all sorts of mishaps likely to reduce its value. Despite the excellent security provided, the home owner can only obtain a maximum of 60% of the value on a first mortgage.

Times change, and methods of doing business change. We cannot sell things in the same way our grandparents did. A sales method that was good ten years ago may be antiquated ten years from now—maybe today.

Modern demands have made the down payment of a large amount of money required for a home to be a burden too great to be carried. A change in methods of financing home ownership is now necessary.

A LARGE mail order institution, sensing the trend of the times, has come out with a 15-year home installment mortgage, up to 75% of value! Other large financial institutions are sure to follow this lead.



The Key to Millions of New Homes.

If the present mortgage loaning institutions wish to continue reaping the benefit of their past hard work they must fall in line with new conditions.

One of the best methods of home financing, and one that has helped countless thousands to own their own homes is our building and loan associations. Fortunately there are many of them; more than 12,000 building and loan associations are in business in our country.

As long as these established building loan institutions have handled the matter so well in the past, we believe the time is here now for them to reduce their monthly rates by extending their term of repayment over a period of 15 years instead of the present 11½ year period, and also to increase the amount of their loans up to 75% of their value.

Should they do this, a new impetus would be given to home building and local interests would profit thereby.

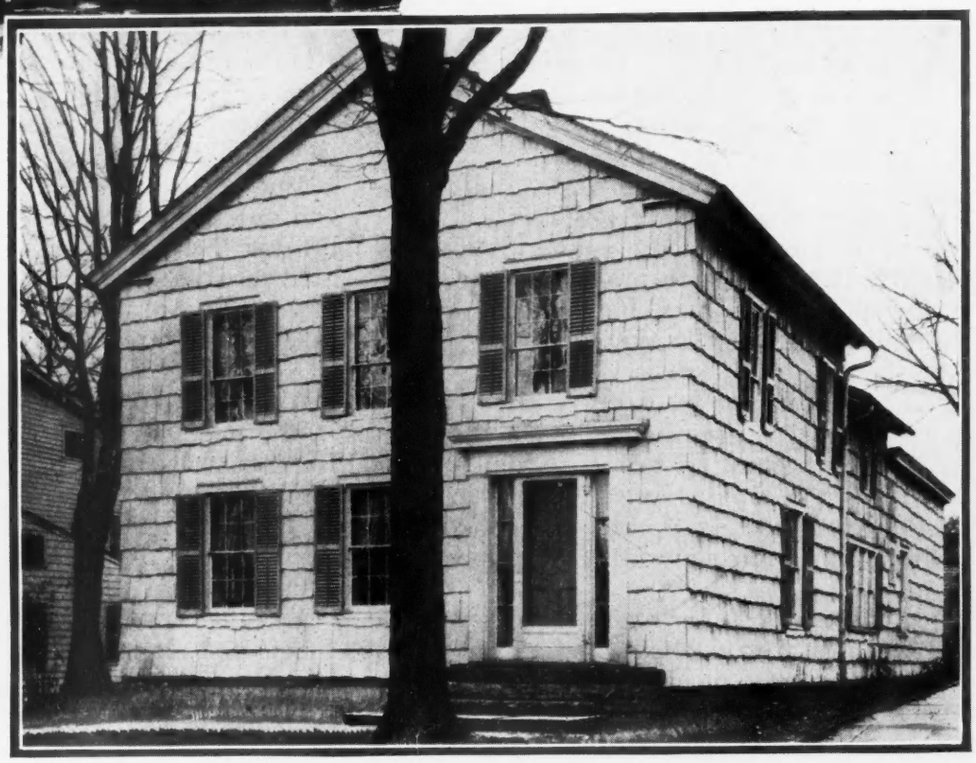
The best reason would be given to local merchants why they should invest liberally in the local building loan association. Every new home provided would mean an increase of business all around.

For building and loan associations to change their methods of doing business along the lines we have suggested may seem radical; but unless they do make home financing a little easier they will find their business going to other hands that will bank more on the integrity and moral risk involved than on the old line financial margin of safety.

We do not believe that local building and loan associations are nearing the end of their usefulness, because we do believe that they will meet the situation. They will come forward, we believe, with more attractive terms to homeseekers.

44% Modernize

Cost Figures submitted in Modernizing Competition show low average Expense and High Return



THE FIRST PRIZE WINNER ($1,000.00)

Home of Stephen H. Perkins, Binghamton, N. Y. A truly remarkable improvement was attained in "overcoating" this 75-year-old house with Weatherbest Old Colony Hand-Rived Shakes. At a cost of only a few hundred dollars, about $4,500.00 was added to the resale value of this home.

SOME very interesting figures concerning the cost of modernizing have been compiled from data sheets submitted by entrants in the Second Home Modernizing Contest conducted during 1929 by the Weatherbest Stained Shingle Co. Twenty-two per cent of the entrants spent over $2,000.00 to modernize their homes; 17 per cent had costs of between $1,000.00 and $2,000.00; 17 per cent spent from $600.00 to $1,000.00; while 44 per cent, or almost half of the total home owners, modernized their homes for less than $600.00.

Increased value was another item taken into consideration, and some very interesting figures along this vein showed the real intrinsic value given to old homes through modernization. In 46½ per cent of homes modernized the value of the property was increased by approximately the cost of modernization; in 30 per cent the value of the property was increased two to three times the cost of modernizing; 10 per cent increased the value of the property three to four times; while 13½ per cent reported increases in the value of the property over the cost of modernizing, equal to four or more times.

In this contest 28 cash prizes, aggregating $3,000.00, were offered for the best examples of homes modernized and insulated by recovering the sidewalls with edge grain red cedar stained shingles. These prizes range from "first" of $1,000.00 down to ten prizes of $30.00 each. The interest taken in this contest was widespread and the response to it ran into the thousands.

The Weatherbest service department rendered invaluable aid by supplying impartial ideas and sketches to those who desired this assistance. The sketches themselves, showing how an old home could be modernized, proved very popular and many contestants took advantage of them. This service is offered gratis to anyone desiring to modernize his home, and also to any contractor who desires to have some assistance in closing a prospect.

The judges of the contest were Howard Bissell, chairman of the board of the M. & T. Trust Company of Buffalo; Jerome B. Chase, president of the Moss-Chase Company of Buffalo; Maurice I. Flagg, People's Popular Monthly, Chicago; H. S. Sackett, director National Home Modernizing Bureau, Chicago, and L. N. Whissel, president of the L. N. Whissel Lumber Company,

for Less Than $600

Four Prize Winners Illustrated with "Before and After" Photos --- Many Home Modernizing Ideas

THE SECOND PRIZE WINNER ($500.00)

This little 150-year-old house at Upper Lime Rock, Mass., was purchased for the proverbial song by Mrs. Frances G. Houghton. The old Cape Cod design has been retained and beautified with 16-inch stained shingles laid over the old clapboards. $3,000 in resale value added, cost less than $1,000.

Inc., Buffalo—a very representative judging committee.

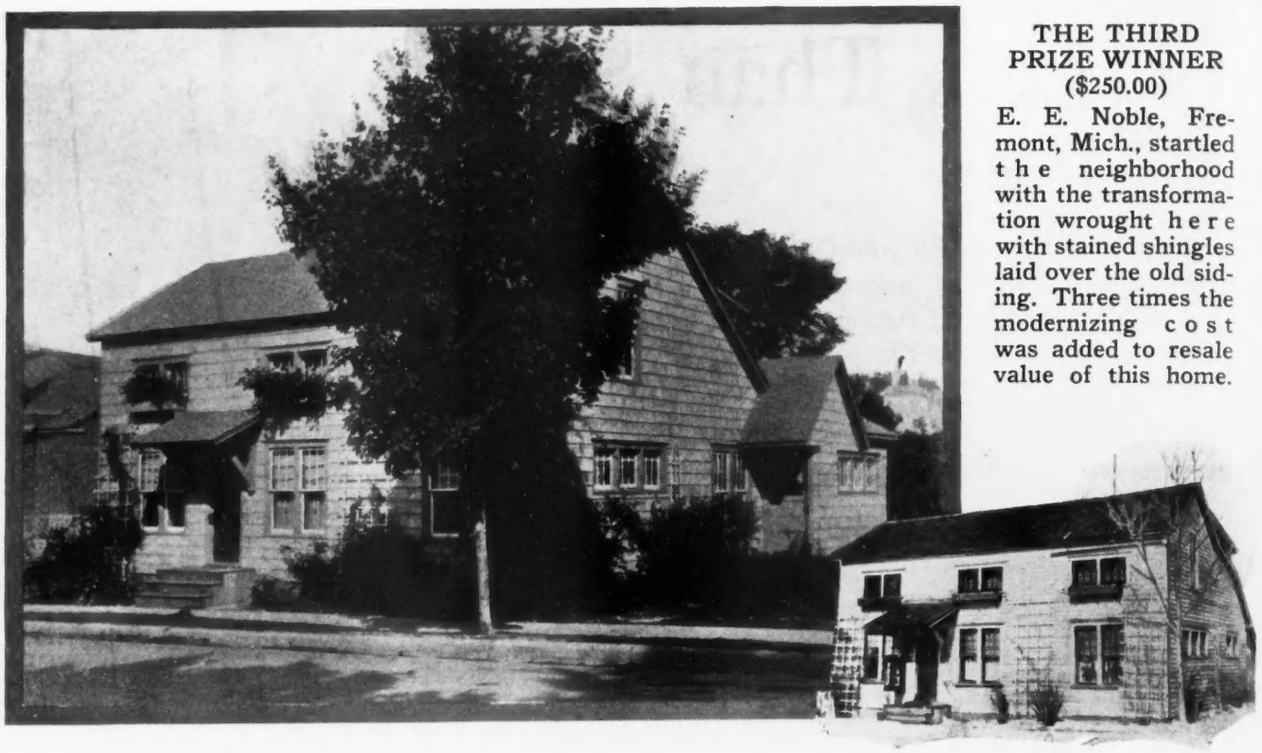
It required several days of close work on the part of the judges to pick the prize winners from the vast array of entries, so many of which had so much merit. As in the previous contest, all names and addresses were deleted from photos and manuscripts and each entry was known to the judges only by number. Many points had to be considered in the judging. These consisted of improved appearance; cost of modernization; good architectural lines; and the value of the changes as expressed in a statement by the owner.

The first prize of $1,000.00 was awarded to Mr. and Mrs. Stephen H. Perkins of Binghamton, N. Y., whose home is shown in the attached photographs.

The second prize example, owned by Mrs. Frances G. Houghton of Upper Lime Rock, Mass., shows how modernizing can help an old house which soon would have been discarded as unfit to live in. This little house was over 150 years old, and Mrs. Houghton literally bought it for a song. The old colonial Cape Cod design has been retained and beautified with 16-inch stained shingles in gray, laid over the old worn paintless clapboards. Many years of useful service and $3,000.00 in resale value have been added at a cost less than $400.00. The stained shingles, which did so much to preserve and enhance the original design, represented only a very small part of the cost to modernize.

Mr. E. E. Noble of Fremont, Mich., winner of the third prize, startled the neighborhood with the transformation wrought with red cedar stained shingles laid right over the old siding. "Looks like a new, modern home." "The shingles are just suited to the style of the house." "I'm going to do that to mine," are some of the comments made by Mr. Noble's neighbors after the modernizing was completed. Covering the siding with stained shingles has solved the problem of how to eliminate painting costs and add insulation and modern appearance for thousands of home owners.

The modernizing work done to the home of Mrs. Charlotte G. Bus of Belchertown, Mass., fourth prize winner, was really the saving of an old colonial landmark. The house itself was at least 150 years old and had an almost negligible valuation. Stained shingles in a delightful soft gray effectively covered up the old siding, and while providing excellent insulation, turned a veritable ruin into a delightful example of colonial



THE THIRD PRIZE WINNER ($250.00)

E. E. Noble, Fremont, Mich., startled the neighborhood with the transformation wrought here with stained shingles laid over the old siding. Three times the modernizing cost was added to resale value of this home.

architecture. At present the estimated value of the house is between $8,000.00 and $10,000.00, while the cost of complete modernization, both inside and out, is less than half that amount. The modernization of this home has attracted a great deal of attention.

One of the interesting sidelights obtained from the contest was the difficulty that the judges had in confining the list of prize winners to the 28 original cash prizes. So many homes of merit remained after the prizes had been awarded that it was decided to give 28 additional honorable mention. These additional honorable mentions included modernized homes in which the owners by their foresight and ability had produced through modernization a modern and livable home.

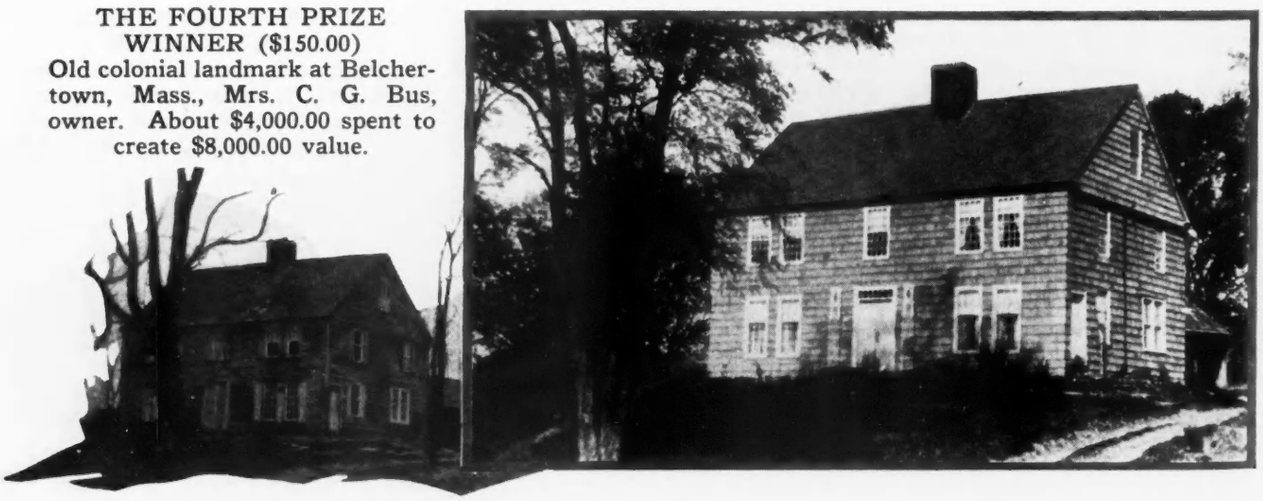
Commenting on the contest and its results, E. B. Allen, advertising manager of the Weatherbest organization, points out several of the worthwhile results obtained. "We like to call attention in the first place to a series of figures obtained which contradicts a prevalent erroneous idea concerning the excessive cost of modernization. Over 60 per cent of the people who modernized their homes spent less than $1,000.00 in so doing. This fact, together with the knowledge that every modernized home represents an increased value of the property of at least twice the cost to modernize, and in over half the cases of even more than that, is something which we would like to emphasize. These figures in themselves show the amazing story of modernizing in money well invested.

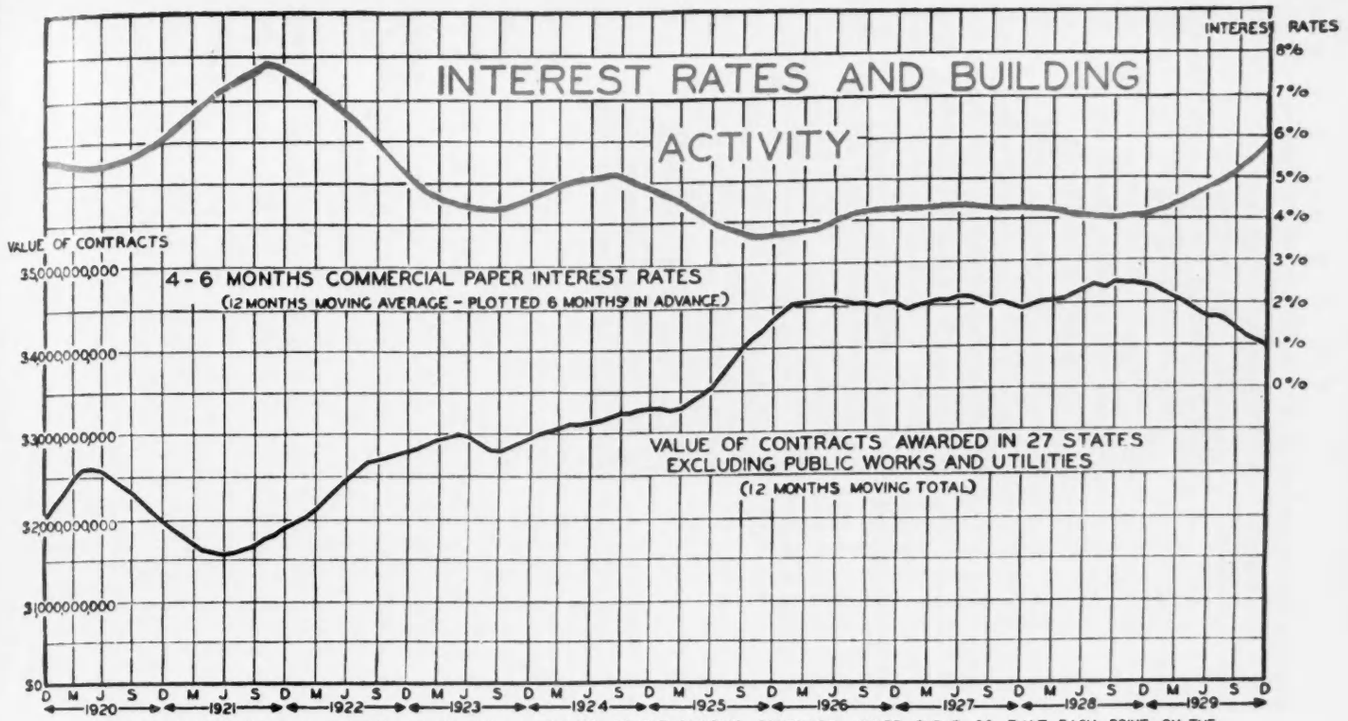
"While we are primarily interested in selling stained shingles for these modernizing jobs, we like to point out that on the average modernizing job three-fifths of the money spent was for items other than shingles and labor to apply them, so that the dealer invariably sells a substantial bill of other material in addition to the shingles themselves."

This contest was widely advertised in 1929 both in periodicals of widespread circulation and by means of direct mail literature with the assistance of lumber dealers. This advertising was very effective and the results showed how appealing the idea of modernization is to the average home owner.

THE FOURTH PRIZE WINNER ($150.00)

Old colonial landmark at Belchertown, Mass., Mrs. C. G. Bus, owner. About $4,000.00 spent to create $8,000.00 value.





THE INTEREST RATE CURVE IS PLOTTED SIX MONTHS IN ADVANCE OF THE BUILDING CONTRACT AWARD CURVE SO THAT EACH POINT ON THE INTEREST CURVE CORRESPONDS TO A POINT ON THE BUILDING CURVE SIX MONTHS LATER. FOR EXAMPLE THE INTEREST RATE FOR APRIL 1929 CORRESPONDS TO THE BUILDING AWARDED IN OCTOBER 1929
THIS IS DONE BECAUSE HISTORY INDICATES THAT ABOUT SIX MONTHS AFTER INTEREST RATES TURN UPWARD BUILDING AWARDS DECLINE AND ABOUT SIX MONTHS AFTER INTEREST RATES TURN DOWNWARD BUILDING AWARDS BECOME MORE ACTIVE
AT TIMES THERE HAS BEEN AN INCREASE IN BUILDING AWARDS IN LESS THAN SIX MONTHS AFTER DECLINE IN INTEREST RATES.

Building Volume Goes Up As Interest Rates Go Down

"TO forecast the volume of building construction it is necessary to consider the trend of interest rates," according to Clarence M. Woolley, Chairman of the Board, of the American Radiator Company. A study of interest rates and building contracts shows a very definite relationship between the two.

It is possible, by watching the trend of interest rates to determine, six months in advance when the volume of building construction will increase. It is also possible to determine as accurately, though less promptly, when the building volume will decrease. The relationship of building volume to interest rates is graphically represented on the chart reproduced above.

On this chart the black line represents the volume of building contracts, plotted by months, over a period of nine years. The red line represents interest rates plotted in the same manner over the same period. When the interest rate line curves upward the building volume line curves downward and vice versa. For example:

Throughout 1926 and 1927 up to March, 1928, the interest rates remained about level at an average of about four per cent. During this period there was a fairly constant building volume at a high level. Throughout 1929 the trend of interest rates was steadily upward, ultimately reaching six per cent at the close of the year. During that year the building volume decreased at almost exactly the same rate.

Since the first of the year interest rates have declined. The building volume has not as yet shown any great increase, though the tendency is apparent. The increase is due to be felt in June. In other words, when commercial money is high, building activity declines almost immediately. When money becomes cheap building increases. The effect is not felt immediately, however, but follows in about six months.

The delay between the occurrence of low interest rates and increased residential construction is due, in a large measure, to the psychological factors affecting the prospective home builder. It is also due to the fact that it takes time for commercial money to find its way back into small communities and small mortgage sources.

"I am informed by students of the situation that this six months lag will have been passed by June, 1930, and that commercial and residential construction for June, 1930, will surpass June of last year," said Fenton B. Turck, Jr., Chairman of the National Building Survey Conference, speaking before that group a few weeks ago. Certainly, if history repeats itself, building activity should reach a high level soon.

This prospect is supported by a summary of residential finance conditions, made by observers of the National Building Survey Conference, covering a period up to and including the first three weeks of April. This survey showed that mortgage funds were continuing to improve both as to availability and volume, but were generally restricted to non-speculative building enterprises.

In several of the larger cities of the East, particularly in New York and Philadelphia, an absorption of surplus built-to-sell houses has been indicated, with the probability that speculative homes of good quality will again find a market within the next few months.

A pronounced increase in residential construction of the home-owner type is indicated in the reports from most sections, particularly in the larger cities and an improvement over the showing for the first quarter is expected in residential construction totals for the year.

OLD BANKS

MODERNIZING APPLIED TO OUT-OF-DATE COMMERCIAL BUILDINGS IS HIGHLY PROFITABLE FOR THE OWNERS AND THE BUILDING INDUSTRY

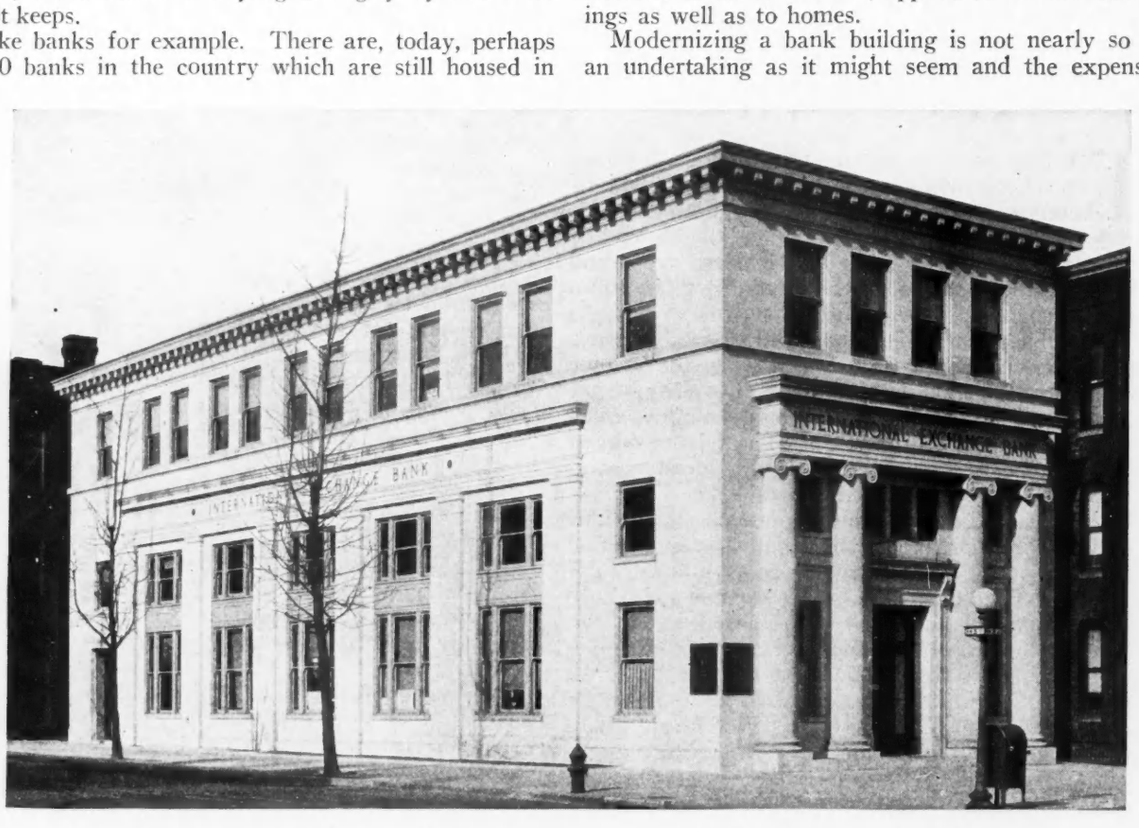
WE may sigh for "the good old days," we may admire old fashioned furniture, we may even rave about the quaintness of picturesque old buildings, but when it comes to buying business property or renting space in a commercial building nobody wants anything old fashioned. Business today must be housed in a style which is up-to-date if it is going to meet competition.

The last two or three decades have wrought such changes in style, such improvements in design and equipment that the old fashioned building is a drug on the market. Everyone prefers the convenience and smartness of the modern building. Structures of a generation ago are difficult to rent and almost impossible to sell, for a business is judged largely by the office that it keeps.

Take banks for example. There are, today, perhaps 25,000 banks in the country which are still housed in old fashioned buildings, buildings which fail to embody the character of the institution, soundness, durability, up-to-dateness. A study of the subject would probably reveal that most of these banks were on the down grade, or at least not growing with the growth of their communities. Eventually, unless something is done about it, they will pass out of the picture, pushed out by more progressive institutions.

What can be done about such a situation? The buildings are sound, well built structures, good for many years to come. It is costly to replace them even though unprofitable to maintain them. Should they be wrecked and replaced with expensive new buildings? No, that is not necessary. We are at last waking up to the possibilities of modernization, applied to commercial buildings as well as to homes.

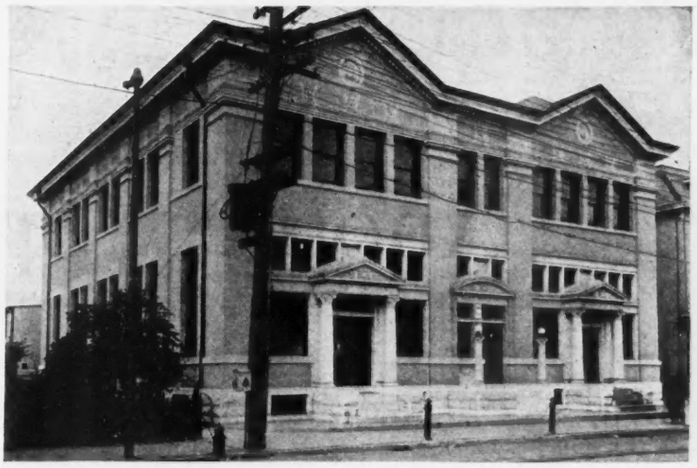
Modernizing a bank building is not nearly so great an undertaking as it might seem and the expense in-



The International Exchange Bank, Washington, D. C., as It Appears Since Remodeling with Buff Indiana Limestone Embodies the Character of the Institution. O. Harvey Miller, Architect. The old building, before being modernized, is shown at the top of this page.

MADE NEW

THERE ARE THOUSANDS OF OLD BANKS THAT ARE WELL BUILT BUT NOW OUT-OF-DATE THAT ARE IN NEED OF MODERNIZING TODAY



volved is a sound investment. The revamping and modernizing of interiors is so commonly practiced that its practicability is seldom questioned; but, until recently, the complete regeneration of the exterior was regarded as a stupendous task. As a matter of fact, it is, in many cases a much simpler undertaking than the remodeling of the interior and, as far as the outside world is concerned, of much greater importance.

The illustrations show two bank buildings, before and after remodeling. In each case the old building was refaced with Indiana limestone. The result is a striking example of the possibilities that are hidden in old buildings of this sort.

In many cases it is not necessary to remove the old facing. The foundation is merely widened and the new stone facing is built against the wall, leaving a clearance of one inch between the old and new. There are cases, of course, where it is necessary to remove the outer course of old facings with its unnecessary trimmings and ornamentations and to harmonize the old window and door openings with the more modern design selected.

This latter point is exemplified in the case of the International Exchange Bank, in Washington, D. C. The old idea was a first story of ordinary height and a high second story—just the reverse of modern bank construction. The change was accomplished and no one could doubt for a minute the advantage to the bank.

The case of the First National Bank, of Lansdale, Pa., was somewhat different. It was not necessary to change proportions or floor levels, but merely to apply a facing of Indiana limestone, modifying the front elevation in accordance with modern ideas of bank architecture. Once again the result was a marked increase in the value of the property, far greater than the actual cost of the improvements.

A Simple Job of Refacing with Indiana Limestone and Remodeling the Front Completely Changed the Appearance of the First National Bank, Lansdale, Pa., as May Be Seen by Comparing This View with the One at the Top of the Page. Tilghman Moyer Co., Architects & Engineers.

Another "Specialist"

With Apologies to Charles (Chick) Sale Where and If Needed

By G. MALCOLM STICKNEY

WHEN th' great buildin' slump of 1928-29 hit us, I didn't know quite what ter do with myself. You see, I'm a carpenter by trade and, although I *have* done odd jobs in my time, buildin' and putterin' around a house is what appeals ter me most. Man and boy, fer nigh on ter forty year, I've had a saw er a hammer in one hand er t'other. My heart's in my work, you might say.

Well, sir, I got ter thinkin'—not havin' much else ter do—and I decided that a feller ought ter pick out a job and get ter do it better'n th' next feller. That struck me as bein' a purty good thought, so I thought a leetle bit longer, and then I sez ter myself,

"Lem, my boy, this is an age of specialization as well as speculation (I'm something of a joker, too)—and you're goin' ter be a Specialist. Now the thing fer you to decide, first off, is what par-tic-u-lar work you're goin' ter specialize in."

Well, I read a lot of magazines and sent fer a lot of litterchure, but that only made it harder fer me ter make a choise. So I piked down ter see Elmer Johnson. Elmer has a mighty nice lumber yard here in town and I allus talk things over with him, account of his havin' so many new ideas. Sez I ter Elmer,

"Elmer, I'm plannin' ter be a Specialist."

"I thought you wuz one," sez Elmer.

"No, this is diff'rent," sez I, and I goes on ter explain it ter him. Well, we didn't have ter talk fer more than, oh, mebbe half an hour, when Elmer sez,

"Lem, did you ever hear of modernizing?"

"Hear of it!" sez I, "That's what put me out of my old business."

"Well," Elmer goes on, "that's what's goin' ter put you in yer new business. You're goin' ter be a 'Modernization Specialist.'"

"Sa-a-y! That's a high-soundin' name. Tell me more about it." I wuz int'rested, you see.

Well, he told me all he knew about it, which wasn't much, and then I found out I knew more about it than Elmer. I put on a sun parler fer old Mrs. White down th' street, and I changed th' front door and some winders fer Frank Perkins, and it seems *that's* the start of modernizin'.

It wan't long before we wuz rarin' ter go—and *we went*. Here wuz my big chance, and from then on I was a "Modernization Specialist." (It took me some time ter say that without stutterin', but I kept at it and kept lookin' at th' sign th' Acme Sign Co. made fer me, and now I almost s'prise myself. Yes, Sir!)

I do my work nice and neat, and when folks have fixin' up ter do, they allus say, "Let's send for Lem Jones. He'll do as good a job as any,—better, because he's specializin' on it."

Another thing that appeals to most of 'em is that they don't have ter pay fer it right off th' bat. Mr. Thompkins, down at th' bank, showed me how t' arrange time payments so's a man can pay easy-like, a few dollars a month.

I'm goin' ter keep at this work too, and I'll tell you why.

I'm makin' more money now than I ever made carpent'rin', and I like th' work. Then there's a kind of satisfaction in drivin' around th' town and lookin' over some of the jobs that have made me famous, so ter speak. And, gentlemen, I've got some m-i-g-h-t-y, m-i-g-h-t-y, purty leetle jobs.

I'm raisin' that boy of mine ter follow along in my footsteps, but if he don't hurry up and grow, I'm goin' ter have ter hire a couple or three carpenters ter help me. I'm that busy.

It's s'prisin' how th' idea of modernizin' grows. Gentlemen, I thank you.

Newspapers Aid Modernizing

Special Home Building Sections Stimulate Public Interest--
Local Modernizing Bureaus Organized

WHEN the newspapers generally of the United States take up the promotion of any policy in the interest of the public, that policy usually comes into active life through the public sentiment which is aroused. The newspapers just now are becoming interested in the problems of the building industry and are awakening to the news interest to be found in the building and modernizing of homes. Many of them are establishing interesting and readable building and modernizing sections far different than the old type of section which was made up mostly of "handout" material and of no interest or value. The result of this is that many localities are being beautified by new construction and modernization of out-of-date homes, property values have been increased and living conditions bettered materially.

This situation is attributable to a considerable degree to the efforts of the Home Modernizing Bureau of the National Building Industries, Inc., now called the National Building Industries Bureau, and of some of the officials who have gone out into the field to interest the newspapers in the promotion of interesting home building and modernizing sections.

The National Building Industries Bureau has a department called the news service department. This department was organized for the purpose of providing a news service on modernizing and new home construction to be sold at cost to newspapers throughout the country for use in building sections.

The material furnished is made up of interestingly written articles on how to build or modernize, before and after drawings of remodeling jobs, suggestions on improvements in old homes all the way from installing an electric outlet to a complete make-over of the exterior of a home.

Just at present there are forty newspapers taking this service. These newspapers have a combined circulation of several million copies. They publish the material in their sections once each week accompanied by the advertising of the building material and home accessory dealers and of builders. In some communities there are formed organizations of these building interests into bureaus for the promotion of new building and modernizing. These organizations advertise in the newspapers and through a close cooperation between the two, the public is made home conscious and the newspapers, the dealers and builders and the community benefit materially.

An instance of this is found in a recently organized body in Racine, Wis. The mail order house home construction plan having been widely publicized the dealers decided to be ready to meet this strong competition and joined hands with the "Racine Times Call" to bring about a successful movement. They planned a nine months' advertising campaign, about forty dealers, bankers, etc., joining in on the co-operative advertising.

The newspaper offered to furnish half as much interesting reading matter for every full page of advertising in a building section to be established. The newspaper was assured of thirty-six full page advertisements as a start and it was understood that many of the individual dealers were planning to run their own advertisements as a tie-up with the co-operative advertising. Most of the copy was to stress the home building idea with modernizing as part of the campaign.

There are three outstanding successes by newspapers in promoting building sections which might be mentioned. The "Hartford (Conn.) Times" has for more than a year published a building section running from seven to sixteen pages each week. It has meant a tremendous increase in home building and remodeling there. The newspaper conducts a bureau where the prospective builder or modernizer can obtain a visualization service, estimates and general information. The second outstanding instance is the "Wisconsin News," of Milwaukee. For over a year that newspaper has published a four to eight page section, being very liberal with space for reading matter. Many thousands of lines of advertising has been run in this section with the result that Milwaukee became decidedly modernizing conscious. There also is a bureau in Milwaukee where free service is given to customers.

Some Typical Newspaper Home Modernizing Editions.

The third instance is that of the "Cleveland News." C. E. Stedman, general sales manager of the Celotex Company and a director of the National Building Industries Bureau, spent considerable time in Cleveland assisting the "News" in organizing a building section that is outstanding. In this connection the "Cleveland News" organized a Home Owners' Bureau which certifies the workmanship and material of its members, guaranteeing to the Cleveland public an honestly built home or honestly constructed modernizing job.

Mr. Stedman has visited many newspapers and pointed out the need and advantages of a good building

(Continued to page 126)

CREATING BUILDING JOBS

By Dealer-Contractor Co-operation

HOW to find building jobs when most folks are crying hard times is a problem that tests the real sales ability of a building contractor. Now, many builders have gone right on keeping busy by creating jobs. How they do it will interest every building contractor and from time to time AMERICAN BUILDER will publish such stories.

A most interesting one comes from Hartford, Connecticut. The building situation was no different there than in many other localities—things were somewhat at a standstill. While the builders were doing nothing the material dealers were also making no sales.

One up-to-date dealer gets busy and promotes a co-operative advertising and sales campaign. The opening gunfire was a big advertisement, practically a full page, in the Hartford "Times," this to be repeated weekly in this paper's Home Building editions. The copy, of course, will be changed for each insertion.

The first advertisement is reproduced on the opposite page. It is well written, its dominant space will insure its attracting attention and the service offered is a complete one—materials, labor, and finance. While the plan has not been in operation long, it has already stirred up a fair amount of business, also a number of prospects. A number of the sub-contractors report receiving telephone calls.

THERE are always building jobs for those able to render a complete service.

Here is a story of how a dealer and builders co-operated to create new business for all during a dull business period by offering a complete service.

THE American Cement Company of Hartford is a local building material supply house; they do not handle lumber. Their attractive office has a reception room fixed up as a display room for the various building materials they sell. The walls of this reception room are divided into panels, each one filled with a different kind of material: brick, stucco, insulation, tile, etc. Thus, prospects see samples of finished work, and talking to them is easier because the samples can be seen and explained.

The management of the American Cement Company takes an optimistic view of the so-called "hard times" situation. They figure, and rightly so, that there are quite a number of people who are not out of work owning their own homes. These people could afford to go on with home remodeling work or improvements. They may be a little timid about going ahead, not knowing how the business situation would turn, but when they have an opportunity to have desired home improvements done on a long time credit basis they are apt to look with favor on going ahead now.

Some few weeks ago the manager of the American Cement Company sent out an invitation to the various builders and sub-contractors of Hartford asking them to come to a meeting to discuss ways of promoting building activity. Nearly 200 responded.

At this meeting the financing system, backed by a large manufacturer of building materials, was made the basis of their credit system.

The American Cement Company volunteered to look after the advertising details and offered any contractor who wished to enter the program to have a display card in the advertisements for a small sum; payment for these cards to be made to the American Cement Company, who, of course, assumed the obligation to pay for the entire advertising.

Some 37 contractors agreed to go in the movement and the result was a series of co-operative advertisements to get the message over to the people of Hartford.

The newspaper in which the advertising appeared gave further aid by running a number of stories on home modernization and keeping the public interest alive. Material for the editorial section is being contributed by various builders and architects. All felt that if the public were made building conscious they would get their fair share of the created business.

NOW what the Hartford building material dealer accomplished with the co-operation of the contractors can be done in practically every community. In some locations the financing can be done through one of the local banks in which perhaps the dealer is heavily interested. Sometimes a local discount company could be formed if one did not exist already.

People will go on with improvements if the proper inducements are made and if the financing can be accomplished at not too great an expense. A usurer's rate of interest will kill any scheme, no matter how good otherwise it may be.

The main point of advertising like this is to produce inquiries or to create the desire to build. It then is up to the dealer or contractor to sell the prospect after he has inquired.

When it comes to talking prices, agree with the owner about a cheap price, but tactfully work in the "quality" talk; show them that for just a little more money the result can be accomplished with better materials that will leave the owner completely satisfied.

When builders and dealers cooperate in this way they need fear no mail order house invasion in home building in their vicinity—for they are ready to give the material, labor, and finance required and their intimate knowledge of local conditions enables them to render the best service on every worth-while job.

Co-operation, however, is essential to success. It requires the force of group effort to combat the highly organized and heavily financed operations of the mail order houses. It requires the force of large space, group advertising to convince the public that the present is an opportune time for building and remodeling work. It also requires a recognition of the value of remodeling and modernizing work, especially during periods of building depression. Modernizing work will keep the organization together, maintain employment, produce income where there would otherwise be none, and speed up the return of normal building activity. With co-operation in selling the public on modernization it is possible to actually create building jobs now.

THE HARTFORD DAILY TIMES, SATURDAY, APRIL 5, 1930. 27

HOUSE LOCATION CALLS FOR STUDY

Small House Should Set Close to Ground Avoiding Need for Stairs.

LOCATION OF GARAGE

May Be Attached to Dwelling on Narrow Lot—Use of Ell.

The ordinary suburban lot gives little scope for anything but consideration of the position of our neighbor's kitchen and parlor windows and the corresponding or alternating positions of our own. The remaining arrangement rests with the possible future of the grounds, and here it would be always well to consult a landscape architect.

In the type of lot just spoken of there is usually a setback or restriction which brings the houses all along the line. There may, however, be some question of the depth of the sewer which will determine the arrangement of plumbing in the cellar.

The garage may be a separate unit or incorporated with the house either as an ell or part of the first story. It's place on the site may add to the house by giving it length, or, if thoughtlessly located, may ruin the effect and the possibility of charm. Its location with regard to convenience of approach from house to street, its appearance and the amount it encroaches on our lot are important considerations.

Height of Foundation

A house set low on the ground is more attractive than one that is high, especially if the house is small. When furnaces came in, and people began to have good cellars under houses, there was a demand for light and air in the basement.

Every house was thereupon put up from two to three feet above ground. This makes a house look as if it had perched for a brief rest, not as though it had grown in its place or was intended to be a definite part of the landscape as should be the case. It entails long flights of outside steps to be built and taken care of. Some types of houses need this elevation for the sake of dignity, but for the small house it is better to hug the ground. The cellar will be dry and light enough.

For the actual positions of rooms we must consider the points of the compass, the location of the neighbors' windows and our own. A house set with care and thought very close to another may not feel that proximity too much because of careful planning of rooms and windows.

An irregularly shaped lot left over on the edges of the development may be made delightful by building an ell at right angles to the main house, with a sheltered garden in the angle.

Take Advantage of Outlook

On a sloping lot the garages may be put entirely under the house, either at front or back. If the land slopes up steeply from the street, it is possible to have one more story on the front than on the back. The entrance into vestibule or reception hall would be in front of the cellar. The living room would be on the floor above.

Plan to have the living rooms toward the south and west. Some people refuse to have the front door take up any room on the south side. Others feel that a front door on the north means cold wind whenever the door is opened.

Handsome trees on the lot may influence the house. One lot which had almost in its center a beautiful oak had the house built around it in such a way that it made a charming covered porch in summer. The bare branches in winter permitted plenty of sunshine in the house. Copyright, 1929, The Architects Small House Service Bureau, Inc.

BRICK DWELLINGS GAINING PLACE

Financial Agencies Demanding Permanent Construction.

Significant in the home construction field is the growing tendency of late on the part of those agencies which finance home building operations to insist upon not only a better type of house but as well one of permanent construction. It isn't so easy as it used to be for the jerry builder to finance his operations. He is being cramped by the financier's insistence not only upon good houses but houses that will resist the ravages of time and the elements with the least degree of depreciation.

In some instances this has advanced to the point where brick construction is virtually demanded. Generally speaking the trend with most of the more important agencies is increasing toward more permanent construction. More brick homes are being built to-day than in a number of years, and in many instances realtors are restricting their developments to homes of this type. There is reason for this, beyond the financier's insistence.

With materials at their present prices and labor costing in most localities almost if not quite as much as the materials that go into the home, it behooves the man who builds or buys to make a good investment. One upon which he can cash in readily if occasion arises where he is compelled to sell. And the resale value of the brick house is always highest. Besides there is the every year saving on insurance premiums, fuel bills and maintenance costs.

New types of brickwork, particularly skintled brickwork, is causing a wide revival of interest in the common brick home. And economy is aiding in this as well, for the common brick house to-day can be built in most cities at not to exceed five or six per cent more than its cheapest competitors.

Here Is a Reproduction of the Full Page Newspaper Advertisement That Opened the Campaign.

Frank J. Wachewicz

"Thermo-art"

Rigid, Fire-safe and Inexpensive Home Building Method Perfected by Firm of Hammond, Ind., Builders

OPERATIONS BEING EXTENDED TO OTHER CITIES

FOR twenty years, Frank J. Wachewicz has been a prominent and successful home builder and developer operating in the Hammond and Calumet region of northern Indiana, just over the border line from Chicago. During that time, he has put to his credit approximately 1,000 homes and some of the finest subdivision in this rapidly growing section.

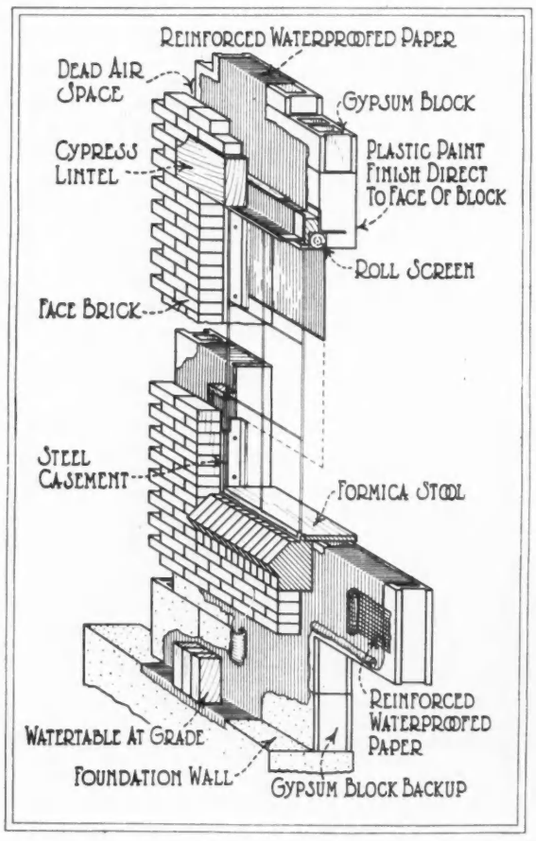
In the course of this home planning, building and selling experience, Mr. Wachewicz found that 85 per cent of the homes built and sold represented an investment of approximately $15,000 each, and that most wanted homes of masonry construction on which upkeep expenses and fuel expense would be low. He found many new building materials coming into the market which appealed to the judgment and style sense of the home seekers, but the problem seemed to be to work these materials into a unified plan or method of home building that would be practical and within the reach of this 85 per cent, $15,000 home class.

Working at this problem with his architectural and building associates over quite a period of time, a method was evolved which seemed to possess all of the desired features. Although making use of regular stock materials obtainable through building material dealers everywhere, this building method combines them in a novel way which justified giving to it a special name. "Thermo-art" it is called, and Mr. Wachewicz and his associates have organized the Mansionette Corporation to promote this thermo-art Mansionette way of building, and to extend its use into other cities.

Already considerable progress has been made in licensing builders in important centers. Typical of the class of builders who have joined the Mansionette organization are Wagner & Braun, Joliet, Ill.; J. B. Whitehead, Rockford, Ill.; Walter L. Curdes, Ft. Wayne, Ind.; and G. L. Peterson & Son, Moline and Rock Island, Ill., and Davenport, Iowa.

The advantages which the Mansionette Corporation is able to hold out to building firms invited to membership are five in number: 1st, the thermo-art better building method; 2nd, mass buying power; 3rd, a vigorous publicity and advertising plan; 4th, architectural service, including home designs and local supervisions; and 5th, financing.

Details of the thermo-art construction method are illustrated herewith. Masonry walls combined with concrete floors supported by light weight steel joists produce a rigid, permanent, fire-safe construction. The outside walls are of face brick with a back-up of gyp-



The Thermo-Art Exterior Walls Are Warm, Dry, and Inexpensive.

Type of Homes Being Built by the Mansionette Thermo-Art Method.

sum block, making a warm, dry wall which requires neither lath nor plaster but can be finished with plastic paint applied direct to the inner face of the gypsum blocks. Moisture is entirely excluded from the gypsum block half of the wall by means of heavy reinforced waterproof paper which is built in as the wall is laid up and, when the walls are finished, completely encases the house so that no moisture working through the brick mortar joints could penetrate past the waterproofing layer and into the gypsum.

All details of this construction have been carefully worked out through actual building experience on the job, and new members of the Mansionette organization are furnished very complete instructions covering all installation details and methods so that labor cost is kept low.

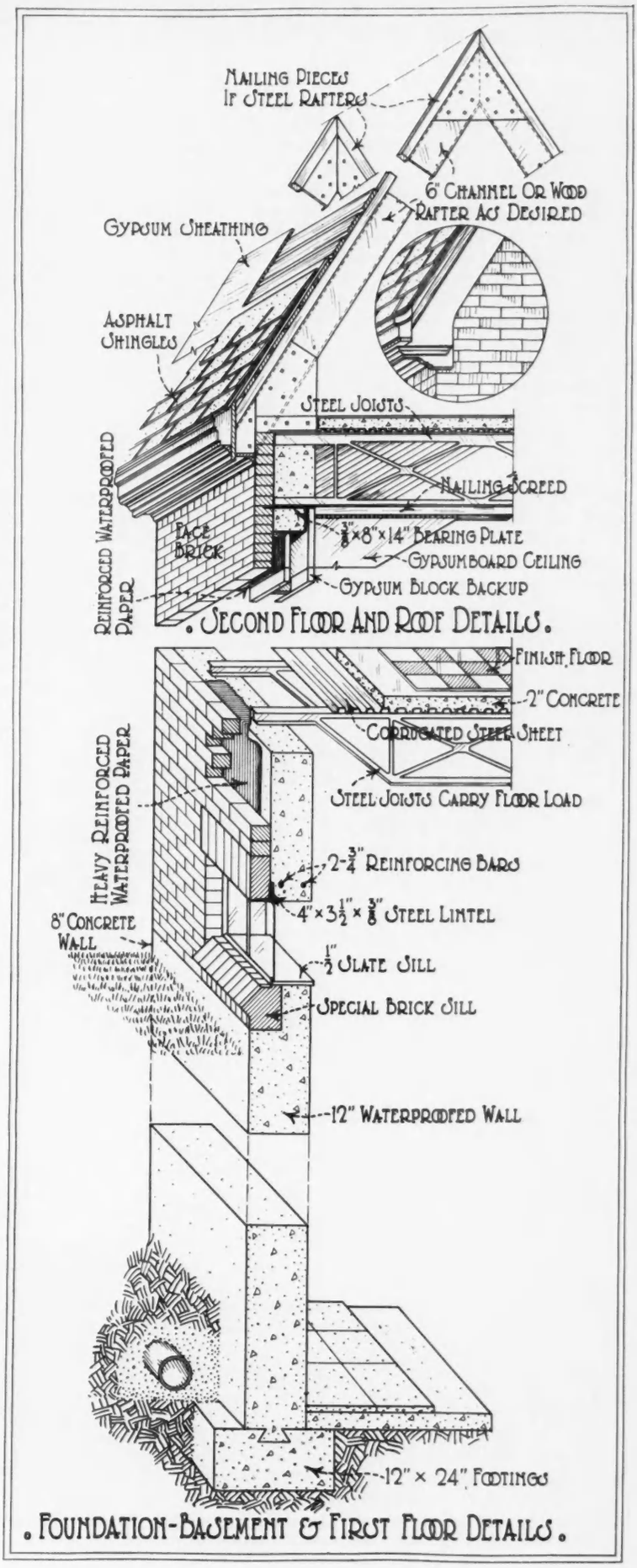
Mention was made of mass buying power as the second point in this proposition. Contracts have been secured from all of the manufacturers whose products are called for in the thermo-art specifications. Substantial discounts have been granted, based on the mass buying power of all Mansionette member builders. All of these materials, however, are shipped and billed through the local established dealer channels so that the good will and co-operation of the local dealers are retained and, at the same time, the Mansionette builders are able to offer their product at a decided saving. A point in selling is that prices are never quoted on individual units but only on the completed product, the finished home ready for occupancy. For this reason, it is expected that these favorable discounts from the manufacturers based on quantity buying and the elimination of sales expense will cause no trouble in the local markets.

The promotion of Mansionette homes in each community is accomplished through local newspaper advertising and the distribution of attractive booklets and circular matter. A sample of one of the full-page newspaper ads is reproduced in small size on the next page. A sample or demonstration home of thermo-art construction is the most effective promotion, and many of these will be built.

For architectural service, Mr. Wachewicz has evolved a very practical plan of furnishing builders a collection of attractive designs and arranging with a local architect in each community to superintend construction and to work out any changes or new design ideas that may be desired.

The financing of Mansionette homes is easily accomplished, it is said, through local banking and building loan sources because the thermo-art construction appeals to these lending institutions. Mr. Wachewicz feels that home financing, just as architectural service, dealer service and the employment of labor, should be kept at home in the local community. Outside financing, however, is available through the Mansionette organization whenever it is needed.

John C. Nowicki, Vice-President of the Mansionette Corp., when interviewed by the



AMERICAN BUILDER editorial representative said:

"During the season of 1927-28, when the building industry in general was subjected to a serious depression, the Mansionette plan of merchandising custom built homes to vacant lot owners was launched, with the result that one hundred twenty-seven Mansionette homes were built for lot owners, aggregating $1,206,500.

"During the last two years, the plan was developed for national operations with production units now set up in the principal cities of the five central states.

"Representation in principal cities is maintained by licensing responsible local builders, who in their own established offices conduct the merchandising of the homes. A local architect is then appointed to supervise construction expertly, on all homes so built. This removes much of the technical responsibility from the shoulders of the licensed builder, permitting him to concentrate on sales and production. It gives the customer expert supervision by a qualified local architect whom he knows and has confidence in on even the smallest job he may select, with no additional cost to him. Mansionette homes are built only for owners of clear vacant lots, and never speculatively. Thus, hundreds of vacant lots in each city are redeemed from a non-productive liability to a self-sustaining investment for the owner and a general community betterment.

"The financing of Mansionette homes is arranged through mortgage and insurance sources, on first mortgage term loans and second mortgage amortized loans, without necessity of inflation for heavy discount charges, customary on all speculatively built homes. The securities are always signed by an owner occupant, who is permitted to buy only what he can reasonably afford to pay for, out of a predetermined budget. Considering the quality of these homes, the type of construction, the diversification of risks and locations and the fact that each mortgage is signed by an individual owner occupant who is qualified as to earnings and credit standing, the securities are the highest grade that can be obtained.

"The Mansionette Corporation buys the materials for all of its production units under fleet contracts, taking advantage of the largest discounts available for mass purchases and is thus able to give its individual home purchaser a superior product at decided savings.

"It goes further, and here is an attractive feature worth noting. It has its material purchases shipped through the local established dealer channels, at current market prices, so that all local factors not only remain undisturbed, but become the beneficiaries. All labor is let under subcontracts, compelling employment of resident trades mechanics; and all purchase money, whether from owner or mortgage loan sources, is deposited in and disbursed by the community bank through individual unit trust accounts. The corporation's service charges are the last item drawn upon, only after all material and labor costs are fully discharged.

"The manufacturer's discounts on materials are based not only on volume production but also on the fact that their sales expense to us is practically eliminated. One transaction closes a material contract for all homes to be built during the entire year. We do the merchandising and selling for them and do this in a manner which does not affect their normal production, but increases it many fold. For while we do not expect to build all the homes in any city we operate, we do create a distinctive market which is approached in no other way, and we sell our prospects on the firm and its materials to the extent that, they will demand what we specify, even though another contractor should get the job We never quote prices on individual units but only on our completed product, so that no confidential price or discounts are disclosed to the detriment of local dealers.

"Authorized Mansionette building offices are now established in several cities. Before the building season is well under way, the corporation expects to have thirty-five to forty production units functioning in that many cities. A license is granted only after an exhaustive survey of the city has been made, which determines the normal absorption of new homes under existing conditions. A definite quota is then designated to each licensee, resulting in a profitable developments of needed improvements."

Reduction of One of a Series of Full Page Newspaper Announcements to be Used in Each City Where There Is a Mansionette Corporation Builder.

Is There a Measuring Stick for Home Building Operations?

By ETHELBERT STEWART

United States Commissioner of Labor Statistics

IS there a measuring stick that will approximately determine the extent of the residential building operations needed year by year for the country as a whole, and one that can be made to apply to any given locality?

In an attempt to answer this frequent question I have studied the data available in the Bureau of Labor Statistics and will here outline my conclusions.

The difficulty in the first instance arises out of the fact that in most cases there are no figures that apply to the same civic area or to the same population. For instance: while the building permits show the number of families provided for, they relate generally to the population within the city limits, and the city is generally not identical with the county either in area or population. Manifestly the best measure of family residential requirements is the number of families, and the best measure of needed residences would be the increase in the number of families. But marriage licenses are issued by the county government, while the building permits are issued by the city, and these are not usually coterminous and hence only roughly comparable.

In a few instances, however, the city and county are coterminous, and represent the same population. I have studied a few of these with a view to determining how far they lend themselves to the construction of a yardstick for building operations.

Number of Marriages and Number of New Homes

St. Louis, Missouri, some years ago became coterminous and identical with St. Louis County. In 1928 St. Louis, with an estimated population of 848,100, licensed 7,698 marriages, or 9.08 to each thousand of population. During the same year the building permits issued provided for 7,190 families. This of course includes one-family dwellings, two- family dwellings, and multi-family or apartment houses.

The City of San Francisco is also coterminous with the county. The marriage rate is very high, being 10.43 per thousand of population estimated at 585,300. In other words there were 6,104 marriages, while building permits provided for 6,084 families.

The District of Columbia is another case in point. Marriage licenses and building permits cover the same area and the same population. Here with a population of 552,000, there are 9.6 marriages per thousand, or a total of 5,298; the building permits provide for 4,305 families. Much of this discrepancy is due to marriages in Washington of persons not residents of the District, and to a certain degree of congestion and doubling up caused in part by the high cost and prices of dwelling properties. The average cost of the 1,961 dwelling units in Washington for the first half of 1929 was $6,410 not including the land. If we add $1,500 as the land value, making a total of 7,910 then a person must have an income of $4,500 per year to purchase safely such a property. The average salary income of the classified government employees in Washington for 1929 was $2,043.

But to return to the evidence with its weakness and its strength. Philadelphia affords one seeming exception to the rule. It is the largest city which is coterminous or identical with the county organization. It has a population of 2,064,200. In 1928 there were 13,627 marriages, and 10,576 families provided for in the building permits. The marriage rate is, however, very low, only 6.6, not much more than half the marriage rate of San Francisco (10.43). The year 1928 was a bad year for Philadelphia textile industries and many others. It is a low wage city with a more than usual proportion of unemployed. Its low marriage rate shows unfavorable economic conditions. It is a city where overcrowding is too prevalent. Taking all things into consideration the building activities were very good. During the first half of 1929 the dwelling units erected cost, apart from the land, $4,558 on the average. An income of $2,500 per year is necessary to purchase safely such a house, even if the land was already owned. The percentage of Philadelphia population able to assume such obligations is not up to the average, judging by the labor conditions, hence the overcrowding.

When all is said the marriage rate and the family building unit rate run so close together that the former is unquestionably an adequate measure of the possibilities of the latter. Therefore take the known population of any given district, divide by 1,000 and multiply the quotient by 8 and the result will be a close approximation of the net number of marriages and the number of family dwelling units that will be desired in each year in that district, at a price within the reach of the resources of the population of that district.

Each locality would have to be studied in relation to its peculiar economic condition as affecting its total population. For instance, Philadelphia has a marriage rate of 6.6, while San Francisco has a rate of 10.43.

Baltimore City is coterminous with the county. The marriage rate, 8.25, is a little lower than that of the United States, but well above that of Philadelphia. The number of marriages in 1928 was 6,849 and the family units covered by building permits 2,884. The first half of 1929 shows up better, i. e., 1,781. The city is badly congested, and what is said above of Philadelphia applies.

Virginia has an unusual number of cities, some quite

(*Continued to page 126*)

"Air Conditioning" Has Strong Sales Appeal

BREAK down sales resistance with the heating system. That may be a comparatively new thought in the minds of most commercial builders and contractors, but during the past few years heating and ventilating engineers, in the warm-air heating field especially, have wrought remarkable achievements in the development of warm air systems. In fact, the modern warm-air system is more than a heating system. It is an air-conditioning system, and as such offers sound selling points to the commercial builder or the developer who is building homes to sell. There are a number of such points, each in itself of sufficient importance to influence a prospect to put his name on the dotted line.

Practical selling points are indispensable in the merchandising of homes. In spite of the fact that seemingly the *ne plus ultra* has been achieved in home style and equipment, it is safe to say that the house that is modern today will not be strictly modern tomorrow. And so the competition among builders to provide home buyers with something new goes merrily on, for they are ever seeking new things that are effective selling points in home merchandising.

TO the merchandising efforts of commercial builders may be accredited in large degrees the high character of American homes, both large and small, that makes them models of comfort, convenience and elegance. And these factors are not limited to the high-price residence; they characterize the modest bungalow also.

The list of things introduced by builders to make homes more attractive—more "homey," if you please—and to simplify the general housekeeping scheme is a long one, ranging from shoe cabinets to mechanical refrigerators, and from steel building units to insulation and fireproof floors.

In providing these factors of comfort and convenience and beauty, builders and the general public have directed their eye and mind chiefly to the things above the foundation. The basement has had only secondary attention, with the possible exception of laundry equipment. Yet, the heating system in the basement is one of the principal installations in the house. It has been taken for granted that the plant installed will provide sufficient heat when the winter season arrives, and nothing more has been expected of it.

And it is to the heating system in particular that attention is now directed, so builders are again invited to the basement, especially in view of the fact that more than half the homes built are equipped with warm-air heating systems.

IN the air-conditioning home heating system is found conspicuous improvements that will determine whether a house is really modern, now that other modern household installations have come to be taken as a matter of course. And this determination centers around the fact that the latest type of warm-air heating system is no longer just a heating plant. As an air-conditioning system it is in a new role as health guardian, as generator of genuine indoor comfort the year 'round, and as the avenue to fuel economy and easier home heating; and the cost is well within the purse limitations of any home buyer.

In these newer functions lie effective selling points for the builder who is marketing either the modest bungalow or the more pretentious home. They are accomplished by perfected and foolproof heater equipment that is the source of moisture—relative humidity—and air motion. These two factors have heretofore been imperfectly taken care of in domestic heating, though long recognized by experts as being indispensable to comfort and health.

The factor of generating sufficient heat is no longer a problem. In fact, in domestic heating it has come to be a matter of too much heat from the standpoint of indoor comfort and health. During the heating season the air in most homes is too dry. It has a moisture content lower than that of the air in California's famous Death Valley. That's why the furniture dries out, the wallpaper cracks, and the woodwork warps, and why it is so difficult to cultivate indoor plants.

And the human occupants also suffer. The super-dry heated air also draws an abnormal amount of moisture from their bodies, and higher temperatures are necessary to compensate for the sensation of coolness caused thereby. The result is that in most homes the temperature ranges high in the seventies and even to the eighties. The moisture content, relative humidity, of the air in the average home during the heating season will be as low as 20 per cent, whereas from a health-comfort standpoint it should be at least 45 per cent when the temperature is 70 degrees Fahrenheit.

AND here modern warm-air heating systems—now properly termed air-conditioning systems—of the vapor-air type offer builders most effective selling points, for they automatically evaporate and inject into the home air during the heating season sufficient moisture to maintain the required degree of relative humidity.

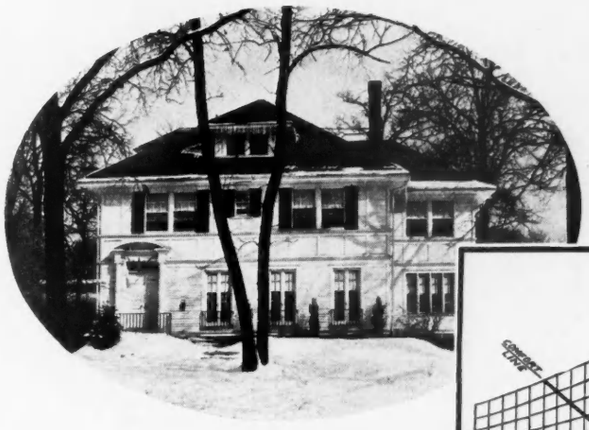
In northern climates at least six to eight gallons of water should be evaporated daily in homes of moderate size—that is, 5 or 6 rooms. This seems like a prodigious amount of vapor to be distributed into the air of a home daily. However, the humidifying equipment in the latest type of warm-air heating systems will evaporate from 3 to 25 gallons of water daily, according to requirements, so that supplying necessary moisture offers no problem. Furthermore, the average 5- or 6-room house contains approximately 12,000 cubic feet. Indoor air is constantly filtering out through the roof, the walls and the cracks around door and window openings, and so it is apparent that the evaporation of 6 to 8 gallons of water into this cubage each 24 hours produces no undesirable results.

By evaporation of this amount of water each day during the heating season, indoor comfort is assured with moderate temperatures. For example, when the relative humidity is 45 per cent, greater comfort is assured at a temperature of 70 degrees than is now possi-

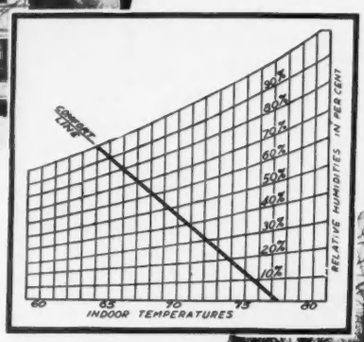
ble with high temperatures when the air is not adequately humidified. And, of course, it is more economical to maintain an indoor temperature of 70 degrees than the 78 or 80 degrees now so common.

A MORE important factor is the health factor, from the standpoint of producing potent sales points. The super-dry air in over-heated homes draws moisture from the delicate membranes lining the noses and throats of the human occupants, and instead of these membranes serving in a natural way to conserve health, they become ideal breeding places for disease germs.

As you may have noted, epidemics of colds and the more serious respiratory diseases usually get their start at the beginning of the heating season. That is the time when people begin to coop themselves indoors after having virtually lived in the healthful and naturally humidified air of out-of-doors all summer long. And because respiratory diseases are incipient at this time and become epidemic as the heating season progresses, it is the consensus among health authorities and heating and ventilating experts that living in artificially heated, inadequately humidified indoor air is a contributing factor in the development and spread of respiratory diseases. Contributing to their belief is the definite experience of persons now living in homes equipped with warm-air, air-conditioning systems, who find that winter colds and other respiratory diseases are virtually eliminated under normal living conditions.



Size is not a restriction to warm-air heating systems, as evidenced by this fine home in a Chicago suburb, equipped with air-conditioning system.



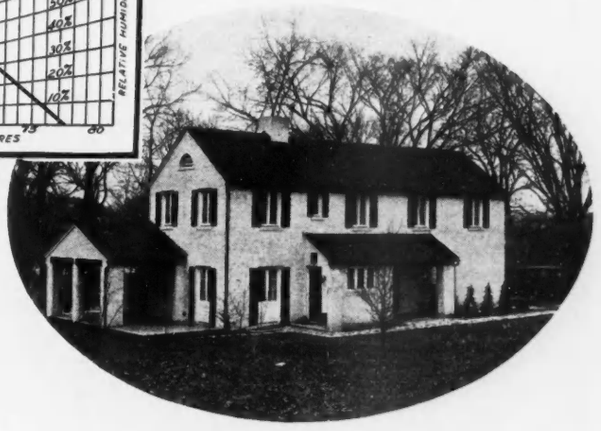
Thus the builder of homes equipped with systems that will automatically evaporate as much as 25 gallons of water daily, if that amount be needed to insure an adequate relative humidity, offers his prospects a factor that makes for comfort and for health.

Another function of the modern type of warm-air heating system is to keep the air indoors at uniform temperature. This is accomplished by means of an electrically operated air-propeller unit that is installed in the top of the furnace casing. The operation of this unit eliminates dependence upon gravity for heat circulation. It forces the warmed air from the heater through the heat ducts and into every room—even the far northwest room which in so many houses is difficult to heat in extreme cold weather. With old style heating systems there are from one to two changes of air per hour, but the operation of the air-propeller unit keeps the air in more rapid motion, changing it from four to six times per hour. Thus there is a constant supply of freshened, warm air and, of great importance, the gentle, draftless air motion eliminates pockets of stagnant air and strata of cold air and heated air. And, instead of the usual discrepancy of 10 to 20 degrees between ceiling and floor temperatures, there is a difference of but 1 or 2 degrees. In other words, every room and every part of a room is equally comfortable.

Still another sales point lies in the fact that the air-propeller unit gives the home owner year 'round returns on his heating plant investment, for it can be used to impart comfort on those hot, stifling days and nights of summer when there doesn't seem to be a "breath of air." By placing the propeller in operation, the air in the home is set in motion, gently carrying away body heat and excess moisture, imparting a degree of comfort similar to that in modern theaters and auditoriums. Its value to provide comfort to the sick and to young and old can hardly be overestimated. In fact, this unit as now perfected may be looked upon as one of the most important contributions of heating and ventilating science to air conditioning in the home during winter and summer.

The air propeller unit offers other advantages, among which are the easier heating of homes on cold, windy days, quicker heating, and elimination of the need for forced firing with resultant damage to heater, and the creation of unnecessary fire hazards.

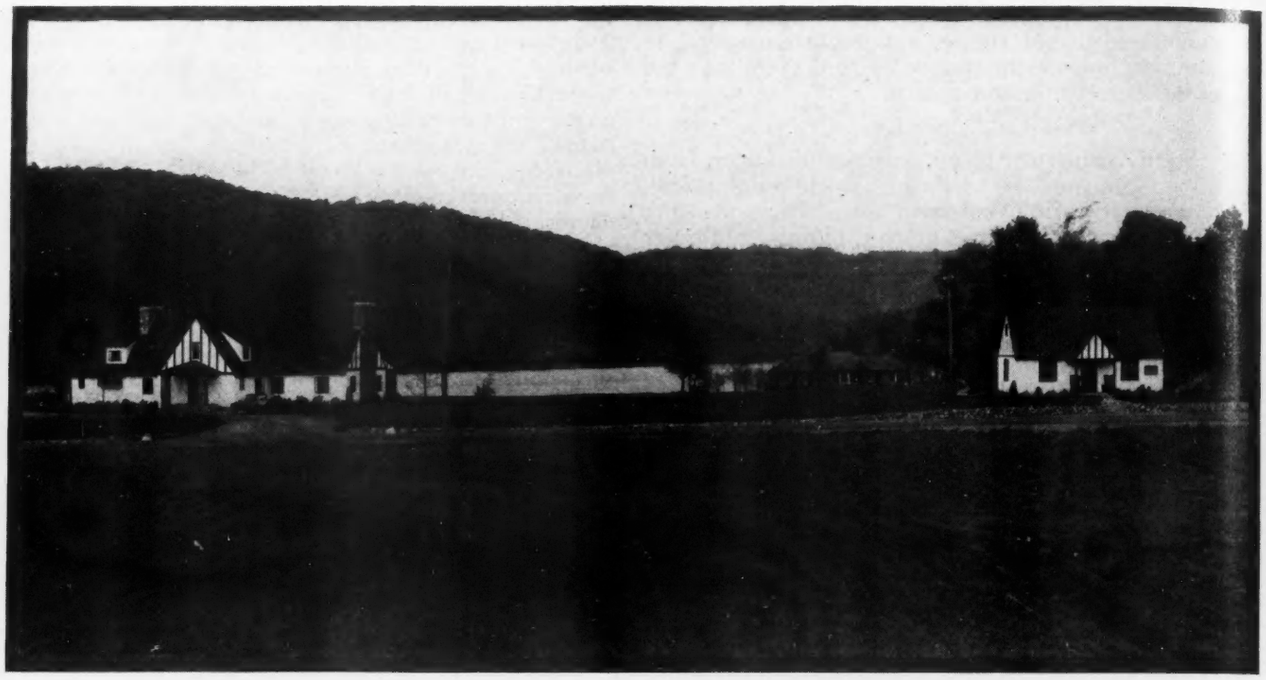
Below is home of E. T. Marsh, Geneva, Ill., heated and moistened by an electrically operated air-propeller unit warm-air heating system.



And of much importance to builders, it has made possible the satisfactory heating of large homes, homes in the $50,000 class and upwards, when equipped with these warm-air, air-conditioning systems.

Health and comfort are uppermost in the minds of all persons. Air-conditioning warm-air systems contribute a large share in supplying these wants. The fact that so many of the better class of homes are being equipped with them demonstrates that home buyers greatly appreciate the new functions of air-condition heating systems, for they satisfactorily fill what might be termed an unfilled want in domestic heating, namely a combination of adequate relative humidity, air circulation and uniform temperature.

The home that is minus an air-conditioning system cannot long be looked upon as modern.



Building Up A Lake

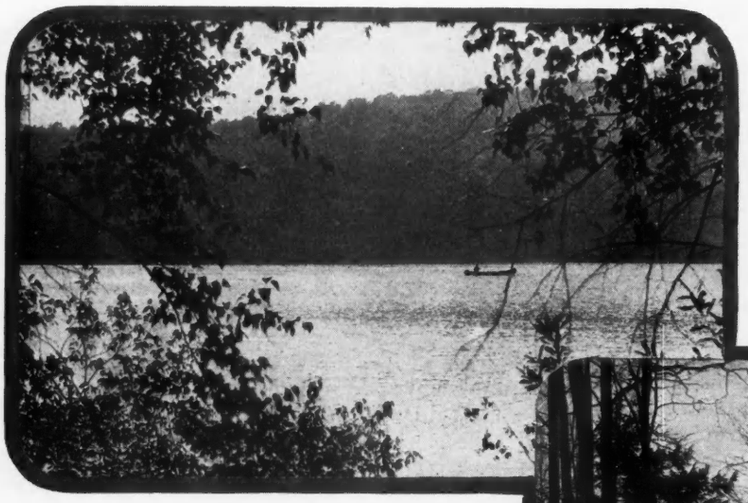
IS there any money for the builder in lake or club developments? This is a question which many AMERICAN BUILDER readers are asking because of the unprecedented increase in this type of project in some sections of the country.

Do the subdividers build the houses or do contractors put up most of the residences seen in these resorts? Do people live there all the year round? These are two other important questions that the active, wideawake builder wants answered, and in view of the increasing importance of the lake and club project in stimulating building construction it is essential that readers of the AMERICAN BUILDER who are out for new business make themselves acquainted with this new phase of community development.

The almost universal desire to get out into the country where invigorating sports may be enjoyed is the great force which is driving many American families away from the cities and into localities in the far suburbs where developers have built lakes, put down golf courses and installed improvements of the kind demanded by American standards of life.

The public response to well conceived projects of this kind has been instantaneous and overwhelming, particularly in sections like northern New Jersey where the contiguous presence of hills, streams, woods and large cities make conditions ideal for establishment of the lake and country club community.

Dozens of these projects have been established in this favored locality and among those most benefited have been the building

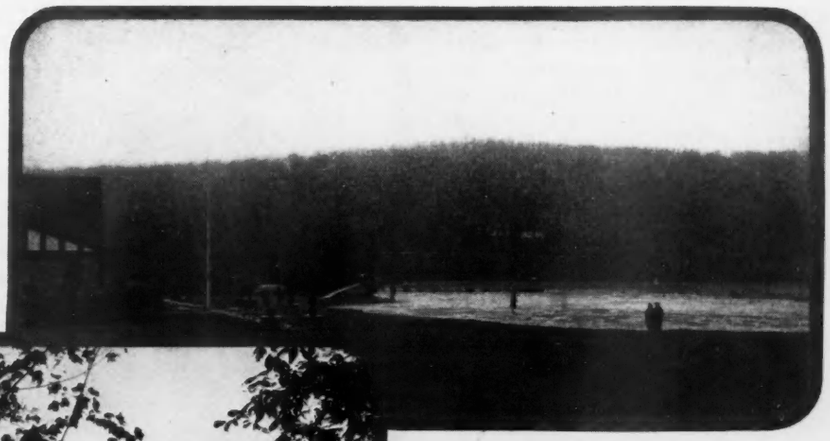


Lake Valhalla is a Natural Lake With a Depth of from Three to Forty Feet. Hills round about average a thousand feet in height.

contractors. Local builders in every case have seized the afforded opportunities and have either bought lots for speculative building or have secured good contracts for houses by active solicitation.

The impression that much of this building is of the summer cottage type is wrong. In many cases, expensive residences are being erected and one developer places the number of people buying for all year residence at about 75 per cent.

One of the highest class lake developments in the country is Lake Valhalla Estates, a project established in the heart of the north Jersey lake country, forty minutes from the large metropolis of Newark. Three builders get the cream of the Lake Valhalla business and these three contractors between them have been responsible for most of the homes built there in the space of one year. These have been done on contract and not on speculation. Cornelius Bush has built nine homes at Lake Valhalla; Frank J. Zwigard, seven homes; George Carlson, six homes. When the reader examines the accompanying photographs of a few Lake Valhalla homes, he will realize that this represents a nice piece of business for each of these men.



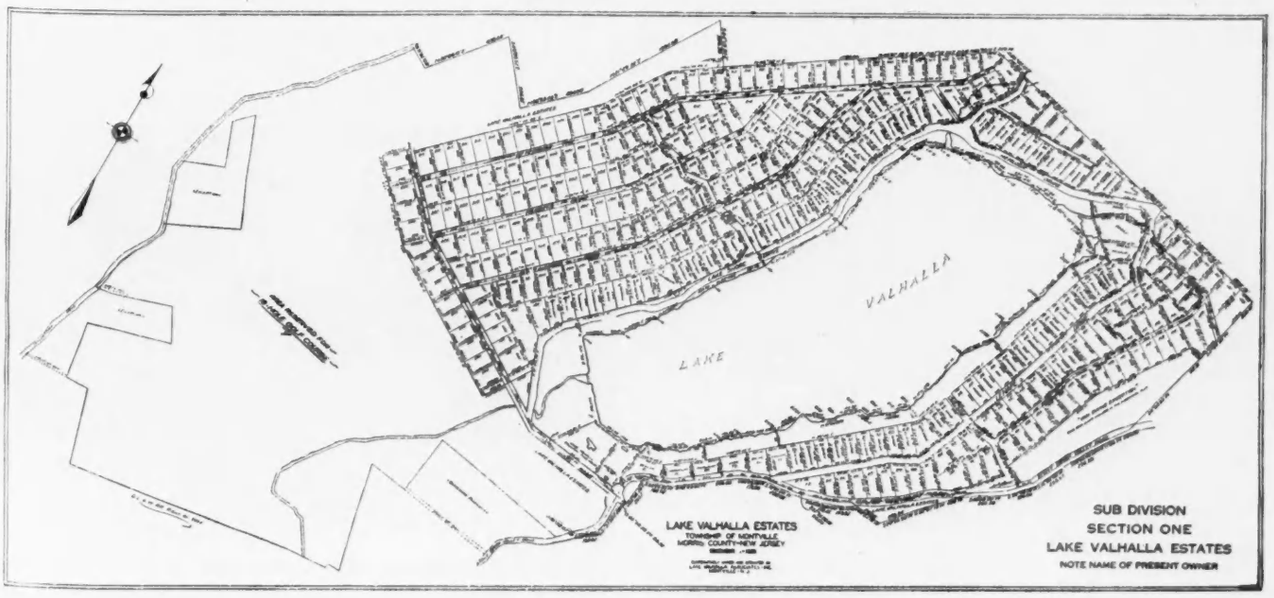
Summer or Winter Finds Lake Valhalla Full of Life and Sport. The Middle Atlantic Skating Association has scheduled its amateur skating championship here.

"We have limited our builders to the above mentioned three because we know them to be very efficient," says Martin C. Delaney, director of sales at Lake Valhalla and local manager. "We are particularly anxious that, in building, our members receive good value and good workmanship."

Here is where local builders are able to capitalize on their years of experience in erecting good residences. Being on the ground from the start of the project, they can follow its progress, pick out good lots for possible purchase later and become acquainted with the officials of the subdividing company. If the development is well organized and practically sure of success, the purchase of a few well-placed lots is desirable. In building speculative houses on such lots, it is essential that the builder study the types of buyers who are purchasing land there, and select a number of first-rate designs that will suit the topography as well as the needs and tastes of the prospects.

The basic idea which is making Lake Valhalla at Montville, New Jersey, so successful, is the "country estate" scheme of subdivision combined with a rigidly restricted club membership plan of admittance. No lots are made less than one-half acre in size and these are disposed of at prices which vary from $3,500 to $10,000.

The management has followed a conservative and



dignified policy and has done no advertising and has made no active solicitation. All prospects are turned into the office through members of the Lake Valhalla club, through which the type of resident in the community is controlled.

"We are very particular as to the type of membership in Lake Valhalla," Mr. Delaney emphasizes. "When a prospect is reported to us, we have a sales representative call. He reports back to me the character and home surroundings of the prospect. An application is signed, submitted to our Membership Committee and then passed on to the Board of Governors for a vote."

There are four classes of membership at Lake Valhalla: Founder Memberships, Life Memberships, Affiliated Memberships, and Associate Memberships.

Martin C. Delaney

This Fine Home is Typical of Residential Construction at Lake Valhalla. The floor plan indicates its spaciousness.

Founder memberships are limited to 31 in number and are priced at $5,000, which sum is represented by the issue of 50 shares par value of the capital stock of the Club.

Life memberships are limited to 100 in number and may be acquired only through election to membership in the Club by vote of the Board of Directors and the acquisition of 10 shares of the capital stock of the Club. Dues are $100 per year.

Affiliated memberships are limited to 100 in number and consist of persons who are members of the Country Club whose applications for membership in the Golf Club have been approved by vote of the Board of Directors of the Golf Club. They do not have the right to vote at stockholder's meetings or participate in the business management. Dues are $125 per year.

Associated memberships are limited to 150 in number and consist of such persons as may be elected to Associate membership by the Board of Directors. Dues are $150 per year.

The initiation fee at Lake Valhalla is $600. Approximately 250 memberships in the club have already been sold. The project is said to be cooperative in this way; forty of the members of the country club are stockholders in the Lake Valhalla Associates, which is the land company.

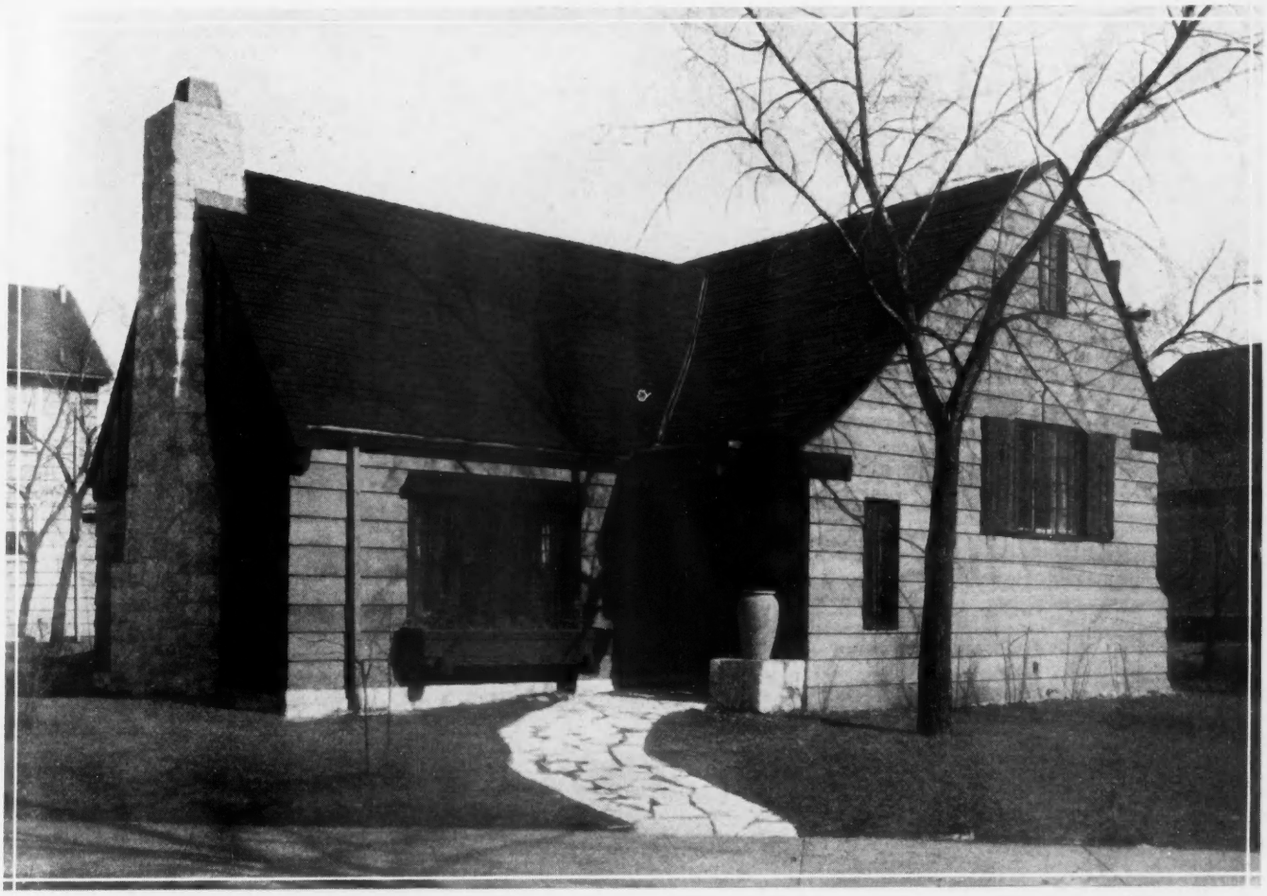
This development started August, 1928. About $100,000 was spent in surveying, cutting roads, building bridges, etc. Comprised in the community are 754 acres of land, including 164 acres for the new eighteen hole golf course, which was opened for sale in December, 1928. To date land sales have totaled 195.

Homes vary in cost from $15,000 to $45,000. Every home has been built for all year round residence.

Mr. Delaney's own enthusiastic description of Lake Valhalla is indicative of the motives and ideas behind this successful project. He says:

"We have planned an ideal community—a distinguished home colony whose every member will be congenial and acceptable to every other member. We have, for example, decided to permit only one dwelling on each half acre of land because we do not want our 'breathing space' or outlook encroached upon.

"Only certain types of homes can be built because we feel that an ideal community must be attractive in appearance as well as in spirit. To this end we have appointed a supervising architect to go over all building plans and sketches."



ZOOK AND McCAUGHEY, *Architects*, Chicago

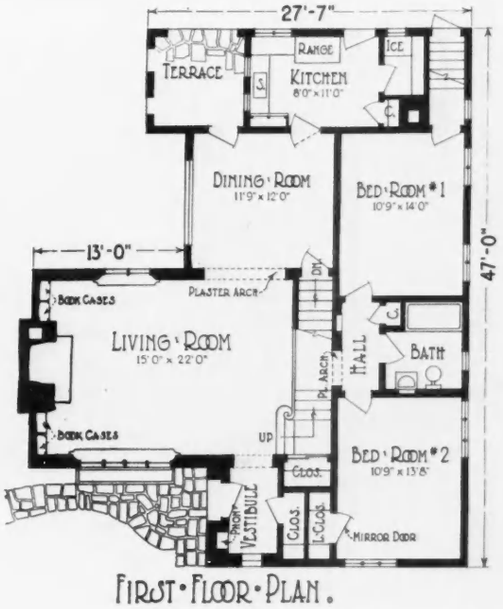
INDIVIDUALITY IN THE BUNGALOW

This Charming Little Home Possesses That Subtle Quality of Individuality So Rare in Small Homes and So Satisfying to the Owner.

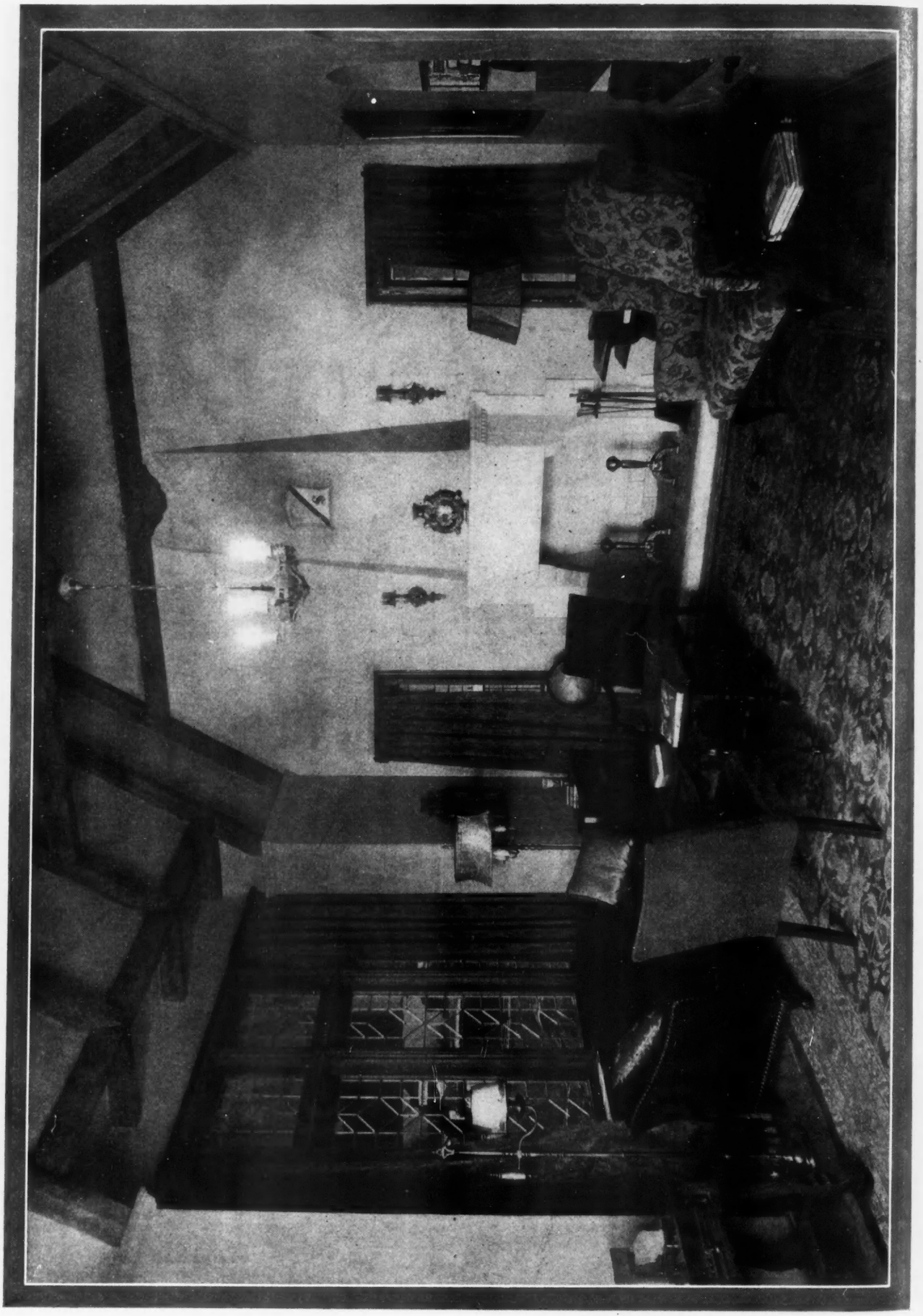
Service to Home Builders

Throughout this magazine we present many building designs. A variety of home plans are included, selected from many parts of the United States and designed by various architects of standing.

The "American Builder" will gladly serve its readers by bringing them together with these architects if any further information or plans are desired for any of these designs. Address the American Builder Home Planning Service, 105 West Adams Street, Chicago, or 30 Church Street, New York City.



FIRST FLOOR PLAN.



Studio Living Room, with Exposed Rafters and Collar Beams, Home on Opposite Page, by R. W. Miller, Architect.

R. W. MILLER, *Architect*, Indianapolis, Ind.

Studio Living Room, with Exposed Rafters and Collar Beams. Home on Opposite Page, by R. W. Miller, Architect.

AN ARCHITECT'S IDEAL HOME

Modernized English Architecture Used in a Six-Room Bungalow Which May Be Converted into an Eight-Room House

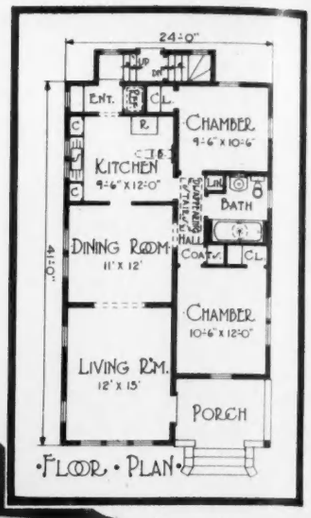
WHEN R. W. Miller, architect, of Indianapolis, Ind., was asked to design a model home for the 1929 Indianapolis Home Show, he undertook to bring into actuality the house he had dreamed about for years as a home for himself. Being, as he expresses it, "an average" man, it was a home suitable for the average family. It established, however, a standard above the average for Mr. Miller put into it all the skill of his many years of experience as a designer of homes.

The style is described as "modernized English" architecture. The exterior is done in common brick, with stone trim about the porch arches and entrance and a colored terra cotta insert above the arches. The front and side gables are of half-timbered stucco while the rear gables are of irregular shingles.

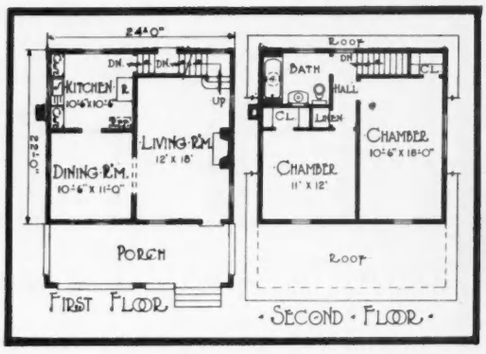
The arrangement of the rooms is something quite unusual but should appeal to people equally as much as the attractive exterior. And it did appeal for within a few weeks after the show eight duplicates of this house were under construction in Indianapolis.

The equipment throughout maintains a high standard but because of excellent economy of design this house was built to sell for $11,000, exclusive of the lot, a price which places it easily within the reach of the average home owner.

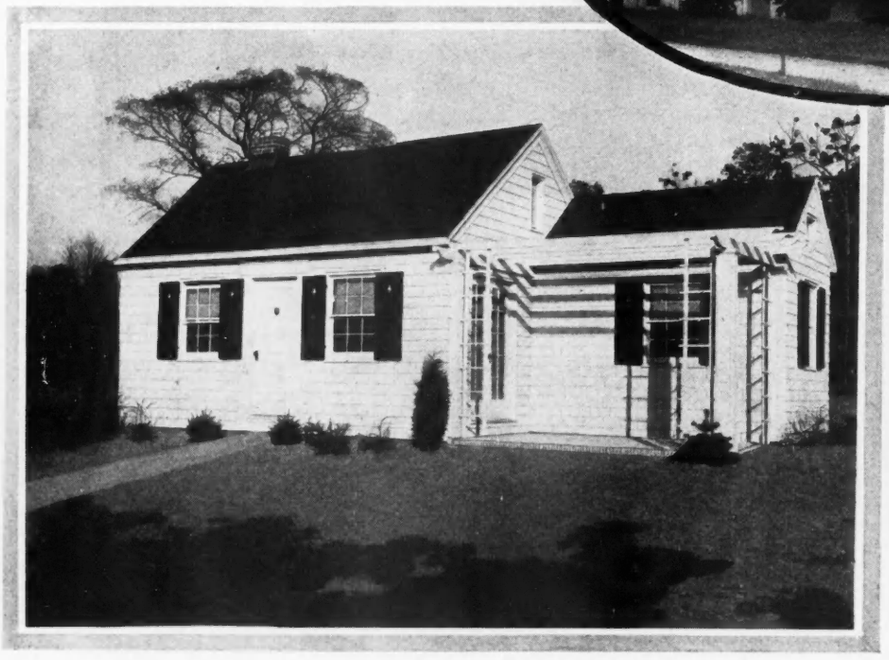
FIRST · FLOOR · PLAN

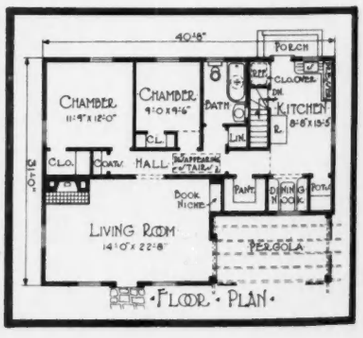


An Attractive Cottage for the Narrow Lot.



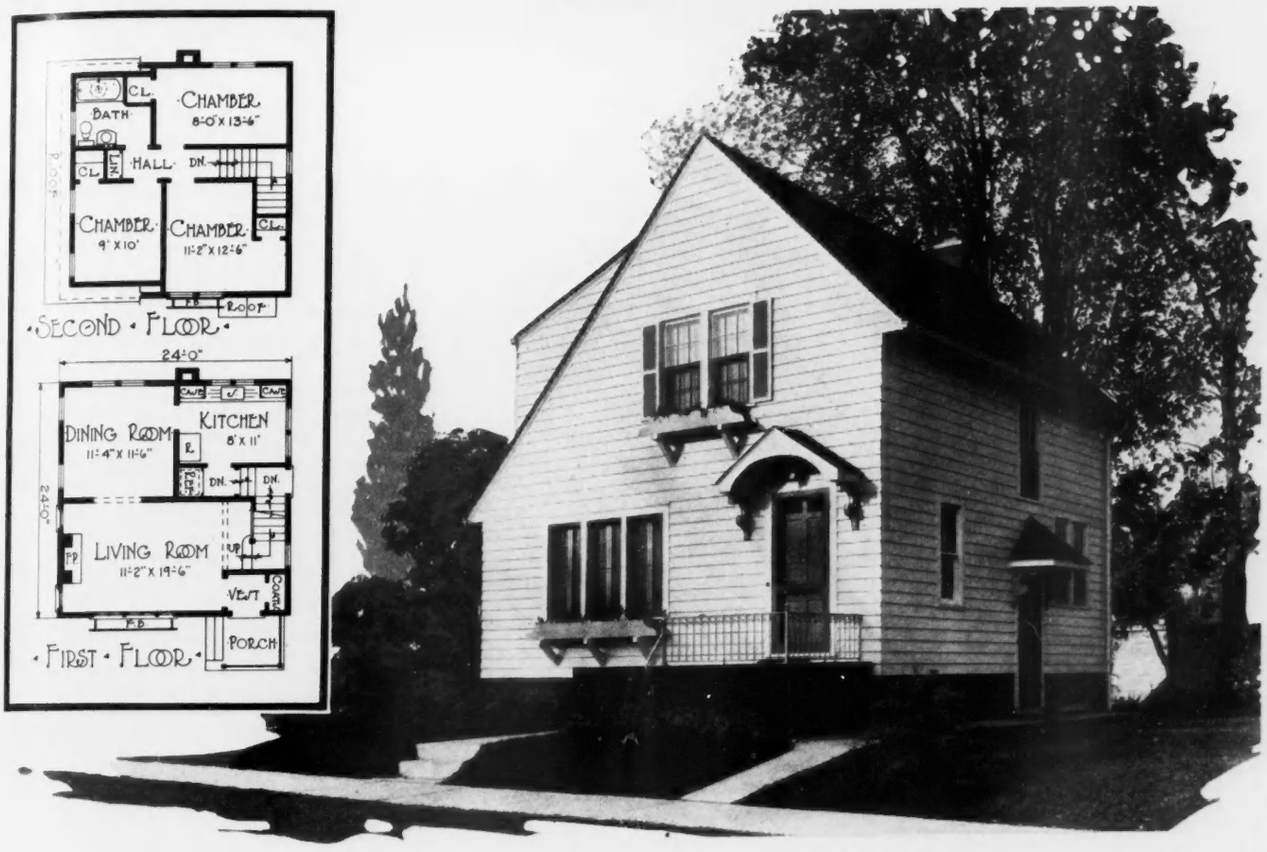
Another Narrow Lot Design Affording Five Rooms and Bath.



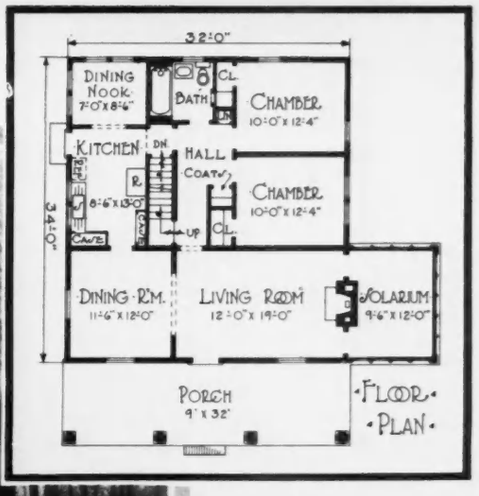


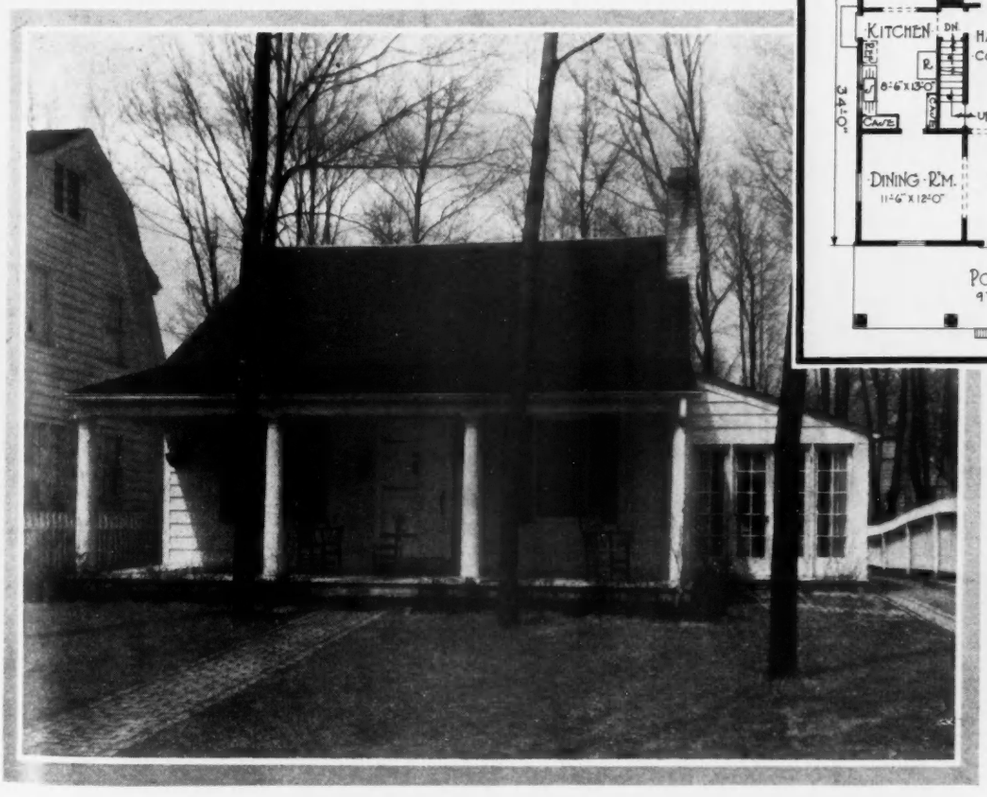
Simple, Unpretentious and Free of Meaningless Decoration This Small Home Has a Charm That Is All Its Own.

SMALL HOMES PICTORIAL



Here Is a Six-Room, Two-Story Home Which Can Be Built on the Ordinary 30-foot Lot.





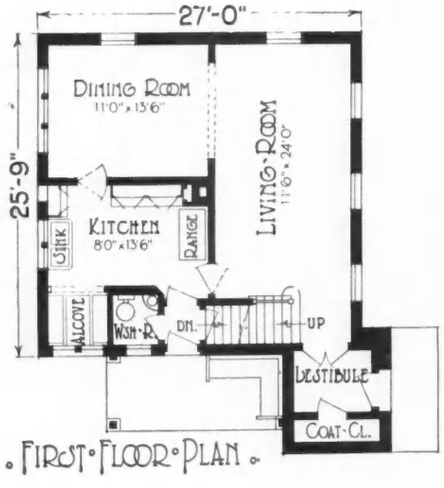
Delightfully Cozy, Remarkably Convenient and with a Surprising Degree of Roominess, This Little Home Should Appeal to the Really Home Loving Family.

SMALL HOMES PICTORIAL

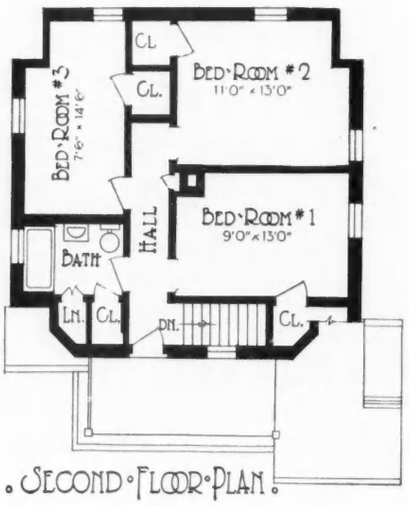
BETTER HOMES IN AMERICA DEMONSTRATION HOUSE, Kohler, Wis.

FOR A SUBURBAN SETTING

Set in the Midst of Trees and Shrubbery, This Design Is Most Effective and an Excellent Example of Adapting the House to Its Site.



FIRST FLOOR PLAN

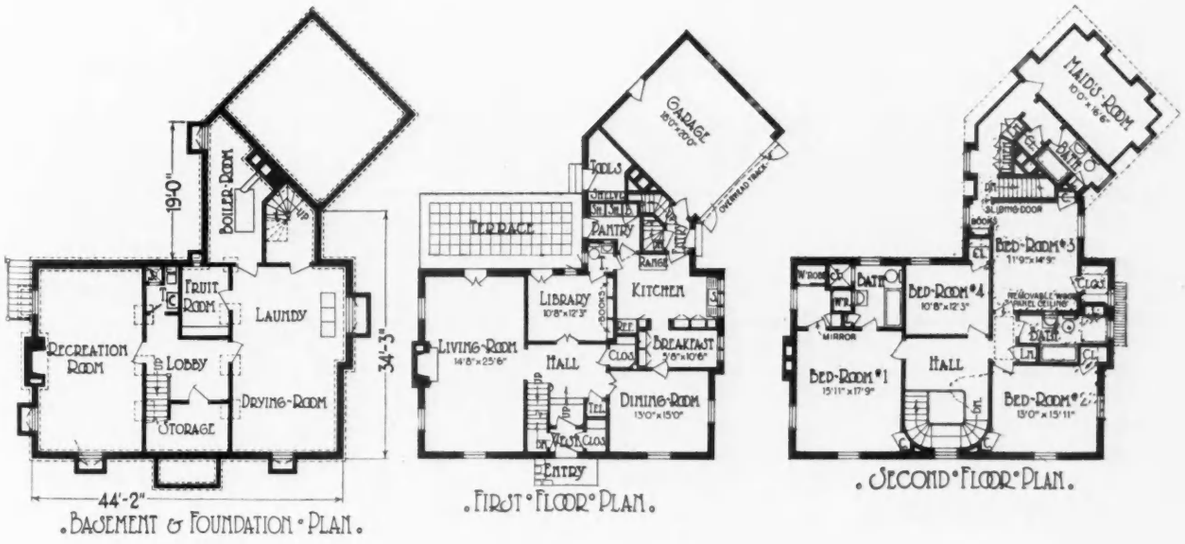


SECOND FLOOR PLAN

The Residence of E. R. Soukup, Esq., Wheaton, Ill., *Barg & Holmes, Builders.* WILLARD C. WALKER, *Architect,* Chicago

A FINE FRENCH MANSARD

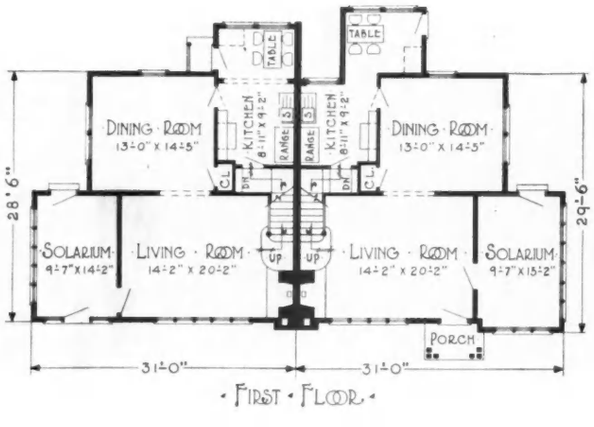
The Mansard Roof Permits a Third Floor with Full Head Room, Reached by a Disappearing Stair and Lighted by an Overhead Skylight



W. PERCIVAL JOHNSON, *Architect and Builder*, Gladstone Manor, Pa.

HOMES FOR TWO FAMILIES

Here Is Proof That a Two Family House May Make An Appearance Equal to That of the Finest Single Residence



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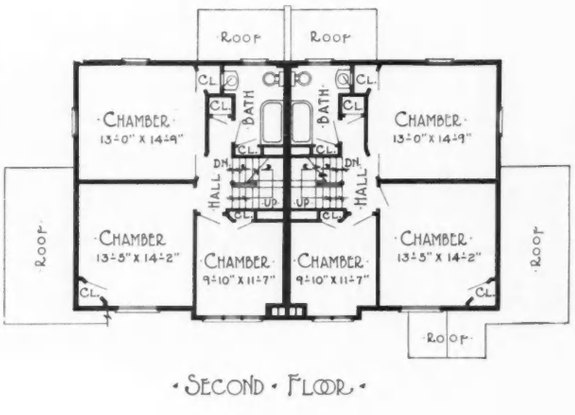
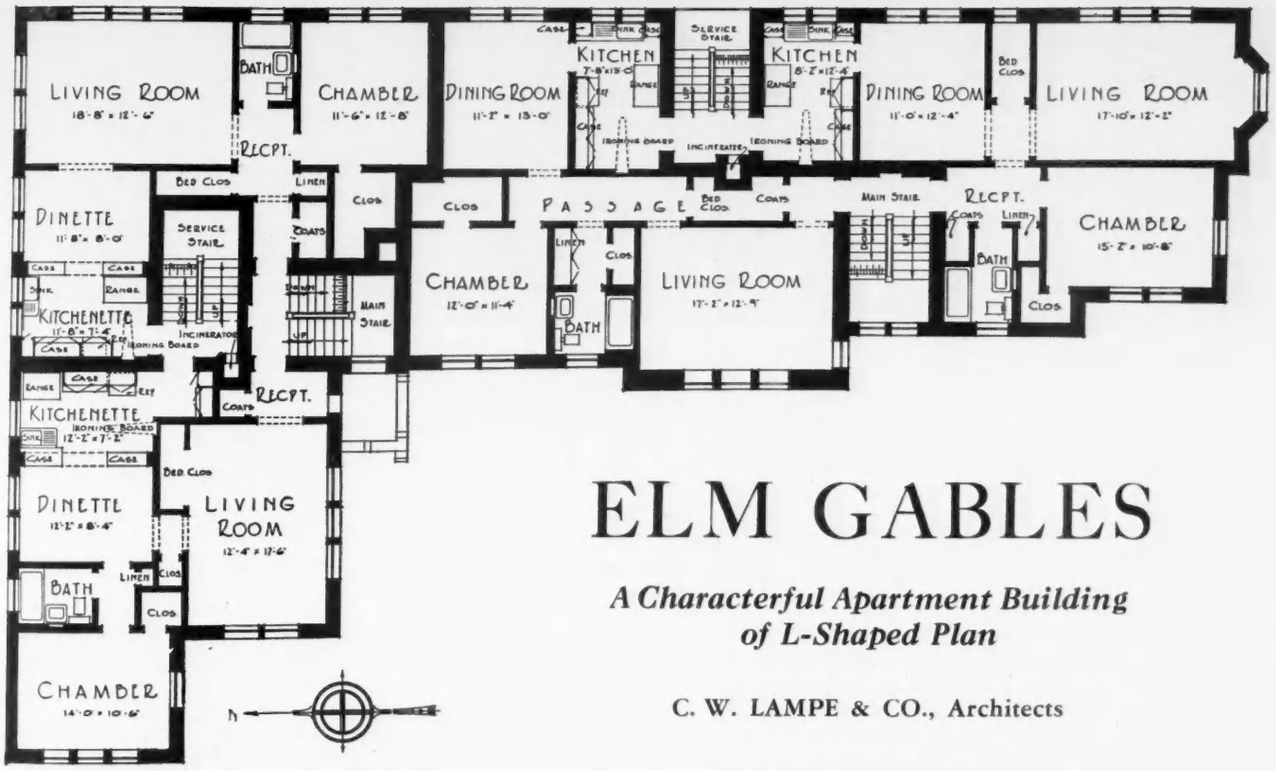


SECOND FLOOR

TYPICAL FLOOR PLAN OF ELM GABLES



ELM GABLES

A Characterful Apartment Building of L-Shaped Plan

C. W. LAMPE & CO., Architects

A REACTION from the common use of light courts is noticeable in recent apartment house designs. In this new Niles Center (Chicago) apartment building, C. W. Lampe & Company, architects, have provided a very attractive building of an L-shaped design, taking full advantage of the fine, landscaped grounds for outlook.

The design shows a Tudor inspiration in its chimney pots and half-timbered gables. It was built for the Metropolitan District Realty Trust—a subsidiary of the Chicago Rapid Transit Lines, which are developing Niles Center.

There is an apartment in the English basement and four on each of the floors above. Due to the L-shape of the building, a number of these apartments secure exposures on three sides, providing an unusual degree of outlook, light and ventilation. A notable feature of the building is the great number of outside windows, as evident in the plan and perspective.

In seven of the apartments in this building, rolling beds have been provided, with a large bed closet off each living room, in addition to the regular sleeping accommodations. The other six suites of apartments are of three rooms and bath, with a dinette-kitchenette arrangement. All kitchens and kitchenettes have tiled wainscots and the bath rooms are attractively tiled, with colored borders. The kitchens have linoleum floor coverings, electric refrigerators, gas ranges, chimney-fed incinerators, automatic ventilating fans, folding ironing boards and built-in cases.

TODD AND BROWN, Inc., *Builders;* ANDREW J. THOMAS, *Architect,* New York City

VAN TASSEL GARDEN HOMES

Three to Six Room Apartments in Brick Quadrangle Building, of Modified Spanish Architecture, for Co-operative Ownership

THE Van Tassel Apartments, in North Tarrytown, N. Y., is one of the latest co-operative projects which is attracting attention, not only because of its interesting tenant ownership plan but also because of the type of homes which it provides. The building itself is of brick, in a modified Spanish style, and was designed by Andrew J. Thomas, Architect, of New York City. It is built on a plot 520 feet by 226 feet.

The building, however, occupies less than half the area of this plot. Built along all four sides of the rectangle, the center portion is left open, providing a private park or garden 400 feet long and 150 feet wide. The result is a suburban atmosphere for the 241 apartment homes and an abundance of light and air.

There are entrances from all four streets into the inner garden, and from them bluestone paths lead to the 24 building entrances. The building is of highly fireproof construction and each apartment is made soundproof.

The apartments offer a wider variety as to size, being three, three and one-half, four, five and six rooms, but the same quality is maintained throughout the building. The rooms are all of ample size and large closets are provided. The kitchens are fully equipped, including enameled ranges and mechanical refrigerators. Bathrooms are tiled with inset fixtures. Brass plumbing is used for all hot water leads and the plumbing fixtures are chromium nickel plated.

An auditorium is provided in the basement, which is available to the tenants for meetings, receptions, dances and other entertainment. There are also large storage rooms with provision for baby carriages and children's sleds and velocipedes.

On the opposite side of one adjoining street is a large, modern, fireproof garage for the accommodation of the tenants, and adjoining it a fully equipped children's playground with swings, slides, sand boxes and other devices to keep the children occupied under competent leadership.

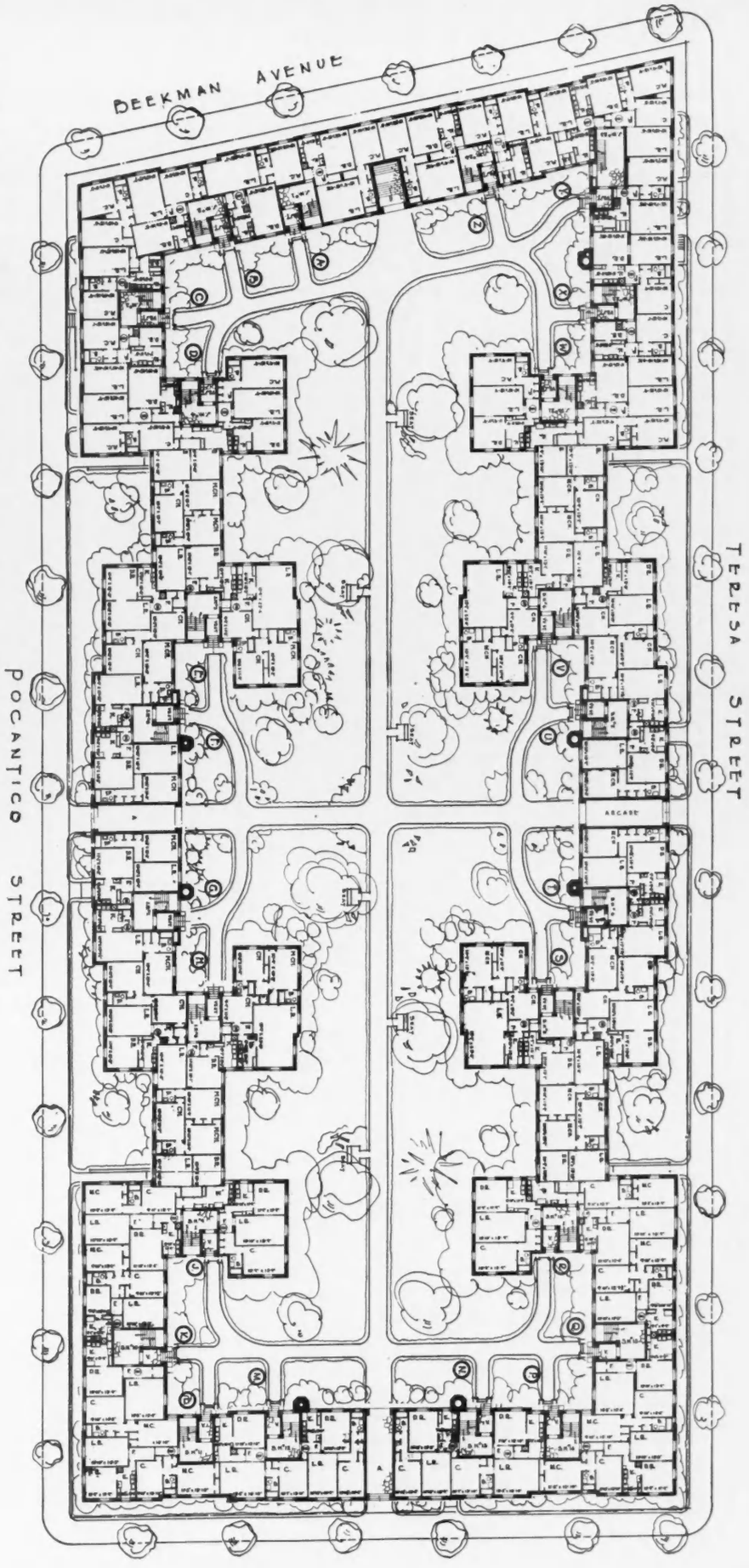
All this has been provided for co-operative ownership, on a rental and stock purchase basis, by John D. Rocke-

feller, Jr., who has built the Van Tassel Apartments, not as a profit making project, but to provide suitable housing at moderate cost. The rental and purchase plan is an interesting one.

The rental of the individual apartments varies from $60.00 to $125.00, according to the size of the apartment. Each tenant is required to buy a certain minimum number of shares of stock, also in proportion to the size of his apartment, ranging from 10 to 15 shares. Each tenant is encouraged to purchase the maximum number of shares, ranging from 54 to 110. These shares are sold at $20.00 per share plus interest at 6 per cent from April 1, 1930, less any dividends which have been paid thereon since the first of the year.

Additional shares will be offered to the tenants from time to time until the total authorized 40,000 shares are held by the tenants, when the full ownership and control will be in the hands of the tenant stockholders. In the meantime Mr. Rockefeller will retain control and his representatives will manage the property without any management costs being charged against the corporation.

Mr. Rockefeller has also agreed that, in case any tenant's lease is terminated, for any reason, within 15 years—that is, until January 1, 1945—he will buy the tenant's stock at the price paid for it. This assures every tenant a ready market for his equity in case it becomes necessary for him to dispose of it.



Typical Floor Plan of the Van Tassel Apartments. Andrew J. Thomas, Architect

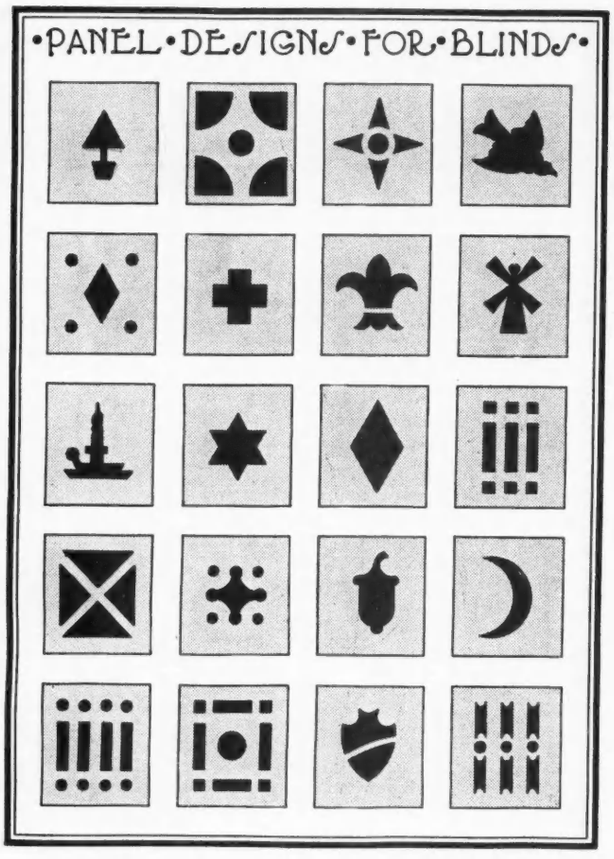
SHUTTERS ARE IN STYLE

Particularly for the Colonial Style House Shutters and Blinds Are a Type of Ornament Approved by the Architectural Profession

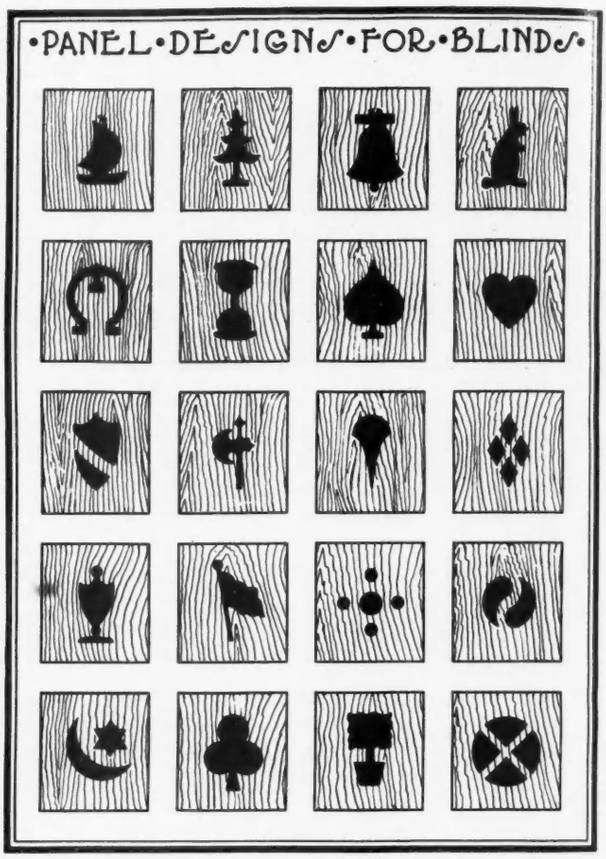
THE growing popularity of New England and Dutch Colonial architecture for homes has brought about a revival of the old fashioned shutter or wooden blind, and though, as a rule, it serves merely as an ornament, it is accepted by architects as a justified bit of trimming for homes in the Colonial manner. And so it is that builders are taking an interest in shutter designs.

Modern standards require that any style adopted shall be carried out consistently, and therefore the shutter with movable louvers, so familiar in the so-called Victorian period, has not been accepted for the modern homes. Instead the demand is for solid panels with a small decorative design cut out of the panel. This style harks back to the original Colonial shutters which were all of this type.

Now a wooden panel with a small opening cut through it is a simple thing, but people also demand variety along with consistent style. And so, to achieve individuality, the builder may be hard put to it to work out variations of paneling and variations of cut-out design. With this problem in mind the designs illustrated on these pages have been prepared by the AMERICAN BUILDER architectural staff to suggest ideas which apply to any and all requirements.



Infinite Variety Is Possible in the Cut-Out Designs Used in the Panels of Wooden Blinds or Shutters and These Few Suggestions Will Bring to Mind Many Possibilities.



Simplicity Should Always Be Kept in Mind in Designs for Window Blind Cut-Outs, Not Only to Save Time and Expense, But Also Because Too Elaborate a Design Is Easily Broken.

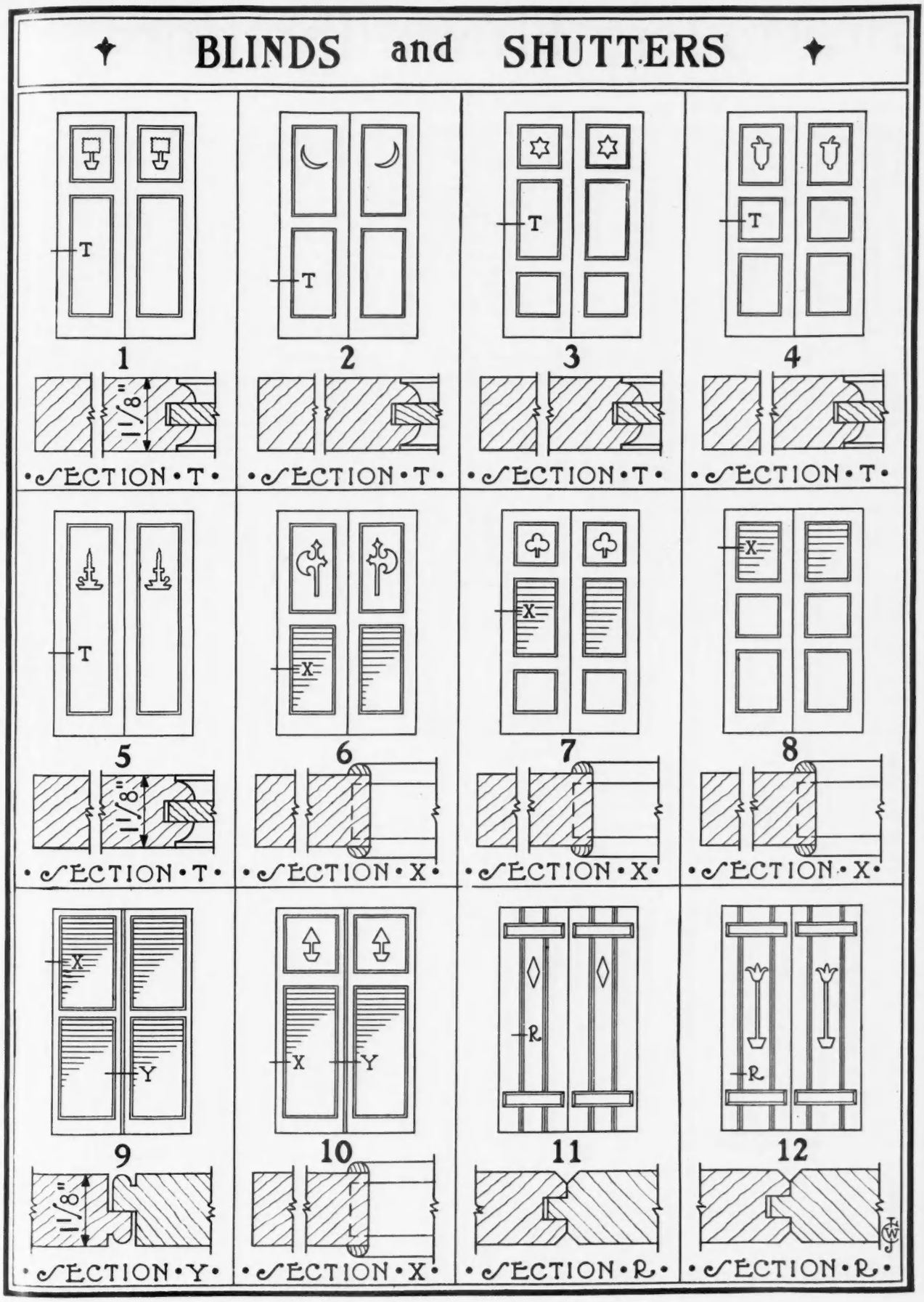
With these suggestions to work from the ingenious designer can go ahead and work out any number of simple but novel and attractive designs. They must be simple, however, since too elaborate a design is likely to get broken, which, of course, would spoil the effect.

In addition to shuters and blinds there are numerous other small, ornamental details which are much in demand. Each client wants something distinctive and artistic and the builder may find himself running short of ideas just at the time he needs a really good one.

With this in mind a number of designs have been produced, not only of shutters but also for flower box and similar ornamental work. From month to month they will be published in the AMERICAN BUILDER.

A file of these designs properly organized for reference is a valuable asset.

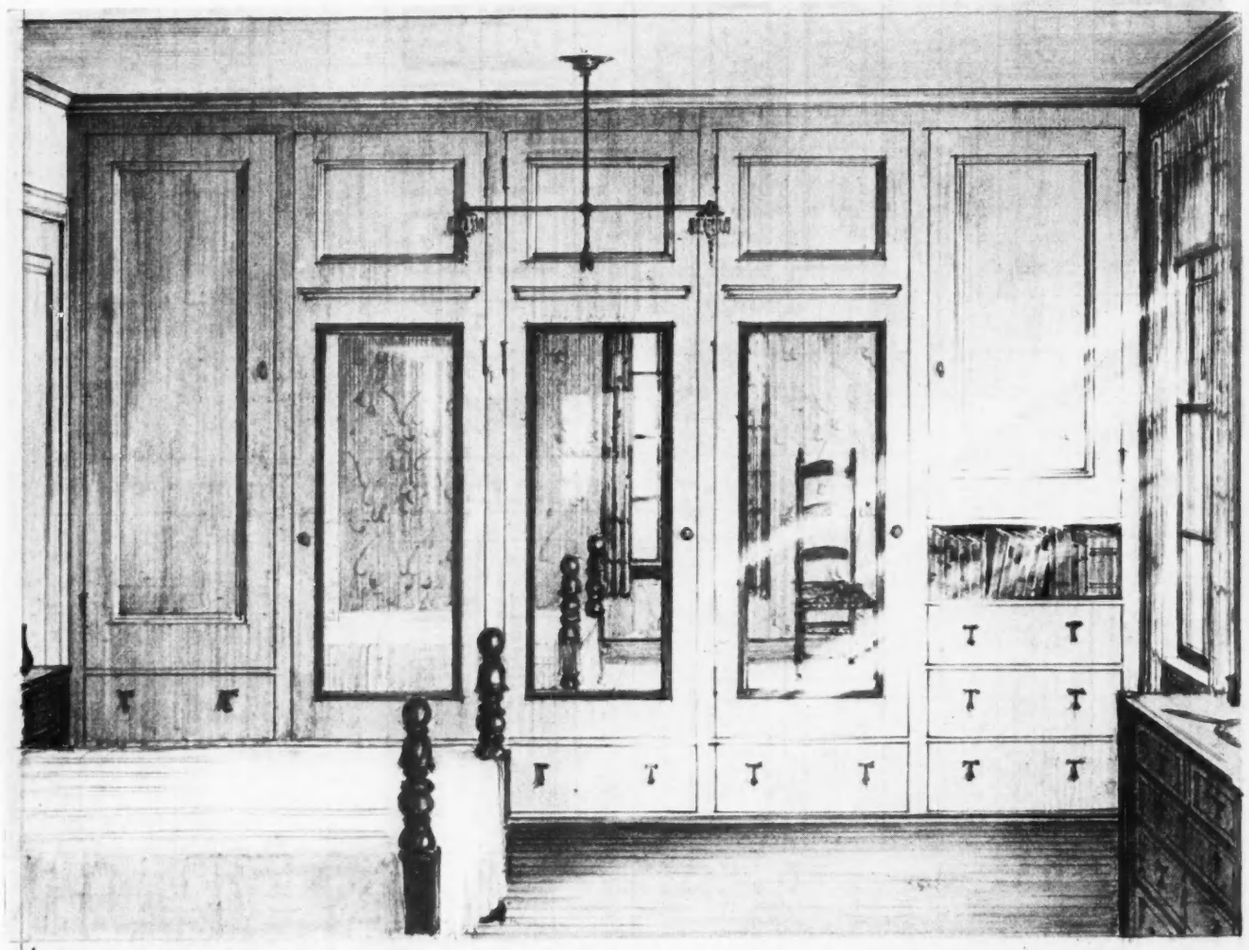
NEXT MONTH ornamental flower boxes will be detailed—Ten smart designs!



Good Design and Approved Construction for Ornamental Shutters; Drawings by American Builder Architectural Staff.

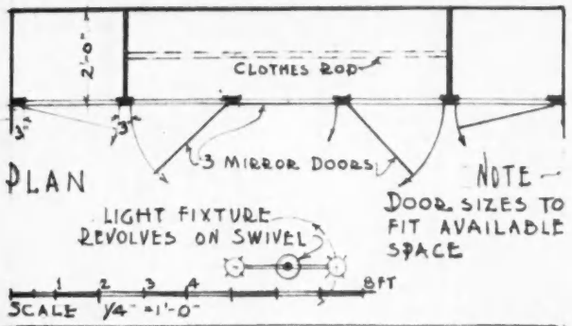
Modern Home Interiors

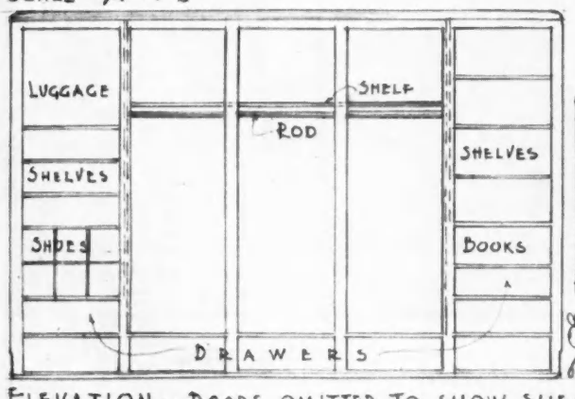
Some Clever Suggestions for Improvements



A WARDROBE COMMODIOUS AND DECORATIVE, AND WITH UNUSUAL CONVENIENCES.

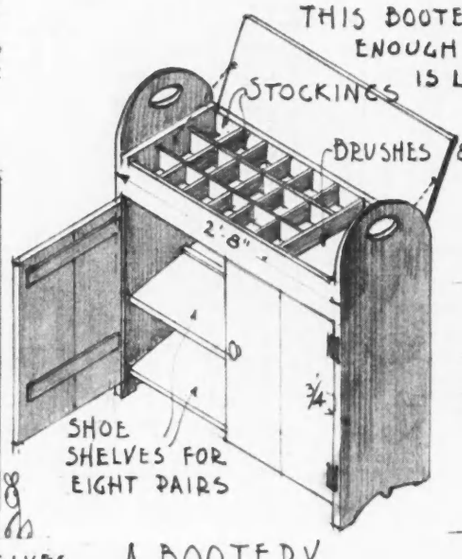
THE MIRROR DOORS ARE HUNG SO THAT YOU MAY HAVE YOUR REFLECTION FROM ANY ANGLE.



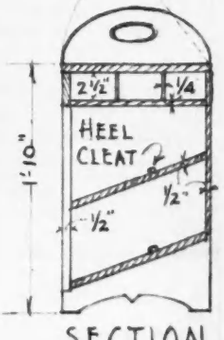


ELEVATION — DOORS OMITTED TO SHOW SHELVES

THIS BOOTERY IS LOW ENOUGH FOR A SEAT. IS LIGHT & STRONG



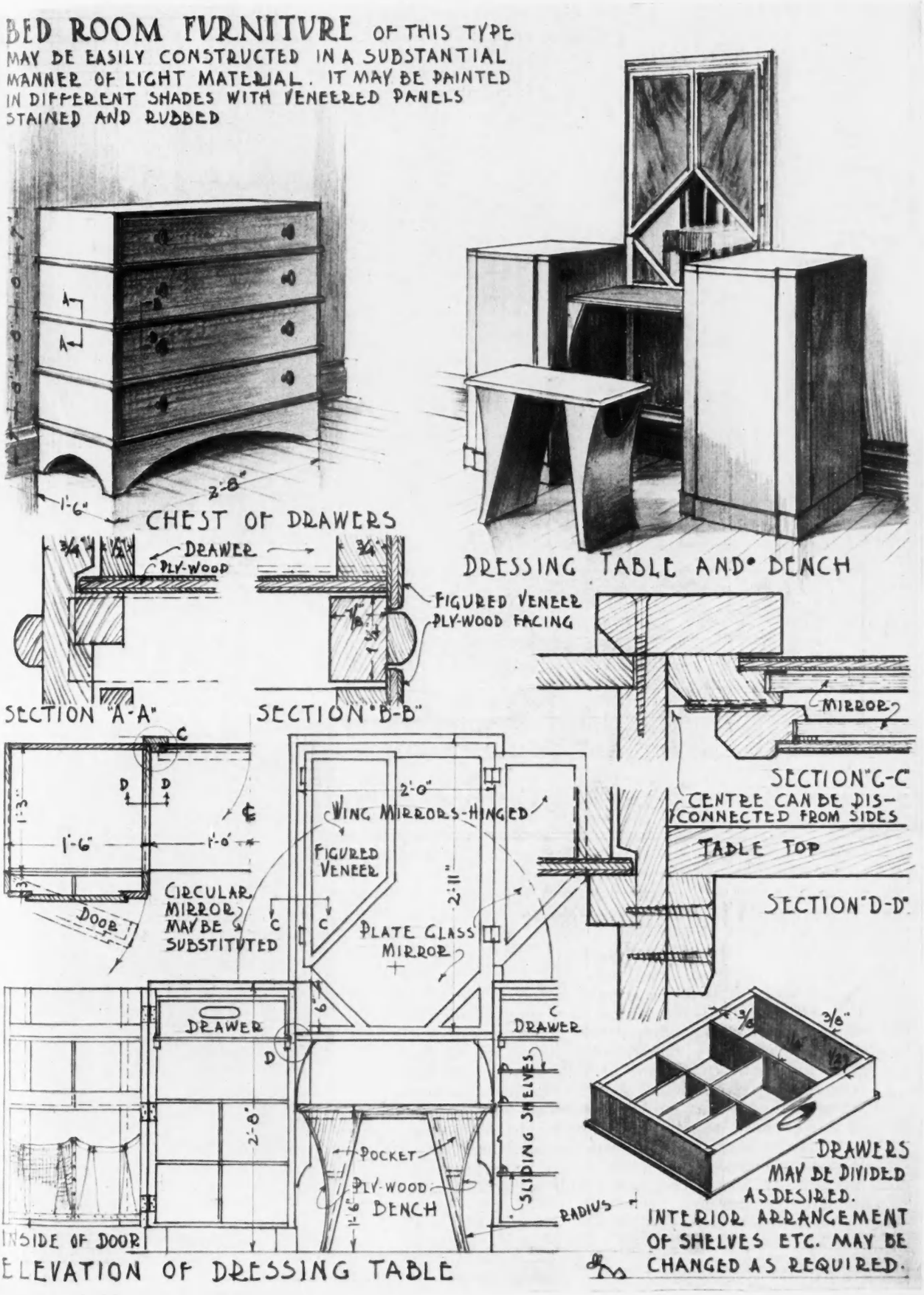
A BOOTERY

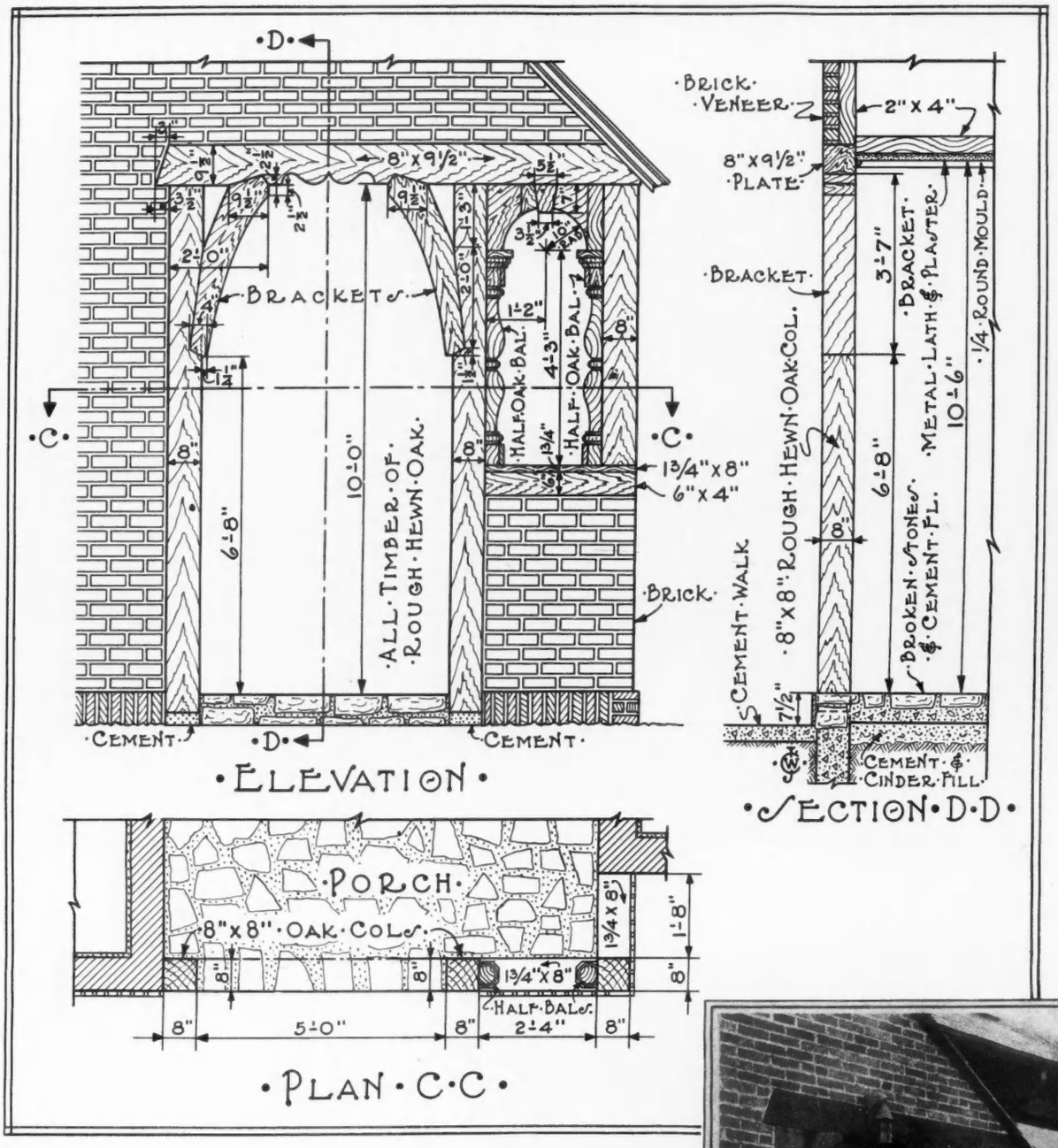


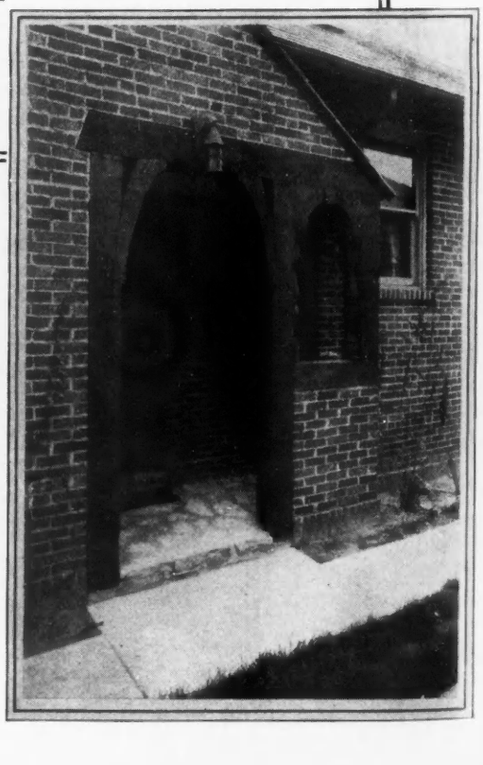
SECTION.

—Details of Bedroom Furniture

Prepared by Eldred Mowery and Richard G. Kimbell
of The National Lumber Manufacturers' Association







That Important Entry Detail

NO detail of the home is more important than the entrance. It is the natural focal point of interest in the front elevation and may make or mar any design. At the right there is reproduced a photograph of the entry to an attractive home of English style. It has been selected as one which should offer an interesting study to the designer of homes. Measured drawings of this entrance have been prepared by the AMERICAN BUILDER Architectural Staff and are reproduced here for the convenience of our readers. The series of which this is a part should be a useful addition to the architectural reference file.

THE AMERICAN BUILDER ALL-FEATURE HOME

Complete Working Plans

A Beautiful Stone, Brick and Stucco Home Presented in One-Eighth-Inch Scale Drawings

AMERICAN domestic architecture at its best is exemplified in the residence of A. C. Battersby, located in New Rochelle, N. Y. It was designed by Philip Resnyk, Architect, New York City, and built by the Mahaffey Construction Company, builders and developers, of New Rochelle. The design is worked out in a harmonious combination of stone, brick and stucco.

The windows throughout this home are of the casement type, very appropriate to the architectural style. All leaders and gutters are of copper assuring absolute permanence of satisfactory service. The interior is equipped throughout with nationally advertised products which have established a reputation for quality. Even the floors are of 7/8-inch oak, while the roof is covered with genuine slate.

The plans, reproduced on the pages following this, are especially interesting as an example of the kind of planning which takes into consideration the utmost in convenience and comfort for the owner. Even though this would be classed as a moderate size home, nothing has been overlooked which might add to its desirability and hence it is possessed of those qualities which assure a sustained value throughout the years.

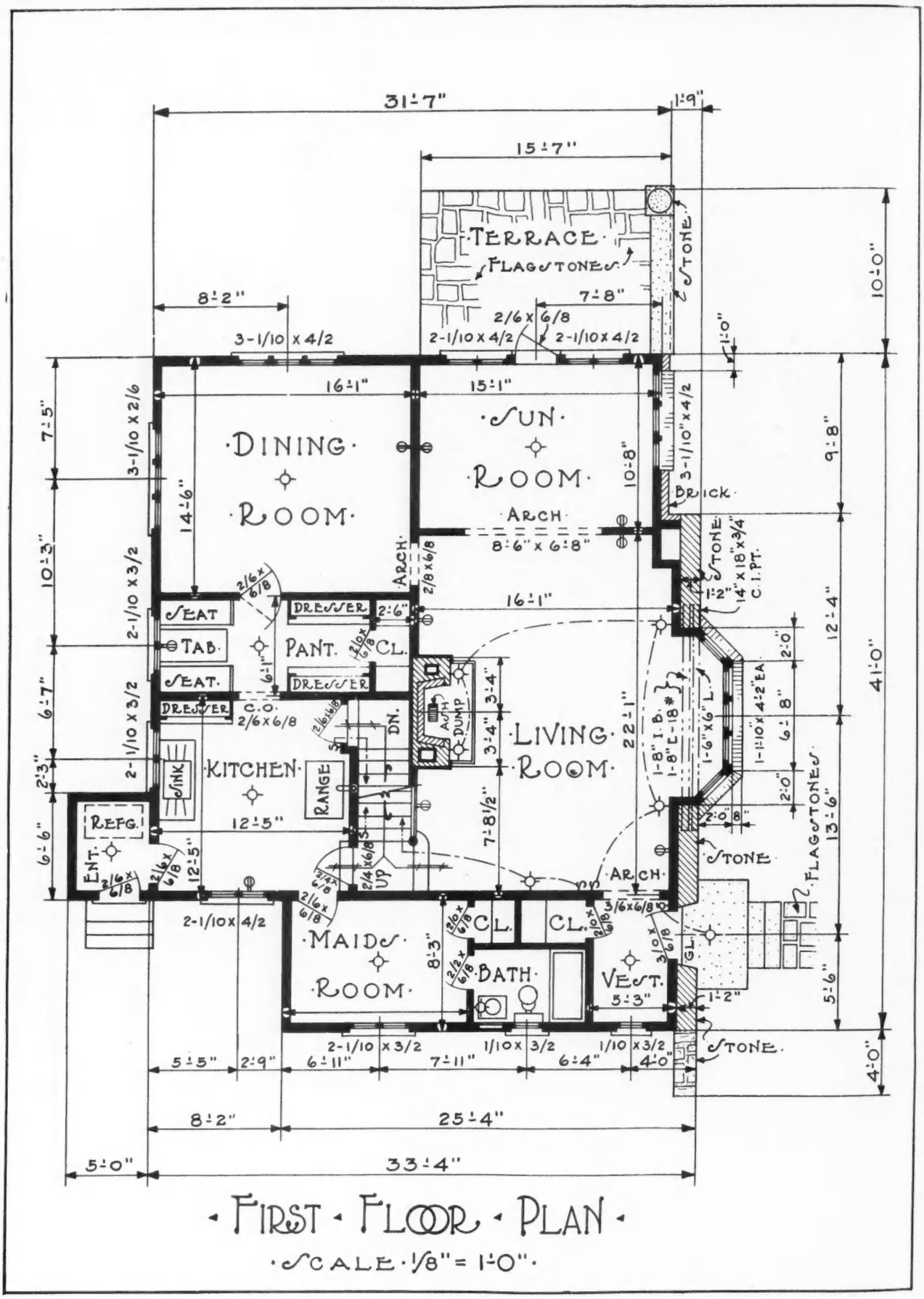
In studying the plans one naturally turns to the first floor. Here should be noted the relation of kitchen, breakfast nook and pantry, the dining room and the adjoining maid's room. Also the arrangement of stairways is interesting as is also the separation of entrance from living room by means of a vestibule, a point too often neglected in the modern effort to reduce space to the minimum.

On the second floor, the closets should be noted, including the concealed stairway to the attic space placed in the closet of one of the rear bedrooms. Then, too, there is cross ventilation in every bedroom, something which should be a universal bedroom feature.

Nor is the basement to be overlooked. The garage is built into the house occupying a portion of the basement space. This is good economy and a great convenience. The balance of the basement space is utilized for the essential work equipment of the home.

NEXT MONTH

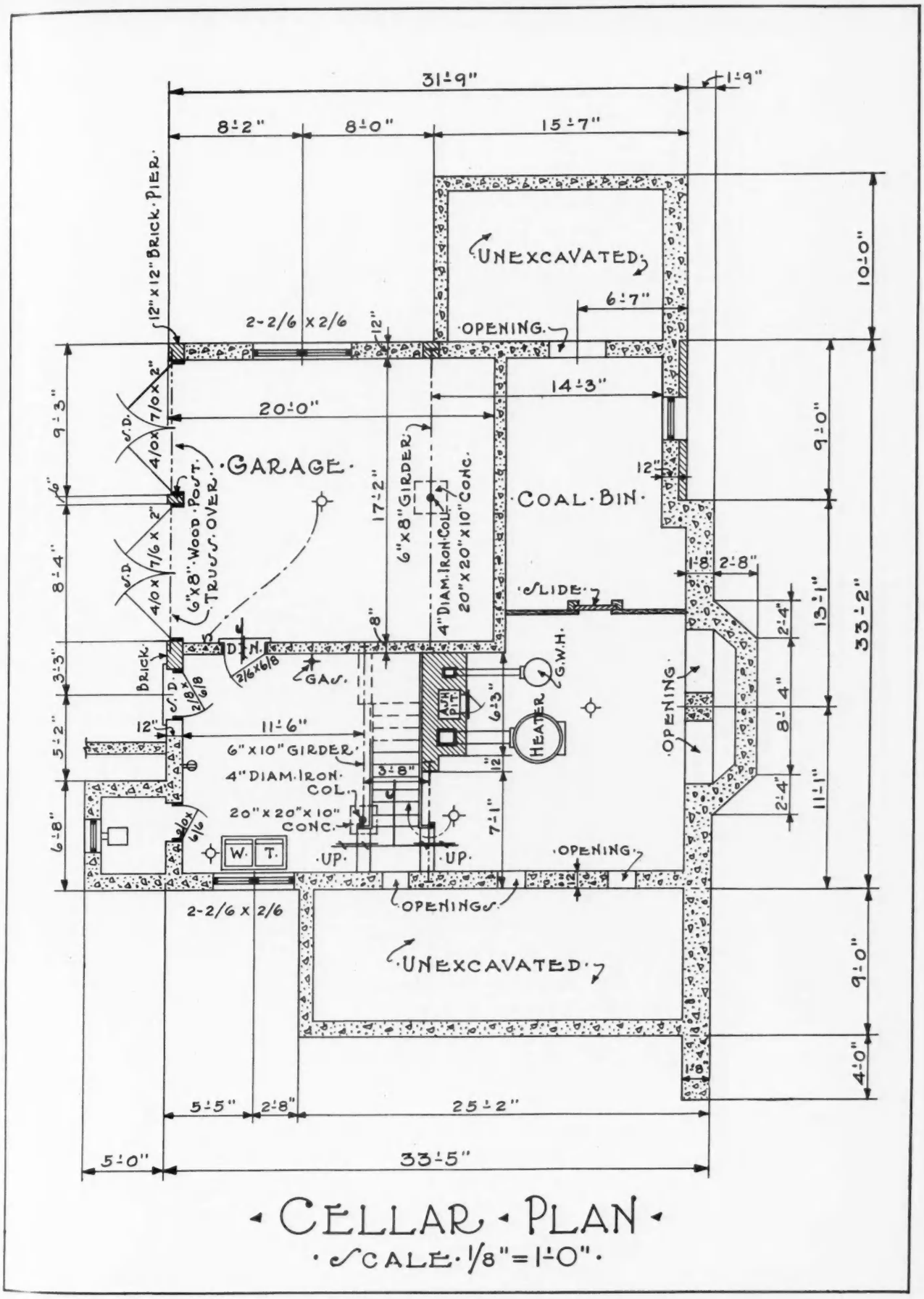
Complete Working Plans of a Six-Room Colonial Home Built of Brick.



FIRST FLOOR PLAN

SCALE 1/8" = 1'-0"

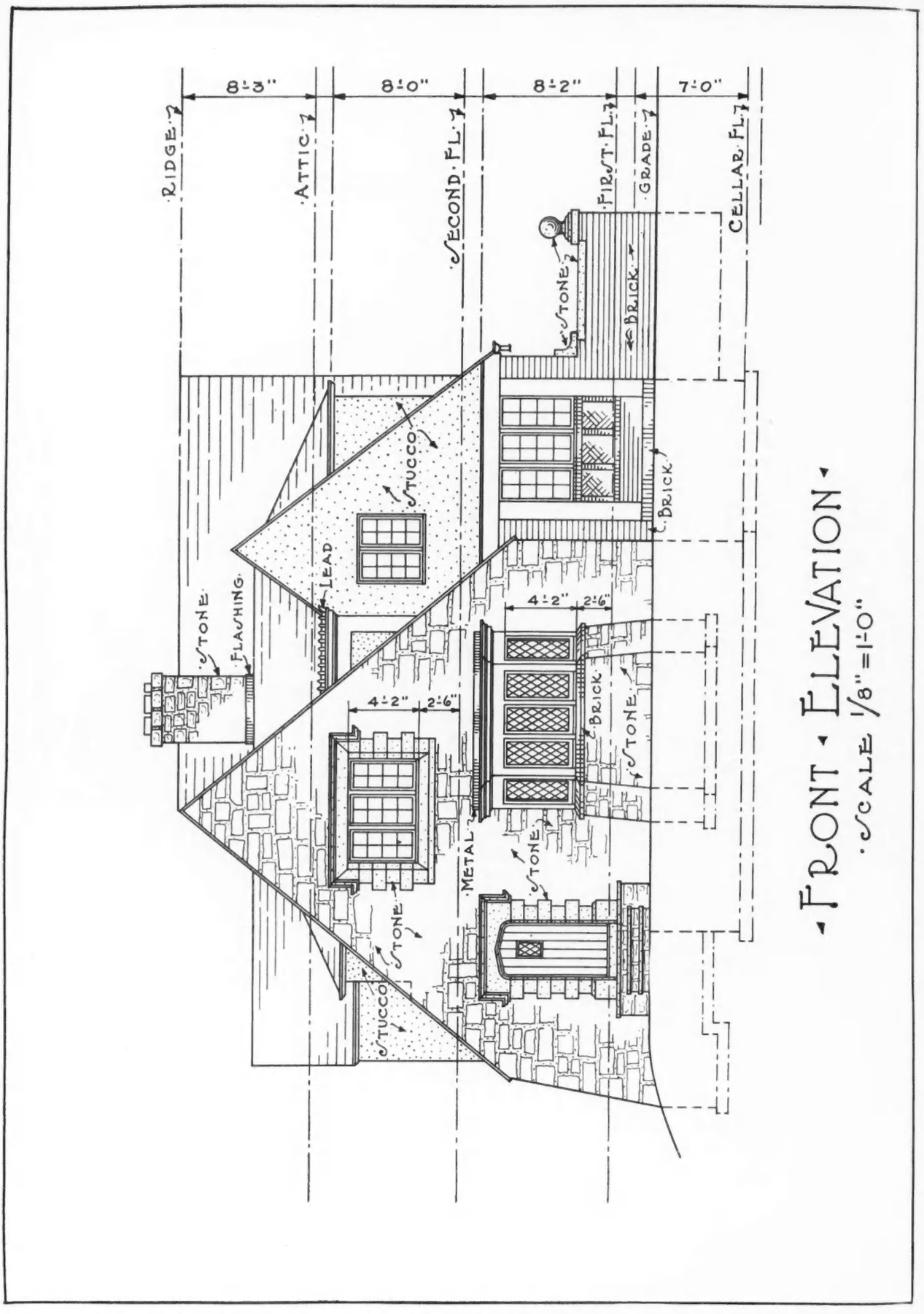
A More Conveniently Arranged Home Would Be Difficult to Imagine Than This Where the Plan Seems Perfectly Developed to Facilitate the Smooth and Easy Flow of Home Activities.



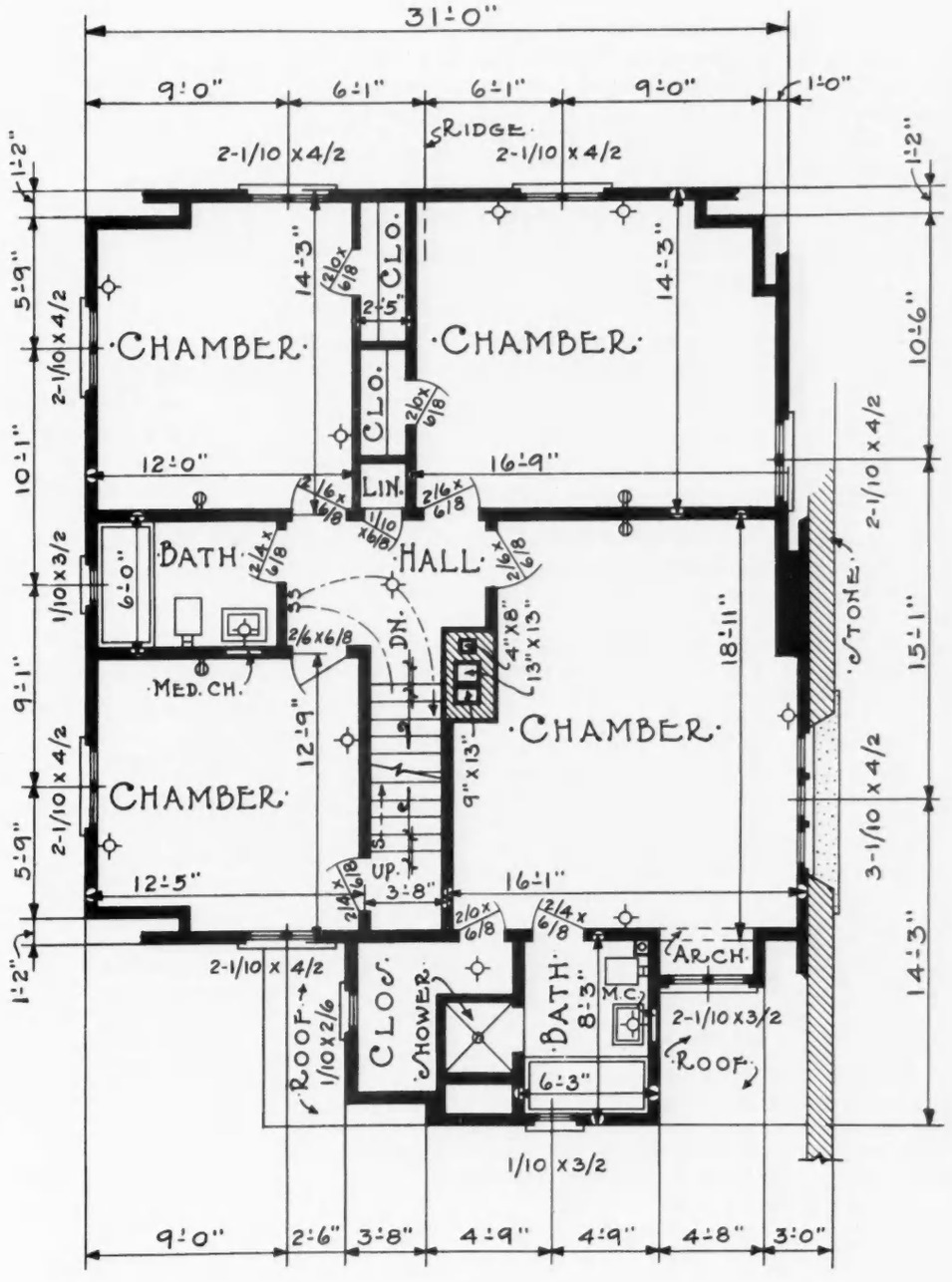
CELLAR PLAN

SCALE 1/8"=1'-0"

A Two Car Garage Built Into the Basement of the All-Feature Home Can Be Reached Without Going Outdoors, but Is Safely Segregated by Solid Concrete Walls.



This Front Elevation of the A. C. Battersby Residence, in New Rochelle, N. Y., Shows How the Three Materials, Stone, Brick and Stucco Have Been Blended in the Exterior Design.



SECOND FLOOR PLAN

SCALE 1/8" = 1'-0"

The Simple, Four Corner Bedroom, Arrangement Is Found Most Satisfactory for the Second Floor with Well Equipped Bathrooms and Commodious Closets Conspicuous.

Talks on Estimating

Estimating "Systems" Analyzed

By L. G. KELLEY

BEFORE we discuss any systems of estimating we will first attempt to define what a "system" is, and what we may expect of it.

Systems of Estimating are largely based on some mathematical or geometrical reasoning. Hence, as mathematics is in no sense really new, very few systems are new. It is doubtful if anyone today can "invent" a system. He can merely collect and arrange data for using one. No system is any more accurate than the mathematics involved.

Estimating Systems Analyzed

By "system" here we refer only to those methods of procedure or mathematical assumptions that can be used for the building as a *whole,* or for *all materials,* or practically all, *that go to make up the building.* For example, the so-called System of Estimating "By the Square" (of 100 square feet) is not a system at all as it cannot be applied to all materials. It is merely part of one of the Unit Systems. This particular Unit System, of course, requires in its application all units of measure, that is, for example, Lineal Feet, Square Feet and Cubic Feet. See outline, Unit Systems, (b) Unit of Construction.

The ordinary Unit Cost System is based usually on a commercial unit of material *as purchased.* Example, 1,000 brick, 1,000 feet B. M. of lumber, etc., but many of the ordinary unit costs are also based on a certain amount of *finished work,* such as 100 square yards of plaster, 100 square feet of flooring, 100 lineal feet of trim, 1 cubic yard of concrete, etc. These last mentioned actually belong to the System we have designated as based on *Units of Construction.* Note that in these cases the terms are generally Lineal Feet, Square Feet, Cubic Feet or Cubic Yards.

Again, suppose that we decide to take a typical cornice and list all the material and labor required for building 100 lineal feet of this cornice. In this case *we are using the Unit System,* but the unit is actually one of *construction* based on lineal feet, but it is not a special method, nor would we be wise in calling it the "lineal foot method." Making up a unit cost for a cubic yard of concrete in place is not using a "cubic foot method."

Any so-called system that can be applied to only one kind or type of building is of doubtful value, and is not a complete system in the sense we wish to use the term here. Also we may say that any method or system of Estimating which is a mixture of two or three methods or systems is not to be considered here as this confusion is one of the things we are attempting to avoid by making this analysis.

The following outline gives about all the various systems used at present that will answer to the definitions given.

Questions on Estimating and allied subjects will be answered by Mr. Kelley. Address him care of the Editor American Builder.

Outline of Usual Estimating Methods

Accurate Methods

(1) DETAILED ESTIMATE.
Made up like a grocer's bill—merely a list of materials and their cost. (Labor may or may not be included.)

(2) UNIT SYSTEMS.
(a) Unit of Material.
Example—1,000 brick.
(b) Unit of Construction.
Examples—100 lin. ft. of trim.
100 sq. ft. of wall.
1 cu. yd. of concrete.

Approximate Methods

(3) GEOMETRICAL.
(a) Square Foot Method.
(b) Cubic Foot Method.

(4) PERCENTAGE.
(a) Whole Cost = 100%.
Example—Foundation = 10% of total cost.
(b) Material Cost = 100%.
Example—Labor Cost = 60% of material cost.

The Detailed Estimate

In the outline we have listed first the Detailed Estimate. This is the simplest, as far as the reasoning is concerned, of all ordinary estimating methods. Making up a detailed estimate is merely a matter of knowing the construction well enough, and knowing the drawings well enough so that we can visualize all of the various materials which enter into the construction, and proceeding to make a list of these materials. As far as the list itself is concerned, it is nothing more or less than the same sort of list you would obtain from your local general merchant. Hence, we say it is made up like a grocer's bill, and we are sorry to say that in many cases young and inexperienced estimators, who do not use care in grouping their items, may make their estimate look even worse than the bill we receive from a general store.

Here we have the source of one of the most common complaints against this method. For example, in taking off millwork, many young estimators, even where they have a large number of doors of exactly the same size and character, will scatter these through their list in such a way that the entire estimate or list must be made over again when shipment or delivery is made. It is well to remember that for the sake of the man doing the crating at least we must have all similar items grouped, and thereby hangs one of the most important principles of the Unit Cost System of Estimating, which is essentially an attempt to *group items* in such a way that *a number of items can be handled as a single unit.*

The Unit Cost System

We will not attempt to say much about the Unit Cost System at this time because so much has already been said about this system by others. We only wish to call to the reader's attention that it makes little difference whether we choose a Unit of Material (a common com-

mercial unit), say 1,000 brick, and then group the quantities and costs of all the incidental items such as sand, lime, cement, labor, etc., around the cost of this one item, or whether we take 100 square feet of *finished wall* as a unit and list all the materials required in constructing this amount of wall. The one point that we should remember, however, is that in changing from one unit to another we will in most cases change the size of the unit, and we must expect slightly different results owing to the peculiar mathematics involved.

Because of the slightly varying answers that one sometimes obtains by using one or two different methods, we often hear the statement made that one method is not as accurate, when as a matter of fact one is just as accurate as the other. The question is whether either one is *exactly* right. These varying answers are caused, not by the method in particular, but generally by the *size of unit* employed. For example, if we make a small error when using a large number of small units, this error will be multiplied a rather large number of times. Of course this applies in the reverse manner to using a small number of rather large units, in which case any error we make will not appear so large. In fact, we must be more careful, perhaps, to see that unit costs are *high enough when larger units are used.* For example, in using 1,000 brick as a unit, if we should make an error of say five cents in figuring the unit cost of 1,000 brick, the ultimate error would be approximately twice as great as the same sort of error made if we were using 100 square feet of wall, in which case, of course, the unit is approximately twice as large, but there would only be slightly more than half as many units in a building.

If this peculiar mathematical condition is thoroughly understood, a great deal of the discussion in regard to the inaccuracy (?) of certain systems will be seen to be without point.

In general, however, we would like to call to the reader's attention the convenience of using a decimal unit as far as possible, that is, a unit which is some power of 10, such as 100, 1,000, etc., whether it applies to 1,000 numerical units such as brick, or 100 square feet of wall.

THE GEOMETRICAL SYSTEMS

The Square Foot Method

Although not so well known, the Square Foot Method (this is the proper use of the term) should be considered first. This method is based on the area covered by the building in square feet, measured over all. For example, a bungalow 24 feet by 55 feet (outside dimensions) would be figured as 1,320 square feet, and the cost per square foot would be equal to the total cost divided by 1,320. If the total building cost was $6,600.00, the square foot cost would be $5.00. This applies here to a "one-story-area." For two floors it is figured in the same manner, but the area is doubled and the cost is usually less.

The Cubic Foot Method

The cubic foot method is not so simple nor in general is it as accurate, but it can be applied to buildings having no definite regular story heights such as theaters, or to extremely high buildings, say over four or five stories. It is based on the *cubic contents* or *volume* of the building. The cubic foot cost is derived by dividing the total cost of a building by the figures representing the contents or volume in cubic feet. Compared with the Square Foot Method is requires *twice as much work, doubles the chances for error,* and is *not as accurate.* The real difficulties encountered with these systems are:

1. Getting proper data or original costs.
2. Making adjustments for variations from the typical building used as the basis for costs.
3. Applying some standard system of measuring.

In the hands of experienced estimators having the data available, wonderful results may be obtained in the shortest possible time, but in the hands of beginners these methods are deceiving and dangerous.

The Percentage System

(a) *Total Cost Equals 100%.* As will be noticed, there are two general ways in which we can apply the idea of percentage in estimating a building, and as these are really so different from each other, it will be almost necessary to consider them as separate systems. It is difficult to say which is the most common, but for the sake of simplicity we will take the one which is better known to the general reading public, that is, where the total cost of the building equals 100%, and the cost of each part of the building, whether it be foundation, brickwork, carpentry, or plumbing, is considered to be a percentage of the total cost. Thus we may say that the foundation, for example, is quite often about 10% of the total cost of the building.

This system is particularly useful for certain workers in the building profession where, as we may say, they are compelled to work backwards from a given cost. It is really not intended as a system of estimating, although attempts have been made by many to utilize it as such. For example, if a certain prospective builder goes to an architect to obtain drawings, he usually tells the architect how much money he wishes to spend and the architect can get a fairly clear idea of how much can be spent for each part of the building if he has in his records some data giving the percentage of the total cost of each of the various parts of a building and for different classes of work.

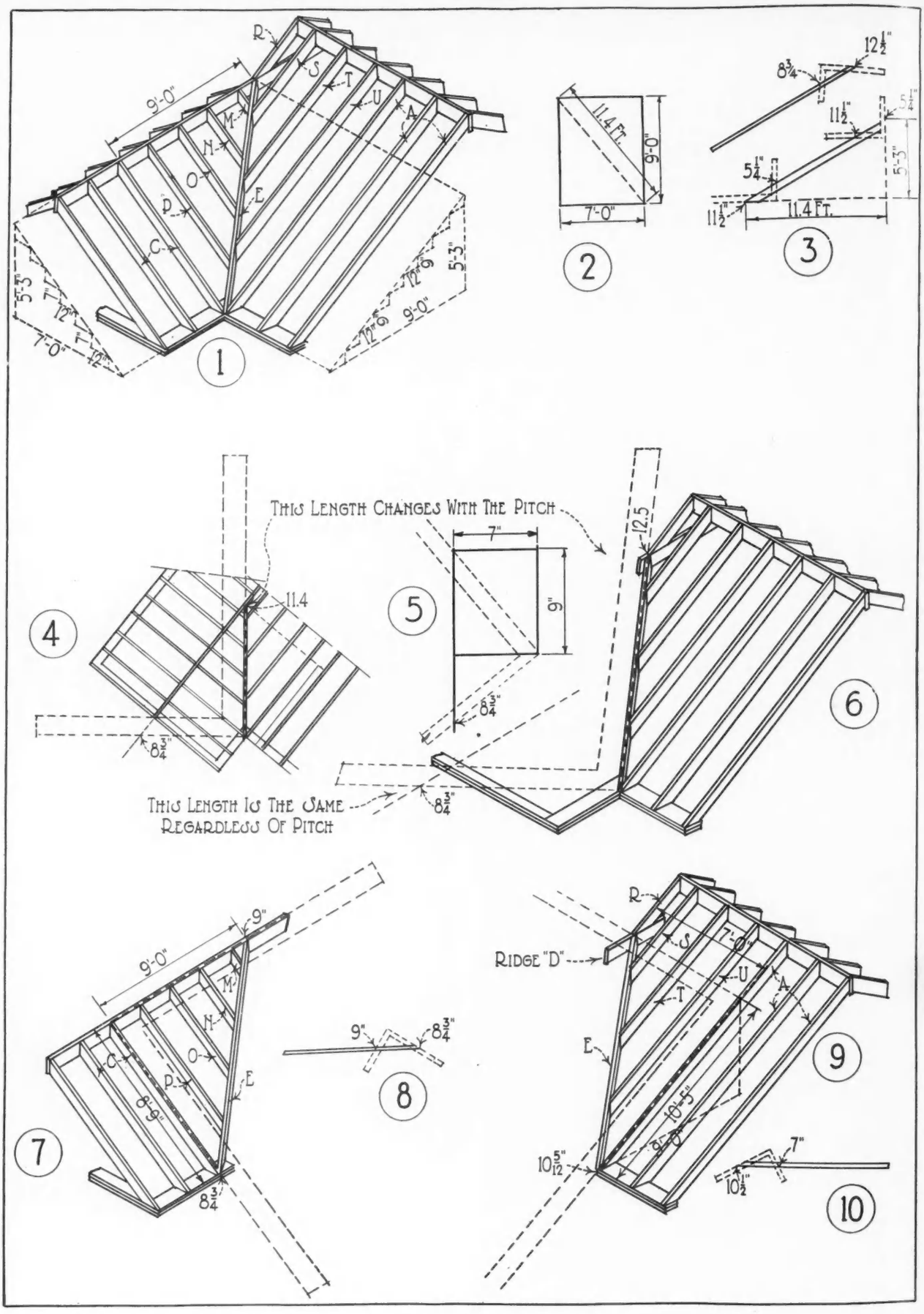
To have data for only one class or price of building is sometimes misleading and useless because quite often as the price of the building increases the relationship of different parts of the building to other parts changes greatly. This is because in the more expensive structures the same amount of money might be expended for the foundation, but the interior might be finished off in a manner that is three or four times as expensive as buildings which are more moderate in price.

(b) *The Cost of Material Equals 100%.* In this system of estimating we have something which is entirely different from the one we have just discussed, although the idea of percentage is applied here also. Here, however, the base of our system is considered to be the *total cost of the material,* and the cost of labor for placing this material is considered to be a certain percentage of the cost of material.

Now in the past few years the relationship between the cost of labor and the cost of material has perhaps run close enough for any locality, but it varies widely in different localities. That is, the cost of material may be the same in two different localities, but the labor costs are not the same. Also the reverse may be true. Therefore, the relationship between labor and material is not the same. Hence, this system, although very useful at times for certain lines of work, is only useful where the contractor himself has perhaps engaged in a certain line of work for years and does not do work out of a certain locality, nor does he change the quality of his material to any great extent.

Attempts have been made to analyze this system into a more systematic and accurate method, but we find that if we are to consider only two or three variations, that is,

(*Continued to page 105*)



Daigrams Showing Framing of Roof Containing Two Different Pitches.

Roof Of Different Pitches

Solving a Problem in Roof Framing and the Use of the Steel Square-Diagrams on Page Opposite

By JOHN T. NEUFELD

THIS month's problem is a further discussion of the problem shown and discussed last month. Part of the discussion will be reviewed so as to get a good connection. The roof shown in Figure 1 has two different pitches. Rafter "C" has a 9-inch rise per foot run whereas rafter "A" has a 7-inch rise per foot run.

The ridge of rafter "C" is 7 times 9, or 63 inches above the plate.

The valley "E" will frame to the ridge "D" at a point at which the rafter "A" is equal in height to the rafter "C". We must therefore find this point. Rafter "A" rises 7 inches per foot. The ridge "D" is 63 inches high.

$63 \div 7 = 9$.

Thus the run of rafter "A" to the point adjacent to where rafter "E" frames against the ridge is 9 feet. Rafter "E" has a run of 9 feet in this direction and a run of 7 feet in the direction of rafter "C". This is illustrated with a triangle as shown in Figure 2. The diagonal distance across the corners represents the actual run of the valley. This is 11.4 inches on a drawing drawn to a scale of 1 inch to a foot, or in actual length 11.4 feet.

The rise of this rafter is 63 inches or 5 feet 3 inches. In Figure 3 we have the run 11.4 feet, the rise 5 feet 3 inches and the valley "E" forming a right triangle. In this way the length of the valley rafter may be scaled or the length may be found by square root as shown in the last lesson.

The Plumb and Seat Cuts

The numbers representing the total run and the total rise of the rafter will give the plumb and seat cuts of the rafter. Thus the numbers 11½ (for 11.4) and the 5¼ (5′-3″) give the cuts for this rafter. The application is shown in Figure 3. The upper cut has a bevel, which is called the side cut.

The Side Cut of the Valley Rafter

Figure 4 shows the roof as though it were a floor. The center line of ridge "D" is extended. A square is placed with the edge of the body along the center of the valley rafter. The points at which the square coincides with the center of the ridge "D" give the number for the side cut, if the roof were flat. This is 8¾ on the tongue and 11.4 on the blade of the square. If the roof takes on a pitch the length along the valley changes, but the length along the tongue remains the same. The distance along the tongue is at right angles to the run of the rafter and is sometimes called the "tangent."

The distance along the tongue becomes the length of the rafter. Thus in this case the cuts are obtained by using the numbers 8¾ and 12.5 as shown in Figure 6. The square is applied on the back of the rafter as shown in the upper part of Figure 3.

If the roof was of equal pitch then the tangent would equal the run of the valley and the rule could be stated: "Take the run on the tongue of the square and the length on the blade and mark along the blade for the side cut." But where the roof is not of equal pitch the tangent is not equal to the run and must be found as in Figure 5.

Length of Valley Jacks "M-N-O-P"

Study Figure 7 for finding the length of these jacks. First we will find the length of rafter "C."

Pitch is 9 inches rise per foot run.

Length per foot run is 15.00.

Total length is $15.00 \times 7 = 105$ inches.

The spacing of these jack rafters forms 4½ spaces, and therefore rafter "M" which is ½ space from the valley "E" would be one-ninth as long or 1/9 of 105 = 11⅔ inches.

Rafter "N" would be 3/9 of 105 inches or 35 inches.

Rafter "O" would be 5/9 of 105 inches or 58⅓ inches.

Rafter "P" would be 7/9 of 105 inches or 81⅔ inches.

PROBLEMS

1. Find the length of rafter "A" in figure 1 or 9.
2. Find the length of rafter "R".
3. What is the difference in length of rafter "T" and "R"?
4. What is the difference in length of rafter "A" and "U"?
5. Find the length of rafter "U".
6. What is length of rafter "T" and "S"?
7. Give the side cuts for these rafters?

ANSWERS

1. Length per foot run for rafter "A" is 13.89 inches.
   Run is 12 feet.
   Length is $13.89'' \times 12 = 166.68$ inches or 13 feet 10 11/16 inches.
2. Rafter "R" has a 3-foot run.
   Length is $13.89'' \times 3$ or 41.67 inches or 3 feet 5 11/16 inches.
3. The difference in length of rafter "A" and "R" is 166.68 less 41.67 inches or 125.01 inches.
4. The difference found in problem 3 is divided into 3½ equal parts as there are 3½ spaces for these jack rafters. $125.05 + 3.5 = 35.7$ inches.
   Rafter "U" is one of these parts shorter than rafter "A" = 35.7 inches.
5. Length of rafter "U" is 166.68 less $35.7 = 130.98$ inches.
6. Length of rafter "T" is $130.98 - 35.7 = 95.28$ inches
   Length of rafter "S" is $95.28 - 35.7 = 59.58$ inches.
7. The side cut for these rafters is 10½ and 7 as shown in Figure 9.

✣

Talks on Estimating

(*Continued from page 103*)

high, medium and low cost material; high, medium and low cost of labor; and conditions requiring a great deal of labor, a moderate amount of labor, or little labor, the various combinations possible to arrange from these simple conditions are so numerous and complex that the system gets unwieldly and almost impossible to apply. Yet unless we make some distinction between the different grades of material, the different amounts of labor required, and the relative cost of that labor, the system is misleading and inaccurate except for certain cases as we have noted.

How Dan Does It

A Department for Passing "Life Savers" Along to Other Builders

$2 for an Idea

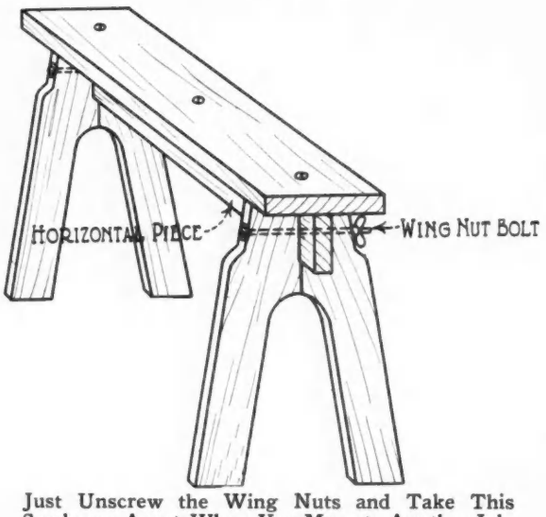
Dan is an ingenious cuss. Nothing ever stumps him. He always knows the way out when he runs into a tough problem out on the job or in the office. Dan is editor of this Department and will pay $2.00 each for every good idea he can use here to show and tell other builders "how to do it." Send him a rough sketch and a short description of what the tough job was and how you handled it.

Address Dan-Do-It, care of American Builder, 105 W. Adams St., Chicago, Ill.

Handy Take-Down Saw Horse

THE sketch shows a carpenter's horse which is very handy for moving from one job to another. I have used it for more than 20 years and I thought it might be of interest to some of the young carpenters who may never have heard of it.

This horse is not difficult to make. The construction is quite plainly shown in the drawing. It consists of four pieces. The top is screwed onto the horizontal piece below and the legs are held securely in place by means of the two bolts with wing nuts which pass through the legs and the horizontal strip beneath the top.



Just Unscrew the Wing Nuts and Take This Sawhorse Apart When You Move to Another Job.

When ready to move from one job to another it is a simple matter to loosen the wing nuts, remove the bolts and take down the horse for moving. When taken down it is much easier to handle and transport than the ordinary sawhorse.—L. N. Snow, 1076 Kossuth St., Bridgeport, Conn.

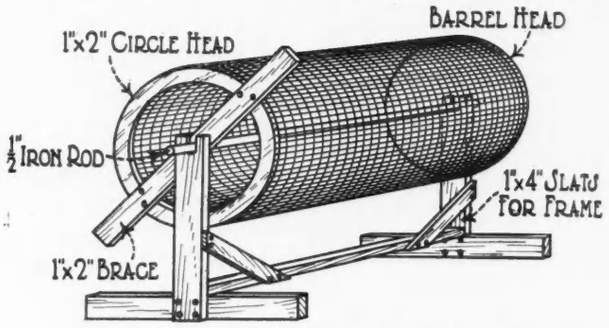
✣

For Screening Wet Sand

THE sketch shows the way in which I make a handy screen for screening wet sand. Wet sand is difficult to screen with an ordinary screen but with this device it is easy. I use a barrel head for one end of the cylinder and make the other end of one by two-inch stock cut out with a keyhole saw. It has the same outside diameter as the barrel head, of course.

The cylinder is made of five feet of 36-inch sand sieve wire with ¼-inch mesh, tacked around the two heads. This makes a cylinder with one end open except for the two-inch brace, nailed across it. The brace extends a few inches at each end to serve as a handle for turning the cylinder.

Holes are bored in each head to receive a ½-inch iron rod which serves as an axle. The frame is made of one by four-inch slats as shown in the diagram. Hang the cylinder



It Is Just as Easy to Screen Wet Sand as Dry If You Use This Sort of a Screen.

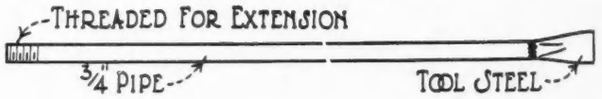
in the frame as shown, place a few shovelfuls of sand in the cylinder and give it a turn. The wet sand will be screened just as easily as dry sand.—J. Dan Collier, Box 292, Albertville, Ala.

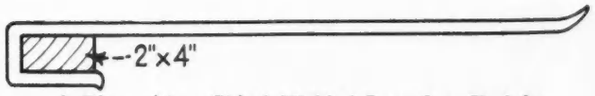
✣

Wrecking Concrete Forms

STRIPPING frames from concrete walls that are tight against a bank of earth is often a difficult job, especially cutting the wires that are below ground. The sketch shows an idea that has helped me greatly on such jobs.

I had a bar made of a piece of ¾-inch pipe. Into one end of this pipe I had welded a piece of tool steel sharpened like a chisel. The other end is threaded so that it can be extended to any required length. With this I can reach down and cut all the tie wires below ground.



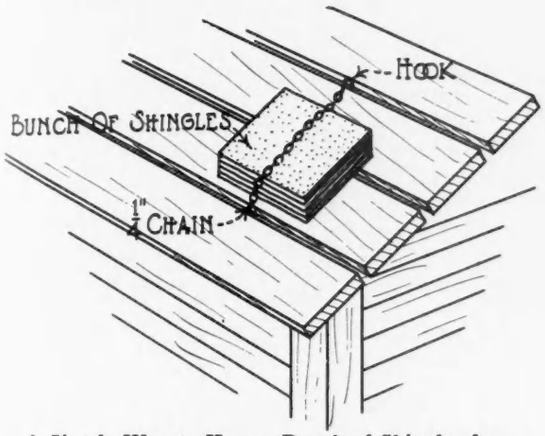


A Pipe with a Chisel Welded Into One End for Cutting Form Wires Below Ground and an Improved Wrecking Bar.

I also took a common wrecking bar and had the crooked end squared to fit around a two by four, as shown in the sketch. With this it is an easy matter to twist the two by fours out.—Albert Saunders, Box 322 Retsil, Wash.

It Helps When Shingling

WHEN shingling, I have often had trouble keeping an open bundle of shingles from being blown away by the wind. One day I thought of a way to hold the shingles without interfering with the work. I took a piece of chain about four or five feet long, with a hook on one end, hooked it back of one of the roof boards and dropped the chain over the bunch of shingles, letting the end hang down through a crack between the roof boards. This held the shingles in place even in a strong wind and still permitted me to pull the shingles out as needed without delaying the work.—ROBERT G. SHOEPKE, 255 Oak St., Juneau, Wis.

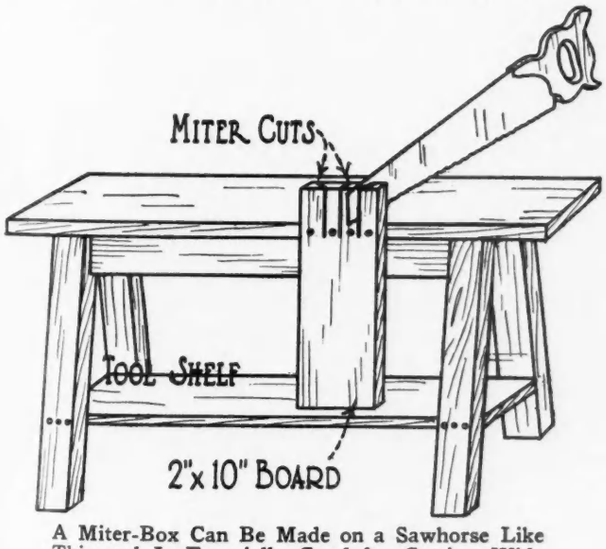


A Simple Way to Keep a Bunch of Shingles from Blowing Away in a Strong Wind.

Sawhorse Miter-Box

A MITER BOX can be improvised on a sawhorse which will not only serve quite satisfactorily as the usual type of miter-box, but will be better for some kinds of work. The sketch shows how this sawhorse miter-box is made.

A piece of 2 by 10 material is nailed against the top of the horse with one end resting on the tool shelf of the horse.



A Miter-Box Can Be Made on a Sawhorse Like This and Is Especially Good for Cutting Wide Stock.

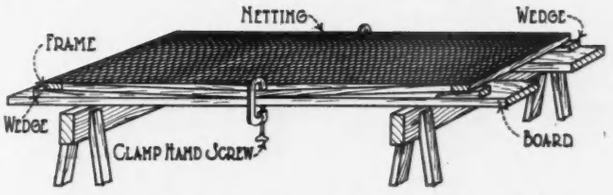
Care should be taken to see that this piece is exactly plumb and at right angles with the top of the horse. When properly placed the miter cuts are made in this piece.

This box is better than the ordinary miter-box for mitering baseboard and other wide stock because it can be made as high as required and so provides a better guide for the saw on such work.—CHRIST WALTER, Raley, Alberta, Canada.

For Stretching Screen Wire

MY method of stretching screen wire on frames is to take a pair of common sawhorses, set as far apart as needed for the work in hand. Then take two boards about one by six, or any width will answer, lay on the horses as far apart as the width of the frame to be screened. Lay the screen frame on the boards.

A clamp hand screw to fasten frame at the center on the one by six board is then needed. Take four wedges and drive them at the four corners of the frame until you get the proper tension for stretching the netting on the frames. Place the netting on the frame and nail each end to the frame. Release the wedges and the frame will spring back on the board with the netting stretched nicely.



By This Method It Is Possible to Stretch the Screen Wire Onto a Single Frame Satisfactorily.

If the frames are about square they can be turned at right angles and proceed nailing as before. When the wedges are driven, it presses the frame to the board on the horses and also presses the horses to the floor and makes them quite secure, besides getting the tension of the frame to tighten the netting.—ALVA H. PIERSON.

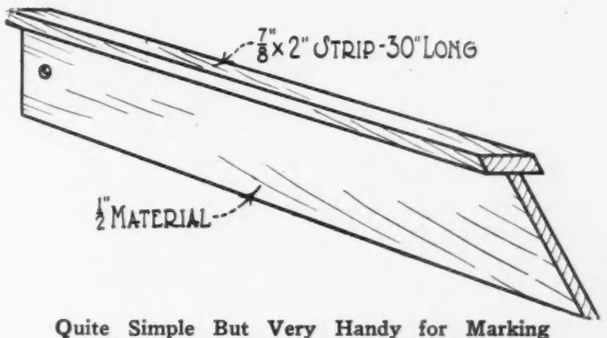
EDITOR'S NOTE—This item is reprinted from an issue of several years ago in response to the following letter:

"I noticed in several recent numbers of the AMERICAN BUILDER ways of stretching screen wire. These are all right but do not fit all cases. Many times a person has only one screen to make. I am sending a clipping from a back number of AMERICAN BUILDER for April, 1917. I have used Mr. Pierson's method quite frequently and probably will never use any other as this suits me first rate. This is not my idea and I do not want any credit for it, but I feel certain that if you will reprint it someone else may benefit by it just as I have."—EMERY G. SCHELLER, Vida, Montana.

✣

For Marking Rafter Cuts

THE sketch shows a handy pattern for cutting rafters and jack rafters which saves considerable time, does not move when being used as a bevel square does, and is more accurate because it is longer. After you have one cut marked with this pattern you turn the pattern and mark the other cut. It is made of a piece of ½-inch material with a strip of ⅞ by 2-inch material along the top edge, and should be about 30 inches long.—E. SCHWARTZ, 880 Duane St., Syracuse, N. Y.



Quite Simple But Very Handy for Marking Rafter Cuts Accurately and It Saves Time.

Law for the Builder

Conducted by M. L. Hayward

The Question of Consideration

AN ordinary building contract is not binding in the absence of a legal "consideration," and it is a legal principle that where one party to a contract is under a legal duty to do what he promises to do, then his promise is not a valid consideration for the promise of the other party.

For instance, if A owes a builder, and the builder promises to do something if A will pay the debt, the builder's promise is not binding as A was legally bound to pay the debt in any case.

An interesting example of this rule is found in a Missouri case (reported in 45 Mo. App., 304) where a contractor agreed to construct a sewer for a city, a railway had a right of way over the street, the contractor agreed to pay the railway company for supporting its tracks while the work was going on, and then refused to pay.

"The city had a paramount right to build the sewer, the railway company was bound to protect its own property, so there was no consideration for my promise," the contractor argued, and the court ruled in his favor.

The Ohio Contract

AN Ohio building company, having its principal place of business in that state, entered into a building contract with B, of Michigan, sent the written contract to the company's agent in Michigan, and the agent secured B's signature in the latter state.

"This contract is not to be valid nor binding unless countersigned by the agent in Michigan and approved by the company at its head office in Ohio," the contract stated. It was returned to the head office, approved by the company there, and then the question was whether the contract had been made in Ohio or Michigan.

The Federal Courts, having considered both sides of the question, decided that it was an Ohio contract.

Payment Stopped

"LIKE to have a check for the last shipment we sent you," the salesman for the Midland Accessory Company suggested. "It's at the freight shed now."

"Haven't got any notice of it yet," said the manager of the Popular Building Company.

"Well, it's there sure, for I inquired on my way up," the salesman declared. The manager accepted this assurance, delivered the check, and that evening he called at the freight office on his way home.

"No such shipment here," the freight agent told him.

The manager promptly telephoned the bank, and asked for the cashier.

"Went home hours ago," the watchman told him, "Better try his house." The manager finally located the cashier at a local theatre, and explained the situation.

"Now, I want you to stop payment of that check without fail," the manager told him.

"Sure—I'll make a memo on my program right now," the cashier agreed.

The bank opened at 10 a. m. the next day, at 10:15 the check was presented and paid. At 10:30 the cashier strolled in, found what had happened, and telephoned the manager.

"Well, it's up to the bank to stand the loss, after I'd notified you to stop payment," the manager argued.

"Oh, no, a mere telephone request that reached me out of banking hours at a local theatre isn't binding on our bank, as a matter of law," the cashier retorted.

The manager had the courage of his convictions, however, sued the bank, and the Texas Court ruled in his favor in the case of Hewitt vs. First National Bank, 252 S. W., 161.

"In the instant case the cashier was not required to transact any business away from the bank, but, acting upon the information which had been received, he agreed to stop the payment of the check at the bank. Though there were some things that he could not do, as cashier, except at the bank and within banking hours, he was as much the cashier at home on Sunday as he was when he was in the bank transacting its business on any other day of the week," said the court.

Obstructed Right of Way

A MAINE builder with a right of way from his store rooms to a public street across A's land, was moving heaven and earth to complete a contract on time. One Monday morning he found that A had "plugged" the road so efficiently that it was useless to the builder, and there was no other way of getting his material from the storehouses to the work.

"I'll apply to the courts for an order to compel you to open the road," the builder threatened.

"You'll probably get it, but by the time the road's opened, it will be too late to complete your contract on time," A pointed out.

"You've got me down this time," the builder admitted. A stood pat, the builder signed an agreement to pay $500 for the use of the road. A removed the obstruction and the builder completed his work. Then A demanded his money, and the builder refused to pay.

"My lawyer tells me that the contract was obtained under 'duress,' and cannot be enforced in any court," the builder stated, and the Maine Supreme Court decided in his favor in Dwendel vs. Barnard, 28 Maine, 554.

The "Burden of Proof"

THE owner and the contractor had signed up a building contract, each party pocketed his copy, the owner refused to carry out his part of the agreement, the contractor sued for damages, and the case came to trial in due course.

"Our signature to the contract was obtained through the fraud of the contractor," the owner's lawyer contended.

And the contractor's lawyer did not say a word.

"Well—what about it?" the judge demanded.

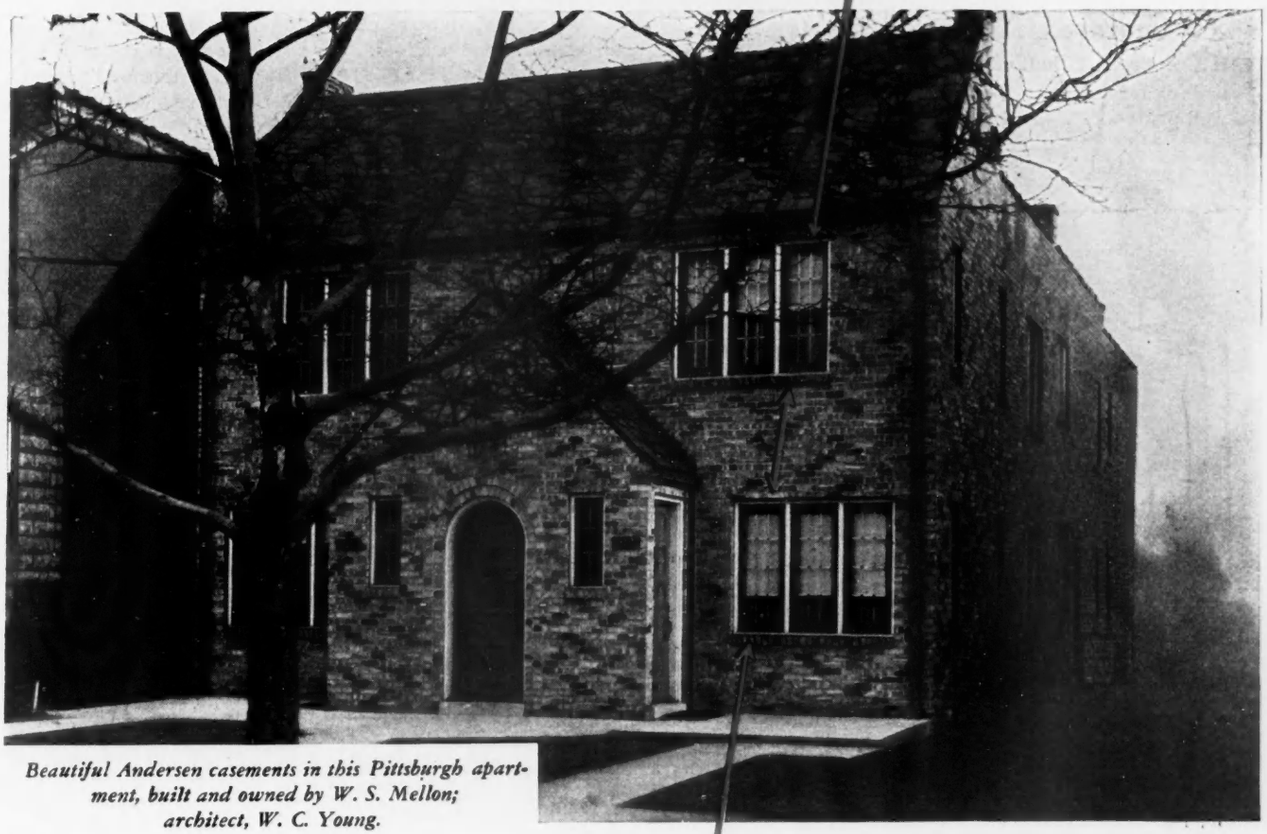
"The contractor is bound to prove that there was no fraud—in other words, the burden of proof is on him," the owner's attorney argued.

Then the contractor's attorney was heard from.

"No—the burden of proof of fraud is on the party setting it up," he maintained.

And the court ruled in the contractor's favor in 52 Atlantic, 472.

Andersen leads again . . . perfects new locked sill-joint . . . provides builders with better frame construction



Beautiful Andersen casements in this Pittsburgh apartment, built and owned by W. S. Mellon; architect, W. C. Young.

AT frame headquarters, Bayport, Minnesota, Andersen again has perfected a new type frame, a frame which will give you better frame construction.

Here is a frame of genuine white pine, with a locked sill-joint that makes the frame as rigid as if the wood had grown together ready for 100 years' wear.

HERE is a frame with a wide blind stop feature that reduces all drafts and air leakage 53.4% by actual test. Here you get our new 3 inch per foot sill slope for good drainage.

The new Andersen Master Frame, low in first cost, easy to install, will reduce labor costs and will give you a real job with snug joints, close fitting sash.

REMEMBER, the new Andersen Master Frame is made to fit every type of construction. The beautiful casement, with all our new and exclusive features, is ready in 640 stock sizes, and available to you through 3,300 leading jobbers or dealers. There is one near you.

Andersen MASTER Frames

OF GENUINE WHITE PINE — FOR WINDOWS AND DOORS

BAYPORT MINNESOTA

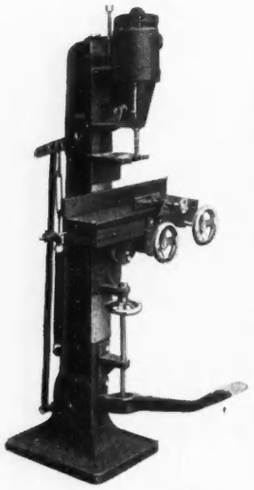
ANDERSEN FRAME CORPORATION, Bayport, Minnesota.

What's New in Contractors' Equipment

For further information in regard to any item described in the "What's New" Departments address American Builder Information Exchange, 105 W. Adams St., Chicago

Improved Motorized Mortiser

THE motorized, hollow chisel mortiser illustrated here is designed for light mortising in hard or soft woods. It is a well made tool which is free from vibration and the chisel is held rigidly at all points of the stroke. It will mortise 3½ inches deep, with a ½-inch chisel, in hardwood, or with a ⅝-inch chisel in softwood. It will bore four inches deep with a ¾-inch bit and is easy to operate at all times. A ¾-inch hollow chisel may also be used with this machine.



A New, Motorized Hollow Chisel Mortiser That Is Free of Vibration.

A vertical motor is mounted on the chisel ram which is operated by foot power and slides on ways, gibbed to take up wear. The bit spindle is directly connected to the motor shaft and has a speed of 3,600 r.p.m. Adjustable stops control the depth of the hole without altering the height of the table. The floor lever connections are adjustable for stroke and power.

The table slides up and down, in and out, and to the left and right, on machined ways gibbed to take up wear. The first two sets of movements are controlled by a hand wheel and screw, the last by a hand wheel, rack and pinion, regulated by stops. The table tilts to 45 degrees to the right or left.

A clamp on the front of the table, operated by hand wheels, holds the stock against the stop at the back of the table. There is a renewable wooden top to the table for through mortising, and an adjustable hold down and top back stop. By removing the table assembly from the ways, a door 30 inches wide may be mortised.

The over-all height of this machine is 66 inches and it occupies a floor space 36 inches by 40 inches. One ⅜-inch chisel and bit, two bit bushings and two chisel bushings and one ½ h.p. motor are furnished with the machine. The motor may be for direct current, or single, two or three phase alternating current. A similar machine for belt drive is also available.

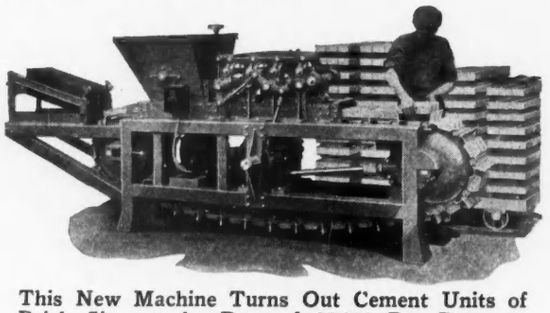
✣

Concrete Brick Machine

AN announcement of great interest to the building industry is that of a new cement brick-making machine which has been developed by one of the leading manufacturers of concrete products machinery. This machine is a definite departure from methods formerly employed in such manufacture. It incorporates the modern mechanical method and principle of line production. The manufacturers claim a capacity of 25,000 units, of the size of standard size brick, per day.

Just as new as the machine itself is the product it makes. The unit produced is of the "frogged" type, having a recess on the flat side. It requires 20 per cent less material and is 20 per cent lighter in weight. A unit of this type has three definite advantages. For the mason, it is easier to lay; for the purchaser, it affords a better keyed mortar bond; for the manufacturer, it requires less material, with resultant lower cost of production.

With the new machine the product is made with any desired water content, approved by engineering standards, and is densely and uniformly tamped, with sides troweled, in the continuous line of travel through the machine. Mixed concrete is discharged directly into the hopper and the operation is all automatic, with the exception of removing the finished product, three at a time on steel pallets, and racking it up. Pallets are automatically fed into the endless chain of molding compartments.



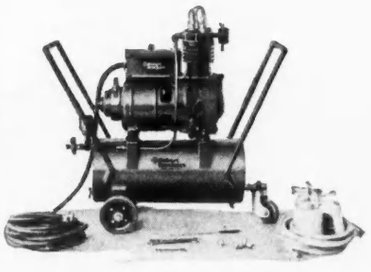
This New Machine Turns Out Cement Units of Brick Size at the Rate of 25,000 Per Day at Low Cost.

Figures taken from actual producing plants, the manufacturers state, show that units applicable to the same uses as common brick are produced for less than $7.00 per thousand under ordinary working conditions.

✣

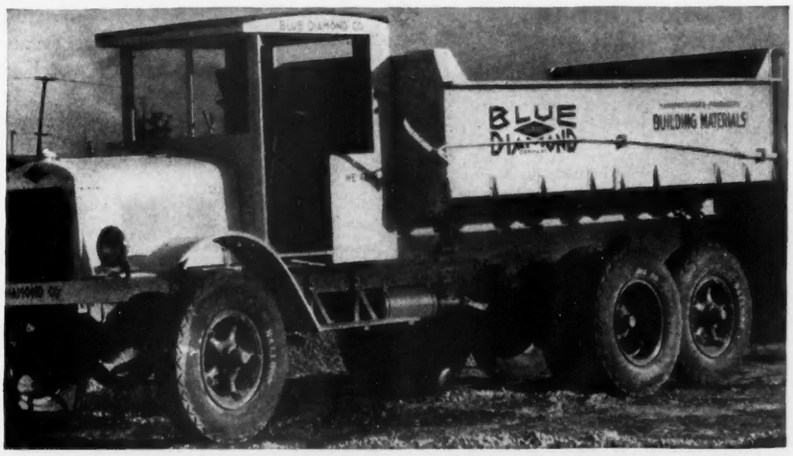
Light Efficient Paint Spray

A PORTABLE paint spray outfit designed for all kinds of work where a large, expensive, large production outfit is not required, or as an auxiliary to a larger unit, is shown. This unit is exceptionally compact and its combination wheel and caster mounting, with two handles, makes it extremely portable and convenient. It is equipped with a 25-foot electric cable and 25-foot air hose, giving a working radius of 50 feet from the light socket to which it is attached.



This Portable Paint Spray Outfit Is an Excellent Auxiliary to a Large Outfit.

Although light and compact, this unit has a large displacement capacity and is equipped with a 4½-gallon storage tank. The pressure-feed spray gun is equipped with one round and one flat spray air cap. The unit is powered with a ½ h.p. motor operating from the lighting circuit. The compressor has a continuous working pressure of 30 pounds and a maximum pressure of 50 pounds.



"40,000 MILES · STILL RUNNING" ·

Goodyear Balloon Truck Tires are piling up big mileage everywhere

Here is a typical report on Goodyear Truck Balloon Tires in building supply service. These tires "have gone approximately 40,000 miles, and up to the present time none has been discarded."

"The balloon tires that we have purchased have been less susceptible to punctures and rock cuts than high-pressure tires, and seem to give superior traction—due, no doubt, to the increased road contact area."

Such is the experience of Blue Diamond Company, Los Angeles, California, manufacturers, producers, distributors of building materials. In this plain statement of fact you find the most eloquent reasons for using these remarkable new tires on your trucks—40,000 miles and still going—greater traction in all the places a building material truck has to go—greatly reduced damage from punctures or rock cuts—and, as hundreds of others will tell you, astounding endurance on fast long hauls.

Find out about these newest Goodyears now, from any Goodyear Truck Tire Service Station Dealer.

ON YOUR NEW TRUCKS SPECIFY GOODYEARS

GOODYEAR

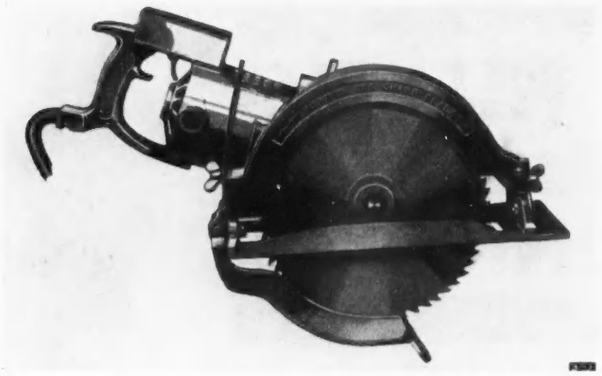
MORE TONS ARE HAULED ON GOODYEAR TIRES

THAN ON ANY OTHER KIND

Four Types of Electric Saws

ONE of the leading manufacturers of high-speed electrical equipment for cutting wood, metal and stone has acquired a well-known electric hand saw which was one of the pioneers on the electric hand-saw field, and also the electric combination mortiser and router made by the same company.

The electric hand saw is made in four models. One of these weighs only 15 pounds and has a cutting capacity of 2⅝ inches; another has a capacity of 4⅛ inches; the third has the same 4⅛-inch capacity, and has also an additional beveling feature up to 60 degrees. The largest model has a 1 h.p. universal motor of well-known make, handles 4½-inch material, and also offers the beveling feature.



There Are Four Models of This Electric Hand Saw Which Adapt It to a Wide Variety of Work.

Among the unusual features found in these saws are: No obstructions force the operator to an unnatural position to observe the cut. The saw is so designed that there is clear vision from the operator to the point of cut. A sawdust blower keeps the cutting line always visible. The entire body of the motor tilts for bevel cutting.

The motors are of one of the leading makes and are operated on a convenient trigger switch. Each saw is equipped with a gravity guard, providing safety without sacrificing practicability. The blade is mounted on a molded rubber bushing, reducing shocks to a minimum and increasing the life of the machine. The blades revolve clockwise, causing the machine to hug the material.

✣

Small Weigh Batcher

THE small weigh batcher, for wheelbarrow batching of accurately weighed aggregates, which is shown in the illustration, is designed for building, culvert, small bridge and curb and gutter work where the job does not justify the setting up of a complete bin and batching unit. It is of particular interest to the builder because of its adaptability to stucco and plastering work where accurate proportioning is required.

For Accurate Measuring of Aggregates on Small Jobs and for Stucco and Plaster Work Where a Large Bin and Batching Unit Is Not Justified.

This unit, weighing but 280 pounds, can be loaded and unloaded easily from a truck. With the two large diameter wheels it can be moved about on the job by one man. The shoveling height is 42 inches, a height tested to prevent easy tiring. The capacity is four cubic feet, or 400 pounds—a full wheelbarrow load.

The discharge is a simple sliding gate with nothing to get out of order and high enough for any standard wheelbarrow. The hopper is round, free from any obstruction that might allow the materials to build up, and only the material directly in it affects the weight.

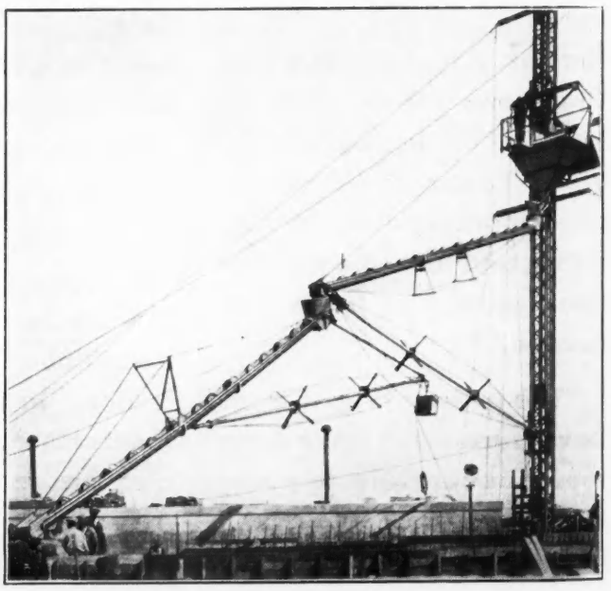
The particular feature of this batcher is the weighing unit. The scale parts are entirely of bronze, eliminating rust and standing up under long service. The beam balance indicator, warning the operator of approaching balance, balance and overload, can be read from either side. All that is necessary is to set the beam for the desired weight, run the wheelbarrow under the discharge, and shovel into the hopper until the indicator shows a balance.

✣

New Heavy Type Steel Mast Plant

THE heavy type steel mast shown in this illustration can be used with any one of the three different types of concrete chuting plants most commonly used on construction work. These are the "counterweight boom chute plant," the "continuous line plant" and the "bin plant."

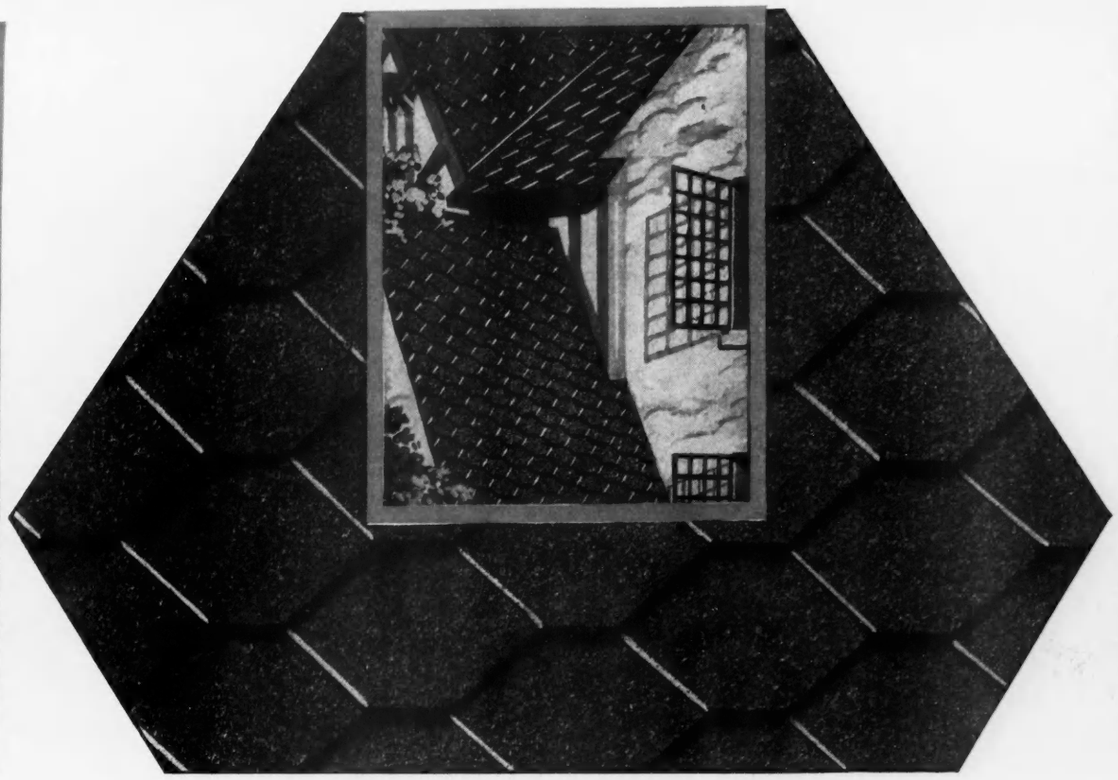
The sections of the mast are made in 22½-foot lengths. On high masts this extra length saves time in erection. The four corner posts are built of 5-inch 6.7 pound channel, and



These Masts Can Be Used with the Three Types of Concrete Chuting Plants That Are Commonly Used on Construction.

2½x2x$\frac{5}{16}$-inch angle, riveted together in a manner that develops maximum strength of section. The standard weight sections can be erected to a height of 202½ feet.

This mast is safe and easy to erect. The sections can be put in place quickly as they are picked up by the hoist line and hoisted to the top without any loss of time and then dropped into place and bolted. The same hoist line is then slipped over the sheave, which is bolted at the top of the last section. The platform and the men are then raised to the top of the last section.



See These Colorful Roofs Blended By Experts

Experts have blended beautiful new roof colors for you—colors that do justice to the architectural beauty of the homes you build or remodel.

These are soft, non-fading shades of warm reds, blended browns, rich purples, bright greens and shaded grays—fine graduations of color tones that express roof individuality and good taste.

You will want to select these shingles for more than their greater beauty. Their known weather-defying and fire-resisting qualities will appeal to you.

There is a wide range of shingles to choose from—individuals and labor-saving strips, in various weights and in popular designs. This enables you to select colors, styles, weights and prices according to the job and the protection required.

See these colorful shingles at your dealer's, or write the nearest office for color charts and descriptive literature.

CONTINENTAL ROOFING MILLS	RUBEROID MILLS	SAFEPACK MILLS	H. F. WATSON MILLS

Divisions of

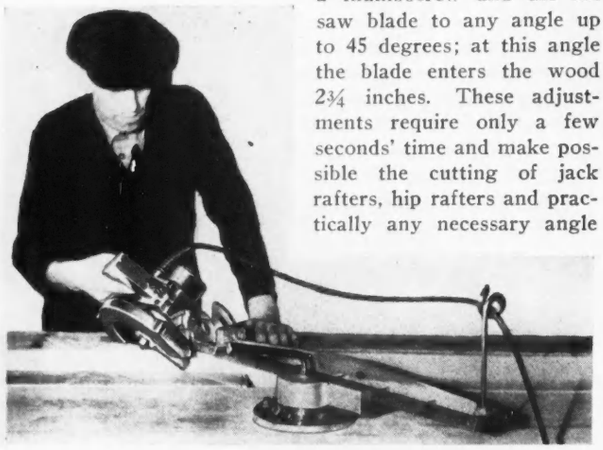
The RUBEROID Co.

Offices: **New York - Chicago - Boston (Millis) - Erie - Baltimore - Mobile**

Converts Hand Saw to Table Saw

ANNOUNCEMENT has been made by a well-known manufacturer of woodworking machines of a table attachment that changes this company's power saw from hand to table use in less than a minute. No wrenches are required, as it is necessary to remove only a thumbscrew to make the change. It can be readily seen that this attachment increases the all-around use of such a tool, for it can be taken to the work or, when production sawing is necessary, can be used as a table saw—two different types of saws at the cost of one.

The swivel base upon which the arm swings has a graduated scale of 60 degrees each side of zero, although the arm can swing in a full circle, or 360 degrees. In this manner the correct angle at which the saw enters the work is quickly obtained. If a compound cut is required, just loosen a thumbscrew and tilt the saw blade to any angle up to 45 degrees; at this angle the blade enters the wood 2¾ inches. These adjustments require only a few seconds' time and make possible the cutting of jack rafters, hip rafters and practically any necessary angle cuts. Depth cutting from 0 inches to 2¼ inches can also be accurately secured by a second thumbscrew, allowing such work as fluting, stripping and dadoing to be done. For ripping, the position of the saw is quickly changed over to another segment on the attachment. The arm is then pulled out and locked by a thumbscrew at any desirable width. For this type of cutting the work is fed into the saw. Here also is an angle gauge so that bevel ripping up to 45 degrees is possible.



The Table Attachment Makes It Possible to Convert the Electric Hand Saw to Table Use in Less Than a Minute.

The table attachment is made of cast iron and ways are dovetailed and gibbed to take up wear, practically insuring the owner a lifetime of service. The weight of the attachment, including the saw, is only 52 pounds, and it can be attached to any table by means of three bolts.

✣

Pump Handles Mud and Silt

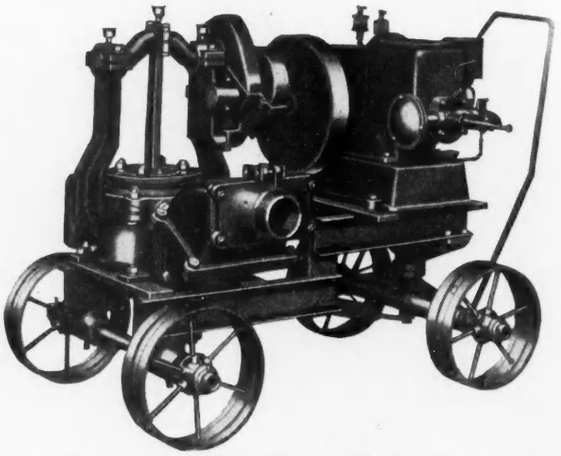
ONE of the new additions to an old established line of contractors' pumps is a closed diaphragm pump. To the ability to handle water heavily loaded with mud and silt is added the advantage of discharging the water at a distance away from and above the pump, or if desired, spilling it at the pump for trough discharge.

Conversion from hose discharge to open spout discharge is quickly and easily made. The discharge outlet, threaded for a four-inch hose coupling, is hinged to the open spout and held in place by four bolts. When not in use it is swung back out of the way.

Another feature of the new pump is a patented ejector plate which keeps all mud moving through the pump with the water and eliminates all trouble from settling of mud in the suction chamber.

Used as an ordinary diaphragm pump it has a maximum suction lift of twenty-five feet. As a lift and force pump it works efficiently under any head up to thirty-five feet.

This closed diaphragm pump is offered in both single and duplex pumps with capacities from 3,000 to 13,000 gallons or 6,000 to 26,000 gallons per hour.



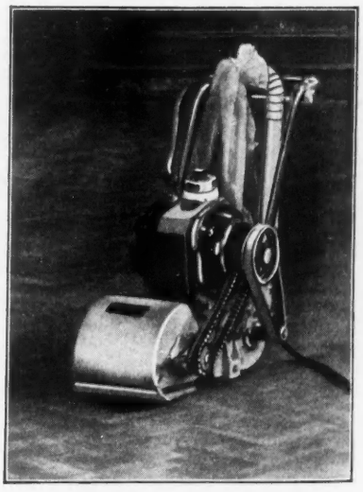
A New Pump Which Handles Water, Mud and Silt Without Clogging.

✣

A Dependable Floor Machine

THIS machine is of a new design and offers particularly advantageous features. It is simple, has few moving parts and delivers maximum results with the least amount of effort. It weighs only 180 pounds complete, the motor weighing 90 pounds and the machine 90 pounds. Two men can easily move it as a unit up and down stairs, or one man can carry it by dismounting motor from the machine and moving each part separately. It only takes a minute or two to remove or replace motor.

The machine is of perfect balance so that one pound to one hundred and fifty pounds of its 180-pound weight can be placed on the drum by easy control with the pressure bar. By holding on to the front handle bar, this power is transmitted through the connecting bars to a lever pressing down on the rear wheel and up on the rear of the machine making a powerful downward pressure on the drum.



The Motor Can Be Demounted So That One Man Can Move This Machine as Needed.

The drums are machine balanced, which eliminates chatter and vibration, and insures a fine, uniform finish. It is made in 8-inch and 12-inch drums. The drums have rubber pads which do not get loose and will outwear three felt pads.

This machine will surface from 1,000 to 1,500 square feet of new floor in an eight-hour working day; also, will surface old floors without gumming the paper in almost the same time. It cuts close to walls, ends of rooms, closets and sinks. It is not tiresome to operate. It has little depreciation and seldom requires repairs.

from START to FINISH

The REID-WAY is on the JOB

THE easy convertibility of the Reid-Way Whirlwind Sander makes it the most efficient machine in its field. It performs four different jobs and does them all well—Bench Sanding, Jointing, Floor Sanding and Floor Polishing. A Reid-Way Whirlwind Sander seldom stands idle. On almost every job where wood is used it is kept busy from start to finish constantly saving you money by eliminating hand-work.

NOTE

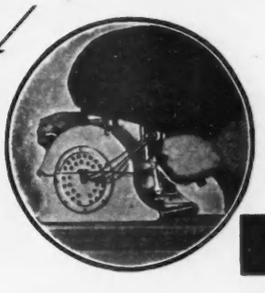
The Reid-Way Company has always avoided extravagant statements in its advertising. It is obviously absurd to claim that a light weight sander will finish *more* footage per day than a modern 2 horse power machine. The light sander has a large and useful field of operation and in this field the Reid-Way Whirlwind offers the greatest dollar for dollar value. Hundreds of enthusiastic users will testify to its efficiency. The power of its new motor and its extraordinary capacity for hard work in continuous operation have been proven. Reid-Way Sanders are sold on merit and performance alone.

←Bench Sanding

←Jointing

←Floor Sanding

Floor Polishing



THE REID-WAY CO.
2911 First Avenue
CEDAR RAPIDS, IOWA

Reid-Way Company,
2911 First Avenue,
Cedar Rapids, Iowa.

Gentlemen: Please send me circular describing the new Reid-Way Whirlwind Sander.

Name .....

Address .....

What's New in Equipment for Buildings

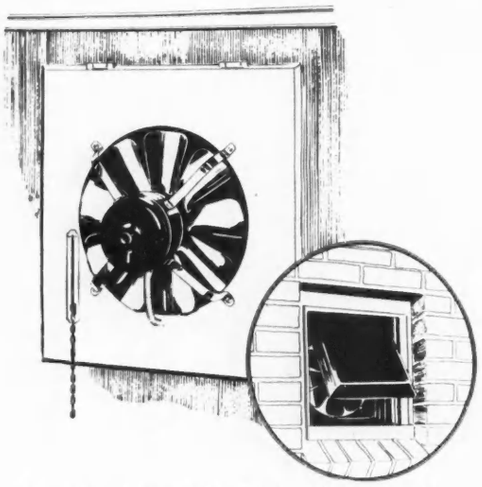
For further information in regard to any item described in the "What's New" Departments address, American Builder Information Exchange, 105 W. Adams St., Chicago

New Ventilating Fan

A NEW type of built-in ventilating fan for homes has just been announced. The new unit comes complete with box frame, built to go between standard 16-inch studding, without cutting. It is mounted just as window frames are mounted.

The motor, of special brushless type construction, is free from radio interference and service troubles. It operates either forward or backward, and has two speeds in both directions, for bringing in fresh air from the outside, or forcing out stale air, cooking odors, steam, etc.

In addition to the built-in model described above, this company manufactures a full line of window ventilators for the home, using the same brushless type motor, sliding panels of plate glass and polished aluminum frame.

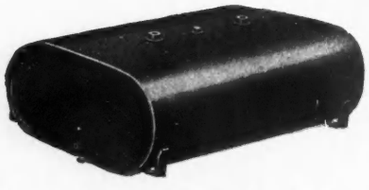


Complete Ventilating Fan Unit Which Is Built in Just as a Window Frame Is Installed.

✣

Sewage and Drainage Equipment

"A COMPLETE sewage disposal service for the unsewered home" is the aim of one company in announcing two recent additions to its sewage disposal line. Efficient drainage is equally as important as correct septic tank operation in assuring complete disposal. The new drain pool and drain tile meet the need for better, standardized drainage methods.

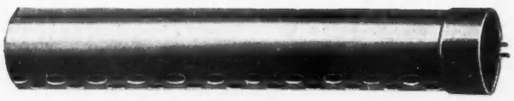


A Scientifically Designed Drain Pool for Septic Tank Systems.

The drain pool is a scientifically designed seepage pool for use where the drainage area is limited and where there is no danger of water supply pollution. It is more satisfactory than home-made equipment and easier to install, with a saving of labor and materials.

Septic drainage for large septic systems is often a problem due to the ground area necessary. By using these drain pools in series, it is possible to provide ample drainage in a limited space.

The filter pipe is designed especially for septic and field drainage. All-metal in construction, it eliminates costly breakage, lays easily and functions longer than ordinary tile.



All-Metal Filter Pipe for Efficient Drainage of Septic Tank Systems.

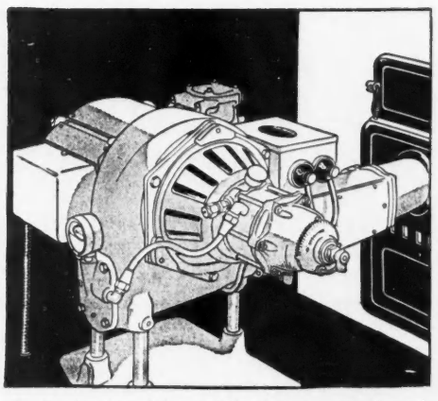
Special perforations in this new tile allow 12 to 20 times more seepage per foot. Tight joints maintain alignment and prevent seepage of dirt into the tile. It is ideal for draining golf courses, sport fields, airports, etc., as well as for septic tank filter fields.

Both drain pools and drain tile are made of special rust-resisting, copper-bearing iron, rust-proofed inside and out with a heavy coating of mineral asphalt. This assures maximum durability and satisfactory service.

✣

Oil Heat for the Average Home

ONE of the best known manufacturers of oil burners recently announced a new junior burner which has been especially designed for installation in homes of average size and is being offered at a very moderate price. The design of the new burner is radically different from burners previously produced but it operates on the same fundamental principles which have proved sound in the larger burners made by this company.



A Radically New Oil Burner Designed for Average Size Homes, by a Leading Company.

The most outstanding feature of the new burner is the control mechanism in which the starting impulse of the motor is utilized to control the flow of oil and ignition of the burner. This affords a dependable means for operating the controls. It also brings about certain production economies, it is stated, which make possible the low price of the new burner.

The same grades of fuel oil which can be used in this company's other burners can also be used in the new burner. Radio interference, which has become a common problem in the operation of oil burners, is entirely avoided by means of a radio-proof transformer. The metering pump used on the former burners is also used on the new burner.

1 **WARM AIR FURNACE**

Specially designed with heat economizer. Strong, sturdy construction.

2 **AUTOMATIC OIL-BURNER**

The burner is the famous Piatt, designed particularly for the furnace and built into it. It is simple in construction, positive in operation, thoroughly safe and dependable.

3 **FORCED AIR BLOWER**

Carries a current of warm air into every corner in Winter, stirs up cool air currents in the hot months of Summer.

4 **HUMIDIFIER**

Keeps the air properly moistened for health as well as warmth; protects furniture.

5 **THERMOSTAT**

Accepted type of Thermostat, automatic in action, thoroughly reliable.

ALL IN ONE UNIT

All for the price of a good Oil-Burner alone

Architects, home builders and buyers are all attracted by this revolutionary new heating plant—the heating sensation of the century.

The furnace is designed for the oil-burner, the oil-burner for the furnace. No part of the construction is an accessory part built *on*, but built *in* to one scientifically-designed, well-made unit. The burner itself is the famous Piatt, noiseless in operation, thoroughly dependable, safe and fully automatic with no springs, weights or complications.

With the blower arrangement, small conductor pipes may be used with the resulting saving of space and headroom. The furnace need not occupy a central position in the basement but may be set out of the way allowing extra basement space. It is being hailed on all sides as a revolutionary accomplishment in warm air heating. Send today for complete literature and technical data.

MOTOR WHEEL CORPORATION
Heater Division LANSING, MICHIGAN

BURN OIL **PIATT** OIL-BURNING APPLIANCES SAVE TOIL

Clean Automatic Coal Heat

THE attractive and comfortable looking basement in the first illustration on this page shows an interesting method of providing clean, automatic heat with coal as fuel.

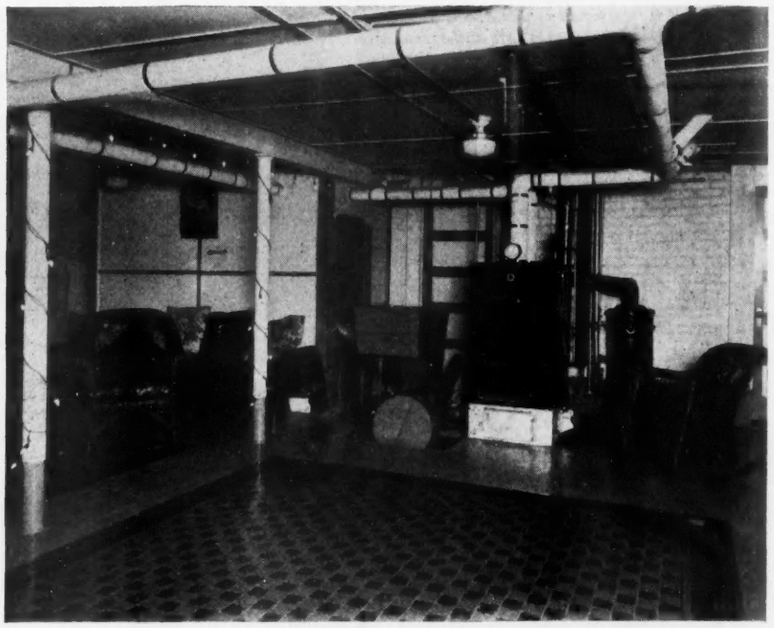
The device shown in both pictures is an electrically operated domestic stoker, or, more properly an anthracite burner. The first one receives its coal by gravity from enclosed bin to hopper and, from there, by screw conveyor to the burner in the boiler. The "close-up" illustration below shows a coal hopper arranged to be filled by hand with a shovel, the small ash residue being fed automatically into the canvas covered tub at the left.

The bin in the first picture has a sloping steel bottom, so that the coal slides readily into the hopper. The bin being tightly enclosed and the coal passing through a large pipe, there is no possibility of coal dust reaching the basement.

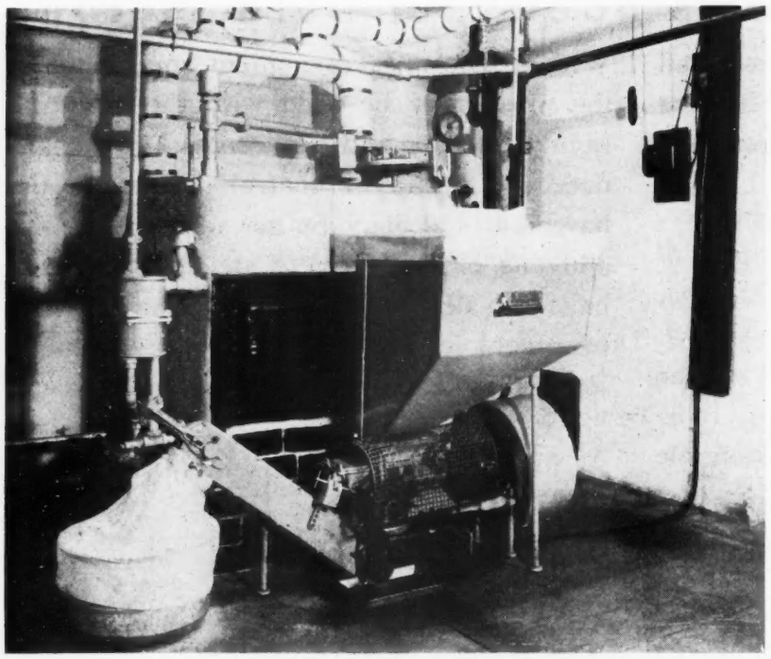
This is not, properly speaking, a domestic stoker. While there are domestic stokers on the market, the distinction is made that a stoker is any mechanical means for delivering solid fuel to a fuel bed, whereas, this device is a true anthracite burner, consisting of a retort having capacity for a limited amount of coal. Combustion takes places exactly in proportion to the coal delivery and the amount of air supplied, and this is regulated by a single lever arm. Air for combustion is exactly correllated with the amount of coal being delivered, so that, at whatever feed the machine is operating, the correct amount of air is being supplied for combustion. This gives a continuous mild action and gets away from the "on and off" feature of many thermostatically controlled heaters.

While both of the installations pictured are in connection with heating boilers, these devices have been installed and are operating successfully in a large number of warm air furnaces. The installation in the lower picture is operated the year-round—in summer for domestic hot water supply—and as low a fire may be maintained as desired. This makes it economical in use.

The combustion in this type of burner is almost perfect, so that there is no smoke and but little ash. In fact, there is no bed of ashes to impede combustion, the amount of heat being controlled entirely by the rate of feed and the amount of air admitted to the burner. This is a clean and efficient method of combustion and allows the use of pea or buckwheat anthracite, which sizes are inexpensive.



In This Edgewood, Rhode Island Basement, a Coal Bin with Sloping Steel Bottom Feeds the Coal by Gravity Into the Hopper, from Whence a Power Conveyor Takes It to the Burner Without Dust or Dirt.



This View of a Westfield, New Jersey Basement, Shows Power Anthracite Burner at Close Range. The Hopper here is arranged for hand filling with shovel. Note the mechanism of thermostat at the right and the canvas covered ash receptacle at the left.

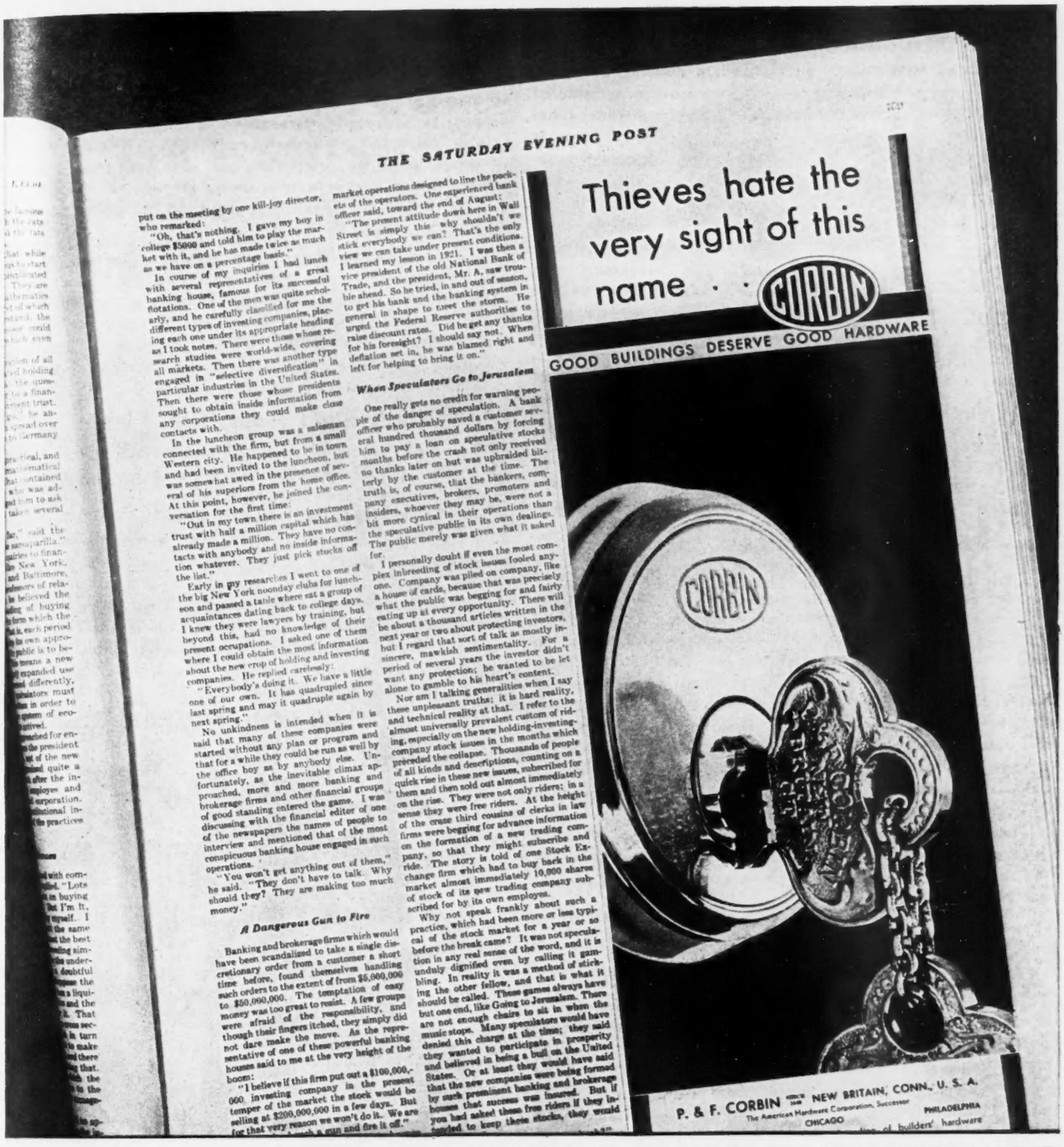
The use of such automatic heaters as these allows full development of residential basement space for any recreational or living use desired and just as fine finish may be installed as in any other part of the house.

✣

Carborundum Is a Trade Name

THE Carborundum Company of Niagara Falls, N. Y., in its campaign against the growing tendency on the part of authors to treat the word "Carborundum" as a common or generic noun, announces that the word "Carborundum" is a trade-mark of this company, registered in the United States and many foreign countries and is applied by it to its range of products: abrasive, refractory, mechanical and electrical.

The Carborundum Company states that the proper term is silicon carbide and that this is the form that should be used in articles, texts, references, etc., unless a specific Carborundum Brand product is referred to. If the word "Carborundum" is used, it should always begin with a capital letter and be put in quotation marks to denote its trade-mark significance.



GOOD BUILDINGS DESERVE GOOD HARDWARE

Need we say more?

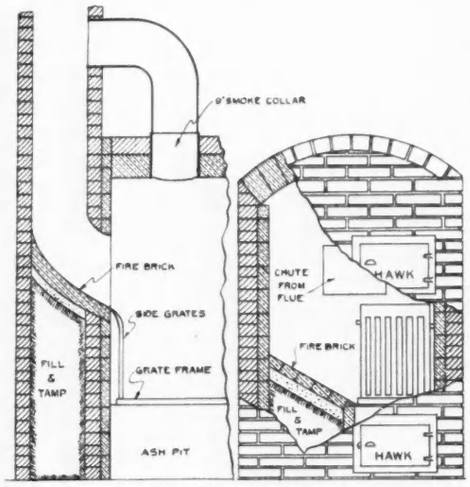
CORBIN

If we hadn't made good hardware in 1849, we wouldn't be making any hardware in 1930. It does not pay to make poor hardware and it doesn't pay to put poor hardware on your homes. Poor hardware always makes trouble. Need we say more? . . .

P. & F. CORBIN
SINCE 1849
NEW BRITAIN, CONN., U. S. A.
The American Hardware Corp., Successor
New York Chicago Philadelphia

Small Apartment Incinerator

NO apartment is modern these days unless it is equipped with an incinerator. In fact, when building an apartment, incinerator equipment is one of the features considered important in arranging the mortgage. The incinerator illustrated here is designed especially for small apartment buildings and large residences.



An Incinerator Specially Designed for Small Apartment Buildings and for Large Homes.

It is suitable for efficiency apartments of the two-room type up to 24 apartments and for other apartments up to 50 rooms. It is suitable for residences up to 20 rooms.

This unit is installed outward from the foundation wall, which may be used as a back wall for the combustion chamber. The combustion chamber is approximately 22 cubic feet. The installation requires 675 common brick and 350 fire brick. The assembly includes one ash pit door, one grate frame, two side grates, one feed door, one dumping grate, one shaker wrench, one shaker tube, one shaker tube housing, one smoke collar, two angle iron door lintels. The assembly weight is 275 pounds.

The outside height of this incinerator is 62 inches, width 40 inches, depth 40 inches. A minimum flue size of 13 by 13 inches is required. The sizes can be varied to suit the building plans.

✣

A New Flush Valve

ABOUT three years ago, a well known manufacturer decided that there was an opporunity for improvement in flush valve construction, and after much study has produced a flush valve which is radically different from the conventional types previously on the market.

The valve and its component parts are of bronze, the valve being of phosphor bronze, and its seat is cut at an angle of 45 degrees which makes it impossible for pipe scale or sediment to remain on it. There are no leather or rubber packings used in its assembly, and there is no by-pass which may become fouled by dirty water conditions. It operates on a ¾ inch supply wherever the volume is great enough to supply 30 gallons of water per minute at a pressure of 15 pounds, and higher pressures will not affect its operation.

This valve has been designed to give a variable volume of water under any condition, and the stop cock does not govern the amount of water passing through the valve. This is governed by the adjustment screw on the top of the valve which is accessible and easily operated.

The valve may be completely drained by closing the stop and holding the handle down a few seconds. This feature alone should appeal to owners of summer homes and hotels in the north, where it is necessary to drain the fixtures during the winter months. There is no need of "organized servicing" on this valve which should commend it to large development operators. ✣

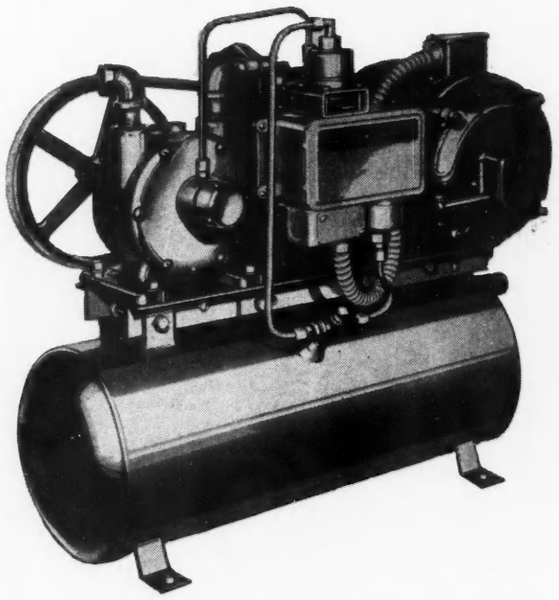
Open and Closed Positions, Left and Right, of This New Type Flush Valve.

Individual Home Gas Plants

THE equipment shown in the illustration is designed to bring to the suburban, village and country home a trouble-free, practical, safe and economical gas service. It can be installed in any home beyond the reach of public service gas mains, and will supply gas for cooking, hot water or any of the other usual purposes at a surprisingly low cost.

This home gas plant makes its own gas instantly when needed without priming or nursing. The gas is ready at the scratch of a match and burns with clean, clear blue, odorless flame providing an intense heat. This means a low fuel consumption and efficient cooking. And the gas can be handled with safety.

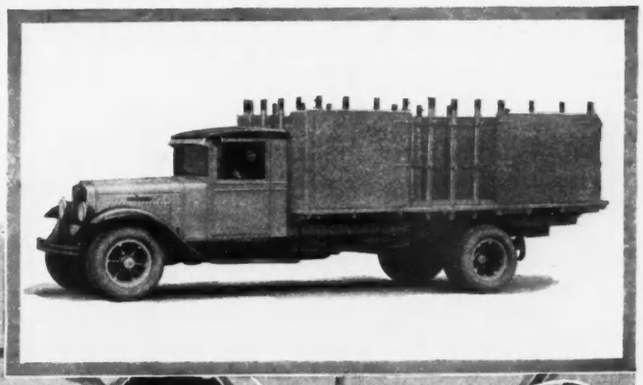
The gas is made from a special grade of fuel which is placed in a tank of large capacity, buried outside the building. There is a compressor in the basement and a pipe from the compressor to a tank where the gas is made. From the latter tank, gas pipes lead to the various gas burners. The instant the burner is turned on a rich dry gas is available at low pressure. The gas is made only as it is used and there is no stored up supply in the house at any time.

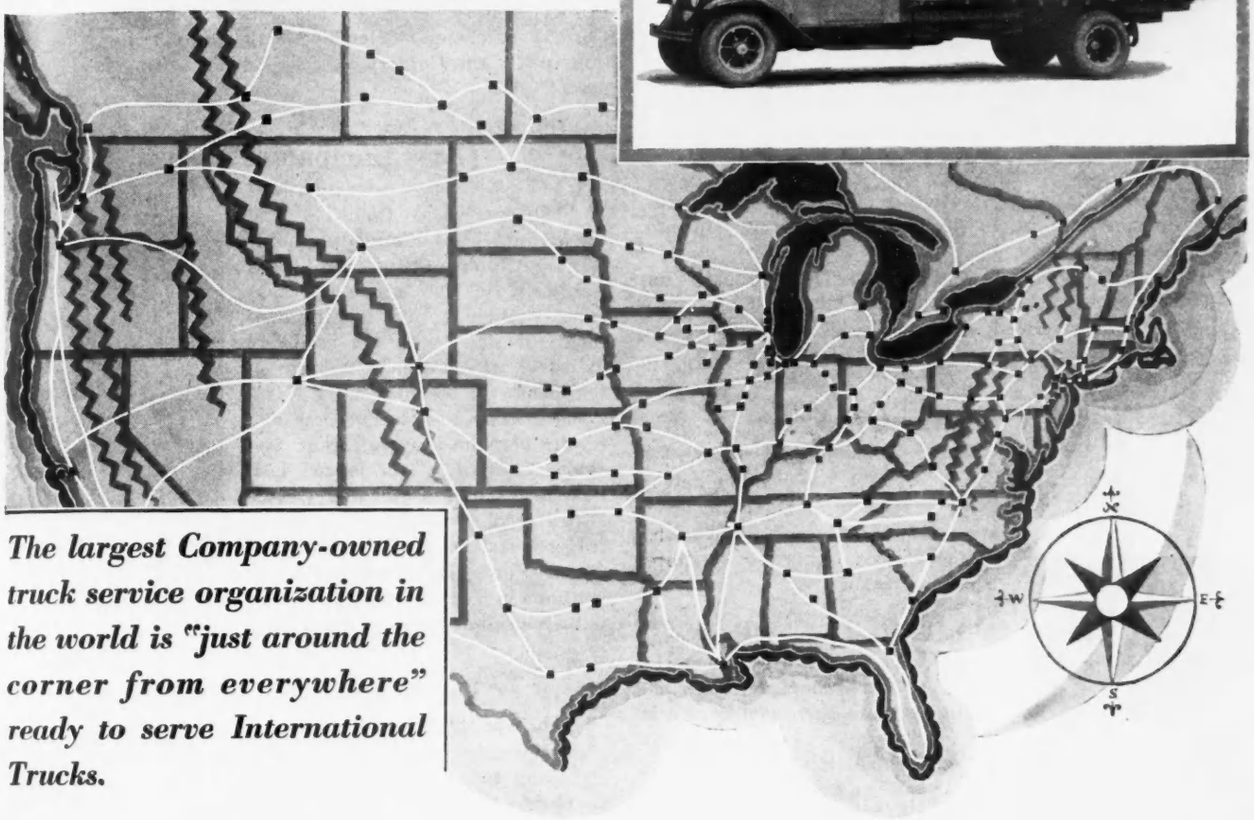


This Home Gas Plant Generates the Gas Needed and There Is No Storage of Gas in the House.

In addition to homes this plant has a wide range of industrial and commercial applications, wherever food is to be prepared or heat applied in ordinary uses, and public service gas is not available.

You can't get away *from* SERVICE LIKE THIS





The largest Company-owned truck service organization in the world is "just around the corner from everywhere" ready to serve International Trucks.

All over the United States and Canada there are Company-owned branches waiting to wait upon International Trucks. There are 161 of these branches in the United States alone, and 19 in Canada.

No matter whether you operate your Internationals in Connecticut or California, in Saskatoon or San Antonio, you will always find an International Branch not far away. The farther you go from one, the nearer you get to another.

And every International owner can get from any one of these branches just the kind of service the factory itself would give him. Each branch has an extensive stock of factory-standard parts on hand for all emergencies, and every trained mechanic works on factory-standard methods with all the modern equipment good service demands.

There's never any guess-work and never any tinkering—and that means economy in every operation.

When you buy an International you buy a truck that the Harvester Company is proud to have carry its name and you can rest assured that the Harvester Company will always do everything in its power to keep the truck that way.

The International Line includes the ¾-ton Special Delivery; the 1-ton Six-Speed Special; Speed Trucks, 1¼, 1½, 2 and 3-ton; Heavy-Duty Trucks to 5-ton; and McCormick-Deering Industrial Tractors. Catalogs on request.

INTERNATIONAL HARVESTER COMPANY
OF AMERICA
(INCORPORATED)
606 So. Michigan Ave. Chicago, Illinois

INTERNATIONAL

INTERNATIONAL TRUCKS

News of the Field

Convention and Show Dates

June 1-16-19, 1930—Heating and Piping Contractors National 48th Annual Convention and Exposition, Statler Hotel and Mechanics Building, Boston, Mass.

June 16-20, 1930—National Electric Light Association, 53rd Annual Convention, Exposition Auditorium, San Francisco, Calif.

June 24-26, 1930—National Association of Master Plumbers, Association, 41st Annual Convention, New Yorker Hotel, New York, N. Y.

July 9-11, 1930—National Association of Real Estate Boards, Annual Convention, Royal York Hotel, Toronto, Canada.

Oct. 13-17, 1930—American Gas Association, Annual Convention, Municipal Auditorium, Atlantic City, N. J.

Oct. 28, 1930—American Institute of Steel Construction, Inc., 8th Annual Convention, Pinehurst, N. C.

✣

Fir-Tex Company Organized

THE Fir-Tex Insulating Board Company, a new $2,500,000 concern, has recently been organized and is building a $1,500,000 plant at St. Helens, Oregon to manufacture insulating board from the sawmill wastes of the Pacific Northwest territory. The new product will be placed on the market shortly.

A. E. Millington, Manager of the Fir-Tex Insulating Board Co.

The Fir-Tex company is being managed by A. E. Millington, who perfected the product and who has for many years been well known in the insulating board field and as a designer, builder and operator of pulp, paper and board plants. Mr. Millington equipped a miniature plant, with specially designed machinery and spent three years in experimenting, improving and testing his product before he considered it perfected.

The patented process of manufacture utilizes the clean wood and bark which is disintegrated by steam and hot water and pressed into a board of great structural strength and insulating value. It has also demonstrated great resistance to expansion, contraction, warping and buckling.

✣

Kawneer Company Expands

THE Kawneer Company, Niles, Mich., has announced that it has purchased the business of Adelbert E. Coleman, formerly the Chicago Ornamental Iron Company, producer of fine sculptural and architectural metals. The new division will be known as the Adelbert Coleman Company, 37th St. and Stewart Ave., Chicago, operating under its owner charter as a subsidiary of The Kawneer Company, which also owns the Kawneer Mfg. Co., Berkeley, Cal., and The Zouri Company, Chicago Heights, Ill.

✣

Straub Patent Upheld

THE Straub patent for the manufacture of cinder blocks, held by the National Building Units Corp., 1600 Arch St., Philadelphia, Pa., was recently sustained by the Federal District Court of Baltimore, Md. The decision, while following former decisions, is of importance because it is the first decision affecting this patent outside the Third Circuit. The District Court of Maryland is in the Fourth Circuit.

Another feature of the decision is that it involves the Cordery patent. The defendant held a license under the Cordery patent and defended on the ground that its operations under the Cordery process did not infringe the Straub patent.

✣

Glass Companies Merged

WITH the merger of the Libbey-Owens Glass Company and the Edward Ford Plate Glass Company into Libbey-Owens-Ford Glass Company, it was announced that John D. Biggers, prominently identified for years with the hardware industry, and a former president of the Hardware Manufacturers' Association, has been elected president of the combined organization, and James C. Blair, of the former Libbey-Owens Company, was elected chairman of the board.

John D. Biggers, President of the New Libbey-Owens-Ford Glass Company.

Headquarters for the Libbey-Owens-Ford Glass Company will continue in Toledo where two of its most important factories are located.

✣

Takes Over Maftex Sales

THE National Gypsum organization has taken over the entire sales and distribution of Maftex insulation board, according to a joint announcement just issued by William L. Geddes, president of the MacAndrews & Forbes Company of Camden, N. J., and W. H. Baker, president of the National Gypsum Company of Buffalo, N. Y.

✣

Filter Companies Merged

ON April 1, the companies formerly operating as Reed, Midwest and National Air Filter Companies consolidated and will hereafter function as one organization under the name of the American Air Filter Company, Inc. The latter was formerly holding company for the three concerns.

✣

To Make Asbestos Wall Tile

THE Johns-Manville Corporation, 292 Madison Avenue, New York City, has announced that still another new product, asbestos wall tile, which is now perfected after more than two years of research and tests, and has been released for nation-wide distribution through its present building material channels.

✣

DeWalt Acquires Wodack Saw

THE De Walt Products Corporation of Lancaster, Pa., announces that it has acquired the Wodack electric hand saw, one of the pioneers in the electric hand saw field, and the Wodack electric combination mortiser and router. These new products will be distributed through a national sales organization.

✣

J. D. Wallace & Co., 134 S. California Ave., Chicago, has published an illustrated booklet, Wallace portable machines for efficient woodworking.

Contractors:

Cut costs this way..

Here's a sound plan that has proved practical for thousands of contractors and other successful business men: To cut your hauling costs, put a Dodge Truck to work.

Dodge Trucks are confirmed money-savers for these reasons: They have the power you need for hill, hole or soft ground. Provide the speed that enables you to make more trips and save more time. Insure the dependability you want for year-after-year adherence to schedules. Attract patronage by their fine appearance. Please drivers by their roadability, comfort and handling ease. Are so designed and built that economy and long life are definitely assured.

See your Dodge Brothers dealer. Inspect Dodge Trucks. Compare them. Drive one. Choose from 124 standard types, ranging in capacity from ½-ton to 3-tons. Buy one complete with body. Rest assured that it will cut your costs — increase your profits.

DODGE TRUCKS

Makes Window Sash Removable

THERE have been many attempts to devise windows which could be washed on both sides from the inside. Of course inswinging casements permit this, but inswinging casements are not always desirable and special windows designed to provide this feature for double hung windows may be complicated and expensive. Now, however, a device has been perfected which permits inside washing on double hung windows and which can be applied to old windows as easily as to new construction.

It Takes Only a Moment to Remove the Strip and Swing the Sash Into the Room for Washing.

This device is quite simple and easy to install. It consists of a strip which replaces a portion of the parting strip and a portion of the jamb. It extends down within two inches of the sill and up about two inches above the top of the lower sash. It is held in place by a spring clip at the bottom. When the window is to be washed, the clip is released, and the strip removed. The sash is pushed into the slot thus provided and can then be swung out into the room. It hangs on the sash cord.

The upper sash is handled in the same way except that the lower sash must first be swung out. The whole operation of removing the strip requires only a moment and it can be replaced as quickly. Any good carpenter can install the strip in any double hung window quickly and easily.

✣

Sales Force Reorganized

THE General Cable Corporation, New York, has made effective a new field sales policy by the establishment of eighteen district and territorial sales offices, and the assignment of the entire district sales personnel of Dudlo, Rome, Safety and Standard Underground Division to these new territories. Until this change, the sales organizations of the four divisions had functioned in parallel.

This reorganization of sales forces consolidates this company's facilities and makes them more readily available. The identities of the 13 companies comprising the four operating divisions will be continued as manufacturing and shipping units, and all present trade marks will also be continued.

✣

Establish Los Angeles Branch

THE DeVilbiss Company, Toledo, Ohio, announces the establishment of a new sales and service branch at 2305 East 8th Street, Los Angeles, Calif., to take care of its increasing volume of business in Southern California territory. Mr. R. J. Burns is manager.

✣

Westinghouse Opens Institute

DEPICTING the application of electric light to all phases of life, commerce and industry, the Westinghouse Lighting Institute was opened in Grand Central Palace, New York City, the latter part of May. This permanent institute for the advancement of the art of modern lighting will be conducted under the auspices of the Westinghouse Lamp Company.

The opening of the Institute was coincident with the opening of the convention of the National Electric Light Association in Atlantic City and the inauguration of Light's Golden Jubilee.

The mark of differentiation of this institute of applied lighting from that of an ordinary exhibit is that it is a permanent institution that will be an ever-changing demonstration of modern practices of artificial illumination.

✣

Wood Joins Dahlberg Industries

AFTER some years of outstanding success in the lumber industry and in the advertising business, W. Wadsworth Wood, former president of the W. D. Wood Lumber Co., of Birmingham, Ala., has taken a position with the Dahlberg Cane Industries as assistant to the president, Bror G. Dahlberg. Mr. Wood will make his headquarters in the New York offices of the company, in the New York Central Bldg., 230 Park Ave., and at the Everglades Club in Palm Beach, Florida.

✣

Open Philadelphia Office

REVERE Copper and Brass Incorporated, announce the opening of a Philadelphia sales office at 2604 Fidelity-Philadelphia Trust Building, 123 South Broad Street, Philadelphia, under the direction of the Baltimore Copper Mills Division, with Mr. George Giffault as manager.

✣

Celebrate Golden Anniversary

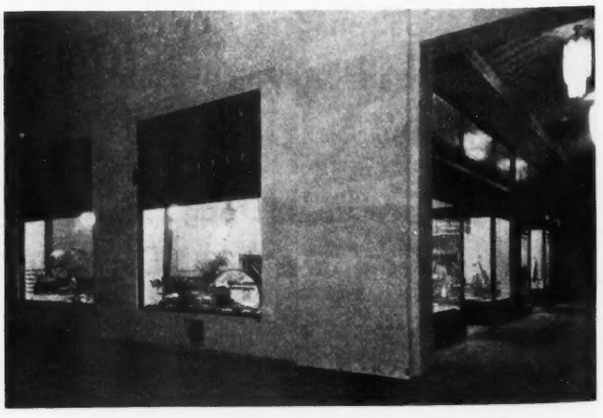
THE Richards-Wilcox Company of Aurora, Illinois, manufacturer of doorway equipment for every type of building, is this year celebrating its Golden Anniversary. The Richards-Wilcox Company was established in 1880 and this will be the 50th continuous year of business in this field.

✣

Open Tool Exhibit

TO better acquaint the public with its wide and growing line of products, Black & Decker has opened a National Exhibit at 2337-2339 Boardwalk, Atlantic City, N. J. The above address comprises two adjoining showrooms in the southwest corner of the new Convention Hall.

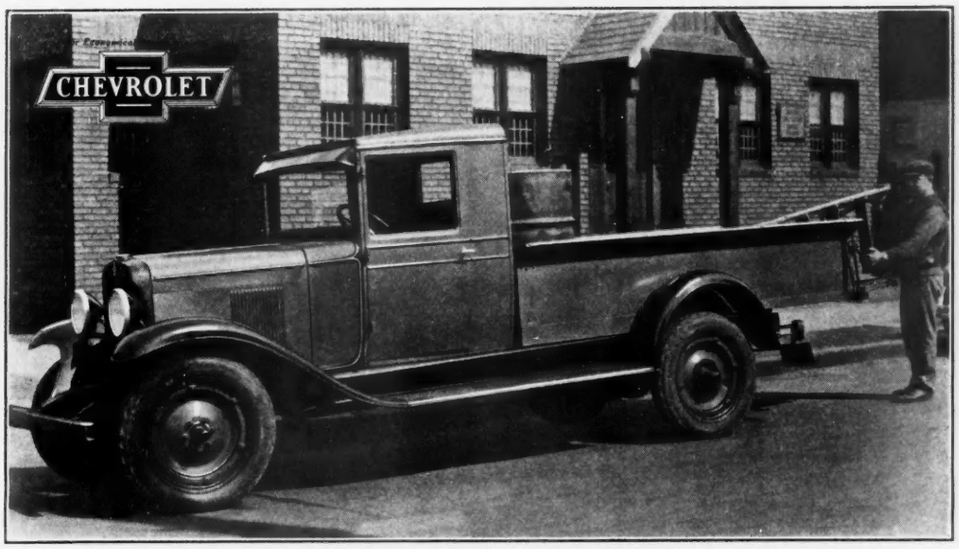
In this exhibit are displayed the Black & Decker Mfg. Co.'s line of portable electric tools and accessories, the Marschke line of heavy duty grinders and buffers, and a representative line of fractional horsepower universal motors, designed and manufactured by the Domestic Electric Company of Cleveland and Kent, Ohio.



Two Showrooms in the New Atlantic City Convention Hall Have Been Taken For a Black & Decker Exhibit.

In addition to the display mentioned above, a special clinic room has been fitted out where all types of highly specialized demonstrations on various tools can be made to those visitors interested particularly in the application of electric tools to industry.

IT'S WISE TO CHOOSE A SIX



. . . and the Chevrolet six-cylinder truck costs no more for gas, oil or upkeep

In the low-price commercial car field, the swing to six-cylinder trucks is growing steadily more impressive every day.

For leading firms in every line of business are rapidly learning the facts about Chevrolet performance — that it offers all the advantages of six-cylinder power, six-cylinder speed, six-cylinder flexibility *without costing a dollar more for operation or upkeep!*

No other truck of similar capacity gives any better gas and oil mileage. For Chevrolet offers such modern features of efficiency as overhead valves, crankcase ventilation, a hot-spot manifold, and the latest type carburetion.

No other costs less for upkeep. For Chevrolet's big rugged spiral-bevel-gear rear axle — its sturdy full-length frame — and the six-cylinder engine itself, with its marked absence of destructive vibration — all make for greater dependability, and lower maintenance costs.

No other costs less for service! For Chevrolet flat-rate service charges on many operations are the lowest in the entire motor car industry.

If you are interested in getting top efficiency from your trucking equipment — and cutting mileage costs as well — see your nearest Chevrolet dealer. Investigate Chevrolet's 50-horsepower six-cylinder engine — its four long semi-elliptic springs — its time-proved 4-speed transmission — its generous carrying capacity. Consider how much better this modern *truck* can do your work — how much *faster, easier, more economically!* And be sure to learn about the small down payment and easy G. M. A. C. terms available to every buyer of a Chevrolet truck.

CHEVROLET MOTOR COMPANY, DETROIT, MICHIGAN
Division of General Motors Corporation

Sedan Delivery $595 Light Delivery Chassis . . . . $365 1½ Ton Chassis. $520 1½ Ton Chassis with Cab . . . $625 Roadster Delivery Pick-up box extra . $440

All prices f. o. b. factory, Flint, Michigan

CHEVROLET SIX-CYLINDER TRUCKS

Is There a Measuring Stick for Home Building Operations?

(*Continued from page 75*)

small, which are coterminous with the county. Richmond is one of these; with a population of 194,400 it had in 1928 1,799 marriages or 9.25 per 1,000, a rate almost identical with that of the United States as a whole, yet its building permits for the year cover but 64 family units. No explanation is available.

Norfolk, Va., with a population of 184,200 has a marriage rate of only 6.6 or exactly the same as Philadelphia. It had 1,215 marriages while its building permits cover but 634 family units. Lynchburg, Va., shows an abnormal marriage rate of 11.4 per 1,000. Here there seems to be a large number of marriages where the parties do not stay in Lynchburg. It may be a Gretna Green. I would like to give all of the other Virginia towns where a wide divergence between marriages and building permits exist, but they would take up some space and to my mind there is a common explanation—which is that the marriage license record is complete, while the building permit record is not.

Many Homes Built Without Permits

A city of forty thousand may legislatively get itself made cotermious with the county, and while this would insure a record of marriages, it would not stop people in the rural districts of the county from building without the trouble of securing building permits. It is not easy to force building permits beyonds the limits of the centralized population.

To return to the larger aspects of the problem—the Bureau of Labor Statistics obtained records of building permits in 1928 from 310 cities, with a combined population of 44,940,049. The families provided for in the cities covered were 399,657, or 8.89 per thousand of population. This represents a very good sample so far as population is concerned.

Now let us compare this with the marriages for 1928, taking the United States as a whole. There were 1,182,497 marriages solemnized in 1928, or 9.85 per thousand of population. There were 195,939 divorces, or 1.63 per thousand. Deducting divorces from marriages we have a net marriage rate of 8.22.

In many cases divorces do not mean families destroyed in the sense of a dwelling vacated. One of the divorced parties may continue to live in the same house and thus keep the family unit together. Taking the country as a whole many of the divorces of a given year are also in the marriages of that year, while few, if any, of the marriages would be represented in the divorces of that year. Speaking in terms of family dwellings it is not quite accurate to consider divorces in terms of families destroyed. This is borne out by the divorce figures of cities having enormous divorce records. In St. Louis with a record of 3.76 per thousand of population, in San Francisco with a record of 4.14, we do not find that the divorce record influences the building permits at all.

To deduct the divorces bodily from the marriages of a given year is to err on the side of fewer dwelling requirements than the facts would warrant. But in considering the country as a whole I have deliberately erred on that side, my wish being to arrive at a very conservative estimate.

Two other considerations must here be noted—the deaths of old people which release residences for other occupants, second, the proportion of newly weds who live for a time with the parents of one or the other of the wedded parties and thus do not add to the demand for residences; others board or live in hotels indefinitely. This constitutes an unknown quantity. Nevertheless there is another side to it. To many of the couples that were absorbed by any of the methods indicated there come changed family conditions which disturb this absorption. Babies make boarding house inconvenient, sometimes impossible. They make living with the bride's or bridegroom's father equally embarassing. In other words, the absorbed marriages of former years are continuously projecting the demand for sepaate houses into the futue. This year must build houses for a considerable number of the marriages of two years ago, of three years ago. These tend to discount whatever fluctuations may come from absorption, from the death rate, and from the divorce rate. But I have shaved the net marriage rate slightly to further provide for these conditions.

✣

Newspapers Aid Modernizing

(*Continued from page 69*)

section. Some of the newspapers which have followed his suggestions are: "New York Herald Tribune," "Philadelphia Public Ledger," "Philadelphia Record," "Minneapolis Tribune," "Kansas City Star," "St. Louis Post Dispatch," "Indianapolis Star," "Toledo Blade," "Detroit Free Press," "Seattle Post Intelligencer," "Seattle Times," San Francisco Examiner" and "San Francisco Call Bulletin," "Los Angeles Times" and the "Los Angeles Examiner" and the "Denver Post."

This sort of effort means that home construction and modernizing is rapidy gaining the place it deserves in the pages of the newspapers of the United States.

Recently the "Allentown Morning Call" of Allentown, Pa., in connection with a model home campaign published a sixty-four page section, fifty-six pages of which were devoted to home building and modernizing. Sixty per cent of the space was occupied by building advertising. This newspaper is a subscriber for the Bureau news service and carries a section each week.

The "Youngstown (O.) Vindicator" recently published a twenty-four page tabloid home modernizing section containing many columns of interesting reading matter and advertising relative to the building and remodeling of homes. This newspaper is a subscriber for the Bureau news service. The "St. Paul Pioneer Press" recently started a campaign with a sixteen page section.

All of this material is of great value to the present home owner and the prospective home owner or the modernizer. They are being taught pride in home ownership. They are responding by building better homes and improving those already in existence.

Now it is up to the dealers and builders in the cities where the newspapers are backing this great movement to do their advertising with these newspapers, thus getting back of a movement which will not only mean profits to them but is a part of their duty as citizens to aid in the general prosperity of the country.

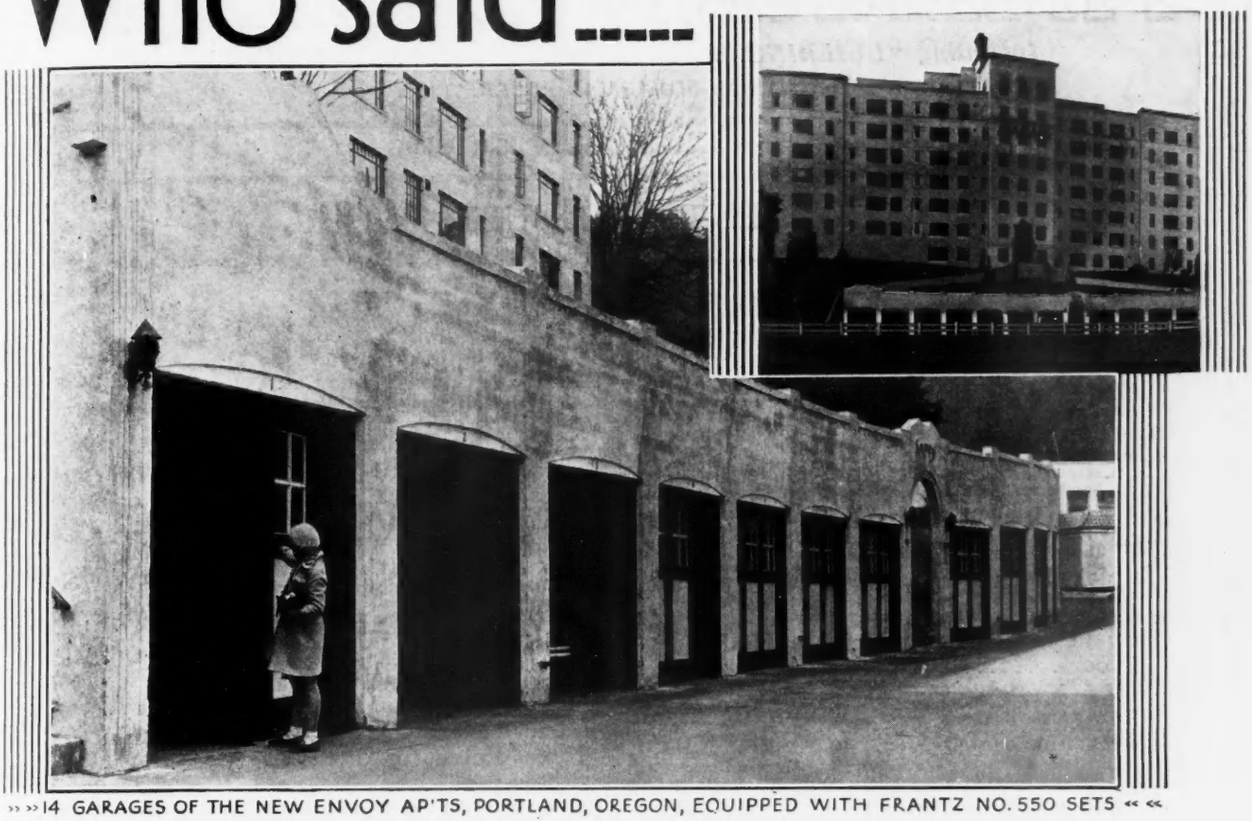
✣

The Department of Engineering Research, University of Michigan, Ann Arbor, Michigan, has published an Engineering Research Bulletin No. 13 on "A Practical Method for the Selection of Foundations Based on Fundamental Research in Soil Mechanics" by W. S. Housel, assistant professor of Civil Engineering. Price, $1.00.

✣

"Standardized Service in Steel for One Story Buildings" is the title of Catalog No. 618 issued by the Macomber Steel Company, Canton, Ohio.

Who said it wouldn't work?



»»14 GARAGES OF THE NEW ENVOY AP'TS, PORTLAND, OREGON, EQUIPPED WITH FRANTZ NO. 550 SETS ««

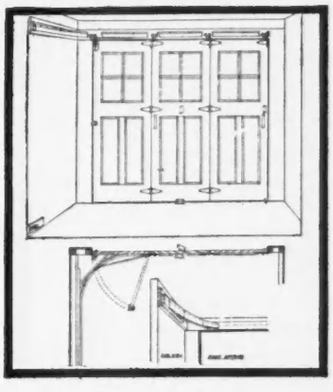
Forget all the objections you have formed against "around-the-corner" type of garage door operation—completely forget how unsatisfactorily "old style" equipment has been. *Here is a set that works!*

The new Frantz No. 550 is an Around-the-Corner set. With it, all the doors roll out of the way, smoothly and easily. No struggling—no trying to guide the entrance door with one hand and pushing with the other. The opening can be cleared or closed as easily from inside or outside the building. The hardware of No. 550 Fixtures fastens on the inside of the doors—operation is never hindered by ice and snow.

The Frantz No. 550 set sells at a much lower price than you have been accustomed to pay even for the "old style" equipment. Contractors, builders and carpenters find it not only logical for providing convenience and long, satisfactory operation, but a most economical choice when selecting garage door equipment. Here is a "'Round-the-Corner" outfit that works—it sells itself to home owners. Mail the coupon for complete information. Frantz Mfg. Co., Sterling, Ill.

Automatic door guide (patents pending) makes it unnecessary to guide the separate passage door by hand. This unique invention supports the weight of the door and holds it in position as the doors are being operated. And, too, the opening can be cleared without entering the garage.

Installing No. 550 Fixtures is a simple task. The hardware fastens in place without cutting and fitting. The "Rollaway" Track requires no blocking or bracing—it fastens on the header over the opening and on the side of the wall. Packed complete with instructions in a strong fibre carton.



FRANTZ
TRADE MARK
Guaranteed **Builders Hardware**

Frantz Mfg. Co., Dept. A-7, Sterling, Ill.

Kindly send me complete information on the new No. 550 Around-the-Corner Garage Door Set.

Name.....
(print plainly)

Address.....