

AMERICAN BUILDER and BUILDING AGE

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AMERICAN BUILDER and BUILDING AGE

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BUILDING INDUSTRY

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Cover Design.....	Painting by L. E. Arent	1
Looking Ahead with the Editor.....	December Forecast	7
Subscribers' Service Page.....		32
Subject Sign-Post.....	A Quick-Finding Guide	54
Editorials.....		58
Larger and Better Homes; Business During Depressions		
Frontispiece; a Gem of Half Timbering.....	"Agecroft Hall" Rebuilt	59
No Vacation This Winter.....	An Editorial	60
How to Get, and How to Handle, Winter Work		
Homes of Good Taste.....	Photographs and Plans	63-73
Ten Pages of Selected Designs of Better Homes to Suit Every Purse; Ten Designs Presented Full of Good Suggestions		
Development Mirrors Charm of Old England.....	by Edward C. Rothwell	74
Windsor Farms an Unusual Subdivision Outside of Richmond, Virginia		
Houses by Motor Truck.....	E. H. Millard, Builder	76
Factory-Produced Homes Delivered to Building Site Completely Finished		
"We Don't Tie Up Our Working Capital".....	by Arthur S. Storm	78
Pooling Land Contracts Make Them More Salable		
National Retailers Offer Business Building Slogan.....		80
"Keep Your Home in Good Repair" Is Making Business for Dealers and Builders		
Recent Home Financing Plans.....		82
The Ames, Emerich & Co. 15 Year 75 Per Cent Plan as Outlined at the Recent Convention of the National Retail Lumber Dealers Association		
Modern Apartments.....	Photographs and Plans	83-87
Three Recent Apartment Buildings Ranging from Small to Large Show Many New Ideas in Design and Arrangement		
Two Good Looking Private Garages.....	Photographs and Plans	88
Filling Station of Better Lines.....	Photograph and Plan	89
"Modernizing Pays Me \$680,000 Yearly".....	by Joseph Pondelik, Jr.	90
How the Work is Sold, Organized and Handled		
Modernistic Business Fronts.....	Recent Photographs	94
Bank Beauty of Today.....		95
Are You Building Your Walls and Floors Sound-Proof?.....	Test Results	96
Wall and Floor Details Showing How to Build a Quiet House		
That Extra Talking Point.....	Controlled Weather	98
Discriminating Home Buyers Favor Heating Plant Which Automatically Purifies and Moistens the Air		
Facts Aid Equipment Users.....	A Motor Truck Survey	100
Better Home Building Conditions.....		103
Contractors Outline Program to Be Recommended to the White House Conference		
The House of the Month.....	Building Plans in Detail	105-109
Practical Job Pointers.....	By Ten Readers	110
Measured Drawings of Good Construction.....	Photographs, Drawings	112, 113
Details of Good Construction..... by James T. Nabrett		
The Month's News of the Industry.....		115-120
Wrought Iron Being Made by New Process.....		124
For the Builder's Library.....		126
These Are New.....		128-138
Questions of Law Clearly Answered.....		140
Advertisers' Index.....		169

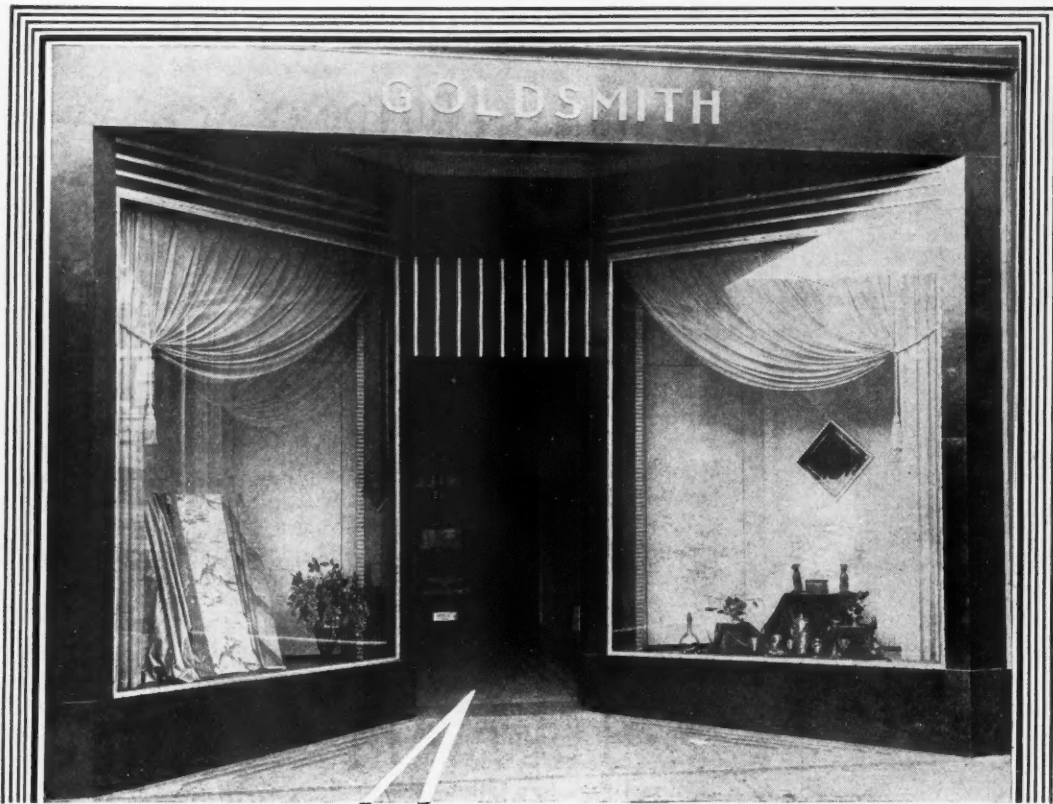
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A Store Front *designed with* FORMICA

THIS attractive store front was designed in black and gold Formica by Eugene Schoen, Architect, New York. It is an exceptionally attractive example of the effects that are possible with this new material.

Every day Formica becomes more popular for store and building fronts, lobby walls, wainscot in restaurants and club rooms.

It is equally well adapted for window stools, baseboard, kitchen cabinet tops, counter panels and tops, and table tops.

If you do not know Formica, ask for literature and samples.

THE FORMICA INSULATION COMPANY
4618 Spring Grove Avenue, Cincinnati, Ohio

FORMICA
for **BUILDING PURPOSES**

FOR ADVERTISERS' INDEX SEE NEXT TO LAST PAGE



LOOKING AHEAD
WITH THE EDITOR

December

Christmas and Home Improvements

DID it ever occur to you how much in line home building and home improvements are with the spirit of Christmas?

Christmas is a home day and a family day. A new home for Christmas or some needed improvements and modern additions to the old home would be a wonderful gift for all the family. A new modern residence or the old place fixed up—as only the men of the building industry know how to fix it up—would indeed be The Jolliest Gift of All. It would be the gift that would mean most and give fullest enjoyment to all the other happy gifts of the glad Christmas season.

Builders, here is work for you to do! You can be “good fellows” about your own business at this season of the year; for every one whom you can interest now in building a new home or in modernizing his old one,

you will be helping to get in line to be a real Santa Claus to his loved ones this Christmas!

The December “American Builder and Building Age” is a Christmas Number. The small illustration above gives just a hint of the beauty and appeal of our Christmas cover, painted in all the colors of a master palette. Inside, this magazine will make good the promise of the cover. It will contain a wealth of timely suggestions and definite plans for linking up the home building and home improvement business with the happy buying spirit of Christmas.

Don't miss a single feature of next month's “American Builder and Building Age”—new designs—new features of interest—new business creating ideas. Christmas this year is a builders' season, and the December issue will contain many a practical and inspiring plan for you.



Stanley Stone Saw
No. CCS-12

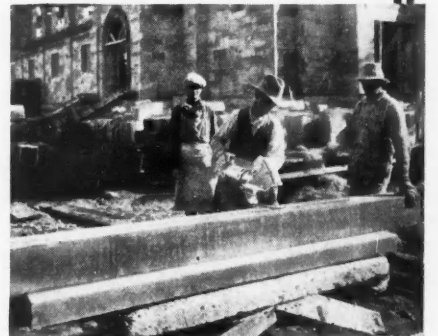
Regular cutting capacity up to
4 inches. Saw blade speed—
2500 R. P. M. Weighs 37
pounds. Absolutely safe.



Cutting marble facing
one inch thick



Cutting Indiana limestone
as if it were wood



The builder of this stone church saved
\$50. a day with a Stanley Stone Saw

Ask These Fellows if a Stanley Stone Saw Saves Time

HERE are a few typical examples of work
that can be done quicker with a Stan-
ley Stone Saw than by any other method.

One demonstration tells the story. You
tell us where you would like to have a
Stone Saw demonstrated and what kind
of work you're doing—we'll be glad to
show you how much time you can save.

*Just fill out the coupon below
—no obligation to you*

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New Britain, Conn.

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Sales Offices and Service Stations:

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With no obligation to me, I would like to have you prove how much time can be saved
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Cutting tile—good, clean
cuts, no breakage



AMERICAN BUILDER AND BUILDING AGE

LARGER AND BETTER HOMES

THE greatest economic, social and moral need of the American people is for larger, better and more beautiful homes. The greatest potential business opportunity presented in this country is that of building, equipping and furnishing such homes. The thing most essential to a revival of general business is a revival of the building of homes.

During the last decade the American people lived in a fool's paradise. They believed that the nation was enjoying real prosperity, that that prosperity would last indefinitely, and that both governments and individuals could squander money recklessly without ever paying the penalty for it. The depression and the financial losses, unemployment and suffering due to it should cause us all to do some serious thinking. The more seriously the American people think about the prevailing tendencies in their recent living the better will be the business opportunities of those who build, equip and furnish homes.

Majority Not Well-Housed

We have heard a great deal about the raising of the standard of living in this country within recent years. Has the standard of living of a large majority actually been raised much? Formerly a family's well-being and the way it lived were measured chiefly by the kind of a home it had. Within recent years its standard of living has been measured chiefly by the number and kind of automobiles it has owned. Millions who could not afford it have kept one car. Hundreds of thousands who could hardly afford one car have kept two. The heads of many families have overworked, and all the members of their families have stinted themselves in numerous ways, in order to "keep up with the Joneses" by having automobiles, the payment of the installments on which has constantly kept them poor.

Possessed by this automobile mania, many thousands who otherwise would have built larger and better homes have been unable to do so, while many thousands more

have moved into houses and apartments with fewer rooms than they were previously accustomed to.

It is quite true that many spacious and beautiful houses and apartments have been built, but the number of them has been much smaller than it would have been if so large a part of the American people had not decided that their neighbors would judge them more by their automobiles than by their homes.

Automobiles Versus Homes

The increase in the use of automobiles has had other indirect effects upon the home building industry. It has resulted in the expenditure of many billions of dollars upon hard surface highways. The construction and maintenance of these highways has been one of the principal causes of the enormous increases in taxes that have occurred. Residences are a kind of property that cannot be concealed, and in consequence there have been large increases in the taxes upon residence property which have contributed toward making good homes more expensive to own or rent.

The automobile industry and other industries that have succeeded in diverting so much of the expenditures of the American public from homes to other things are not to be criticised, but rather the effectiveness of the business methods they have used is to be admired. But what has been the effect upon other kinds of business? What should be said about the management of the building and other industries, which has allowed the automobile and amusement industries, for example, to so change the standards of living of the American people, and thereby take so much business away from those who build homes and sell materials, equipment and furnishings for them?

Fortunately, perhaps, for other industries the constantly increasing congestion of the highways, in spite of the rapidity with which they are being built, seems to set a limit to the amount of enjoyment people can derive from automobiles. Furthermore, there must be some limit to the extent to which the people are willing to tax themselves to provide highways. Certain signs indi-

cate that they are waking up to this growing tax burden.

The business depression has ended a remarkable period in the history of this country. It seems probable that in future the natural tendency of many people will be to think less of the pleasures of joy riding and more of the pleasures of home. Certainly the building industry should try to influence them to do so both in its own interest and that of the people themselves. There is no other market in this country that is so far from what is called the "saturation" point as the market for good homes. In spite of all our boasting about our high standards of living most of our people, whether in large cities, small cities, towns or on the farms are living in apartments or houses that are ugly, too small, inadequately equipped and unattractively furnished in proportion to their incomes. Those who have travelled abroad know that in the leading countries of Europe the standard of beauty of homes in large cities, small cities, and on farms, in spite of the lower incomes there, is higher than that which now prevails in this country. The general standard of our homes is much lower than our other standards. A real home should have not only external beauty, but room for good furniture and the attractive arrangement of it, for pictures, books, large lamps and all those things which create the appearance and atmosphere of a home. You cannot have these things in a flat with one room and a kitchenette. There is no suitable place for them in an old-fashioned frame house of the kind which predominates in our small cities and on our farms. Many of those who are accustomed to bath rooms think everybody has them. The fact is that there are many thousands of homes in this country with automobiles standing in front of them that have not even bath rooms or furnaces in them.

Opportunity of the Building Industry

The American people within recent years have spent their incomes in riotous joy riding instead of showing the sanity, intelligence and good taste to provide themselves with the homes and the home life which are the first essentials to comfortable and happy living and to the proper rearing of families. The building industry has missed and is still missing a great opportunity in not educating them to the desirability and actual need of larger, better and more beautiful homes. Surely the building industry should find it possible to sell one bath room to any family to which the automobile industry can sell one automobile, and two bath rooms to any family to which the automobile industry can sell two automobiles. Comfort, cleanliness and sanitation should be as salable as joy riding.

The building industry during the depression should be carrying the message of better homes to the American people. By doing so it will not only benefit itself, but the people also. A revival of home building is more essential than anything else to a revival of general prosperity, and the American people need nothing else so much as a restoration of the home to its proper place as the principal influence upon, and the true measure of, each family's well being.

BUSINESS DURING DEPRESSIONS

THE prosperity of every business concern is determined mainly by two factors. One of these consists of conditions affecting the industry of which the concern is a part. The other is the way in which the individual concern itself is managed.

This country is now going through a depression, and there is no denying that the building industry is being very adversely affected by it. It is necessary, however, to carry on when business is bad as well as when it is good. Furthermore, able and aggressive management of the individual concern is even more important and indispensable when general business is bad than when it is good. The best possible management when business is bad not only helps the individual concern to get along better than its competitors then, but also prepares the way for it to do better than its competitors when general business improves.

The true test of a business man comes when business is poor. A man of average ability can make money when general business is good, but it requires real brains and energy to deal successfully with conditions when they are unfavorable and to prepare the way then for taking advantage of the better general conditions that will prevail later.

However bad business in the United States may temporarily be, experience shows that depressions in this country always are short. It is a rather curious fact, therefore, that when business has been good for some time most persons should be disposed to believe that it will continue good indefinitely, while when it has been bad for some time many are disposed to anticipate that it will continue bad for a long period. Past experience should teach us that it is when business has been good for a long time that we should begin to prepare for it to become bad, while when it has been bad for some time we should begin to prepare for it to become good again. Obviously, the longer a depression has lasted the closer we are to the end of it.

The depression in the building industry has lasted longer than the depression in general business which began somewhat more than a year ago. Throughout the last year the newspapers have been filled with predictions of public men and business leaders that general business would soon revive, but developments have not vindicated these predictions. All these expressions of optimism apparently have failed to help business. There is one thing, however, that will help business. This is the making of the greatest effort possible by every business man to conduct his own business successfully in spite of the depression. The aggregate effort of all the business men of the country to conduct their own businesses successfully in spite of the depression is the one thing that is most certain to restore prosperity; and those who are the ablest and most energetic in managing their businesses during the depression are sure to be the largest beneficiaries of the return of general prosperity.



"Agecroft Hall," built in England in 1393, transported to America and re-erected near Richmond, Va., by Thomas C. Williams, Jr., developer of Windsor Farms Subdivision
(See pages 74 and 75)

A GEM OF HALF-TIMBERING

NO VACATION THIS WINTER

For Contractors and Builders Who Have Optimism
and Energy and Take Advantage of
the New Set of Conditions



Although There Is Snow and Cold Outside, Building Work Is Going Ahead Comfortably Within.

CONSIDER THIS:

Rapid increase in savings deposits throughout the country shows that more money is available for home building now than ever before. Coupled with this is the fact that installment buying is at a low ebb, indicating that people are hesitating to put money into luxuries.

Energetic contractors are redoubling their selling efforts this fall and are optimistic that they will be able to secure enough work to keep their organizations busy all winter.

Agitation for increased construction work this winter to avert unemployment is greater than ever, and builders are taking part in movements to start construction work in their communities now. Conditions for successfully carrying on winter work are better than ever in the history of the industry.

OPTIMISM, said Herbert Hoover in his recent speech before the American Bankers' Association, is what American business men need to put them on their feet. Optimism likewise is what contractors and builders need right now as the cold weather season approaches.

A new set of conditions prevails this fall which makes an entirely new approach to the winter building problem possible. These new conditions, we believe, make it easier to be optimistic. They call for optimism backed, however, by an energetic, lively business sense.

This is no year for cold weather calamity howlers. The men who are on their toes are taking a new slant on conditions and are going after business—and getting it—stronger than ever.

Here is what an AMERICAN BUILDER AND BUILDING AGE survey of present conditions and their effect on opportunities for winter work shows.

In the first place, reports from bankers in all parts of the country tell that savings deposits are at a high level. In other words, the American public, frightened away from the stock market, has been putting its money in the savings banks. A good example is New York state where the savings deposits in state banks increased \$103,000,000 during the first eight months of 1930, whereas during the corresponding months of 1929, they decreased \$75,000,000.

Now what does this mean to the builder? It means that many people in your town right now have more money readily available than they have had in years. It means that, if you have the energy, enthusiasm and aggressive salesmanship necessary, you can sell these people a new home, or improvements or modernization of the old.

Put Your Building Up While Costs Are Down

People may be talking hard times, but if they are putting more money in the savings banks than ever before, it isn't such a bad picture. It resolves itself into a problem of salesmanship; it means putting up a convincing argument that now, right now, is the time to start building.

Our survey shows that aggressive builders are redoubling their selling efforts. They are pointing out that next spring, many a prospect will be wanting to move into a new house and that, if these are started *now*, they will be ready for them. They are pointing out to the business men of their communities that they need not suffer inconvenience, delay and possible financial loss by waiting six months before starting work on a new project; that *now* is the time to begin.

One midwestern builder is carrying the following display ad in the newspapers:

"Put your building up while costs are down.

"Building costs are at least 15% less than they were a year ago because of the great increased

efficiency of labor and the lower cost of building materials.

"A building built now will carry itself for two to three years before it will equal in cost a building put up a year or two from now. This saving, added to the economies possible in new and more efficient quarters, merits serious consideration.

"We'll be glad to tell you more about this favorable situation and discuss the detailed expense of any building program you may have in mind."

Another lively contractor states in his advertisement, "Today's deep cut prices save you 25% to 40% on repairs, remodeling and on construction work. Then, too, you get the benefit of most skilled labor, with the completed cost of all work at the lowest price in years."

Reports from many states show that this winter under changed conditions, builders are aggressively going out after new business rather than sitting at home while their well-built organizations fall apart and their equipment lies idle.

They are going out to customers with convincing arguments; pointing out that right now, labor is plentiful and cheap, materials are low, and they are making special reductions in prices to get business. They are convincing prospects that they will be able to devote more time and care to jobs they receive now than those that come in next spring and fall when a new building boom may be under way. Another favorable report we have received is that installment buying of luxuries of various kinds is very low right now. Again this brings out the point that more money is available for home building. In times of conservative buying, such as now, it should be much easier to convince a man to put his money into a comfortable home which will be a safe, reliable investment, rather than into an automobile or some other luxury which will soon wear out or become obsolete.

Never in the history of the nation has there been such agitation as we are seeing this fall for immediate beginning of construction work wherever possible, to relieve the unemployment situation which threatens to become acute this winter. Here is another opportunity that aggressive builders are taking advantage of. They are active in local movements to clear away obstacles, pass bond issues and make possible this immediate work. Where no one else has the courage to start such a movement, they are stepping in and making the wheels go 'round. Whether they themselves land the contracts for the work so made possible or not, they are doing a worthwhile act for the community. And the chances are that they will not be overlooked when the contracts are let.

Substantiating the AMERICAN BUILDER AND BUILDING AGE leading article last month, pointing out the need for aggressive salesmanship in the building industry, reports show that much work of this kind is under way right now. Contractors

are taking their selling arguments right into the homes of prospects. One describes how the rough sketches he made to show the housewife exactly how the new arrangement he proposed would look clinched the job and got work started at once.

When the winter winds begin to blow, the old arguments about difficulties of winter work come up. The first snow flurry sometimes causes more cases of cold feet than anything else.

This year, more than any year in the past, the difficulties of winter work are less apparent than ever before. If the old time habit of sitting back and doing nothing to create business can just be conquered, what difficulties there are will melt away in no time.

We can say without reservation that the science of winter building has been so developed that no one who really wants to do work can offer cold weather as a reason for delay. Of course, interior modernizing activities such as painting and decorating, new floors, enclosed porches, new interior trim, creating of extra rooms in basement, attic or elsewhere, modernizing of plumbing or heating systems, cabinet work, etc., can be done just as well in winter as in summer. In fact, they can be done better; for you will have more and better men available to do the work.

With the coming of winter's icy blasts, people are spending more time than ever indoors, and will be more and more anxious to have their homes comfortable and



This Contractor Made Up Rough Sketches to Show Her Exactly How the New Arrangement Would Look.

Building Costs are Down



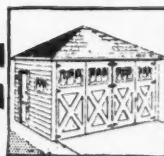
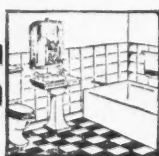
Have Your Building Work Done Now!

Building costs are lower than they have been for years. You can Remodel, Repair or Build at this time and save a substantial sum. Come in and we will help you plan your new home or remodel your present one. Let us

start your job at once. We will get it up and inclosed before rough weather sets in. All work done by experts and fully guaranteed. Estimates Free—Financing Arranged.

Drop in and talk it over

JOHN BROWN
GENERAL BUILDING CONTRACTOR
42 EAST MAIN STREET
PHONE 2108 R



Here Is a Sample of the Kind of Well Designed Advertisements Aggressive Builders Are Using This Fall to Stimulate Winter Building.

attractive. All that is needed is some aggressive selling right now to bring these facts to the attention of your customers.

Outside work, any and all kinds, in any and all kinds of weather, can be done, and done well and with a hardly appreciable increase in expense. In fact, it has been pretty well demonstrated that any increases in construction costs due to cold weather, snow, or other difficulties, are more than made up by the decrease in material and labor costs and the increase in efficiency of workmen due to the fact that they are especially anxious to hold their jobs through the winter.

One by one, the old arguments against outside winter work have been proved obsolete. Concrete work in cold weather was the first process to be established as easily and successfully possible to accomplish, no matter what the temperature or climatic conditions. Thousands of tests have demonstrated that concrete can be placed with-

out damage to quality or excessive difficulty or expense when proper precautions are taken. These may be briefly summarized as follows:

1. Heat both water and aggregates as they go to the mixer. No lumps of frozen materials should be permitted to enter the mixer.
2. Enclose all work with canvas and heat with salamanders, especially faces of exterior columns.
3. Provide one salamander for every 300 square feet of floor area; each should have a heat hole.
4. Furnish water barrels to provide moisture as well as fire protection; prevent canvas from blowing against salamanders.
5. Keep accurate temperature records, maintaining at least 60 degrees Fahrenheit within the enclosure for five days, and at least 40 degrees for ten days additional in severe weather.
6. Do not depend on anti-freezing compounds, but rather provide protection and heat.

Other materials are equally safe to handle in winter when the proper methods are followed. Brick, for example, can be laid in winter, it has been proved many times over, and five precautions are listed to insure good work. They are briefly:

1. Keep the bricks dry.
2. Keep the mortar warm before and while it is used.
3. Heat sand and water.
4. Prevent delayed set.
5. Protect complete brickwork from cold, rain or snow.

Lumber, that most important element in home construction, is not affected by cold but should be protected from snow and dampness. Lumber itself can be handled just as well in winter as in summer, and no one has yet advanced any reasonable proof that carpenter work cannot be successfully carried on in cold weather. When men know they are going to work in the cold, they dress accordingly and will achieve, cost

records of jobs completed last year show, just as good results as in warmer weather.

The building industry might take a lesson from some others in this respect. Do railroads stop operating trains in winter because they are afraid the brakemen's hands will get cold? And what about your local groceryman or milkman who, surprisingly enough, continues to deliver his products to you in spite of the fact that he has to wear mittens and devise means to keep the food from freezing?

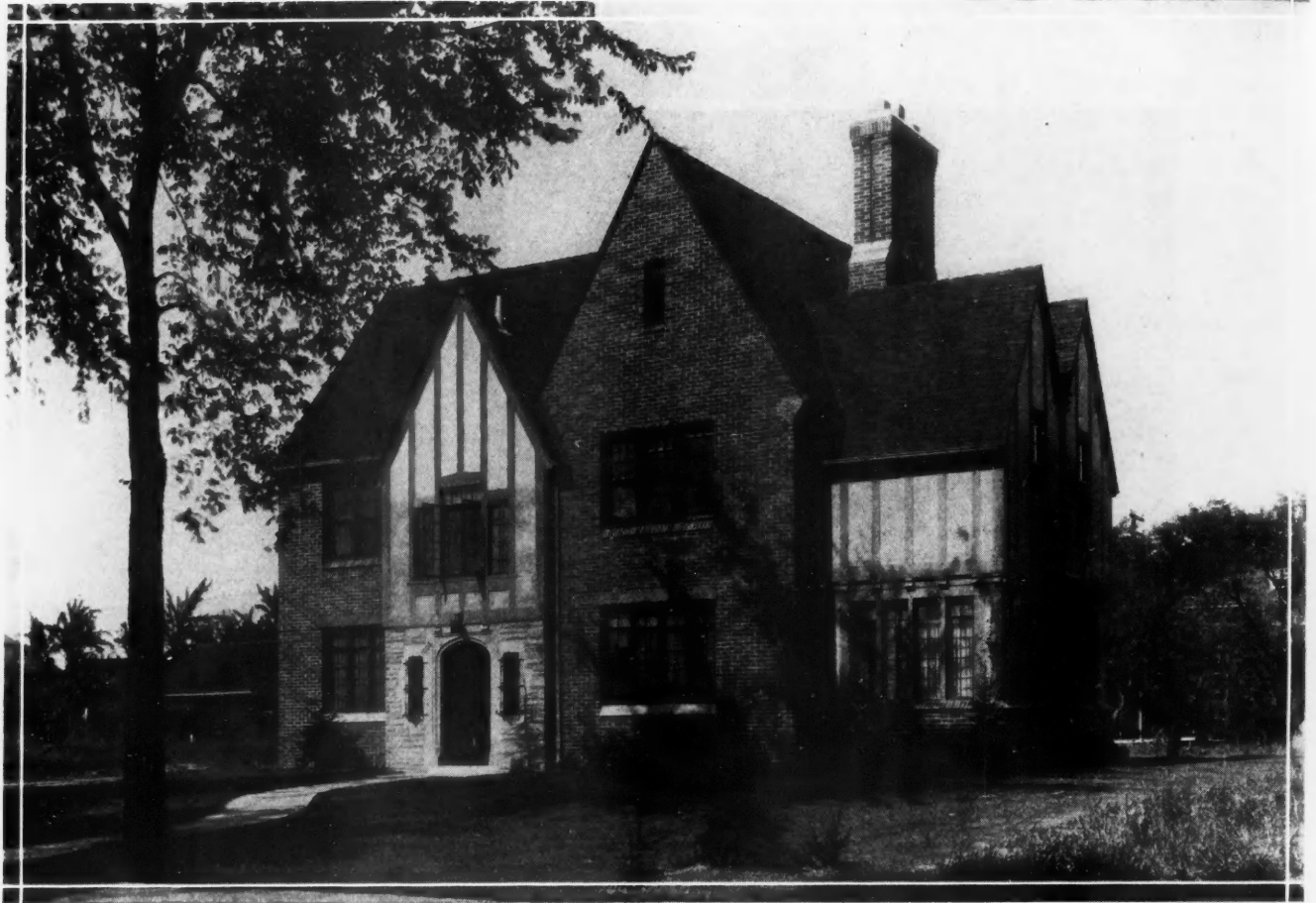
More than 50 per cent of all carpenter work can be done under cover if it is felt necessary; but the fact remains that the ordinary rough carpenter work involved in concrete work, framing and sheathing of wooden structures, and exterior work in general, can be done efficiently in practically any weather.

The placing of steel has never been a serious problem,

(Continued to page 142)



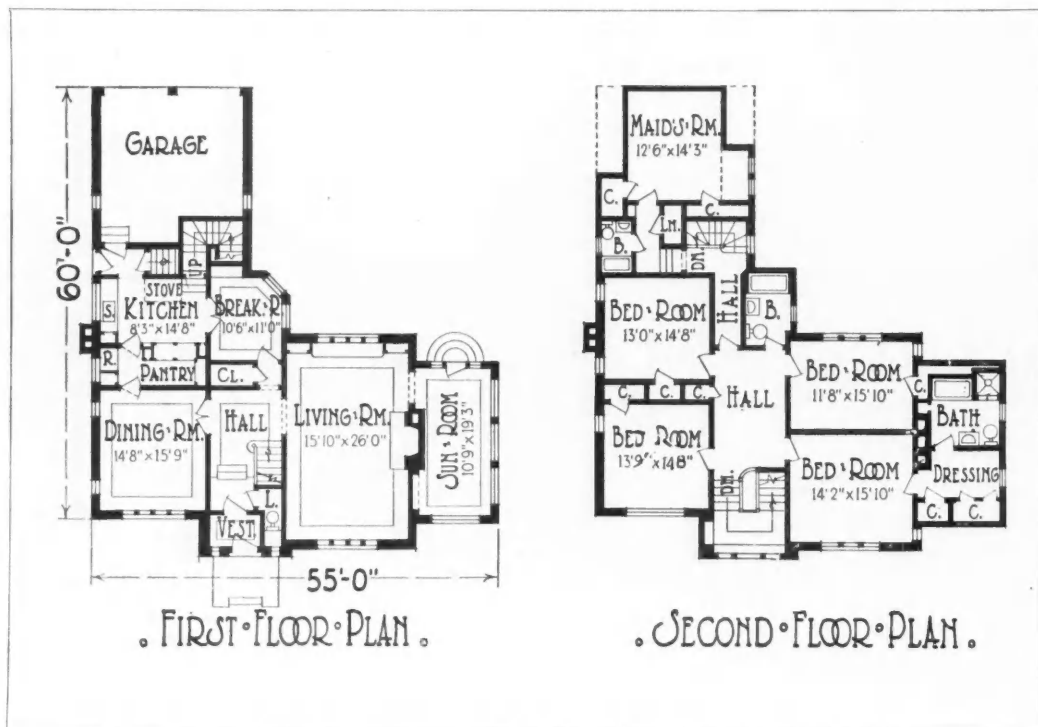
Homes of Good Taste



MILLER-STORM CO., Architects and Builders.

English to the Chimney Pots

A house of many gables, typically English and remarkably effective in proportion, balance and tone, built in Detroit.



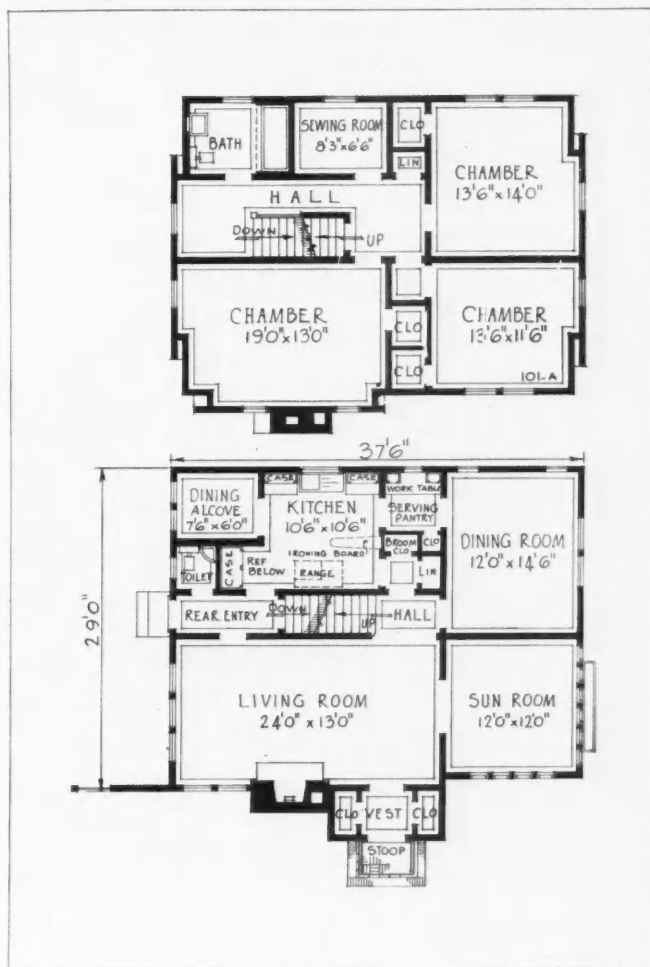


NATIONAL PLAN SERVICE Design

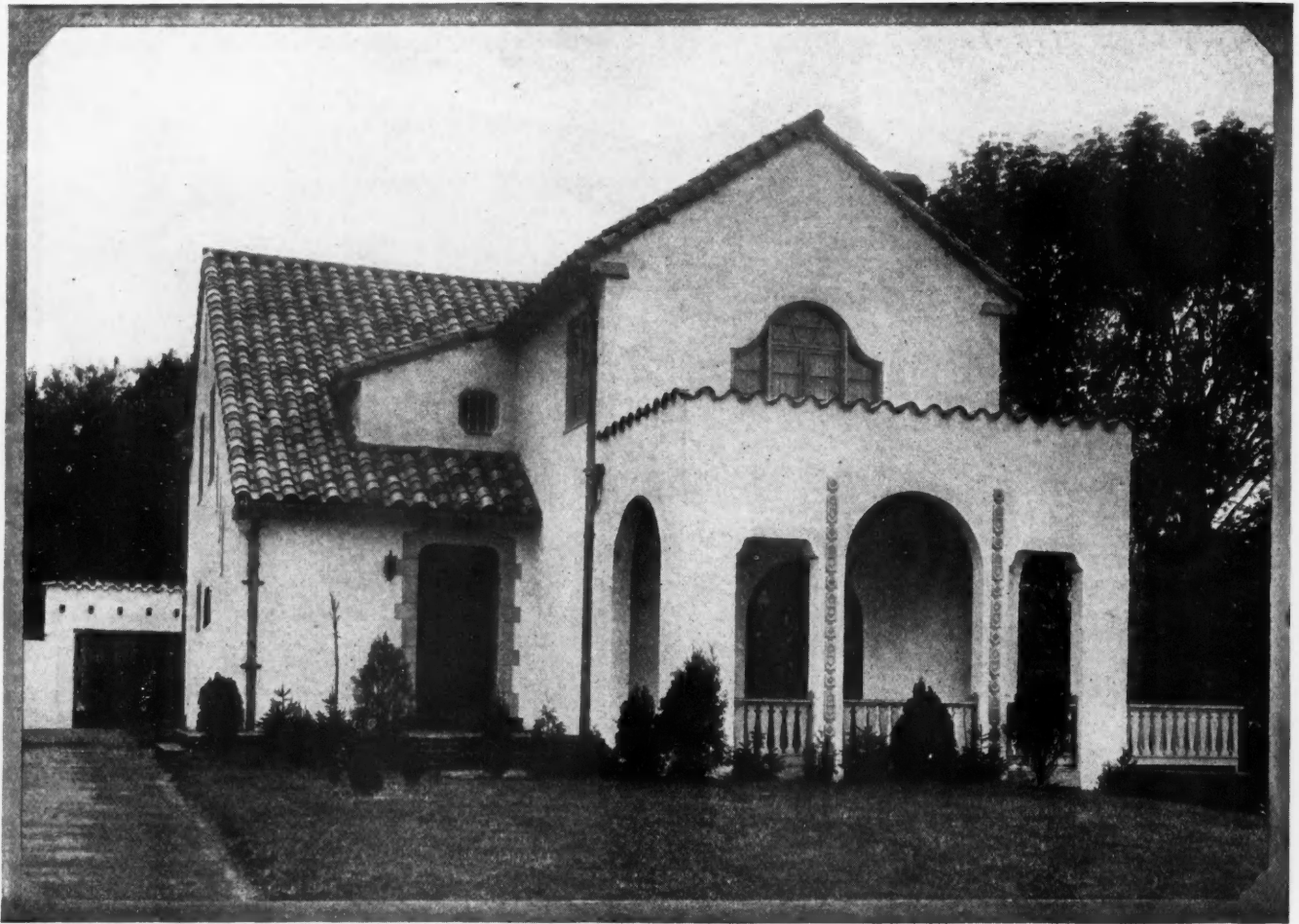
DIMENSIONS

Size of main building.....	37'6" x 28'0"
Size over all.....	48'0" x 38'0"
Ceiling height, 1st floor.....	9'0"
Ceiling height, 2nd floor.....	8'6"
Height of Basement.....	7'0"

Here is a real home—of seven main rooms, besides dining alcove, sewing room, bath and toilet. It is an unusually beautiful house with well laid out interior. A large living room and sun room occupy the entire width of the house. Upstairs there are three delightful sleeping rooms, a sewing room and bath.



**Try Shingles
for Hominess!**

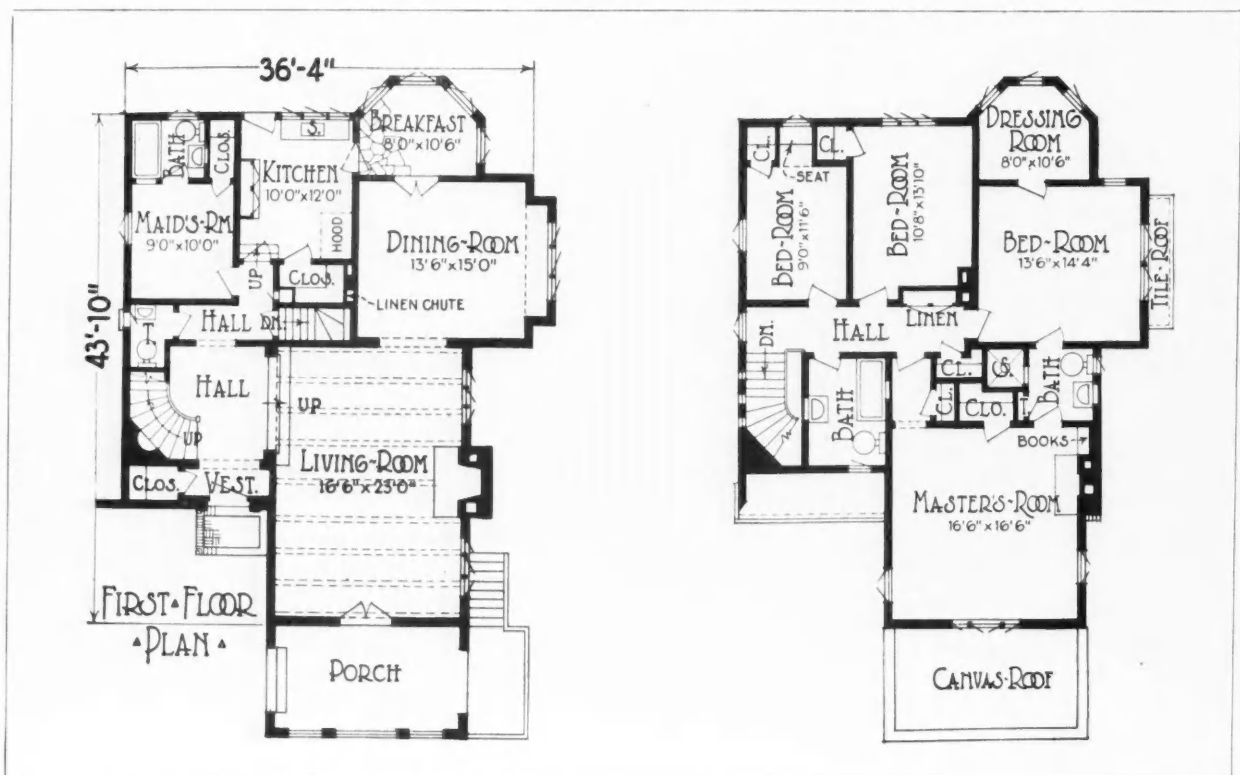


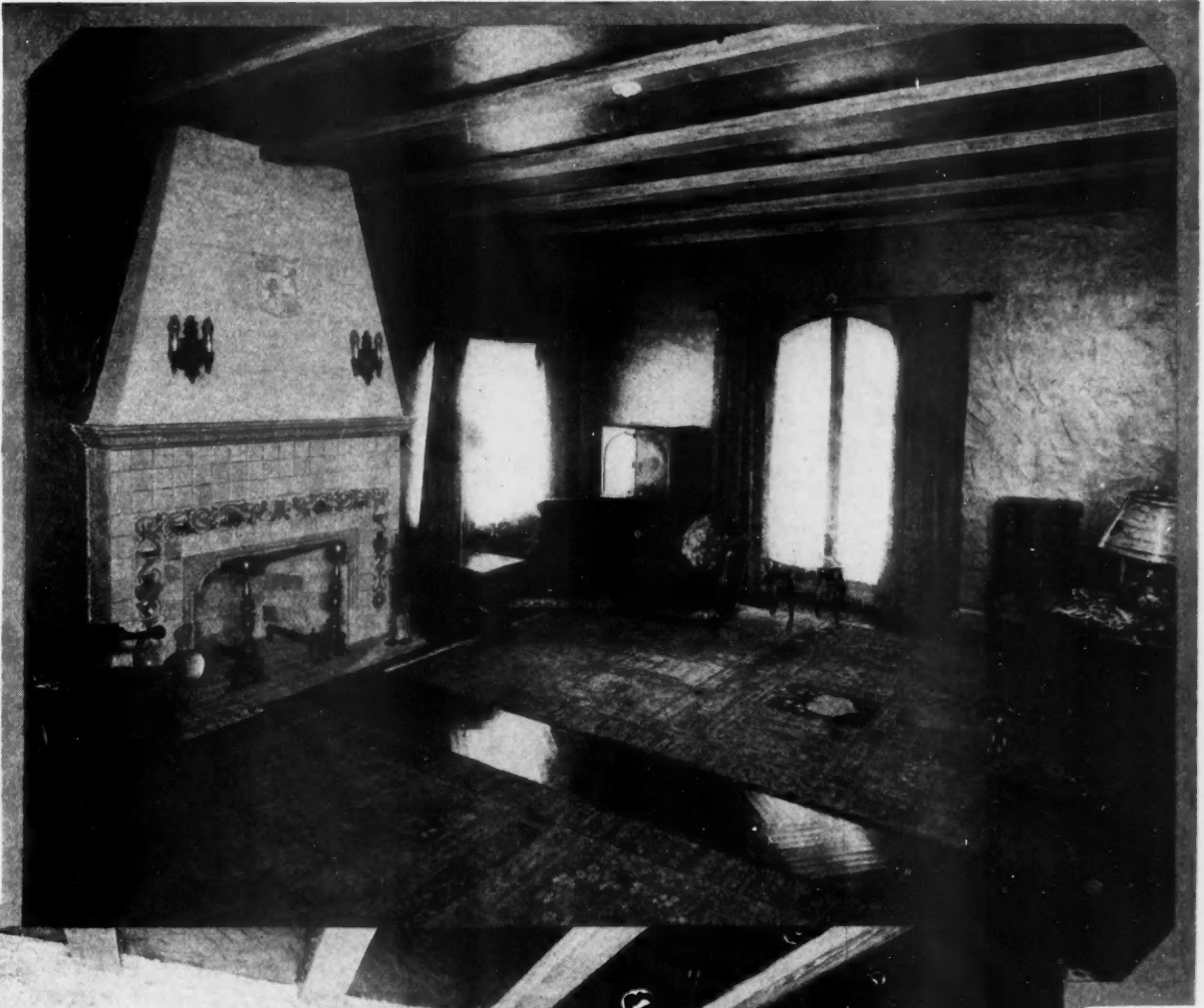
MYERS Y. COOPER, Builder.

WARD FRANKLIN, Architect.

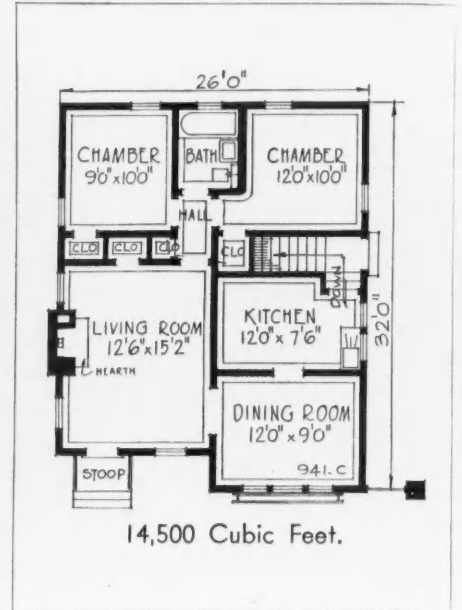
Spanish Mission

Here Is a Style Which Is a Typical Product of the Southwest But Has Been Modified to Meet the Needs of a More Northerly Location.



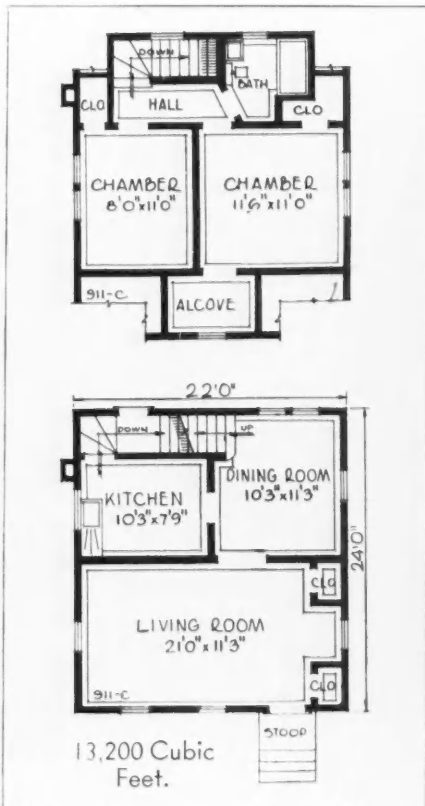


A Living Room and Reception Hall Which Are Modern and Yet in Perfect Harmony with the Spanish Mission Exterior Pictured Opposite.



Here we offer two charming little homes from National Plan Service designs. They are popular quick-sellers arranged for narrow lots.

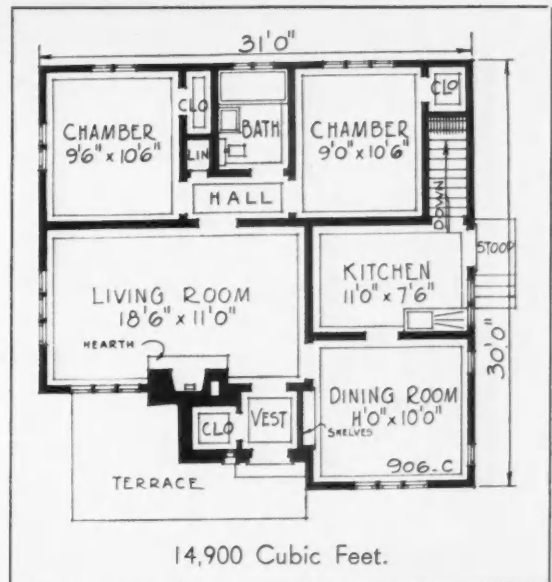
**Good Design
at Low Cost**



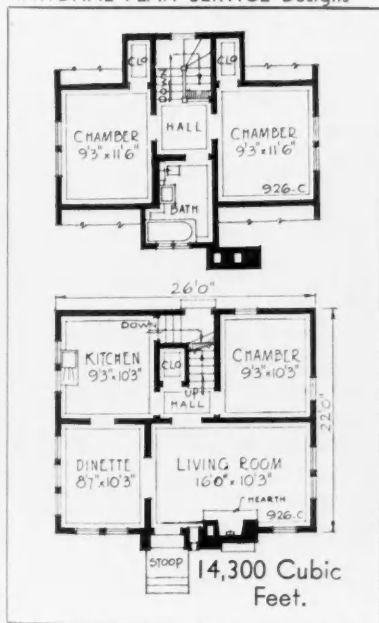


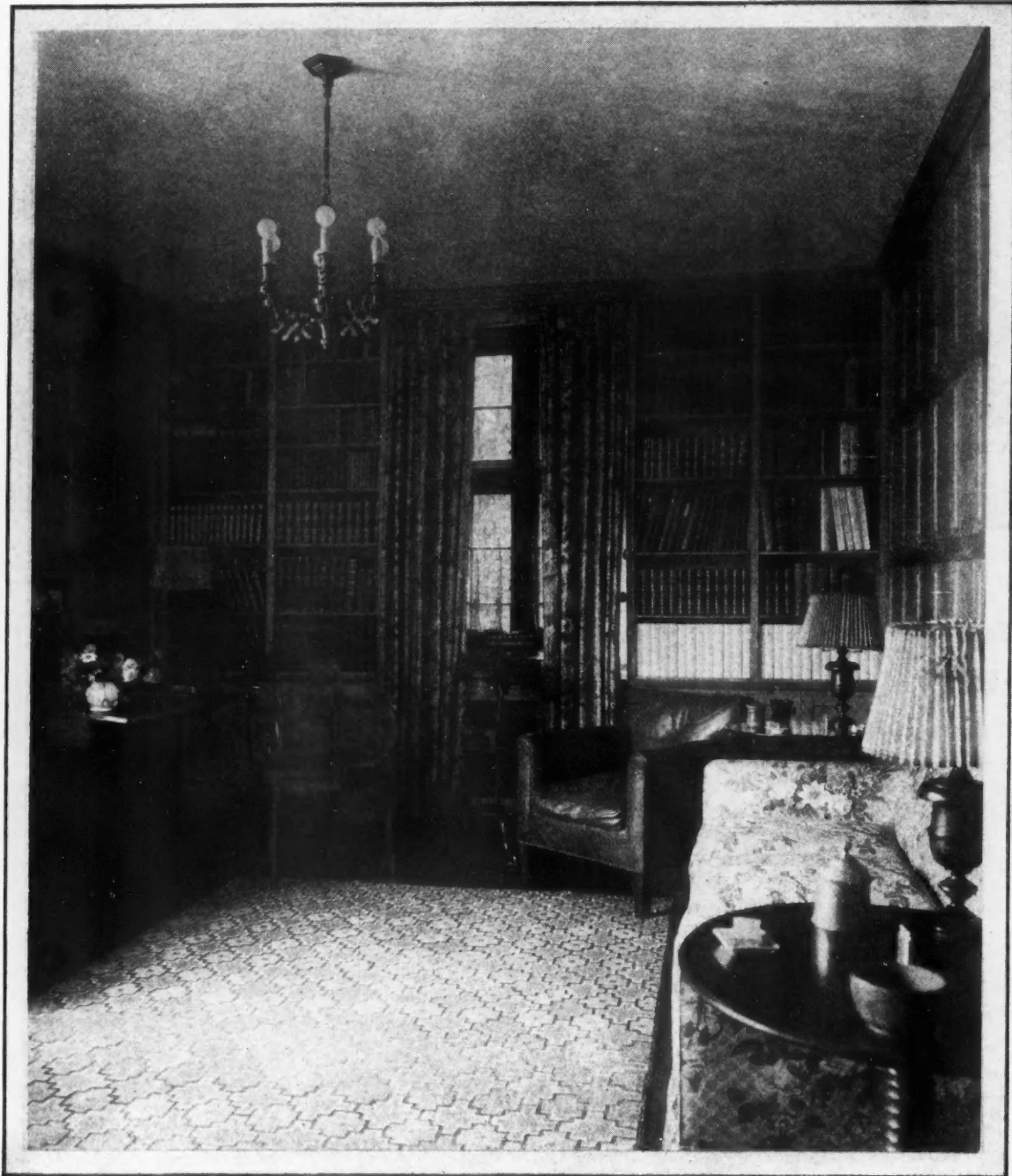
Styled for Wide Appeal

The prudent operator, whether building for the market or for individual clients naturally favors designs of a size and style that will appeal to the greatest number. Here we show two homes, small in size but large in attractiveness, that have won generous applause.



NATIONAL PLAN SERVICE Designs





One of the features of greatest interest in the Withington home, Russell S. Walcott, Architect, is the Study, twelve by fourteen feet, which opens off the central hall to the right, balancing the big living room to the left.

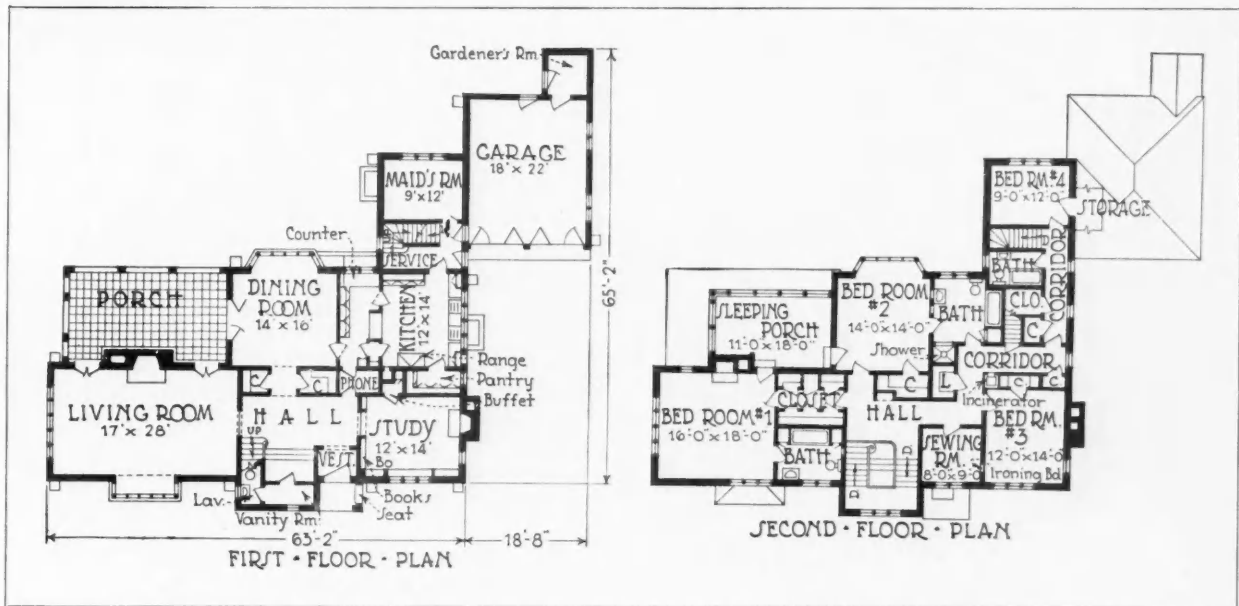
**We want a snug Study—
A Library full of books—
On Open Shelves**



RUSSELL S. WALCOTT, Architect.

**Broad Facade
Lends Dignity**

A Ten Room House with Attached Garage, the Home of Mrs. M. Withington, of Jackson, Michigan, Serves as a Model of Conservative Planning.



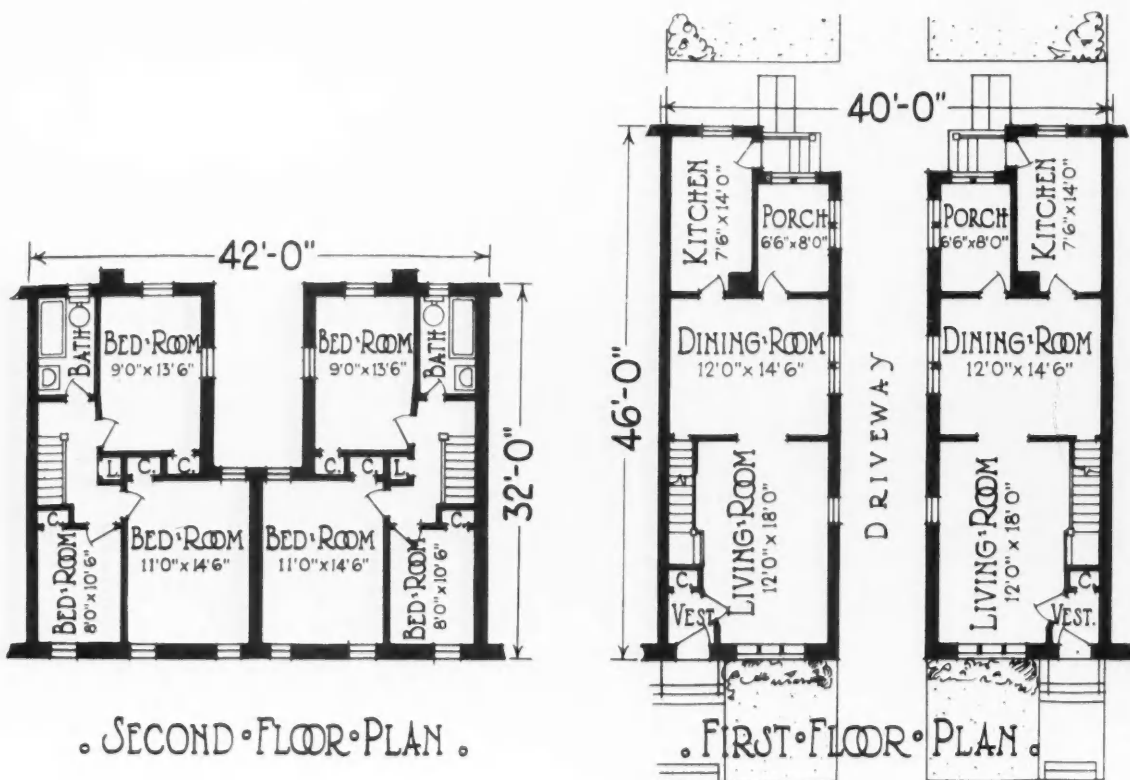


JONAS GREEN CO., Builder.

LOUIS W. FELDMANN, Architect.

**Bridged Drive-Ways
Unique Feature of
Semi-Detached Homes**

Row Units Built in Dyker Heights, Brooklyn,
to Sell with One-Car Garage for \$13,000
Each, a Popular Style in the East.



• SECOND FLOOR PLAN •

• FIRST FLOOR PLAN •



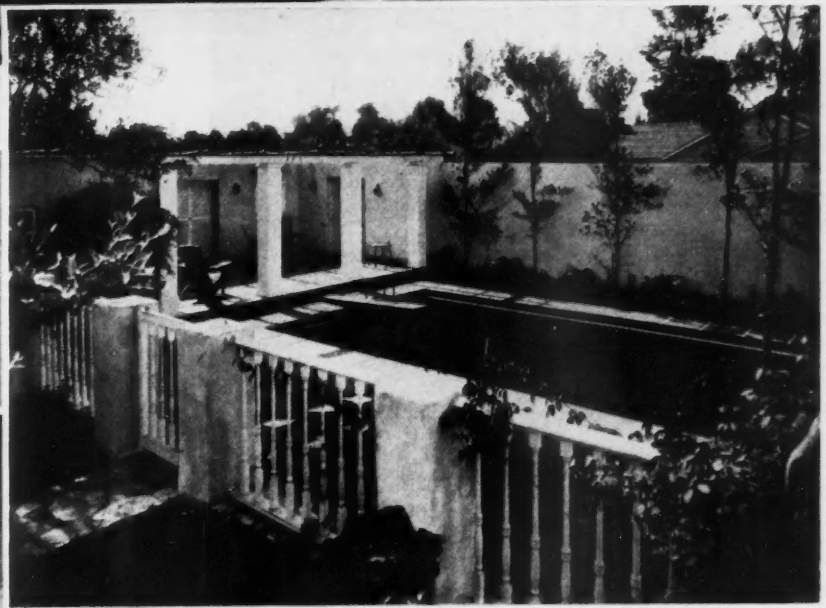
Beverly Hills, California,
Residence of
Mrs. Lita Gray Chaplin
ROY SELDON PRICE, A. I. A.
Architect

The Architect states, "My principal aim was to plan for livability, convenience and outlook, and to express the feeling of homey comfort in an informal way."

Exterior walls are white cement stucco, roofs of variegated red clay.

To Right:
Swimming Pool and Pavilion.

Below: The Breakfast Room; and Below to the Right: The Powder Room, Adjacent to Front Entrance.



"THE LITA GRAY HOME IN THE WEST"

This Virginia Development



"Agcroft Hall," Built in 1393, as Re-erected
Near Richmond, Va.

DOWN where the South begins—as Richmond so proudly calls itself—you naturally expect to see something out of the ordinary, something reminiscent of the old American colonial days, when history was in the making and the State of Virginia was furnishing such men as Washington, Jefferson and John Marshall to guide the struggling colonies.

There will be no disappointment, whether it is parks or boulevards, monuments or memorials, battlefields or buildings, that will interest you—Richmond has them wherever you turn. Planned, developed and peopled by men of foresight, building with an eye to the future, paying careful attention to the smallest detail, the city as it stands deserves the title of "the Paris of America."

Dreamers, they have been called, these men who look so far ahead, and dreamers they are, but dreamers that labor mightily towards the fulfillment of their dream. Just such a dreamer was Mr. Thomas C. Williams, Jr., who inherited among other properties Windsor Farms, an estate on a high bluff overlooking the historic James River. His vision of Windsor Farms peopled it with cultured neighbors, filled it with beautiful homes harmonious in design and relationship, and divided it with curving roads that were like a bit of old England transplanted into one of her earliest Colonies.

Naturally, he associated with other dreamers, men like Alexander W. Weddell and Allen J. Saville, builders, and the Windsor Farms development was formed. Other

MIRRORS CHARM of OLD ENGLAND

+

How the Builders of Windsor Farms Outside of Richmond Fixed the Character of Their Subdivision by Importing Bodily from England Two Old Castles of the 14th and 16th Centuries * * * * *

Inside facts told

By EDWARD C. ROTHWELL

of the Detroit Steel Products Company

properties were purchased so that the development extended from the main highway leading into Richmond to the banks of the James River. Mr. Saville accepted the responsibility of laying out the development with wide curving streets, dividing it into spacious lots and co-operating with John Nolen, famous landscape architect, to reproduce in the suburb of this Virginia city an English countryside.

A lover of English architecture, Mr. Williams found near Manchester, England, a historic old mansion that he believed would make a fit setting for his Windsor Farms suburb. Agcroft Hall, a manor house of the half-timbered type built in 1393, and wonderfully preserved, was purchased and carefully transported to Virginia where it was reconstructed by Virginia workmen from sketches and plans of the original. Facing the James River the front of Agcroft Hall now looks over the formal garden and for several miles up and down the river.

It is the windows of Agcroft Hall that attract and hold the attention of the visitor, metal casements swinging out, fitted with handwrought hardware, and glazed with small diamond-shaped panes set in lead, they are a beautiful illustration of the ability and careful attention to detail of the craftsmen of six hundred years ago. Centuries of sunlight pouring thru the glass has tinted some of the small panes to a light violet, others were colored originally by melting silver into the glass, but the windows themselves retain all of their original grace and charm. One of the interesting features discovered by Mr. Saville when the house was rebuilt was that no two windows are the same size. Made by hand each one varies slightly in height or width, so that it was necessary to fit the same sills and jambs to each unit as had the original builders. One window in the great hall, twenty-five feet wide by ten feet high, was brought over in one piece. It contains the quarterings and crest of the Dauntley family, who had lived in the house for generations. There is an oriel that is an inspiration for an artist, and

Home designed and built at Windsor Farms by Allen J. Saville for his own occupancy follows the style of the old importations.



a sill carved with a leaping stag, signifying the relationship of the owners to Richard II.

Side by side with Agecroft Mr. Weddell fulfilled his part of the dream. A historian, a writer, a former diplomat, Mr. Weddell was informed that Warwick Priory in Warwick, England, was about to be torn down. This old stone mansion dated back to 1565, and like its neighbor, was in excellent condition; so Mr. Weddell purchased it and had it transplanted and rebuilt. The original design of Warwick Priory was followed in rebuilding one wing while the other wing is a faithful reproduction of Sulgrave Manor, the home of George Washington's ancestors. The two types, however, blend in perfect harmony. The wall paneling, the great stairway, the massive white oak beams over the fireplaces, are all in place. The roof is of stone, stone flakes or slabs that resemble slate.

With two such homes as a nucleus, other men—friends and associates of Mr. Williams and Mr. Weddell—decided to build their homes in Windsor Farms. Every home has been carefully designed to harmonize with the

surroundings, English type architecture prevails, and in almost every instance, Mr. Saville has been commissioned to erect and supervise the building. Since this development first got under way in 1926 between twenty-five and thirty beautiful homes have been erected in Windsor Farms, some small, some large, but all in harmony.

Since the windows in Agecroft and Virginia Manor are so distinctive and add so much to the architectural beauty of these two transplanted mansions, the selection of the windows for the new homes being erected in Windsor Farms was a very important detail. Mr. Saville through his building organization, Allen J. Saville, Inc., after a careful study selected steel casement windows for all the modern homes they built in this subdivision. These new casement windows of steel are in absolute harmony in design and general appearance with the six hundred-year-old examples of the English craftsmen while present-day manufacturing methods have vastly improved the weathering, hardware design, and convenience in operating, details that are appreciated.



The Hillberry residence is typical of the charm and character put into the smaller homes in Windsor Farms; note the small leaded glass windows and slate roof, almost an exact reproduction of the old windows and stone roof of "Agecroft Hall" (See page 59).

Photographs by
Detroit Steel Products Company.



House Factory Assembly Yard at Long Island City.

HOUSES BY MOTOR TRUCK!

Factory-Produced Homes Delivered to Building Site Completely Finished

LONG predicted, at last it is here — a factory-built house—kicked off the end of an assembly line (almost!) like Ford cars!

And it is the energy and resourcefulness of E. H. Millard and his associates of the Steel Frame House Company that have brought this wonder to pass. For these are no ordinary flimsy sectional houses, as you might think, but permanent, steel framed, asbestos sided and roofed homes built to last for many years.

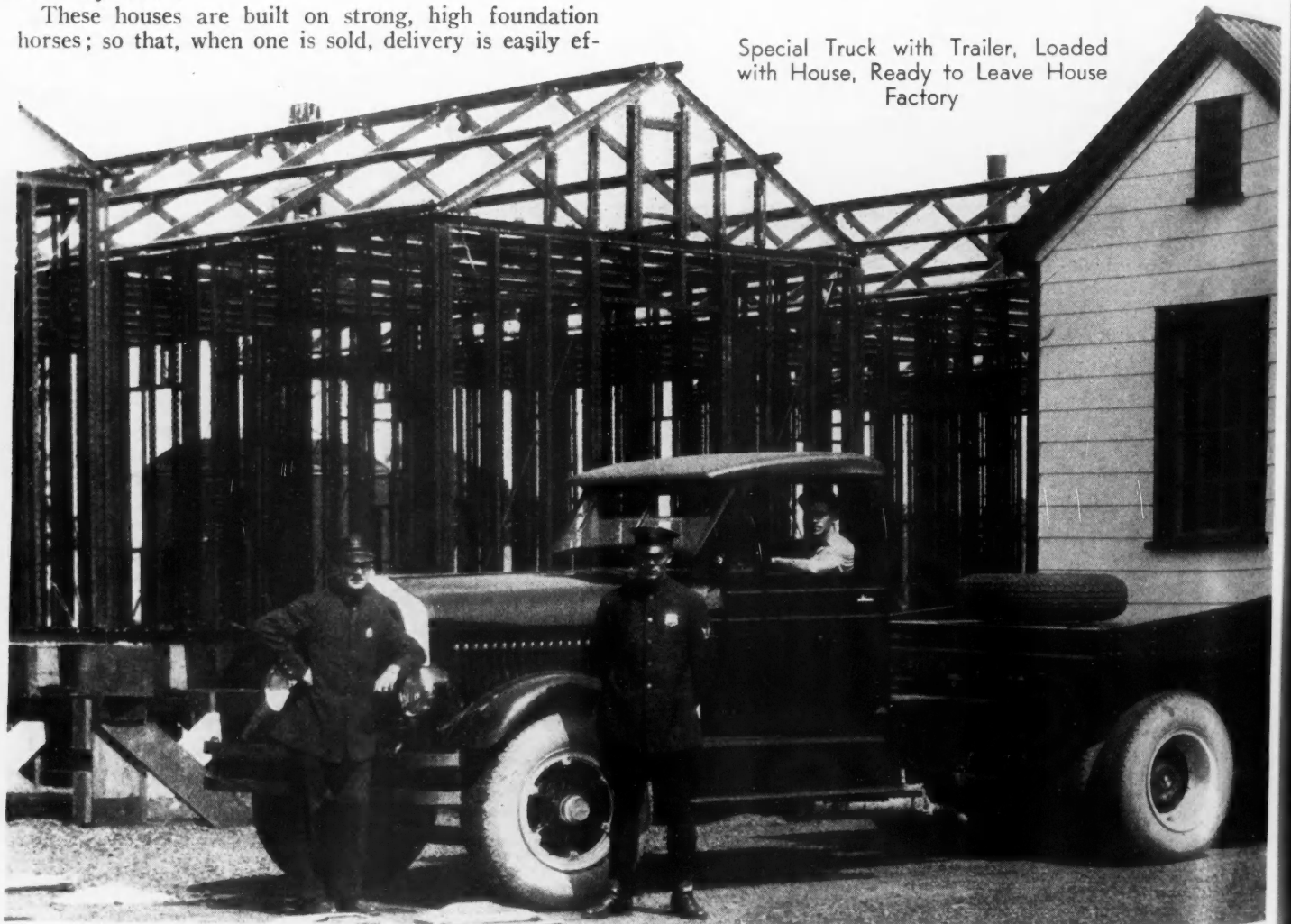
Out at Long Island City, Mr. Millard set up his erecting yard with a capacity of sixty houses building at one time. His especially trained crews of workmen erect the houses, each one just alike. Maximum speed and efficiency result.

These houses are built on strong, high foundation horses; so that, when one is sold, delivery is easily ef-

fectured by backing a huge, especially designed motor truck trailer under the house. Then with its load—a completely finished three room cottage, 12 feet wide by 40 feet long—the truck and trailer proceed smoothly and swiftly along the highways to the purchaser's building site where the foundation has previously been prepared. This is a reinforced concrete pier foundation over which the truck drives and onto which the house is set down.

In order to keep these houses to a practical road width for delivery by this method, the standard floor plan of these cottages is 12 by 40 feet and consists of living-room, kitchen, bedroom, hall, two closets and a complete bathroom. This is the standardized, basic model, which

Special Truck with Trailer, Loaded with House, Ready to Leave House Factory

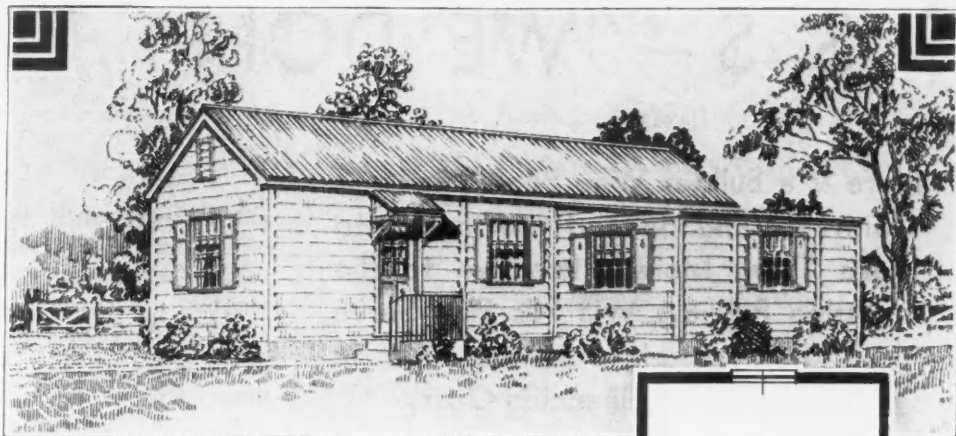


is produced complete at the assembly yard or "factory." It is popular for narrow lots and, being priced low, \$1897, naturally appeals to a big market.

For those having wider lots and requiring a bigger house, several wing additions are offered—a one car garage, a small extra bedroom, a larger bedroom with closets, a bedroom and a garage, and two bedrooms. These additions, however, are not factory built but are attached by special construction crews to the main unit after it is deposited on the site. These additions to make the larger homes are priced at from \$997 to \$2,013 in addition to the \$1897.

The prices mentioned do not cover cost of haulage as that depends on the distance, the condition of the route over which the building is to be taken and the condition of the building site and the approach to it. However, under favorable conditions, these charges are nominal.

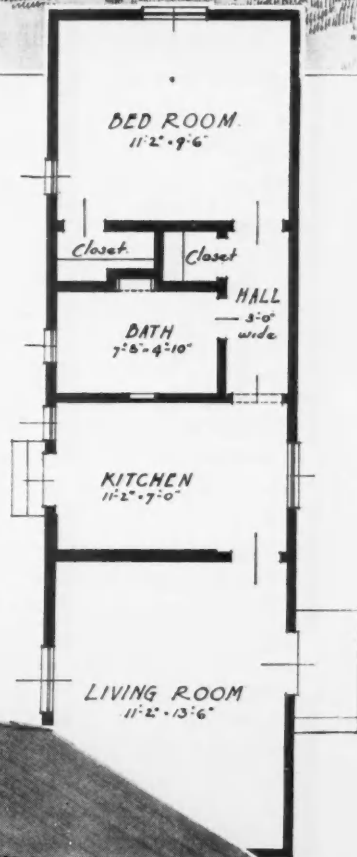
Easy term financing is offered on a ten year plan. The purchaser must own his lot free and clear and make



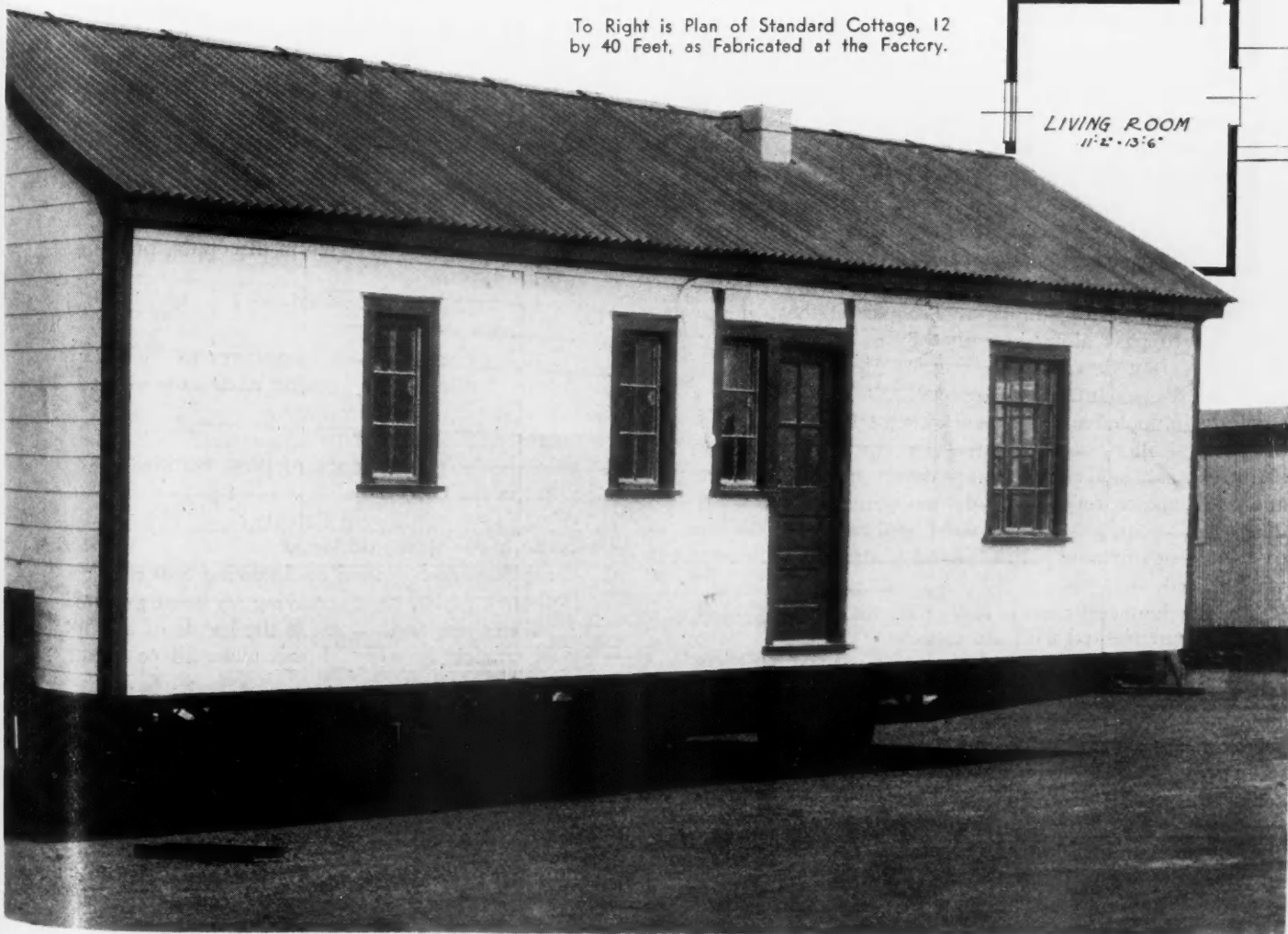
Sketch of Standard Cottage with One-Car Garage Addition. Priced at \$2894.

a down payment of 10 per cent of the price of the house, the balance to be paid in equal monthly installments, including interest at 6 per cent per year. This figures \$11.12 per month per \$1,000 of cost.

The mass production of homes in factories is an idea that has intrigued the imagination of many. Here is a serious attempt to put this idea into effect to supply small homes and seaside cottages to the New York market, which may be adopted elsewhere.



To Right is Plan of Standard Cottage, 12 by 40 Feet, as Fabricated at the Factory.



\$ \$ \$ — "WE DON'T TIE UP OUR

Here Is a Builder Who Pools His Land Contracts and Second Mortgages to Make Them More Attractive to the Investing Public. Will His Plan Serve You? Perhaps Here Is the Path to Lower Home Financing Costs.

LIKE most concerns in the home building business, we have many customers who need both first mortgage and second mortgage financing in order to get up into the home owning class. The first mortgage funds are usually quite easily obtainable since the investing public is well acquainted with, and favorably disposed to, this form of conservative six per cent security.

It is with the second mortgage, or land contracts, such as we issue here in Detroit that difficulties arise. These junior securities, in spite of their attractive yield, are passed along to the investing public only at tremendous discount; and to save this discount, a good many builders permit their own funds or working capital to become tied up in these junior securities. Instead of keeping their working capital liquid, they find, after building and selling off a group of easy-term homes, that all their funds are frozen. Then there is nothing to do but to stop operations for a time until the payments get to coming back in volume.

With the co-operation of one of the Detroit banks, the Metropolitan Trust Co., we of the Miller-Storm Company have recently been endeavoring to get away from this hampering condition by putting our land contracts into a form that would appeal more strongly to the conservative investing public and so permit these junior securities to pass along steadily out of our hands and into the safety deposit boxes of investors—and not at too great a discount.

We have pooled and trusteeed with the bank five homes of recent Miller-Storm construction, each of which we had previously sold on a down payment, a first mortgage, and the balance on a monthly payment land contract. These land contracts we still held, and it was to dispose of them that our new plan of Land Contract Certificates was devised.

The five land contracts in this group totaled \$45,527.21. They were deposited with the bank as trustee, and "Certificates of Beneficial Interest" were issued against them. These Certificates were then offered for sale to the investing public, the entire group being priced at \$35,000, which meant a discount of 23 1/10 per cent.

The investor can buy any amount of "Beneficial Interest" he desires, from a few dollars' worth up to the entire issue. All of the certificates together represent the entire sum of \$35,000 necessary to purchase this group of contracts. The holder of any particular certificate owns an undivided interest in the property to the

extent represented by his certificate. Thus we are offering a security better within the reach of small investors who could not handle an entire land contract purchase. Also we have here a security that seems safer and is safer than individual land contracts because it is diversified over five well selected and widely separated properties.

While we have only recently come out with this plan and so have not had time to test it thoroughly, the indications to date are that it will prove to be a great help to our financing of additional homes. In spite of its novelty and the hesitancy which investors always have in buying unfamiliar securities, we have found these certificates quite readily salable. As they become better known, the sales resistance will naturally become less; and then the discount rate can be reduced and home building costs will come down.

Builders of easy-payment homes in other cities who may want to consider some similar plan for disposing of their junior financing paper, whether second mortgages or monthly payment land contracts, will no doubt desire further detailed information about this plan of ours, and I will be glad to correspond with any such.

In general there are four interested parties involved in this plan: first, the builder; second, the bank or trust company; third, the capitalist or investor; and fourth, the home buyer. If fully successful, each of these parties will benefit substantially by this land contract certificate plan.

The questions which naturally arise regarding this plan can be summarized as follows:

As a builder, I should know:

1. Will my bank enter into such a plan?
2. How much will it *cost me* in discounts, printing, sales expense, etc.?
3. Do I have a contingent liability?

As a bank, I should know:

1. What are the profits or advantages to the bank?
2. What are the costs of acting as trustee and administering this plan?

As an investor, I should know:

1. What is the security back of these certificates?
2. What is the yield?
3. What is the contingent liability?

As a home buyer, I should know:

1. What does this method of financing cost me?
2. Is there an advantage in having my home grouped with others and placed in the hands of a bank as trustee, to which I will make all payments as they fall due?

In answer to these several questions, while the main workings of this certificate plan remain the same, the details of its operation will vary according to local conditions and the ideas of the builder and the banker who co-operate in any community to put such a plan into effect.

Any builder, who finds his funds frozen up in a bunch of land contracts or second mortgages that are

WORKING CAPITAL"

An Interview — with
 Arthur S. Storm, Secretary
 The Miller-Storm Co., Inc.,
 Prominent Home Builders
 of Detroit, Michigan . . .

not readily salable in the present market except at a prohibitive discount, should consult with his bank and work out an arrangement. Possibly our experience will be helpful.

In our case, the Miller-Storm Company printed all the forms, and does all the selling. The bank simply acts as trustee of these properties, receiving the payments from the owners, both on account of first mortgages and land contracts and disbursing same to mortgage holders

and certificate holders. For this service, the bank retains five per cent of the gross collections.

The cost to the builder is the original discount plus the selling cost. As the market for this form of security becomes more established, both of these costs will grow less.
 (Continued to page 142)

CERTIFICATE

OF

BENEFICIAL INTEREST IN LAND CONTRACTS

No. _____ Dated _____

This Is To Certify that in accordance with a certain Trust Instrument made and executed as of July 24th, 1930, by Metropolitan Trust Company, a Michigan Corporation,

Sample Copy Not Negotiable

has a beneficial interest in the proportion which _____ is to \$35,000.00, in those certain properties and land contracts for the sale of same, a schedule of which is listed below, and which have been conveyed and transferred by Miller-Storm Co., Inc., to said Metropolitan Trust Company as Trustee under the aforesaid Trust Instrument:

Vender	Address of Property	Sales	Balance	Monthly	Mortgage	Equity
Anderson, Gustaf	12345 Main St.	\$10,500.00	\$ 7,882.52	\$ 75.00	\$ 2,765.00	\$ 3,117.52
Carlson, Peter	5678 Elm St.	\$2,000.00	44,109.96	500.00	15,000.00	29,109.96
Johnson, John	9012 Oak St.	6,500.00	5,464.91	50.00	2,500.00	3,964.91
Lee, Robert	3456 Pine St.	8,500.00	7,271.50	65.00	3,310.00	8,761.50
Smith, John	7890 Maple St.	8,000.00	6,561.17	35.00	3,000.00	3,561.17

This interest is conveyed and possessed in accordance with the provisions and terms of said Trust Instrument which the holder hereof by the acceptance hereof assents to as fully as if he had signed and executed such instrument.

This certificate and the interest represented hereby are transferable only upon the books of the Trustee and for all purposes the person herein named as the Beneficiary shall be deemed and treated by said Trust Company as the holder and owner of all the right and title to the certificate and the interest represented thereby, until and unless said certificate shall have been transferred upon the books of said Trust Company.

On the 15th day of January and July of each year, the Trustee shall render to the holders of these certificates a statement of the income and disbursements of said properties during the previous half year and distribute to the certificate holders from the funds collected from said contracts and properties and available therefor under the terms of said Trust Instrument.

If, as determined by the Trustee, the funds on hand should be insufficient to meet present or accruing maintenance or mortgage requirements or other charges of or under the Trust, the Trustee may call upon the holder hereof and the holder hereof shall pay his pro rata share of the amount or amounts required therefor when and in the manner provided in the Trust Instrument. The holder of this certificate shall also pro rata in the proportion that the interest thereof is to the whole, protect, indemnify and save harmless the Trustee from claims of third parties arising from and in connection with this Trust, except those arising from fraud or malfeasance on the part of the Trustee. For all obligations of the holder hereof and all fees and expenses of the Trustee, including any advances for mortgage requirements, maintenance or improvements of the properties, Trustee shall have a first and paramount lien on this certificate and the interest represented thereby in accordance with and enforceable as provided in the Trust Instrument.

The holder hereof by the acceptance hereof assents and agrees to all the terms and provisions of this certificate and of said Trust Instrument.

IN WITNESS WHEREOF the said Metropolitan Trust Company, Trustee under said instrument of Trust, has caused this certificate to be executed by its duly authorized officers, and its seal to be affixed this _____ day of _____, 19____.

METROPOLITAN TRUST COMPANY

By _____
Vice-President

By _____
Asst. Secretary

Sample of Engraved Certificate being used by the Miller-Storm Co.

NATIONAL RETAILERS OFFER

Three of the series of building improvement ads. calculated to jolt home owners.

Put them to work in YOUR TOWN!

Why Didn't You See a Doctor Six Months Ago?



From "Dinky," Andrew Linder and Edward C. Robinson in a scene from "Lucky in Love," a recent Metro-Goldwyn-Mayer Picture.

Serious complications quickly developed from neglect of a single minor ailment. He'll recover, but the doctor says he must have a long rest, away from business—and that means without pay. It could have been so easily avoided if he had only seen a doctor six months ago, and had taken care of himself at the first sign of trouble.

So it is with houses, if they are neglected—not kept in repair—expensive replacements are soon necessary. Meanwhile, the entire family suffers discomfort.

There never was a more favorable time to repair or improve your house than right now. Lumber and building material prices haven't been so low in years. And there are plenty of experienced, dependable men ready to help you with

Check This List!

See if your home needs any of these repairs or improvements.

- Replace broken stairs
- New walks or driveway
- New roof over old
- Shedding
- Sun room
- Combination doors
- Porch enclosure
- Paint
- More closet space
- Recover side walls
- Attic storage or play room
- Breakfast nook
- New front porch

"Going Out Again?"—This advertisement "gets under the skin" of parents. The illustration, showing a well-known picture star, is new to the lumber and building material field.

"If You Had to Wear Your House."—This kind of picture and copy appeals to pride, and to the wife who fears what neighbors may say about her home. Note the list of repair suggestions and reference to "dependable, experienced men."

If You Had to "Wear" Your House Would You Have Patches on Your Pants?



Suppose you had to "wear" your house to a party. Would you be well-dressed—or shabby, frayed at the cuffs, baggy-kneed and run down at the heels?

Don't give keen-eyed people a chance to talk about little signs of neglect in your home—inside or out.

The seemingly unimportant, familiar little breaks, cracks and worn places you "intend" to fix, thrive on neglect. Let them go long enough and you will need expensive replacements. Minor repairs cost very little.

You can save money by having your house fixed *right now*, because building materials are cheaper than they have been for years, and you can get experienced, dependable men to help you with the more difficult jobs you cannot do alone.

It pays to "Keep Your Home in Good Repair." Come in and talk it over.

(Your Name Here)

Check This List!

See if your home needs any of these repairs or improvements

- Partitions
- Shelving
- Paint
- Roofing
- New side walls
- New front entrance
- Porch enclosure
- New walks or driveway
- Paneled or beamed ceilings
- Tiled bath or kitchen
- Cupboards
- Built-in covers
- Doors
- Repair porch
- Replace step
- Insulate side walls
- Attic storeroom
- More window
- New screen doors



"Going Out Again?"



Adapted from a scene in "Blushing Bride," starring Joan Crawford in Metro-Goldwyn-Mayer Picture.

"Why don't you bring him here?" suggests an anxious mother to a daughter who is rapidly becoming a stranger to her home. The girl does not answer. She avoids the question. An insistent demand taints lips.

"Do you think I want him to see this—this d-dump?"

Heart aches and pain, a tragedy of neglect at home. All unnecessary and easily avoided.

It costs very little to "Keep Your Home in Good Repair," and it means so much to your family. Even an old home can be a place that will make your children proud to say, "That's where WE live."

It pays to "Keep Your Home in Good Repair." Building materials are cheaper than they have been for years and experienced, dependable men are ready to help you with the more difficult jobs you cannot do alone. Come in and talk it over.

(Your Name Here)

Check This List!

See if your home needs any of these repairs or improvements

- More closet space
- Shelving
- Cupboards
- Doors
- Garage
- New walks or driveways
- New floors over old
- Roofing
- Paint
- Screens or screen doors
- Insulate attic or side walls
- Repair or recover side walls
- New front entrance
- Windows or frames
- New trim
- Paneled or beamed ceilings
- Tile bath room or kitchen
- Partitions
- Enclose porch
- Attic storage or play rooms



BUSINESS BUILDING SLOGAN



LAST March the National Retail Lumber Dealers' Association investigated residential building costs in an effort to give its members some advertising ammunition that would stimulate home construction. Inquiry showed that many people were unable or unwilling to build new homes. Many contractors and dealers were unwilling to have prospects involved in financing a home.

Attention then turned to remodeling. Many dealers have co-operated with carpenters and contractors to develop profitable business in this field. Some of the men who went into it unwillingly, feeling that half a loaf was better than none, discovered they were standing in the doorway of a bakery, with orders on all sides, waiting to be picked off the shelves.

On the other hand, many home owners, because of uncertainty as to what lies ahead, hesitate to undertake an extensive remodeling program. Many of these people have money in the bank and will spend it if shown they can get bargains. They know their homes should not be neglected, but there are many attractive ways to spend money.

These people can and will spend *something* on their homes, if home repairs can be made attractive and can be dramatized in some unusual way. After three months of investigation the National Association created "Keep Your Home in Good Repair." Last July this slogan was presented to the trade in three striking advertisements. For the first time in history well known faces of Hollywood celebrities graced the advertisements of lumber yards.

The effect was electrical. Both manufacturers and dealers endorsed the new slogan. Today dealers in forty-one states are using publicity articles and advertisements that incorporate the slogan. It appears in newspapers all over the country, on letterheads, invoices, billboards, truck signs and window displays of lumber dealers. It will be found on lumber sheds, in dealer helps and consumer advertising of more than twenty manufacturers of construction materials.

This movement is national in scope, practical and constructive. Experience has shown that many good remodeling jobs grow from a single, minor repair. One job began with new sidewalls. The owner then decided on a new front door, then a new side entrance, new cabinet work for the kitchen, oak floors for two rooms and finally a new sun room. Many similar examples could be given. "Keep Your Home in Good Repair" is designed to stimulate interest in the little jobs from which bigger remodeling work can be developed. It is geared down to meet present day conditions and to reach a man's pocketbook.

Contractors and builders are pleased and stimulated when they see dealers use this kind of advertising, because it is making business for both. Each of the copyrighted advertisements prepared by the National Association includes a definite list of repair suggestions, and a line such as "Building materials are cheaper than they have been for years, and dependable, experienced men

are ready to help you with the more difficult jobs you cannot do alone." Dealers who are using this slogan, publicity articles and advertisements in which it appears, believe that good materials deserve skillful application, and are working with carpenters and contractors who buy materials from their yards.

This slogan has found widespread use, because of its general appeal and the way in which it can be applied to practically any material or service. Its instantaneous success in the lumber and material field has aroused interest of allied lines and the National Association is now making it available to dealers and contractors in plumbing, heating, electrical supply, paint and hardware lines. Manufacturers have endorsed the movement and are using the slogan.

Carpenters and contractors are invited to use "Keep Your Home in Good Repair." One of the first men in this country to use the slogan was a contractor in Oak Park, Ill., who specializes on repair work. He called on Adolph Pfund, Secretary-Manager of the National Retail Lumber Dealers Association one evening last summer to suggest some chimney repairs. He was told about the slogan, liked it and asked permission to use it in his advertising. Permission was gladly given, just as it is given to any worthy organization or individual interested in home construction work.

Many interesting comments have been received since the slogan was first introduced to the trade.

W. T. Spears, Secretary of the Building Service Bureau, El Centro, Cal., is using the ads as part of a co-operative campaign conducted by lumber and material dealers of the Imperial Valley. The slogan has been made part of the heading for Home Builders Pages in three "Valley" newspapers in which the advertising appears. He says, "We have had more comments from the first ad, 'Going Out Again?' than any other type of advertising we have used. We hope you will continue this class of service."

Clelland A. Antrim of the Antrim Lumber Co., St. Louis, says, "We are using mats for publicity articles at sixteen different yards."

Morgan D. E. Hite, Research Architect, Oak Flooring Manufacturers Association of the United States, says, "This is to compliment you not so much for the idea or wording of the slogan, 'Keep Your Home in Good Repair,' as for the splendid way you have organized the idea and obtained for it widespread distribution and acceptance from the trade."

W. F. Shaw, Trade Extension Manager, National Lumber Manufacturers Association, says, "This will stimulate new business in many communities where the slogan itself and your suggestions for putting it into effect are taken seriously."

Here is a practical, constructive movement, national in scope, designed to help dealers, carpenters and contractors get business, and to stimulate interest in home ownership. Take the slogan and use it at every opportunity. The more it is used the more valuable it becomes to everyone interested in home construction.

Recent Home Financing Plans

Ames, Emerich & Co., Investment Bankers, Develop Plan to Finance Home Building on Nation-Wide Scale

THE financing of home building is, at the present time, the outstanding problem of builders and of the building material dealers as well. In spite of the so-called building slump, there is a market, in fact an actual demand, for homes.

The fact that there is not more home building in progress is due not to the lack of demand, but to the difficulty, and, in many cases, actual impossibility, of financing even though the home building project offers the safest type of security. This, in addition to the fact that, for the most part, home financing has not been properly co-ordinated to permit the owner to handle his entire building program through a single organization, has turned the attention of the building industry toward efforts to correct the existing conditions.

A number of practical plans have been put forth recently. Outstanding among these was the proposal made by Ames, Emerich & Co., investment bankers, before the recent annual convention of the National Retail Lumber Dealers Association. This plan was the product of months of study on the part of the bankers and a series of conference between the bankers and a committee of the lumber dealers.

Under this plan, it is proposed to lend 75 per cent of the appraised valuation of the house and lot, an amount equal to the financing offered by the mail order houses. Sixty per cent of the valuation of the house and land—land to represent not over 25 per cent of the total—would be loaned on first mortgage, and 15 per cent of the total on second mortgage. Both first and second mortgage notes would bear interest at the rate of six per cent per annum.

Both five and fifteen year loans would be offered. On a fifteen year loan, on the basis of each \$1,000 worth of appraised valuation, the first mortgage loan would be 60 per cent, or \$600, and the second mortgage loan would be 15 per cent, or \$150.

The first mortgage loan would be made at a 10 per cent discount, and the second mortgage loan at a 25 per cent discount, with an additional charge of \$15 per thousand as the mortgage company's service fee. The discount on the first mortgage would amount to \$60 per thousand, and on the second mortgage \$37.50 per thousand which, with the fee, makes the cost to the owner \$112.50 for each \$1,000 borrowed, exclusive of interest.

The owner would make payment on the basis of \$8.56 per month for each \$1,000 borrowed, this payment covering all charges, including interest.

The loans under this plan would be made by a financing organization to be capitalized at \$2,550,000 and controlled by a board of directors on which both the bankers and dealers would be represented. The plan could be put into operation as soon as \$400,000 had been subscribed.

If the plan is put into effect this financing service will be available, to builders as well as to dealers, on the basis of stock subscription. The subscriber will take stock in the corporation to the amount of 15 per cent of the total amount of mortgages he wishes financed during the year.

That is, if he expects to finance \$100,000 worth of

mortgages, he will subscribe for \$15,000 worth of common stock. If he wishes to finance only \$10,000 worth of mortgages, he will only subscribe for \$1,500 worth of stock. He will again subscribe for stock, on the same basis, the second and third year.

This common stock will pay a six per cent annual dividend, making it a sound investment, and may be expected to earn as high as 20 per cent.

After three years this annual stock subscription will not be required as, by that time, the corporation will have established itself upon an earning basis and can provide all needed funds by issuing bonds to be sold to the public. Behind these bonds will be individual mortgages as collateral. Such collateral will permit bonds even to the extent of \$100,000,000 to be readily absorbed.

The plan also contemplates that the dealer or builder will sustain a contingent liability on each loan until the amount of the loan, through monthly payments, has been reduced to 40 per cent, at which point liability will cease. Bankers in general would not, however, regard this contingent liability as an impairment of credit and it would not curtail the dealer's or builder's bank credit.

This plan was not submitted as being perfect but as an approximation, from the banking standpoint at least, of what a financing plan would need to be in order to be sound and effective. It was discussed by the dealers at the convention and referred back to the original committee for further consideration and development.

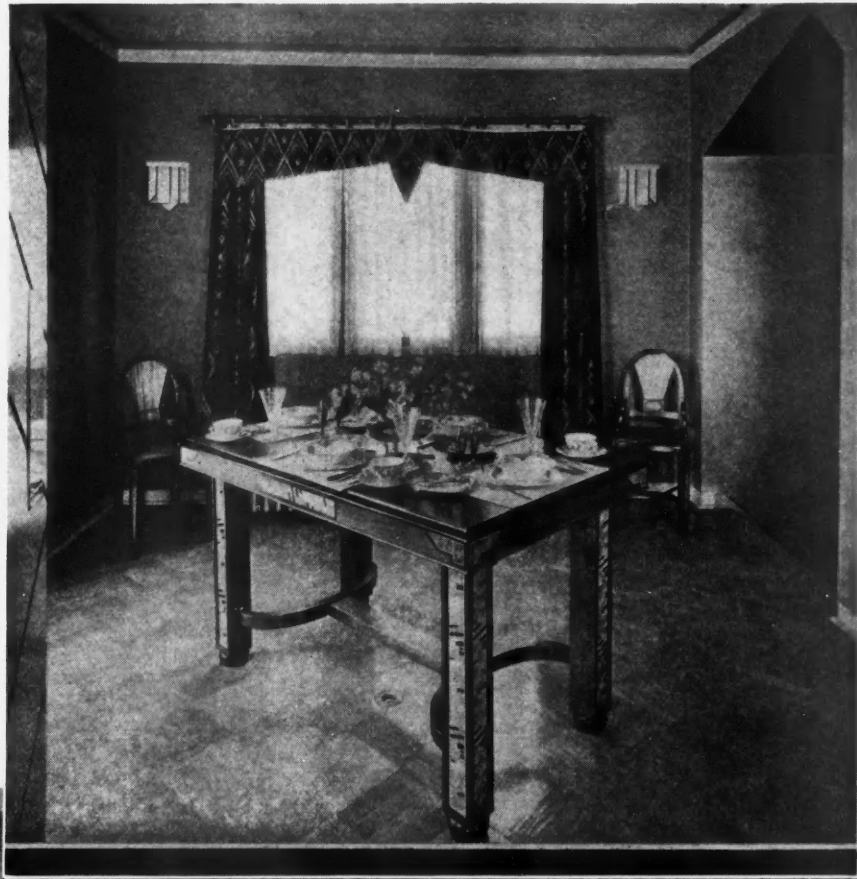
The Dickason Goodman Financing Plan

Another plan has recently been put into operation by the Dickason Goodman Lumber Company, of Tulsa, Okla. For several years this company has made use of a unified home building plan involving supervision of construction, supplying a certificate of construction, architectural plan service and other special services. By means of this plan competitive bidding for house jobs has largely been eliminated by this organization. The more recent development offers several opportunities for financing which appeal to the prospective owner.

In the Tulsa district a 20 per cent down payment is usually sufficient to clear the lot and leave a small amount for building. In some instances the lot owner will take back a second mortgage for 50 per cent of the selling price of the lot. In other cases some contractors will take their profit and a little more, in the second mortgage. In other cases the dealer will help.

Several of the loan companies will loan 10 to 12½ per cent more on houses carrying the Dickason-Goodman abstract of construction than on other houses. It is possible to obtain six to seven per cent money up to 66⅔ per cent of the actual cost of the house and lot. Plus the 20 per cent down payment, this leaves only 13⅓ per cent to be handled in a second mortgage.

This second mortgage is payable either monthly, semi-annually, or annually, over a period of three years. It is possible to obtain the large first mortgages only because the manner in which specifications on the job and the contractor's responsibility for living up to them are controlled.



RESTRAINED MODERNISM IN HOME FURNISHINGS



Apartments Require Careful Planning

**New Ideas in Exterior Design and Interior Arrangement,
and in the Proper Equipment to Make Apartments Rent
and Sell at a Profit—Three Recent Designs Presented**

WITH increasing numbers in city suburbs and in the smaller towns looking with favor toward the city apartment type of home, it becomes more and more important for builders everywhere to become thoroughly familiar with the general principles of apartment house design and arrangement. The two-story residential type and the larger groups, two and three stories high and embellished along definite period lines, seem to be most in demand; they blend in best with other existing buildings in a residential neighborhood.

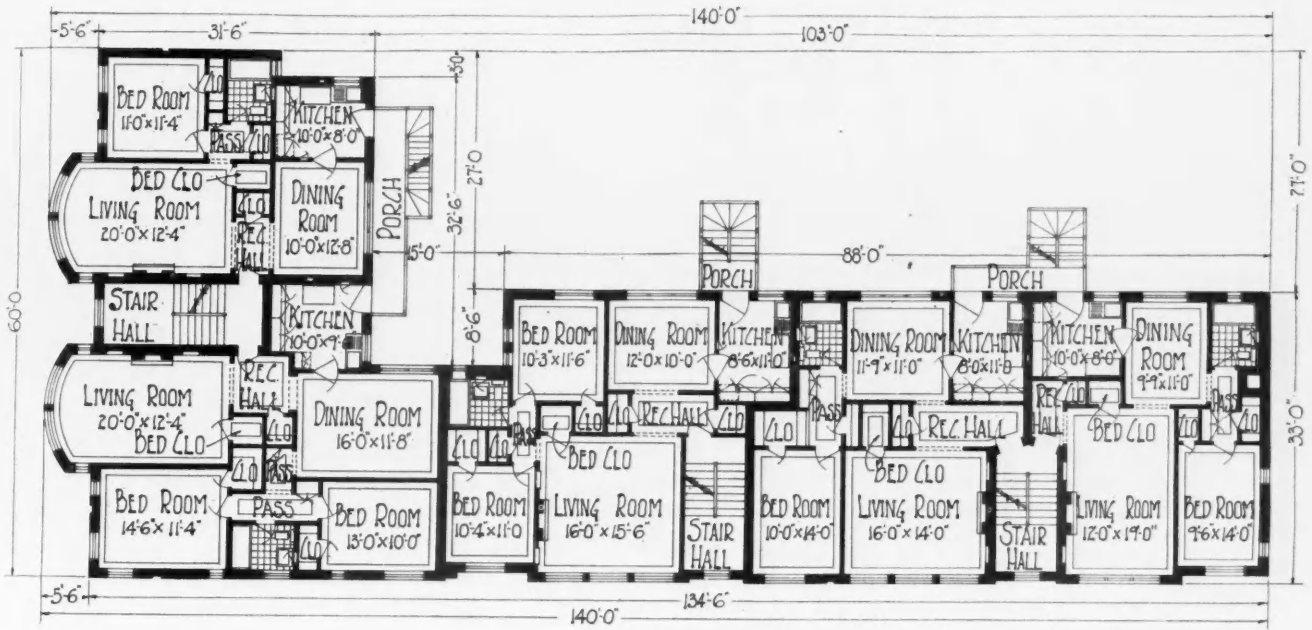
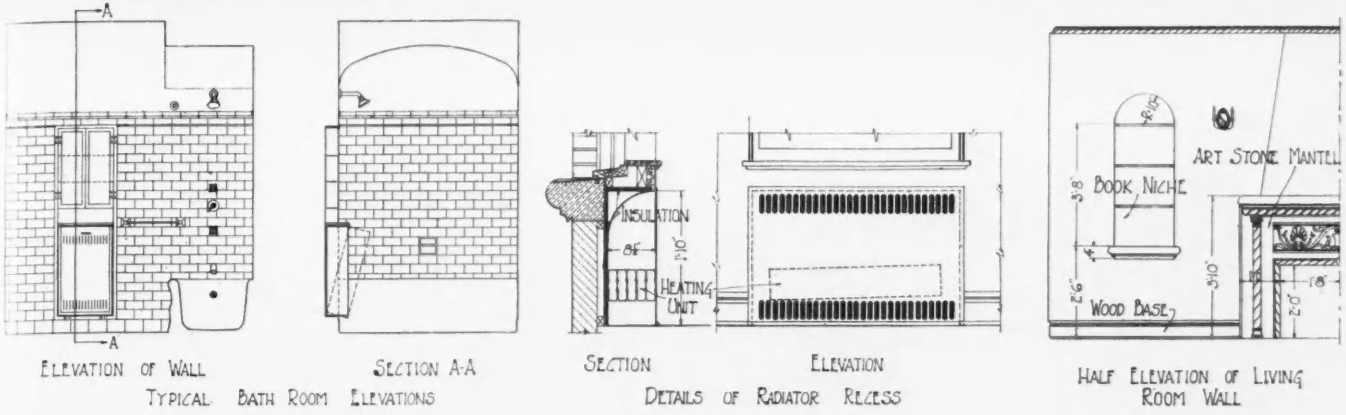
We have selected three such to illustrate some of the newest ideas. The first is a building of pronounced Spanish lines, recently built on Eighty-first Street, Chicago; John Hocke, Architect; Henry Bros., Mason Contractors, and Carlson & Bergren, Carpenter Contractors. The dimensions of this building are 60 feet by 140 feet, built on a corner lot on an alley. There are two stories and a basement, containing ten apartments, four five-room apartments, and six four-room apartments. In the basement are located boiler and coal-room, laundries and drying-rooms and storerooms for tenants and janitor. Where local ordinances permit, one or two apartments can be finished off in the basement.

In this building are arched openings between main rooms, concealed radiators, disappearing beds, mechanical refrigeration, tile baths and showers, built-in clothes hampers in bathroom walls, garbage receptacles, cedar

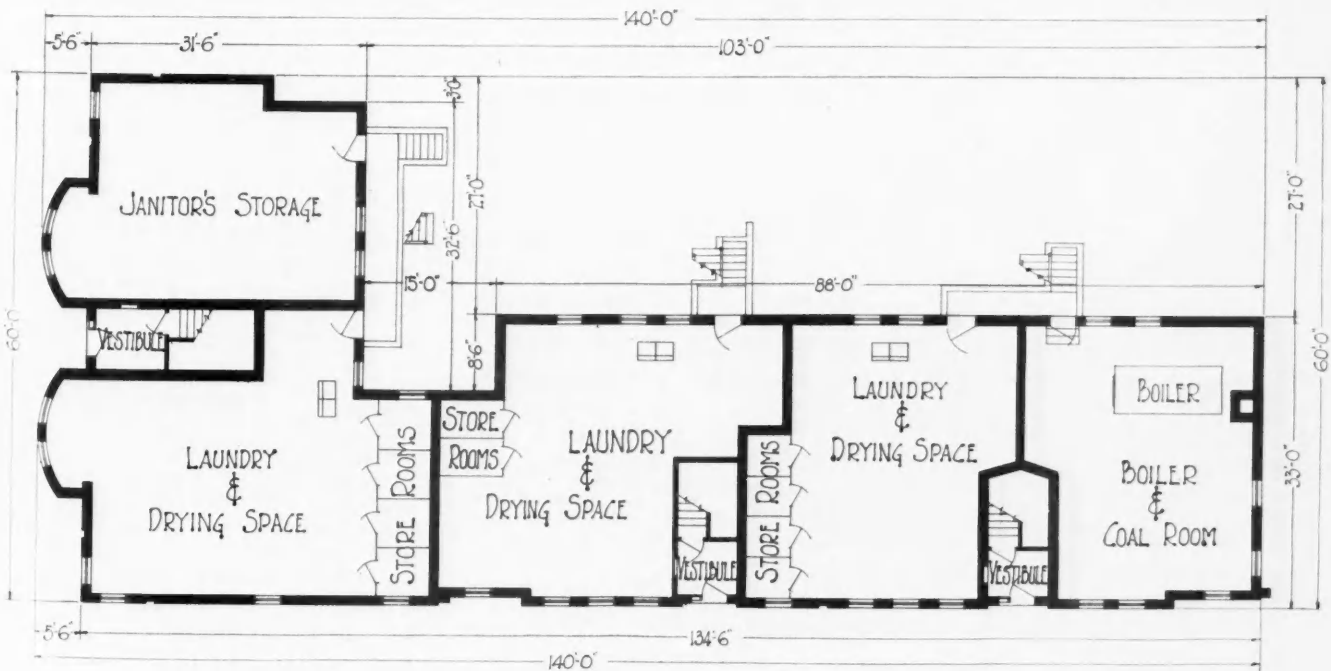
closets, interviewers, and chromium plated plumbing fixtures. Each individual apartment has a private reception hall, and two apartments on each floor open off to each stair hall. The four-room apartments contain a living room, bedroom, dining room, kitchen and bathroom, while the five-room apartments include an extra bedroom.

This building is of ordinary construction, consisting of concrete walls to grade, brick walls above grade; brick walls dividing all apartments. Second floor ceiling is insulated with heavy corrugated paper-board insulating lath. First floor is insulated with reinforced building paper; second floor is insulated with flexible insulation between rough and finished flooring. In addition, over boiler room, first floor, one layer of flexible insulation is installed between joists in boiler-room ceiling. Oak floors in all rooms, excepting in kitchens, which are finished off with linoleum on 1 by 4-inch dressed and matched pine flooring. Main roof is flat roof with tar and gravel roofing. Vestibules are treated in novel way by installing imitation marble.

This building was erected, using 12-inch brick walls in entire first floor, and 12-inch brick walls on second floor for front only, where face brick is used. Chicago ordinances permit the use of 8-inch brick walls for this type of building for all common brick walls on second floor, where face brick is used the walls are 12 inches.

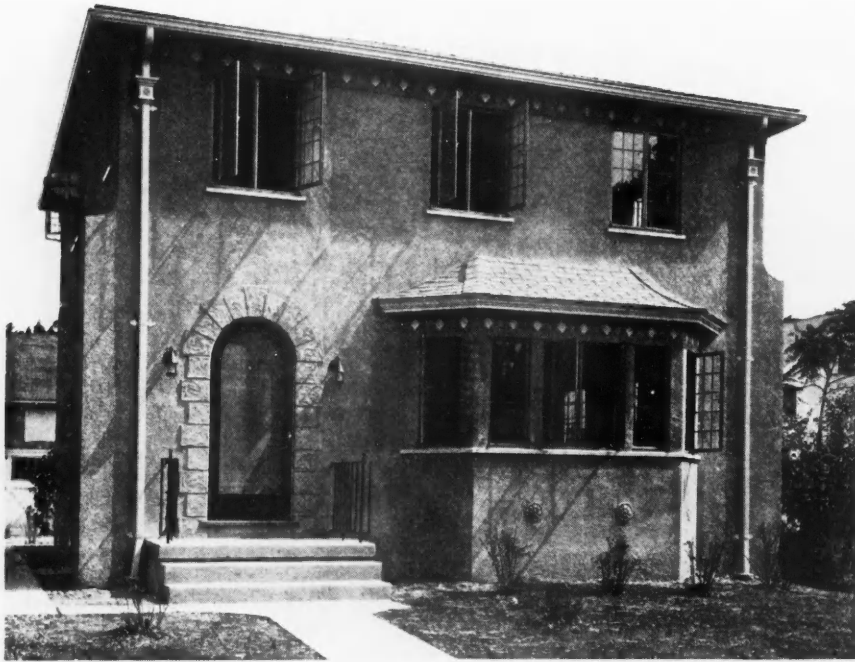


TYPICAL FLOOR PLAN



BASEMENT PLAN

Arrangement and Details of Spanish Type Apartment, Shown on Opposite Page.



THE accompanying illustrations depict a small two-family house at Elyria, Ohio, which should offer a satisfactory solution to property owners having small lots which are not yielding an income.

Although compact in design, it is nevertheless very conveniently arranged, and most of the facilities and conveniences of much larger houses can be found therein. It was designed to resemble a single detached house and it can therefore be erected in almost any locality without detracting from any general architectural scheme of the street on which it is built. With slight variations in exterior design and the use of different materials, it can easily be made to harmonize with homes in any neighborhood.

Each suite consists of a large living room, a dinette, a kitchen, one bedroom, and a bathroom, besides the usual necessary closets and cases. The two floors are identical in plan except that a large bay is added to the first floor living room. This has the effect of making the house appear as a one-family house and at the same time adds more floor space and light to this room.

The living room and dinettes have textured plaster walls and ceilings, the general color scheme being a pale green with a slight mottled orange cast. The fireplaces, also of textured plaster, are of a design to harmonize with the rest of the house. Each living room has a door-bed which permits these rooms to be converted into bedrooms when necessary. The dinettes, though small, are sufficiently large to accommodate the small dining sets of the "apartment" type. Ample wall space is provided for a buffet.

The kitchens are simply and conveniently arranged. On one side is the sink, with tiled drain-board and back, and usual group of cupboards, shelves, and drawers. The refrigerator space is also on this wall and the space over the refrigerator is closed in, giving additional space. On the oppo-

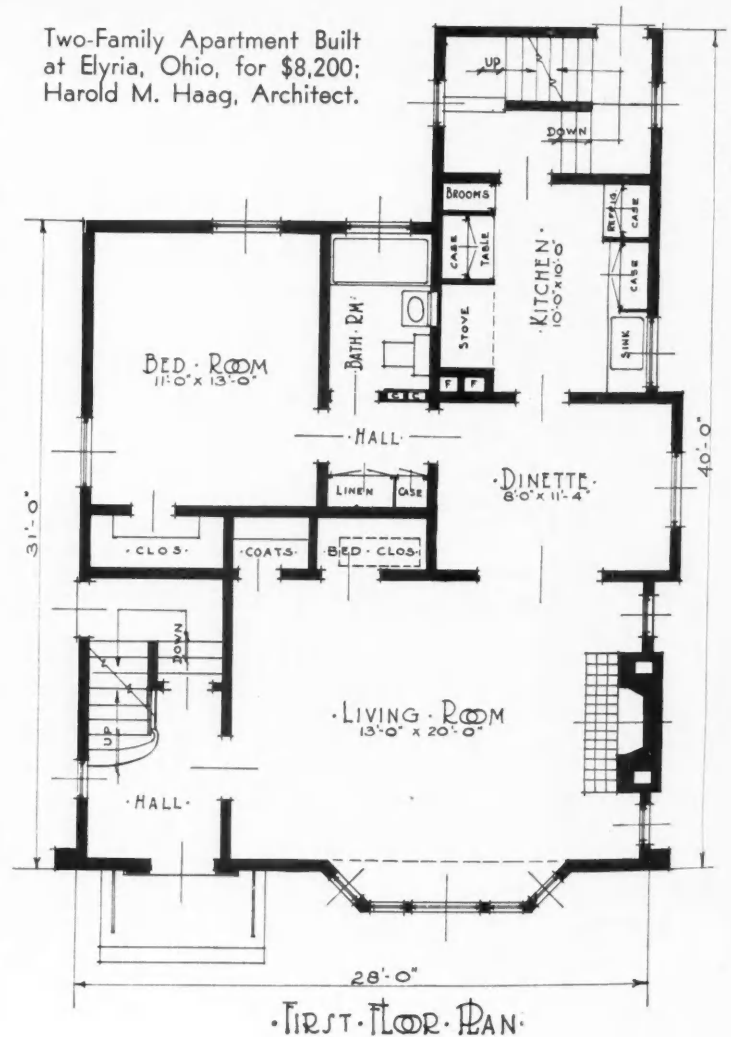
site wall is the broom closet, the stove, and a table space with cupboards above.

The bedrooms have cross-ventilation, and due to the unusual amount of wall space, permit of several arrangements of furniture. There is a large clothes closet for each bedroom. The baths have built-in tubs, tiled floors and tiled wainscoting with built-in bath accessories. Large linen and supply cases are built into the rear hall. These are door height and plastered above. The bed-rooms and bath, as well as the rear hall and kitchen, have smooth tinted walls and sand-finish tinted ceilings.

There are separate warm-air heating systems with independent fresh air supplies, and separate fuel rooms in the basement. Water, gas, and electric services are separate for each apartment. Only one set of laundry trays was installed; but connections were made from each water supply to a single set of faucets.

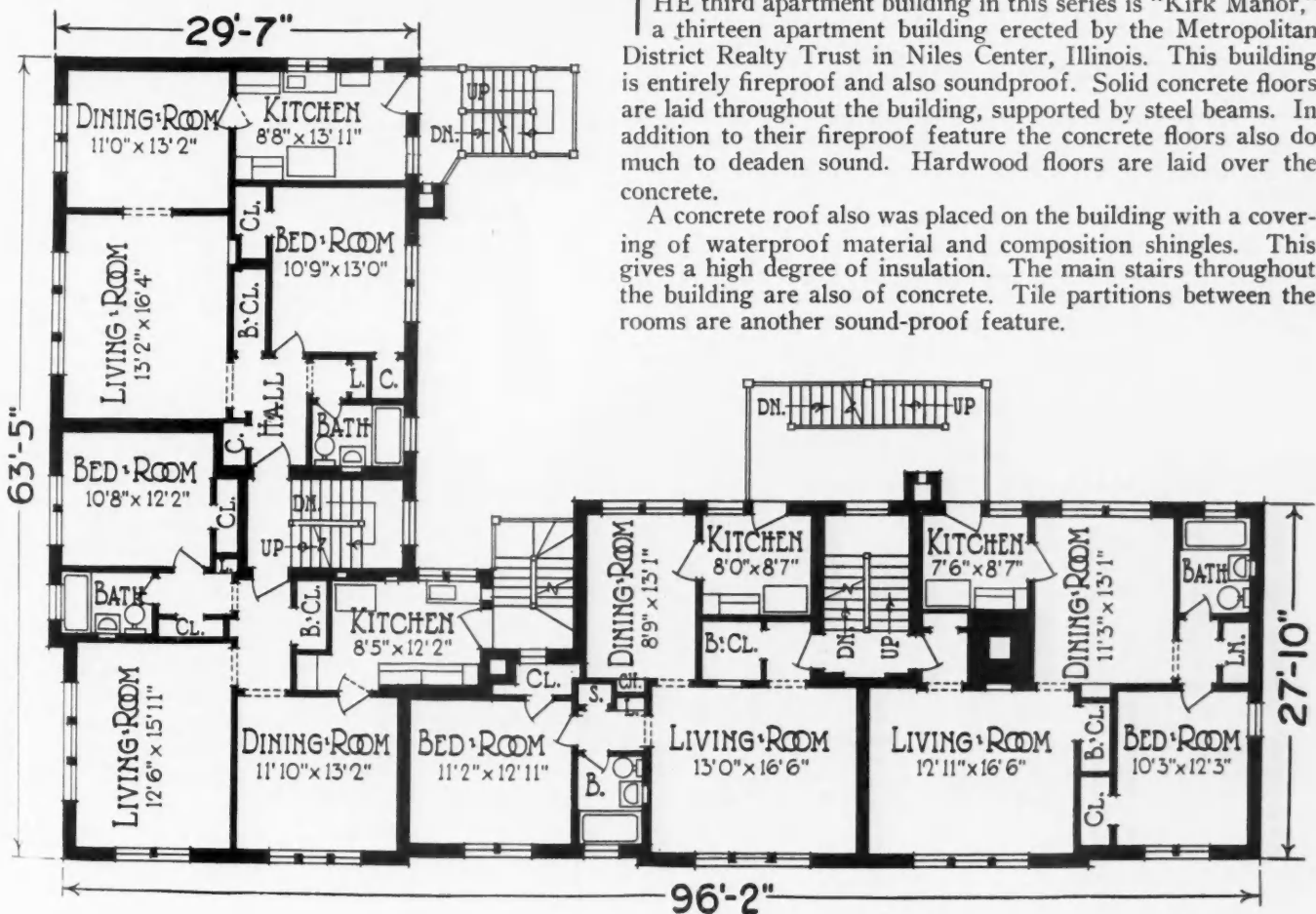
A generous number of convenience outlets was installed and all are of the double type, thus giving twice as many outlets for only a small additional cost.

Two-Family Apartment Built at Elyria, Ohio, for \$8,200; Harold M. Haag, Architect.



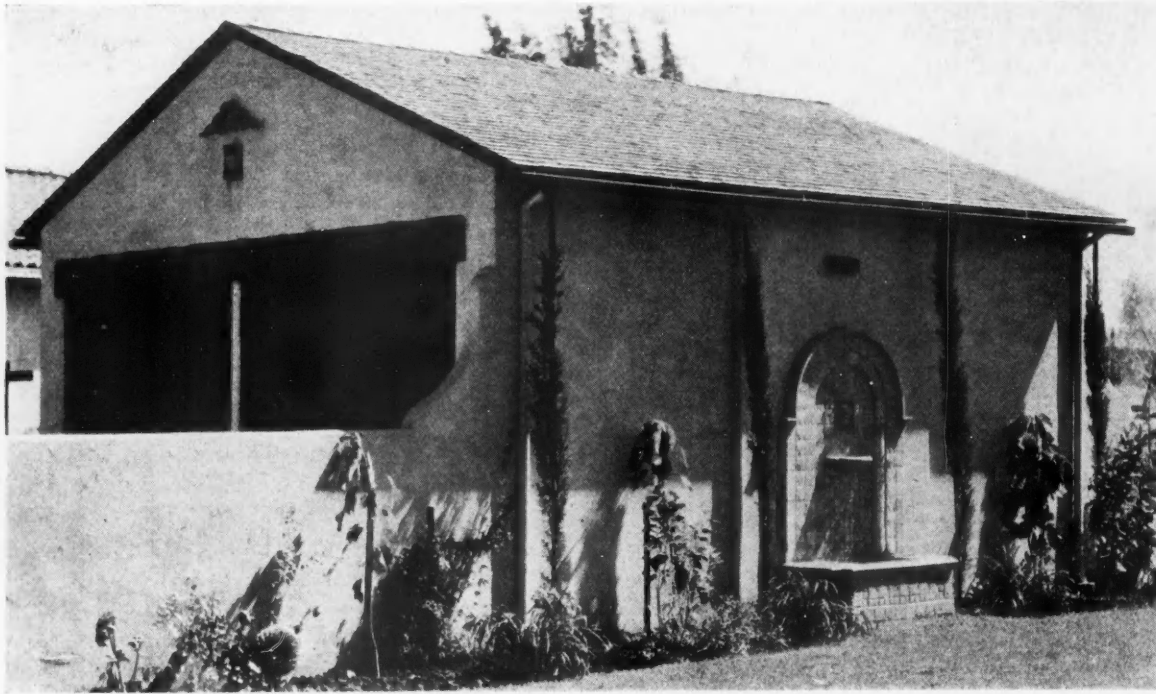


"Kirk Manor" Being Erected by the Metropolitan Realty Trust and the Suburban Construction Company at Niles Center, Illinois; C. W. Lampe & Co., Architects.



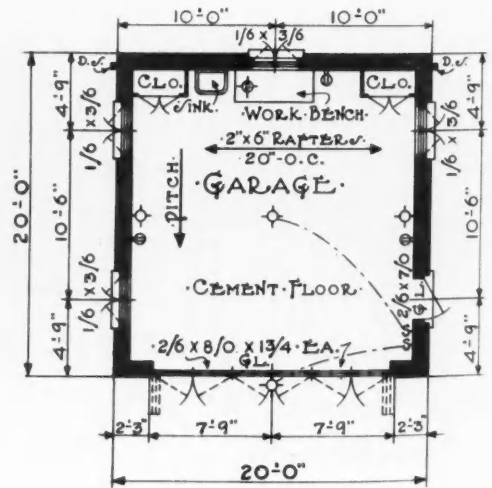
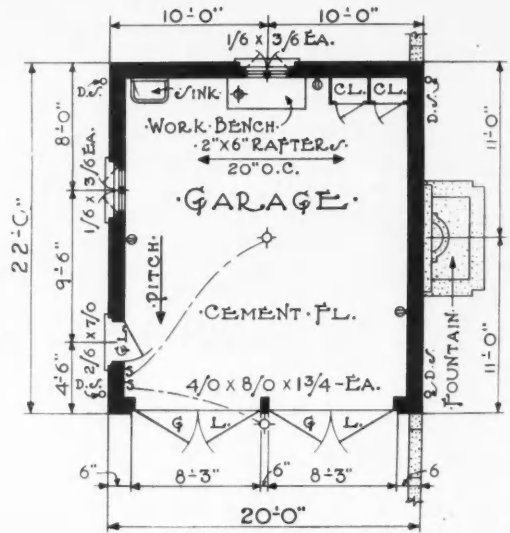
THE third apartment building in this series is "Kirk Manor," a thirteen apartment building erected by the Metropolitan District Realty Trust in Niles Center, Illinois. This building is entirely fireproof and also soundproof. Solid concrete floors are laid throughout the building, supported by steel beams. In addition to their fireproof feature the concrete floors also do much to deaden sound. Hardwood floors are laid over the concrete.

A concrete roof also was placed on the building with a covering of waterproof material and composition shingles. This gives a high degree of insulation. The main stairs throughout the building are also of concrete. Tile partitions between the rooms are another sound-proof feature.



The two-car garage is what is wanted; and it is well to build it substantially of masonry materials, and in harmony with the dwelling it serves. Here are two suggestions.

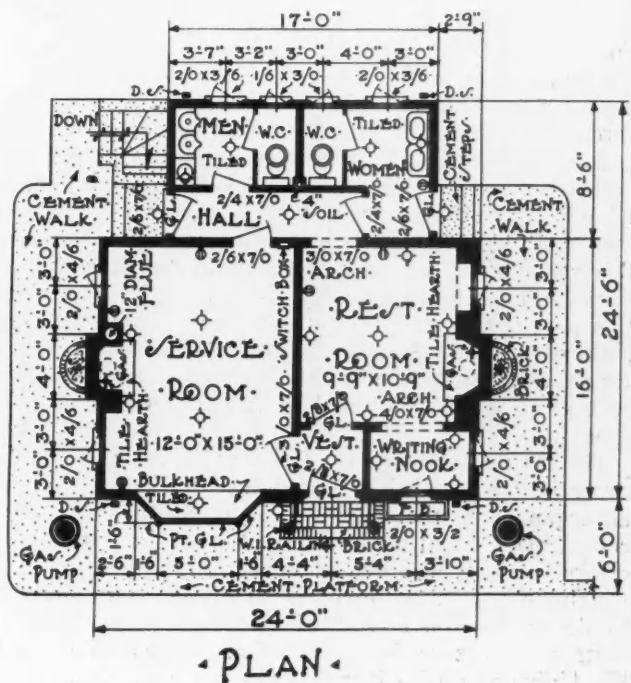
Two Good Looking Private Garages





Filling Station of Better Lines

Gas and oil stations are improving in appearance. Better design and better construction are evident. Here is a Colonial model, attractive yet businesslike.



"MODERNIZING PAYS ME \$680,000 YEARLY"



An Interview with Joseph Pondelik, Jr.

Three steps in a typical Pondelik job—converting a brick bungalow into a two-flat. See below and to left, and on page opposite for completed building.



NOT many builders have had the amount of experience with the modernizing business that Joseph Pondelik, of the Joseph Pondelik Jr. Construction Company of 5213 W. 22nd St., Chicago, Illinois, has had for the last twelve years. Modernizing business has been a specialty of his, and, thanks to it, he has suffered no falling off in income during the recent slump in new construction. He counts on a yearly 40 per cent increase in business. He did \$680,000 worth of modernizing business during the last year—safely a 40 per cent increase over the year before—and so far his business this year shows that he will maintain the same rate of increase, in spite of the stock market crash. At no time this past spring or summer has he had cause to complain of bad business. The Monday before Labor Day, for instance, forty-one "good" leads came into the office, several of which amounted to orders signed up on the spot.

He has made a success of this modernizing work because he has studied it thoroughly and has worked up an organization that moves so perfectly that he has received many inquiries lately from individuals and associations asking for details concerning it—information which he has been unwilling to divulge until induced to do so for the benefit of AMERICAN BUILDER AND BUILDING AGE readers. Mr. Pondelik was famous in his University of Chicago days for making the All-

American football team two years in succession, and began business with a wide acquaintance made in that way.

Most of the difficulties that builders have in making modernizing business profitable, Mr. Pondelik believes, grow from ignorance as to the kind of jobs it is profitable to handle, and inability to handle them efficiently. Mr. Pondelik makes a specialty of moderate priced work—simple jobs that as he says, "everybody wants and are therefore easy to sell," such as finishing attics, modernizing basements, raising houses, doing over bathrooms, changing store fronts and gas stations, making open porches into rooms. The gas station modernization, for instance (photographs of which accompany the article), cost the customer about \$3,500. On jobs such as this Mr. Pondelik figures on getting double the profits obtainable from new construction. This is right and fair, he says, because of the risk always involved in working with old structures, especially when original plans are not available. And also because there is always more work involved in reworking old structures, in figuring out their condition, and their possibilities.

The transformation of this old fire-wrecked building into a modern auto service station is spectacular. It looks as though the whole thing had been torn down and then done over. He utilized, however, all the old walls and the roof. Two of the old walls were recoated

HOW THE WORK IS SOLD, ORGANIZED AND HANDLED

The First of a Series of Two Articles

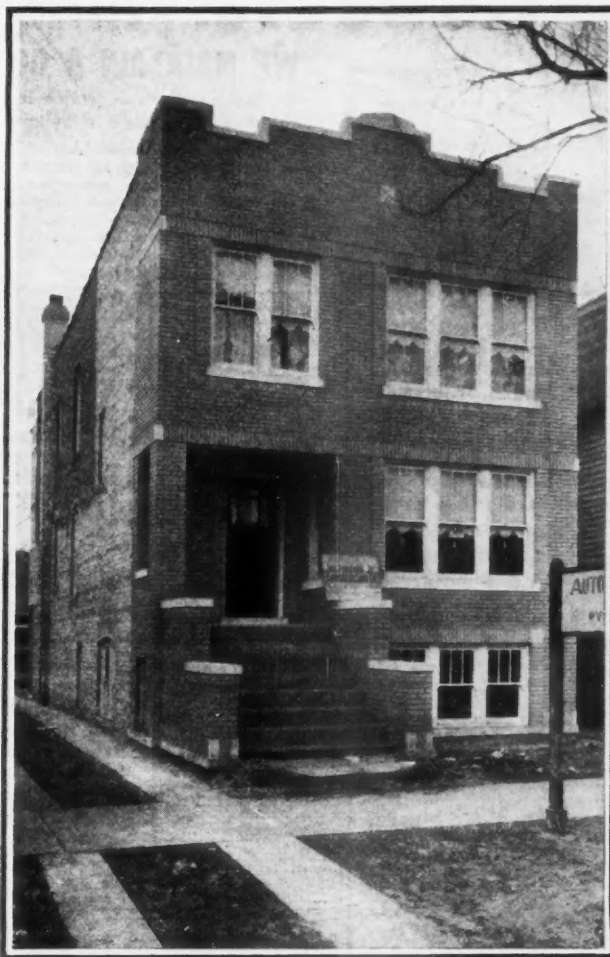
with stucco. The front wall that was made of good brick was newly tuck pointed. The inner walls were relined, so that the building looks new, inside and out. He added new floor, windows, doors, pit and columns.

Bathroom modernizations bring him in another lot of business. The one job illustrated is typical. Here the finest fixtures in Ming-green are used. Ceramic tile of buff and green was used on floor and wainscot. The very latest in lighting fixtures and medicine cabinet give the room an up-to-the-minute appearance. The field for this sort of modernizing work is practically unlimited, he says. Every job sells another.

Such prices as he makes on these jobs, with such profits as they yield, are due to the efficiency of his organization. And the whole secret of the efficiency of his organization lies in what he calls his Basic Cost Price List, which he makes up at the beginning of each year when he does his year's buying. This is the list of the basic cost of each type of job (materials and labor) that goes into the modernization of a building, in terms of square or cubic footage, and is estimated on the basis of existing prices of labor and materials. His twelve years of experience have enabled him to make it accurate, so that he can price jobs that are not exorbitant in cost to the customer, and yet give him his profit. This list enables his salesmen to estimate jobs quickly while in the process of selling a customer; it is the basis of all his dealings with his foremen; it takes all the detailed tasks of figuring and handling jobs out of his hands and puts them into the hands of the girls in the office.

Selling modernization is an art that has been only too little studied, Mr. Pondelik says. It is more difficult than selling new construction because the salesmen must be equipped not only with sales talk, but must have a certain skill at drawing plans and designing the modernization for the customer. Most prospects have a very vague idea about the whole business of modernizing, not only as to what actually can be done to an old house, but as to the value of doing it. The salesman must go prepared to give suggestions and information on both points if he is to sell him successfully.

He must find out for what reason the customer is interested in modernizing, or can be interested in modernizing. Some people modernize for luxury's sake—because the children are growing up and they are demanding a more attractive home, a fancier bathroom, more spacious sleeping quarters; or they may modernize because the house they are in cannot be sold profitably until it is not only repaired, but given certain features that will make it interesting to women customers, and therefore easily salable. Some people want to modernize to obtain additional income, and these raise the roof of their home and change the attic into a small apartment. There are other motives for modernizing, and many times people have a combination of motives; but



they furnish the basis for successfully interesting a prospect and for successfully clinching the sale.

Before any salesman goes to call on a prospect he must be equipped with some knowledge of the prospect's financial standing. As soon as possible in the first conference, the salesman should find out how the customer is prepared to finance the job; if he does not plan to pay cash for it, then how much he is able to pay per month. This information is extremely important, not only so that the salesman will be able to work out a satisfactory financing scheme for him, but as a guide to how big a job he may safely and wisely sell the customer. Mr. Pondelik believes in "repeat" business; he does not often sell a complete modernization at once; he sells one job to a customer, and when that has been paid for, sells him another. About fifty per cent of his business is repeat business.

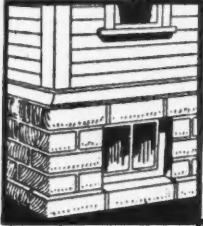
In selling modernization, Mr. Pondelik says, two things are absolutely necessary—imagination and a ruler. When the salesman finds out in general what the customer wants, then he must take the initiative. He must take his ruler and measure up all the dimensions concerned in the modernization. Then, sitting, say, at the dining room table with the customer and his wife, he takes out a sheet of paper and makes a rough sketch of the job, drawing in proposed changes, and being quick to embody all the suggestions the customer makes. "This is to keep the customer actively interested," he says. The drawing need not be made to scale, but it should be made quickly. It gives the customer something con-

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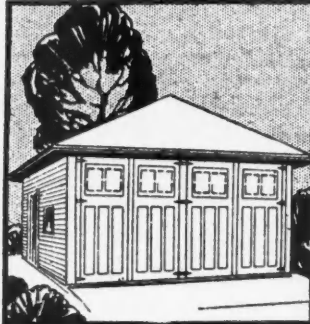
1. We employ union labor.
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3. We have been serving our customers satisfactorily for eleven years, and as a result 60% of our business today is repeat business.
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Brick garages from one car to ten cars, built of first grade materials to meet your demand, price and quality.

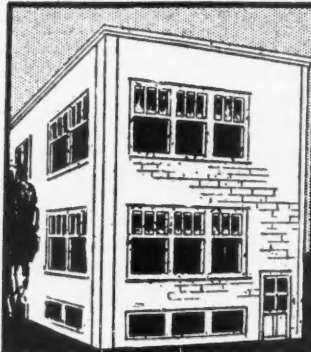


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Advertisements Like This Have Paid Well for Mr. Pondelik, When Run in His Local Newspapers. This Ad, Size 8 1/2 by 11 Inches, Appeared May 11, 1930, in the West Side Metropolitan Section of the Chicago Sunday Tribune.



Imagination and Enterprise Turned This Old Fire Wreck Into the Neat Service Station Above.

crete to grasp, and gives him a chance to see his ideas take form before his eyes.

When the tentative changes have been agreed upon, then the customer wants to know, "How much will it cost?" From the dimensions the salesman has obtained, he can figure out in terms of square or cubic footage each class of material going into the job, and multiplying by the basic cost price, obtain in a few minutes an accurate figure for the cost of the whole job.

Of course, as Mr. Pondelik points out, any one engaged in modernizing is always running into unexpected difficulties, after actual work on the job has commenced, and for this reason it is always necessary to figure high. "When in doubt, figure high" is a rule with him, and a very necessary rule, experience teaches. In estimating plumbing it is always best to avoid giving a quick estimate, for figuring the changing of plumbing is a very special job and should only be done after careful investigation.

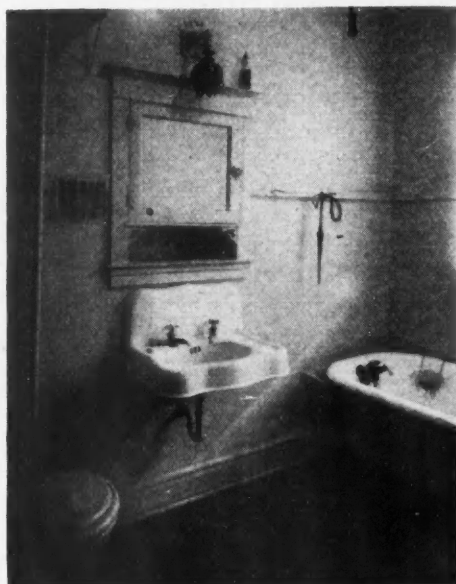
Finding the method of financing the job is one of the most important parts of the selling procedure, for if the money for the job cannot be found, it naturally falls

through. Part of the duty of the salesman is working out the financing scheme. This firm prefers to have work paid for on a time payment plan. Notes, signed by the customer and his wife, and paid off in two (or sometimes, though not often, three) years' time by monthly payments, are discounted by the firm. When jobs are of any size, however, this method demands monthly payments larger than most customers can afford. In this case loans must be arranged for, by the firm, through other mediums. Sometimes it is most convenient to arrange for a complete refinancing of the property, if the home already carries a small first mortgage. Mr. Pondelik says, however, that most of his customers dislike a mortgage. It so happens that almost all of the people in his community have investments in Building and Loan Associations, which are very strong and active. Most of his loans are managed through them. This is a matter which every builder must work out according to the conditions in his own community. Mr. Pondelik says that during the last year he has lost only one job through being unable to find the money for it.

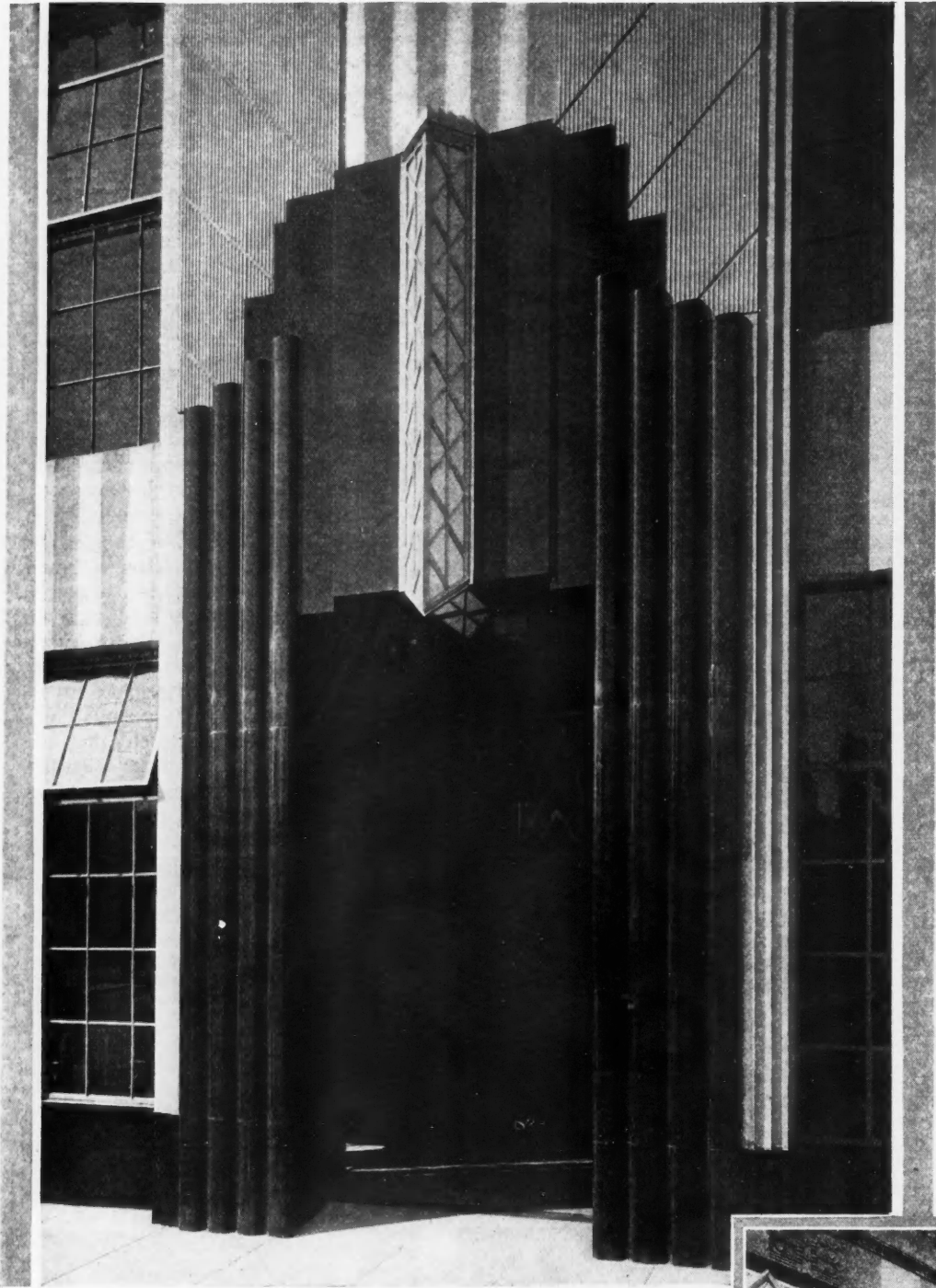
Mr. Pondelik and his salesmen do all of the designing of the modernizations themselves. After a rough plan has been accepted *and signed* by the customer, it is turned over to an architect who draws it to scale and makes blueprints. Specifications, too, drawn up by the salesmen and signed by the customer, are handed over to the girls in the office force. These girls make up the job cards which are turned over to the foremen, who from then on, handle the job. Mr. Pondelik has two full time salesmen, and two part time salesmen who help him handle the selling end of his business. Except for the jobs that he himself handles from the beginning, most of the jobs go right through to completion without his ever seeing them—thanks to his system.

Many other builders and dealers are interested in knowing how he gets his prospects. He uses no spectacular methods. In modernizing more even than in new construction, each job sells others, for it is a comparatively new and interesting line of work. Mr. Pondelik says that when a tip comes in concerning a person who has seen the work of a customer, he always goes out to call on him with a contract in his hand—such a sale is so sure.

Editor's Note: In the December issue of *AMERICAN BUILDER AND BUILDING AGE* further details of Mr. Pondelik's successful methods of handling repair and remodeling work will be given.

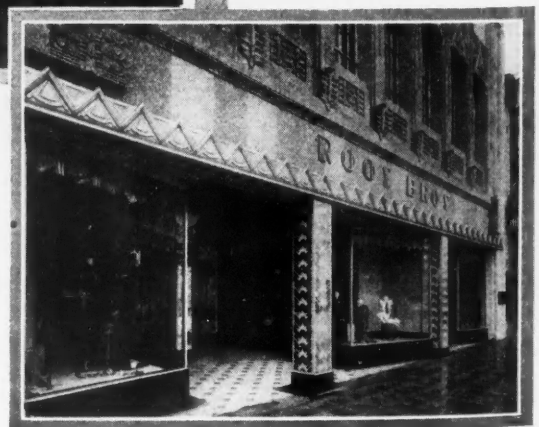


Modernizing old bathrooms is a routine job, and a profitable one, for the Pondelik Company.



Left:
Chowinard Art School,
Los Angeles.
Morgan, Walls &
Clements,
Architects.

Below:
A Pulling and Selling
Store Front.

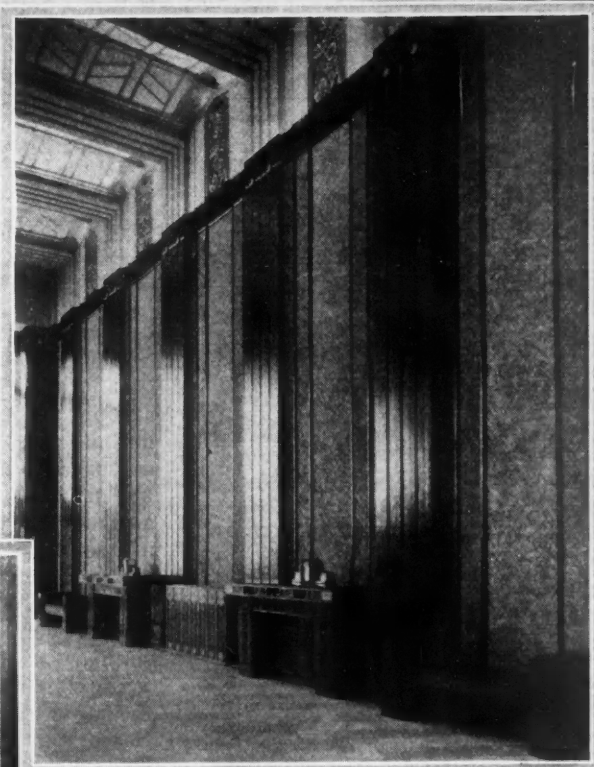


MODERNISTIC APPROACH



Right:
Exterior and Interior of a Bank of
Strikingly New Lines. Morgan,
Walls & Clements, Architects.

Below:
A Business Office by Feil &
Paradise.



BANK BEAUTY OF TODAY

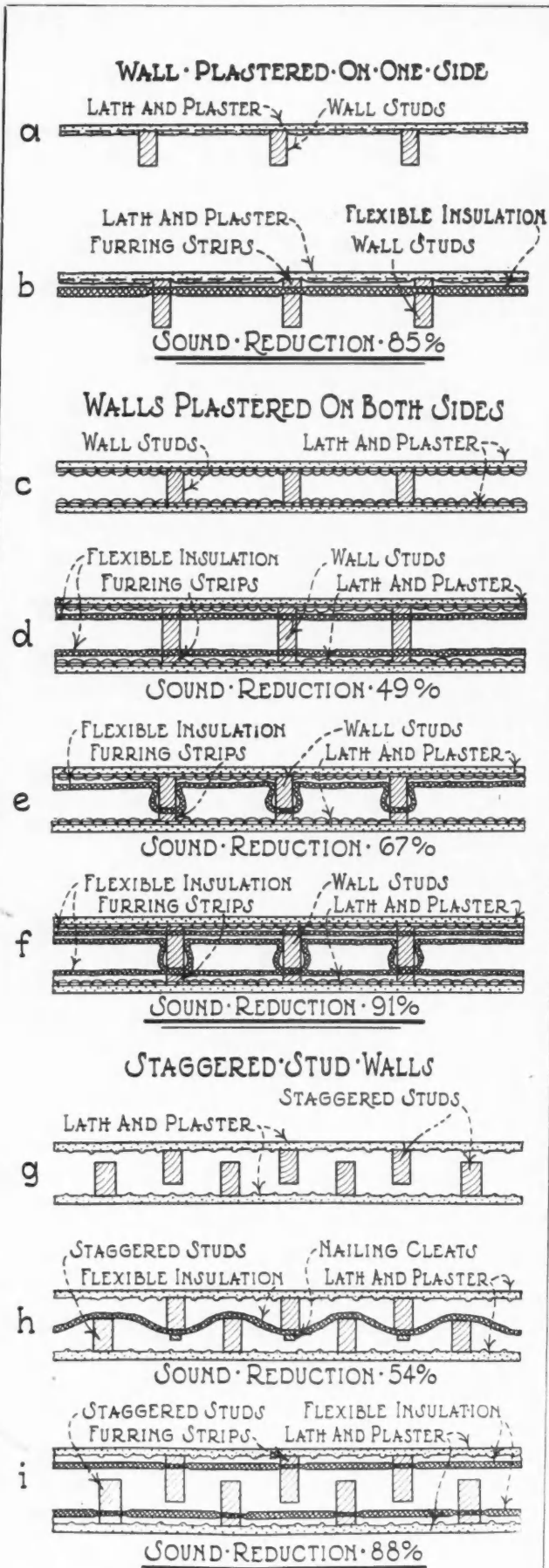


Fig. 1. Methods of Wall Construction for Soundproofing.

Are You Building Your Walls and Floors SOUND-PROOF ?

ONE of the most important factors in the design of a comfortable home and an efficient commercial building is provision for the elimination of all possible noise. More and more, builders, architects and dealers are devoting attention to the soundproofing of exterior walls, partitions and floors.

Early experiments in the effectiveness of various sound-deadening materials depended largely on the ear, producing such a wide variation of laboratory results that it is not hard to account for the tardiness of builders to include soundproofing material in building plans. It was difficult to produce a sound recording instrument which would provide actual measurements of transmitted sound. William R. Barss, consultant on acoustics of the Massachusetts Institute of Technology, has developed a method of testing the amount of sound that can be transmitted through various substances, which makes possible the treatment of the subject of sound-deadening by itself and not as an adjunct to acoustical sound absorption.

Professor Barss' experiments, which have been recently completed, were carried out in conjunction with Samuel Cabot, Inc., Boston, Mass. They demonstrate that with the application of flexible insulation the amount of sound transmitted through a wall plastered on both sides may be reduced as much as 91 per cent, as compared with the same type of wall constructed without insulation. Floors, because they must receive impact and structural sound vibrations, as well as those transmitted through the air, are much more difficult to sound-proof with the same degree of effectiveness. Complete insulation of a floor produced a reduction of 61 per cent in the amount of sound transmitted in comparison with an uninsulated floor.

Flexible insulating materials absorb sound in much the same manner as a blotter absorbs liquids, Professor Barss points out. The generally accepted theory is that walls and floors vibrate like a drumhead when struck by a sound, and that stiffness or structural strength is necessary to prevent the passage of the sound. But this is only partially true. A hard material tends to reflect the sound, causing a reverberation or an echo without actually destroying it or dissipating its energy. Flexible insulating materials are supposed to change sound into heat or mechanical energy, possessing the property of absorbing it. It is also believed that flexible insulation is most effective when applied to the vibrating surfaces of a wall or floor. While the best results would be obtained by applying the insulation to the outer surfaces, in most cases that would be impractical, and the next best method is application to the inner surfaces of a wall or floor.

Tests Show How Easily Sound Insulation Can Be Increased 91 per cent for Walls and 61 per cent for Floors

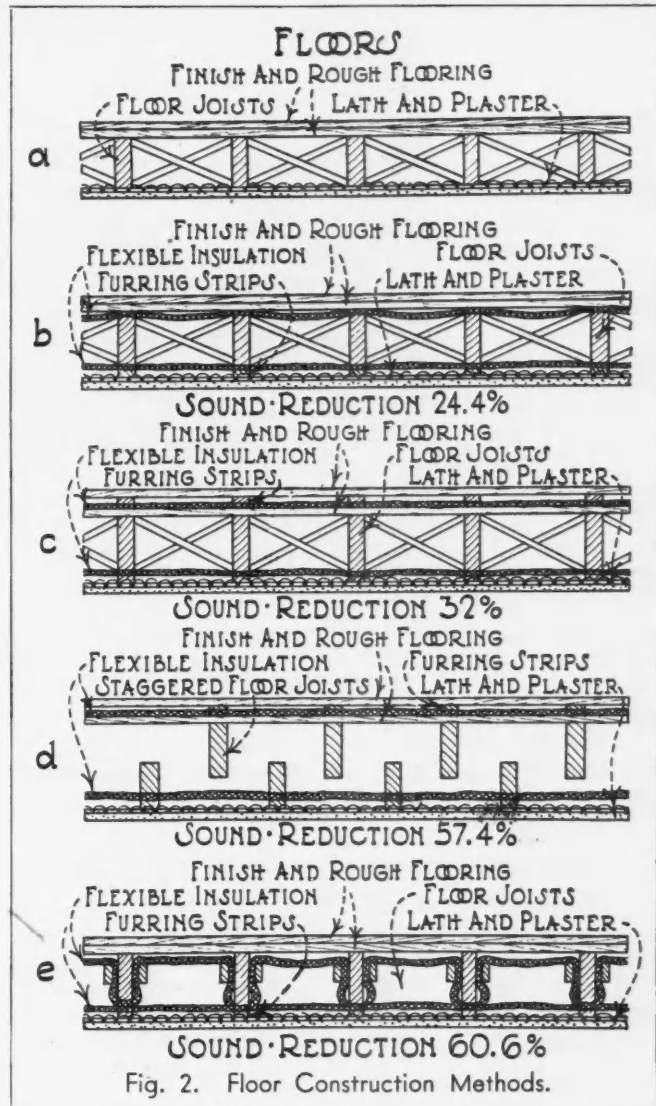
How To Build a QUIET House

The method used in the tests consisted in passing a plane parallel beam of sound of 512 cycles frequency, first, through the air, and second, through the material in question. The sound in both cases was picked up by a condenser microphone, amplified and fed into an oscillograph. The reduction factors were then calculated from the amplitudes of the air wave and the wave after passing through the wall, partition or floor.

Tests on walls plastered on one side only (Fig. 1a) showed that 2.7 per cent of the sound striking the walls passed through. When the same wall was provided with a layer of flexible insulation, applied between the studs and furring strips (Fig. 1b), only 0.4 per cent of the total sound striking one side was transmitted to the other, a reduction of 85 per cent.

An uninsulated wall plastered on both sides (Fig. 1c) transmitted 1.3 per cent of the sound striking it. Two layers of flexible insulation, applied between the furring strips and the studs, on each edge of the stud (Fig. 1d), allowed 0.64 per cent of the sound to reach the other side, a reduction of 49 per cent as compared with the uninsulated wall. One layer of insulation, applied near one of the plastered walls and nailed around the studs (Fig. 1e), effected a further reduction of 67 per cent in the amount of sound transmitted as compared with the uninsulated wall. This type of wall allowed the transmission of 0.43 per cent of the sound striking it. A method of construction employing three layers of flexible insulation, and representing a combination of the two layers and the one layer nailed around the studs (Fig. 1f), permitted only 0.12 per cent of the sound striking one side of the wall to pass through to the other. Compared with the uninsulated wall this was a reduction of 91 per cent in the amount of sound transmitted.

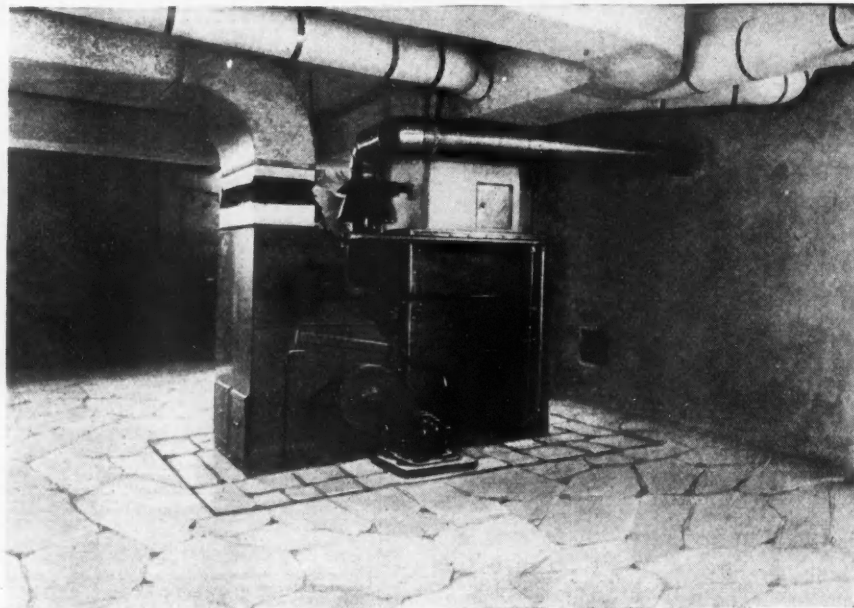
Equally effective were the results of the application of flexible insulation to staggered stud wall construction. Here the amount of sound transmitted through from one side of the wall to the other was less than that permeating either of the other types of uninsulated construction—1.1 per cent of that striking it. Each separate plaster face was supported by a separate row of studs and the two sections of lath and plaster had no direct connection with each other (Fig. 1g). When one layer of flexible insulation was anchored with nailing cleats to one row of studs (Fig. 1h), 0.51 per cent of the sound striking one side of the wall reached the other side, a reduction of 54 per cent as compared with the uninsulated wall of this character. When a layer of flexible insulation was applied to each row of studs with furring strips (Fig. 1i), the amount of sound penetrating the opposite side of the wall was 0.13 per cent of that striking it, or 88 per cent less than the uninsulated wall.



How to Sound-Proof Floors

Professor Barss found that 0.94 per cent of the sound striking either side of a floor and ceiling construction such as is shown in Figure 2a was transmitted to the opposite side. A layer of insulation between the rough flooring and the floor joists, and another between the joists and the ceiling furring strips (Fig. 2b) reduced the amount of sound penetrating the construction by 24.4 per cent, allowing only 0.71 per cent of the sound to reach the opposite side. By placing the upper layer of insulation between the rough flooring and furring strips (Fig. 2c) a reduction of 32 per cent of the sound was obtained, only 0.64 per cent of that striking either side of the construction being detected on the other side.

A method of insulation, identical with the previous one, but applied to staggered joist floor construction (Fig. 2d) still further reduced the penetration of the sound. Here only 0.4 per cent of the sound striking one side was transmitted to the other. By placing one layer of insulation between the bottom of the joists and furring strips and placing a second layer just below the rough flooring, supporting it by strips nailed to the sides of the joists and nailing it around the lower edge of the joists (Fig. 2e), the most effective sound-deadening effect in floor construction was obtained. This type represented a sound reduction of 60.6 per cent as compared with the uninsulated floor. It allowed only 0.37 per cent of the sound striking it to pass through to the other side.



Compact basement installation which purifies, moistens and warms the air, automatically maintaining ideal "weather" in the home.

That Extra Talking Point

Discriminating Home Buyers Are Expecting More Than Mere Warmth from the Basement Heating Plant

THERE was a time when a built-in ironing board would sell a house!"

In these words a prominent builder in a leading American city expressed a fundamental truth which every man in the speculative building field, whether builder or sales agent, recognizes—that there must always be one extra talking point, the one unique feature about a house or its equipment, whether large or small, which determines the ease of sale.

Always on the look out for any indications which point the trend of ultra-modern building needs, progressive builders in a number of residential developments ranging from \$20,000 to \$80,000, have been quick to sense the opportunities in this direction offered by "made to order" weather, as supplied by the newest scientific apparatus for house heating.

"It is the job of the successful speculative builder to keep always one step ahead of the procession," continued the builder—E. A. Cullings, of Baltimore. "You must get into each house that you build a special talking point or two that will make *that* house desirable above others. In the general roar of laudatory sales talk that the prospective house purchaser hears on every hand, your house must strike the note that is 'somehow different.'

"My latest house, which is now nearing completion, has two such talking points which I have found carry special weight with the people who have looked at the house with a view to buying it. One of those is the vault in the cellar. The other is a system of heating and air conditioning.

"In my opinion within a couple of years a weather-making system will be an accepted, and required, part of the equipment of the average home built to sell at from \$20,000 upwards. I even think the time is coming when the public, educated to manufactured weather in private homes and in office buildings, will expect it in apartment houses. A comparatively short time ago mechanical refrigeration was a novelty for the house salesman to emphasize. Today it is a commonplace.

Air-conditioning will take much the same course, as the most modern form of house heating. In the meantime, the man who can say he has an air-conditioned home, has something to talk about to his friends that they haven't got—yet—and those are the things that sell new houses."

J. S. Downing, another Baltimore builder of outstanding prominence, is putting a similar humidifying apparatus in two houses, one at \$50,000 and one at \$65,000. The advertisement of the latter residence—headed "More Than A la Mode" lists the weather making system first among the "very important and interesting new features."

Other builders, both in Baltimore and elsewhere, echo the conviction that they have found the extra fillip for their sales appeal. And unanimously they stress the salient points which in their experience or belief carry most weight with Mr. and Mrs. Anybody when they go house-hunting. Functioning in four capacities where the old-style furnaces served in only one, this new apparatus not only heats the air, but cleans, humidifies, and circulates it through the whole house. All air is filtered then passed over heating sections warmed by gas, sent through a humidifying chamber where it absorbs moisture—sometimes as much as twenty gallons a day—and finally is distributed through ducts to register openings in all rooms throughout the house by an electric blower. One feature is that no drafts are experienced and that windows need not be used for winter ventilation.

Absence of radiators is the point which most of the builders put first. A revolutionary change is taking place in house heating requirements, they will tell you, and the old-fashioned radiator, with the almost insurmountable obstacle it offers to well-balanced home decorative treatment and placing of furniture, is anathema to the modern woman. "And it is the woman who, in the last analysis, must be pleased," says Edgar A. Levi, another well-known Baltimore builder.

Radiators are already becoming obsolete, more than

one builder said. There are devices for meeting the objections to them, of course. There are radiator covers and recessed radiators and radiators built into the window sills, but more and more the trend, in the belief of these progressive builders, is away from any such form of radiation. The small inconspicuous grills of this new heating system, they say, "get it across" at first sight to the woman who visualizes the possibilities of furniture arrangement.

Then there is the cleanliness. Listen to Ross Hasbrouck of Poughkeepsie, who built one house in which he installed this apparatus, sold it for \$19,500—and says he could have sold it over again—and who is now installing it in another house. According to Mr. Hasbrouck, it will come to be a necessary part of household equipment, and any house will be labelled old-fashioned which does not have a heating plant that cleans and humidifies the air. "The cleanliness of the air, which is assured by the filter removing the errant dust particles, is one of the points which carries the most appeal at the present time," he declares, stating that he emphasizes this point in discussing the advantages of the system. "The absence of dust and dirt, no bother with a furnace man to shake-down the fire and carry out ashes, no dirty cellar full of coal, those are the things which I consider strong talking points in selling the house," he said.

Apparently the purchaser stayed "sold," because the new owner, after a winter of occupancy, declared with enthusiasm that he removed from the filter each month a pound box full of dirt. Otherwise with an old-style system, this dirt would have existed in the air of the

house and settled on rugs and walls in the form of dust.

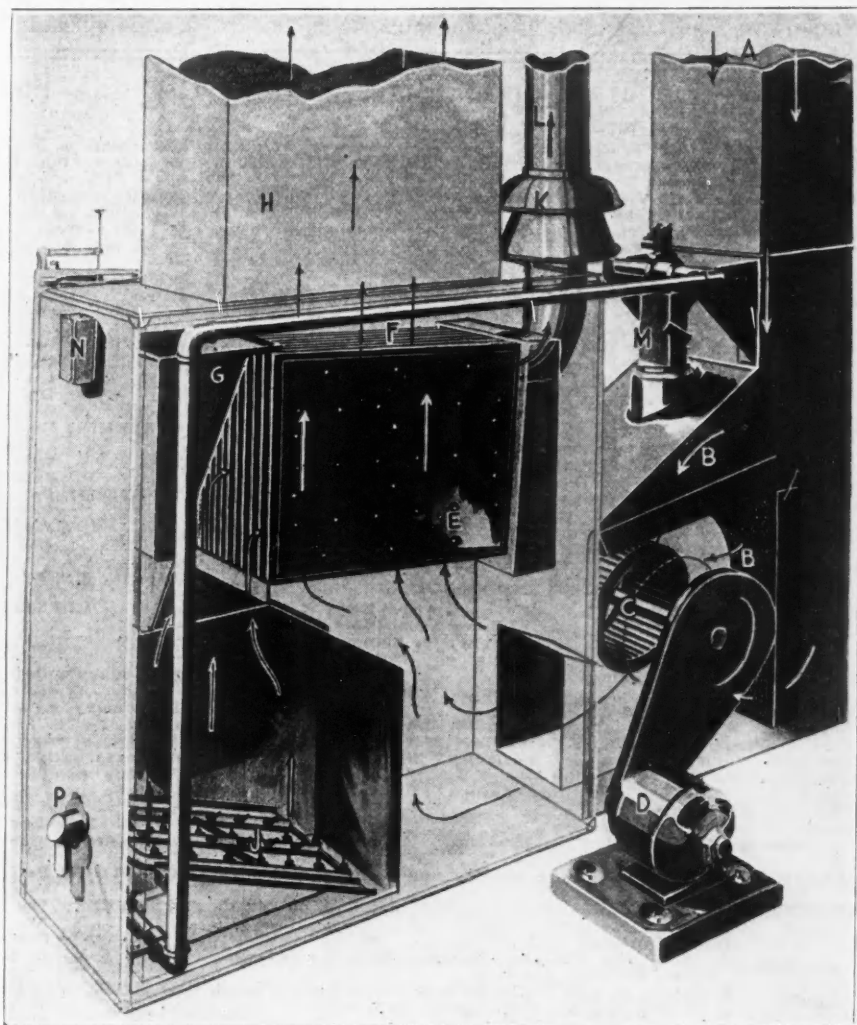
The humidifying feature the builders agree is a strong talking point when it is convincingly explained. To the average person at the present, they point out, the term humidity is not in itself entirely clear. As one man put it, when they hear the word "humidity," they are apt to think instinctively of those muggy days in summer when humidity is a synonym for discomfort. But on the other hand, everybody knows that air, to be healthful, must not be too dry. Therefore, in describing the advantages, this builder has consistently made a practice of referring, not to "humidity," but to "moisture content" with highly successful results.

Even that portion of the buying public who are uninformed or skeptical about the importance of proper humidity from the standpoint of health, are susceptible to the fact that it means longer life for their furniture, assures a better condition of pianos and other musical instruments, and tends to preserve the general house structure and woodwork in better condition.

William H. Flanigen, of Bryn Mawr, Pennsylvania, who has installed the system in a seventeen-room \$82,500 house erected for speculative selling, brings out in this connection still another point which to him makes the humidifying feature of outstanding importance to the builder himself. "When we sell a house," he said, "we take care of it for a year, making any necessary repairs. Having properly humidified air in the house, means that there will be appreciably less need for minor repairs such as woodwork or floors split or warped, cracks in walls and ceilings, and other minor repairs or replacements necessitated by the general 'drying out.'"

MAKES WEATHER IN THE HOME

Newly invented domestic air conditioning system which warms, cleanses, humidifies and circulates air. Illustration shows how air is brought in through incoming duct "A," drawn through filters "B" by the rotary blower "C" (operated by exterior motor "D"), forced through heat interchanger "E" into humidifying chamber "F" into mixing chamber "H" and thence out into the house. The filters remove 98 per cent of the dust; the rotary pump keeps up a constant circulation both from and into the rooms of the house. The heat interchanger is heated by a gas burner "J" above which is humidifier "G." This humidifier contains a constant quantity of water—controlled by a float-valve, which evaporates into the humidifying chamber and mixing chamber where it is borne away by the warm column of ascending air. The thermostat "M" controls the heat of the building while "P" is the pilot governing the gas flame and "N" the excess heat control. Escape of any fumes of gas or carbon is provided through backdraft diverter "K" and flue "L."





Well-selected, Modern Equipment, Properly Used, Saves Time and Labor and Adds to Net Profit.

Facts Aid Equipment Users

Profit Possibilities in Motor Truck Equipment Brought Out by Nation-Wide Survey of Builders and Dealers

In all types of construction, well selected, modern equipment is a large factor in assuring profit. With the relative cost of labor constantly increasing, economy of time and labor is an all-important consid-

eration in building operations, not only for the contractor and builder, but also for the building material dealer. And it is only by careful planning and the efficient application of modern equipment, that this economy

General Contractors Equipment Used

- 165 Firms used a total of 993 trucks.
- 475 Were Light Duty trucks, capacity ½ to 1½ tons, representing 48% of the total.
- 317 Were Medium Duty trucks, capacity 1½ to 3 tons, representing 32% of the total.
- 201 Were Heavy Duty trucks, capacity 3½ tons and up, representing 20% of the total.

993 TOTAL

QUESTION: Do you use special bodies, made and adapted to your requirements by body makers, or do you use standard bodies furnished by the truck manufacturers?

ANSWERS: Use Special Bodies.....79 Firms 49%
Use Standard Bodies.....69 Firms 43%
Use Both Special and Standard.....12 Firms 8%
Did not answer.....5

QUESTION: How do you pay your drivers:

1. Do you pay them a straight salary, no bonus?
2. Do you pay them a salary and bonus?
3. Do you pay them by the load, or trip, or tonnage?

ANSWERS: Pay Straight Salary.....152 Firms 95%
Pay Salary and Bonus.....7 Firms 4%
Pay Straight Commission.....2 Firms 1%
Did not answer.....4

Operating Experience

QUESTIONS:	ANSWERS:		
	Av. of Users for Light Duty	Av. of Users for Medium Duty	Av. of Users for Heavy Duty
How many miles per gallon of gas?	13.1 miles	9.2 miles	6.8 miles
How many miles per quart of oil?	101.6 miles	101.8 miles	60.5 miles
What is average payload?	2538.0 lbs.	6528.0 lbs.	10538.0 lbs.
Average length of haul or route?	14.3 miles	16.7 miles	17.6 miles
Average number of stops per day?	21.2 stops	21.1 stops	29.7 stops
What is total truck operating cost, including maintenance and depreciation per mile?	10.9 cents	18.4 cents	37.0 cents

QUESTION: Do you do all your hauling and delivery with your own trucks?

ANSWERS: Yes.....70 or 50%
No.....71 or 50%
Did not answer.....24

Of those who hire some trucking done, the following shows for what purpose:

- 34 or 48% hire trucks for cartage to and from railroad.
- 61 or 86% hire trucks for Heavy Delivery.
- 29 or 41% hire trucks for Long Distance Hauling.
- 20 or 28% hire trucks for Light Delivery.

Building Material Dealers Equipment Used

- 295 Firms used a total of 2070 trucks.
- 644 Were Light Duty trucks, capacity ½ to 1½ tons, representing 31% of the total.
- 809 Were Medium Duty trucks, capacity 1½ to 3 tons, representing 39% of the total.
- 617 Were Heavy Duty trucks, capacity 3½ tons and up, representing 30% of the total.

2070 TOTAL

QUESTION: Do you use special bodies, made and adapted to your requirements by body makers, or do you use standard bodies furnished by the truck manufacturers?

ANSWERS: Use Special Bodies.....148 Firms 52%
Use Standard Bodies.....116 Firms 41%
Use Both Special and Standard.....20 Firms 7%
Did not answer.....11

QUESTION: How do you pay your drivers:

1. Do you pay them a straight salary, no bonus?
2. Do you pay them a salary and bonus?
3. Do you pay them by the load, or trip, or tonnage?

ANSWERS: Pay Straight Salary.....266 Firms 91%
Pay Salary and Bonus.....18 Firms 6%
Pay Straight Commission.....8 Firms 3%
Did not answer.....3

Operating Experience

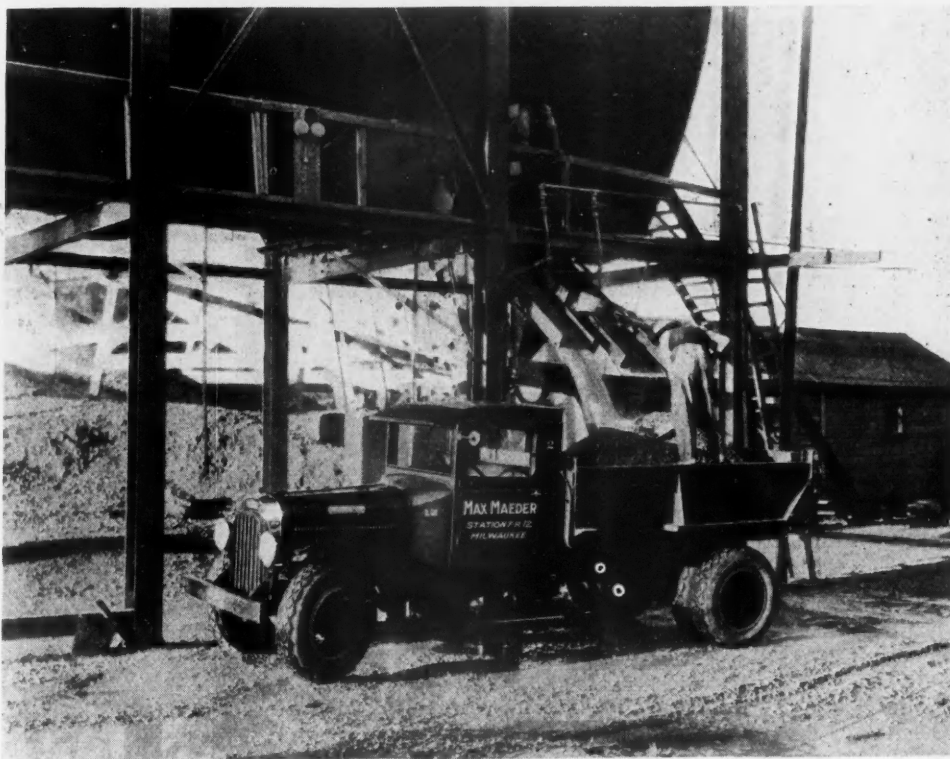
QUESTIONS:	ANSWERS:		
	Av. of Users for Light Duty	Av. of Users for Medium Duty	Av. of Users for Heavy Duty
How many miles per gallon of gas?	12.1 miles	9.7 miles	5.0 miles
How many miles per quart of oil?	104.3 miles	90.8 miles	59.2 miles
What is average payload?	2894.0 lbs.	6160.0 lbs.	12712.0 lbs.
Average length of haul or route?	11.6 miles	17.1 miles	11.8 miles
Average number of stops per day?	21.0 stops	17.3 stops	12.8 stops
What is total truck operating cost, including maintenance and depreciation per mile?	16.0 cents	20.7 cents	29.2 cents

QUESTION: Do you do all your hauling and delivery with your own trucks?

ANSWERS: Yes.....168 or 63%
No.....97 or 37%
Did not answer.....30

Of those who hire some trucking done, the following shows for what purpose:

- 35 or 36% hire trucks for cartage to and from railroad.
- 76 or 78% hire trucks for Heavy Delivery.
- 40 or 41% hire trucks for Long Distance Hauling.
- 37 or 38% hire trucks for Light Delivery.



For the Greatest Economy of Operation, Keep Your Motor Trucks Busy All the Time Hauling Capacity Loads

can be effected, and cost kept at the minimum.

That equipment should be modern, well selected, and efficiently used, is essential. The right type of power saw is a money saver on any job, but the wrong type may prove to be merely an additional expense. In order to select the right equipment and use it effectively the builder, or dealer, must have accurate information on the kind and amount of work that is to be done and on the performance of the various types of equipment with which it may be done.

There was a time, not so very long ago, when the building industry did not have to worry much about overhead and the cost of using equipment. Building was booming, there was plenty of work for everyone, competition was at a low point, and price was not such an important factor that very close figuring was necessary.

But that is all changed now. For over a year building has been slow, there are not enough jobs to go around, and competition is keen. On any job obtained in this highly competitive market it is necessary to practice every reasonable economy in order to make a decent profit, and expense items that might once have seemed trivial are closely scrutinized.

So it is that any facts which may help in the effective selection and use of equipment are of real value to the contractor or dealer. Such facts, on the use of motor trucks, have recently been made available in a booklet* which contains an analysis of truck operation, based on a questionnaire sent out to a large number of truck users. The information is arranged by types of business, and that applying to contractors and to building material and supply dealers is reproduced here.

To explain all ways in which these facts might be used would require many pages, but a few suggestions will serve as a starting point from which the operator, who is studying the truck problem, may work.

Take, for example, the matter of paying truck drivers.

The questionnaire asked, "How do you pay your drivers?" It will be noted that, in the different classifications, from 91 to 98 per cent of the companies answering this question stated that they paid straight salaries, with no bonus. From this it would seem that, in businesses of these types a straight salary for truck drivers is the most satisfactory method.

In each classification, however, there was a certain percentage of firms paying either a salary and bonus, or on a straight commission basis. These percentages are just large enough to lead one to the conclusion that, while the straight salary is, in general the most satisfactory method, there may be special conditions under which a salary and bonus or straight commission plan works better.

It will, then, be necessary to study local conditions to determine whether or not there exist any special condition which call for some

Plumbing and Heating Contractors Equipment Used

- 81 Firms used a total of 339 trucks.
- 232 Were Light Duty trucks, capacity ½ to 1½ tons, representing 68% of the total.
- 80 Were Medium Duty trucks, capacity 1½ to 3 tons, representing 24% of the total.
- 27 Were Heavy Duty trucks, capacity 3½ tons and up, representing 8% of the total.

339 TOTAL.

QUESTION: Do you use special bodies, made and adapted to your requirements by body makers, or do you use standard bodies furnished by the truck manufacturers?

ANSWERS: Use Special Bodies 34 Firms 40%
Use Standard Bodies 48 Firms 56%
Use both Special and Standard 4 Firms 4%
Did not answer 1

QUESTION: How do you pay your drivers:

1. Do you pay them a straight salary, no bonus?
2. Do you pay them a salary and bonus?
3. Do you pay them by the load, or trip, or tonnage?
ANSWERS: Pay Straight Salary 84 Firms 96%
Pay Salary and Bonus 2 Firms 3%
Pay Straight Commission 1 Firm 1%
Did not answer 0

Operating Experience

QUESTIONS: **ANSWERS:**
Av. of Users for Light Duty Av. of Users for Medium Duty Av. of Users for Heavy Duty

QUESTIONS:	Av. of Users for Light Duty	Av. of Users for Medium Duty	Av. of Users for Heavy Duty
How many miles per gallon of gas?	15.1 miles	10.3 miles	3.7 miles
How many miles per quart of oil?	94.8 miles	89.3 miles	42.5 miles
What is average payload?	1198.0 lbs.	3641.0 lbs.	7500.0 lbs.
Average length of haul or route?	12.6 miles	26.4 miles	30.0 miles
Average number of stops per day?	30.0 stops	18.1 stops	17.4 stops
What is total truck operating cost, including maintenance and depreciation per mile?...	13.3 cents	17.7 cents	

QUESTION: Do you do all your hauling and delivery with your own trucks?

ANSWERS: Yes 37 or 46%
No 43 or 54%
Did not answer 7

Of those who hire some trucking done, the following shows for what purpose:
33 or 77% hire trucks for cartage to and from railroad.
29 or 67% hire trucks for Heavy Delivery.
17 or 40% hire trucks for Long Distance Hauling.
7 or 16% hire trucks for Light Delivery.

*"National Motor Truck Analysis," published by the General Motors Truck Co., Pontiac, Mich.

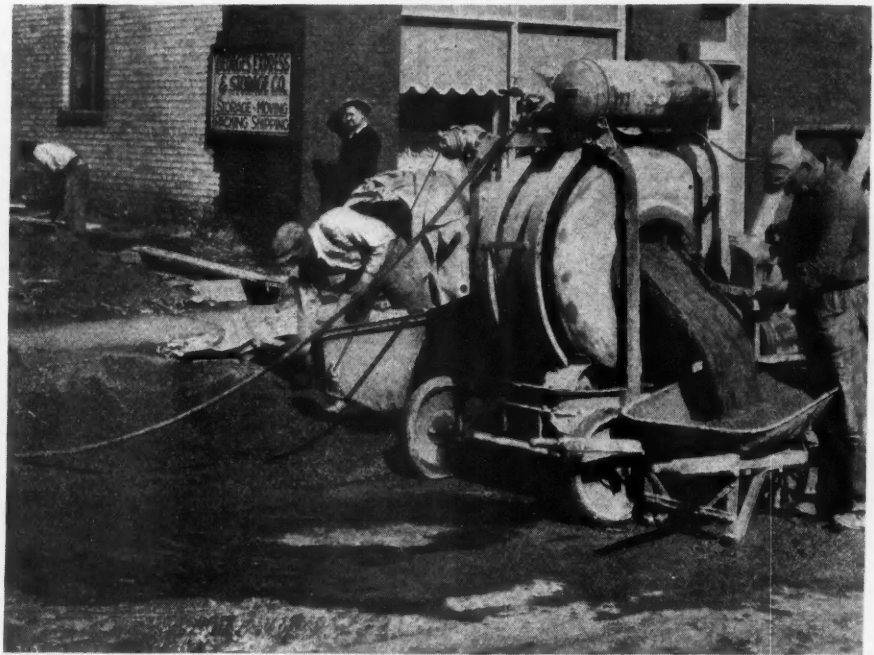
bonus plan. If not the straight salary plan can safely be decided on, as being most satisfactory to the vast majority of companies in this line of business.

Perhaps the matter demanding the most consideration is the selection of the right type of trucks. The tabulation classifies trucks as: light duty, 1/2 to 1 1/2 tons capacity; medium duty, 1 1/2 to three ton capacity; and heavy duty, 3 1/2 ton capacity and up.

There is considerable difference in the cost per mile for operating these different classes of trucks. This alone, however, does not determine the economy of one type as compared with another. Its determination is only one step in arriving at the cost per ton mile, that is the cost of hauling each ton of load one mile. This is the real determining factor in cost.

Let us take a concrete example of this cost per ton mile problem. Assume that your average load and your cost per mile for operating the different types of trucks has been found to be the same as the average for building material dealers, as shown in the tabulation on page 100.

Suppose that most of your hauling falls in the medium load class, averaging 6,160 pounds to the load. You



Studying Equipment Right on the Job Pays Big Dividends on the Time and Thought Invested

do have a certain amount of hauling in the heavy class, averaging 12,712 pounds to the load. Now the cost per ton mile for hauling 6,160 pound loads in the medium duty truck is 6.7 cents. The cost per ton mile for 12,712 pound loads in the heavy truck is 4.5 cents. Obviously it is cheaper to haul the heavier loads in a heavy duty truck.

Since you do not have enough of the heavy hauling to keep the heavy duty truck busy all the time, however, the heavy duty truck must either stand idle part of the time, which means a serious loss, or it must be used part of the time on loads averaging 6,160 pounds. On the lighter loads its cost per ton mile will be 9.3 cents. This, of course is high, and more than offsets its economy on the heavy work.

When it is necessary to hauling heavy bulk materials, the loads may be divided up, the 12,712 pound load may be handled in the medium duty truck, in two trips, 6,306 pounds at each trip, at a cost of only 6.6 cents per ton mile, since the heavy duty truck would be used the larger part of the time on medium loads it is plain that you will save money by using medium duty trucks and splitting the heavy loads, unless most of the work is heavy hauling, in which the heavy duty is more economical. This brings the whole problem down to determining the proportion of heavy and medium hauling that you will require of your equipment.

All this is a very general sort of calculation but it shows the method of approaching the problem of actual transportation costs. When you get down to applying this sort of figuring to your own business it will open up all sorts of possibilities in the selection and use of truck equipment and you may be surprised at some of the facts you will uncover.

But facts are what you are after and the more information you can get on actual costs the surer you are of operating on a maximum profit basis. If you do not now have enough data on your own costs to make possible such a study, you will do well to establish a complete cost system. It is simple. Many of the truck manufacturers furnish forms for the purpose and it is well worth the little time it takes.

Electrical Contractors

Equipment Used

- 51 Firms used a total of 173 trucks.
- 136 Were Light Duty trucks, capacity 1/2 to 1 1/2 tons, representing 79% of the total.
- 36 Were Medium Duty trucks, capacity 1 1/2 to 3 tons, representing 21% of the total.
- 1 Was a Heavy Duty truck, capacity 3 1/2 tons and up, representing 9% of the total.

173 TOTAL

QUESTION: Do you use special bodies, made and adapted to your requirements by body makers or do you use standard bodies furnished by the truck manufacturers?

ANSWERS: Use Special Bodies.....15 Firms 32%
 Use Standard Bodies.....30 Firms 62%
 Use both Special and Standard.....3 Firms 6%
 Did not answer.....3

QUESTION: How do you pay your drivers:

1. Do you pay them a straight salary, no bonus?
2. Do you pay them a salary and bonus?
3. Do you pay them by the load, or trip, or tonnage?

ANSWERS: Pay Straight Salary.....50 Firms 98%
 Pay Salary and Bonus.....1 Firm 2%
 Pay Straight Commission.....0 Firm 0%
 Did not answer.....0

Operating Experience

QUESTIONS:	ANSWERS:		
	Av. of Users for Light Duty	Av. of Users for Medium Duty	Av. of Users for Heavy Duty
How many miles per gallon of Gas?	14.6 miles	11.4 miles	
How many miles per quart of oil?	128.0 miles	100.4 miles	
What is average payload?.....	1055.0 lbs.	3187.6 lbs.	
Average length of haul or route?	14.7 miles	25.7 miles	
Average number of stops per day?	19.3 stops	22.9 stops	
What is total truck operating cost, including maintenance and depreciation per mile?.....	9.2 cents	10.5 cents	

QUESTION: Do you do all your hauling and delivery with your own trucks?

ANSWERS: Yes.....26 or 57%
 No.....20 or 43%
 Did not answer.....5

Of those who hire some trucking done, the following shows for what purpose:

- 13 or 65% hire trucks for cartage to and from railroad.
- 11 or 55% hire trucks for Heavy Delivery.
- 12 or 60% hire trucks for Long Distance Hauling.
- 5 or 45% hire trucks for Light Delivery.

Contractors Outline Program for

Better Home Building Conditions**Recommendations to Be Considered by the
White House Conference**

AT the meeting of the Associated General Contractors, held on Oct. 6 to 8 at Rye, New York, President A. E. Horst, who is a member of President Hoover's Planning Committee on Home Building and Home Ownership, presented an outline of the program he is recommending to that committee in behalf of the contractors and builders.

According to Mr. Horst's report, the primary purpose of the planning committee should be to exert itself to improve the procedure followed by the construction industry so that public confidence and interest in home ownership may be properly restored and activity in home building accelerated on a sound basis.

Before any program can be devised toward this end, agreement will necessarily have to be reached on the following points:

1. That there is justification for the existence of a considerable body of opinion or belief that it is risky procedure to buy or build homes under: (A) existing financing methods and financing costs; and (B) prevailing difficulties of determining the quality of construction that will be received.

2. That it is feasible for the Planning Committee to initiate studies and negotiations looking toward the establishment of ways and means to:

- A. Devise methods of making appraisals on which first and second mortgage loans may be intelligently and economically based; devise systems of providing prospective owners or builders with copies of appraisals and construction ratings in simple and understandable form; devise systems whereby appraisal agencies may check up construction operations to see that plans and specifications are honestly carried out.
- B. Develop economical and sound methods of second mortgage financing.
- C. Develop methods of rediscounting construction paper.
- D. Promote methods of curtailing credit abuses and of preventing the filing of unwarranted liens on residence projects.

If agreement can be reached on the points above the following notes relate to each item of these essential programs:

A. Method of Making Appraisals on Which First and Second Mortgage Loans May Be Intelligently and Economically Based

The present appraisal procedure is at the root of many of the unsound practices that are a disservice to the public and to sound financing, sound design, sound construction and equitable prices. Appraisals frequently bear no relation to the actual investment, reasonable future earning power, actual construction and land cost or to the soundness of the design or construction.

- A. Because there are no definite standards for making appraisals.
- B. Because payment for independent appraisals is made by those interested in having a specific sum reached in the appraisal.

- C. Because when financial agencies have excess funds competition is keen to secure outlets and promoters can shop for the highest appraisal before securing loans.
- D. Because the underwriting of a first mortgage for 50, 60 or 65 per cent of appraised value may create an erroneous sense of the worth of the basic security since inflated appraisals may mean that the first mortgage has been issued at 90 to 100 per cent of sound appraisal value.
- E. Because appraisals are made on the basis of plans and specifications which may be violated in the actual construction without detection and without influencing the total amount of the loans which are therefore based on fictitious values.
- F. Because the making of appraisals is governed by no legal statutes, professional regulations or other self policing measures and is susceptible to influences that may be selfish and unethical, not to mention collusive.
- G. Because with appraisals being non-standard, and frequently entirely unindicative of the true value, all second mortgage financing remains under a cloud.
- H. Because the facts and the basis for arriving at specific appraised valuations are not made public and the appraised valuation itself is seldom revealed.
- I. Because the merit of the design and the skill, integrity and responsibility of the constructor, while vital factors in insuring sound value, may be and frequently are ignored in making appraisals. On the other hand allowance is often made for meritorious design and sound construction when performance records would indicate that both will be lacking.
- J. Because the present method of making appraisals encourages irresponsibility of financial agencies, of contractors, of speculative builders and of architects.
- K. Because unsound methods of making appraisals undermines public confidence in real estate mortgages, fosters irresponsible competition for legitimate financing agencies, architects of merit and responsible contractors.

A sound appraisal system can be devised through the co-operation of responsible financial agencies, responsible architects, responsible real estate firms and responsible contractors and builders on a national, regional and local basis.

- A. By joint establishment of appraisal and construction inspection bureaus in every city or construction center in the United States.
- B. By setting up high professional standards to govern such bureaus and by making the operations of the bureaus independent of the expediences of all groups within the industry.
- C. By financing their work through a moderate fee charged against financing cost instead of the present sometimes exorbitant fees charged for investigation and appraisals.
- D. By making copies of each appraisal report of the bureau available to the public upon the payment of a nominal fee.
- E. By establishing standard classes of construction based on excellent, medium and poor specifications and plans and by grading each project within the class in which it belongs; such as Class A, Class B, Class C.

- F. By establishing practice among financial agencies to make first mortgage loans of high percentages on structures rated as Class A, of moderate percentages on structures rated as Class B, of low percentages on structures rated as Class C.
- I. By inspecting projects under way and determining that plans and specifications are not being violated.
- J. By reducing the classification or the appraised valuation or both if it is found that specifications are being seriously violated and the structure injuriously cheapened.

B. Economical and Sound Methods Proposed for Second Mortgage Financing

The present system of second mortgage financing frequently involves great risk of funds, places a heavy tax on the building owner in the form of bonuses, fees and service charges, is carried on in such a manner that second mortgage paper is not a liquid asset and represents the most wasteful and uneconomical factor affecting home building and home ownership.

1. It represents a high risk (A) because the lack of standards in appraisals makes it difficult to distinguish between sound and unsound paper; (B) because as secondary paper it must bear the brunt of the losses which occur through the activities of irresponsible elements in the construction industry; and (C) because second mortgage financing is largely in the hands of miscellaneous individuals of limited means and is not organized along sound business lines.
2. Its charges are exorbitant compared with the cost of money for other business operations (A) because due to the risks funds are made available only when there is a high return in sight; and (B) because under prevailing conditions in the construction industry well capitalized and experienced agencies will not enter the second mortgage field to render service at nominal interest rates.

The solution to the second mortgage problem lies first in establishing a sound basis for making appraisals and for the writing of first mortgages. When that is done the value of second mortgage paper will be ascertainable within narrow limits.

In conjunction with the organization of local appraisal and inspection bureaus there should be developed one or more well financed, skillfully managed, second mortgage financial institutions committed to a policy of working closely with the local appraisal bureaus.

C. Rediscounting of Construction Paper

All forms of construction paper with the exception of gilt-edged first mortgage paper in effect represent frozen assets; since (A) no provision is made in the Federal Reserve System for rediscounting it for member banks; (B) bankers are loathe to handle it because of its non-liquid state even though detailed investigation proves it to be sound collateral in specific cases; and (C) it has a bad reputation for the same reasons that second mortgage paper is considered as questionable.

Lack of adequate means for discounting construction paper at reasonable rates:

- A. Penalizes responsible owners and operators for the acts of the irresponsible elements in the industry.
- B. Handicaps the responsible contractor or builder in his competitive struggle with irresponsible competition.
- C. Prevents the acceleration of soundly conceived construction programs.
- D. Tends to encourage loose credit practices on the part of construction material men who are forced by competitive conditions to displace the bankers' function and to extend large credits to contractors.
- E. Removes a large proportion of the responsibility for financing the construction industry out of the hands of banks and financial agencies where it belongs and where transactions come under the supervision of governmental regulations.

With a sound appraisal system and with a sound credit structure within the construction industry the value of any piece of construction paper ought to be readily ascertainable, should be acceptable at all banks as the soundest type of basic security and should be provided for in the rediscount provisions of the Federal Reserve System.

Recommended procedure is to appoint subcommittee to investigate, and later appoint joint committee with strong banker representation. Aim should be to interest Federal Reserve Board in developing facts on construction financing and to provide means for rediscounting construction paper.

D. Curtailing Credit Abuses and Preventing the Filing of Unwarranted Liens on Residence Properties

Aside from the lack of a sound system of making appraisals and the resultant lack of an economical and effective method of second mortgage financing and of provision for rediscounting construction paper and making it more liquid one of the chief causes of irresponsibility in construction and of unsatisfactory service to home builders and owners are the loose credit practices which have prevailed in the past in the construction industry. Loose credit practices have been based on existing lien laws and on procedure followed in the past by surety companies. These practices allowed:

1. Over-expansion of contractors and builders.
2. Continued competition from financially bankrupt firms who can continue to build or bid regardless of price.
3. The injection of irresponsible elements into the construction field.
4. The creation of a vicious competitive circle rounding to the detriment of all responsible contractors who pay their bills.
5. Tremendous losses to material men in delinquent and uncollectible accounts.
6. Delayed payments to subcontractors, bid peddling, excessive backcharging against subcontractors and many other questionable practices.
7. Frantic competitive conditions and questionable trade practices resulting from the combined action of unsound appraisals, inadequate first and second mortgage financing, inadequate provisions for discounting construction paper and from loose credit, results in unsatisfactory service to owners, violation of specifications, poor building construction, the use of the cheapest and often unsatisfactory materials and many other devices that are a disservice to the home-owning and home-buying public.

Loose credit was granted partly because existing lien laws made it possible for the merchandizers of construction materials and of services to hold the owner responsible for final payment. It was unnecessary to examine into the credit standing or integrity of the contractor to whom materials or service were sold. Errors, bad business procedure or direct dishonesty on the part of contractors and builders frequently force owners to pay contractors' bills a second time regardless of the contract price and financial settlement that may have been made with the contractors.

A complete program for remedying loose credit practices and establishing a sound nation-wide credit structure for the construction industry has been formulated and is being developed through joint efforts of the Associated General Contractors, the National Builders Supply Association and numerous nationally organized associations of subcontractors. This credit plan provides:

1. A national credit structure based on the formation of local credit bureaus which are being launched in every city through local groups affiliated with

(Continued to page 142)



THE HOUSE OF THE MONTH

THE RESIDENCE OF A. W. HOBLER

Reminiscent of an English Manor House

A MASTERLY blending together of stucco, stone and brick surfaces results in the handsome home design shown above. The interesting treatment of gables and dormers crown the home with a most picturesque roof.

The front entrance of carved stone is detailed in Gothic style and stands out prominently, especially so as it is approached from a walled-in terrace.

The half-timbering of the second and third floors is not overdone and faithfully reproduces the old English system of building, in which the exposed timbers were the structural framing and were filled in between with brick work.

The main chimney is especially attractive in its simple rugged lines, the slight break in the gable ends balancing the roof gables is a unique treatment.

Leaded glass casement windows, gable finials and other details faithfully carry out the idea of an old English manor house.

There is one modern touch, and this is shown in the garage, but it is handled effectively with the heavy diagonally battened doors as the keynote, so as not to be out of harmony with the rest of the house.

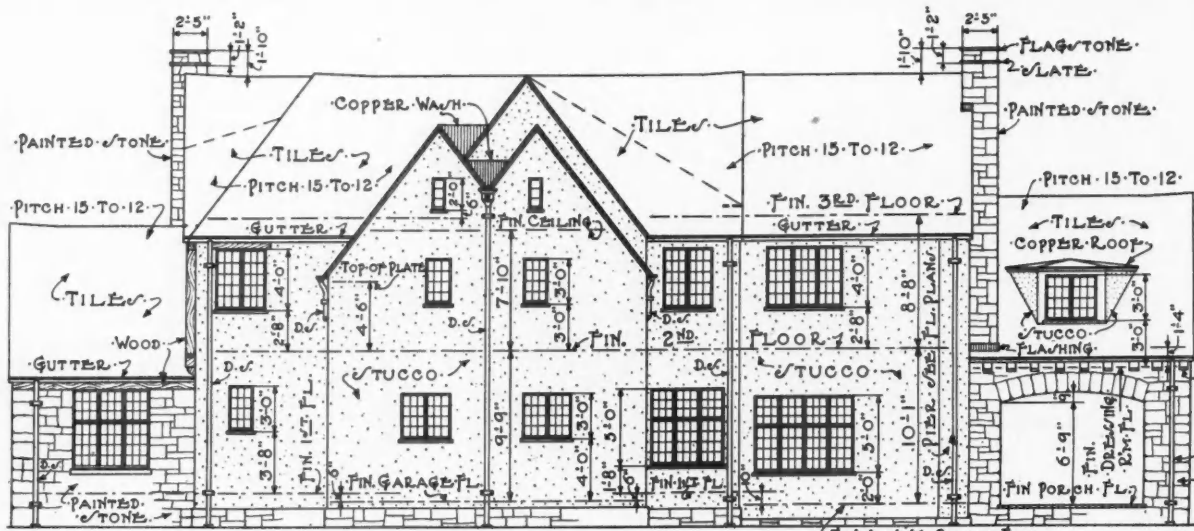
The plans and elevations of this house are given on the following pages and are worthy of careful study as they provide a good lesson on house design. Every door, window, partition, etc., has been carefully arranged for convenience of access and privacy, and so that furniture can be properly placed.

The plans also show, in complete detail, the generous use of equipment which makes this home not merely a faithful reproduction of an English manor in appearance, but a thoroughly livable modern home. Our American manufacturers are constantly improving and adding to special devices and appliances that make life more comfortable and convenient than it was in the days of our grandfathers.

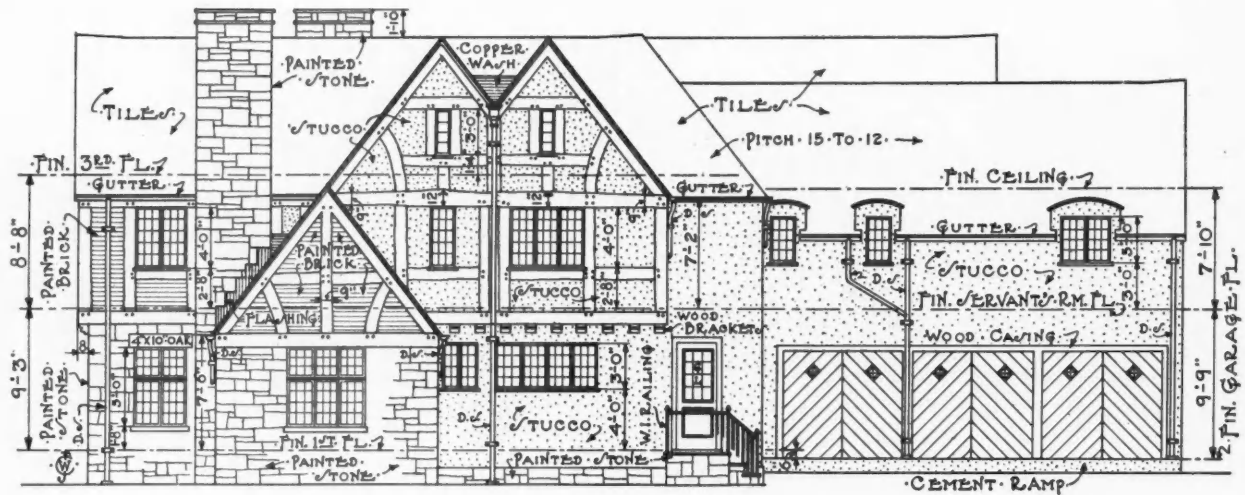
It is essential, in the successful designing of homes, to take advantage of all these up-to-date improvements. They spell the difference between the house that is highly desirable and the house that is a "white elephant" on the hands of the builder or owner. And so, from the very complete electric wiring to the built-in features, the equipment of this home will also prove interesting to students of modern refinements in residence work.

**COMPLETE
WORKING
PLANS**

On Following Pages



• REAR ELEVATION •



• SIDE ELEVATION •

The Value of Good Plans

THE designer of small houses can get many practical pointers by studying the plans of larger and more pretentious houses, as they are sure to contain many appliances, details, and novel arrangements that could be modified for use in the smaller home.

Our readers will be particularly interested in the very complete and carefully drawn detail plans of The House of the Month given herewith.

These drawings of a large residence will be specially valuable as a study to every builder and architect who is called upon to prepare plans for a particular client who desires something out of the ordinary.

The draftsmanship on these can be recommended to the student as worthy of emulation. Notice the many dimensions and explanatory notes; yet all are clear.

Too often the plans given builders are carelessly drawn and the blue prints indistinct. Pencil lines

on tracing paper do not make clear blue prints; they look, and are, sloppy.

Clearly drawn plans prevent mistakes and it is money well spent to have them. It will pay in most cases to have indistinct plans redrawn before starting construction.

We believe we are rendering a distinct service to our readers by presenting these carefully drawn plans as models of what practical working drawings should be.

The Cellar Plan

Much thought has been given to the arrangement of the cellar. A finished stairs under the main stairs, leads down to a good sized central hall. Two steps below this is an attractive billiard room; notice how the walls of this room have been furred out to obtain a properly balanced room.

To the right of the hall and a few steps down is the boiler room. It will be noted that fireproof partitions have been provided. An oil burner, with

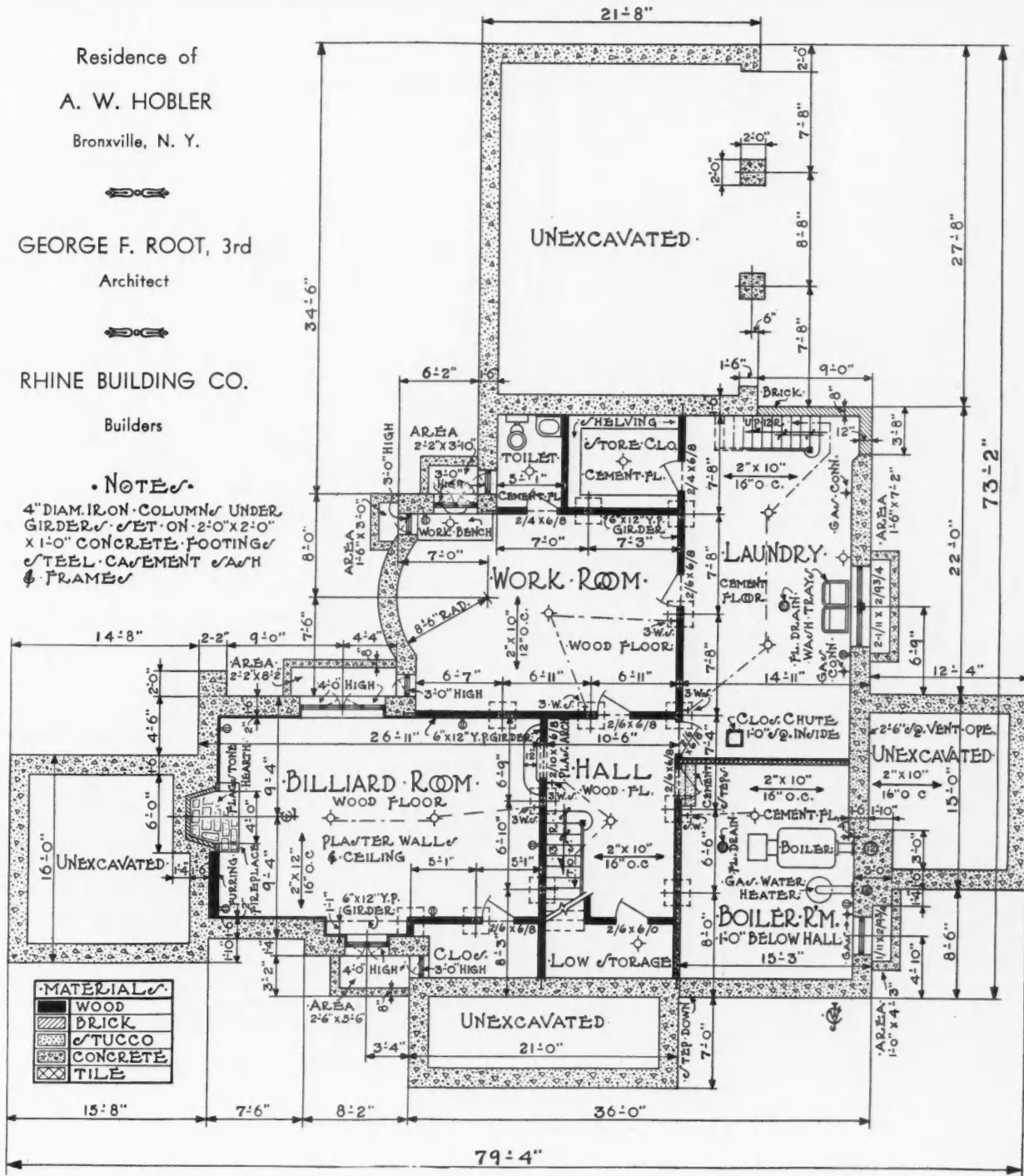
Residence of
A. W. HOBLER
Bronxville, N. Y.

GEORGE F. ROOT, 3rd
Architect

RHINE BUILDING CO.
Builders

• NOTES •

4" DIAM. IRON COLUMNS UNDER
GIRDERS SET ON 2'-0" X 2'-0"
X 1'-0" CONCRETE FOOTINGS
STEEL CASSEMENT W/ W
& FRAMES



• CELLAR PLAN •

outside tank supply, provides the necessary heat. Setting the boiler at a lower level insures a good fall to supply and return pipes, insuring rapid circulation to the heating system.

A large work room with a bench conveniently located alongside a window has been provided in a large room which has direct connection with both hall and laundry. The laundry may also be reached from the kitchen by a separate stairway.

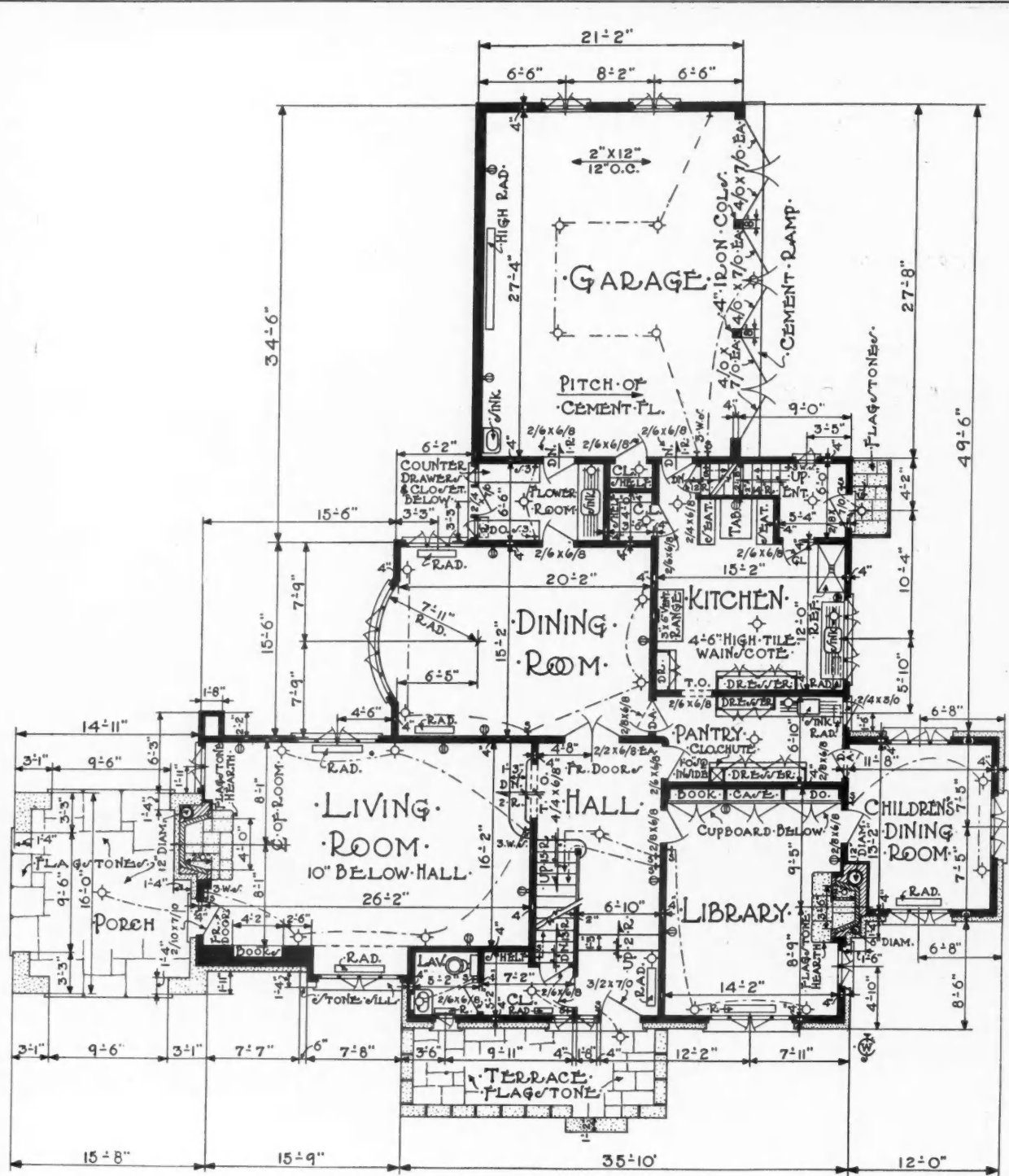
Note particularly how the different light switches have been located so that lights can be turned on or off from either entrance of the laundry, the work room, or the hall.

The clothes chute comes down directly into laundry; note its relative position in the first floor pantry, and in linen closet on second floor. It is therefore, ideally located on all floors.

Note also the reduction in thickness of the foundation wall at the rear stairs; here it is made of brick 12 inches thick instead of 18 inches concrete so as to provide sufficient turning room at the bottom.

The First Floor

The layout of living room is worthy of special attention; note how furring has been used to square



• FIRST FLOOR PLAN •

out the room, providing space for book shelves and also an alcove for deep recessed windows, such as one finds in old Elizabethan houses. To obtain a higher ceiling the floor of this room is two steps below that of the hall; note the width of the tread to make an easy step.

A flower room is ideally located off the dining room. One side of this flower room is practically all glass; the door gives direct access to the garden.

The children's dining room is an innovation that will be appreciated by both children and adults. Of

course, when the need for this separate dining room has passed, it will make a very desirable solarium or breakfast room.

The arrangement of electric lights and other convenience outlets together with the necessary switches is worthy of close study.

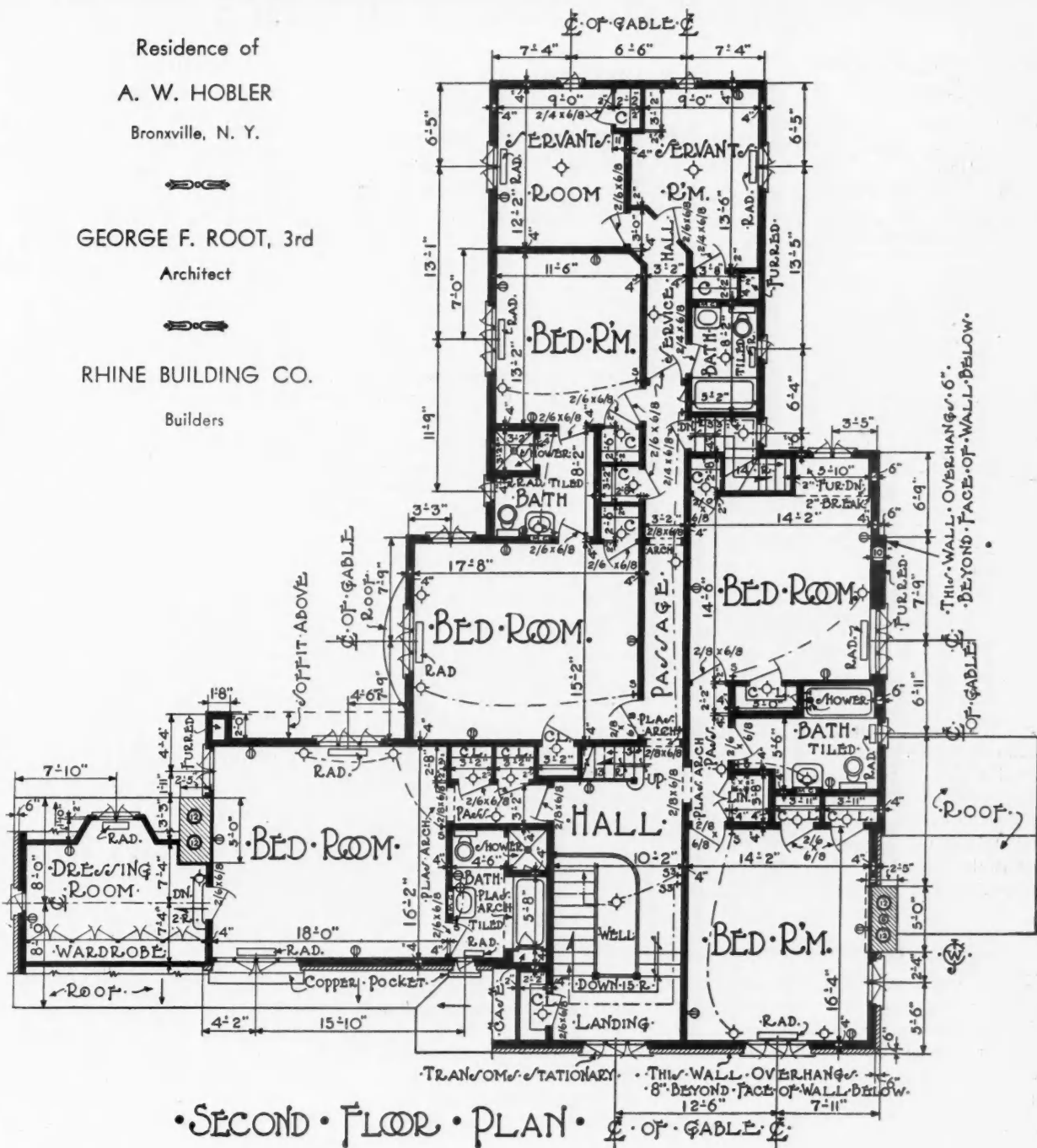
A feature that will be appreciated by the servants is a separate entrance to their quarters without the necessity of going through the kitchen.

At the end of living room, toward the fireplace side, is a false pier the object of which is to give an

Residence of
A. W. HOBLER
Bronxville, N. Y.

GEORGE F. ROOT, 3rd
Architect

RHINE BUILDING CO.
Builders



• SECOND FLOOR PLAN •

added width to the left facade so as to evenly balance the gable ends. This is one of the many details followed that make this home different.

The Second Floor

This plan presents a very interesting study in bedroom and bathroom arrangement. All bedrooms except one, have the advantage of two exposures; while the master bedroom has three. The adequate closet arrangement is worthy of special study. The two servants' bedrooms in the rear can be entirely closed off and a door also closes off the rear stairway leading down to the kitchen.

The main staircase from the second floor has an attractive landing three steps below the second floor level; here a large casement window is prominently

placed. An innovation is the large supply closet opening off this platform. A stairway leading to the third floor is at the other end of the hall.

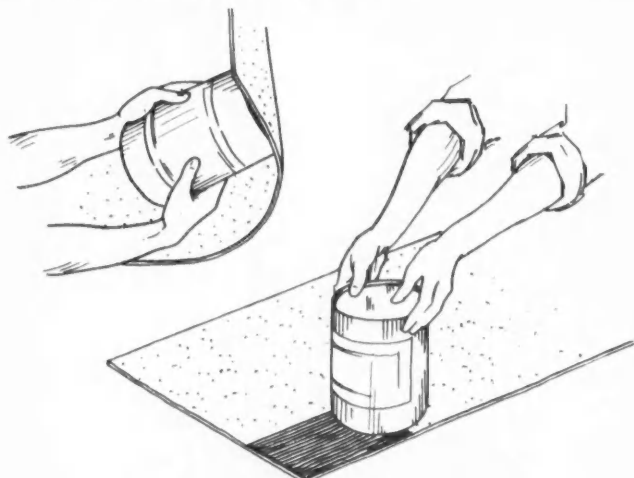
Note how the family bedrooms are concentrated so as to be of easy access from the front hall. The guest room, while conveniently located near the front hall, still has its own desirable privacy. The whole bedroom and bathroom layout is worthy of careful study.

In presenting this set of drawings it is thought that builders and students of architecture will gain some valuable ideas. Throughout the entire plan expert attention has been paid to proportion and to the niceties of arrangement and equipment, so that this layout may well become a model for the solving of many similar problems.

Practical Job Pointers

Applying Roofing Cement

ALWAYS found it rather difficult to apply roofing cement till this idea struck me. Here is how I do it: I cut the can open, all around the top, and turn it over onto the roofing. I run the can along the edge of the



Roofing Cement Is Easily Applied by Turning the Can Upside Down

roofing. This makes a neat job, spreads the cement evenly, and a can is just enough for one piece of roofing.

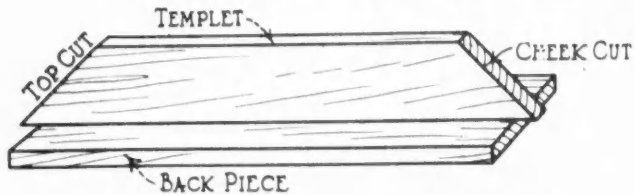
When I wish to apply the cement to part of a roll only, I turn the end of the roofing up, with the can against it, and so get the can right side up without spilling the cement.

I find it hard to apply roofing cement with a paddle and when it is the least bit cold you cannot use a brush either, so this method is a real help. E. G. JOST, Hillsboro, Kan.

Template for Cutting Rafters

THE top and cheek cuts of jack rafters can be marked quickly and easily, saving much time, if a simple template is prepared. Such a template can be made of two pieces of board nailed together as shown in the sketch. One end is cut to correspond with the cheek cut, the other to correspond with the top cut.

NILS O. FAGERSTROM, 150 9th St., San Francisco, Cal.



With This Template Top and Cheek Cuts Can Be Marked Quickly and Accurately.

To Paint Asphalt Roofing

IN painting soil pipes, roofing cement and built-up asphalt roofing with light colored house paints most people have trouble with the original black showing through the light paint. This can be avoided easily. I give the work a first coat of aluminum paint and, after it has dried, the surface can be painted with almost any color with complete success.

WM. H. HARTZLER, Marshallville, Ohio.

A Readers' Exchange of Tested Ideas and Methods, Taken from Their Own Building Experience. Two Dollars Will Be Paid for Each Contribution Published in This Department.

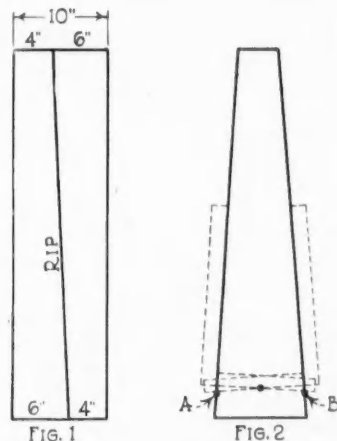
Making Tapered Posts

IN the August issue, Mr. Allen Harris showed how he saves half the ripping in making tapered columns or posts. His method is all right but he could make the one ripping do and also save all the lumber, except that

squared off the ends. It is just as easy as his method.

In making six-inch tapered posts, use a piece of 10-inch stock and rip it as shown in Figure 1. This saves the 16 2/3 per cent that is wasted by Mr. Harris' method. Also there is an easier and quicker way to square the ends than by lining the center, from end to end.

Figure 2 shows how this is done. Make a dot in the center of the end to be squared, at the cutting point. Place the framing square against the work so that the tongue intersects this dot and scribe lightly across the piece. Place the square on the opposite side and repeat. Set the bevel square to intersect the points indicated by A and B. Tighten and mark around the post. To square the other end, simply reverse the bevel square and go around the other end at the point where the cut is desired.



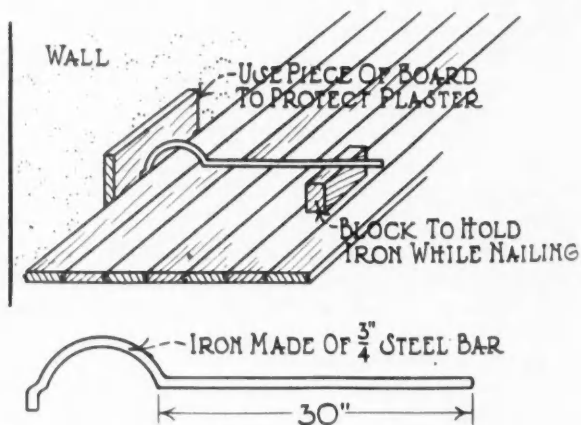
This Saves Lumber

B. L. HENKLE, Paonia, Colo.

For Laying Flooring

WHEN laying flooring up close to a plastered wall, it is difficult to get the strips tight as there is not room to use a hammer. For this purpose I use the bar shown in the sketch. It is made from a 3/4-inch steel bar, bent in shape. A block of wood against the wall keeps the plaster from being marred. Another block of wood, of the right size, placed under the handle of the bar, after the strip is pulled up tight, holds the strip in place while it is nailed.

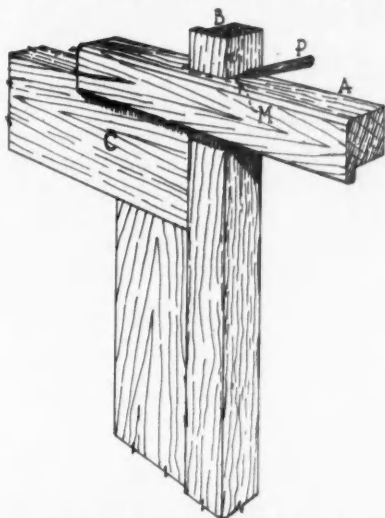
KENNETH L. PALMER, 38 First St., Hamden, Conn.



This Simple Bar Is Very Useful in Laying Flooring Close to a Wall.

Handy Backband Marker

TO mark the length at which to miter backbands around door and window casings, use a piece of backband, A in the sketch, about eight inches long, with a notch $1\frac{1}{2}$ inches wide and $\frac{3}{4}$ inch deep, as shown. Lay this piece upon the head casing C in the position of the top member, with the



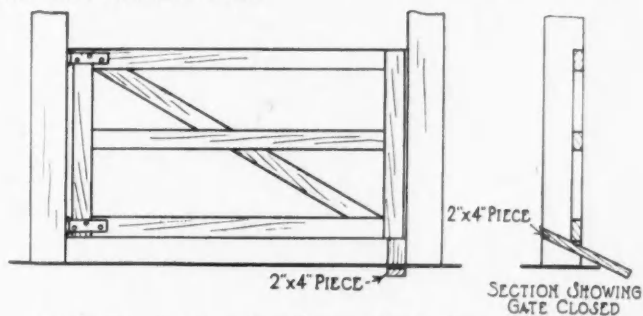
A Notched Piece of Backband as a Marker.

notch around the end of the side member B and mark at M, as shown by the pencil P. The length of the top member is easily marked by placing it upside down over the side members.

RUDY SENGER, 1143 S. Eighth St., Goshen, Ind.

It Prevents Sagging

IT is practically impossible to keep a large, low swung gate from sagging and dragging when being opened and closed and the weight of the gate on the hinges puts considerable strain on them.



With This Device the Gate Won't Sag and Drag in Opening and Closing.

Nail or bolt a piece of wood, with smooth top, to the latch post of the gate in the position shown. Set the angle to the proper degree required to bring the gate level when closed. The slope of this piece brings the gate level as it is closed and removes practically all weight from the hinge post as well as the gate braces when closed.

CHAS. J. MAREK, Jourdanton, Texas.

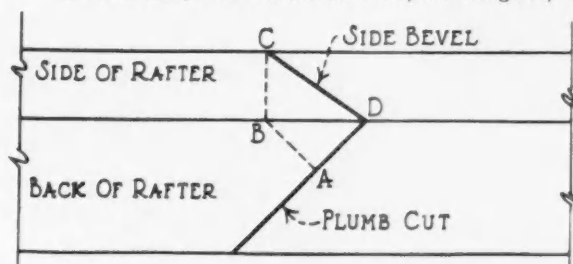
Getting the Side Bevel

THE accompanying sketch shows a simple, accurate method of getting the side bevel of a hip, valley or jack rafter for any regular roof, regardless of its pitch as the plumb cut always governs the side bevel. The same principle is also applicable to mitering stair skirtings for risers. Where the plumb cut is given the side bevel can, in this way, be laid off quite accurately with a pocket rule.

Let the length of the dotted line A-B, squared back from

the plumb cut, equal the thickness of the rafter. Square across the back of the rafter to C and connect the plumb cut D with C. This gives the desired side bevel.

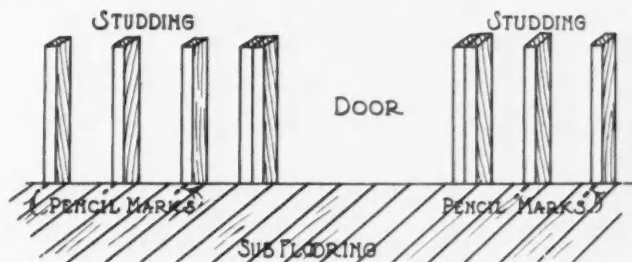
L. M. HODGE, 4039 Edenhurst Ave., Los Angeles, Cal.



A Simple Method of Getting the Side Bevel of Rafters.

Nailing Base Board

WHEN it comes to nailing on base boards, some carpenters sound the plaster, with a hammer, to find the studding. This often leaves hammer marks or causes the



A Mark on the Subflooring at the Center of Each Stud Is a Guide in Nailing Base Board.

plaster to crack. Others measure 16 inches from one end and start nailing. If the studding happens to have been spaced from the other end, part or all of the nails miss the studs and the base board is not solidly nailed.

I find that if, before plastering, you take a pencil and mark the center of each stud on the subfloor, when you come to nail the base board you can place your nails properly and get a solid job without damage to the plaster.

CHAS. E. DEGAN, P. O. Box 153, Port Chester, N. Y.

Handy Saw Oiler

I SAW a local carpenter using a saw oiler, the other day, and asked him where he got the idea. He said it was his own. It was so handy that I am passing it along. It consisted of a small round box, such as shoe polish comes in. A strip of felt was coiled into this box and then soaked with machine oil. The felt is thick enough to project a little above the edge of the box when the cover is removed.

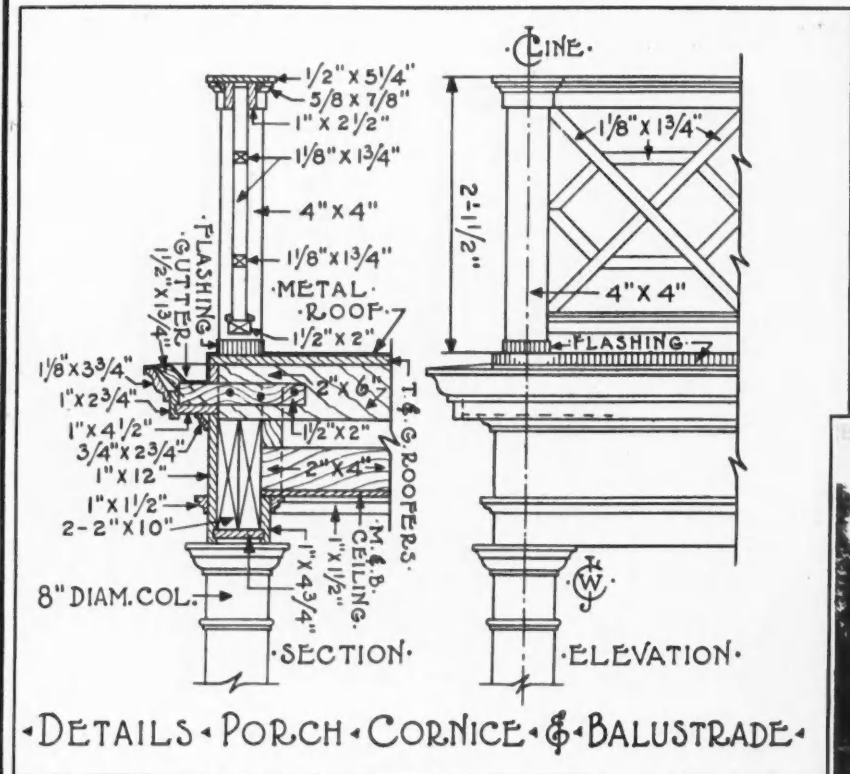
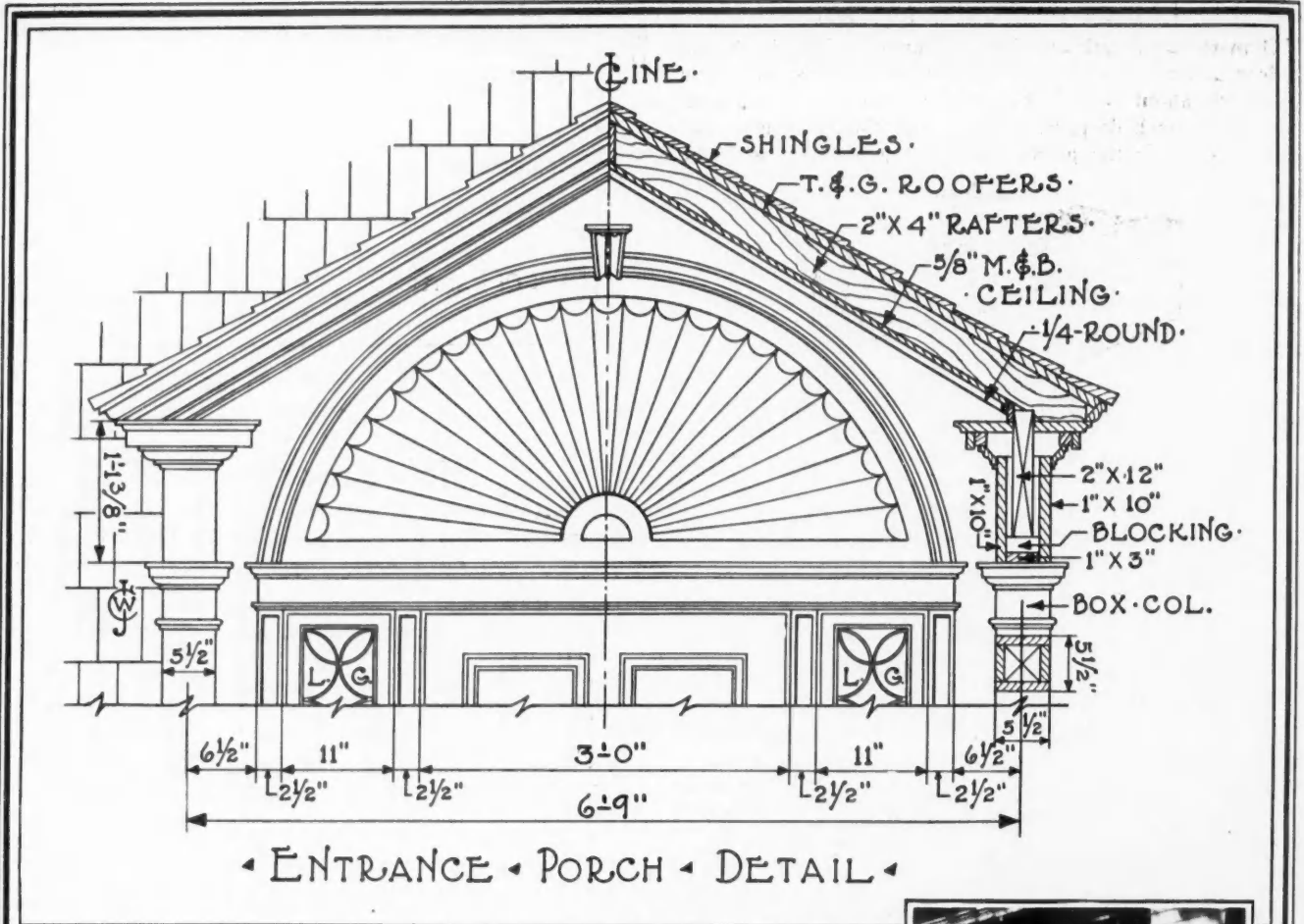
FELT-COIL SLIGHTLY WIDER THAN DEPTH OF BOX



A Shoe Polish Box Containing a Coil of Oil Soaked Felt for Oiling Saws.

Such a box can be carried in the pocket without getting oil on your clothes. It is always handy, and convenient to use. Just remove the cover of the box and rub the felt over the saw.

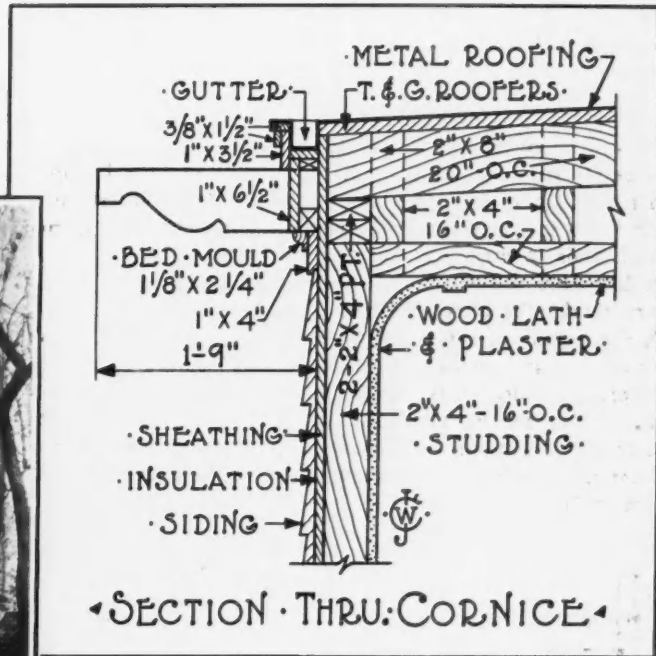
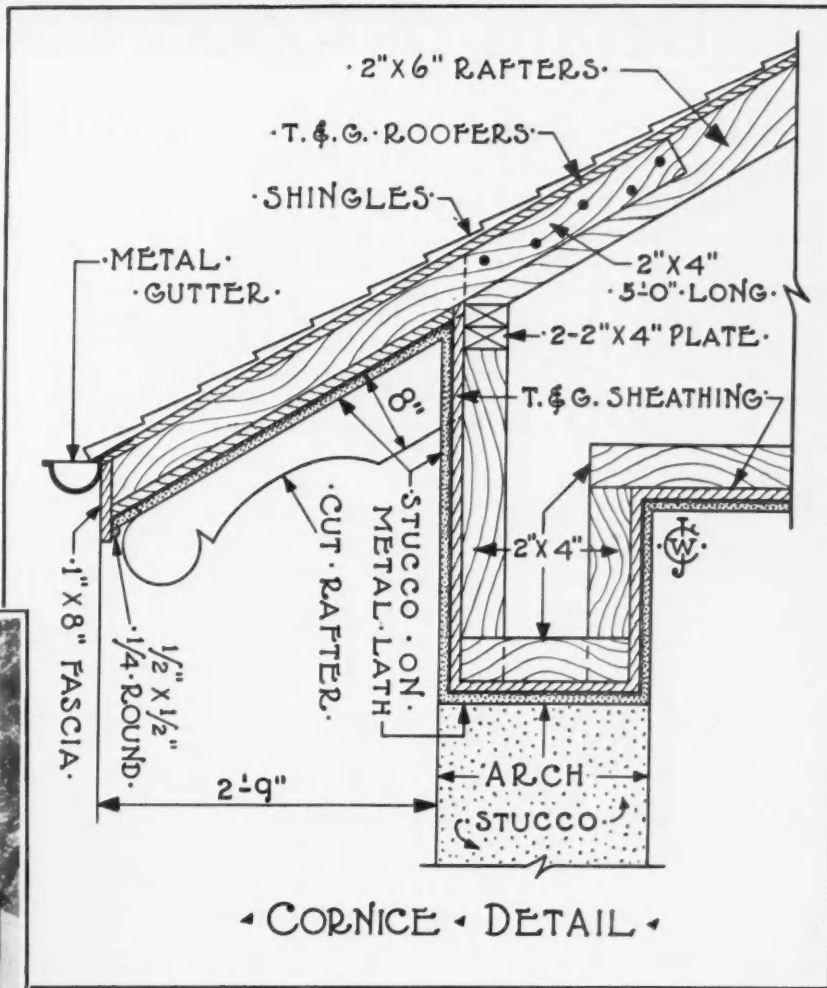
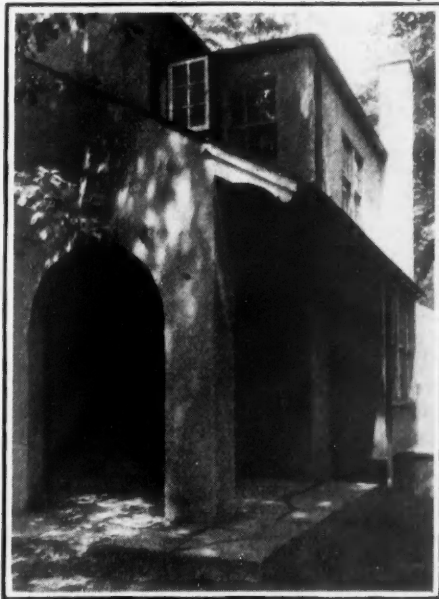
EMERSON EASTERLING, 391 Liberty St., Ashland, Ore.



Examples of Well-Handled Carpentry Details, Photographed, Analyzed and Drawn by American Builder and Building Age Architects.

**MEASURED
DRAWINGS
OF GOOD
CONSTRUCTION**

Cornice Details
Illustrating Show-
Rafters.



"Better Building" Results Only When a Multitude of Details Both Small and Large Are Properly Designed and Skillfully Executed.

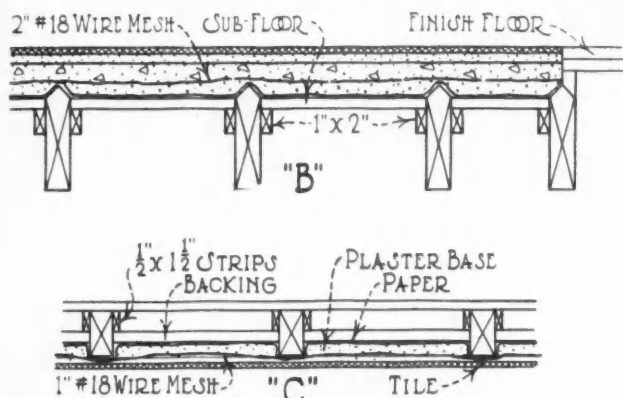
Details of Good Construction

Correct Practice Guides by JAMES T. NARBETT

Preparing for the Tile Setters

WHERE bathroom floors are set flush with the finished floors as is usually the case, the wood sub-floor to receive the concrete slab must be depressed.

Assume the finished floor to be $1\frac{1}{8}$ inches above the floor joist; nail on each side of joists 1 inch by 2 inch pine strips 3 inches below tops of joists. Lay in sub-floor between joists and merely nailing with 4d. nails to hold same in place. The next step is to bevel off the tops of joists with adz or axe.



Care should be exercised to prevent reduction of the width of joists which should be as little as possible. It may be found expedient to adz or axe off the joists before nailing in the sub-floor.

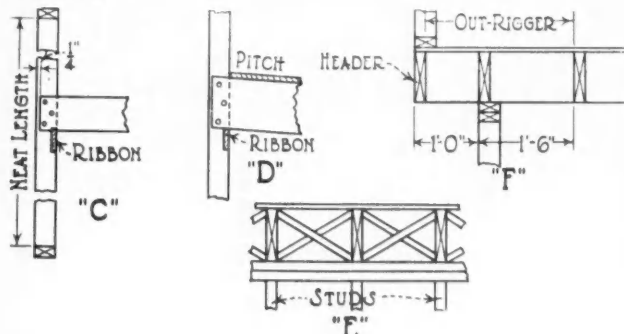
In backing side walls of kitchens, pantrys, baths and wherever else walls are finished in tile; first nail in $\frac{1}{2}$ by $1\frac{1}{2}$ inch strips (lath will do), $1\frac{1}{4}$ inches from face of stud. Nail in surfaced 1 inch pine boards and cover same with paper. Never use for this purpose redwood or other lumber that may cause a stain.

Balloon Framing

FOR a firm job of framing where firewall occurs, as shown in detail "C," cut joists neat length with $\frac{1}{8}$ inch by $3\frac{3}{4}$ inch ribbon let in $\frac{3}{8}$ inch above bottom edge of joists; and notch joists to fit over notch, and with joists cut back from face of studs $\frac{1}{4}$ inch.

In low cost flat roof construction (used mostly in temporary work) the above method is used without the notch; with the combined rafter and ceiling joist set level at high point of roof and pitched to outlet, as detailed in "D."

Where possible, joists should be carried over two spans at least; this results in added strength, as then the joist assumes the status of fixed beam. Joist bearings should lap at least their width. Joists should sit directly over studs as shown in "E."

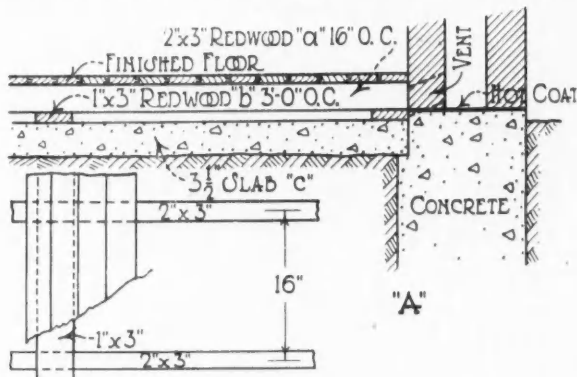


Out-rigger joists supporting the bay should extend back into building frame at least one and a half times the projection; see detail "F."

Venting Under Floors

WHERE pine strips are laid on rough concrete slabs on soil and where there is possibility of moisture, dry rot of both strips and flooring is the result, even when the slab and strips are treated with preservative.

The direct cause for dry rot, a fungus growth, is moisture plus lack of ventilation. To overcome this to a certain extent this detail is offered. The space should be vented at bottom and ducts carried up through wall in convenient locations to

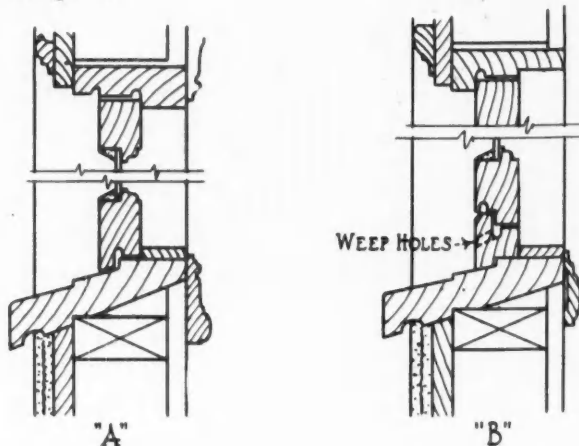


take out the foul air. Members "a" and "b" are to be treated with preservative as well as the slab "c" of concrete. In brick walls it is a simple matter to carry a $4\frac{1}{2}$ inch by $12\frac{1}{2}$ inch vent up to top of firewall.

Leak Proof Window Sills and Heads

A LEAKY window frame is very troublesome and elusive to the repair man and usually the trouble is found in a faulty designed sill or head; it often means that the frame must be taken out and reset, a costly operation. Extreme care should be exercised in the designing the frame and then seeing that the mill carries it out and in the setting of the frame. The frames both door and sash should be put together with white lead and oil paint at the mill and primed at the job before setting.

Two types of frames are shown herewith, Design "A" the ordinary swing out casement type and the casement hinged at bottom and swing in at top and the swing in type in Design "B".



Building Activities

The Month's News of the Industry

Costs Reduced 13 Per Cent

ADOLPH Pfund, manager of the National Retail Lumber Dealers Association, reports that a lumberman in a mid-western city recently called for an itemized bid on the construction of a frame dwelling, reproducing exactly one that was built in March, 1929, on which all cost data were available. The contractor agreed to build a replica of the house for \$4,349.46, instead of \$5,013.33, the 1929 cost.

It was found that every item of material, equipment and labor, except gas service, surveying, insurance, and building permit, which were identical, was lower than a year ago. The greatest decreases were in excavation 35 per cent; and in finish hardware, also 35 per cent. The following table shows the details of the bid:

	COST OF SIX-ROOM FRAME HOUSE		Approximate Decrease %
	Cost March, 1929	Cost August, 1930	
Excavating	\$100	\$ 65	35
Mason	601	530	12
Millwork	875	700	20
Lumber	917	790	14
Carpenter Labor..	614	554	10
Plastering	335	325	3
Plumbing	483	475	2
Heating	250	210	2
Painting	400	335	16
Finish Hardware..	58	38	35
Rough Hardware..	39	39	
Wiring	98	88	10
Tile	45	34	24
Gas Service.....	34	34	
Electric Fixtures..	80	60	25
Shades	30	20	33
Surveying	8	8	
Insurance	37	37	
Permit	5	5	
	\$5,013	\$4,349	13%

Competition Announced

A NEW small house architectural competition has been inaugurated under the auspices of Better Homes in America, Washington, D. C. The competition will be judged by a committee appointed by the president of the American Institute of Architects. Three gold medals will be awarded each year to the architects who submit the best designs for small houses which have been erected anywhere in the country during the preceding year.

Any house actually built during 1929 may be entered in the current competition, provided the cubage, above the first floor, is not greater than 24000 cubic feet. Entries must be submitted not later than December 1, 1930, to Better Homes in America, care of The American Institute of Architects, 1741 New York Ave., Washington, D. C.

COMING EVENTS

- Dec. 2-4, 1930—Associated Leaders of Lumber & Fuel Dealers Annual, Congress Hotel, Chicago.
- Dec. 8-10, 1930—Associated General Contractors of America, Chicago.
- Jan. 12-16, 1931—American Road Builders' Association, St. Louis, Mo.
- Jan. 15-17, 1931—National Association of Real Estate Boards, Mid-winter Meeting, St. Petersburg, Fla.
- Jan. 15-17, 1931—Mountain States Lumber Dealers Association, Annual, Broadmoor Hotel, Colorado Springs, Colo.
- Jan. 20-22, 1931—Northwestern Lumbermen's Association, Annual, Minneapolis Auditorium, Minneapolis, Minn.
- Jan. 21-23, 1931—Pennsylvania Lumbermen's Association, Annual, Bellevue Stratford Hotel, Philadelphia, Pa.
- Jan. 27-29, 1931—Northeastern Retail Lumbermen's Association, Annual, Hotel Pennsylvania, New York City.
- Jan. 28-30, 1931—Southwestern Lumbermen's Association, Annual, The Forum, Wichita, Kan.
- Feb. 4-6, 1931—Michigan Retail Lumber Dealers Association, Annual, Hotel Book-Cadillac, Detroit, Mich.
- Feb. 10-12, 1931—Illinois Lumber & Material Dealers Association, Annual, Hotel Stevens, Chicago.
- Feb. 17-19, 1931—Wisconsin Retail Lumbermen's Association, Annual, Milwaukee (Wis.) Auditorium.
- Feb. 19-21, 1931—Western Retail Lumbermen's Association, Annual, Winthrop Hotel, Tacoma, Wash.
- Apr. 13-18, 1931—American Oil Burner Association, Annual, Benjamin Franklin Hotel, Philadelphia, Pa.

Government Buys Air Rights

NEGOTIATIONS have recently been completed between the federal government and the Chicago Union Terminal Company, for the purchase of the air rights for Chicago's new, \$14,000,000 post office, at a price of \$5,000,000. It is estimated that actual construction will not begin for about six months. When construction begins, however, work will be provided for about 6,000 men.

Clay Joins Truscon Staff

WHARTON CLAY, Commissioner of the Associated Metal Lath Manufacturers since 1920, has recently joined the Truscon Steel Company, Youngstown, Ohio. In his connection with this company he will help to promote the friendly service of the company to the profession and trade, will contact larger projects which involve permanent building products, and will develop fields for the application of new ideas in up-to-date merchandising.



Wharton Clay.

When Mr. Clay first joined the metal lath association, the industry was shipping about 13,000,000 square yards per year. In 1929 shipments exceeded 65,000,000 square yards and during this period the general recognition of metal lath was developed. Mr. Clay's organization of the National Council for Better Plastering, in 1926, resulted in a widespread revival of public interest in plastering.

Demand Five Day Week

PRESIDENT WILLIAM GREEN, of the American Federation of Labor, speaking on October 5, before the Annual Convention of that organization, in Boston, made a strong plea for a united effort to establish, immediately, the five day week in industry. The urgency of his demand is indicated by his statement:

"I wish that, beginning now, it might be the purpose of the officers of the federation to press upon industry our uncompromising demand that the five day work week be immediately established.

"The workers of today can produce, in the shorter work day and the shorter work week, the commodities needed by the world."

Announce New Frame

AFTER more than two years of experimenting, Fred C. Andersen, president of the Andersen Frame Corporation, Bayport, Minn., has announced an addition to the company's line of frames. The new frame is made entirely of Ponderosa pine with all important joints primed with aluminum paint. It will be identical with the Andersen Master frame so far as construction details and mill accuracy are concerned.

CURRENT CONSTRUCTION FIGURES

BUILDING contracts for the country as a whole, during the month of September, totaled \$365,049,850. This was divided between the different types of construction as follows:

Residential	\$108,388,060
Commercial	34,251,140
Industrial	34,894,200
Educational	31,056,630
Hospitals and Institutions	18,201,480
Public Buildings	12,826,990
Religious and Memorial	7,233,710
Social and Recreational	6,643,560
Public Works and Utilities	111,554,080
Total	\$365,049,850

These figures are for contracts awarded in 37 states, as reported by the F. W. Dodge Corporation, plus an estimate for the West Coast and Mountain States, which are not covered by the Dodge reports. In addition to the above reported contracts, there was, as always, a large amount of work in outlying and rural districts which was not reported, and which would amount to about 24 per cent additional to the above figures.

Certain tendencies are evident which may be taken as an indication of improving conditions. Conspicuous among these is a large net gain in residential building over August of this year. More than this, residential contracts account for 30 per cent of the total contracts reported. This was the first

month of 1930 to show a ratio above 25 per cent.

Though the September record may not be conclusive, further improvement in this ratio would indicate the approach of more normal conditions. Following this, however, preliminary reports for the first 10 days of October indicate that all classes of construction took an upturn during that period in comparison with the September daily average.

Still further encouragement is to be found in the building permit figures compiled by S. W. Straus & Co. The volume of permits for September was \$168,254,846 compared with \$161,609,331 in August, a gain of four per cent. This gain is all the more significant, it is pointed out, in view of the fact that normal seasonal factors call for a decline of more than 9½ per cent between the two months.

While the September figure was 23 per cent below that for September of last year, this is a substantial improvement over the 37 per cent loss in August, and indicates that building is continuing the steady upward climb toward normal which, with but few interruptions, has been going on since early this year.

Records of past years show that building permits precede actual construction operations by between three and five months. If this precedent continues in the present situation, a distinct increase in actual building activities should be experienced sometime between December and March.

Service Company Changes Name

LUMBER and building material dealers, and their contractor customers, who have long been familiar with the service offered by the Building Age Publishing Company, will be interested to learn of the change in name of that organization, which has recently been put into effect.

The Building Age Publishing Company was formerly affiliated with the magazine, "Building Age," though independently operated. When Building Age magazine was merged with the American Builder, it seemed advisable to change the name of the independent service organization, in order to avoid confusion.

The former Building Age Publishing Company will, hereafter, be known as National Plan Service, Inc. No other change in the organization is contemplated and it will continue to offer the same plan service, calendars, plan books and merchandising media as formerly. The offices at 1315 W.

Congress St., Chicago, are still under the direction of J. M. Wright, vice president and general manager of the company, and R. V. Winters, secretary.

Compton Cup Presented

THE Compton Cup, for annual award to the Hoo Hoo Club, in a town of less than 25,000 population, making the greatest contribution to the progress of the lumber industry, was presented to the International Concatenated Order of Hoo Hoo, at its recent convention, by Wilson Compton, secretary and manager of the National Lumber Manufacturers Association, and donor of the cup.

The new cup, which was turned from timbers that supported the White House for more than 112 years, was offered to clubs in communities whose limited size has not given them opportunity for equalling the accomplishments of clubs in the larger cities.

Tests Welds in Production

AN important advance in methods of testing welds in production, without destroying them, was made public by the Westinghouse Research Laboratories, before the American Welding Society, at its fall meeting in Chicago. In the past, the impossibility of testing welds without knocking them apart has been a serious hindrance to the use of welding.

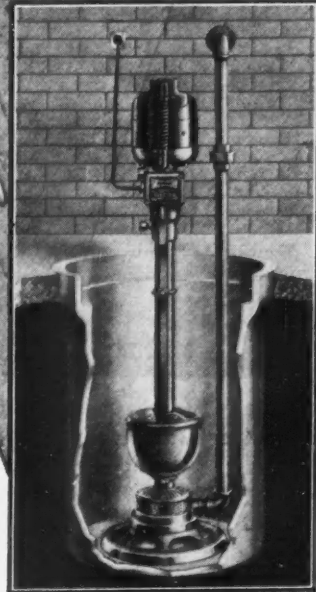
These tests are made by "bridging" the welded seam with a large horseshoe electric magnet and "exploring" the magnetic field in the vicinity of the weld with a meter. By passing the meter over the weld and watching the pointer the quality of the weld can be readily determined.

The meter indicates the "reluctance" of the weld, reading the magnetizing forces across the weld as compared with the magnetizing forces of the steel plate. If the forces are about the same, the weld is good; if not, the weld is bad and the meter will tell just how bad it is.



Testing a Weld by Means of the New Magnet and Meter Method Which Does Not Destroy the Weld.

when it RAINS and RAINS and RAINS



Penberthy Automatic Electric Sump Pump

*This house is just as easy to show
and sell as in fair weather*

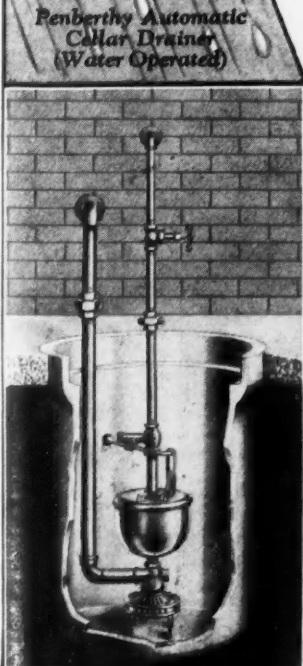
THE buyer of this home will never be troubled with a wet basement, no matter how hard or how long it rains . . . because it is equipped with a Penberthy Pump which handles all basement seepage and drainage quickly and quietly.

A Penberthy Pump will reduce your selling effort on the homes you build where basements are below sewer level or sewerage facilities are not available.
Your plumbing contractor can quickly supply and install either the electric or water operated Penberthy Pump.

PENBERTHY INJECTOR COMPANY
DETROIT
PENBERTHY PUMPS
PREVENT FLOODED BASEMENTS

Established
in 1886

Canadian Plant
Windsor, Ont.



Penberthy Automatic Collar Drainer (Water Operated)

World's Largest Mooring Mast

THE largest airship mooring mast in the world, located at St. Hubert, Quebec, Canada, was formally dedicated upon the arrival of the dirigible



The World's Largest Mooring Mast with a Substructure of Concrete Block.

R-100 from England, last summer. This dirigible is the largest and fastest ever built.

The substructure base of the mooring mast is a striking piece of architecture built entirely of concrete units manufactured by the Duntile Co., Ltd., of Montreal.

Shingle Passes Fire Test

AN announcement from the Beckman-Dawson Roofing Co., 223 Jackson Blvd., Chicago, states that the Class "C" label has been granted, by the Underwriters' Laboratories, to this company's Ced-A-Roc shingles, following an investigation extending over more than a year.

The Ced-A-Roc shingle is a cedar shingle surfaced with asphalt and crushed slate. Since this is the first time that this classification has been given to a wood shingle by the Underwriters, it opens up a new field where anti-wood shingle ordinances are now in effect.

G. E. Plans New Plant

PLANS for a new manufacturing building, to cost \$1,000,000, to be erected at the Pittsfield plant of the General Electric Company, have been announced. The new building will be

550 feet long, 150 feet wide, and 70 feet high, and will be of all-welded construction, probably the largest welded building of its kind.

The plan calls for a building quite unlike anything previously planned in the manufacturing building line, it is stated. The entire building will be of steel and glass.

Painting Contract Protested

AWARDING of the contract to paint the White House, at Washington, to an employer of nonunion labor, has aroused a number of protests. In replying to these, Lieut. Col. U. S. Grant, Director of Public Buildings and Public Parks, of the national capital, stated that awarding a contract to an employer of union labor who was a higher bidder would be a violation of law.

Because of the administration's policy of not permitting "the temporary financial stringency of the country to lower the scale of living of American workmen," Col. Grant inquired into the wages paid by the nonunion contractor, R. K. Ferguson, of Washington, to whom the contract was awarded. It was found that this contractor pays wages equal to, or higher than, those paid by the government under the Personnel Classification Act.

Mortgage Bankers Elect Officers

AT the recent annual convention of the Mortgage Bankers Association of America, held in Detroit, Mich., J. B. Sleeper, vice president of the Pioneer Mortgage Company, Topeka, Kan., was elected president, to succeed A. A. Zinn, of Kansas City.

Electrical Costs Increased

BEGINNING September 1, 1930, all bids on electrical installations, in Chicago, included an increased item of cost covering an insurance assessment in connection with an old age pension plan for electrical workers. The increased cost amounts to about 12 per cent.

To Set Up Lumber Stresses

THE appointment of a subcommittee on unit working stresses for lumber and timber has been announced by Robert P. Lamont, secretary of Commerce, and chairman of the National Committee on Wood Utilization. The establishment of this board is the result of a request made by the lumber industry to the National Committee.

It will not set up or recommend working stresses, nor does it have the desire nor power to enforce its decisions. It is intended to facilitate the

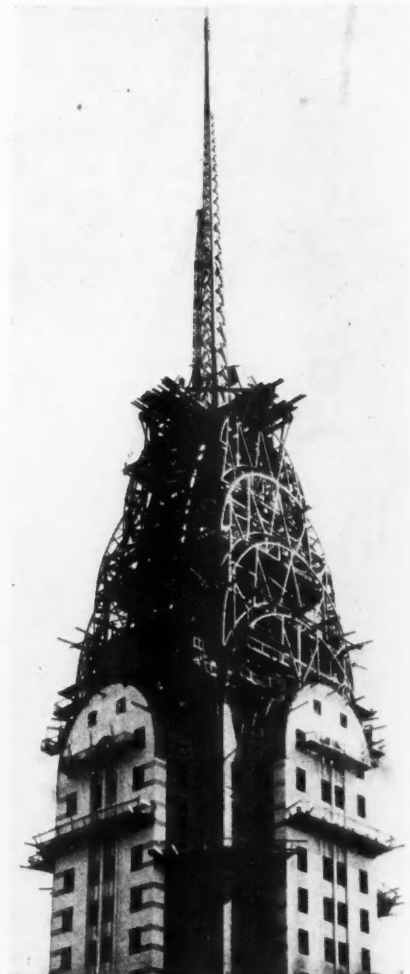
establishment of stresses arrived at by agreement of various lumber manufacturers associations by giving them the approval of an impartial body.

Topping the Chrysler Tower

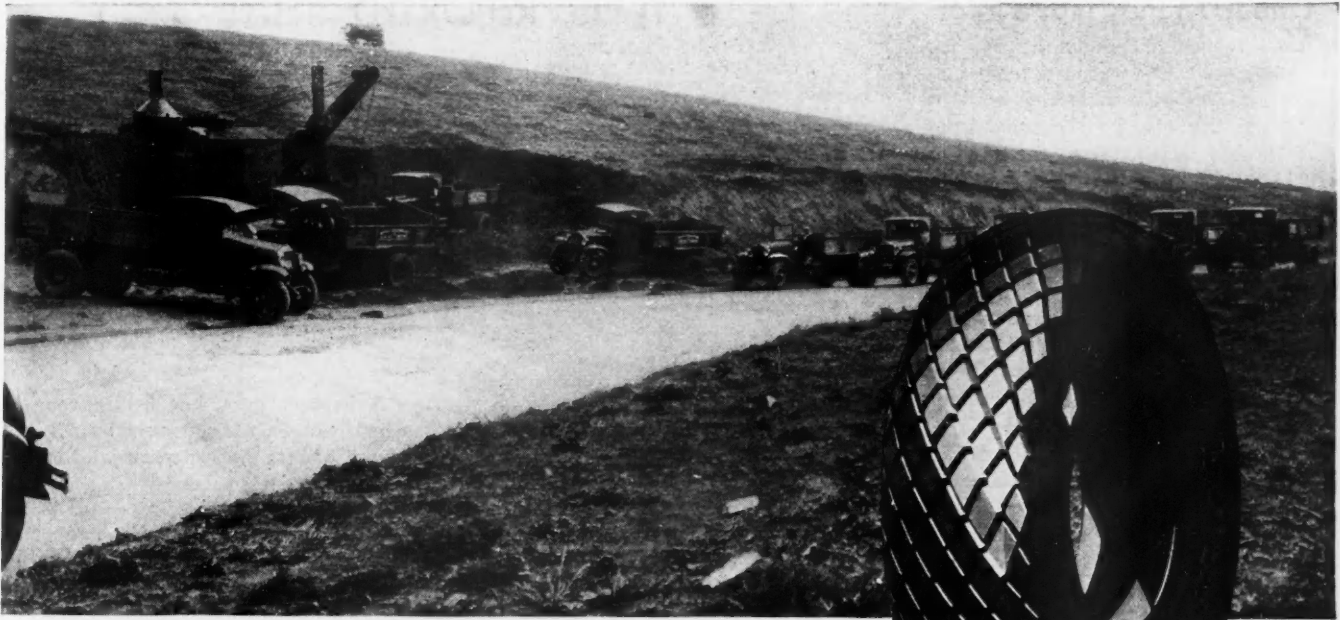
THE towering top of the Chrysler Building is now a familiar part of the New York City skyline. The erection of the finial, the top of which is 1,046 feet above sidewalk level, called for unusual methods.

The assembled framework of the finial, nearly 200 feet long, was delivered in three sections. Each section was raised by a derrick to the upper platform level and then lowered into a well left for the purpose. The sections were riveted together within this well and a special fitting was riveted to the framework to receive the derrick hook. The complete finial was then raised into position.

This interesting procedure saved the erection of scaffolding nearly 200 feet high, which would have been costly, as it would have had to be built at a height of more than 800 feet above ground level. The general contract was handled by the Fred T. Ley Construction Company.



Raising the Finial at the Top of the Chrysler Building Tower.



6 of the trucks in this fleet were on Goodyear Truck Balloons, 4 were on solid tires. Over a five months' period they showed the results below:

75%

more work per day

on Goodyear Truck Balloons

Side by side on the same job, and on the same size and type of truck, Goodyear Truck Balloons made this showing against other tire equipment.

"The length of the haul was two and one half miles. The balloon tired trucks made 14 round trips per day while the solid tired trucks made only 8 round trips per day." 6 more trips per day for the Goodyear Balloons meant 75% more hauling done. But that is not all, as this report from Meyer Rosenberg,

San Francisco contractor, shows:

"In the dump we had considerable trouble pulling out of the sand with solid tires but the balloon tires never even faltered — I estimate gasoline consumption to be 15% less on the balloon tired trucks... We had practically no punctures and tread cuts and there was no carcass trouble whatever with the balloon tires... I feel that the cushioning ability of the balloon tires enabled me to eliminate any body repairs during this five months'

period... Besides all these good features, we are getting from fifteen to twenty months' service from these balloon tires, and this is remarkable in our line of work."

There's a line-up of advantages to make any contractor or builder think twice about his tires!

Get in touch with a Goodyear Truck Tire Service Station Dealer, and ask him what these remarkable new truck balloon tires can do for you.

ON YOUR NEW TRUCKS, SPECIFY GOODYEARS

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TIRES THAN ON ANY OTHER KIND

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

Cheap Money Not a Fact

IN its review of the lumber market, which is based on reports from 1,500 correspondents, covering the whole of the United States, The National Lumber Manufacturers Association says:

"The slump in residential buildings continued throughout August in three districts. In the Southeastern States and California a slight gain was registered, and the Kansas City district was unchanged. . . . Loans from banks, for building purposes, are still hard to get in most districts. A slightly better condition exists in the case of building and loan associations.

"It thus appears that so far as financing home building is concerned, the present, so-called, cheap money is a theory rather than a condition. In commenting on the tightness of loans for residential building purposes, an executive of the National Lumber Manufacturers Association ascribes it almost entirely to the psychology of banks rather than to actual financial conditions.

"The banks loaned freely when building was costly, careless and excessive and, naturally, have had some unpleasant experiences since the business depression set in. The memory of these is still keen enough to make them indifferent to the fact that building costs and real estate valuations are now down to bedrock and that there is an enormous latent desire for the acquisition of homes at present reasonable costs."

Bird Celebrates Anniversary

BIRD & SON, INC., East Walpole, Mass., is using a dirigible balloon as the most modern means of advertising, and to celebrate the organization's 135th anniversary. The company was established in 1795 as pioneer



"Neponset," the Bird & Son Airship, Is Making a Six Months' Tour.

IT IS REPORTED THAT—

LUMBER and timber products mills are located in 45 states, Nebraska, Nevada, and North Dakota, being the only states without mills.

The Simonds Saw & Steel Co. will build a \$1,500,000 factory building with solid walls and roof, having no windows or skylights.

An annual loss of approximately \$45,000,000, to houses and buildings in the United States, caused by insects and by decay of wooden members exposed to moisture or in contact with the ground, can be greatly reduced by the use of treated lumber.

Expenditures of \$8,993,505 were made for building material advertising during the first nine months of 1930, an increase of \$497,430 over the amount spent during the same period in 1929.

manufacturers of felt base floor coverings, asphalt slate shingles, and waterproof building papers. The dirigible, named the "Neponset," has started on a six months' tour of the country.

Ohio Lumber Dealers to Hold Building Exposition

AN exposition of building materials and equipment will be a feature of the annual convention of the Ohio Association of Retail Lumber Dealers, which will be held in the Public Auditorium, Cleveland, Ohio, January 13-16, 1931.

Fifty years ago the first association of lumber dealers was organized in

Manufacturers of domestic oil burners have had their most prosperous year during the past 12 months, in spite of business depression.

Construction is under way on the Hoover Dam, formerly known as Boulder Dam, the principal unit in the greatest reclamation project ever undertaken.

A keyless door has been perfected which can be opened only by a touch of the fingers, by a person who knows the exact touch required.

An experimental contract for a pavement, with an Armeo iron base and curb, has been placed for 150 feet of pavement on a highway near Springfield, Ill. If successful this construction is expected to eliminate cracking and deformation.

Ohio, and it is to commemorate the half-century of progress that the present association has planned a Golden Jubilee celebration and the Building Products and Equipment Exposition.

An office to handle the exposition arrangements has been open at Room 336, 7016 Euclid Ave., Cleveland. It is expected that over 18,000 square feet of exhibit space will be rented to leading manufacturers in the building field, according to the announcement made by Findley M. Torrence, Xenia, Ohio, secretary of the association.

Merger Announced

THE Porter-Cable Machine Company, Syracuse, N. Y., and the Hutchinson Manufacturing Company, Norristown, Pa., have announced a combination of their organizations for the more efficient marketing of their woodworking machines. The new company will be known as the Porter-Cable-Hutchinson Corporation. General offices will be located in Syracuse.

Universal Atlas Personnel

THE Universal Atlas Portland Cement Co., 208 S. La Salle St., Chicago, announces the following personnel changes: the transfer of E. M. Johnson, assistant treasurer, from Pittsburgh to Chicago; the appointment of A. B. Wells, assistant eastern credit manager, at Pittsburgh, to assistant treasurer; the appointment of Paul C. Van Zandt as an additional assistant to the president.

ALUMINUM PAINT — THE COAT OF METAL PROTECTION



Prime both sides of Lumber with
Aluminum Paint

and defeat the 5 causes
of paint top-coat failures

1. Excessive moisture changes in wood.
2. Bleeding through of sap, resins, stains.
3. Oxidation due to action of the ultra violet rays of sunlight.
4. Flaking off of paint over summer wood.
5. Flaking off of paint over knots.

For priming and *back-priming* no other paint will give anywhere near the protection offered by aluminum paint.

Let us send you the booklet, "Aluminum Paint, the Coat of Metal Protection". It contains facts that you should have. Address ALUMINUM COMPANY of AMERICA; 2420 Oliver Building, PITTSBURGH, PENNSYLVANIA.



ALBRON

ALCOA ALBRON
POWDER FOR
ALUMINUM PAINT

ALUMINUM PAINT — THE COAT OF METAL PROTECTION



\$950 painted this house , , , priming
and back-priming with Aluminum Paint included

In the first place, the contractor was convinced that priming only the weather-exposed surface of lumber in the house was not enough. It is obvious that moisture can enter from the interior (or semi-protected) side, too.

Secondly, he was aware that the metallic pigment of aluminum paint retards the penetration of moisture, and thus stops flaking and peeling of paint top coats.

And now for the facts. The original estimate for painting this house was \$860. This estimate called for interior and exterior knot sealing with shellac, priming on one side only with regular paint and two finish coats.



ALBRON

With the specifications changed to "priming and back-priming with aluminum paint", knot

spotting was eliminated. The cost for this greatly superior job was only \$950.

Priming lumber on both sides is rapidly gaining popularity with builders, master painters and home owners. Use aluminum paint, with its superior moisture-proofing ability, for this work and each job you complete will help secure more work for you.

Aluminum Company of America does not sell paint. But aluminum paint made with satisfactory vehicles and Alcoa Albron Powder may be purchased from most reputable paint manufacturers, jobbers and dealers. Be sure the pigment portion is Alcoa Albron and is so designated.

Let us send you the booklet, "Aluminum Paint, the Coat of Metal Protection". Address ALUMINUM COMPANY of AMERICA; 2420 Oliver Building, PITTSBURGH, PENNSYLVANIA.

ALCOA ALBRON
POWDER FOR
ALUMINUM PAINT



FOR COLD-WEATHER MASONRY

BRIXMENT mortar is used regularly for mid-winter masonry even in the severest northern climates.

In fact, during the winter months more Brixment is sold in proportion to the volume of building construction *than at any other time*. Louisville Cement Company, Incorporated, Louisville, Kentucky.

CEMENT MANUFACTURERS SINCE 1830

BRIXMENT

for MASONRY and STUCCO



Wrought Iron Now Being Made by New Process

Increased Production Expected to Effect Extension in Use of Material

WITH the recent formal opening of the new Ambridge, Pa., plant of the A. M. Byers Company, there was introduced a new mechanical process of manufacturing wrought iron in large units. Owing to the fact that the only method heretofore known to produce wrought iron has been that involving almost entirely manual labor, the use of this material has necessarily been limited. Under the new process, known commercially as the Byers or Aston process, it is expected that a maximum production of 50,000 tons a month can be secured.

The puddling process by which wrought iron has been manufactured by hand for so many years is carried out in a furnace by which pig iron is converted into practically pure iron by elimination of almost all of the elements, other than iron itself. This pure iron is at one stage granular, and when in this condition, the grains are covered by a bath of slag so that each grain attains a slag coating. The grains are then worked by the puddler into balls.

In the new process the procedure is analogous in principle, but the manner of achieving objectives is different. Pure iron is obtained by melting pig iron in a cupola and then refining the molten metal in a Bessemer converter. This highly refined iron is carried in ladles to what is known as the "processing platform" where it is carefully poured into processing cups in which is a bath of slag. This slag, the analysis of which is exactly controlled, has been prepared in an open hearth furnace and tapped into the cups. As the molten iron falls through the liquid slag it solidifies into a granular form and, as in the puddling furnace, each grain takes on a coating of slag.

After sufficient iron has been poured into the slag, the surplus slag is decanted and a ball similar in every respect, except weight, is found in the bottom of the cup. This ball, instead of weighing 200 lbs. as in the puddle furnace, weighs from 6,000 to 8,000 lbs.

The equipment of the new Byers plant includes a 900-ton press for producing blooms about 17 in. by 4 in., a 40-in. blooming mill, a universal plate mill with a capacity for rolling plates 24 in. to 84 in. in width, a skelp mill and a mill for rolling billets into flats, rounds, squares and other merchant mill products.

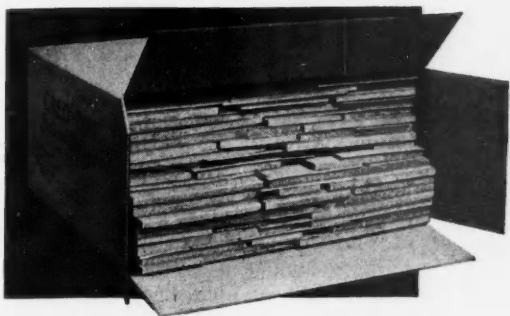


In This 900 Ton Electrically Driven Press Is Compacted the 6000 Pound Bloom. This is the first press of its type ever manufactured.



Processing—the Key Operation in the Aston Mechanical Process of Manufacturing Wrought Iron.

NEW CREO-DIPTS WIN BUILDERS' APPROVAL



Buffalo contractor among those amazed at beauty and economy of new shingles

READ what William H. Fitzpatrick, leading Buffalo builder, says about the New Creo-Dipts: "As soon as I saw a carton of the new Creo-Dipts I could see that they were a great improvement over ordinary stained shingles. The colors were deeper and more uniform, with almost no variation in the shade of the wood showing through.

"Then I used them on a house—a certain type of house that we have been building for fifteen years. It always takes exactly 14½ squares of shingles.

"But when we finished the house—the first house using the new Creo-Dipts—there were four cartons left over. Where did they come from? We checked up on the weather exposure. That was all right. So we called the Creo-Dipt representative.

"He showed us that with the new Creo-Dipts packed in cartons, there is no waste or broken shingles because the carpenter uses every shingle in the carton."

Amazing? Yes, but this testimonial is typical of the response that the New Creo-Dipts are bringing from builders in every part of the United States.

If you have not already seen the new Creo-Dipts, just mail the coupon and we'll send our salesman around with a carton right away. Creo-Dipt Company, Inc., 1599 Oliver Street, North Tonawanda, N. Y.

READ THESE FACTS

Uniform colors . . . even in lightest shades of gray.

No color variation . . . pronounced shades of timber cannot show through.

Doubled life of colors . . . cannot fade or blotch.

Packed in dustproof cartons . . . protected in transit, in stock and on the job.

No waste . . . you can use every shingle.

No increase in price . . . although the new Creo-Dipts cost more than the old to make, we have not increased prices.

OTHER CREO-DIPT PRODUCTS

CREO-DIPT BRUSHCOAT STAINS

CREO-DIPT DIXIE WHITE

HANDI-IRONING CABINET

CREO-DIPT WEATHERPROOFED BUILDING PAPER

MAIL THE COUPON TODAY!

CREO-DIPT COMPANY, INC., 1599 Oliver Street,
North Tonawanda, New York.
In Canada: Creo-Dipt Company of Canada, Ltd.
1610 Royal Bank Building, Toronto, Ont.

(Factories, warehouses or sales offices in all principal cities)

I'd like to see a carton of the new Creo-Dipts. I am also interested in
 Handi-Ironing Cabinet Creo-Dipt Weatherproofed Building Paper
 Creo-Dipt Brushcoat Stains Creo-Dipt Dixie White

Name _____

Address _____

CREO-DIPT

Stained Shingles

STAINED UNDER PRESSURE

GENUINE CREO-DIPT PRODUCTS ARE SOLD BY LEADING LUMBER DEALERS EVERYWHERE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

The Builder's Library

Equipment for Buildings

Bathroom Equipment

A handsome catalog, illustrated in both black and white, and in colors, has been published by the C. F. Church Mfg. Co., Holyoke, Mass., presenting its toilet seats for better bathrooms.

"How to Drape Your Windows"

This is the title of a book published by the Kirsch Company, Sturgis, Mich. It is more than a catalog, being a presentation of styles and suggestions on window draping including a number of illustrations in colors. It is bound in hard covers.

Electric Panel Boards

Typical specifications for Westinghouse panel boards are contained in a new booklet, S. P. 1890, issued by the Westinghouse Electric & Manufacturing Company, 160 Seventh Ave., Brooklyn, N. Y.

Bathroom Cabinets

Steel cabinets and accessories for the bathroom are featured in a new catalog, No. 8, offered by the Miami Cabinet Company, Middletown, Ohio.

Automatic Water Still

Complete equipment for distilling water, for all types of installation, is presented in a new handbook, catalog B, published by the Barnstead Still & Sterilizer Co., Inc., 2 Lanesville Terrace, Forest Hills, Boston, Mass.

Ironing Cabinets

Complete architectural specifications for its Handi-Ironing Cabinet have been published, in booklet form, by the Creo-Dipt Company, Inc., North Tonawanda, N. Y.

Offered by Book Publishers

"Shades and Shadows for Architects"

This book, by Richard S. Buck, Wibert C. Ronan, and Thomas F. Oman, Architects and members of the faculty of the Ohio State University, and edited by Thomas E. French, of Ohio State University, presents the principles and problems of drawing shades and shadows, together with methods of solution most practical for actual presentation drawing use, treated as simply and basically as possible. Published by the McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City. Price \$3.00.

"Estimating Construction Costs"

A new chart system that simplifies and speeds up construction cost esti-

Check These Items Every Month and Write for Those You Need to Keep Your Files Up to Date. Any Item Listed Will Be Sent Free on Request Except Where a Price is Noted. The American Builder & Building Age Should Be Mentioned When Writing for These Publications.

ating, and eliminates long and detailed figuring, is presented in this book, by G. Underwood, Construction Engineer. It covers all phases of construction work including transportation, labor and materials. It is published by the McGraw-Hill Book Co., Inc., 370 Seventh Ave., New York City. Price \$6.00.

Construction Materials

Fiber Backed Mesh Lath

Steltext, a welded wire mesh with integral fibrous backing, for plaster and stucco base, is completely described, with full specifications for its installation on all types of construction, in a new booklet prepared by the manufacturers, the National Steel Fabric Company, Pittsburgh, Pa.

The Use of Cement

A practical handbook on cement buildings and improvements has been published by the Alpha Portland Cement Company, Easton, Pa., under the title "Alpha Cement—How to Use It."

Wall Fabrics

Samples of Wall-Text, coated fabric wall coverings manufactured by the Columbus Coated Fabrics Corporation, Columbus, Ohio, are presented by that company in a new booklet.

Acoustical Tile

Acoustical treatment for offices and auditoriums is covered in a booklet prepared by the United States Gypsum Company, 300 W. Adams St., Chicago, under the title "Acoustone—The USG Acoustical Tile."

Steel Joists

One piece, expanded steel joists are presented in a new catalog which also contains complete safe loading tables in accordance with the Steel Joist Institute standards. It is offered by the Bates Expanded Steel Corp., East Chicago, Ind.

Asbestos Cement Materials

The characteristics of corrugated Transite, an asbestos cement building material, and its application to roof and wall construction are fully treated

in a brochure issued by the manufacturers, the Johns-Manville Corporation, 292 Madison Ave., New York City.

Coated Fabrics

Style, design, color and texture are the subjects treated in a handsome booklet, illustrated in colors, which is offered by the Fabrikoid Division of E. I. du Pont de Nemours & Company, 30 Fifth Ave., New York City. A booklet of samples is also available.

Stained Shingles

A folder containing a large number of illustrations of houses finished in stained shingles, some of them in full colors, has been published by the Creodipt Company, Inc., North Tonawanda, N. Y.

Steel House Framing

"How to Build with Mac-Mar Steel Framing" is the title of a booklet issued by the Steel Frame House Company, a subsidiary of the McClintic-Marshall Corporation, Pittsburgh, Pa. It is fully illustrated with photographs and drawings.

Miscellaneous Publications

"Termites and Termite Damage"

This is circular 318, of the University of California, College of Agriculture, Agricultural Experiment Station, Berkeley, Cal. It was prepared by S. F. Light, Merle Randall, and Frank G. White, and contains preliminary recommendations for the prevention and control of termite damage.

"The Farm Shop"

This is popular Bulletin No. 147, by L. J. Smith and Harry L. Garver, of the Agricultural Experiment Station, State College of Washington, Pullman, Wash. Free to citizens of the State of Washington.

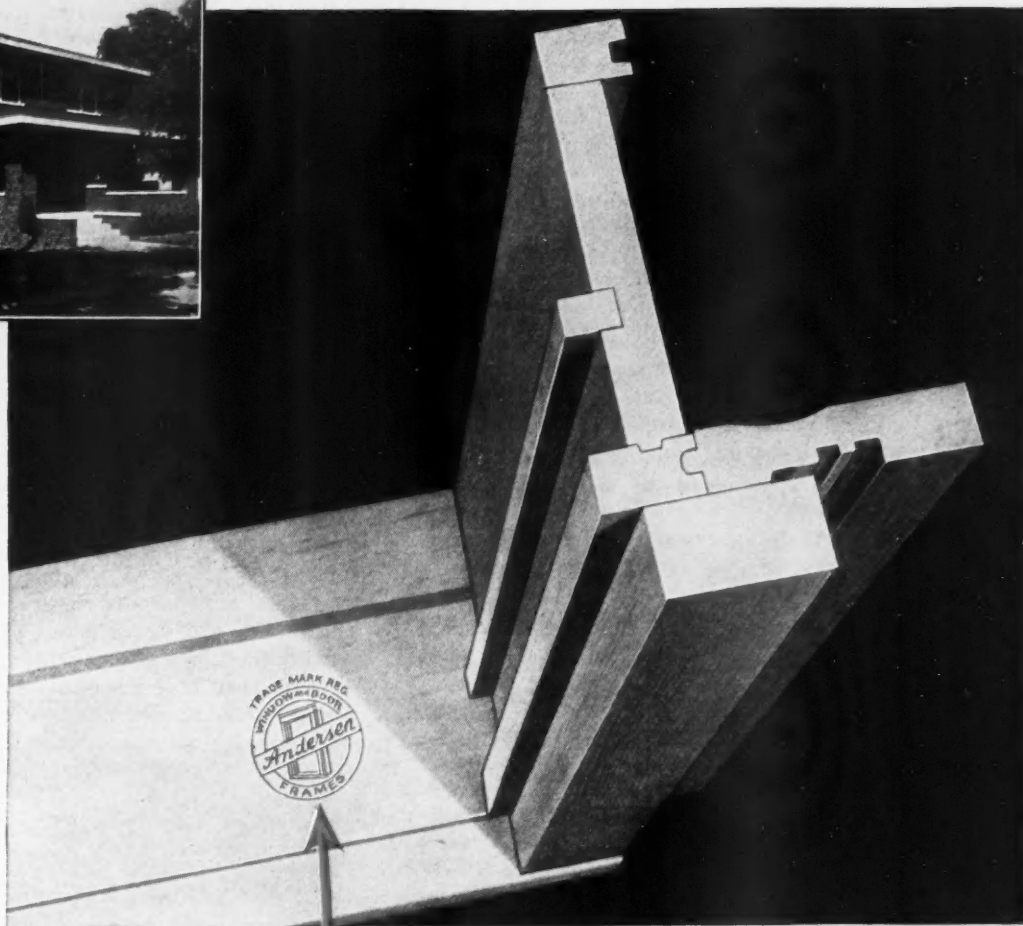
"The W. S. C. Laying House"

Bulletin No. 160, by J. S. Carver and L. J. Smith, of the Agricultural Experiment Station, State College of Washington, Pullman, Wash., is furnished free to citizens of the state.

"Stronger Frame Walls"

Here is a new bulletin in the Construction Information Series of the National Lumber Manufacturers Association, Transportation Bldg., Washington, D. C., presenting the results of tests to determine the strongest type of frame construction.

Builders demand this new frame with locked sill-joint for leak-proof construction



The new Andersen Master Brick Veneer Frame. Note trademark die cut in the sill.

ON a brick veneer job, use the new Andersen Master Frame with the new locked sill-joint.

You get a strong, rigid installation, weather tight, leak-proof, eliminating all repair bills. You can cut sash and fit trim at the bench. You save \$1.00 per opening in labor costs.

And these new frames make a strong sales argument because of the many exclusive

features — the steep sill slope, the wide blind stop provision, the beautiful white pine material, the noiseless pulleys.

Ask for a demonstration of this new frame, by your nearest Andersen dealer, or send for a descriptive folder. ANDERSEN FRAME CORPORATION, Bayport, Minn., represented by 3,500 leading dealers.

Andersen  Frames

FOR WEATHERTIGHT INSTALLATIONS—USE ANDERSEN SPECIFICATIONS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

These Are New

New Reinforced Building Paper

A NEW building paper is now being marketed, one of the unusual features of which is that the cords are built right into the paper itself. These cords run lengthwise through the paper. They are not placed between layers but are an integral part of the paper.

The body of the building paper is made from northern sulphate fibre. The pure fibres coming from these logs are exceptionally strong and tenacious, and give the paper its toughness, enduring strength and its factors of long life. After the paper is made, it is finally coated with a mastic compound, this treatment making it waterproof and weather-proof.

The paper is rolled and wrapped for shipment. Each roll is 36 inches wide, and contains 500 square feet.

This building paper is not, in any sense, an experimental product. Its development goes back many years with years of actual test and use backing it up.

The tough, fibrous backing of the floor lath produced by this company was the start of this building paper. This backing has cords built in exactly like the cords that are now built in this new building paper.

For Further Information in Regard to Any Product Described in This Department, Write to the American Builder and Building Age, Information Exchange, 105 W. Adams St., Chicago.

the title "All Speculation Removed from Speculative Building by the Miller-Storm Methods."

In addition to being used on the walls and ceilings of bathrooms, the material is often used in kitchens and pantries, in hotel corridors and lobbies, in restaurants, in beauty parlors, in display rooms and in other places where a high degree of beauty and

durability along with moderate cost are desirable.

This material can be applied over plaster, gypsum wall-board, painted surfaces, etc., a special, prepared adhesive being used to hold the sheets in place.

Top Closer Makes Tight Casements

THERE has been a long standing need for a practical means of closing casement windows, screen doors, and other close fitting openings, so as to be weather-tight even though warped. The illustration shows a simple and inexpensive fixture for accomplishing this.

This fixture is free from complicated mechanism and is designed to operate continuously without trouble or attention. It is strong enough to overcome a warp of one inch in a four-foot window and has a pull of 10 pounds.

The use of this closer eliminates the need of all casement fasts and surface bolts. It is reversible for right or left hand operation, can be installed quickly without mortising or fitting and, in size and appearance, affords an unobtrusive installation. It is furnished in solid brass or rustproof steel for finishing to match woodwork.

Tile Finish on Sheet Metal

ABOUT a year ago, a contractor, while inspecting an apartment for rent, was struck with the beauty of the tile bathroom. Not until he was living in the apartment did he discover that the walls of the bathroom were not clay tiling but metal sheets on whose face the tile color had been reproduced in all its original beauty by a new process.

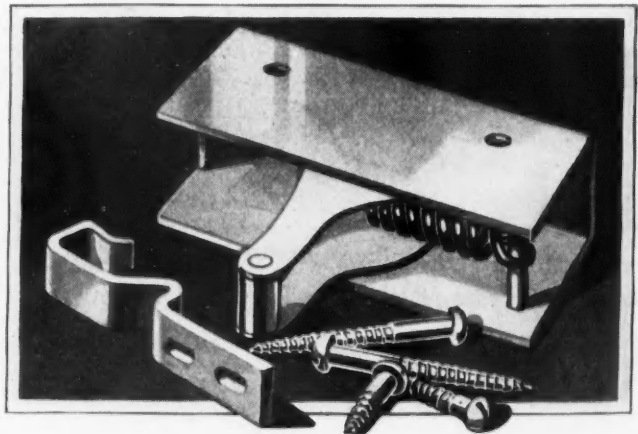


Applied Like Wallpaper with a Special Adhesive.

Some months ago this contractor, needing something to tide him over the period of depression, decided to specialize in this metal wall finish. He was gratified to find that a considerable percentage of owners to whom he showed a sample and explained the durable character of the material gave

him contracts for its installation. At the present time, this man is giving this installation all his time and has several men working for him.

The product is equally well adapted to new construction. One prominent builder who has used large quantities of the material is the Miller-Storm Co., of Detroit, whose story appeared in a recent number of THE AMERICAN BUILDER under



Top Closer Makes Casements Weather-tight.

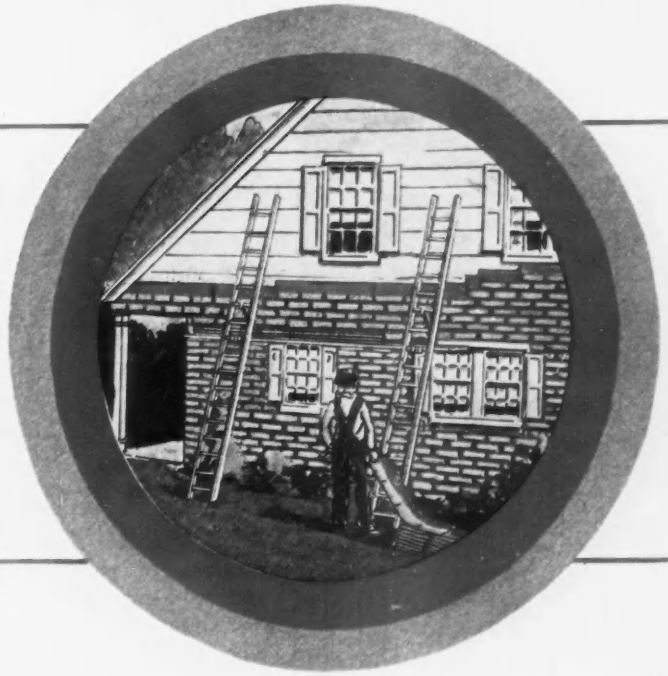
New Lighting Outlets

ONE of the well known manufacturers of electric wiring devices has recently placed on the market a new line of porcelain lighting outlets for four-inch boxes. These receptacles are of the two-piece type with shadeholder or plain ring, in the popular combinations of 7-inch chain, chain and cord, or chain and insulator.



Outlets with or without Shade Holder.

BRICK-STYLE SIDING ANOTHER HOME IMPROVEMENT PROFIT-MAKER



Brick-style Siding has outstanding sales features that make it a big seller and a profit-maker.

It stops paint bills forever. It reduces fuel costs drastically. It gives property owners a beautiful, weather-tight siding at only a trifle additional cost over paint.

This product is especially designed so that there is a thick layer of asphalt felt behind each butt. Strips are 36 in. long, reducing application cost to the minimum. The double coated, heavy slated, exposed butts have the appearance of deeply re-

cessed bricks in true brick size. The colors are a rich red and a handsome buff. By combining these colors you get an attractive tapestry brick effect.

All these features make Brick-style Siding easy to sell. Moreover, every frame building that is weather worn is your prospect, and you know what a gigantic market this is.

See samples of this product. Get descriptive literature and full particulars of how to get this business. Address and mail your letter to the nearest office listed below.

CONTINENTAL
ROOFING MILLS

RUBEROID
MILLS

SAFEPACK
MILLS

H. F. WATSON
MILLS

→ Divisions of ←

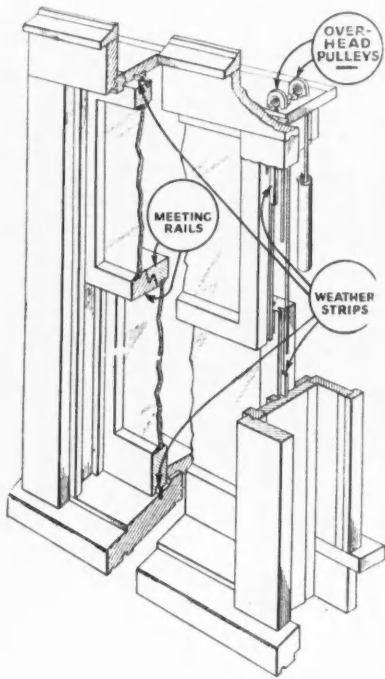
The RUBEROID Co.

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



New Improved Window Frame

THERE has recently been placed on the market a new window frame which is scientifically designed and accurately manufactured of douglas fir. Its wedge-shaped, tongue-and-groove joints interlock to prevent air, water and heat leakage. This frame defies the weather and conforms to present-day insulation standards.

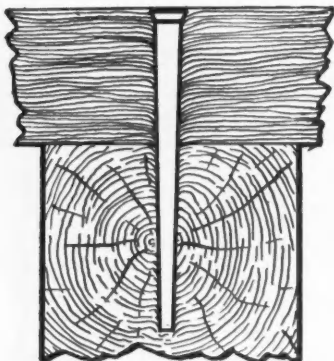


No Further Weatherstripping Is Needed with These.

The sash have meeting rails with specially designed, co-acting flanges that lock together to make a weather-tight joint when the window is closed. To accomplish a perfect unbroken contact for the weather-strip around the sash, this new frame has overhead pulleys. Thus, all possibility of jamming is eliminated; the pulley is in the logical position for any elevation of the sash; the sash never overlaps the pulley; and a straight, non-binding pull is assured at all times. Assembly of sash and cord is quick. No knots are necessary in the sash cord, as a special metal ferrule is placed on the end of the cord and this is slipped into an angled socket in the side of the sash. Thus, the cord automatically locks itself against displacement.

Cut Wrought Iron Nails

ACCORDING to government tests, cut iron nails possess 72 per cent greater holding power than cylindrical wire nails. This is due to the fact that they are wedge shaped and have four sides. The four sides give greater bearing surface, and the wedge shape makes them become tighter as they are driven in.



The Wedge Shape Gives Great Holding Power.

Though it is conceded that the cut nails are more difficult to drive than wire nails, this is readily overcome by experienced workmen and the cut nail is now extensively used in the southeastern and middle Atlantic states in laying hardwood floors. Fewer nails are required in order to make a satisfactory job. Also the cut nails help to overcome

defects and warp caused by the use of green material.

Kiln dried lumber is difficult to secure. When green material is used, expanding and contracting forces are set up which often bend or break nails in floors and result in squeaky, loose strips. The firmer nailing obtained with cut nails helps to avoid this difficulty.

In addition to the advantages mentioned, these nails offer remarkable resistance to corrosion and will, under ordinary conditions, remain sound until the wood into which they are driven decays. This is due to the fact that they are made of puddled wrought iron, which is noted for its corrosion resistance.

Screw Type Roofing Nails

A NEW nail has recently been produced which provides the ideal means of fastening corrugated roofing to wood. This nail combines the leak-proof advantage of a soft mushroom head with the great holding power of a screw-nail.

As the screw-nail is driven, it turns in and holds like a screw, tests showing that it has four times the holding power of an ordinary nail, it is stated. Where ordinary nails would back out and allow the roofing to become loose, these screw nails hold tight, thereby increasing the life and service of a corrugated roof or sidewall.

The soft head of this nail is self-sealing, the head smashing down over the corrugation and sealing the nail hole from moisture. Roofs applied with these nails have been flooded with a hose without a sign of a leak.

The entire nail is made of one piece and is heavily coated with pure zinc by the hot-dipping process, making it rust-proof. These nails are made in sizes from 1¼ to 3 inches long.

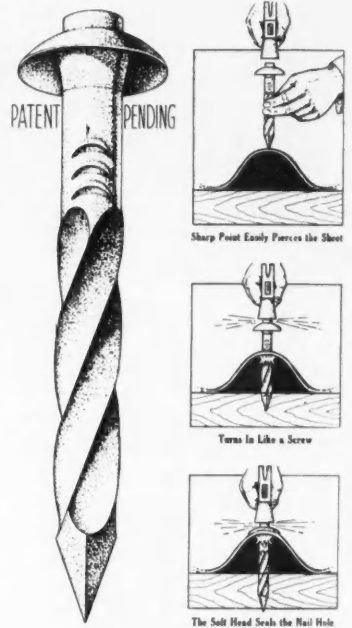
One Piece Steel Hammers

A RECENT improvement in carpenters' hammers and hatchets consists of a line in which the head and handle are forged in one piece from high grade tool steel. The grip is a series of leather washers held between the shoulder and a thin steel end plate. This grip is guaranteed, by free replacement, to outwear the head and provides a most satisfactory type of grip. The whole tool is polished and lacquered all over.



One Piece of Tool Steel with Guaranteed Leather Grip.

(This Department Continued on Page 132)



Great Holding Power and Self-Sealing.



At Last ...
**A
 FIREPROOFING
 INSULATION BOARD**



For the first time in America, there is being produced a truly fireproofing insulation board and building material made from rock and wood—**THERMAX!** Back of its introduction in this country is a record of twelve years manufacture and successful use in Continental Europe. Buildings of all types have numerous uses for this remarkable new product.

Thermax is the only product of its type in America combining all of the highly desirable, as well as the essentially necessary qualities and characteristics of a number of practicable building materials into one efficient, economical product.

Thermax is a building material in board or slab form that is virtually a *Fireproofing Insulation Lumber*; but it embodies many additional qualities; such as light weight, structural strength, vermin proofness, sound deadening, acoustical values, and is odorless and permanent.

It is an ideal building board, plaster and stucco base, partition block, or roof slab—manufactured in three thicknesses (1", 2", and 3"), and in units easily handled, nailed, or laid up.

Thermax is lighter than gypsum boards or blocks and stronger than fibre boards; it exhibits no perceptible warp, buckle, expansion, or contraction, regardless of climatic conditions.

Write for literature and samples of this wonderful board which has been used for more than twelve years in European Countries, where it has become the standard fireproofing insulation material.

THERMAX CORPORATION
 1411 FOURTH AVENUE SEATTLE, WASHINGTON

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER AND BUILDING AGE

Circulator Type Heater

THE illustration shows a circulator type heater that was built in response to a demand for a circulator that would warm the floor. This heater differs from others in that it



Satisfactory Heating
for Small Homes.

uses a positive down draft construction. The lower draft or draft in the ash pit door is only for starting a fire or in reviving a slow fire.

When the heater is properly operated, all air is taken into the combustion chamber through the top of the feed door above or over all smoke, gas and burning fuel. The only exit for escaping fumes is at the rear of the stove, at or below the top of the fire bowl level.

This method of fuel combustion forces all smoke and gas generated by burning fuel down through the blaze at the rear of the stove, so completely burning gas and smoke that no accumulation of soot appears in either pipe or chimney, thus reducing fuel cost and increasing heating efficiency.

The peculiar construction of the fire bowl gives over 1,000 added square inches of radiation surface to the heating element. Since the heat is confined to the fire bowl and base of the heater, a baffle is placed at the front and both sides at the top of the fire bowl, extending from the heating element to the outer casing, joining the casing just above the louvres, on a line with the lower part of the feed door. The lower part of the stove, particularly the fire bowl, being the hottest, completely warms the air as it comes in contact with the heating element and is deflected through the louvres by aid of the baffles to the floor, rather than letting all heated air for circulation rise to the ceiling from the top of the heater before heat distribution actually begins.

This heater is built in two sizes, and is finished in a hand grained walnut, three coat porcelain enamel. All doors and joints are machine fitted making the heater absolutely air tight and enabling the operator to bank and hold the fire 48 hours or more. The fire is kept under positive control without the use of a pipe damper.

Automatic Door Opener

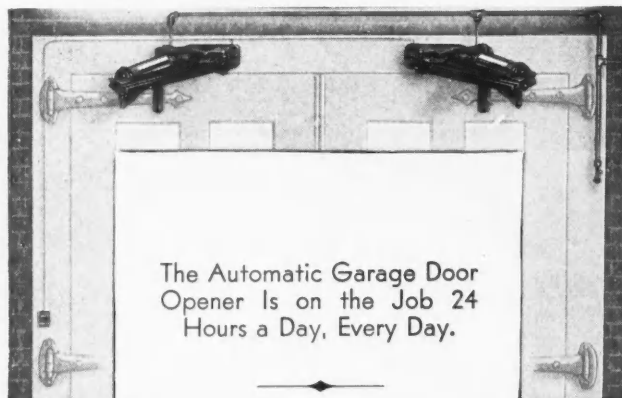
GARAGE owners are, more and more, coming to appreciate the economy and other advantages of automatic garage door openers. Hand opening of garage doors is wasteful because, when cold weather arrives and fuel bills mount, the door that stands open for even a few minutes is responsible for a considerable heat loss.

Then, too, there is the loss of customer goodwill. Even though the mechanic gets to the door as quickly as possible, when a customer honks outside, and feels that there has been no delay, the customer sitting out in the cold feels as though he had been waiting endlessly. Running to the door to let customers in and out is a serious waste of mechanics' time.

With an automatic door opener, the mechanic merely touches one of the buttons, placed at convenient intervals around the shop. The doors swing open instantly, and

another touch of the button closes them instantly. The arms of the opener hold the doors rigid so that there is no swinging and slamming, and the opener serves as a reliable lock when the doors are closed.

The opener illustrated here offers an inexpensive and dependable installation. The first cost is not more than two weeks mechanics' wages, and the operating cost is practically negligible. The saving in mechanics' time, alone, will soon pay for the installation.



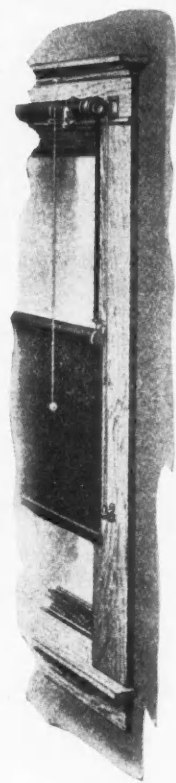
The Automatic Garage Door
Opener Is on the Job 24
Hours a Day, Every Day.

A Simple Shade Adjuster

WINDOWS have two important functions, to provide light and ventilation but, in order to avoid also having glare from the windows, it is necessary to have window shades and ordinary window shades can not always be adjusted to provide correct lighting and ventilation. There is, however, a window shade adjuster, a simple fixture which makes it possible to properly shade the windows at all times without interfering with light or ventilation.

This shade adjuster, shown in the illustration, consists of a roller applied at the top of the casing either inside or outside. The shade roller proper is suspended from it by two thin bronze ribbons. These ribbons wrap about the top roller and so raise and lower the shade roller which moves up and down, along wires which keep it level and in position.

The top roller is operated by a cord attached to a ratchet. A slight pull on the cord, when the shade roller is down, releases the ratchet and the spring operated top roller rolls up the ribbons, raising the shade roller and winding up the cord. By pulling the cord when the shade roller is up, the shade roller is pulled down. The shade can be placed at any desired point to shut off direct glare of the light and to avoid shutting off ventilation at the top.



A New
Shade
Adjuster.

"Homes with Beautiful Floors"

This is the title of a very handsome bound volume, published by The Goodyear Tire & Rubber Company, Inc., Akron, Ohio. This book is illustrated with a number of very fine color plates and features a Colonial living room, a directoire dining room, a Dutch kitchen, a modern library, a Colonial bedroom and a Spanish hall, in each of which flooring contributes to the beauty of the room.

(This Department Continued on Page 134)

"The Best Book of Home Designs We Have Ever Seen"

— Says Prominent Building Material Manufacturer

Approved by Architects and Builders

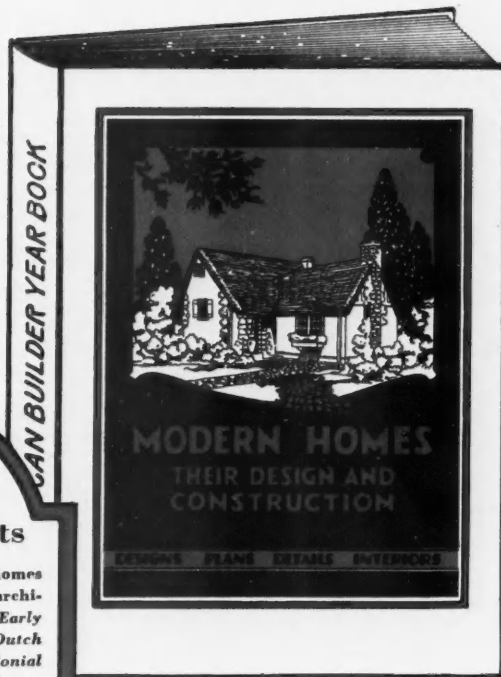
"I am very much pleased with 'Modern Homes.' I have selected and am working on the house illustrated on page 157."

A. M. B.—Builder—Lancaster, Pa.

Can't See How We Do It

"Received my book 'Modern Homes.' Don't see how you can put out such a handsomely illustrated volume for the price you ask. I have paid more for books that resemble an old Blue Back Almanac in comparison with this fine book."

J. R. T.—Builder—Anderson, Ind.



WE have been telling you about this new and different book of exclusive *Period Architectural Home Designs* in the past several issues of **AMERICAN BUILDER AND BUILDING AGE**. Don't take our word for it—read what this manufacturer and others who have received a copy of the book have to say about it:

"Permit us to say that we have read 'Modern Homes' from cover to cover and believe it is by far the best publication of its kind we have ever seen. You are to be congratulated on the excellent quality of the designs in this book." (Name on request)

So great has been the demand for this book, "The American Builder Year Book of Modern Homes", that a brand new edition has been necessary and is now ready for delivery. The first edition of this unusual book of Architectural Home Designs was completely exhausted within a few weeks of publication. If you want your copy of this second edition—don't delay! Act Now! Send your order today.

New Edition Makes Lower Prices Possible

Designs By Leading Architects

Illustrated in this book are homes designed by over 100 leading architects, in period styles as follows: *Early American, New England Colonial, Dutch Colonial, Southern Colonial, Colonial Types, Tudor, Georgian, English Types, Norman, Italian, Spanish, Modernistic*, also specifications of residence, details of residential construction, useful rules, tables and data.

122 Designs with Floor Plans

In all, there are 122 illustrated designs with floor plans. These are arranged according to type, so that they may be referred to conveniently. 1½ story, 2 story and 3 story houses are shown in a variety of materials—stone, brick, stucco, wood, etc. There are 79 illustrations of interiors in the correct period style described. 181 illustrations show fittings and furnishings appropriate to style of architecture. 85 views show exterior details of doors, windows, towers, gates, etc.

Period Style Homes Never Become Obsolete

These offers good only within the United States and Canada.

In printing and binding this large second edition of "MODERN HOMES" a considerable saving has been possible and this is being handed along to *American Builder and Building Age* subscribers in the form of lower prices. You may now secure your copy of this book in connection with your new or renewal subscription at the following liberal prices:

- \$4.50** Will bring you *American Builder and Building Age* for 3 years and a copy of the book postpaid.
- \$3.50** Will bring you *American Builder and Building Age* for 2 years and a copy of the book postpaid.
- \$2.50** Will bring you *American Builder and Building Age* for 1 year and a copy of the book postpaid.

Here Is your Order Form — Clip and Mail — NOW!

The American Builder and Building Age, 105 W. Adams St., Chicago, Ill. Date..... Nov. 30

Gentlemen: Find \$.....to pay for.....year's subscription to the big New **AMERICAN BUILDER AND BUILDING AGE**—with which I am to receive, postpaid, a copy of your New "American Builder Year Book—Modern Homes."

Name

St. and No.

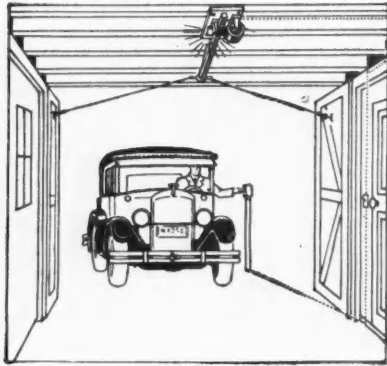
Post Office..... State.....

IMPORTANT: Building publications are required to show occupations of subscribers. Please help us to properly classify you by stating on line below the business in which you are most active.

My Business is.....

Automatic Garage Door Operators

A COMPANY specializing in the manufacture of door operators for private and public garages and industrial plants, including both electric and manual operators, offers



Operated by a Key Inserted in a Lock Box.

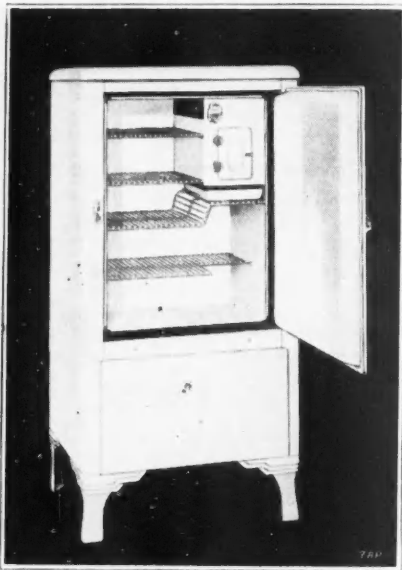
the remote control, private garage, door operator illustrated. While this is shown applied to outswinging doors, it can also be applied to various other types of doors, including inswinging, folding, roller and vertical doors.

This automatic operator lights the garage, opens, closes and locks the doors automatically. It increases the comfort and convenience of using an automobile and adds to safety. When the auto-

mobile driver enters his driveway he does not need to get out of his car. He merely reaches through the window and turns a switch located in a lock box to which he carries a key. The lock box is placed on a post alongside the driveway. As soon as the switch is turned the garage lights are lighted and the doors swing open. Similar operators for public garages can be controlled from any number of remote points.

Improved Electric Refrigerator

A NEW electric refrigerator has been placed on the market which can be shipped directly from the factory and installed, ready for operation, by simply plugging into a light socket. The freezer, connecting tubing and condensing



An Improved Type of Electric Refrigerator

unit may easily be installed or removed together without moving the cabinet. Tube openings in the back of the cabinet are unnecessary in this device.

The compressor is quite a refinement over the rotary type, the manufacturer claims. A roller turns smoothly within a cylinder and performs the function necessary to refrigeration. This principle eliminates the necessity of the piston, connecting rod and many other moving parts. It is permanently quiet, as the three principal parts operate sub-

merged in oil, which insures less friction and gives it longer life, thus lowering operation costs.

The freezing unit is equipped with vertical down-draft flues which provide increased air circulation over the freezer and lowers the cabinet temperature quickly. The large ice-cube compartment is enclosed by a self-closing porcelain

door which prevents the cubes acquiring flavor from food odors. This door also prevents the forming of frost on the trays, thus making them always easily removable.

A cold accelerator, adjustable to five points is located on the front of the ice cube compartment. Combined with it is a switch used for starting and stopping the unit.

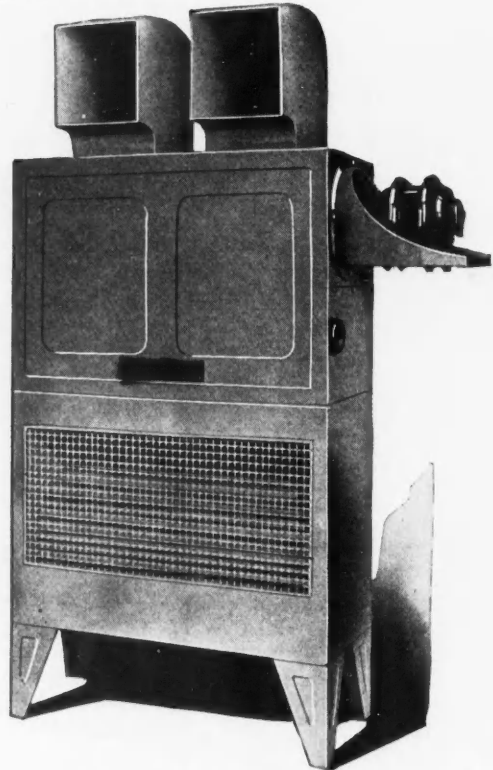
The cabinets are furnished in four, five and seven cubic foot sizes and are exceptionally sturdy in construction and scientifically insulated. The four foot size has a lacquer exterior and a vitreous porcelain interior. The five and seven foot sizes have porcelain on both the interior and exterior. The especially designed hardware is of stamped and cast brass with a finish of chromium over nickel. The design of the door latch permits closing without slamming.

The spacious shelves are of heavy parallel bar construction. They are hot welded and triple tinned.

A porcelain chill tray for crisping salads and storing foods which must be kept unusually cold is part of the standard equipment of each refrigerator.

Unit Heaters Wash Air

A COMPANY which, for some time, has been manufacturing high quality unit heaters for industrial installations, has recently applied to these units an air washing and humidifying feature.



A Unit Heater with an Air Washing and Humidifying Unit.

The new feature involves a revolving drum of air washer, eliminator and scrubber plates, propelled by the air current through the unit. The scrubber plates continually dip into a water tank and provide a wet surface over which the air must pass twice. This removes 70 per cent of the dirt and dust from the air.

The dust picked up from the air settles into a tank similar to the air washer. A hose connection is provided and the revolving drum can be lifted up, collected dirt washed out through the drain connection. The water level in the tank is maintained automatically by means of a float. Satisfactory results can be obtained where no outside water connection is available, by manually filling the tank.

(This Department Continued on Page 136)

Can You Read Blue Prints?



Now... A 2¢ Stamp Brings

FREE BOOK

"HOW TO READ BLUE PRINTS"... AND

FREE BLUE PRINTS!

Without Cost or Obligation Investigate Chicago Tech's Blue Print Way to Bigger Pay!

MEN, here's a liberal offer if ever there was one! By acting at once, every ambitious builder in America who wants to win quick promotion and run big building jobs may now secure a valuable book and real blue prints, together with full details about a wonderful new method of training that teaches you how to read plans and qualify for leadership in Building. Send no money. Simply fill in and mail the coupon below.

Big Demand for Men Who Can Read Blue Prints

Right now there is an urgent need for practical men with actual building experience who know how to read plans and are able to supervise construction. This amazing book that is now offered to you free will show you how you can, in surprising short time, qualify for positions that only men with a knowledge of plan reading can fill. It tells how you can in your spare time, right in your own home, put yourself on the "headwork" side of Building and earn the kind of money that you want.

Easy, Practical Training . . . Mastered in a few Short Weeks

Chicago Tech's Blue Print Method is entirely different from ordinary schooling. You'll be surprised and delighted at the ease with which you will master every basic principle of plan reading, this fascinating blue print way! There are no textbooks to read—no useless theory. Instead you are given actual working blue prints to examine and keep. Twenty famous experts go over these with you, step by step, explaining everything in plain, everyday language you can quickly grasp. No wonder

If You Live Nearby
Visit our big Day and Evening School attended by over 1,000 builders. You get this training at home by mail—same plans, lessons and instructions.

Chicago Technical
SCHOOL for BUILDERS



Dept. P-123, Chicago Tech Bldg.
118 E. 26th St., Chicago, Ill.

builders everywhere proclaim this to be the most practical and the easiest training method they have ever seen!

Brings Quick Promotion

A few short weeks of practical instruction while you are still on the job, and you are prepared to accept the higher positions that are open only to trained builders. See what this marvelous training has done for others. Baker, Ohio, made \$3,800 clear profit in three months as a contractor. Depke, R. I., increased his salary 700 per cent in twelve months. And Clifford Scholl, a laborer, became assistant superintendent in eight months!

Don't Delay—Act NOW!

Smart builders will grasp this opportunity immediately and get before them the free book and plans that will show them how quickly the success they want can be realized now as a result of Chicago Tech's Blue Print Way. Remember—there is no risk whatever, no obligation in mailing the coupon. So send it at once.

SIMPLY MAIL COUPON NOW

It will bring you at once the valuable free book, *How To Read Blue Prints*, the free blue print plans, as well as full information about Chicago Tech's Blue Print Way to Bigger Pay. No obligation whatever, so write immediately!



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Yes, send me at once without cost or obligation your **FREE BOOK** and complete set of blue prints. Also full details about your easy, practical home training. It is understood no salesman will call on me.

Name.....

Address.....

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

Age..... Occupation.....

Automatic Device Opens Door

ONE of the big manufacturers of electrical equipment recently demonstrated an automatic door opener by means of which a door can be made to open swiftly and silently without being touched by anyone, and closed in the same way. This device, which is a development of the photo-electric tube, will be found to be a great convenience in restaurants and hotels where waiters with heavy trays must pass between the kitchen and dining room.



The Door Opens Without Being Touched.

A ray of light, focused on a photo-electric tube, passes in front of the door. When this ray is interrupted, as when a person approaches the door, it sets a hydraulic door-opener to work, through the agency of a photo-electric relay. The tube and light are placed several feet from the door so that as a person approaches his body interrupts the ray and the door is opened by the time he reaches it.

The current is amplified through three large vacuum tubes, the last a power tube. It then sets in motion a small motor which operates the hydraulic device, thus actually opening the door. A lever, comparable to those found on ordinary door checks, forces the door open. A suitable time then elapses before the door closes.

When the ray of light is again focused on the tube the device is again ready for operation. The length of time which the door is held open is variable by adjusting the control.

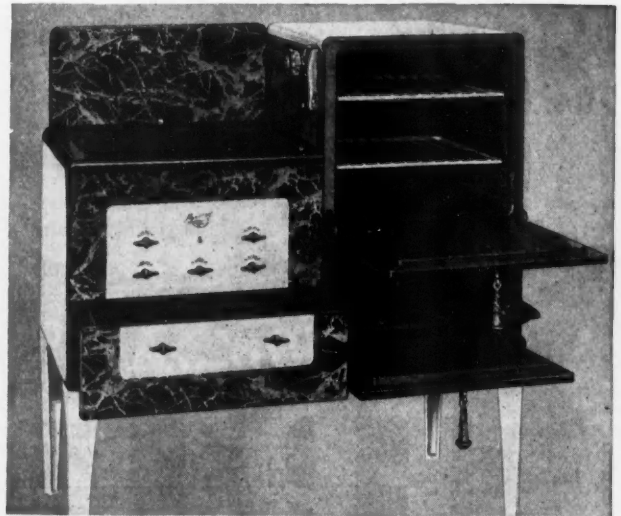
A Modern Gas Range

A FEW months ago one of the outstanding manufacturers brought out an advanced type of gas range which has attracted much attention because of its great efficiency and beautiful appearance. This company has now announced a new model of this range of smaller size, suitable for the modern small kitchen, and more moderately priced, that embodies many of the improvements found in the original model.

This range will add to the value of any home in which it is installed and should be considered in the remodeling of old homes as well as in the construction and equipment of new ones. It is all porcelain enamel with porcelain enamel linings and is finished in old ivory with verde antique marble trim. No pipes, bolts or screws are visible and all gas control parts are hidden.

A folding enamel top covers the burners when not in use, hiding this less sightly portion of the stove and providing an extra working space. When the burners are in use it forms a back splasher. The oven projects only nine inches above the cooking top and so does not put it in shadow.

The oven is heavily insulated with mineral wool, reducing the heating of the kitchen to a minimum and preserving the effectiveness of the oven heat. It is equipped with an oven regulator of well known reliability and is of sufficient size to contain an entire dinner for 10 people.



Real Beauty in a Gas Range for the Small Modern Kitchen.

Only the heads of the top-burners and lighter are visible. The burner tray is perforated to fit over them. This prevents boil-overs, grease and dirt from getting down into the burner box where it is difficult to clean and makes a much neater appearance of the cooking top when in use.

Covers for Warm Air Registers

RADIATOR covers are well known to everyone these days. Similar covers for warm air registers are rather a novelty, but are just as practical, attractive and useful. These cabinets also include a humidifying element to overcome the dry warmth which does so much damage not only to the furniture and wall coverings but also to the health of the family.

The cabinets are made of fine quality, 20-gauge, furniture steel and are finished with eight coats of lacquer. Nine finishes including wood grain, plain colors or two-tone finishes, are available.

A deflector fastened inside the cabinet forces the air through the front so it does not come in contact with anything directly above or behind. The tops are of double thickness steel with an asbestos interlining.

The whole cabinet is built for a life-time of service. It is attractive in appearance and is available in models for application to wall registers as well as floor registers.

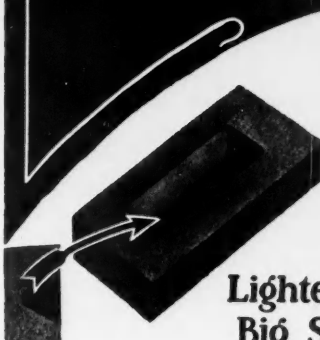


The Warm Air Register Cover Is an Attractive Piece of Furniture.

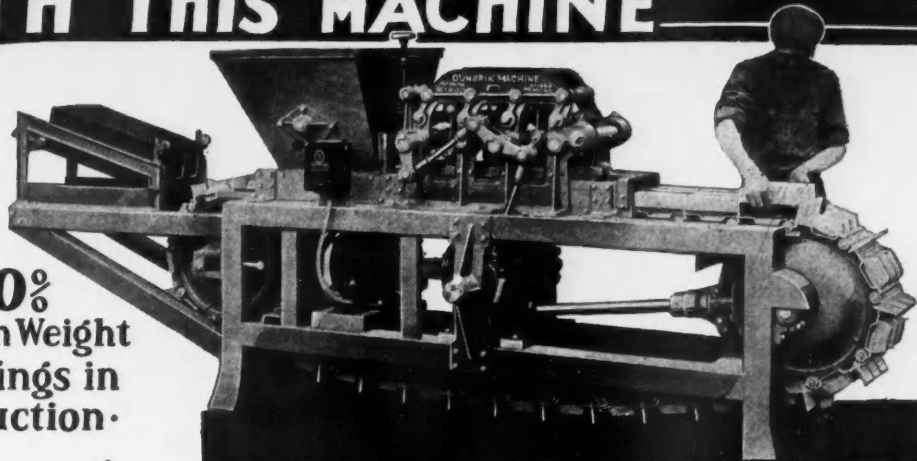
(This Department Continued on Page 138)

TO-DAY'S GREATEST MANUFACTURING OPPORTUNITY

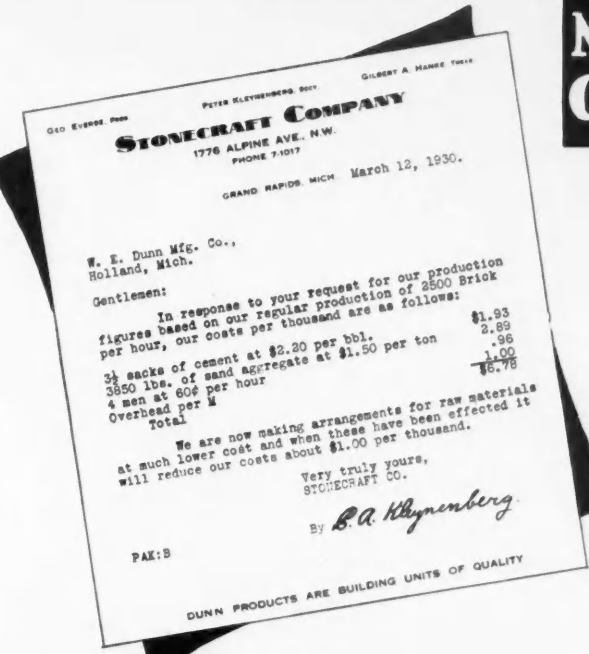
Brick Now Produced For
 Less Than \$7⁰⁰ Per Thousand
WITH THIS MACHINE



20%
 Lighter in Weight
 Big Savings in
 Construction.



**Modest Capital Starts You
 Capacity 24,000 Per Day**



YOU CAN DOMINATE THE BRICK MARKET

THE Dunbrik line-production machine shatters all previously-conceived ideas as to costs, speed and efficiency in brick making. Think of the production of standard, superior brick—the stable building unit of all time,—using 20% less material, and,—at the amazing speed of 24,000 per day.

LIGHTER WEIGHT — BIGGER SAVINGS

AS revolutionary as this machine is in production, so is the product in improved design. Each brick has a recess, or "frog"—saves 20 barrels of cement out of a hundred, with corresponding saving in sand. Reduces freight and trucking costs. Handles easier, lays faster, and makes a stronger bond. Truly, a superior product.

BIG PROFIT OPPORTUNITY

VISUALIZE the money-making opportunity in a commodity market with a better product at lower cost. You can undersell and dominate the brick industry in your territory. Equipment sold on a "pay-as-you-produce" plan. Modest initial investment enables you to start.

RETURN COUPON

W. E. DUNN MFG. CO., 450 W. 23rd St., Holland, Mich.

I want to weigh the possibilities of a stable and profitable enterprise for dominating the brick business in this locality with one of your new DUNBRIK low production-cost plants.

Please reserve.....territory for investigation and send full details covering operation, earning capacity and cost of establishing this industry for

Name.....

Address.....

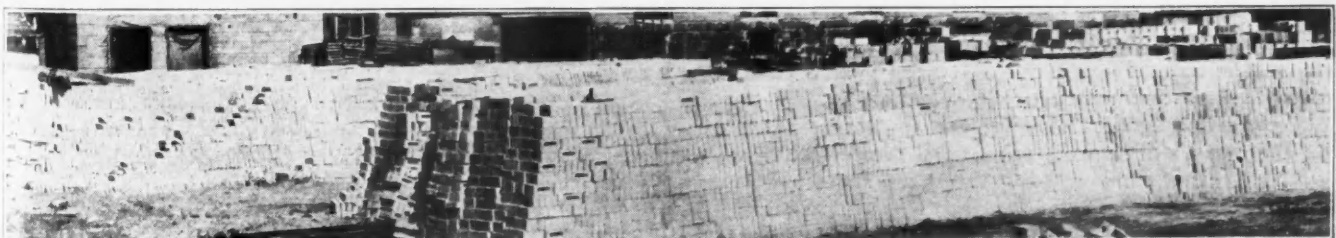


FROM A DUNBRIK MANUFACTURER

THE above letter speaks for itself. Brick actually produced for less than \$7.00 per M and the bottom hasn't been reached yet. Come to Holland and see the Stonecraft Company plant operate. Then let this automatic brick maker bring the same satisfaction and independence to you.

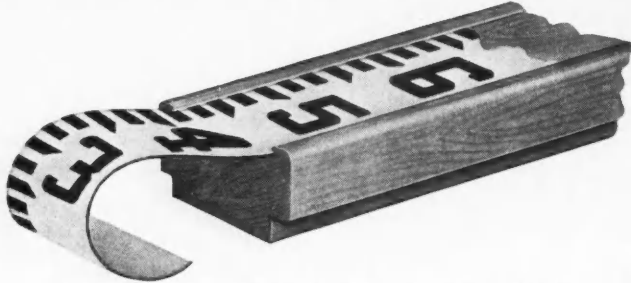
EXCLUSIVE FRANCHISE PROTECTS YOU

NO competition. Write or wire for territorial reservation. Get all the facts today about this business, and this machine—a marvel in engineering skill.



Improve Level Rods

AN improved system of marking the number and gradations on leveling rods has recently been applied to the product of one of the well known manufacturers of instruments. In the new rods the gradations and numbers are applied directly upon a durable, corrosion-resisting, metal strip with a permanent, white enameled face. This strip is securely attached to the rod but is readily replaceable.



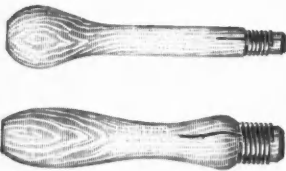
Markings on an Easily Replaceable Metal Strip.

The gradations are sharply defined in black. The numerals are in red for the main divisions, such as feet, and in black for the subdivisions. The markings of the metal strip will outlast those on the all-wood rod, it is stated, and the strip can be readily replaced if it ultimately shows wear. This materially lengthens the useful life of the rod as, in the past, all-wood rods have frequently gone to scrap heap simply because the gradations and numerals have become all but invisible and their renovation was expensive and not always satisfactory.

The entire metal strip is graduated, numbered and finished before it is attached to the rod, which merely serves as a support. As a result, the gradations are not affected by any vagaries of the wood itself. The advantages of these new rods are: clearer, more legible markings; greater life for the markings; and greater ease and lower cost of replacement of the scale.

Holds File Like a Vise

THE new type of file handle shown in the illustration has recently been placed on the market. Its outstanding features are a coiled-spring ferrule and the slots in the end of the handle. They provide for expansion and contraction. Tangs of various thicknesses can be inserted and removed easily and the coiled spring holds them continually in a vice-like grip. These handles are made from selected hardwood, in five different sizes, for files ranging from three to 14 inches.

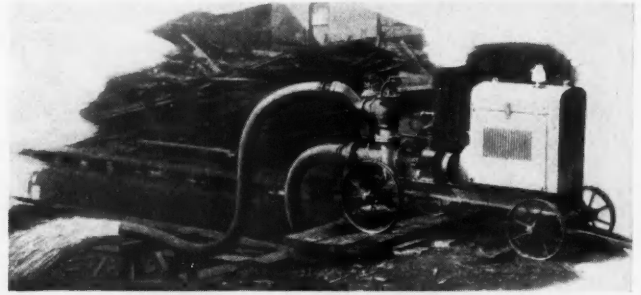


They Hold the File Like a Vise.

A New Self-Priming Pump

MUCH interesting development and research work has centered around a new, self-priming centrifugal pump that recently has been placed on the market. This new pump, it is said, takes practically all the air out of the chambers and maintains its prime. The new pump is an addition to a line of pumps already manufactured by this company as a part of a line of construction equipment including concrete mixers, pavers, saw rigs, central mixing plants, etc.

No matter whether the depth of a hole is 27 inches or 27 feet, and regardless of what the amount of water may be, the pump will keep its prime with greater lifting capacity. On many pumping jobs there are times when very little water is in the hole, in fact barely a cupful. This



This Pump Will Not Lose Its Prime When the End of the Hose Is Uncovered.

may be the case at one minute and the next minute water may rush in and fill up the excavation. The pump used on such a job must be ready to take care of the increase of water without any attention. Ordinary pumps lose their prime when the water barely covers the end of the hose or pipe. Then when the flow increases they have to be primed before they can resume pumping.

The new, self-priming pump requires no attention even though the water does go below the end of the hose. The vacuum is maintained automatically. Just as soon as the water begins to drop the vacuum pump begins to exhaust the air and pick up the prime again. Ordinarily there are air pockets at the hub of the centrifugal vanes. In the new pump it is possible to remove these air pockets before they can be sealed and not to interfere with the pump's prime, or its lifting capacity.

Vacuum Floor Mopper

THE illustration shows an electric vacuum mopper which consists of a squeegee and a motor driven water absorber designed to take up from the floor the dirt and water scrubbed loose. It greatly reduces the time required for this work by ordinary mopping and reduces the cost of labor.

This unit is especially adapted for use in congested areas and small floor spaces. It is operated just like the common household vacuum sweeper. As it is pushed across the floor, an 18-inch wide rubber squeegee pushes the dirty water ahead of it and the vacuum created by the 1/7 h.p. electric motor picks up this water into a 2½ gallon dirty water tank.



Is as Easily Operated as a Vacuum Cleaner in Cleaning Floors.

The machine is equipped with 50 feet of 18-gauge, rubber-covered, electric cable, carried on two hooks mounted on the handle. The complete unit weighs 24 pounds and this weight is supported by two, 2¾-inch, double disc, rubber tired wheels that make operation easy.

(This Department Continued on Page 140)

The New Dahlquist Turbo-Aquatherm

(U. S. Patent No. 1,762,215 June 10, 1930)

Experts have long recognized that the ordinary hot water boiler serves as an efficient sediment trap. This is due to the fact that it contains a relatively large volume of quiet water and hence any sediment or insoluble matter which normally remains in suspension in the water lines gradually sinks to the bottom of the boiler.

This continual accumulation of sediment is one of the greatest enemies of the efficient satisfactory operation of the hot water boiler. If allowed to accumulate long enough it will cause surges of rusty muddy water in the hot water line and in the case of underfired or automatic storage units, it forms an insulating blanket on the bottom between the water and the metal itself which is the greatest cause of burnouts. Furthermore hot water accumulated in the ordinary boiler becomes stagnant and unsuitable for domestic purposes.

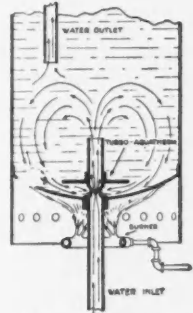
THE TURBO-AQUATHERM

(U. S. Patent No. 1,762,215 June 10, 1930)

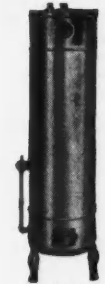
In order to absolutely prevent the accumulation of sediment which is the greatest enemy of the efficiency and life of hot water boilers, Theodore W. Dahlquist has invented a device called the TURBO-AQUATHERM which takes advantage of the velocity of the incoming cold water to create a suction and whirl which constantly sweep and scour the bottom of the boiler, carrying every particle of foreign matter out of the system. No sediment can ever accumulate in the Dahlquist TURBO-AQUATHERM Copper Boiler and the water is always as fresh as that in the cold water lines and may be safely used for cooking as well as for other household purposes. Furthermore the danger of burnouts in automatic storage and underfired systems is eliminated and the thermal efficiency of the boiler is greatly increased. The accompanying sketch shows clearly the action of the TURBO-AQUATHERM which may be had with little additional cost on all Dahlquist range boilers and automatic storage systems.

Write now for full particulars regarding this revolutionary improvement in hot water boilers.

Accompanying sketch shows: "A" the inferior steel bottom boiler without provision for withdrawing sediment. "B" ordinary copper range boiler from which sediment can be occasionally flushed out. "C" Dahlquist TURBO-AQUATHERM always free from sediment.



Arrows show action of water when drawn through TURBO-AQUATHERM, scouring bottom of boiler and preventing any accumulation of sediment.



Gas Under-Fire



Gas Slide-Arm



Automatic Electric

Dahlquist Mfg. Co.

30 West 3rd Street

So. Boston, Mass., U. S. A.

Ask for full information regarding the Dahlquist complete line of copper range boilers. Copper, gas, electric and oil combination. Copper, automatic storage systems and large industrial units for all purposes.

NOW-IS THE TIME

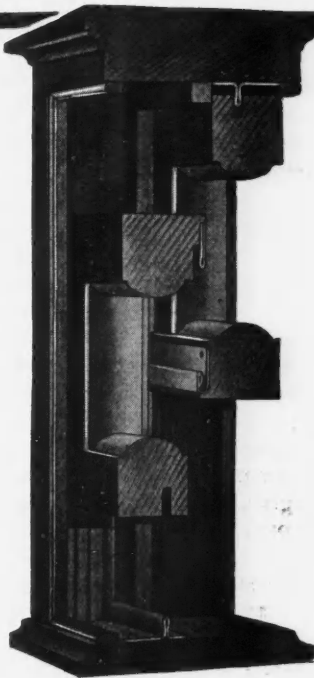
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All materials guaranteed. An "Accurate" strip for every opening.

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Let us send you complete information and samples. We will help you get started in this profitable business. Fill out the coupon and Mail today.

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Questions of Law Clearly Answered

Legal Rulings of Interest to All Builders

By M. L. HAYWARD

An Invalid Settlement

A BUILDING employee fell from a building, bounced off the sidewalk under a passing truck, and sustained a broken leg and other minor injuries.

When the employee came out of the hospital he was approached by the contractor for whom he had been working at the time of the accident.

"How much do you want for damages?" the contractor demanded.

"For \$2,000, paid in a lump sum, I'll release you from all claims and demands," the employee agreed.

The contractor paid the amount agreed upon, took a release from the employee. But, according to the Illinois Workmen's Compensation Act, lump sum settlements between employees and employers were not valid unless approved by the Industrial Commission; so later on the employee applied to the Commission, and got an award of \$3,000.

"Of course, I'll be given credit for the \$2,000 that I've already paid," the contractor suggested.

"According to law, the lump sum settlement without the approval of the Commission was illegal, and the courts will not allow you the benefit of an illegal contract," the employee's lawyer contended, and the Illinois Supreme Court upheld this contention in the case reported in 127 N. E. 703.

"While this contract may have been entered into in perfect good faith, yet the purpose of the Compensation Act is, as we have said, that the economic loss caused by accidents should not be permitted to rest in any way upon the public, but that it should be absorbed by the industry in which the accident occurs, and, carrying out that purpose all settlements of this character were by the law placed under the jurisdiction of the Industrial Commission. No lump sum settlement is authorized to be made in any other way, except under the jurisdiction of the Commission, and any contract that makes such a settlement otherwise is an illegal contract, and this court will not aid in the enforcement thereof, but will leave the parties as it finds them," said the court.

A Question of Interpretation

AN Arkansas contractor had erected a building for an Arkansas owner, the contractor bought materials from an Arkansas dealer, and the dealer filed a lien against the building.

"Please do not file suit on your lien, but give me more time, and I will pay the same," the owner wrote to the dealer, the dealer agreed to give, and did give, the additional time requested, the owner failed to pay, and the dealer filed suit.

"The lien is void, as it was not filed within the statutory period," the owner claimed, when the case came to trial.

"We'll admit that, for the sake of argument, but I am entitled to a judgment against the owner on his letter agreeing to pay the lien. In other words, as far as the

owner is concerned, I am relying on the letter, and not on the lien," the dealer pointed out.

Then the owner was heard from.

"It is true I agreed to pay the lien, but all my letter means is that I will pay the lien, as far as the same is valid, and, the entire lien being void, I am under no liability, the owner argued, and the Arkansas Supreme Court ruled in his favor in 222 S. W. 365.

"We are unable to construe the language of the letter into an obligation on the part of the owner to pay a void lien which does not imperil his property, or to pay the debt of another which does not hazard his property," the Court said.

An Omitted Word and a Law Suit

HOW the omission of a single word in the endorsement of a promissory note led to a law suit may be found in the official records reported in the case of First State Bank vs. Cox, in 213 N. W., 290. The evidence showed that a debtor gave a note payable to the "West Wisconsin Contracting Company." The president of the company endorsed the note "Wisconsin Contracting Company," and signed it as president. A Wisconsin bank took the note for value and sued the maker.

"You cannot be a holder in due course, for the endorsement omitted part of the proper title of the payee company," the maker contended, but the Wisconsin Supreme Court, in the case referred to, ruled in favor of the bank.

"We hold the endorsement, having, in fact, been made by the payee was a valid endorsement, though there was a misdesignation," the court reasoned.

Was the Policy Delivered?

THE builder had insured his stock in the Pyro Insurance Company, at least the premium had been paid, the application accepted, and the company forwarded the policy to the local agent, with instructions to deliver to the builder.

The agent took the policy out of the post office, decided to deliver it on his way to his own office, but the fire engine passed him on the way, and when he arrived at the builder's place of business he found that the fire was beyond control.

"It's a lucky thing the policy did not arrive an hour earlier," the agent assured himself and returned the policy to the company. The builder sued, and the company defended on the ground that there had been no legal delivery of the policy.

"When you forwarded the policy to your agent to deliver to me, and there was nothing for me to do except to receive the policy, the agent held the policy for me, and there was a complete and binding contract," the builder contended.

This point came before the Massachusetts Supreme Court in the case of Wheeler vs. Insurance Company, 131 Mass. 1, where the court ruled in the builder's favor, and there are Michigan, Nebraska, New Hampshire, New Jersey and Ohio rulings to the same effect.

You can't do good work without **MONARCH MACHINES!**

You can't get expert results from any machine unless it is expertly designed. Long experience in building dependable woodworking machinery is in back of these new Monarchs. They will turn out more work in a given time than any other machines made . . . and at less cost. Made to stand up under hard use . . . to deliver year after year of satisfactory service. Write for literature and prices.

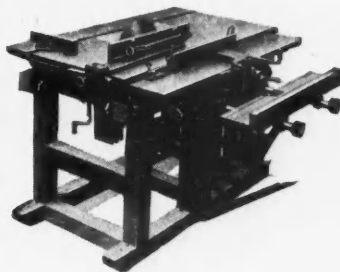
Drum and Disc Sander



A completely adjustable ball-bearing machine that holds records for the speed with which it works and the low cost of operation. Requires minimum attention and power. Write for prices today.

Variety Woodworker

The famous woodworking machine that four men can use at once . . . and do the work of four machines . . . cut off and rip saw with boring attachment, mortiser and jointer. Send for free booklet No. 82.



20" Band Saw



You can depend on this saw to lower your costs. Handles the hardest jobs swiftly and efficiently. Light socket operation. Guaranteed to be entirely satisfactory. Write today for bulletin.

American Saw Mill Machinery Co.
Makers of Woodworking and Saw Mill Machinery
60 Main St. Hackettstown, N. J.

Pour yourself a fortune



There is a big opportunity for contractors skilled in the handling of cement and concrete construction to specialize in waterproofing with Sika*.

Sika* is a liquid which makes all Portland cement mixtures set more firmly and more quickly and renders them absolutely waterproof. Also it strengthens the mix by many times, utterly unlike any waterproofing compound ever sold on the American market. It requires no special skill to use, invariably resulting in a perfect job. It has been used for 20 years in Europe without a single failure.

We are looking for aggressive cement contractors with good reputations in their communities and the financial responsibility to stand behind their work. For one such business man in each community we have a proposition with almost unlimited possibilities for profit. We invite correspondence, which will be given prompt and thorough attention. Address your reply to our New York office.

American Sika* Corporation

West 45th Street New York

418 North State St.
Chicago, Illinois

Sika Canada Limited
819 Pacific Building
Vancouver, B. C.
Canada

Sika Canada Limited
1198 University St.,
Montreal, P. Q.,
Canada



WATERPROOFS UNCONDITIONALLY

*Pronounced See-ka; the Sanskrit word for "Dry."

Recommendations to White House Conference

(Continued from page 104)

- nationally organized general contractors, subcontractors, material men, financial institutions and others.
2. The national interchange of credit information through the agency of the Bureau of Contract Information, Inc. (Washington, D. C.)
 3. National promotion of uniformly operating credit bureaus through the agency of the recently organized Allied Construction Industries of America.

The program which has been designed and consistently supported by these organizations provides for:

1. A drawing up of standard credit terms between groups of buyers and sellers in individual trades.
2. The establishment in these terms of definite dates when unpaid accounts will be deemed delinquent and when further credit should be extended only by financial institutions.
3. The forwarding by each selling agency of a list of all delinquent accounts to the credit bureau once each month.
4. The compilation and distribution of a consolidated list of all delinquent accounts as reported to the bureau.
5. The creation of arbitration committees empowered to extend additional credit beyond the terms for brief periods when investigation of individual circumstances warrant such extension.

The majority of unjustifiable liens that are filed against owners are caused by the existence of conditions which encourage unscrupulous or irresponsible practices, which factor would be removed through the establishment of a sound appraisal system, a sound system for second mortgage financing, a sound system for discounting and rediscounting construction paper and by the carrying out of the present program for the creation of a sound credit structure. All these programs would be further strengthened through the revision of state lien acts in conformity with the principles worked out by the Standard State Mechanics Lien Act Committee of the Department of Commerce.

"We Don't Tie Up Our Own Working Capital"

(Continued from page 79)

The contingent liability arises from the possible failure of one or more of the home owners in the group to keep up his monthly payments. Under this plan of financing, the purchasers of the certificates become the actual owners of the property in default and, as such, assume all contingent liability, none remaining with the builder.

One of the desirable adjuncts of our land contract certificate business is that we use them to put a premium on additional home building. The Miller-Storm Company advertises that it will accept, from holders of certificates residing in Detroit, certificates of \$1,000 or less and give a bonus of ten per cent when turned in on the building of a new home or the purchase of a home already constructed by the company. This is an attractive feature, especially to the young couples who wish to begin saving toward the purchase of a home, but who do not care to purchase a vacant piece of property in a location that may not be to their liking at the time they are ready to build. They are encouraged to put their savings regularly into these land contract certificates and so get the benefit of a high interest return until they have enough accumulated either to buy or to build.

No Vacation This Winter

(Continued from page 62)

although basically, there are just as many difficulties involved in its erection in cold weather as in the use of other materials. Steel work is fabricated in the factory and delivered to the job, ready for use. Hoisting equipment and air-driven tools used in riveting operate at full efficiency regardless of weather conditions; and steel workers have been trained to carry on in the coldest climates. Mortar has been subjected to various tests to determine proportions and methods that will give best results in cold weather. They have shown conclusively that, where water and material are properly warmed and the mortar well protected after being placed, good results are certain. On the basis of tests conducted by the Engineering Society of Wisconsin, it was proved that the most satisfactory mortar for cold weather work is a lime-cement-sand combination commonly called a 1-2-9 mix. This calls for one cubic foot of portland cement, two cubic feet of lime and nine cubic feet of sand. This gave a mix that had shear, tensile and compressive strength as well as spreading power and workability.

Volumes have been written on construction methods for cold weather and all of the suggestions we have given regarding materials may be amplified hundreds of times by studying the text books available, as well as instructions and technical publicity of the various manufacturers of these materials.

Readers contemplating winter work who desire additional information on any phase of the subject are urged to get in touch with AMERICAN BUILDER AND BUILDING AGE.

The Relay Motors Corporation, Lima, Ohio, has now issued the booklet "Trucking Costs—and How to Lower Them" in permanent binding. This book, compiled by L. A. Graham, contains charts and diagrams which analyze transportation costs, and should be helpful to the motor truck owner in decreasing his transportation costs.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, of AMERICAN BUILDER, published monthly at Chicago, Ill., for October 1, 1930. State of New York, County of New York, ss.

Before me, a Notary Public in and for the State and county aforesaid, personally appeared Robert H. Morris, who, having been duly sworn according to law, deposes and says that he is the Business Manager of the AMERICAN BUILDER, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management and (if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher—AMERICAN BUILDER Publishing Corp., 105 W. Adams St., Chicago, Ill.

Editor—Bernard L. Johnson, 105 W. Adams St., Chicago, Ill.

Managing Editor—Joseph B. Mason, 105 W. Adams St., Chicago, Ill.

Business Manager—Robert H. Morris, 105 W. Adams St., Chicago, Ill.

2. That the owners are: American Builder Publishing Corporation and Simmons-Boardman Publishing Corporation, both of 30 Church St., New York, N. Y. Stockholders of 1 per cent or more of the total amount of stock are: E. A. Simmons, 30 Church Street, New York, N. Y.; I. R. Simmons, 1625 Dimas Ave., Brooklyn, N. Y.; P. A. Lee, Hopatcong, N. J.; H. Anderson, 246 Rugby Road, Brooklyn, N. Y.; E. G. Wright, 398 N. Walnut St., E. Orange, N. J.; S. O. Dunn, 105 West Adams St., Chicago, Ill.; C. B. Dunn, 3500 Sheridan Boul., Chicago, Ill.; B. L. Johnson, 105 West Adams St., Chicago, Ill.; W. A. Radford, 407 So. Dearborn St., Chicago, Ill.; L. E. Sherman, 375 Sheridan Road, Winnetka, Ill.; Mae E. Howson, 105 W. Adams St., Chicago, Ill.; Frederick H. Thompson, Terminal Tower, Cleveland, O.; Spencer Trask & Company, 35 Broad St., N. Y. Partners of Spencer Trask & Company are: E. M. Bulkley, Acosta Nichols, Cecil Barret, J. Graham Parsons, C. Everett Bacon, William R. Bassett, F. Malbone Rildiget, Percival Gilbert, Harry S. Allen, Harry A. Minton, William Beckers, W. V. C. Buxton, all of 25 Broad St., New York, N. Y.; Arthur H. Gilbert, 308 La Salle St., Chicago, Ill.; S. Wallace Roe, 253 State St., Albany, N. Y.; William E. Stanwood, 50 Congress St., Boston, Mass.; John Nightingale, 50 Congress St., Boston, Mass.

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ROBERT H. MORRIS

Business Manager.

Sworn to and subscribed before me this 2nd day of October, 1930.

[Seal] H. D. NELSON

(My commission expires March 30, 1931.)