SEPTEMBER 1915

AMERICAN CARPENTER AND BUILDER

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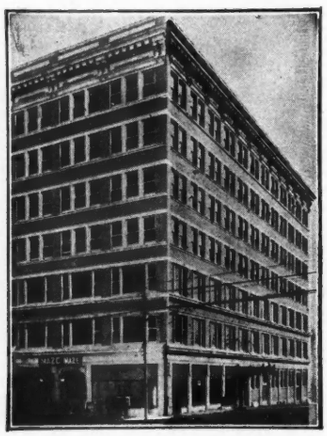

Kling Building, Kansas City, Mo.
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Sidewalks Equipped with Berger's "Raydiant" Sidewalk Lights

Makes it possible to erect fireproof buildings of any kind or size, in any climate, regardless of weather conditions, more quickly than wood and more economically than reinforced concrete.

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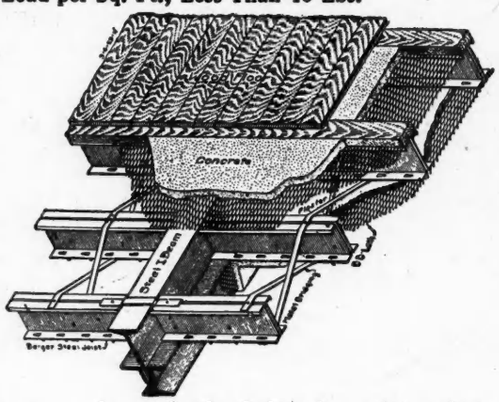
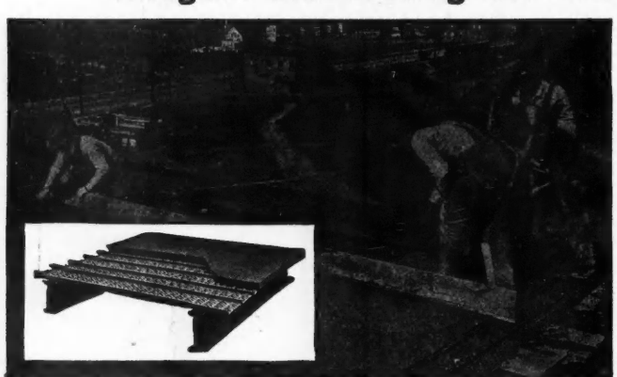


This is Standard Construction and may be finished with wood (as shown here), concrete, tile, or any finish wearing surface desired.

The recent Official Practical Fire, Load and Water Test conclusively proved Berger's Metal Lumber absolutely fireproof and, therefore, the ideal material for constructing non-combustible buildings. *There never has been a failure where Berger's Metal Lumber has been used.*

See Sweet's, pages 278-285. Our Special Metal Lumber Construction Catalog L. A. B. contains information of value to every architect, engineer, contractor and builder. *Why not send for a copy today?*

Berger's Reinforcing and Metal Building Materials



Roofing the Taylor-Boggis Foundry, Cleveland, O.
Architects: The Cleveland Engineering Co.
Contractors: John Gill & Sons. *Inset: Berger's Rib-Trus*

Berger's Rib-Trus Reinforcing and Furring Plate

Especially adapted for Reinforcing Thin Concrete Slabs for Roofs, Floors, Sidewalls and Partitions

Expanded *vertically* (not laterally). This not only saves you labor and material, but prevents, to a great extent, the soft concrete from dripping through on men, materials and machinery on the floor below. Ribs running throughout the length of each sheet on 6" centers stiffen the plate and support it while the soft concrete is being applied. No supports are required for ordinary spans. The under-side of plates can be economically plastered.

150,000 ft. of Berger's Toncan Metal Rib-Trus were used in constructing the Taylor-Boggis Foundry. The picture shows workmen applying the roof on one of the buildings.

We also make: *Multiplex Steel Plates*, for heavy service floor construction; *Ferro-Lithic Reinforcing Plates*, for floors, sidings and roofs; *Expanded Metal Lath*, *Pressed Steel Cores*, *Corner Beads*, etc. ***Write for information.***

See Sweet's, pages 210 and 220-224. Mention the products that interest you and *and write for our Special Catalog F. A. B.*

The Berger Mfg. Co., Canton, Ohio

Address Our Nearest Branch for Best Service:

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An Invitation To Our Friends

WE would like to think that all of our readers feel as friendly and well acquainted with us—in spite of the fact of never having actually seen us—as a contractor from Northern Indiana, who was in to see us the other day.

It was his first visit, but he said he felt just as much at home, as well acquainted and comfortable as an old shoe. He was in the city to get figures on lumber and mill work for a big theater job, and as he knew no one in town, he said he came right straight to the AMERICAN CARPENTER AND BUILDER Office, as he felt he knew *us* anyway—had been a subscriber for several years—and was sure we would give him directions for reaching the best concerns to bid on the material he would want.

We sat down and had a good old-fashioned visit. It was like talking with an old friend, and a real friend. Heard all about the dwelling house he had been building for himself from one of our plans. Heard about the power wood working machine he had "invented," and built for himself. Heard all about his family, his fordcar and his 10-acre farm. In fact, we had a good talk lasting half the morning. Afterwards Mr. Radford said to some of us:

"I wish we could get to know every one of our subscribers as well as that.—How it would help us to make the magazine better and more interesting."

Send Us Some Pictures of Your Work

The next best thing to having you actually come to our Editorial Rooms, and get personally acquainted is to send us a long letter and put in some snap-shots of some of the work you have been doing this past season. We would like to see what you have been doing, every one of you; and your fellow builders in other parts of the country will be interested to see how you are doing it, too.

A Bigger Correspondence Dept.

Beginning next month, we are setting aside several extra pages for the Correspondence Department. We want to have plenty of room to illustrate the work our readers have been doing, to narrate their interesting building experiences and helpful discoveries, and to answer fully all building problems of every sort that are put up to us.

We want you to feel that the AMERICAN CARPENTER AND BUILDER is more than ever your own magazine, to give you the features that you like best, and find most helpful. The correspondence columns in particular belong to you. We want you to feel perfectly at home, and we invite you to give us the benefit of your advice and assistance in editing your publication.

When in Doubt Ask Us

In return for this co-operation, and as a regular part of our service to our readers, we ask you to put up to us your building problems and questions. Our Expert Service Manager is a glutton for work; and you will find his advice first class. He and that mathematical shark, the "Boss Carpenter," are one and the same; so you can't stump him on any strength of material or safe designing questions. Also he knows the very best places to obtain all kinds of contractors' supplies or building materials. Try him.

Winter Work and Extra Profits

Do not fail to take note of the big Winter Work Competition announced on page 39. A large number of valuable prizes will be awarded; but more than that, it is the interchange of good ideas that will be most valuable to you and to your builders. There will be room for all. So begin right now to make some sketches, or take some pictures to send in with a letter about your dealings with this Winter Work proposition.

Very sincerely your friend,
Editor AMERICAN CARPENTER AND BUILDER.

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PROTECTION FOR OUR READERS
The publishers of the American Carpenter and Builder will not knowingly publish any advertisement of a misleading character nor accept advertising from any individual, firm or company whose business methods are open to question.
We often receive inquiries from readers who desire information about concerns that formerly used the advertising pages of the American Carpenter and Builder, but are no longer doing so. They want to know if these former advertisers are still in business, if they can send them orders with the assurance that they will be filled, and a variety of other questions.
The American Carpenter and Builder will use every legitimate means to safeguard the interests of its readers and to protect them from fraudulent or unreliable concerns. Where the slightest doubt exists our readers should write the publishers for information. It may save them money, time and worry.
In all cases in writing to advertisers say: "I saw your advertisement in the American Carpenter and Builder.

VOL. XIX — SEPTEMBER, 1915. — No. 6

Silo Building Opportunity

BACKWARD SEASON FOR CORN BRINGS URGENT NEED FOR ADDITIONAL SILOS

WE hardly need to mention that this has been an unusual summer. There never was such weather like it before, says the weather bureau—which makes it unanimous. We will all agree to that. Rainy weather,—hardly any sunshine,—and then some more rain.

It hasn't been just the ideal growing weather for corn; yet nevertheless, the Department of Agriculture survey predicts a very heavy crop. The danger is that a considerable part will not be able to mature before frost.

MORE SILOS should be the answer.

Here is an opportunity for builders in every locality to do a patriotic service, by helping the farmers to get the very most out of their corn crop this year. At the same time this will mean some pretty nice silo building contracts. Ordinarily this would be too late in the season to start to build additional silos; but the backward season this year makes this just the time to get busy.

There is hardly a farmer that has enough silo space. Right now the slogan should be, "ANOTHER Silo for EVERY Farm." Another silo will save that piece of corn that started late, and hasn't done so well. An extra silo will practically double the feeding value from *any* piece of corn, no matter how good. Last year only 8 per cent of the total corn acreage was cut for silos, 11 per cent cut green for feed, and 81 per cent matured for the grain. This year the silage per cent must be very much greater.

The great value of silo to the farmer has been proved, and is now undisputed. Go around among the farmers in your community right now, and arrange to rush up extra silos so as to take care of the huge corn crop, much of which cannot mature before frost. A good stave silo costs very little—almost pays for

itself the first year—and can be put up in jig time. It costs no more than a pit silo, and is better in every way. Some of the farmers may have a notion of digging temporary pit silos. Discourage them, as they are dangerous and unsatisfactory. It is impossible to ventilate pit silos. Farmers are killed by suffocation in them every year. A good stave silo is the thing for quick work, or if there is time, suggest a concrete silo, or one of vitrified clay.

It matters little what you build them of, *get out and build silos NOW.*

✣

Pick-Ups on the Job

By H. J. Blacklidge

SOME time ago I was loafing around a job waiting for the contractor to show up so that I could ask him for a job, and I nearly "had monkeys" watching two fellows trying to plumb a corner stud with a little fifteen cent plumb bob and line. Now there are lots of places where a bob beats a plumb and straight edge all hollow. But setting studs in a California breeze is not one of the places. Actually it took those fellows nearly five minutes to plumb that one stud! A seven or eight foot straight edge and level would have done it in less than one minute. But be sure you have a little block tacked to the face of the straight edge at each end to overcome irregularities in the stud surface.

LONG ago I determined that when I started contracting I would have some kind of a stand for my mitre box. So when Hayes & Blacklidge began bungalow building we made a mitre box stand right along with the ladders and saw horses. It is about three feet high, the top is a good solid two by eight pine plank six feet long. The legs are "applied" exactly the same as the legs on a saw horse, only more so—that is, they slant side-ways and length-ways. An X brace across both ends, and across the back makes it rigid as the bench. Then we built up each way from the box so as to have a level bed to work on the full length of the stand. One man can put a two by four in the box and cut it without having anyone hold one end, and if the scantling is sixteen feet long it will not split off when it is nearly cut through. Now I am never troubled with having some one come along and want to cut a 'steen foot moulding on the bench when another is working at it. Anybody can use the mitre box and never disturb anyone else.

AND while speaking of mitre boxes, have you ever seen a man go up a ladder, mark a piece, come down and cut it off? Then go up again and nail it in place? And then repeat? Or one man mark the piece, hand it down to another, and then stand and wait for it to be cut? Oh, Lord! When *will* contractors and foremen ever learn to make the staging wide enough so that a man can WORK on it? Why, it saves one man's wages for a day or two just on one job to have a good solid, wide staging. However, there *are* times when one has not the material for a good staging, or has some other good reason for not having one. In that case we always insist on our men using a light wooden box that can be handled in almost any position or—if the work is not too fine—use a little Acme Handy Mitre Box, which, by the way, is as handy a little article as a man can carry in his box. There are dozens of places where it is "just the ticket."

ANOTHER time-saver, thumb-saver, and swear-saver, is a rule gauge. Get one of the kind that clips on almost automatically, no screws or cams to fool with or get out of order. It will save its cost about seven times the first week you own it if you have much ripping to do. Clips onto the rule in a second, can be moved to exact distance desired, and then you can scribe one or forty boards without any further thought. Using the thumb nail is all very well until you have filled it full of slivers a few times—then you will say Amen to the rule gauge idea.

WHEN driving a good many small nails in hard-wood it is a good idea to have a small hole drilled in your hammer handle end and filled with tallow or beeswax. Jab a nail into the wax and it will go into oak like pine.

BY all means have one *coarse* saw. Give it plenty of hook and not too much set, just enough to run easy. Make it a five-point anyway, and even four-point is not too big if kept well sharpened. Then saw large stuff (2 by 8, 10, 12, etc.) alongside of a man using his regular seven-point for awhile and see what surprises await you. Many an old timer will tell you he can cut as fast with his eight-point as you with your five. Just get him to go one side of the fence and you go the other and keep at it for a couple of hours! You will get his goat!

HANDY Saw Oiler. Tack a piece of bacon rind to a small block, setting the tacks well. Then squirt a little oil on it. You can oil a saw in a moment with it—likewise a bit or chisel, or planes. It saves oil, saves time and puts the oil just where you want it.

KEEP a box of double-pointed rivets in your chest and when your hammer loop breaks away, rivet it. It will *stay* thereafter. And it sure looks a heap better than to see a nail stuck through it, and you will find just 702 other uses for them once you get the habit.

ONE of the best time savers I have got hold of is the 3-foot rule. I was wedded to a 2-footer for about twelve years, but—well, I got converted finally and pretty thoroughly, too. Just to convince yourself, go out and get somebody to measure off 40 or 50 or 100 feet with you—one of you using a 2-foot rule and the other a "folding yardstick." You can lay off door openings with one stroke, as it were. And there are literally hundreds of places where it saves two measurements as compared with the 2-foot. Once you get used to the different "lay" of the figures on it you will never go back to the smaller one.

Announcement of Fourth Annual Prize Contest

To keep the  coming in during the winter months

Closing Date October 10th

Winning Letters to Appear in November "A. C. & B."

We Want 100 (or more) Answers to This Question of Moment to Every Carpenter and Builder:

"How Can I Turn My Spare Time to Profit During the Winter Season?"

There are hundreds of ways to do it. Enterprising readers of the "American Carpenter and Builder" are solving this problem successfully every year, adding many a neat sum to their winter income. We want to hear from these now—for the benefit of other builders.

Our big Winter-Work Contest has become an annual institution. Hundreds of our subscribers come forward every fall with frank, helpful letters.

WE want all of these and others, too, to write us now. Here's your chance to do a good turn—to help some fellow workman—and at the same time to win a nice prize.

Are you able to keep busy right through the cold weather? Yes? Then how do you manage it? Many of your brother builders are not so lucky; they have not been able to get just the right combination, and often find their supply of hard, round, iron dollars cut down just when they are needed most.

For the benefit of these—to give some suggestions that might help other carpenters and builders at this season of the year—won't you kindly write us a letter telling what you have found out about developing and handling spare-time sidelines?

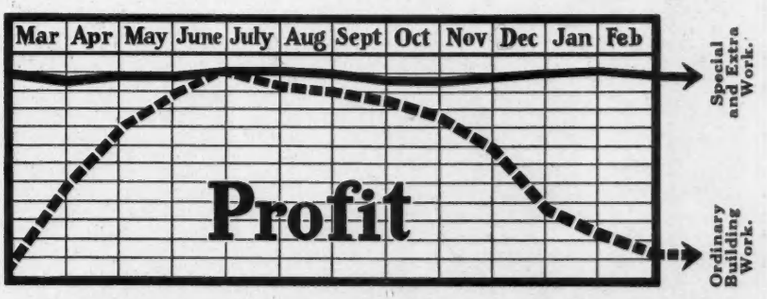
We want a flood of good, practical letters from practical men. Don't mind if they aren't models of rhetorical composition; if they contain the Real Goods, that's all we care. Carpenters and builders want to know how they can keep busy all the time—winters same as summers; and if you will write out simply and clearly some of your own experiences with spare-time work and winter work, you will be helping some other builder and at the same time have the chance of winning a nice Prize for yourself.

In order to encourage a full and free discussion and interchange of ideas, we offer a number of $10.00 First Prizes and $3.00 Second Prizes for the most helpful and sensible letters on winter work for Carpenters and Builders. These prizes will be paid in goods selected from our advertising pages. If you have been up against the part-time problem and have mastered it, won't you write and tell just how you did it?

NO able bodied man can afford to loaf around even part time. He owes it to his family and to himself to turn every hour to account. Some builders have **snug woodworking shops** where all kinds of **cabinet woodwork** can be made. Some build **handicraft or Mission furniture** and find it has a ready sale. Some **build boats** in the winter time—row boats, canoes, and motor boats—and have no trouble selling all they can make, at a good **profit.** Some do a regular planing mill business during the winter, making up in advance, for future use, all sorts of standard frames, sash, cabinets, etc.

Some carpenters and builders (both young and old) welcome every spare moment and these long winter nights as just the time to **read** and **study** practical building and architectural books and so fit themselves for better work and bigger earnings. Some employ any spare time they may have in the winter season getting around among the people and **talking up new building projects** for spring; drawing up plans, showing plan books and building magazines.—and so investing this time to their **future profit.**

These ways and dozens of others are good. What is your way? and what have been your experiences?

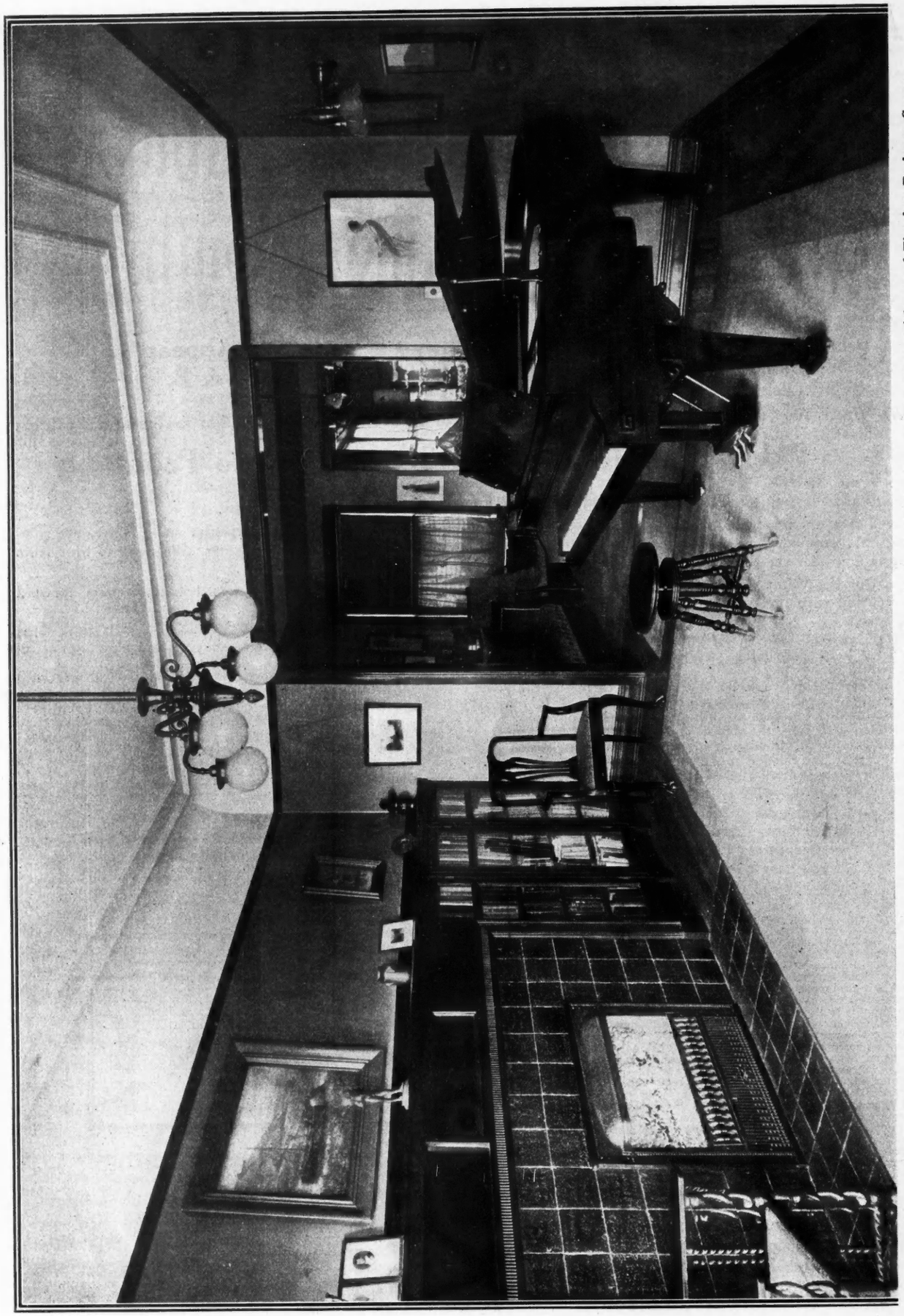


Can You Keep Your Earnings Up the Year Around?

There will be as many prizes as there are different branches of the subject discussed. Write a good, helpful, practical letter and we will do our part toward keeping the money "coming in during the winter months."

Prepare your contributions AT ONCE. They must reach this office at least by October 10th to appear in the NOVEMBER "American Carpenter and Builder." Write today and help a friend.

Address WINTER WORK EDITOR, American Carpenter and Builder, 1827 Prairie Ave., Chicago.



Music Room or Parlor in a Modern Residence Characterized by Chaste Simplicity of Standing Trim and Plaster Cove and by Warm Richness of Fireplace-Bookcase Group.

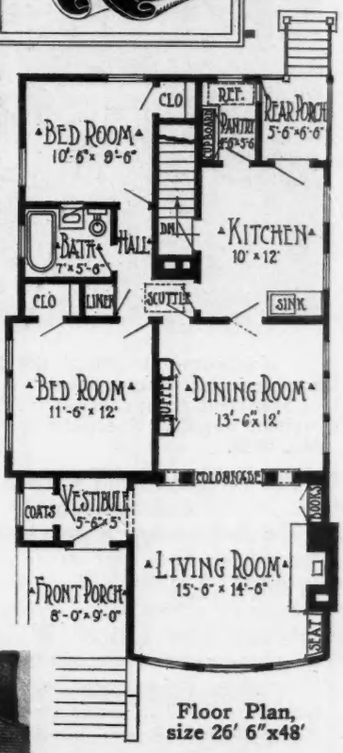
Colonial Hip Roof Cottage

This small cottage possesses many desirable features. It is built rather high, as is customary and desirable in low-lying country, so as to provide a basement without having much excavation. Built high, it is much easier to light the basement and also to ventilate it. Anyone that likes to have a workshop around the house will appreciate a well-lighted, well-ventilated basement.

The exterior appearance of this design is very pleasing. The broad curving bay, supported by two ornamental brackets is attractive. The white finish with the hip roof and the projecting dormer all combine to give it a restful and comfortable aspect, suggesting the Colonial.

The living-room is large and almost square. The broad curved bay presents as beautiful an appearance from the interior as it does from the outside.

The two bedrooms and the bathroom are along the other side of the house from the kitchen, dining-room, and living-room. Both these bedrooms are well lighted and have ample closets.



Floor Plan, size 26' 6"x48'

Colonial cottage of five rooms. Size, 26 feet 6 inches by 48 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only $5.00 per set. Blueprints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6738.

Handsome structural tile house, with brick and stucco finish. Size, 43 feet by 28 feet 6 inches. We can furnish complete set of blueprinted working plans and typewritten specifications for only $12.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6728.

Tile House Faced with Brick and Stucco

The distinguished, substantial appearance of this house will instantly attract attention. The lower floor is finished with brick veneer which consists of a four-inch brick wall securely tied to an eight-inch structural tile wall. The upper floor is of stucco finished over ten-inch tile. The accompanying detail sheet shows the manner of this construction.

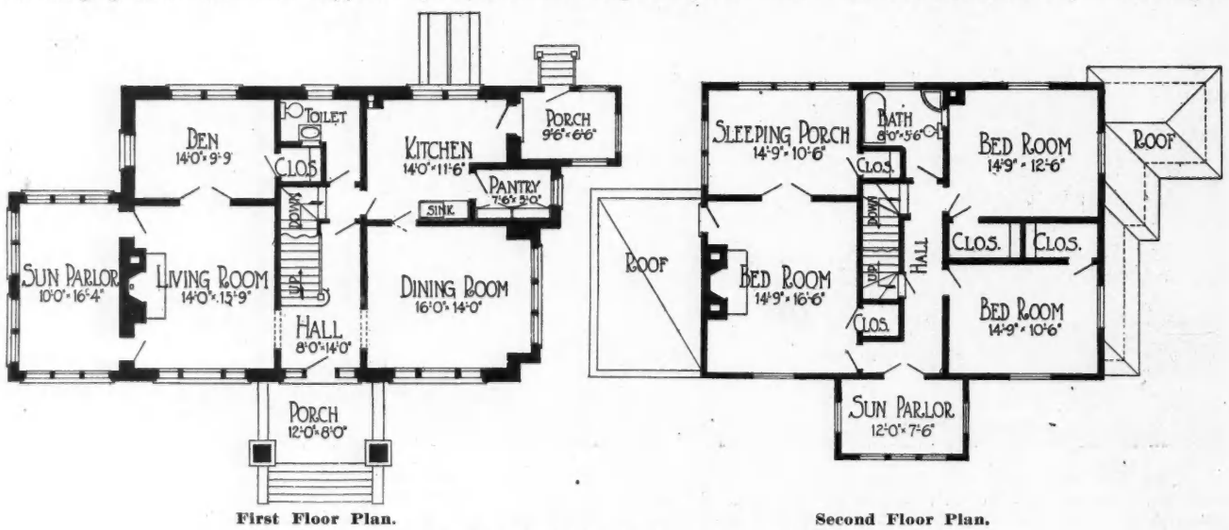
The heavy columns projecting through the roof at the four corners and the overhanging eaves with their supporting brackets are pleasing and in keeping with the strong, substantial character of the rest of the house. The porch under the second story sun parlor with its heavy brick pillars is very attractive.

From the front porch, on entering the house, there is a hall that goes all the way back through the house. In this hall are the stairs to the second floor and also the stairs to the basement.

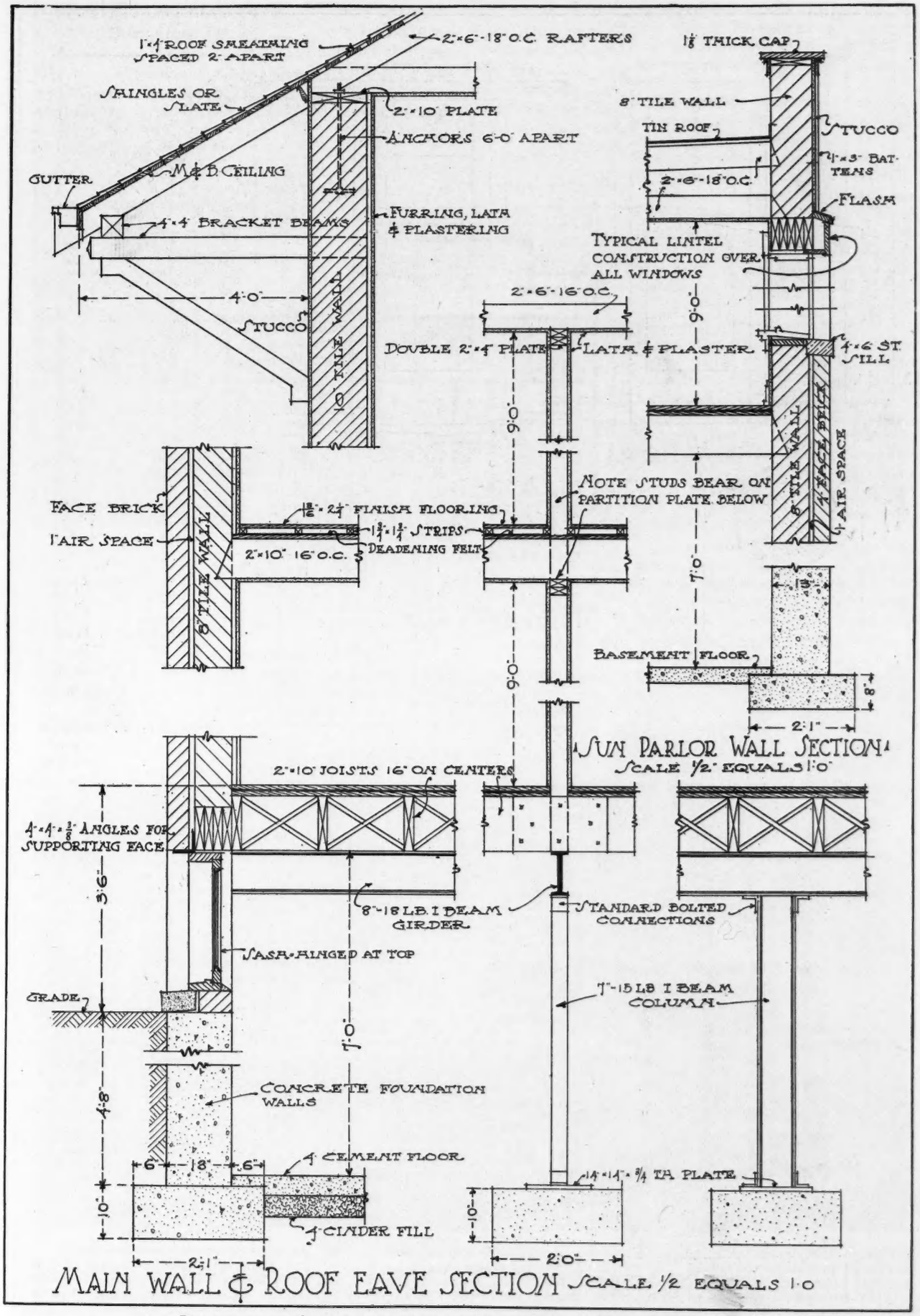
On the left side of the hall is a cased opening leading to the living room. Off the living room, with doors leading to it from each side of the fireplace, is an extra large sun parlor. The fireplace is between these two rooms. Back of the living room is a den. The whole side of the house is taken up by these three rooms and they can be very attractively finished.

The dining room, kitchen, pantry, and back porch occupy the other side of the house. The back porch is covered and screened in so it may be considered as another room.

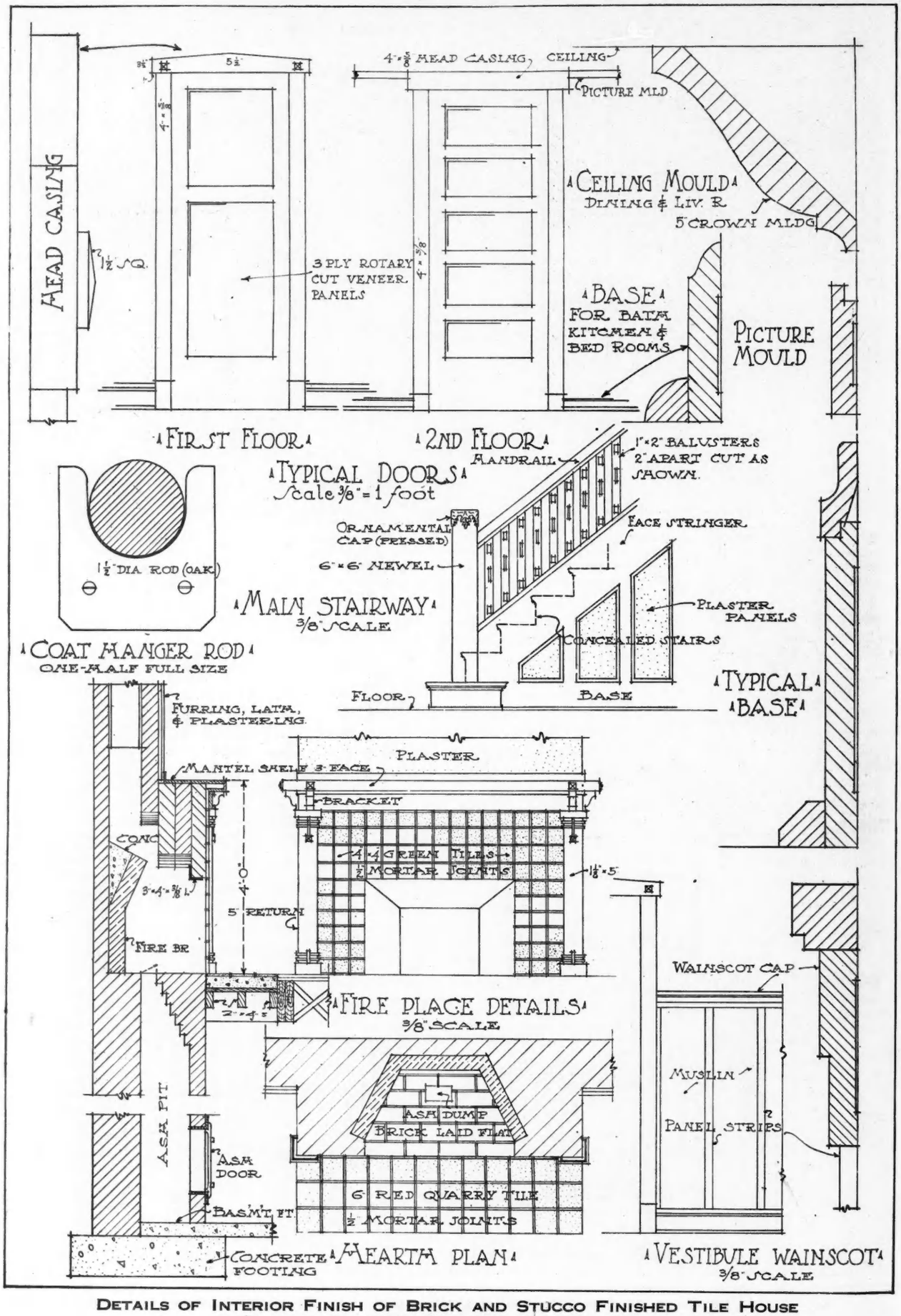
On the second floor are three bedrooms, a bathroom, a sleeping porch, and a sun parlor or sleeping porch. The bedrooms are all well equipped with closets and are very well arranged.



Arrangement of House, size 43′ by 28′ 6″.



DETAILS OF CONSTRUCTION OF STRUCTURAL TILE DWELLING (DESIGN NO. 6728) ILLUSTRATED ON OPPOSITE PAGE.



DETAILS OF INTERIOR FINISH OF BRICK AND STUCCO FINISHED TILE HOUSE (DESIGN NO. 6728) SHOWN ON PAGE 42.

Artistic Dwelling of the Bungalow Type

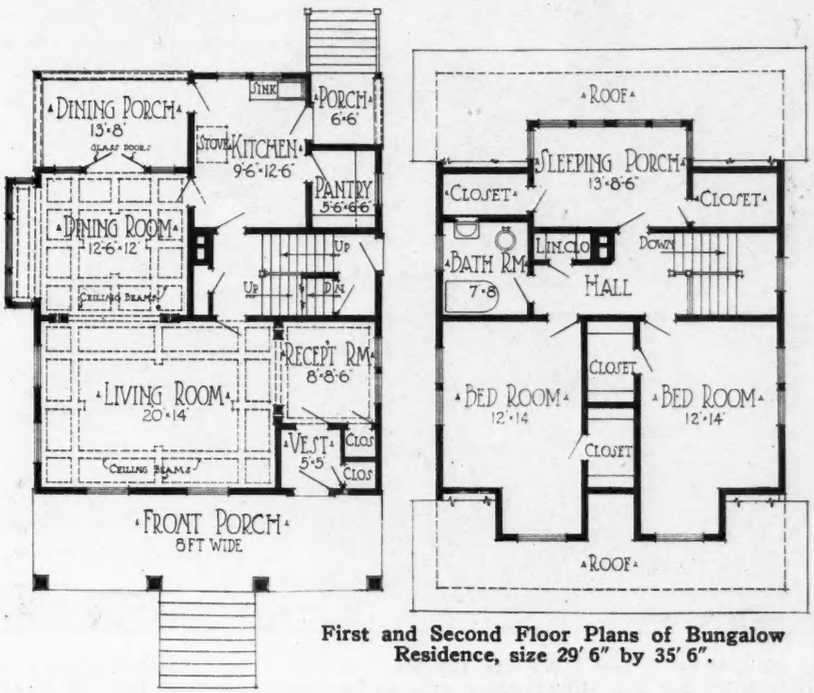
The exterior of the house shown here is most inviting and has a pleasant home-like appearance. The broad veranda has a built-in look because it is under the main house roof. The sides up to the plate can be finished in various ways. In the illustration it is shingled; but it would also be very attractive if done in clapboards or cement stucco. An unusual effect is created by the paneling below the plate on each side of the house. Above the plate in the gables the walls are shingled. The double dormer facing the front and the single one in the back add to the pleasing impression that this house makes on everyone.

The entrance from the front porch is at the side into a vestibule which opens into the reception hall. This hall is connected to the living room by a cased opening.

The living room and dining room are finished in the same style and are joined by a wide cased opening so that they can be used together. Both these rooms have beam ceilings, which is one of the most artistic ways of finishing a room. A beam ceiling gives an atmosphere of coziness and comfort that cannot be had in any other way.

Back of the dining room is a dining porch and between the two are double full glazed doors. This porch can be screened in so as to add to its usefulness. A screened porch of this kind is a great comfort. Some porch furniture such as a swing and easy chairs will make a porch such as this the most used part of the house during the hot months.

On the second floor there are two bedrooms, a bathroom and a sleeping porch. A large amount of closet space is furnished in this design. There is a large one in each bedroom and also two opening into the sleeping porch.



First and Second Floor Plans of Bungalow Residence, size 29′ 6″ by 35′ 6″.

Seven-room residence of pleasing design. Size, 29 feet 6 inches by 35 feet 6 inches. We can furnish complete set of blueprinted working plans and typewritten specifications for only $7.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6713.

Handsome modern stucco residence. Size, 42 by 42 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only $10.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6727.

Ultra-Modern Stucco Residence

Features of the design, shown here as No. 6726, are the excess of windows and the distinctive arrangement of the first floor.

The large, well arranged living room is in the central front part of the house. The back walls of this room are at an angle so that they meet at the staircase leading to the second floor. On one side of the stair the slanting wall is closed but the other contains a cased opening that leads to the dining room.

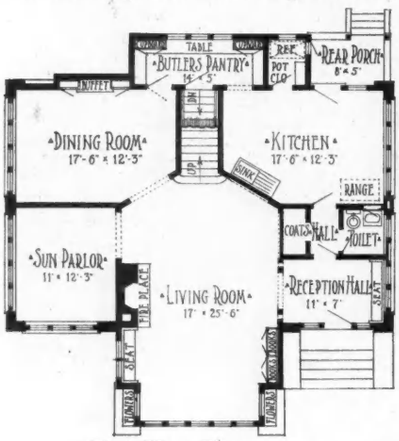
The front part of the living room is built out from the rest of the house and the walls are taken up almost entirely with windows. The entrance to this room is from the reception hall on the side. Across from this entrance is the sun parlor. Almost the whole house is a sun parlor anyway because of the many windows. The fireplace is in between the living room and the sun parlor. On the side of the fireplace near the front of the house is a seat, and a bookcase occupies the same space on the other side of the room.

In one of the back corners of the house is the dining room and in the other is the kitchen. The necessary communication between these two rooms is maintained by a butler's pantry in the rear center. This is a mighty handy room with its cupboards and work table so close to the dining room. Next to the butler's pantry, back of the kitchen, is a small pantry containing a pot cupboard and an outside-iced refrigerator.

The kitchen is of the modern type and is as carefully arranged and lighted as the rest of the house. The entire wall on one side of the kitchen is taken up with windows.

Along the back wall of the dining room is a built-in buffet. There are four windows occupying the side wall which insure a bright and cheerful room.

On the second floor are four bedrooms, a sleeping porch, and a bathroom. All the bedrooms are well supplied with closets as is also the sleeping porch. In the hall, which runs from the stair landing to the central part of the house, is another closet for linen. Windows are as plentiful on the second floor as they are on the first so that all the rooms are very well lighted.



First Floor Plan.

Second Floor Plan.

Arrangement of House, size 42′ by 42′.

Cement Stucco Bungalow with White Trim

The outside finish of cement stucco with white trim shown in this bungalow (No. 6724) is a most attractive feature. Many of the construction details are shown in the illustration in a way that is typical of bungalows. In the open cornice on the side are shown the brackets that support the over-hanging roof. In ordinary construction these supports would probably be concealed, but in a bungalow they are exposed and in this case are painted white so that they stand out. All structural features, that are exposed, are painted white and in combination with the brick chimney with its white terra-cotta shoulders and the cement stucco make an extremely attractive exterior.

Another prominent part of the exterior is the front porch. Half of this porch is covered by a gable roof and the other with a pergola. An unusual effect is obtained by the combination of these two types of construction. The porch rail and the rafters of the pergola, with their projecting, decorated ends, are finished in white, as are the porch columns above the porch rail. Below the top of the porch rail the columns are of cement stucco while above three square posts are grouped together to support the roof.

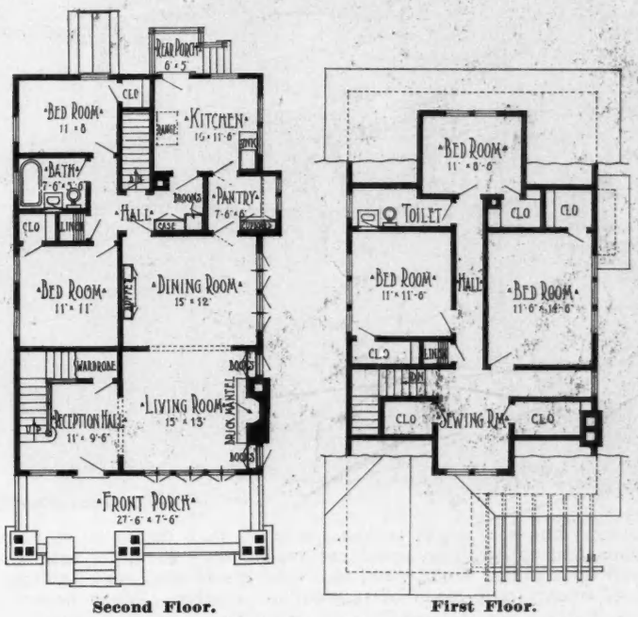
The main floor plan shows a very good arrangement. The dining room and living room are connected by a wide cased opening so that they can be used together. All the windows in these two rooms are of the casement type, outward swinging. Opening onto the front porch from the living room are three sets of double casement windows which add much to the beauty of this room. One the side of this room is a brick fireplace with bookcases on each side of it. Above each bookcase is a small casement.

The outside of the dining room is taken up with two sets of double casements. Across from these is a buffet built against the wall.

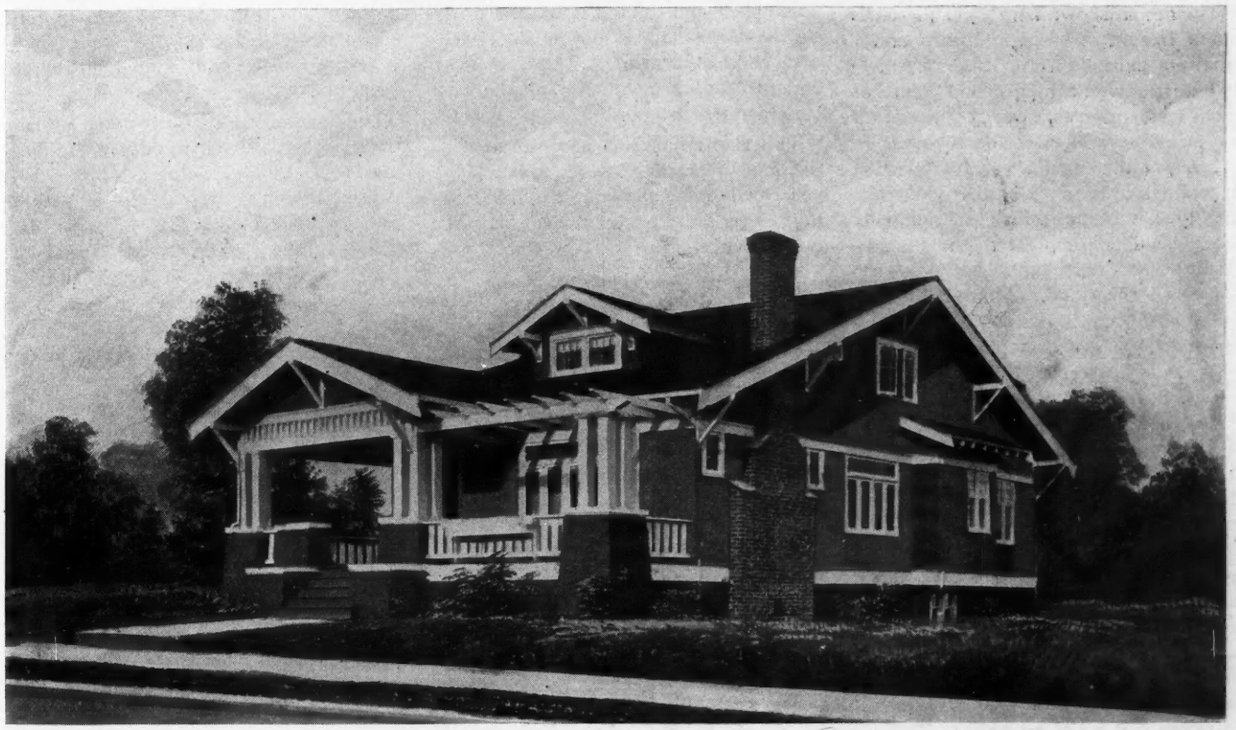
Considerable storage space is provided for various odds and ends around the kitchen in the back hall and in the pantry, so only a small back porch is provided. The kitchen is well lighted by two wide windows and the sink is placed under one of them, which is a very desirable feature.

On the other side of the house are two bedrooms and a bathroom and also the reception hall, from which the stairs go up to the second floor hall.

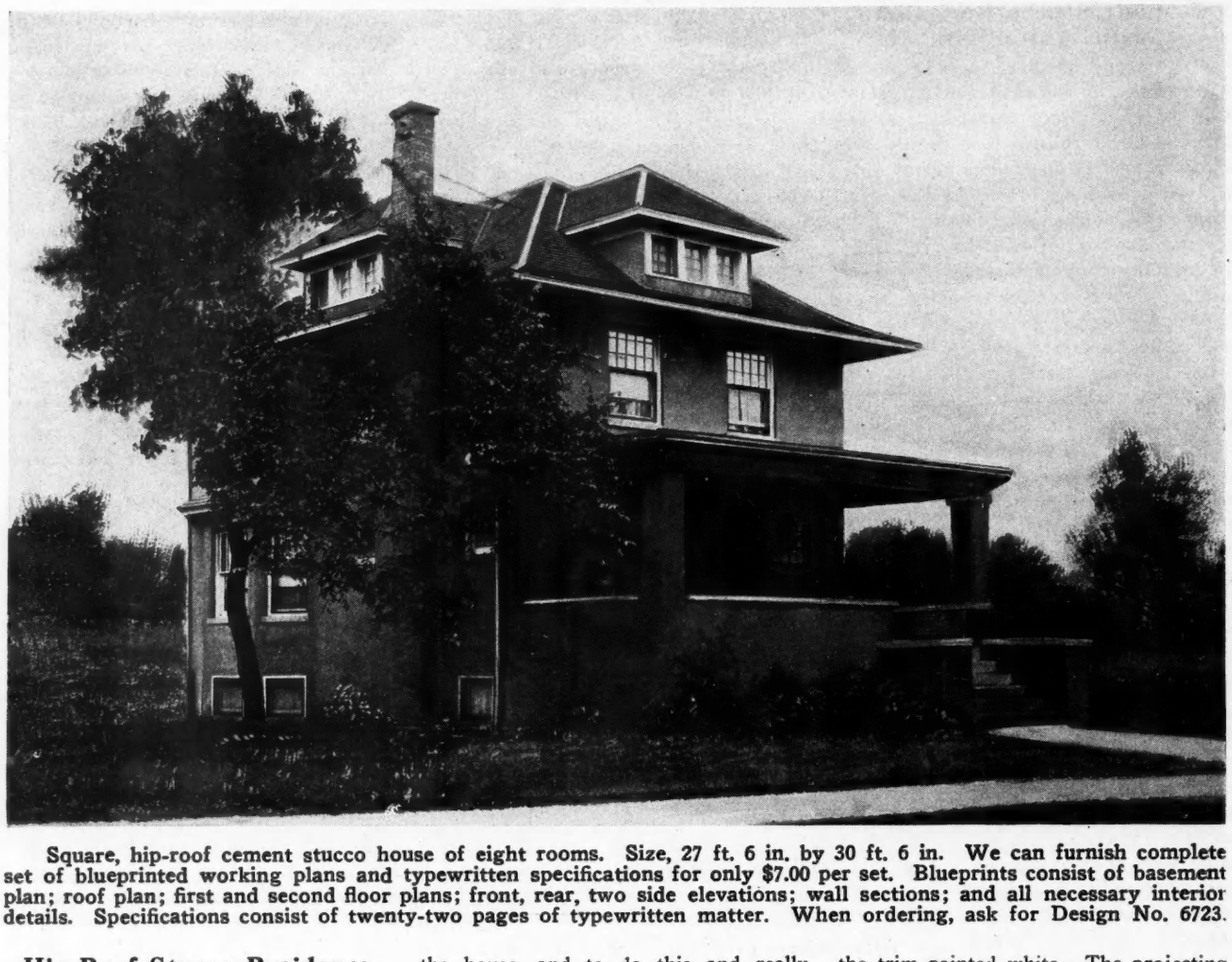
On the second floor are located three more bedrooms and a toilet. A sewing room is built out into the front dormer. Generous closets are furnished to all the rooms on this floor and may be used for storage. A large basement is provided with an inside and outside entrance.



Arrangement of House, Size 27 ft. 6 in. by 43 ft. 6 in.



Eight-room, artistic bungalow of cement stucco. Size, 27 ft. 6 in. by 43 ft. 6 in. We can furnish complete set of blueprinted working plans and typewritten specifications for only $8.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6724.



Square, hip-roof cement stucco house of eight rooms. Size, 27 ft. 6 in. by 30 ft. 6 in. We can furnish complete set of blueprinted working plans and typewritten specifications for only $7.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6723.

Hip-Roof Stucco Residence

The design shown here gives the maximum amount of space and comfort for a given expenditure. There are two full stories, well arranged and plenty of room in the attic that can be finished off to make several pleasant rooms. In decorating the attic, a careful selection of wall board can be used that will make mighty handsome rooms at minimum cost. Wall board presents great possibilities for finishing off rooms of this kind. This wall board can be finished in various styles to suit the individual tastes of the owner.

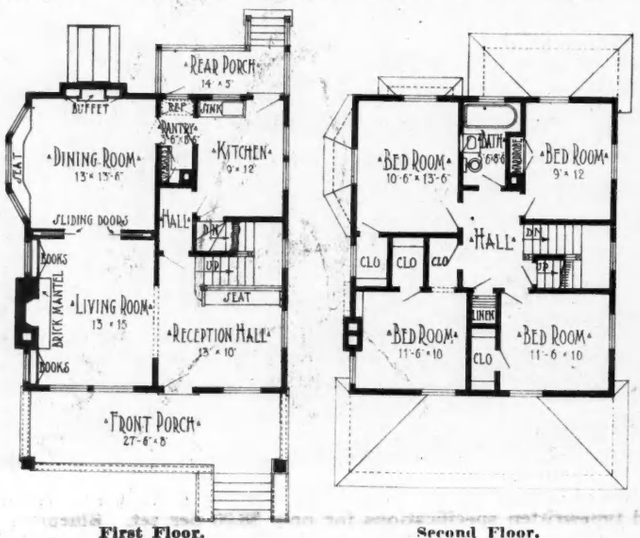
The house is set rather high, which makes it possible to have an unusually light and well ventilated basement. Arranging the basement in this way will increase its usefulness to a large degree. Many of the ordinary details of house care that cause considerable discomfort in the kitchen can be carried on in the basement if it is lighted well and the ventilation is properly taken care of. Most men like to tinker around the house, and to do this and really accomplish something, they need a workbench which can be located in a well-arranged basement of this type. A light, comfortable basement is one of the most used parts of a house.

The exterior of this house presents a pleasant appearance, due to its solid construction and the wide porch extending across the front of the house. The outside finish is of cement stucco with the trim painted white. The projecting dormers add to the idea of a well lighted, comfortable house. The front porch is exceptionally well suited to porch furniture.

One side of the house is taken up entirely with the living room and the dining room. Sliding doors are placed between these two rooms, so that they can be used together if occasion demands. The big brick fireplace with bookcases on each side in the living room, and the seat in the curved bay window, also the built-in buffet in the dining room are features of these two rooms that are especially worthy of note.

The reception hall and the kitchen and also the stairs to the basement and the second floor occupy the other side of the house from the living room and dining room.

The second floor plan calls for a bathroom and four bedrooms. Plenty of closet room is provided, which will no doubt gladden the heart of the housewife. Storage space is in attic.



First Floor. Second Floor.

Arrangement of House, Size 27 ft. 6 in. by 30 ft. 6 in.

Cement Stucco House with Cobblestone Porch

The exterior of this house is attractively finished in cement stucco colored dark and with white trim, which makes a pleasant combination. The window boxes supported by the curved brackets present an attractive appearance. The tapering porch pillars and the chimney of cobblestones are worth noting.

The feature of the first floor plan is the large floor space furnished by the living room and the dining room. These two rooms occupy almost all of one side of the house and are separated by a fireplace with a cased opening on each side.

In the front corner of the living room is a seat that is built under the projecting windows. In the dining room there is also a seat along the side. The combination of these two rooms makes an almost ideal place for entertaining. The interior finish and the furniture in these two rooms should be of the same type as they will probably be used together a great deal. It would be an interesting problem to select the decorations for such a large space and will give a good chance to exercise a little ingenuity.

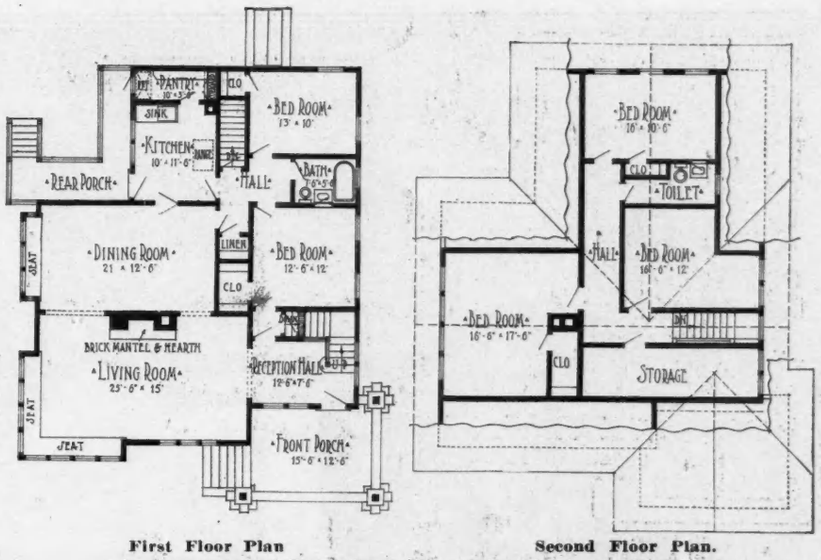
The front porch is comfortable and will be very pleasant in warm weather. The entrance from the front porch is into a fair sized reception hall where there are stairs leading to the second floor. In the back of the reception hall is a small entry way that leads to one of the two bedrooms that are located on this floor.

The two bedrooms are along the side of the house opposite the dining room and living room. The bathroom is located between them.

Back of the dining room is the working part of the house, which is very well arranged. The kitchen is lighted in good style and has a convenient pantry equipped with an outside iced refrigerator and a cupboard.

There is a back hall from which the basement can be reached. There is also an outside entrance to the basement which is large and roomy.

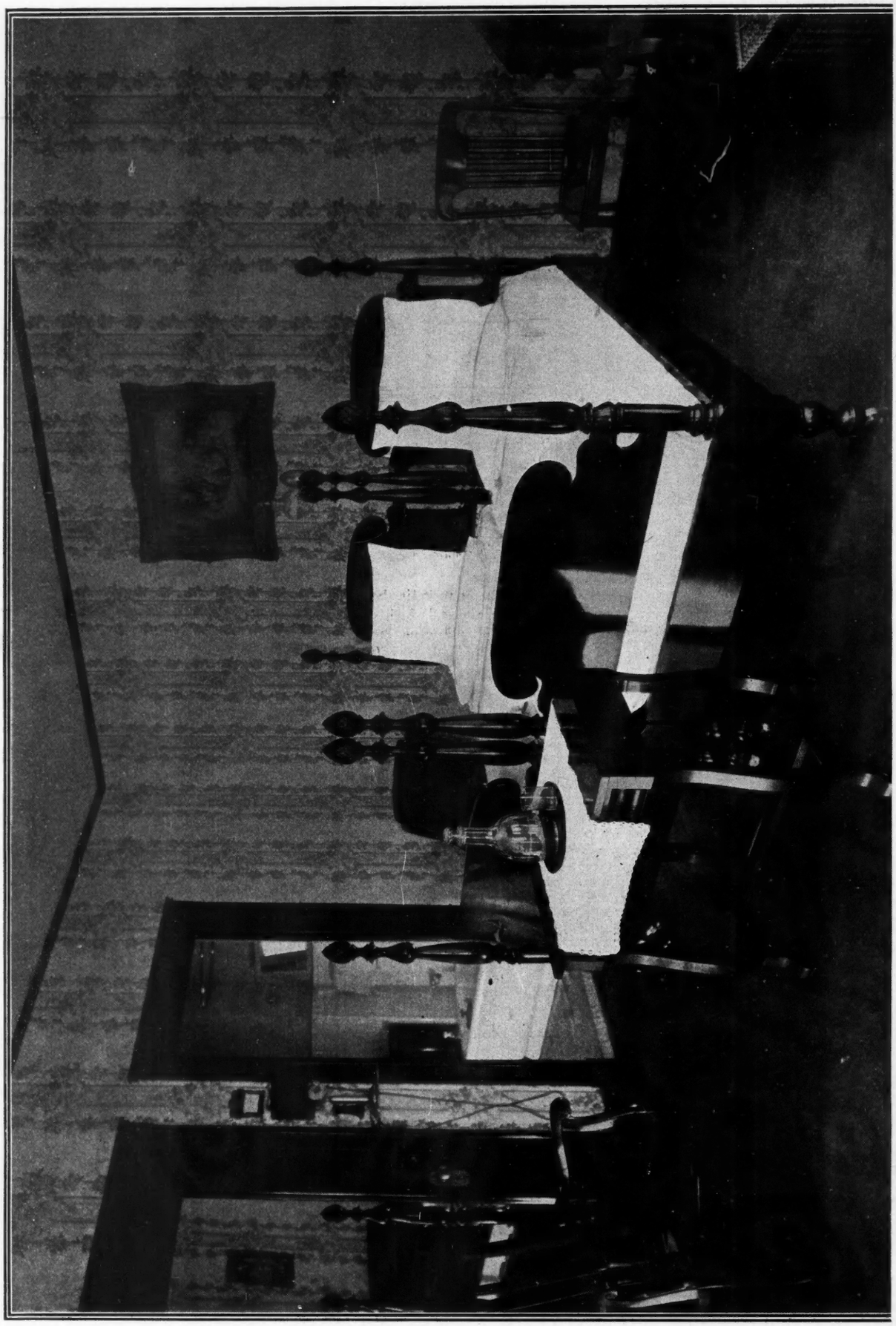
Three bedrooms and a toilet are located on the second floor. Two bedrooms are built into the gables, one on each side, and the third is built into a dormer window in the back of the house.



First Floor Plan. Second Floor Plan.

Arrangement of Bungalow, Size 39 ft. 6 in. by 45 ft. 6 in.

Roomy, well-arranged house of eight rooms. Size, 39 ft. 6 in. by 45 ft. 6 in. We can furnish complete set of blueprinted working plans and typewritten specifications for only $7.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6725.



"Bedroom with Bath" in Private Home, Featuring Twin-Beds. All Furniture and Room Trim are Mahogany Finished. Note Closet Door Has Full-Length Mirror Panel.

Plain Gable Bungalow

Simple, artistic lines are notable impressions aroused by this design, No. 6710.

The sides, finished in wide shingles or shakes stained dark, and the white trim around the windows and doors make a pleasing combination. The wide overhanging eaves and the low brick wall around the porch are rather striking features.

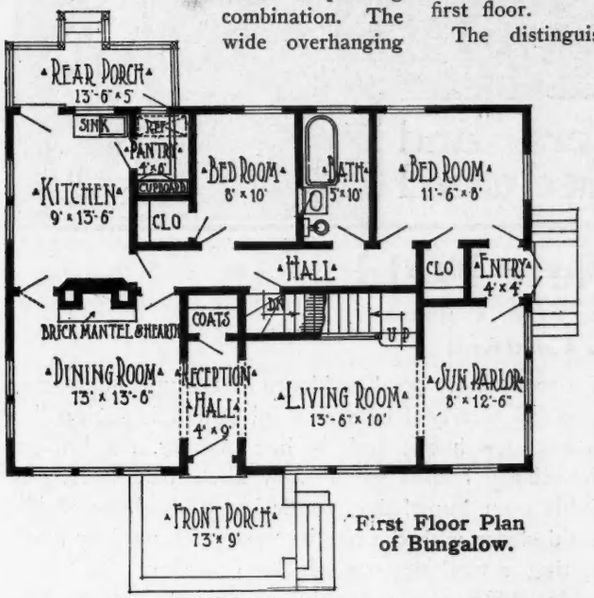
The reception hall, which is entered from the front porch, extends well back to the center of the house and has a cased opening on the right to the living room and one on the left to the dining room. In the back of the hall is a closet for coats.

Across the living room from the reception hall is a sun parlor. The entry from the side porch has a door into this room. The other door from this entry opens into one of the bedrooms on the first floor.

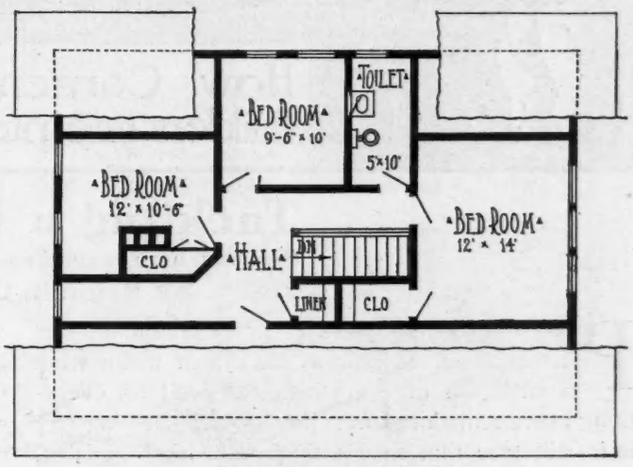
The distinguishing feature of the handsome dining room is the brick fireplace in the back of the room. There are doors on each side of the fireplace—one leading to the kitchen and the other to the back hall. This is a rather unusual effect.

The back of the house is taken up by a kitchen, two bedrooms, and a bathroom. A convenient pantry, with a cupboard and refrigerator that is iced from the outside, is a particularly well arranged part of this kitchen.

The back hall opens into both the bedrooms, the bathroom and the kitchen. The stairs to the basement are also reached through this hall. The two bedrooms are well equipped with closets and the bathroom is placed between them. The stairs to the second floor are reached through the living room. The second floor plan calls for three bedrooms and a toilet.

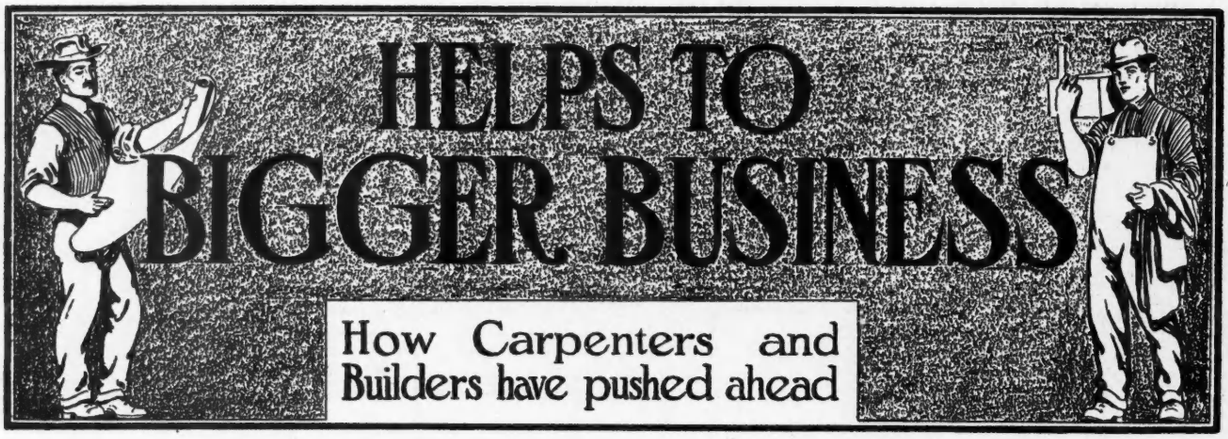


First Floor Plan of Bungalow.



Second Floor Plan.

Shingle-Sided Eight-Room Bungalow; plain gable roof. Size, 41 ft. by 28 ft. 6 in. We can furnish complete set of blueprinted working plans and typewritten specifications for only $6.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6710.



Tackling a New Field

A BUILDING EXPERIENCE WITH A MORAL

By Kenneth C. Cardwell

PROBABLY the average carpenter and builder comes about as near as most men to knowing a little bit of everything, as well as everything about something; in spite of which cheering fact it is still true that this is the age of the specialist, and that the man who is venturing into a line of work, —even in his own trade, if it is new to him, would do well to feel his way rather carefully at first. There are men who have made good at house-building who can testify eloquently and painfully to the things that happened to them by reason of failing to do this.

For example, the concrete expert who knows how to put up the framework of a warehouse or a factory might be so unfamiliar with the exact requirements of a moderately good residence of the up-to-date sort as to fail utterly if he attempted to handle such a job on his own hook; and, in like manner, the builder of ordinary houses would very likely be unable, out of his own knowledge, to design a dwelling which would chime with the requirements of a wealthy man, desiring something out of the ordinary. In other words, differences not only in structural styles and materials, but in a hundred details, from top to bottom, would arise to confuse the man unfamiliar with them, and to spoil the whole job.

"If They Can Do It, I Can," He Declared to His Wife.

This means that the man who has not had his experience in a certain field should give some rather careful thought to the requirements of the market in that field before going into it. The advertising pages of every building journal, not to mention those of the ordinary magazine, are sufficient to show the progress of the building trade almost from month to month, in this respect. The home designed for comfort and convenience now requires equipment which a few years ago was unknown, and which, for that matter, is still unknown in some parts of the country. And this is where the man who is on unfamiliar ground, no matter how practiced in his own field, is likely to make his mistakes.

Now, this doesn't mean that the builder should not change either his environment or his line of work; for he may certainly do both, under proper conditions, with profit and propriety; but he should, by all means, study the best models available in his new field to see exactly what is moving, and why. Then he can go ahead with some degree of certainty, knowing just what designs are popular, and, more important, what they call for in the way of equipment, fittings, materials, etc.

THERE was—once upon a time—a foreman who had worked for some years for a concern which devoted itself almost exclusively to building low-priced workmen's cottages—four rooms, or so, built one room

behind the other, and usually without baths. These sold readily and profitably, and the foreman himself eventually went into the same line on his own account, making good, as might have been expected, for the reason that he knew exactly what he was doing.

Then he began to look for wider and more profitable fields, as he very well might, in view of his success; and right here is where the point made above would have come in extremely handy. It might have saved him a good deal of trouble, and some little money.

He noticed in the real estate section of the Sounday paper the big advertisements of some of the well-known operators of the city, especially those in connection with the development of well-located properties; and noting the descriptions of some of the houses —although not as closely as he might have done—and the prices asked for them, the notion kept coming back to him that there was no reason why he, too, should not get into this obviously profitable and apparently easy game.

"I'm going to quit piking," he declared to his wife. "I'm capable of doing everything that these fellows, like Johnson, with his Bella Vista Park, and Myers, with his High Point subdivision, are doing and have done; and I'm going to do it, by gum! They're making dollars where I make dimes, and you know it—just because they put a dash of style into their places and sell 'em for a hundred per cent profit. If they can do it, I can!"

And he proceeded to take steps to carry out this really excellent idea. Fundamentally, he was right; he had the expert, inside knowledge of buying material, handling men and getting a job done quickly and at the lowest possible cost, which had made him valuable to his former employers, which had enabled him to make money out of his cottage deals, and which were just as necessary on the kind of houses he had in mind as on any other. But what he did not have, and did not take the pains to acquire—inasmuch as he did not consider it as worth his attention—was the knowledge which enabled the salaried architects of the real-estate operators he had mentioned, to turn out houses which were the last word in modernity and convenience, and were, besides, what enraptured young housekeepers declared were "too cute for anything."

In a word, Sam Dempsey, the cottage builder, had never put up a "cute" house in his life; nor, if he had only known it, had he ever built one which was really modern, in the up-to-date, last-word sense of the term. Notwithstanding which, and notwithstanding the staggering price of the lot on which he determined to start his venture into fashionable building, he finally erected a house which would establish him, he stoutly maintained, as a builder of the first rank. It was in a restricted subdivision, and that meant that he had to put into it a good deal more money than he had been accustomed to spending on a single job; but he was prepared for that. It was a six-room, story-and-a-half affair; and when it was finished he regarded it proudly.

"By gosh, it's my masterpiece!" he declared, as he went through it on the day when the painters finished their work. "Drew every line of the plans myself, too; and maybe I didn't keep the cost down nicely, either, considering what a dandy house it is! Some of these dad-blamed plumbers, and the supply house, too, thought they could give me some pointers on what I ought to put in; but I ran things myself, and look what I've got! They'd have had me spend twice as much as I did, and I wouldn't have had any tangible results, either.

"Would you believe it, an electrical contractor that I never heard of before, wanted to tell me I couldn't sell the house unless I had it wired throughout!" he continued, indignantly. "Some guys will do anything

"No Hardwood Floors? and No Electricity!" Disdainfully Remarked the Young Woman.

to boost their own game. I know this town, I think, and I know the way the average citizen thinks; and you can't get people to use electricity when they can get gas for thirty-five cents—not much; so I saved the cost of electrical work. I'll show some of these smart ones a thing or two about this game before I get through!"

The following Sunday he inserted the following advertisement in the "Houses for Sale" department of the leading paper's classified columns:

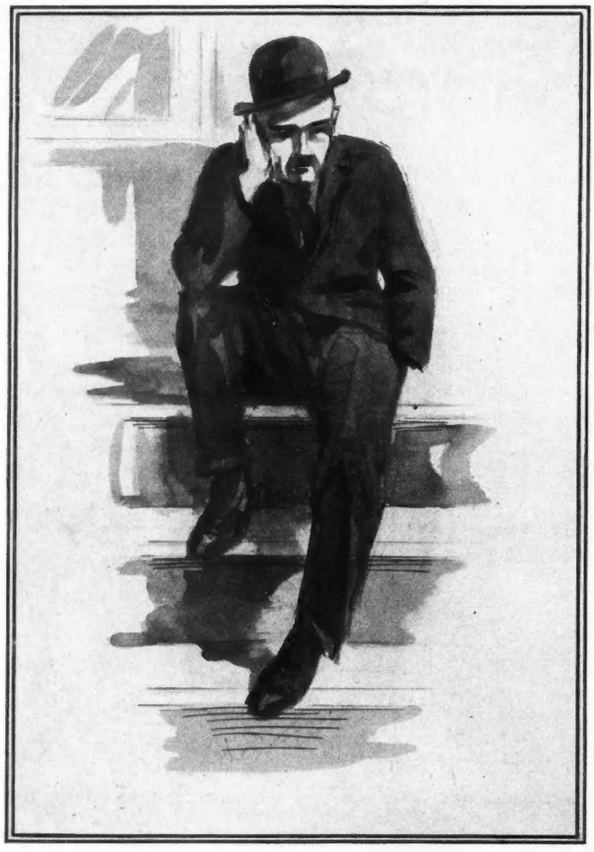
FOR SALE—Six-room house, in fine neighborhood; just completed. Modern throughout, bathroom, kitchen sink, etc. Phone M-1637, or see owner at house today.

He was on hand bright and early that Sunday, too, to take care of the horde of "lookers" whom he confidently expected. Nor was he entirely disappointed

Tackling a New Field

in the number who came, although they did not make their inspection as early in the morning as Demsey though they might. The disappointment came—sad to tell—in the manner in which some of the visitors viewed the house. Some of them were actually satisfied—or dissatisfied, it might be more accurate to say—with an outside view; others expressed themselves after a view of the interior.

"No hardwood floors?" disdainfully remarked a young woman who, with her submissive husband in tow, looked the place over. "And no electricity! How on earth do you expect to sell a place without things like that? I don't suppose there's any use looking at the rest of it, Henry—this is enough."



Sam Dempsey Sat Disconsolate on the Front Porch.

And she turned and swept out, still followed by the other fraction of the family, leaving Dempsey struggling with an explanation about the economy he had achieved in putting up the place, and wondering at the same time whether it would sound just right. Next his furnace came in for a good deal of criticism—everybody wondered why it hadn't been fitted with gas, as long as gas was so cheap; and the absence of laundry tubs from the basement seemed to condemn the whole place, to the minds of others. All, very nearly without exception, commented bitterly and bitingly on the fact that there was no electricity; and a number thought it absolutely inexcusable that there was no automatic hot-water heater.

"Say, old man," remarked a visitor, as Dempsey was mopping his perspiring brow, toward the end of this eventful day, "I don't want to say anything to make you sore, but as long as I came out here to look at this house in response to your advertisement, I think I can say this: Why did you call it 'modern,' when it lacks a number of features that an up-to-date house, intended for sure-enough people, is incomplete without?"

Dempsey threw up his hands.

"Not modern?" he exploded. "Hasn't it got plumbing and a basement and a furnace and gas? What's the matter with it? Of course it's modern, even if it hasn't got electricity—lots of people don't want it."

"Everybody wants it in this part of town," replied the other, shaking his head. "Of course, compared with a workman's ten-dollar-a-month cottage, this place is the last word in modernity; but that isn't the way to look at it. You've got to compare it with the houses of the kind of people that live around here; and by that standard, this house is a complete flivver. It doesn't look right from the outside—I couldn't exactly say what the trouble is, but it's there—some defect in design, a kind of lack of harmony. It lacks the automatic water-heater, which most people want, as well as electricity, and laundry facilities in the basement. There should be a separate toilet in the basement as well; and your fixtures look cheap. Those round wood pillars on the porch probably didn't cost you much—but they don't look good; and you've even left out corner posts inside, to keep plaster from being knocked off at the corners. In fact, my wife wouldn't let me buy this place if I wanted to; and, to tell the truth, I don't think I want to. Much obliged for showing it to us, though."

And the last visitor of the day was gone, leaving Sam Dempsey sitting disconsolate on the front porch of his "modern" house. But the lesson was worth while, in spite of the loss he had to pocket on that house—a loss of profit, rather than of capital, but still one that hurt. He knew better next time. He knew what he did not know, at least, and acquired the services of a good designer, with experience in that line of work; and the very next house which he advertised as modern was entitled to the term, in the fullest sense of the word. Sam had graduated out of the cottage class. And while his case may not be exactly common the moral is worth remembering.

✣

Of Course

James started his third helping of pudding with delight.

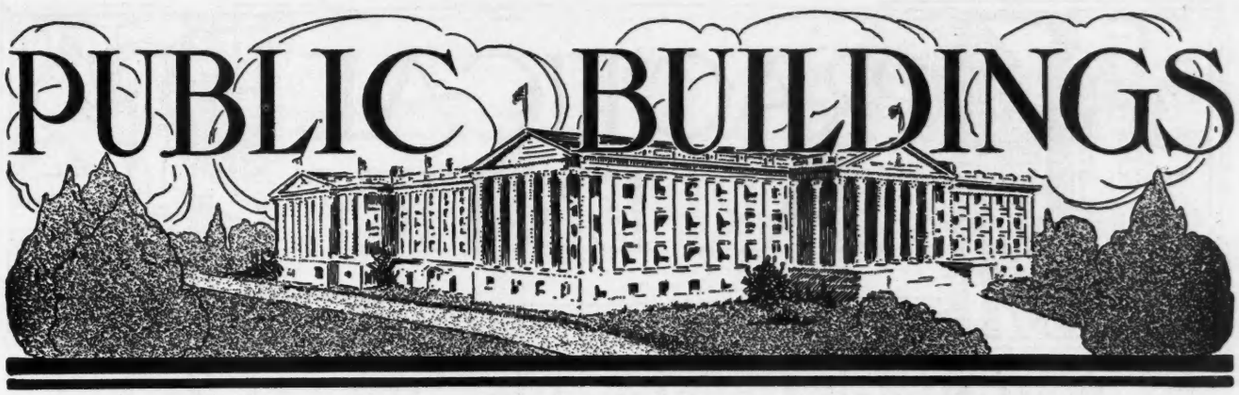
"Once upon a time, James," admonished his mother, "there was a little boy who ate too much pudding, and he burst!"

James considered. "There ain't such a thing as too much pudding," he decided.

"There must be," continued his mother, "else why did the little boy burst?"

James passed his plate for the fourth time, saying: "Not enough boy."—*The Multitude.*

PUBLIC BUILDINGS



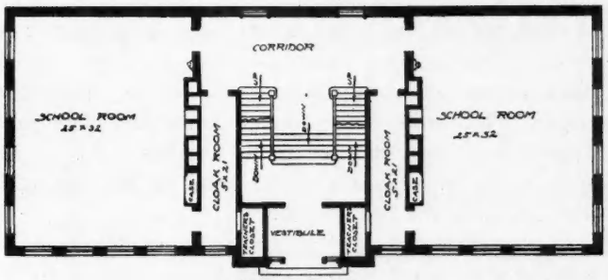
New School at Oak Lawn, Ill.

THE photograph and floor plans shown here are of a new school that has recently been built at Oak Lawn, Ill. (a suburb of Chicago). It is a design by Mr. G. W. Ashby, architect, whose schools are well known throughout Illinois and neighboring states.

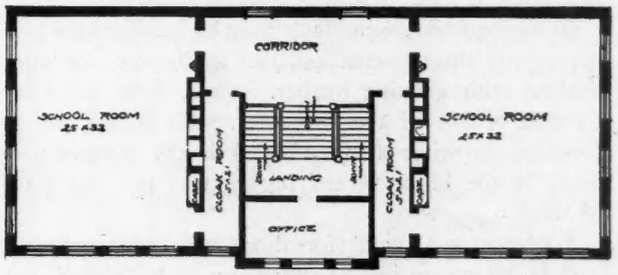
This is one of the designs that is made for a growing community and is so arranged that it can be readily doubled in size. The front half of the building for the two stories is finished; and when more room is required, the back part can be added, which will double the capacity of the school. The corridors and stairways are made large enough so that they will accommodate the complete building when the back part is added.

On each floor there are two rooms; which will be increased to four when the addition is put on.

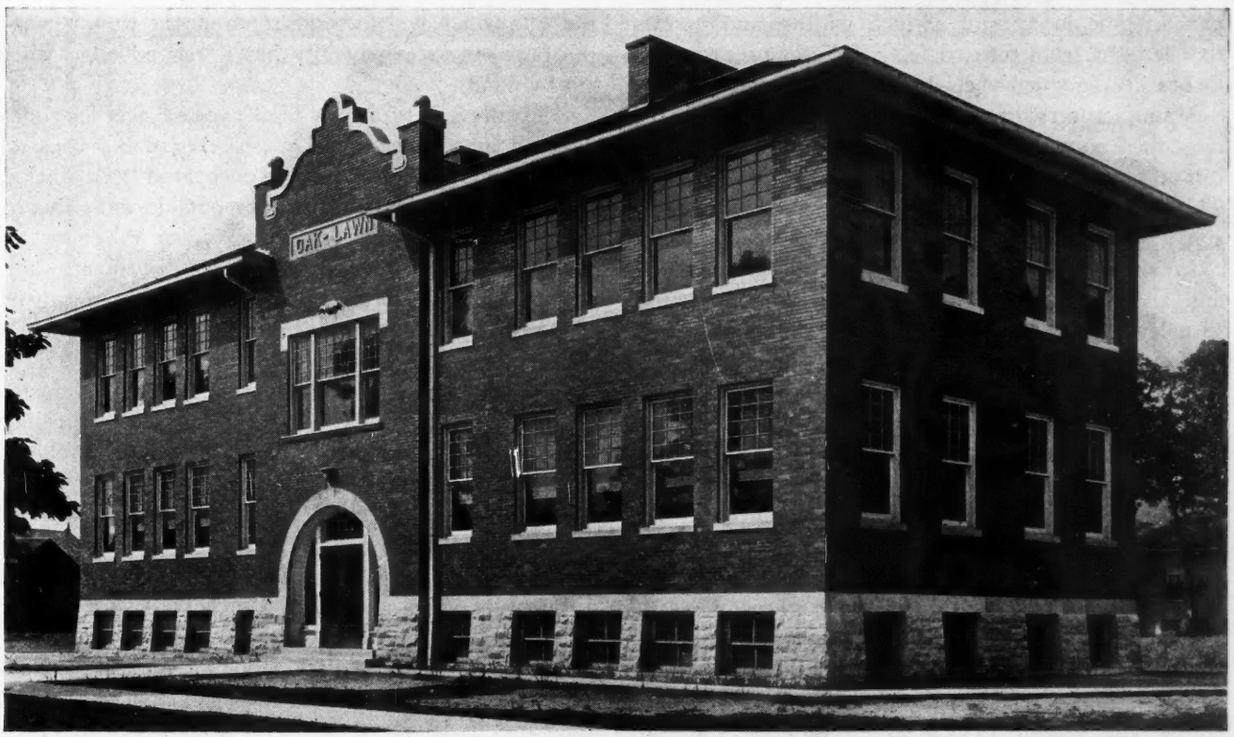
The exterior is finished in plain massive style so that its depreciation both as to strength and appearance will be a minimum. The foundation is of stone, and is pierced in many places for windows so as to insure a well lighted basement.



First Floor Plan.



Second Floor Plan..



Handsome School Building at Oak Lawn, Ill., which Can Be Readily Doubled in Size to Suit the Needs of a Growing Community.

Wall Board Construction—How to do a Good Job Easily

By Joseph A. Poesl

WALL board has found itself. Since its advent nearly a decade ago it has passed through an arduous but hopeful stage of experimentation. There are now a number of vastly improved makes on the market, which can be relied upon to give the utmost satisfaction, provided the application is properly done in accordance with the manufacturers' instructions.

In view of this, something may be intelligently said concerning the construction, just as though one were dealing with genuine lumber. Here, then, are hints for the benefit of the carpenter, who is anxious to join the growing army of wall board experts and share in the highly gratifying returns for that class of work.

To begin with, and for those who do not know, wall board ranges in thickness from ⅛ to ½ inch; but the 3/16-inch board is most commonly used. The panels come in 32 and 48-inch widths, and in even foot lengths from 6 to 16 feet. Widths of 24 and 36 inches are supplied special at the regular price.

Manufacturers of wall board agree now that it must have a substantial framework to which the panels can be securely fastened on all edges and in the center. This is the underlying principle of good wall board construction and must be strictly adhered to.

In new work it is best to have all ceiling joists and all studding, unless sized, dressed and trimmed to a level surface in order to make plumb walls and ceilings. For horizontal nailing, headers, usually 2 by 2's or scrap pieces of lumber of equal strength, are inserted between the studding and joists. Where the studding and joists are not spaced 16 or 24 inches on centers, to accommodate the regular 32 and 48-inch panels, additional nailing surface is provided for vertical nailing.

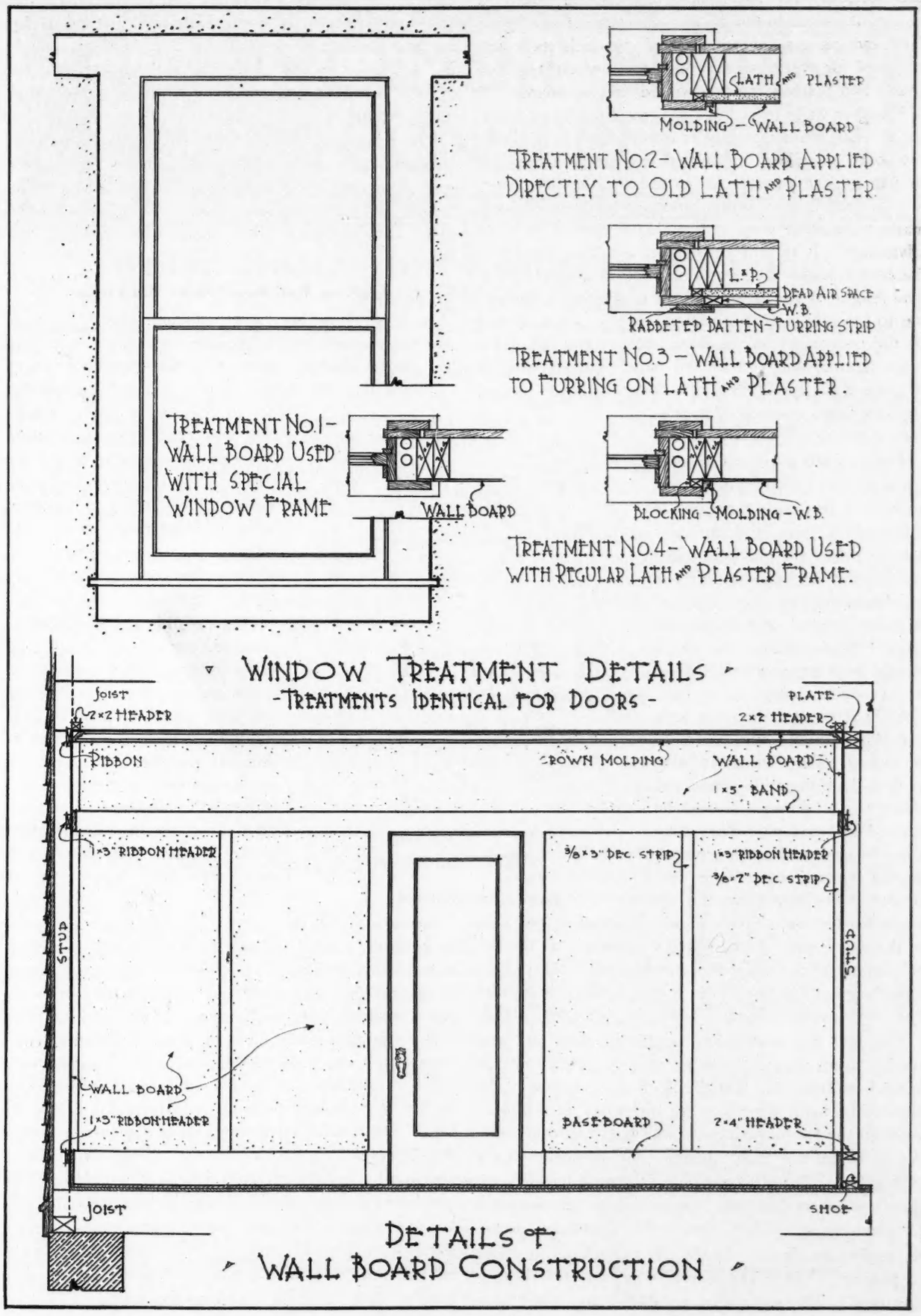
While the work of placing headers makes a tedious job, it can be considerably reduced by notching the studs, according to the panel arrangement planned, to receive 1 by 3-inch boards, which will take the place of the ordinary headers for horizontal nailing. Of course, this should be done at the time the studs are being notched for the "ribbon" upon which the joists will rest.

Every joint formed by the meeting of two panels must be covered with a decorative strip or some sort of moulding. A picture moulding, chair rail, or plate rail may, however, be put where there is no joint. It is here, that the average carpenter who has had little wall board experience, errs by neglecting to place headers behind the board where these mouldings are used. They are necessary there to hold the board tight against the moulding and obviate unsightly cracks, which would mar an otherwise first-class job. False beams are fastened on by nailing a board as wide as the inner width of the beam to the joist and then securing the beam to it.

Any wall board can be readily cut with a fine-toothed saw; some with a sharp knife. When doing this, always be sure to have the right side up, that is, the side which will face the room on the wall, because the opposite side generally has a ragged edge when cut by hand.

On walls 8 feet 6 inches high panels 8 feet long may be used in connection with a baseboard 8 inches, or more, high by filling in the uncovered space below with waste pieces of board. The outside walls should, however, have panels extending from the floor up to insure good installation. The idea of utilizing short panels on inside walls or partitions can be advantageously carried out in practically any odd height room.

Ordinary brads and nails are employed to fasten the board on. In new construction, both are 1 inch long, and in remodeling work over lath and plaster they are 1½ inches in length. It is not of great importance what gauge the flat head nails are, but it is advisable to have No. 16 gauge brads. The former are for the edges of the panels and should be spaced at intervals of not more than 3 inches; at least ½ inch from the edges. The brads are used to fasten the panels to the intermediate studding and are spaced about 12 inches apart. Care must be taken not to dent the panel in driving these. One pound of 1-inch nails

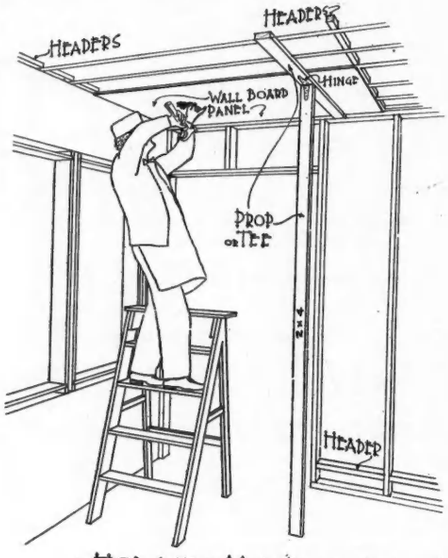

LATH AND PLASTER
MOLDING – WALL BOARD
TREATMENT NO.2 – WALL BOARD APPLIED DIRECTLY TO OLD LATH AND PLASTER
L. & P.
DEAD AIR SPACE
W.B.
RABBETED BATTEN – FURRING STRIP
TREATMENT NO.3 – WALL BOARD APPLIED TO FURRING ON LATH AND PLASTER.
TREATMENT NO.1 – WALL BOARD USED WITH SPECIAL WINDOW FRAME
WALL BOARD
BLOCKING – MOLDING – W.B.
TREATMENT NO.4 – WALL BOARD USED WITH REGULAR LATH AND PLASTER FRAME.
WINDOW TREATMENT DETAILS
– TREATMENTS IDENTICAL FOR DOORS –
JOIST
2×2 HEADER
PLATE
2×2 HEADER
RIBBON
CROWN MOLDING
WALL BOARD
1×3" BAND
1×3" RIBBON HEADER
3/8×3" DEC. STRIP
1×3" RIBBON HEADER
3/8×2" DEC. STRIP
STUD
STUD
WALL BOARD
1×3" RIBBON HEADER
BASE BOARD
2×4" HEADER
JOIST
SHOE
DETAILS OF
WALL BOARD CONSTRUCTION

are necessary for 100 square feet of wall board; a pound of 1-inch brads do for 500 square feet. Over lath and plaster two pounds of 1½-inch nails are required for every 150 square feet and of the 1½-inch brads two pounds for 750 square feet of board.

Whether walls or ceilings are covered first is immaterial. But more difficulty is experienced in applying the board to ceilings, and often two men are required to put up one panel. As an aid to keep the panel in place while it is being nailed, a simple and easily made tee-shaped prop can be made use of to good advantage. It usually consists of a 2-by-4 hinged in the center of the flat side to one end of a long 2-by-4. The length of the latter will, of course, vary according to the height of the ceiling. In use, the long end of the prop rests on the floor and presses the crosspiece against one end of the panel, thus holding it in place while the other end is being fastened. By its use one man, unassisted, is enabled to put up a fairly large panel.

On the walls a nail is driven in the center of the panel at the top to hold it in position, then it is adjusted to the studding and all the brads are put in. After this the flat head nails are driven in, beginning at the top and working around and down the sides. While nailing, the panel should be kept smoothed out so as to avoid bulging.

Only after all nailing has been completed should the board be decorated. Then, when the paint is dry, the decorative strips and other mouldings should be stained and put on. They may then be shellaced and varnished at the convenience of the decorator. To determine the quantity of decorative strips needed for a room, figure on about 60 per cent of the square feet of wall board it takes, giving the lineal feet of strips required. If a chair rail or any other moulding is to be used over a panel joint, simply deduct the quantity required from the decorative strips.



HOW TO USE PROP OR TEE AND WHERE HEADERS ARE PLACED

The fact that wall board is thinner than lath and plaster must always be taken into consideration. It is obvious from this that the door and window jambs have to be made narrower the difference in thickness between the two coverings, if wall board is to be used. As is often the case, though, homebuilders rarely decide to use it until the house is almost finished, or, they do not realize that special jambs are required in planning it. Then, when the carpenter comes to apply the board, he is at a loss as to how to proceed. There are several ways out of this predicament. The easiest is, no doubt, by inserting a thin strip under the casing. Its thickness should take care of the difference between that of the board and lath and plaster. A more elaborate method is by leveling the casing with blocking and putting a moulding around the edge, which could either come to ⅛ inch from the surface of the casing or project that much beyond it.

The foregoing refers solely to common frame construction. To apply wall board to brick or concrete walls they are first plugged and furred. The regular furring strips, ⅞ by 1⅞ inches, are secured to the plugs and arranged in the manner of studding and headers.

Applying Wall Board Over Old Plaster

In remodeling work over lath and plaster the best and most convenient method of application is to put the board directly over the old material; using 1½-inch nails to fasten it on. Should the plaster be in extremely poor condition and ready to fall, it may be removed and the board secured to the laths with ordinary nails. This, however, should be avoided as much as possible on account of the dirt, muss and bother accompanying the removal of old plaster.

When wall board is applied to plastered walls, as above, the edges of the panels around the doors and windows are finished off with a small strip or moulding not less than ¼ by ⅝ inch in size. In the event of the plaster being removed and the board put on the laths, the same schemes as already described for frames made for lath and plaster and used with wall board can be applied.

Sometimes it is desirable to provide a dead-air space between the plaster and the board. In ordinary frame construction this may be done to bring about better insulation for heat, cold and sound, while on brick walls, where plaster has been put on the brick without lath, it is frequently done to prevent moisture condensation. The process is similar to that for ordinary brick or concrete walls. The furring strips must not be less than ⅞ inch thick so as to furnish a firm nailing. This means that the surface of the furring strips will be level with the casings, and consequently, when the board is on, the surface of the wall will project beyond the casings. Now, the way to finish the edges of the panels where they meet the casings is to use a heavy batten with a rabbet on one side at least ⅝ inch wide as the thickness of the board. The rabbeted edge should, preferably, be equal to the thickness of the regular battens or strips.

Water Heater for Concrete Watering Trough or Tank

NECESSITY FOR EVERY DAIRY FARM—CHEAPER TO HEAT WITH COAL OR WOOD THAN WITH EXPENSIVE GRAIN AND SILAGE—HOW TO CONSTRUCT TANK AND HEATER

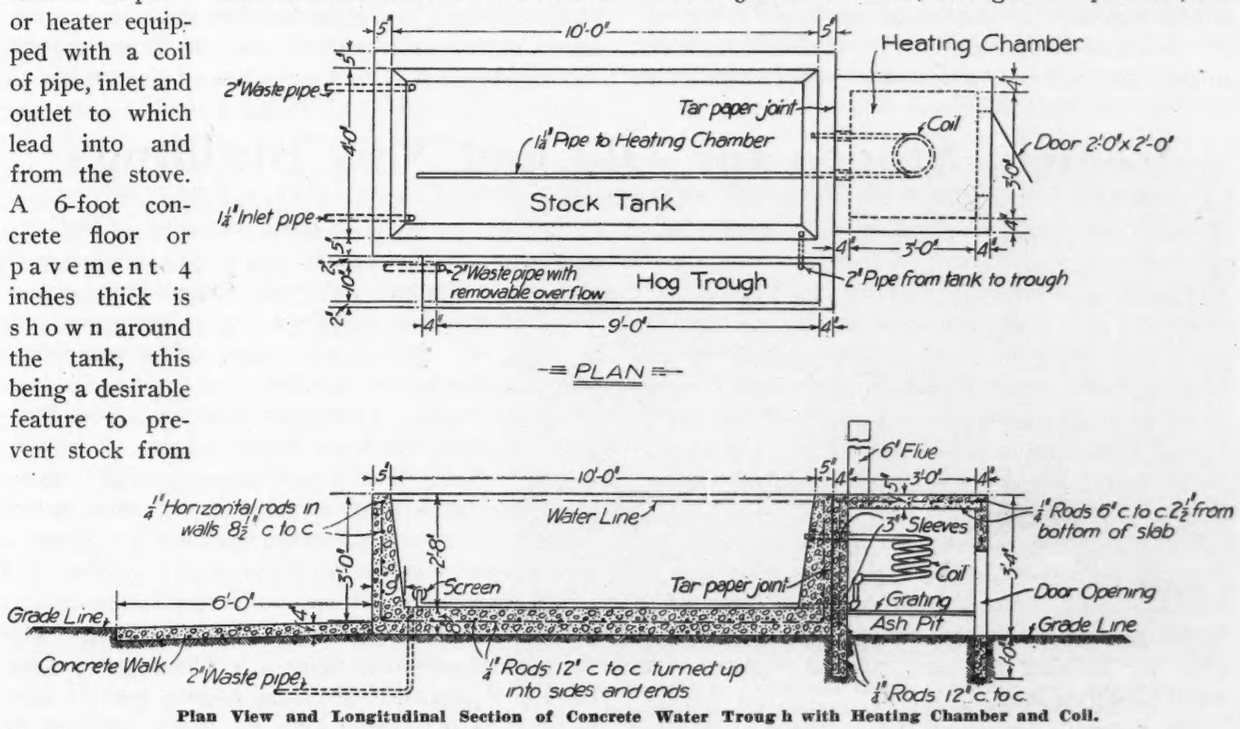
By H. Colin Campbell, C. E.

LIVE stock, especially dairy cattle, need plenty of pure water to drink, and sometimes during the winter months owing to extreme cold, are not likely to satisfy their thirst unless drinking water is slightly warmed. So some method for heating a stock watering trough or tank is often desirable. This will also prevent formation of ice so thick that the safety of the tank would be endangered, especially where the inside walls have not been battered (made slanting) to relieve the expansion of the ice.

The accompanying sketch illustrates in plan and elevation a concrete watering trough, 4 by 10 feet inside dimensions at the top, with walls 5 inches thick at the top, increasing to 9 inches near the bottom, to provide suitable batter for counteracting the forces of expansion above referred to. A smaller watering trough intended for hog watering is shown adjoining the stock tank in the plan. There is also shown a concrete stove or heater equipped with a coil of pipe, inlet and outlet to which lead into and from the stove. A 6-foot concrete floor or pavement 4 inches thick is shown around the tank, this being a desirable feature to prevent stock from working the soil up into mud. A 2-inch pipe forms the heater coil. Concrete for all of this construction should be a 1:2:3 mixture.

The stove illustrated is larger than need be and the drawing omits some desirable details of construction. It would be well to use as an inside form for the stove, old sheet iron, which would be left in place, thus preventing direct contact between the concrete and the flame, not because concrete would not stand the degree of heat necessary, but because many gravels and some rocks which are often used as coarse aggregate, particularly limestones and some granites, would disrupt on continued exposure to the heat, and thus cause failure. Metal lining would obviate this.

A still more convenient way to construct the stove would be, perhaps, to take two pieces of old smoke-stack pipe—one, say, of 18-inch diameter, and the other of 30-inch diameter, setting them up nested, that



Plan View and Longitudinal Section of Concrete Water Trough with Heating Chamber and Coil.

is, one inside of the other, and placing concrete between. The outer form or section of pipe could be left in place until it rusted away.

That portion of the water pipe which leads from the upper part of the coil into the tank should be threaded where it passes through the concrete, and over the threaded portion two or three large nuts or threaded washers should be passed, spaced sufficient distance apart so that concrete when placed would securely fix the pipe in the concrete so solidly as to prevent movement due to expansion. The portion of the pipe leading from the floor of the tank to the coil will not need such provision as the colder water will keep this portion from expanding.

A heating arrangement such as described can be readily fitted to a tank already constructed, by drilling the necessary pipe inlet and outlet holes through the tank end walls. In such a case, however, it will be necessary to cut a hole in the concrete larger than the pipe so that the remaining space can be well sealed up with a rich cement mortar. Details of reinforcing are so plainly shown on the sketch that no special reference need be made to this requirement.

✣

Efflorescence on Masonry and Concrete Construction

That white substance occurring on the surface of brick or other masonry walls or concrete block and monolithic concrete construction is known as "efflorescence" and consists essentially of free lime carbonate. Concrete block and monolithic concrete so manufactured or deposited as to result in porous construction will absorb rain or moisture which dissolves any soluble matter present and consequently deposits it on the surface when evaporation takes place. In practically every case efflorescence occurs as a direct result of porous material. An impervious surface is never subject to efflorescence because it is impossible for water to penetrate it, hence any soluble salt which may be in the concrete cannot be dissolved and conducted to the surface to crystalize on evaporation of moisture.

One should not condemn concrete construction on account of this white deposit, as it is a result of faulty workmanship.

The only effective method of preventing efflorescence is to manufacture dense concrete which results in the use of properly proportioned mixtures and enough water to produce a "quaky" consistency when the concrete is deposited. Concrete, whether monolithic or block, that is properly proportioned rarely gives cause for complaint on account of efflorescence. Of course, blocks that are free from this objection require more care to manufacture, but they can be made and will be of superior quality.

Efflorescence may be removed from the surface by scrubbing it with wire brushes or by the use of ordinary scrubbing brushes and a solution of muriatic acid, consisting of one part of acid with at least four or five parts of water, following which the surface should at once be well washed down with clean water.

A recurrence of the efflorescence may then be prevented by applying to the wall surface what is known as the "Sylvester treatment." This consists first of an alum solution made by dissolving 1 pound of alum per gallon of water, and second, a soap solution made by dissolving about 2½ pounds of reasonably pure hard soap per gallon of water. The surface to be treated should be clean and dry and then the soap wash should be painted on boiling hot and allowed to dry twenty-four hours. After this the alum solution at a temperature of about 60 to 70 degrees Fahrenheit should be painted on in the same manner. The chemical combination produced by these two solutions applied separately results in forming an insoluble compound in the porous surface that will close the pores and effectually prevent a repetition of the trouble.

Cement Stucco for Old and New Buildings

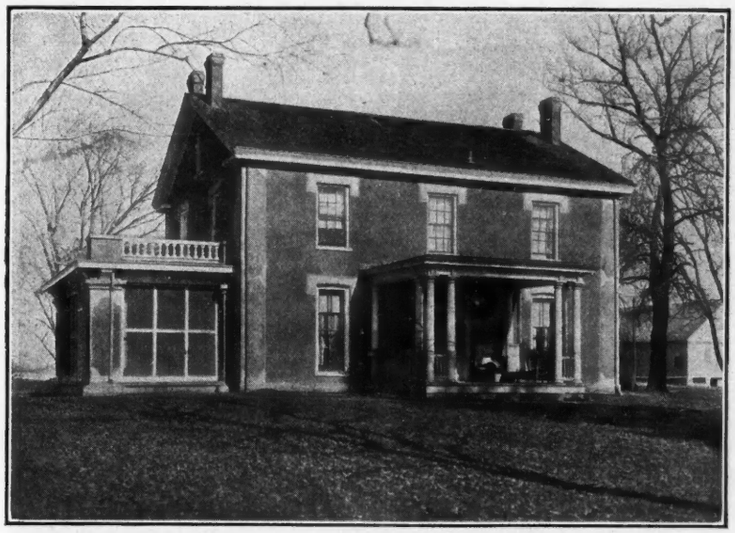
STANDARDS OF PRACTICE RECOMMENDED BY AMERICAN ASSOCIATION OF CEMENT MANUFACTURERS

IN a great many localities are to be found frame structures out of repair. There is a very simple method by which buildings of this kind can be made substantial and practically new. This is through the use of Portland cement stucco. Dwellings of even bad design are frequently remodeled by the use of stucco so as to appear like new and attractive structures. They are not only improved with respect to appearance, but are made thoroughly substantial and weatherproof.

Stucco is not expensive, and if properly applied is fire-resisting and enduring. It may be applied to brick and stone walls, concrete blocks and frame structures. In the case of frame structures the stucco is applied after the building has been covered with wood or metal plastering lath.

The materials composing stucco consist of Portland cement and sand with a small admixture of hydrated lime or slaked lime putty to give the mortar more plasticity. The lime also tends to whiten the stucco. The sand should be free from organic matter and uniformly graded from coarse to fine. The lime should also be uniform in quality.

The proportions for the first coat are 1 part Portland cement to not more than 2¼ parts of sand by volume. Where lime is used 10 per cent. by volume of the cement is the usual amount. In the first coat enough hair or vegetable fiber is added to insure a proper bond or key between the lath and mortar. The most satisfactory construction for the first coat is to plaster, if possible, on both sides of the lath, thus thoroughly imbedding same. If this is not possible the lath is applied to sheathing boards and care must be taken to thoroughly force the mortar through the



A Brick House Built at State College, Ames, Iowa, in 1862. Becoming Dilapidated, it was Restored with Stucco, as Shown.

lath and in contact with the boards back of the lath. If this is properly done it will insure complete imbedment of the lath, which is particularly necessary where metal lath is employed, for it will prevent possibility of corrosion. As soon as the first coat is applied and before the mortar hardens the surface is thoroughly roughened by scratching with a sharp instrument or saw-tooth paddle. After the first coat has been applied and becomes hard the second coat is applied to the roughened surface of the first coat. Before doing this the first coat must be thoroughly wet down with water to prevent the moisture from being absorbed from the second coat. The proportions of the second coat may be the same as those of the first with the omission of the hair or fiber. The surface of this coat is roughened and dampened in the same manner as described for the previous coat. In the third coat the proportions are 1 part Portland cement to not more than 2½ parts sand nor less than 2 parts sand by volume. Lime may be added in the proportion of 10 per cent of the volume of cement. It is sometimes the custom to use only two coats for ordinary work and in this case the third coat just described is the finish coat, the second coat being omitted. The surface finish decided upon, such as rough cast, pebble dash or float finish, is used on the surface of this third coat.

There are two very important precautions to be observed in the application of stucco. First, no stucco must be applied during freezing weather or if there is any possibility of the temperature dropping below freezing. Second, each coat must be kept damp and prevented from drying out by spraying or by hanging over the surface cloths which should be kept constantly wet. Cloths should be used where the stucco is exposed to hot sunshine.

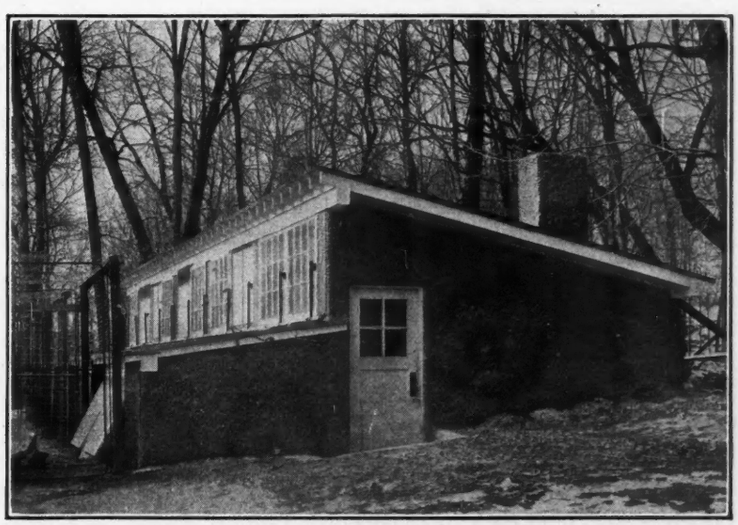
Stucco is used in four general classes of construction, first, the over-coating of old frame structures. Second, application to new structures by the use of wooden or steel frame work with wooden or metal lath. Third, its application to old brick or stone structures. Fourth, its application to concrete block buildings.

The second class of work requires little description. The frame of the structure is built in the ordinary way, with lath and sheathing boards fastened to it and the stucco applied as described above.

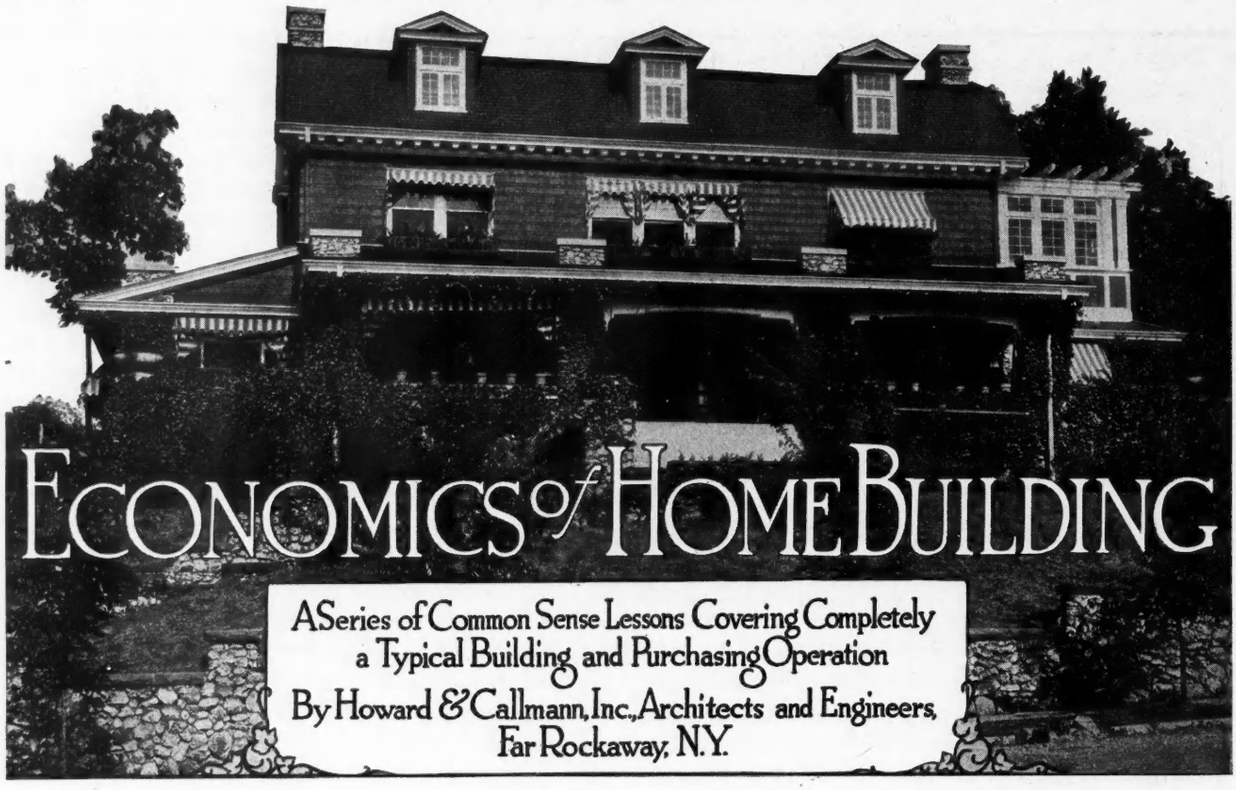
In the third class, the mortar joints of the brick or stone work are raked out to a depth of about 1 inch to form a key for the new stucco. The surface of the brick or stone is thoroughly cleaned and wet before applying the stucco. See that the stucco is forced into the joints to their full depth.

The fourth class is the application of stucco to Portland cement concrete block buildings. This is a very attractive and satisfactory method of construction. The concrete block, when intended to be covered with stucco, may be made with plain faces and no special attention is required to securing a smooth finish. Indeed, a rough finish insures a better bond between the stucco and the block. The mortar joints between the block are left open about 1 inch from the outer surface to insure a proper key for the stucco. The block is thoroughly wet down before the stucco is applied. Thus prospective builders who object to the appearance of the concrete block may combine the two materials and secure at once the strength and inexpensiveness of concrete block construction and the beautiful appearance of the stucco coating.

In all cases, structures should have firm foundations.



A Poultry House with Stucco Finish. This Attractive Structure Illustrates the Adaptability of Stucco to Farm Buildings.



IN TWELVE PARTS—PART X

Explanation of Specification Provisions—Hardware and Heating

Finish Hardware—Metal Work—Hot Air Heating Plant—Steam and Hot Water Heating Plant—How to Figure Amount of Radiation Required

ANOTHER group of items regularly included in the carpentry specifications (which we were discussing last month) has to do with—

"Finish" Hardware

(242) The "finish" inside and outside hardware shall be of standard manufacture, of solid brass or bronze, except in the kitchen and basement, which shall be of iron bronze. Samples shall be submitted to the Architect and Owner for approval.

(243) Furnish and set all "finish" hardware needed throughout the house including door hinges, locks, door handles, door plates, escutcheons, catches, bolts, sash fasteners, sash lifts, drawer pulls, hooks for all closets, hinges and push plates for double action doors, lever bolts for French casement doors, dead locks, sash pulleys, all kitchen, butler's pantry and basement hardware.

(244) There shall be two 4″ x 4″ butts set on all doors with steel bushings and tips. The Front Entrance and Sun Parlor doors shall have three 4½″ x 4½″ butts.

"Butts" are the hinges.

(245) Sliding sash throughout shall be hung with heavy braided sash cord to cast iron weights run over noiseless steel pulleys, with electro plated bronze faces.

(246) All windows shall have double action sash fasteners.

(247) Set two counter sunk sash lifts on the bottom of the lower sash of each window.

(248) Set the door knobs a convenient distance away from the door jambs.

This is to prevent injury to the hand.

(249) *Locks.* Locks for all inside doors shall be three tumbler mortise locks, size 3½″ x 3″ with face finished to match the hardware in each room.

Set mortise locks on back entrance and grade doors.

On the outside of front and sunparlor doors set pull handles with thumb latch and octagon lock escutcheon. On the inside set 2½″ glass knobs, dead bolts with 1¼″ knobs and night latch.

This is the most modern outside door hardware.

The most serviceable finishes for the hardware are old brass and antique copper. Manufacturers supply a variety of finishes, samples of which can be obtained from any hardware dealer.

(250) This is a general specification of what is required. The Owner reserves the right to deduct the net sum of One Hundred and Thirty ($130.00) Dollars from the contract price and supply the hardware, which the Carpenter Contractor shall set. The Contractor shall supply and set all rough hardware.

Rough hardware consists of nails, stirrups, bolts, sash weights, etc., that are not exposed and are part of the construction.

Sheet Metal Work

(251) Furnish and set flashings required of the best tin, brand of which shall be approved by the Architect. The flashings shall be well fitted, blocked, tacked and soldered.

(252) Flash over all window heads, step and cap flash all chimneys, flash for roof, projecting mouldings and cornices. Valley flashings shall be 20" wide. All flashings shall be painted on both sides before setting.

"Flashings" are pieces of tin or other metal, which are inserted at joints to make them watertight. The tin is stepped into the mortar joints of a chimney and turned under the shingles. "Cap flashing" is set a brick course higher and covers the joint of the step flashing.

(253) *Gutters.* Furnish and set with proper incline, 4" x 6" No. 24 gauge galvanized iron hanging gutters with ¼" rods inserted at upper edge and iron supports on each rafter.

A "gutter" is a metal channel to catch rain water as it flows from the roof.

Rods are used to stiffen the edge of the gutter.

There shall be gutters at all eaves of main roof and piazza roof.

"Eaves" are the edges of the main roof where it hangs over the outside walls.

(254) *Leaders.* Furnish and set eight (8) 3" x 4" No. 24 gauge corrugated galvanized iron leaders, secured to outside walls with wrought iron holdfasts and connected to all gutters.

"Gauge" is the thickness of the metal, No. 24 and No. 26 are the usual gauges for this purpose, No. 24 is the thicker.

"Corrugated" means evenly crimped.

All leader heads shall be "swan neck," and where possible the leaders shall be run straight and at a sufficient distance from the walls to clear small projections. The leaders are to be run down to a point 1' 0" from the grade, and from this point the Plumber will connect them to his work.

Copper for flashing, leaders and gutters is more durable than galvanized iron, but is much more expensive.

THE following information is intended as a guide and is not given in specification form.

Hot Air Heating Plant

A hot air heating plant supplies fresh heated moist air. The working of this system is simple. The furnace should be located toward the northerly end of the cellar, as it is difficult to heat rooms that are exposed to cold winds. By this method the pipes can be run direct to the rooms above the furnace.

Steam Heating Plant. A steam heating plant is easily installed, reasonable in cost and gives efficient heat.

Hot Water Heating Plant. A hot water heating plant produces an even degree of temperature and can be regulated during mild weather, which saves coal. The initial cost of installation is from 25 to 33 per cent. more than a steam plant.

Difference in Size Between Steam and Hot Water Radiators. The size and number of columns in the radiators determine the amount of radiation. If the height of the radiators is lowered it will increase the number of columns. Each column of a steam radiator is heated to the temperature of the steam—212° F. or nearly so;—therefore when a hot water plant is used, larger radiators are required than for steam, as the water is only heated up to hot water temperature—from 150° to 180°.

Steam and Hot Water Heating Plants

Hot water and steam radiators should be placed under or near the windows to warm the cold air from the glass surface.

The radiators should not be located under electric lights or in the spaces provided for furniture.

Locating Boiler. The boiler should be centrally located to bring the mains run below the cellar ceiling as nearly equal in length as possible, so that all parts of the house will be uniformly heated.

Drainage of Mains. The mains should have sufficient pitch to return the condensed steam or water back to the boiler.

Definition of Radiation. The expression "amount of radiation" is used to define the heating surface required to heat a building to 70 degrees F. in zero weather.

Definition of Heating Surface. "Heating surface" is the surface of the columns which form the radiator.

Quantity of Radiation. The amount of radiation needed to heat a house satisfactorily depends on:

1st: The area of glass surface in the windows.

2nd: The exposure of the building to the points of the compass.

3rd: The size of the rooms and the height of the ceilings (cubical contents of the rooms).

Capacity of Boiler. The capacity of the boiler should be about 50 per cent. greater than the amount of radiation needed to heat the house, as it is more economical and safer to work a boiler of large capacity with a small fire, than to force a small boiler with a large fire.

Exposed Pipes. All heating pipes should be exposed to obtain the best efficiency. The supply mains and boiler should be covered with an insulating asbestos covering to prevent unnecessary radiation of heat in the cellar.

Contractors' Guarantee. The Contractor for the heating plant should guarantee to heat all rooms of the house to a temperature of 70° Fahrenheit in zero weather.

Efficiency of Well-Designed Boilers. A boiler made and guaranteed by a standard and reliable company will prove far more economical than an inferior one. The additional initial cost will soon be outbalanced by the saving in coal.

(Continued to page 66)

"To the Efficient One, 'Opportunity' is Generally Born Twins or Triplets"

THE MAN FROM THE LUMBER YARD

It is our especial pride that our readers take the American Carpenter and Builder home with them. We commend the spirit of this letter not only to the man who is in active life, but also to the son or employee. There might be worse Sunday reading than this letter.

EDITOR.

"IF I only had a chance I would make good." "There has never been an opening for me." "If I had money to begin with I could make a barrel." "He fell into a soft snap."

I heard these, and many other remarks of a like nature many a time, as several of my father's friends would gather around the stove in February to smoke, swap yarns and discuss the outlook.

I have heard the same sentiment in clubs where the pipe was barred, but the cigarette was welcomed. Eavesdrop on a bunch of young fellows at the cigar store and you hear the same thing.

If this should come under the eye of a man, old enough to have uttered such pessimism, yet young enough to have a spark of vitality about him, with ambition to make good, it will pay him to appoint himself a committee to find out "why Who is Who."

John J. Ingalls, Senator from Kansas, a decade since, and of surpassing brilliancy, did much to kill optimism when he wrote that "Opportunity knocks once at every man's door, and if it is not opened, passes on, never to return."

Opportunity is not going to knock you down and force itself on you; knowledge is won by only constant wooing in every moment of leisure. But while "Opportunity" is not pugnacious, it is omnipresent and may be seen if you develop your mental eyes.

The Big Chance Was Near By, But We Didn't See It

Others, as well as myself, left our home town, because of its lack of opportunities. None of us can count ownership of as many ducats as a quiet common sort of fellow who didn't have enough enterprise to leave. But he SAW the need of a cold storage plant to care for the produce of Bedford county, and he has found a dozen opportunities thrusting themselves upon him. He is now the big man of the county.

There will not be a single reader of this issue of the "A. C. & B." but would be counted to be in a better position than John Phillips, for grasping an opportunity. He had worked in a lock factory until it was necessary for him to get out-door work on account of his health. He was nothing more than a saw and hatchet carpenter, and was the first to be laid off when work shut down in the fall. It was no credit to him that he got a job taking care of a horse, and doing rough work, for a local hardware dealer in the town where he happened to be stranded. It provided a meal-ticket for him. But it is to his credit when he read one morning of two burglaries, where entrance was gained through poorly protected back doors, that he began an investigation.

Phillips Took Up Master-keying

He learned from the proprietor that practically every outfit of locks they sold had a good quality lock for the front door, but the very cheapest for the back door. In fact, his firm carried good locks in only the expensive sets for the front door. He also found out that his people had never sold a single job that was master-keyed. He had his boss send to the factory, where he had worked, for a sample of a good, low-priced, three-tumb-

"Sawdust"

The man who gets in the habit of passing small opportunities will in turn be passed by big ones.

The ant never quarrels with the bee. Both are too busy making good on their opportunities.

To the efficient one, Opportunity is generally born twins or triplets.

You can't borrow money at the bank on your opportunities, but you can on what you make out of them.

The man who don't look for Opportunity will never find it.

If today fate measures you for bigger things, will she find you more worthy than yesterday?

Opportunity for you is not in biting off more than you can chew, but in having a bite the right size for fletcherizing.

Opportunity never seeks an unfit man.

Don't grieve over a lost opportunity, tomorrow may bring one of greater value.

Opportunity don't hang around very long to be discovered.

There are no more opportunities for the man that is dead or THINKS he is a dead one.

"There's pay for the man who can follow a plan
And carry the details through,
But the man whose pay is the most per day
Is the man who can plan and do.

"When a man has to ask you to point out his task
There's very small pay attached to it,
For the man gets the pay who is able each day
To discover his task and then do it."

ler mortise lock, and the prices of master-keying.

He began canvassing first in the neighborhood where the burglaries had been, and then in other sections, taking orders for good locks to be placed on kitchen doors. He showed every housewife that if any difference was made, the better lock should be placed on the kitchen and side doors. He showed how convenient it would be if the front and rear doors each had different keys, yet the man of the house would have a key that would unlock both the front and rear doors.

One of the bankers had a pretentious home, with a garage in the rear, where the man-of-all-work slept, while his chauffeur slept on the third floor of the residence. Phillips arranged the locks for the banker so that the roustabout could enter the garage and furnace room; the chauffeur the garage, and also the side door of the house; the maid the side door; the cook the kitchen; and the members of the family the front door. None of the above could enter any door other than mentioned, while the banker had one key that admitted him to any one of the five doors.

Phillip Called First at the Houses Near the Scene of the Burglary.

The banker was so well pleased with the equipment which Phillips installed for him, that he persuaded his boss to give Phillips an interest in the business, and to open a contracting and repairing department. When the senior member died three years later, Phillips was able with help from the banker to take the business over.

Anyone—You—Can do the Same

But, you say, "Phillips was lucky!" He would not have been lucky if he had not had his eyes open to the "OPPORTUNITY" when the burglaries occurred, and ACTED at once. "But master-keying is only a common proposition that any one can do!" Yes, but no one else used this common thing to force opportunity as Phillips did.

Generally the big opportunities are made up of the little ones that are used, each one resting for support on and getting strength from the previous one.

We have all been interested in David and Goliath, and believe that God directed the pebble. However, I do not believe that the pebble would have reached the vital spot if David had not used a thousand and one opportunities for perfecting his aim and arm for this big Opportunity. God is ready to help man, but man must do his part. You can juggle with a finite mind, but not with the infinite. David had it in him to give painstaking care to little things which prepared him for big things.

Henry Ford did not despise to patiently work out what is now an easy problem.

The Apostle, Paul, was an opportunist. There is a storm at sea, and he makes it the occasion for a sermon. There is a shipwreck, and he performs a miracle. He had to go up into the hills of Gallacia for his health, and he made it an opportunity for founding a church. It was in a letter to this church that he gave the truism, "As a man sows, that shall he also reap."

Being Friendly with a Car

In an Indiana town of some 5,000 people can be seen a contractor who is always busy. He is making good money for a small town. He keeps three men going all the time. He never falls down on the completion of a contract on time. He owns a four-passenger car and takes his men to the job—home for the noon meal and back home at night. It is needless to state that he gets full-time service. It is also worthy of note that the men arrive at work in good conditions, physically and mentally.

Many other employers own machines, but they do not make it an opportunity for securing the loyal efforts of their men, and a full energy free from fatigue.

Elihu Burritt made himself acquainted with ten languages while plying his trade as a village blacksmith (Hebrew, Greek, Syriac, Spanish, Bohemian, Polish, Danish, Persian, Turkish, Ethiopic). His father was the village cobbler, and Elihu had only six months' schooling in his younger days.

Benjamin Franklin, while working as a journeyman printer, wrote his "Dissertation on Liberty and Necessity, Pleasure and Pain." He also found time

The Man from the Lumber Yard

to make useful discoveries in electricity, during spare time, while he was engaged in the printing business.

Hugh Miller taught himself geology, during his spare time, while working at his trade as a mason.

Cobbett learned grammar during the leisure time of his service as a soldier.

Ferguson taught himself astronomy while tending sheep in the employ of a Scotch farmer.

John Bunyan wrote his "Pilgrim's Progress" while imprisoned in a Bedford jail.

Little Commonplace Opportunities Sometimes Yield Big

The New Jersey man who brought out the idea of attaching a rubber erasing tip to the end of a lead pencil received an income from royalties to the sum of $200,000.

The Man Who Invented Roller Skates Made a Million.

The metal plates used to protect the heels and soles of shoes yielded to the man who hit upon the idea $250,000 within ten years.

The inventor of the roller skate received $1,000,000, in spite of the fact that the craze for their use did not begin until nearly the end of the patent.

Opportunities do not come with brass band, bearing torches, but open out in the most ordinary way.

There is only one way in which you can grasp opportunities. Those of yesterday were yours, but are now out of reach. The more you grieve over them the more injury there is to you. Those of tomorrow also are out of your reach. The more you fret about them to the neglect of today the less likely you are to attain.

The Opportunity of TODAY is yours if you see it and seize it.

There is one thing certain: Opportunity avoids the loafer, the boozer, the idler, the cigarettist.

Only the active mind, the mind kept brightly polished by constant use, has the insight to discover and ability to utilize opportunity.

I don't envy any man his opportunities. My great concern is to make good with those that come to me. It may not be as a ruler of men or money, nor yet as a winner of fickle fame; but if my opportunity is only to bring more of peace and happiness to mankind, I am content.

THE MAN FROM THE LUMBER YARD.

Heating Plant Requirements

(Continued from page 63)

Care of Heating Plant. Keep the grate bars clear by using the shaker twice a day—the ashes must not be allowed to accumulate as they will burn out the grate bars. Use small coal—it burns readily and makes few ashes. The furnace should not be loaded with coal above the bottom of the door.

Chimneys. To insure the proper working of a heating plant it is necessary to have a well constructed chimney of ample area and height. The flue linings should be 8½"x13" or 10" diameter (outside dimensions).

Method of Determining the Amount of Radiation Required for Rooms

The following is the method usually employed to ascertain the radiation required to heat a room to 70 degrees Fahrenheit in zero weather:

1st—Determine the cubical contents of the room: Multiply the width by the length and multiply this product by the height, this will give the cubical contents. Divide the cubical contents by 200.

2nd—Multiply the length of the outside walls of the room by the height. Divide this product by 20.

3rd—Multiply the width of each window by its height and add the products together—divide this by 2.

4th—Add together the sums of each of the above results and the total will be the number of square feet of direct radiation necessary to heat the room.

Illustration.

To ascertain the amount of radiation necessary to heat a room 14 feet by 14 feet and 10 feet high; with two outside walls, each wall having two windows size 3' 0" x 6' 0".

	Sq. Ft. Rad.
(1) Cubical contents of room.	
14' 0" x 14' 0" x 10' 0" = 1960 cu. ft.	
Divided by 200 =	9' 8"
(2) Area of outside walls.	
14' 0" x 10' 0"	
14' 0" x 10' 0"	
28' 0" x 10' 0" = 280 sq. ft.	
Divided by 20 =	14' 0"
(3) Area of windows.	
2 (3' 0" x 6' 0") = 36' 0"	
2 (3' 0" x 6' 0") = 36' 0"	
Divided by 2 =	36' 0"
(4) Total	59' 8"

TRICKS of the CARPENTRY SHOP

Colums and Other Things

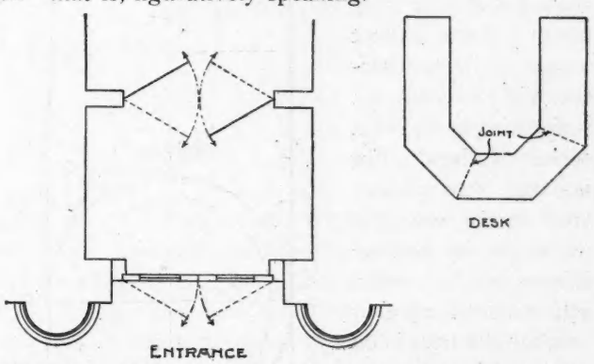
SHORT CUTS AND LONG EXPERIENCES

By Wm. C. Jasbury

The Author as Viewed from the Southwest.

HOW many times one will hear of stories such as a man building a boat in his cellar, so large he could not get it out, etc. I worked in a mill once, where a church frame was built up so large we had to knock the end out of the building to get it out.

Recently I had a job to rebuild a library desk. The new shape looked too large to pass through the library vestibule, so I measured the vestibule, drew a one-inch scale for it, and made a one-inch plan of the desk out of card board, that I might experiment on my bench instead of at the public library with a massive polished desk in the presence of a giggling audience. I found it would not work, hence the desk was built in sections and was placed in the building with bells on—that is, figuratively speaking.



Library Desk Had to Be Made in Sections to Go through the Door.

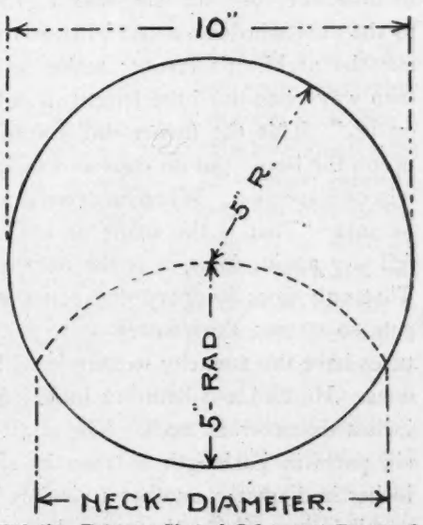
COLUMNS—Speaking about architecture, the column plays such a conspicuous part, I will confine myself to it. There are many good turners that have never given the column enough serious thought and study. As for my going into detail, as to the various orders of architecture pertaining to columns, their shapes and proportions, this field has already been too well covered by concerns making a specialty of this line, by issuing catalogs that are not only well illustrated but scatter much valuable knowledge to the observer. But there are many rules used by mechanics that are not found in catalogs, or even books treating on the orders.

DIAMETER OF NECK OF COLUMN—Shall now try to make clear to you a few home-made remedies; for instance—finding the diameter of the neck of the column. Some turners take 5/6 of the diameter of the shaft at bottom, viz.:

$$10'' \text{ column, } \frac{10}{1} \times \frac{5}{6} = \frac{6)50}{8\ 2/6}$$

$8\frac{2}{12}$" neck diameter.

Here is another. Take a 10-inch column, draw a circle 10-inch diameter which is bottom of column; take the compasses without changing them, put one point in the circumference, scribe an arc from the circumference through the radius point again touching the circumference, then the distance from point to point or where the arc crosses the circumference, is the diameter of the column neck.

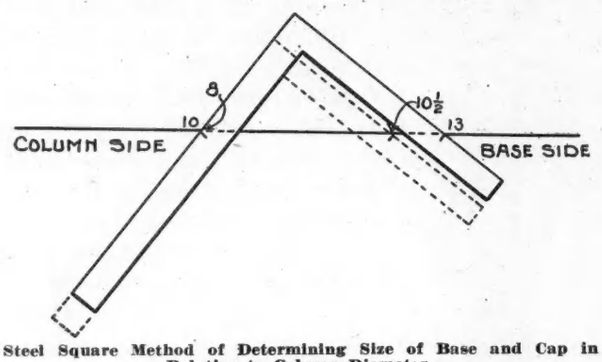


Relation Between Size of Column at Base and Neck.

SIZE OF COLUMN BASE—Now as to the size of the base and cap for a column, I find many architects draw the base for a 10-inch column, 13 inches diameter and cap 1 inch less, or 12 inches. Well, then, if the base of a 10-inch column is 13 inches, that is the proportion to use on the steel square to determine the size of

the base on a 6-inch, 8-inch, etc. This is done by putting the steel square on a straight line, the 12-inch mark on one point and the 13-inch mark on one point, then if you want the size of the square base on an 8-inch column, slide the square down until the 8-inch on the square stops at the point where the 10-inch was. Look over to the other side and you will have 10½ inches—the square of the base on an 8-inch column. This can be used up or down the scale, or square as the case demands. I have used this method for years and find it very handy, which is simply a case of proportion.

COLUMN TURNER FOOLED THE ARCHITECT—I recently took part in a little game of what

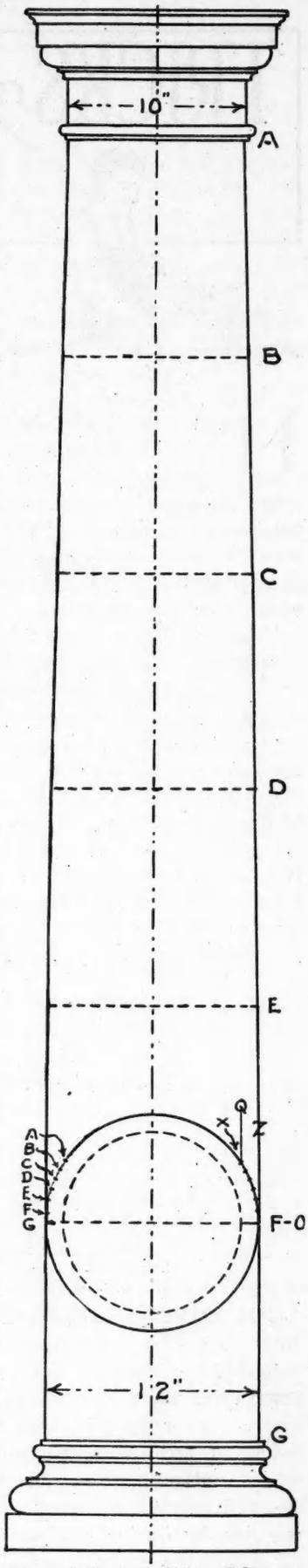


Steel Square Method of Determining Size of Base and Cap in Relation to Column Diameter.

might be called practical woodworking vs. theoretical knowledge. Was engaged in making Colonial columns from a detail of an architect of some renown. He laid out the entasis of the shaft in a manner that I will show later, saying: "So & So Co. are the only folks in this country that can get the correct shape of such a column." He insisted upon this geometrical method. Well, when we had them staved up, ready to turn, the foreman who was a turner himself, said to the man who was about to start the job: "Do not use the architect's layout; make or turn them your own way—one-third the length straight; slight entasis on up." This the turner did, finishing one, stood it up on the bases, put on caps and nailed for architect's trip of inspection. When he arrived and looked it over he said: "That is the shape of a Colonial column; I tell you again, folks, it is the only correct way," etc. That only goes to prove that some men's imagination gets so strong, they worry as to why all other creatures have the audacity to mingle with the chosen (?) ones. He had a column 12 inches diameter base, 10 inches diameter at neck. The shaft he divided into six parts in its length so then he struck a circle 12 inches in diameter, another 10 inches inside, then drew parallel lines, Z-Q; the space between X and O he divided into six spaces on the circumference same as column. Each point corresponds with the one on the column. Measuring across from X to A gives neck diameter, from point B in circle across to corresponding point B gives diameter at B. Measure across from point C to point C gives diameter at C on column, etc.

This process means a lot of callipering for the turner, which naturally means a lot of time. The turner simply sighted up the column while it was runing in the lathe, using not the thumb rule, but the eye gauge—one of man's greatest gifts.

FUSSING OVER WHAT DOESN'T MATTER — While we have our minds on how easy it sometimes is to fool people and how some folks make such a cry about small things, many times I have seen draughtsmen ponder over a few little members of a window trim and as soon as the building is tenantable the trim is covered up with shades and lace curtains. You cannot even see the end section after it is put up, which simply shows a series of lines. For instance, you close your eyes now just where you are and see if you can tell yourself what shape or contour the trim is on the window nearest you. It is a cinch you cannot. So that goes to show that we are not as close observers as we sometimes think we are and make many fusses about things that are not worth their weight in cactus leaves in Arizona.

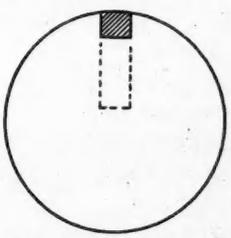


Exact Method of Sizing Column—Little Used.

WOOD TURNING—Let us talk a while about wood turning,—one of the oldest crafts; in fact, the lathe was one of the first machines mentioned in history—the ancient whip lathes that were constructed with a wood spring on which was fastened a leather strap, the end of strap wrapped around the work. As the spring was released, it would revolve the work, then reverse itself. This must have been about as skilled as ploughing the soil in Mexico with a stick held with one end in the ground and with a rope fastened to the middle and an ox for motive power.

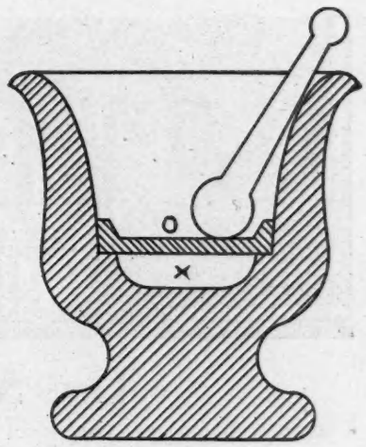
But excuse me,—I started to talk about the art of wood turning. Power was furnished the lathe when steam and water power came into use and later electricity. Such are the modern lathes with individual motors seen in all up-to-date mills and U. S. Navy Yard shops. The art of turning on a lathe is not only one of practice and skill combined, but is fascinating to the observer. There is no limit to the articles that can be wrought on a wood turning lathe by a good turner. I shall not try to enumerate the different things, but take on a few of the odd or novelties that have come to me.

A VARIEGATED BALL—I once saw a turner make a hollow ball six inches in diameter, the shell ⅜ inches think, consisting of over 600 different pieces; many of these dark and light woods, that gave a marvelously variegated color after the ball had been finished. Here is the way it was made: He first turned a ball six inches in diameter between centers in the regular way, then he turned out a hollow chuck to true up the ball. After he had the ball true enough, he bored a 1-inch hole 3 inches deep, plugged up the hole with a disk of other colored wood, ⅜-inch thick, then he again bored a hole, another plug, etc., until he had the entire original ball bored out, leaving only the ⅜-inch thick pieces he had glued in. Of course the shapes of the pieces were not round, as he would have to bore in wherever any of the original ball wood showed up. This novelty took a long time, which was worth much more than the ball would bring even if auctioned off at Monte Carlo the day after a ship load of absinthe had arrived.



Hole Bored Through to Center and Plugged.

TRICK MORTAR AND PESTLE—I once had an order to turn a trick mortar and pestle for an amateur magician. The mortar part was supposed to have a false bottom. The idea was, he would borrow a watch from a person in the audience, put it in the mortar; the watch would be placed in below the bottom piece, then he would have the works of an old watch in the tray—and would grind and tamp with the pestle until the loaner would be driven nearly to the D. T.'s. He would then say a few magic words, such as "Sic Semper, tyranus," etc., pass the wand over the mortar and produce the watch as good as ever.

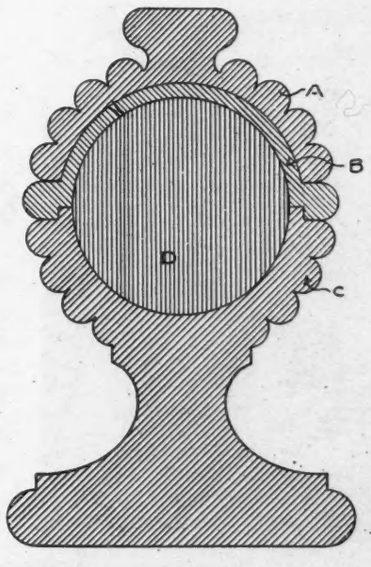


Mortar with False Bottom.

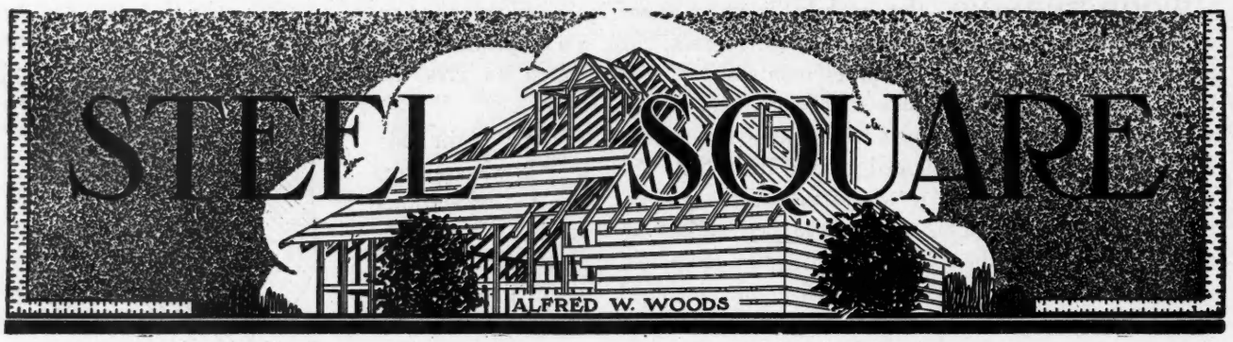
One night this gink was pulling this mysterious shade, when the tray did not get the right jibe, and he mutilated the contents in a fiendish manner. When Mr. Magician discovered he had made a mis-cue by putting little Ben on the blink, he sure did look like a piece of cheese that had been walked on during a plumbers' clam bake. He had to pay for the watch. But this guy had the notion that I should be indicted for his mishap, *as I turned the pesky thing!*

TRICK CUP—I once knew a turner that had the idea the firm for whom he worked kept him on the job on account of his ability to turn souvenirs. This he was at every time the boss left the room. He had one trick cup he used to turn that was all right.

This trick was pulled in a manner thusly. He would remove the upper part A, which would show a shell part B, that looked like a half ball in the bottom part C, except it was a trifle larger as shown at the joint; this had to be, as it covered the real or original ball, then he would spout off about the ball in the cup, etc. He would then go around through the crowd, showing the ball in the cup, not letting any one take hold of said cup or even let them have a Sherlock look at it. While doing this, he would drop the original or real ball in the pocket of some mutt that did not look like a High School with a carved entrance and an owl in the center. Then he would back off from the crowd, remove the upper part, A, which now had the fake ball part, or B, with it, leaving the cup empty in space D. Some more hash language and he would say the ball was now in the pocket, or mouth of Mr. Gargoyle. Mr. G. would examine his pockets and behold the ball!



Section through Trick Cup.



The Steel Square and Its Uses

A SHORT TALK ON THE PRODUCTION OF THE STEEL SQUARE LEADING UP TO THE USER AND A SIMPLE ILLUSTRATION OF HOW TO APPLY IT IN HIP AND VALLEY ROOF FRAMING.

By A. W. Woods

LOOKING at the steel square in its cold, rigid form, the casual observer sees but little in it beyond an instrument for simple measuring and the squaring off the ends of boards, little realizing that with it in the hands of the skillful mechanic with a knowledge of its uses, it is an instrument of calculating power that is far reaching, limited only by mathematics itself. Therefore, its uses to the mechanic go just as far as he is capable or willing to seek and master the information that may be gained from it.

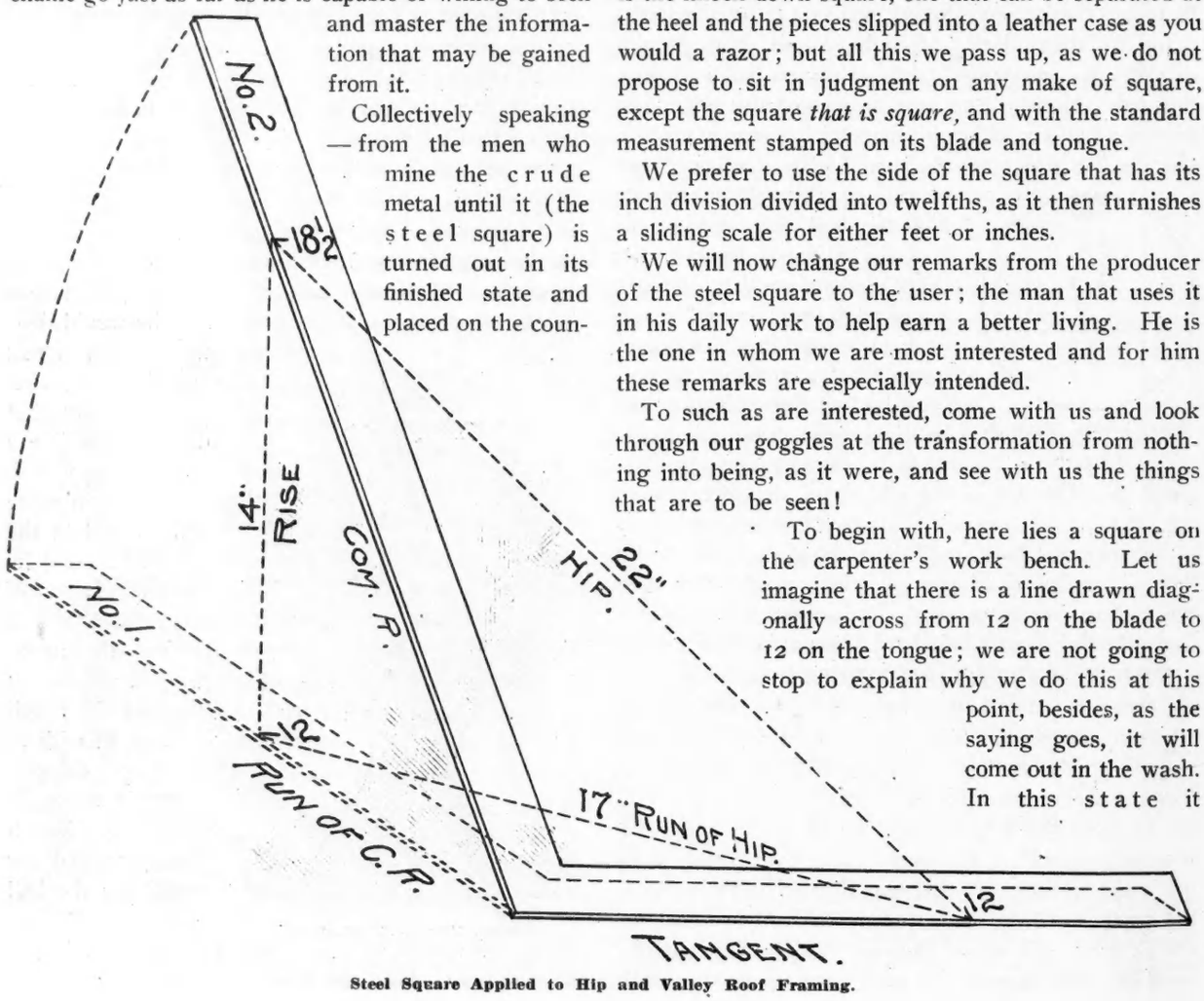
Collectively speaking—from the men who mine the crude metal until it (the steel square) is turned out in its finished state and placed on the counter of the dealer,—the men who produce it know but little of its real use; they are interested in it in a commercial way only. The man behind the counter will tell you that this make or that is the best to buy because it has white figures, or red figures, or that it has So-and So's rafter table stamped on it, or that it is rust-proof or reinforced at the heel to hold it in a perfect shape, while another will tell you that the square to buy is the knock-down square, one that can be separated at the heel and the pieces slipped into a leather case as you would a razor; but all this we pass up, as we do not propose to sit in judgment on any make of square, except the square *that is square,* and with the standard measurement stamped on its blade and tongue.

We prefer to use the side of the square that has its inch division divided into twelfths, as it then furnishes a sliding scale for either feet or inches.

We will now change our remarks from the producer of the steel square to the user; the man that uses it in his daily work to help earn a better living. He is the one in whom we are most interested and for him these remarks are especially intended.

To such as are interested, come with us and look through our goggles at the transformation from nothing into being, as it were, and see with us the things that are to be seen!

To begin with, here lies a square on the carpenter's work bench. Let us imagine that there is a line drawn diagonally across from 12 on the blade to 12 on the tongue; we are not going to stop to explain why we do this at this point, besides, as the saying goes, it will come out in the wash. In this state it



Steel Square Applied to Hip and Valley Roof Framing.

simply represents a flat surface comprising area only, which we will use to represent the plan. The next step is to take on solids; every school boy knows what that is and that is what we propose to take on now. Solids, —they are invisible but nevertheless exist, whether seen or unseen.

Now, referring to the illustration, suppose we raise the blade, as shown by square No. 2, but keeping in mind the plan as before described and shown on square No. 1. The very instant we begin raising the blade, the so-called solids begin to take on shape in the form of a triangular cube, as shown by the square and the dotted lines in connection with same.

Note.—This solid, as we call it, has four sides which are to the roof as from the run of the hip back to the run of the common rafter for its base, as follows:

The bottom side represents the plan, while the upright sides represent the area inclosed by their respective run, rise and pitch, while the top side represents the plane of the roof. In this example, we have raised the blade until it is 14 inches high at a point on a vertical line over 12 in its former position. This line represents the rise per one foot run of the common rafter and intersects the blade at 18½ inches and represents the length of the common rafter for a one-foot run. The diagonal line from 18½ to 12 rests directly over the line in its former position and represents the length of the corresponding hip. Now, if we cut a block to the dimensions here given, we would have a true solid containing the dimensions or proportions to take on the steel square for all of the principle cuts, lengths and bevels that enter into the roof. In fact, by the manipulation of this block by placing it this way and that way on the timber, the same can be had direct from the block itself.

What more simple illustration of the use of the steel square in roof framing can be presented than this? We took the square as we found it lying on the bench and all we did was to raise the end of the blade until it rested in the desired plane of the common rafter and the required parts just come in to being from nothing, as it were, and we turned them to use.

Just a little more and then we close. The above is for a square cornered building. That is the reason 12 and 12 are used to reckon from in this instance, because it represents the angle formed by the runs of the common rafter and hip. For the octagon corner, the diagonal line would be from 12 on the blade to 5 on the tongue and the procedure would be the same as above. This is where circular measurement comes in for its part in the work, but we cannot take up space to explain further.

Note.—Seventeen is given as the diagonal length from 12 to 12, but as a matter of fact, it lacks nearly three hundredths part of an inch of being that amount.

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JUST as well to keep your temper under all circumstances; no one else has much use for it, as a rule.

Ingenious Idea for "Tucking In" a Garage

By Felix J. Koch

CAN'T have an auto because you haven't room on your place for a garage and you don't quite feel you can afford paying storage bills every month?

Just take a little jaunt down to Cincinnati, where real estate is at a premium and ground is so valuable that even the best intentioned are apt to look twice before they will squander a foot. People down there have learned little lessons in utilizing space, that will do you good to copy. One of these has to do with the placing of the garage.

For example, there was one man had his home on a bluff well over the street, with attractive portico out before it. You never could get an auto to climb that hill; and besides, there wasn't room for a garage. So he tucked in a garage right under that porch; faced it neatly, put in attractive doors, enlarged his porch on the top—and there you are, all one might desire.

Garage in Cellar of Corner Lot House.

Noon Hour Talks by the Boss Carpenter

Talk No. 38. Timber Floors—Construction Series No. 2

THE BOSS TELLS HOW TO FIND THE SIZE OF FLOOR JOISTS AND GIRDERS IN ORDINARY CONSTRUCTION

"AT our last Talk," said the Boss, "I told you fellows how to find the amount of load carried by the joists in a floor, and also how to determine the load carried by the main girders or beams when that type of construction is used. This time I am going to go ahead and tell you how to find the size of the joists and girders in a building such as is shown in Fig. 57. We will use yellow pine in this case, but joists and beams of any other kind of timber would be figured in just the same way, except in the use of a different value for the strength of the material itself.

"In figuring, we commonly consider that the following values for the strength of timber in the formulas for bending will give safe results when the timber is seasoned and of good quality, free from cracks and large knots:

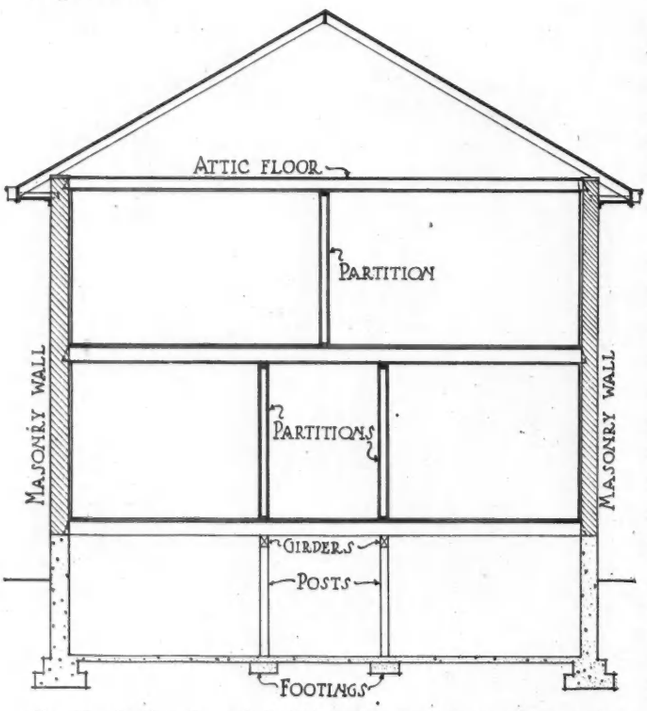


Fig. 57. Section through Building, Showing Floors and Location of Partitions.

VALUES OF X IN FORMULAS A AND B.

Georgia yellow pine	1,200 pounds per square inch
Short-leaf yellow pine	1,000 pounds per square inch
Spruce	1,000 pounds per square inch
Hemlock	600 pounds per square inch
Fir	800 pounds per square inch
Cypress	600 pounds per square inch

"These are not values which would allow the beam to break, but are based on one-sixth of the breaking value. This allows what is commonly referred to as a 'factor of safety' of six."

At this point one of the men asked the Boss how such values were found and whether they are reliable or not. The Boss told him that carefully carried out experiments had been made by investigators at many technical schools and in connection with the various engineering societies to determine values which could be depended upon. These investigators have used full size beams of the common varieties of timber used in practice, and have broken them under as near practical conditions as possible. The loads under which the beams break are recorded in each case and the unit stresses such as given above are taken from the average results of a great many tests on each kind of timber.

"In the building shown in Fig. 57," said the Boss, "the rooms on the first floor are 12 feet wide and the hall is 8 feet wide. This will make it possible to use either three separate sets of floor joists on this floor—two of the sets 12 feet long in the clear and the other set 8 feet in the clear, with ends overlapping on the girders—or two sets of joists with one long and one short set overlapping over the girders. In this latter arrangement it would be advisable to stagger the joists so that the joints will alternate on the two carrying girders.

"We will consider in the present case that the joists of the first floor are 12 feet and 8 feet in the clear; that these joists rest upon the side walls of the building at one end and upon two girders at the other. These girders are supported by yellow pine posts (or brick piers) spaced 8 feet on centers, with the ends of

the girders resting on the building foundation.

"The joists of the second floor are of the same length as those of the first floor and are supported by the side walls and by partitions placed directly over the girders shown.

"The attic floor joists are 16 feet long in the clear and are supported by the walls at the plate and by a partition at the center. We will begin by figuring the size of these joists first and then go down through the other floors of the building.

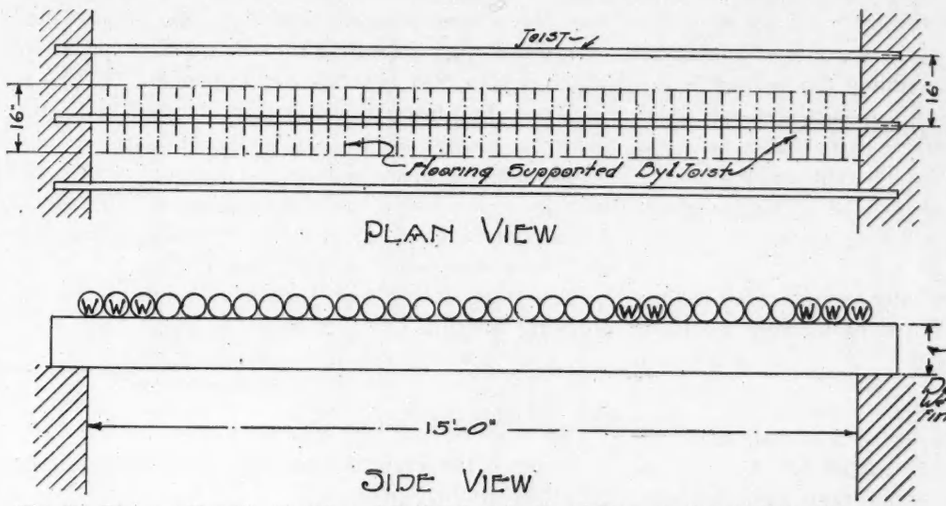


Fig. 58. Diagram Showing Condition of Uniformly Distributed Floor Load Carried by One Joist.

"Since timber 2 inches in thickness is commonly used for floor joists in residence work, we will assume that 2-inch stock will be used in this case. Our problem will be to find the width of the timber to be used, after we know the length, thickness, kind of material and amount of load to be carried. The solution which follows is based upon rough material which runs full size. If the material is planed or dressed down to a smaller size, the calculations will have to be changed also.

"Those of you who have followed all of the Noon Hour Talks will remember that we had a formula in one of our early Talks which took up this same principle. I am going to use this same formula in a little different way in figuring these floors. Our new formula is

$$\frac{X \times b \times d \times d}{6} = \frac{W \times l}{8} \qquad (A)$$

Where X is the strength of the timber in pounds per square inch, b is the breadth or thickness of the timber in inches, d is the depth of the joist in inches, W is the total uniformly distributed load on a joist in pounds, and l is the length of the joist in inches.

"If a partition is supported at or very near to the center of a series of short beams as shown in Fig. 57, then formula (A) is changed as follows:

$$\frac{X \times b \times d \times d}{6} = \frac{W \times l}{8} + \frac{P \times l}{4} \qquad (B)$$

The letters in formula (B) mean the same as in (A) with the addition of P, which represents the concentrated load in pounds which the partition brings onto a joist in addition to its regular uniformly distributed load.

"Assuming in this case that on account of the sloping roof a load not greater than 30 pounds per square foot would come on the attic floor and that this value is large enough to take care of the weight of the joists and flooring also, we would only have to add 10 pounds per square foot to the 30 pounds to account for the ceiling beneath. This would make a total of 40 pounds per square foot as the working basis for the attic. These joists are spaced 16 inches, or 1⅓ feet, on centers and are 16 feet long in the clear. Therefore, the uniformly distributed load carried by one joist will be 16 × 1⅓ × 40, or about 850 pounds. If short-leaf yellow pine is used and the width is 2 inches, we will obtain the proper depth of joist by filling in and solving formula (A).

$$\frac{1{,}000 \times 2 \times d \times d}{6} = \frac{850 \times 16 \times 12}{8}$$

Solving for d, we find that it is equal to about 8 inches. Therefore, we would use 2-inch by 8-inch timber for the attic floor joists. If spruce or hemlock had been used instead of pine, a different value of X would have been used from the table of strengths given above.

"In figuring the size of the long joists for the second floor, we will use the same formula as above. The floor load in this case should be taken as 40 pounds per square foot for the live load, 10 pounds per square foot for the ceiling if of lath and plaster, and about 6 pounds per square foot for the weight of the double floor and joist. This will make a total of 56 pounds per square foot of floor. The length of the joists in the rooms is 12 feet in the clear and they are spaced 1⅓ feet apart. This will make the load on one joist equal to 56 × 12 × 1⅓, or 896 pounds. Fig. 58 shows a diagram of this condition.

"Filling in formula (A), we obtain

$$\frac{1{,}000 \times 2 \times d \times d}{6} = \frac{896 \times 12 \times 12}{8}$$

This gives a value of d as about 7 inches, therefore 2-inch by 8-inch joists should be used for the long joists in this floor.

Figuring Timber Floors

"To find the size of the shorter or 8-foot joists over the hallway, we must first find the load that the partition brings onto these joists. As stated in Talk No. 37, a partition built of 2-inch by 4-inch timber spaced 16 inches on centers and plastered on both sides will weigh about 20 pounds per square foot. If the height of the rooms in this building is 9 feet, the weight of the partition itself which will be supported by one floor joist will be $9 \times 1\frac{1}{3} \times 20$, or 240 pounds. This load will be increased by the load from the floor above, which is carried in part by the partition. Each strip of partition $1\frac{1}{3}$ feet long will carry a load from the attic floor equal to $16 \times 1\frac{1}{3} \times 40$, or 850 pounds, as explained in Talk No. 37. Adding the weight of the partition and the weight *on* the partition per joist, we have a concentrated load of $850 + 240$, or 1,090 pounds at the center of each joist in addition to its uniformly distributed load of $56 \times 8 \times 1\frac{1}{3}$, or about 600 pounds. Fig. 59 shows a diagram of this condition.

"Filling the above values into formula (B) in this case where there are two kinds of loading, we have

$$\frac{1{,}000 \times 2 \times d \times d}{6} = \frac{600 \times 8 \times 12}{8} + \frac{1{,}090 \times 8 \times 12}{4}$$

"Solving, we find that d has a value of about 10 inches. Since this value of the depth for the joists is greater in that part of the second floor over the hallway than over the rooms, we will either have to make the floor joists in the rooms 10 inches in depth, or use

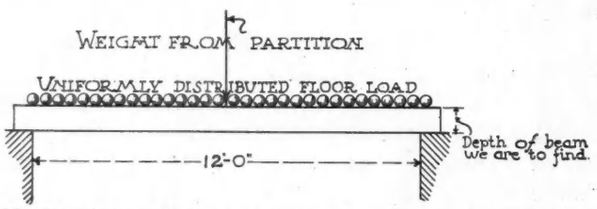


Fig. 59. Diagram Showing a Combination of Uniformly Distributed Load and Concentrated Load from Partition as Carried by One Joist.

two 2-inch by 8-inch joists side by side instead of one in that part of the floor over the hall. It will be cheaper to double up the 2-inch by 8-inch joists under the partition where they are needed and use single 2-inch by 8-inch joists in all other parts of the floor.

"The joists for the first floor would figure out to be the same size as those of the second floor in this building if a live load of 40 pounds per square foot is still used, but on account of heavy furniture, such as pianos, etc., or the effect due to quite a number of people in a room, it is commonly considered better to use 2-inch by 10-inch joists in the floors of the first story. This construction will give a stiffer and stronger floor.

"Each girder under the first floor would support a strip of floor on the room side 8 feet long and 6 feet wide, and on the hall side a strip 8 feet long and 4 feet wide, making a total of 80 square feet of floor. If we assume that the weight of the floor and its live load is 50 pounds per square foot, this would bring a uniformly distributed load of 4,000 pounds onto each girder in addition to the load from the partitions which rest on the girders.

"The loads brought by a partition onto each of these girders is detailed as follows:

"From attic floor, a strip of floor 8 feet long and 16 feet wide loaded with 40 pounds per square foot, or 5,120 pounds. At the second floor, one-half of this amount, or 2,560 pounds, is carried to each of the second floor partitions shown.

"From the second floor, the weight on a strip of floor of the size of that just given above for the first floor, or a load of approximately 4,000 pounds, and one-half of the weight of the second floor partition, which is $\frac{1}{2} \times 8 \times 9 \times 20$, or 720 pounds.

"From the first floor partition located over the girder, a weight of $8 \times 9 \times 20$, or 1,440 pounds. Total, $2{,}560 + 4{,}000 + 720 + 1{,}440$, or about 8,720 pounds. This added to the load from the first floor, 4,000 pounds, gives about 12,720 pounds as the total uniformly distributed load on the girder.

"Assuming a width of 8 inches for the girder and applying formula (A), we have

$$\frac{1{,}000 \times 8 \times d \times d}{6} = \frac{12{,}720 \times 8 \times 12}{8}$$

"Solving, we find that the value of d is a little over 10 inches. Therefore it would be advisable to use an 8-inch by 10-inch girder.

"Next time," said the Boss, "we will find the size of the timber posts or brick piers necessary to support these girders."

✣

Living Room Detail Sheet

WORK OF RALPH W. ERMELING, ARCHITECT

THIS is the first of a set of well designed house interiors from which many helpful ideas can be gathered. (See page 75.)

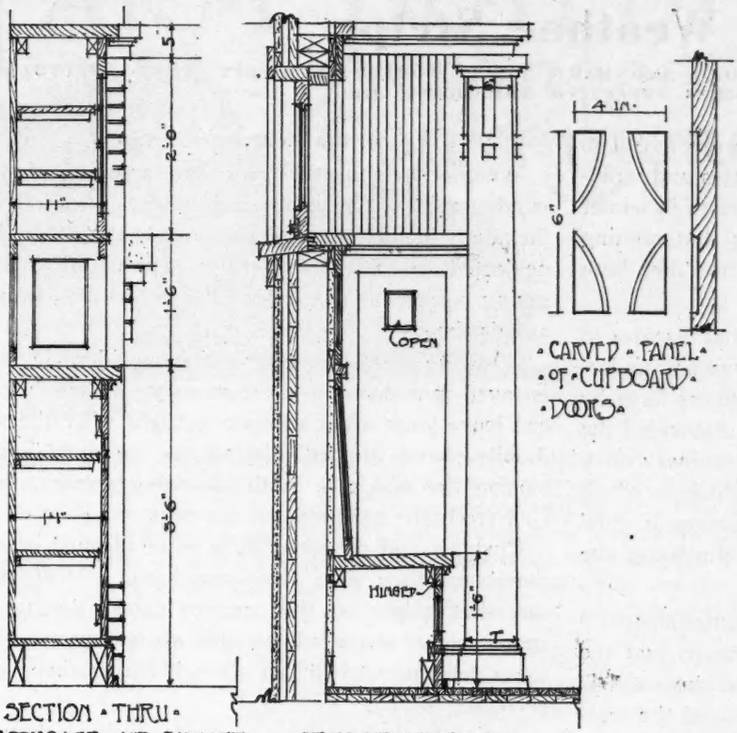
The general arrangement of the living room is shown in the plan at the lower left hand corner of the page. On one side of this room is a cased opening that can lead either to the reception hall or the dining room. Across the room is a pair of double doors that lead out onto a screened porch. In one end of the room is an octagonal bay with built-in seat, and in the other is the fireplace flanked by bookcases and seats.

The fire place nook is separated from the room by screens at the seat ends. The cosy and artistic appearance of this nook is shown in the perspective sketch at the lower left hand corner of the detail sheet. The screens are five feet high and are surmounted with spindle work.

The construction of the seats and bookcases is shown in detail. The space under the seats is available by means of a hinged door under the seat.

The fireplace is of brick and is built along square massive lines which are in keeping with the plain panels of the screens in front of the seats. Above the fireplace is a stone mantel.

The radiators for this room are placed under the seat in the bay window.

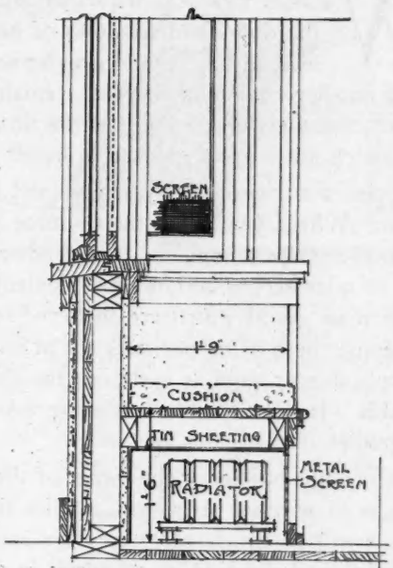


SECTION THRU BOOKCASE AND CABINET

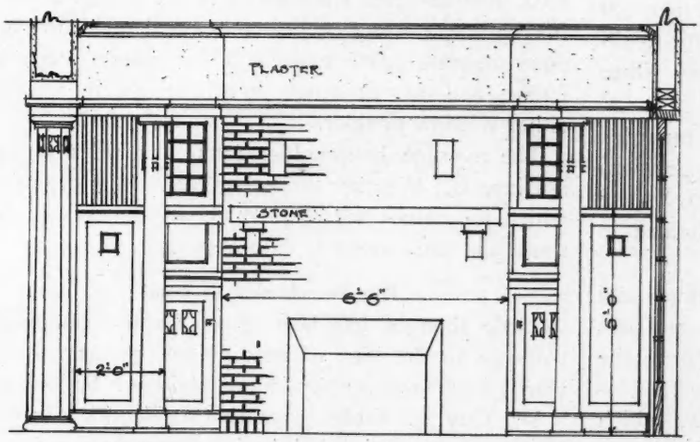
SEAT AND WINDOW

CARVED PANEL OF CUPBOARD DOORS

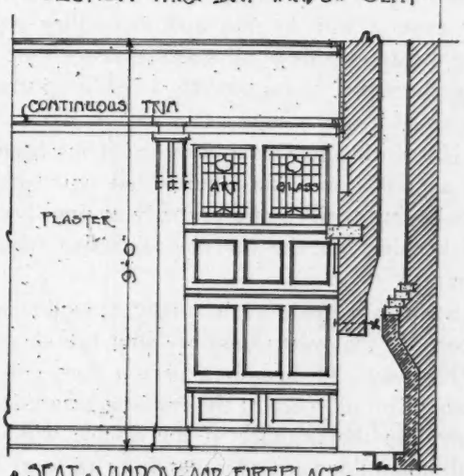
SCALE OF SECTIONS
½ INCH = ONE FOOT



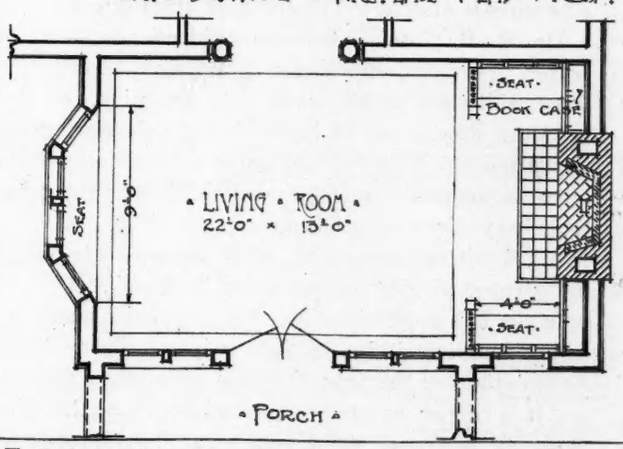
SECTION THRU DAY WINDOW SEAT

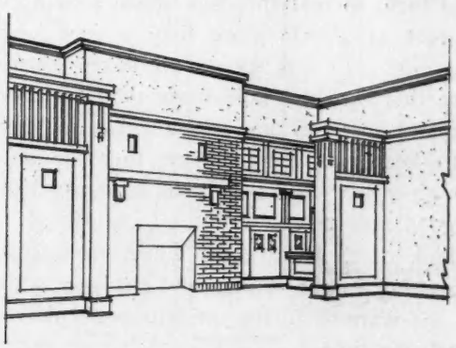


SEATS BOOKCASE AND FIRE PLACE AT END OF ROOM



SEAT WINDOW AND FIRE PLACE
SCALE: ¼ IN. = ONE FT.





PERSPECTIVE OF FIRE-PLACE NOOK

HOUSE INTERIORS — A LIVING ROOM

Practical Suggestions for Those Who Prepare Plans.

Disease Germs are Kept Out of Houses by Weather Strips

NOT ONLY DO THEY LESSEN COAL BILLS AND MAKE HOMES COMFORTABLE, BUT THEY EXCLUDE THE MICROBES INFESTING THE DUSTY AIR.

WHILE weather strips generally are added to the doors and windows of houses and buildings with a view to greater warmth in winter and smaller coal bills the fact remains that nothing is as efficacious in keeping out the dust and dirt, both of which are a great menace to health.

Science attributes many serious and fatal diseases to dust. Where years ago their source was not understood the patient students in the laboratories have by aid of microscopes and other equipment discovered the poisonous germs which are sheltered in ordinary dust. Keeping these flying particles out of buildings in which people live or work is a step in the direction of good health. It cuts out the suffering and eliminates the tragedies.

The home builder or the owner of the office structure thinks of weather strips and applies them so that the place will be comfortable on days when the wind is howling and the cold blasts sneak in around the windows and doors. Strips of wood or metal adjusted by experts will do this, and more they will bar out the disease germs at all seasons, hence they are working the entire year, serving a double purpose, either being of as great importance as the other.

Not until lately have weather strips been regarded as a protection against germs but now many citizens are having their homes properly equipped with a view of keeping out the invisible assassins which lurk in the air.

Strips are made to fit snugly around windows and doors, so that when they are shut the air cannot pass either way. Ordinarily a person does not figure the amount of air space in the running area around a window. In the instance of the double windows which pull up and down it averages from 18 to 21 lineal feet. The play given to a window is about one-sixteenth of an inch, so that the open space actually figures to as great as a hole more than a foot long and an inch wide. If you have two dozen windows in a house this equals a hole more than two feet by one foot, and how can one expect either to heat a house or to keep out germs when there is an aperture through which you could throw a cat and a few kittens for good measure.

Think of the heat units which race through such an opening in the winter and the germs that hustle into the warmth in the air which circulates more or less all the time.

Figuring a sixteenth of an inch for the play of a window is more modest than in the ordinary home where it is an eighth of an inch or more and enlarges the hole to an area of four square feet.

All the Year Proposition

Weather stripping is an all the year proposition. It is advocated by physicians and builders of new houses include it in their general plan, while those who have neglected to add this to their health and comfort-giving equipment are having the safeguards installed at this time.

With the best of weather strips considerable money is saved in addition to the conserving of health. You can leave your windows open at night after the automobiles have stopped stirring up the dust, and by closing the windows in the morning you retain the cool fresh air and keep out the dust.

Curtains and draperies have to be cleaned or laundered and they wear from repetitions. Most of the dirt that lodges on the curtains comes through the space around the windows, and when they are closed these decorations will last a much longer time before becoming soiled.

Not only do the weather strips exclude draughts, dust, soot and dirt and deaden street noises, but they prevent the rattling of the sashes and make the windows operate more easily. They correct imperfect frames and they fit snugly in all the openings around either window or door.

The average householder puts in screens to keep out insects. Weather strips bar the minute organisms which he cannot see and which are far worse than those you can eliminate with a swat.

Disease Lurks in Dust

Little thought has been given by the community at large to the idea of keeping out germs. A few words from leading physicians might not be amiss:

Dr. Guy L. Kiefer says that epidemics of colds, la grippe, tonsilitis, diphtheria, pneumonia and even tuberculosis are caused by the dust from streets.

Dr. R. B. Churly attributes epidemics such as of scarlet fever and diphtheria to unpaved streets and those which are paved but in poor condition.

"More illness and ill health is the rule during the windy months of spring and early fall, due to the immense amount of contaminated dust, than at any other time," says Dr. George Kennedy.

All physicians agree that dust from streets is one of the greatest single menaces to public health.

In the fall and early winter the companies manufacturing and installing weather strips are very busy. At this time of the year they can give better service, and it is of just as great importance to have the windows put in proper shape now as at the approach of the cold spell. Saving doctor bills is just as helpful to the family bank book as keeping down the coal bills.

FARM BUILDINGS Arranged For Convenience

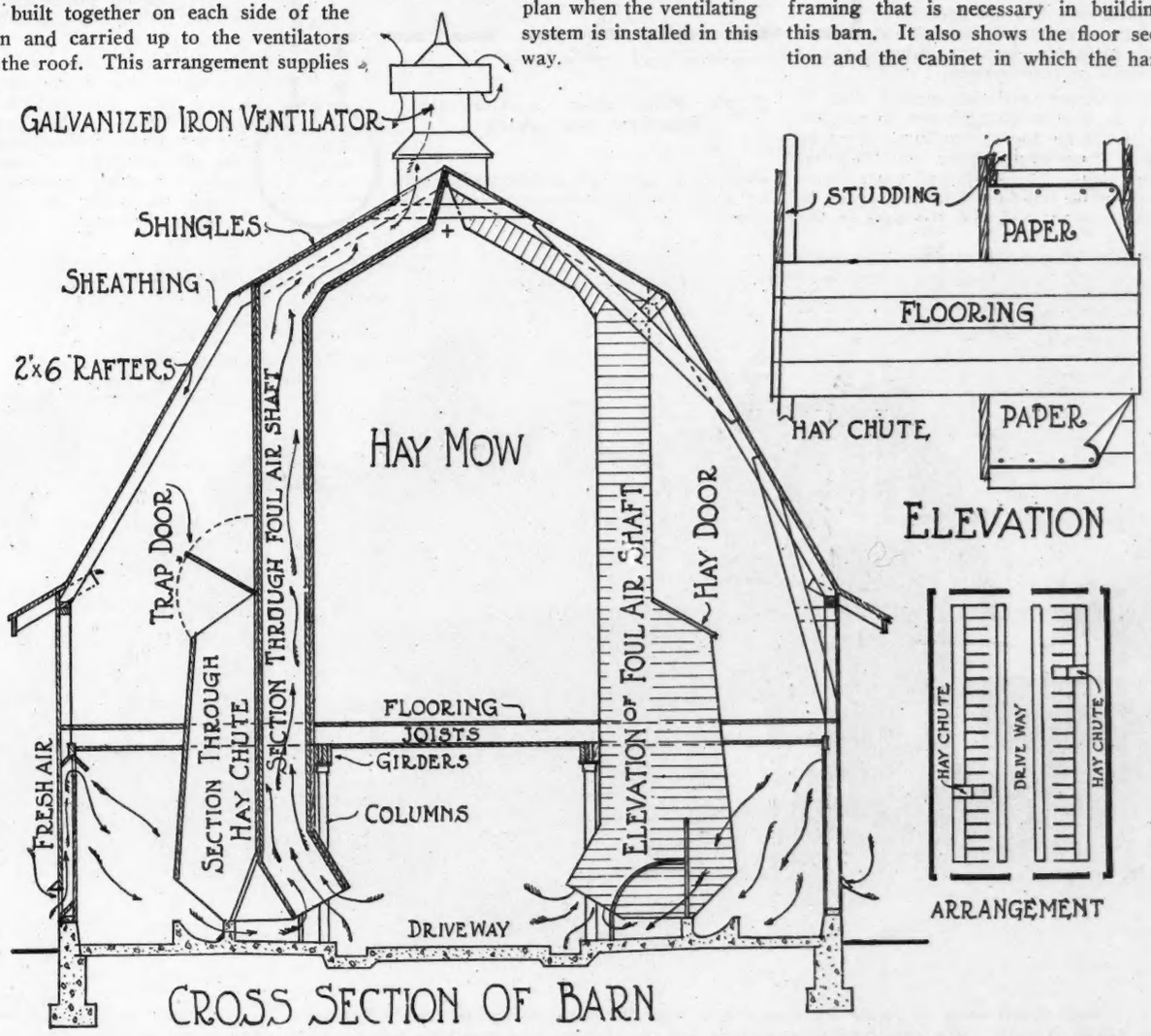
Stock Barn with Concrete Basement Stable

The detail sheets shown here give the method of constructing the framing, the ventilating system, and the hay chutes for the stock barn No. A319, shown on page 78.

The ventilating flue and the hay chute are built together on each side of the barn and carried up to the ventilators on the roof. This arrangement supplies the fresh air for a floor arrangement with the cows facing out. One of the flues occupies part of the double horse stall and the other one of the central cow stalls on the opposite side of the stable. The stable will therefore accommodate one less cow and horse than shown on the floor plan when the ventilating system is installed in this way.

The air is brought in from the outside about two feet from the ground and is carried up through the hollow wall to be discharged into the stable near the ceiling in front of the cows, the opening into the ventilating flue is near the floor back of the stalls.

The second detail sheet shows the framing that is necessary in building this barn. It also shows the floor section and the cabinet in which the har-



Details of Ventilating System for Dairy Barn—Cows Facing OUT.

ness is kept. The details show the self supporting gambrel truss roof and also the end framing.

Concrete from below frost to the ceiling over the cow and horse stable briefly describes the lower part of this well arranged barn.

This barn is 38 feet in width by 58 feet in length, arranged as a general farm barn for the stabling of 15 cows and 7 horses, together with winter feed enough and some to spare.

The name basement stable formerly meant a bank barn with a stable in the cellar. The dampness and dinginess of such stables gave them a bad reputation, which has taken a good many years to live down. Bank barns were built to provide warm stables and to get a driveway onto the thrashing floor without the expense of building a bridge. Farm practice has changed considerably, so that bank barns have gone out of fashion.

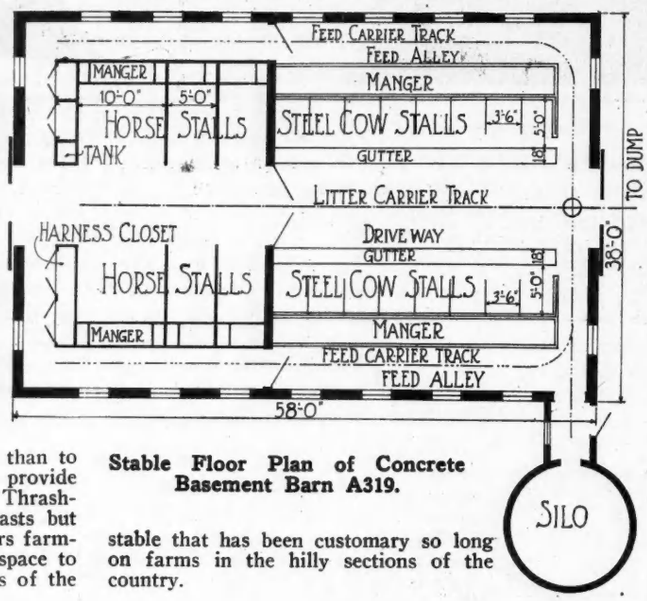
When a modern barn is built into a hillside the earth is removed so that the wall stands out in the open the same as a barn built on the prairie.

Stock men want a stable as light and dry and airy as possible to get it. They also want it warm in winter and cool in summer, but farmers have learned that it is not necessary to bury any part of the barn in the earth to secure either warmth or convenience.

It is better to thrash outside than to give up the necessary room to provide for thrashing floor in the barn. Thrashing is done once a year and lasts but a few days. For a hundred years farmers kept on building thrashing space to remain vacant and idle 360 days of the year, but the demand for economy is utilizing barn space to the best possible advantage, so that thrashing machines are required to do their work outdoors.

The blower pipe may reach in through a window or hay door to deliver straw into the mow while the grain is sacked at the side of the machine or dumped into tight wagon boxes to be hauled away to the two-story granary where it is elevated by power into the grain bins overhead.

The perspective and floor plans of this neat, gambrel roof barn with its solid concrete basement wall, lighted by 18 good sized windows, show a great contrast to the ordinary bank barn basement stable that has been customary so long on farms in the hilly sections of the country.



Stable Floor Plan of Concrete Basement Barn A319.

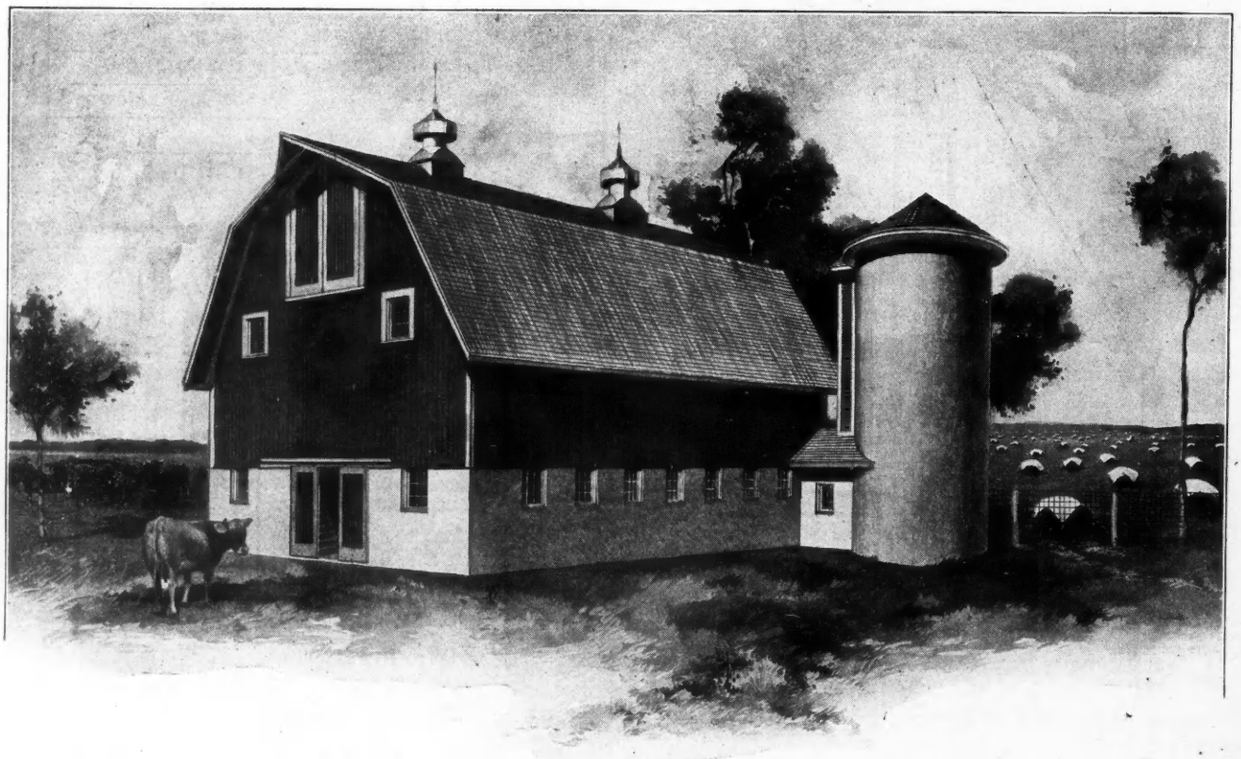
Modern, bright, clean barns like this type of farm barn are growing in demand rapidly. Diversified farming requires a warm, comfortable, well ventilated and well lighted stable to house the different kinds of farm live stock.

The best material for a stable and barn foundation is concrete. Modern improvements in laying concrete walls and fitting the stable with large window frames that hold the sash properly in place show the progress that has been made in this direction.

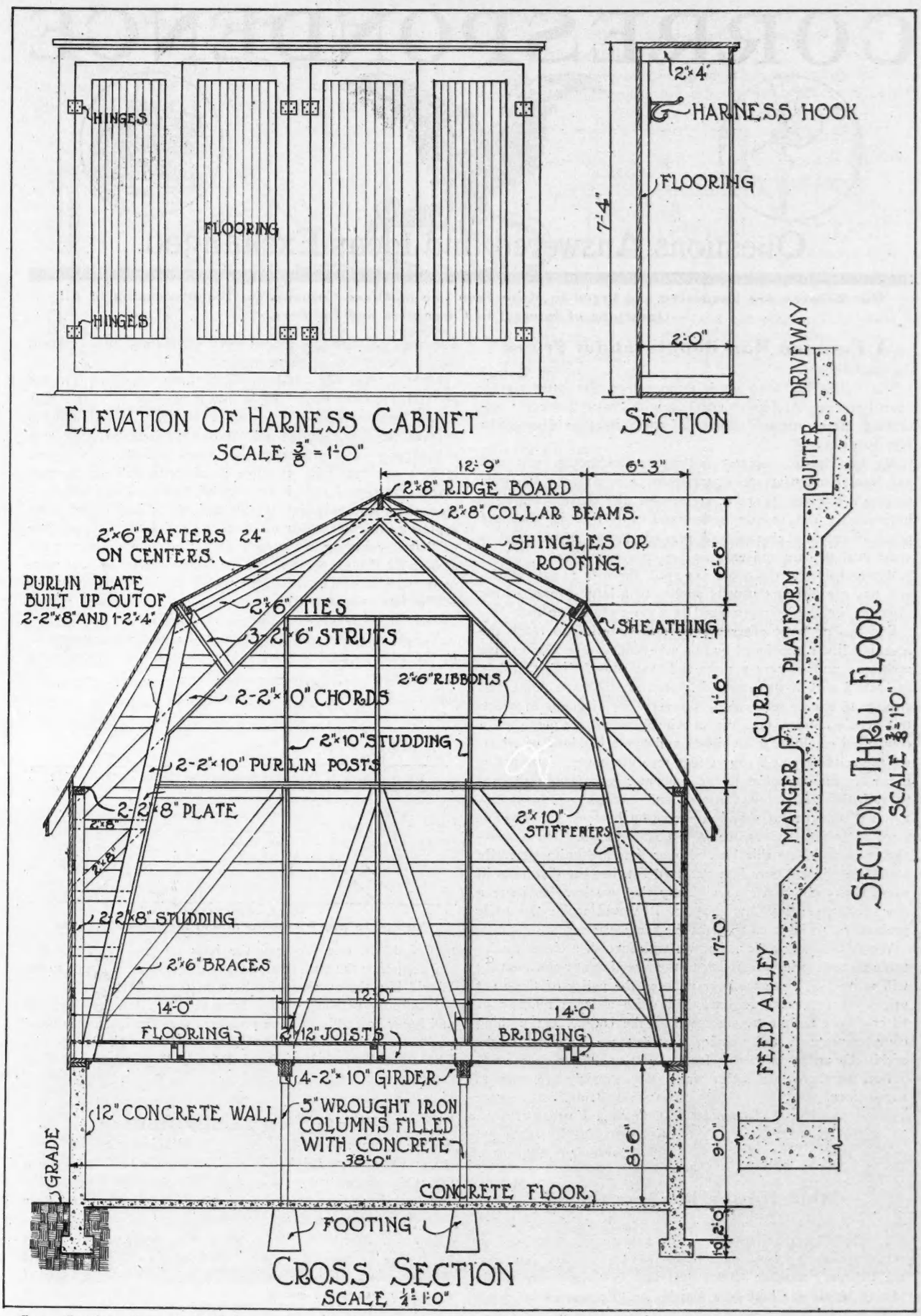
Gambrel roofs also mark a great advance in barn building. The clear mow space, unobstructed by cross timbers, is appreciated by every farmer who owns such a barn. It provides such a splendid storeroom to mow away clover and alfalfa or other roughage for feeding during the winter that a farmer owning such a barn can keep animals in a thrifty growing condition during cold winter weather.

Improved barns and silos with modern feeding devices have eliminated the work of caring for farm animals to such an extent that doing the chores is now looked upon as a pleasant winter diversion rather than an irksome duty.

Modern stables are built with wider feed alleys and wider manure alleys than formerly. The principal cause of the change is the necessity of using modern stable machinery and appliances to help with the work.



Dairy barn with concrete basement and big silo, size 58 by 38 feet. Basement is arranged for fifteen cows and seven horses. We can furnish complete set of blue-printed working plans and typewritten specifications for only $9.00 per set. When ordering ask for Design No. A319.



Cross-Section through Self-Supporting Gambrel Roof of Barn No. A319, Showing also End Framing. Roof Trusses are Spaced about 12 Feet Apart.

CORRESPONDENCE


Questions Answered and Ideas Exchanged.

Our Readers Are Requested and Urged to Make Free Use of These Columns for the Discussion of All Questions of Interest to Carpenters and Builders.

A Furnace Man Replies about Prices

To the Editor: Utica, N. Y.

The writer has been much interested in the letter signed "San Francisco Architect" (dealing with "price Secrecy") appearing in the August number of the AMERICAN CARPENTER AND BUILDER.

My own personal opinion is that the architect is right, and yet from a manufacturer's standpoint it is almost impossible to give net prices. There is one reason why those outside the business do not readily understand, and that is, that the prices frequently change and printed matter prepared at a great deal of care and expense becomes worthless.

Where lists and discounts are used, the lists remain standard, and the discount usually applies to a large group, so the discount list can be reproduced at a very slight expense.

For two or three years, we have been trying to reach the ideal condition mentioned by this architect, and be able to give architects and owners a price list that should reflect closely the actual cost of the goods delivered at any given point, and strange as it may seem, along the very line of goods to which this article alludes, viz., Warm Air Furnaces, we published a condensed catalog for architects and home builders, of which we are sending you a copy under separate cover. The prices given are the net prices to the consumer with freight allowed to railroad station on furnaces and casings. This applies to all of our furnaces and combination heaters, but when it came to pricing boilers, we were unable to work out a satisfactory plan along this line. Boiler lists are quite generally standardized, and ours is a standard list, but the discounts in some seasons fluctuate so violently that we have to issue a new discount every few months. It would make the price prohibitive, to issue catalogs in the same manner.

We do state, however, that we will furnish architects with trade discount sheets applying to their section at any time they will write us. Since we have adopted the policy of these net prices on furnaces, we have had quite a large number of letters from architects, commending the course, but nothing commensurate to the number of times we have called the architect's attention to this feature.

Perhaps there is a better way. We certainly are open to suggestions.

Yours very truly,
INTERNATIONAL HEATER COMPANY,
CLARENCE M. LYMAN,
Advertising Manager.

✣

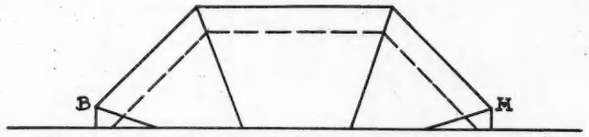
What Do the Readers think?

To the Editor: Fort Wayne, Ind.

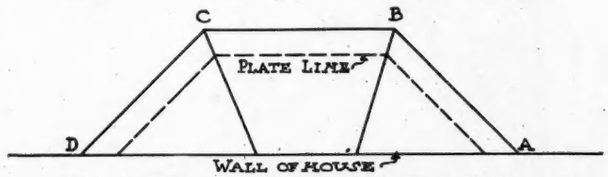
I have been reading with interest the many articles contained in your magazine. I started my subscription with the February number of this year and in consequence would like to obtain the first four articles on "Economics of Home Building." These are indeed very interesting and I would like to obtain the complete series.

I think that Mr. Jasbury is a little bit hard on the Manual Training Boy. He is like a number of others that I know who think when a boy takes the "M. T." in 15 minutes he will be able to make all kinds of things in wood that it has taken others three or four years to learn. Of course it does not look nice to have a taborette full of hammer marks, but then I take it that friend Jasbury came into possession of his trade full grown and never had to serve an apprenticeship like the rest of us poor devils. In reference to that boy hitting the wrong nail, I wonder if our friend always hit the proper nail on the head or was he like common folks, missed it once in a while. It is too bad that the fellow has forgotten that he was once a boy and missed the nail many a time and hit his own fingers.

A few of the carpenters about town had a discussion as to the correct way to roof a bay window. I am enclosing



What Reason is there for Making the Break at H and B ?



This is the Way I think the Line of the Eaves Should Be.

two sketches, one the way the boss on the job framed it and the other the way two or three of us think it ought to be. Would like the opinion of others on the question.

In closing will add that I have taught a few boys myself and know something of the problems that the instructor must overcome in his daily tasks.

HAROLD C. PORTER,
The Fort Wayne Vocational School, Department of Carpentry and Drawing.

✣

Wants Two Family Houses

To the Editor: W. Somerville, Mass.

I find that a great deal of useful information and interesting topics discussed in your magazine. Mr. Welch's letter in the June number strongly appealed to me. The ads are of 99% more value to me if the prices are given.

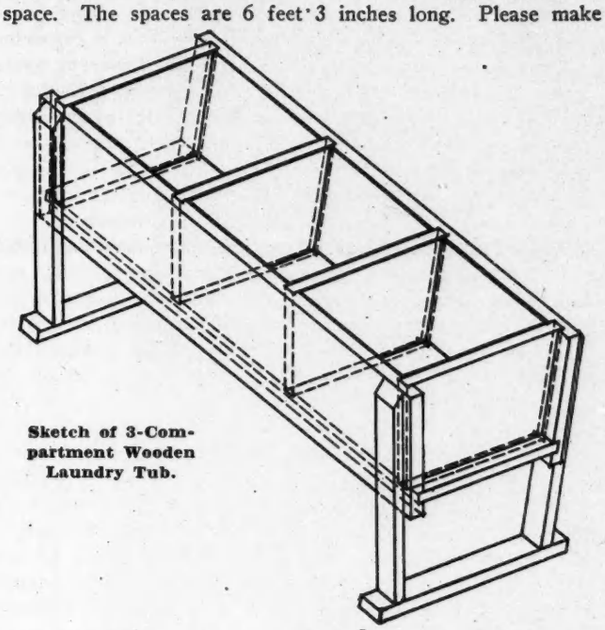
I would like to see some good designs for two-family houses, as 90% of the houses built here are of that type. At the prevailing prices, that is about the only type a man of moderate means can swing.

F. E. WITHAM.

Wood Laundry Tubs

To the Editor: Frogmore, S. C.

I am asked to build in some wooden wash tubs in a laundry here. The tubs are to be stationary, three in a space. The spaces are 6 feet 3 inches long. Please make

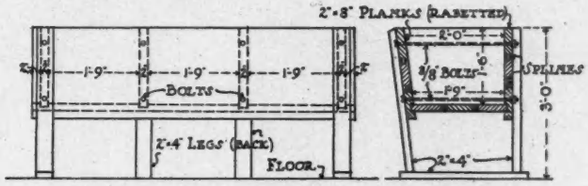


Sketch of 3-Compartment Wooden Laundry Tub.

me a rough sketch giving me an idea as to how they should be built. There will be a trough under the floor that will take the water to a drain pipe. Would it be better to use white pine or Georgia yellow pine? A. D. Watson.

Answer—The accompanying illustrations have been prepared showing the construction of a laundry tub of this kind. The joints between the boards forming the sides and bottom of the tubs are made water tight by means of splines. White lead can be painted over these joints to insure their permanency. The tubs are protected against warping or pulling apart by ⅜-inch bolts placed at each end and in the line of each partition.

The drain pipes connecting to the trough under the floor are not shown because the exact location of the trough to



Front Elevation and Cross Section of Wood Laundry Tubs.

the tubs is not known. The outlet is generally placed near a back corner of each tub. Any plumbing establishment can furnish the necessary collar and the plugs. They must be fitted carefully and calked or a leak may develop.

The best material to use for the tubs is white pine, free of sap, or California cedar. Editor.

✣

Clever Concrete Form Work for Sewer

To the Editor: Brooklyn, N. Y.

Enclosed find a photo which is different from those usually found in these columns. It is the picture of a concrete form, which was built for the Passaic Valley Sewer in Newark, N. J.

The form was designed and built by yours truly, and the engineers declared it to be a clever piece of work.

I must confess that I would not have been able to do the work if it hadn't been for the knowledge I gained from the valuable books and magazines that you publish; they were the means to help me attain and hold the position of Boss Carpenter with a large contracting firm, and I would advise my brother carpenters to study your books and magazines if they have any ambition to advance themselves.

F. W. Klauser.

Wood Form of Y Connection in Huge Concrete Sewer at Newark, N. J. Form Designed and Built by F. W. Klauser.

Women Woodworker Makes Good

To the Editor: East Orange, N. J.

Mrs. Rachel Neill of Orange, N. J., recently celebrated her twenty-fifth anniversary as head of a wood-working business which she rehabilitated after her husband, James Neill, originator of the business, had failed. Today the plant is humming, as it has been since a few years after Mrs. Neill took hold. Although her hair is silvered, Mrs. Neill may be seen any morning after 7:30 o'clock either poring over books in the office or sitting with a workman at a machine. She knows the business from A to Z, although when he went into it she knew no more about woodworking than does the ordinary housewife.

MRS. RACHEL NEILL.
Successful Woodworking Shop Manager.

When Mr. Neill's failure came, he lost him home with the business, and the outlook was decidedly blue for his wife and their children. Mrs. Neill, however, owned the factory building. With a little borrowed money, on mortgage, she began the resurrection.

"My only assets were debts," said Mrs. Neill, when discussing her trials. "I never would give a note and I never would forget to meet my obligations at the earliest opportunity. I ran my business as a prudent woman runs her house—incurring obligations strictly in accordance with income. After many denials I reached the place where I could discount my bills. It is always better to forego luxuries when you can't afford them. We learn this in the long run."

A. A. M.

✣

The Contractor and Municipal Art

To the Editor: Waterloo, Iowa.

There is no one thing that is more needful in the city, the small town and the country than an appreciation of art in building. There is no one who can exert a greater influence for municipal improvement in matters of art than the contractor. One need only to visit the residence or business districts of any small city or town to be impressed by the utter lack of any appreciation for beauty of form and arrangement of buildings.

When a firm is putting up a 10-story office structure there is usually some attention given to the beauty of line and general effect. Here the professional architect is employed but when Paul Jones puts up a two-story store in the outlying district, the chances are he calls in the services of a carpenter and tells him to go to work. He has an idea of what he wants within the walls, but the exterior effect concerns him not at all. Therefore if the said carpenter has an idea of the outer appearance—what it should be to harmonize with the surroundings or establish a type for other buildings—he can put these ideas into effect and the result will work for an improvement in the appearance of that particular neighborhood.

When Paul Jones' friend, who is a laboring man, has found that his savings account, with help from the building and loan, will warrant his putting up a cottage, he hastens to incorporate his ideas as to the interior arrangement—and he gives small thought to the external appearance. When the work is turned over to the contractor if he is capable of handling in a tactful way the details that mean much to the general effect, he will be a blessing to the community.

These suggestions do not imply that the contractor should usurp authority and take from the man who pays the bills his right to an idea, but it does mean that he should have the power to mould these ideas—if they are out of harmony—and shape them to the needs of the surroundings. In this way the contractor and builder can exert a very perceptible influence upon his community. His is an important business, he is the art director of his city so far as the art of architecture is concerned and it is a crying shame that so many of the home communities know nothing of this most desirable of all the arts from a municipal standpoint.

A man need not be a genius to be capable in this art. All he needs is an appreciation of architectural beauty—plain beauty, not gingerbread fancy work—and the ability to vision in his own mind the finished structure before he begins it. Surely this is not impossible, but its influence will be of untold benefit.

H. E. Colby.

✣

Contractors' Cost Records

To the Editor: South Bend, Ind.

I am enclosing with my renewal some of our stationery, together with our cost sheet, which we find indispensable in keeping a complete record of the cost on our work. Probably if this were published it might bring out suggested improvements from some of your many thousands of subscribers.

L. A. Hickey's Sons,
General Contractors and Builders.

SOUTH BEND, INDIANA, _____

M _____

_____

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GENERAL CONTRACTORS
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Bill Head (Slightly Reduced) Used by L. A. Hickey's Sons.

COST SHEET—L. A. HICKEY'S SONS—CONTRACTORS

SOUTH BEND, INDIANA

Job_____ Location_____ Date_____ No._____

CARPENTRY

ROUGH	FINISH

LABOR ON FORMS

Walls	Floors

MASONRY

PL. CONCRETE	REINFORCED	PL. FLOORS	REINFORCED		COMMON BRICK	PRESS BRICK	HOLLOW TILE CONCRETE BLOCKS		INT. PLASTER	EXT. PLASTER
LABOR				LABOR				LABOR		
CEMENT				MORTAR				CEMENT OR LIME		
GRAVEL				BRICK				SAND		
POWER, ETC.				POWER, ETC.				LATHING		
								LATH		

RECAPITULATION

Lumber		
Carpentry Labor		
Masonry		
Cut Stone and Labor		
Tile Work		
Excavating		
Sheet Metal		
Hardware—Rough		
Hardware—Finish		
Painting		
Electric Wiring		
Structural Iron		
Re-enforcing Steel		
Plumbing		
Heating		
Bonds		
Permits		
TOTAL COST		
CONTRACT		
EXTRAS		
TOTAL		
COST		
PROFIT		

Cost Record Sheet (Slightly Reduced in Size). Very Valuable for Preserving Cost Data for Future Reference.

Eight-Room Brick and Shingle Dwelling

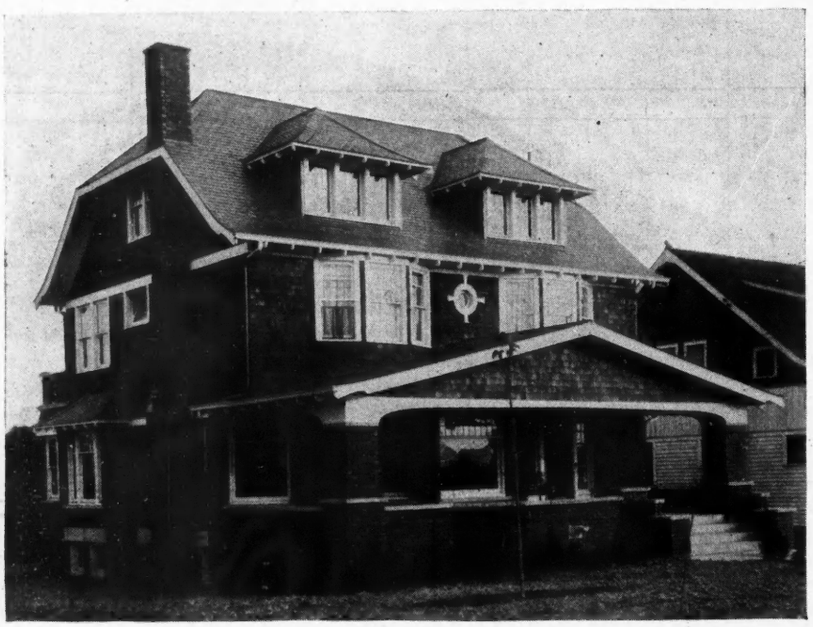
To the Editor: Berea, Ohio.

This is a full two-story house I have designed and built—brick veneer as far as the top of the first floor windows; the brick is moss brown with a wide mortar joint. Above the brick, the house is covered with dipped shingles of a light brown color. The trimming on the house is white. The porch has a red cement floor, laid in diamond blocks eighteen inches square.

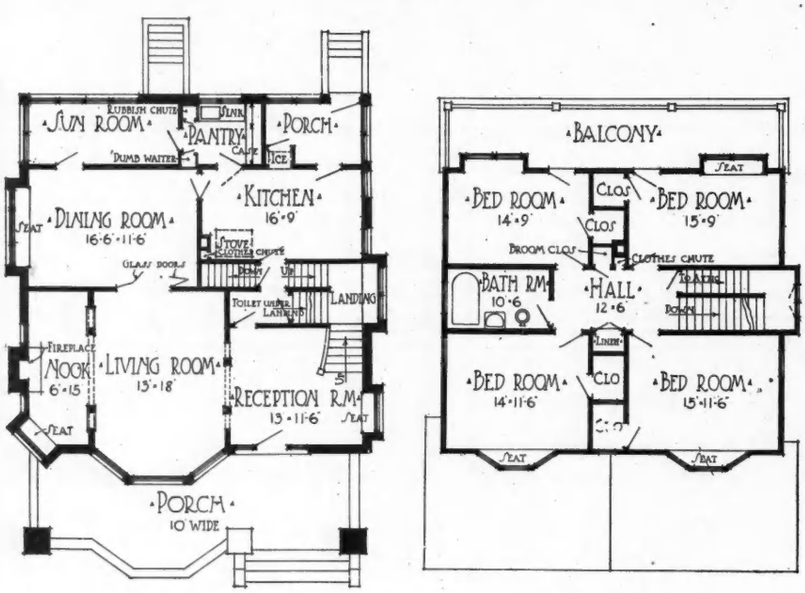
The reception room, living room and nook, are connected by an extra wide archway, so that the three rooms may be convenient for a large gathering. The stair railing or bannister is built of two large panels on a curve; they correspond with the one panel doors; with a newel light on the top. The fireplace is made of small Berea blue stone, sawed joints, which are colored black, with a mould stone shelf. Reception, living, dining and flower rooms, are finished in plain oak, with a plain band five inches wide at the top of doors and windows. The finish on the three rooms, excepting the flower room, is fumed oak. The furniture of mission pattern, and electric lights correspond very well. The dining room with a beamed ceiling, and the group of lights, twelve in all, is very neat. The kitchen is finished in yellow pine with a natural finish. The flower room is finished in a moss green color.

The three rooms on the second floor are finished in white enamel, and the doors are birch, finished mahogany. The den room is of fumed oak with furniture and lights to match.

Wm. H. Blair.



Artistic Brick Veneer and Shingled Residence of Wm. H. Blair. Designed and Built by the Owner.



First Floor. **Second Floor.**

Arrangement of Blair House.

Much Obliged!

To the Editor: Wesleyville, Pa.

I am writing you a line just to tell you what I think of your paper, the American Carpenter and Builder, which I have taken for the past ten years. I have a set of your books, the Cyclopedia, and I also have the book "Estimating and Contracting." I think I paid about $23.00 for the set of books, and if I could not get another, I would not sell them for a thousand times what I paid for them. Your book "Estimating and Contracting" is worth its weight in gold and more.

These books are boosting me right up the Ladder of Success; if I could have had them some years ago, I would be showing the other fellows how to do it; but, nevertheless, I am thankful that I have them now and also for the good they are doing me.

The American Carpenter and Builder is the most looked for and most welcome paper that ever came into my home. I have answered a good many advertisements in your magazine, and I will say I was never treated better in my life by all whose ads I answered. I keep close watch of the ads as well as every other part of the magazine; it keeps a fellow well informed as to what is going on in the country, and all the latest improvements in machinery and wood working tools.

When I first took the American Carpenter and Builder I bought it at the news stand in a village in western New York; I was then just starting to learn my trade. Well, one winter work got slack, and there were several there who wanted me to build houses for them, taking the job by contract. I was game. The firm I worked for had laid off all the men and I was one. However, I was not going to quit, so I took the jobs by contract.

My first experience: I knew nothing whatever of how to build a house, and so I took my back numbers and all I had of the American Carpenter and Builder, studied them close in every detail. I soon got the idea, and went to work and built seven houses without instructions from anyone but my good old faithful friend, the American Carpenter and Builder. I could not think of letting it drop, as it has been the best friend I have ever had. E. N. Taylor.

(*Correspondence Dept. con't. to page 88*)

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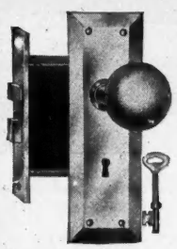
BUY from Gordon-Van Tine. Finish your Building with **standard hardware** of **highest quality** and buy it at about the same prices as local dealers pay! **Test this! Place a trial order!** Cut out middlemen's rake-off. Send for a **FREE** copy of our big, illustrated **156 Page Catalog** showing **500 Bargains in Building Material and Supplies.** Over **10,000 other builders and 100,000 home owners** who deal regularly with us, as well as **3 strong banks,** vouch for us. Our reputation for **honesty** and **square dealing** is backed by our legal-binding guarantee of **satisfaction or money** refunded. We **ship promptly** to you **anywhere, guaranteeing safe delivery.** The items listed below are but a suggestion of the **thousands** shown in big **price-making builders' book.** Send for it! **FREE!** Use the coupon. **NOW!**

FRONT DOOR LOCK SET

Set consists of 1 mortise lock, 5x3½, stop work on face; 1 steel strike; 1 steel outside escutcheon, 2¾x10 in.; 1 small steel inside escutcheon 2¾x7 in.; 2 1¼ in. wrought steel knobs with swivel spindle; 2 nickel plated steel bits, for latch bolt, and 1 for lock bolts. Face of lock, 1x7 in.

No. EH-10. —Antique copper finish, steel. One set in a box, with screws. Per set..... **$1.40**

Also antique copper finish on genuine bronze at **$2.05.**

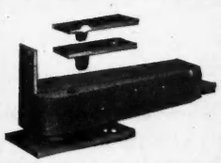


INSIDE DOOR SET

Lock, 3¾x3⅜ in. nickel plated wrought steel case; escutcheon 7x2¼ in.

No. EH-190.—Dull brass or antique copper finish, steel. Per set, with screws..... **49c**

On genuine bronze, either finish..... **$1.15**



SHELBY FLOOR HINGE

Double Action Ball Bearing

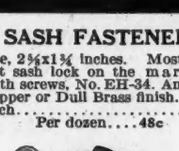
Best Floor Hinge you can buy. Working parts above the floor. Plate screws into the surface, and does not require mortising into the floor. Easy to put up and adjusted. Adapted for Doors 1⅛ to 1¾ inches thick. Weight, about 4½ lbs.

No. EH-253.—Antique Copper or Dull Brass finish. Complete with screws..... **$1.00**

For Doors 1¾ to 2¼ in. thick. Weight, about 6 lbs.. either finish..... **$1.15**

Door Check and Floor Hinge: Checks double-acting Doors avoiding that annoying and dangerous flip-flap of Door; for Door 1⅛ to 1¾ inches thick. Weight, about 8½ lbs.

No. EH-2668. —Antique Copper or Dull Brass finish Complete with screws..... **$5.50**



SASH FASTENER

Size, 2¾x1¾ inches. Most perfect sash lock on the market. With screws, No. EH-34. Antique Copper or Dull Brass finish. Each..... **5c**

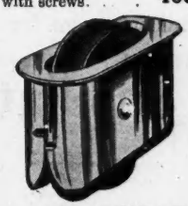
Per dozen....48c

CUPBOARD TURN

Comes in both steel and highly polished and genuine bronze.

No. EH-31.— Antique Copper or Dull Brass finish, steel. Price each, with screws.... **9c**

No. EH-288.—Antique Copper finish, or Dull Brass cast bronze. Each, with screws..... **40c**

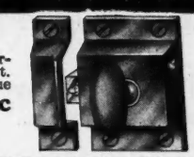


SASH PULLEY

Steel Sash Pulley with durable bushing wheel; every part steel; cannot break or wear out.

No. EH-50.—Price, each.... **3c**

Price, per dozen..... 27c



GLASS KNOB INSIDE DOOR SETS

No. EH-276. —Set consists of pressed glass knob, lock and key plate. Dull brass finish on genuine bronze. Price per set, complete with screws..... **$2.18**

ORNAMENTAL SURFACE HINGE

This Hinge is especially adapted for cupboard door and is put on much quicker than the butt hinge. Size, 1½ in. high. Polished.

No. EH-27.—Antique Copper finish or Dull Brass. Price, per pair..... **10c**

HOOK SASH LIFT

Price including screws:

No. EH-32. — Antique Copper or Dull Brass finish. Price, each..... **2c**

Price, per dozen..15c

BAR SASH LIFTS

Antique Copper or Dull Brass Finish. With screws. Weight, about 5 oz.

	Each	Dozen
No. EH-108.—5x1⅜ in....	4c	$0.40
No. EH-329.—Bronze, 5x1⅜ in.....	16c	1.88
No. EH-2360.—4x1¼ in...	4c	.40
No. EH-2362.—Polished Bronze, 4x1¼ inches...	14c	1.60
No. EH-2364.—Antique Copper, Bronze, 4x1¼ inches.....	14c	1.60
No. EH-2365. — Nickel Plated, 4x1¼ inches....	16c	1.88

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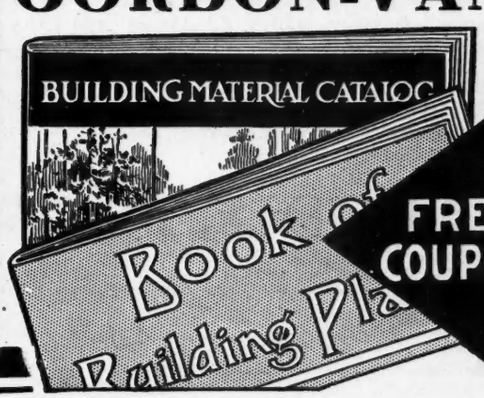

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In sending for Plan Book, enclose 10 cents for postage and mailing. You will receive the books by return mail.

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Address.....

Occupation.....

TO THE BUILDING TRADE

J-M Transite Asbestos Shingles Practically Indestructible

Residence of J. A. Curry, Portland, Ore.
Covered with J-M Transite Asbestos Shingles

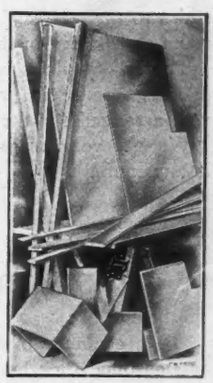
As long as the rafters beneath them last, J-M Transit Asbestos Shingles insure a perfect roof.

Why? Because they are made of nothing but Asbestos Fibre and Portland Cement—a combination of materials that renders them practically indestructible. Age and exposure to weather actually *toughens* their composition and even *fire* cannot destroy them.

Made in attractive Gray, Indian Red and Brown. The gray may be stained any color to harmonize with any artistic scheme. *Write for Literature and Specifications.*

The phrase that best describes J-M Transite Asbestos-Wood is "fire barrier"

On knowing all the properties of this material, new uses will automatically suggest themselves.



It is a lumber, made up of asbestos and binding cements, so compounded that it can be handled like natural wood, with wood working tools.

Being fibrous in structure it is able to withstand lateral and longitudinal strains and can be nailed or screwed fast to studding like wood itself.

It is resistant to fire and water. Actually improves with age, becoming tougher, and of course it is not subject, as wood is, to rot or disintegration. Made in two types—for interior and exterior use. Let us send literature on this widely applicable product.

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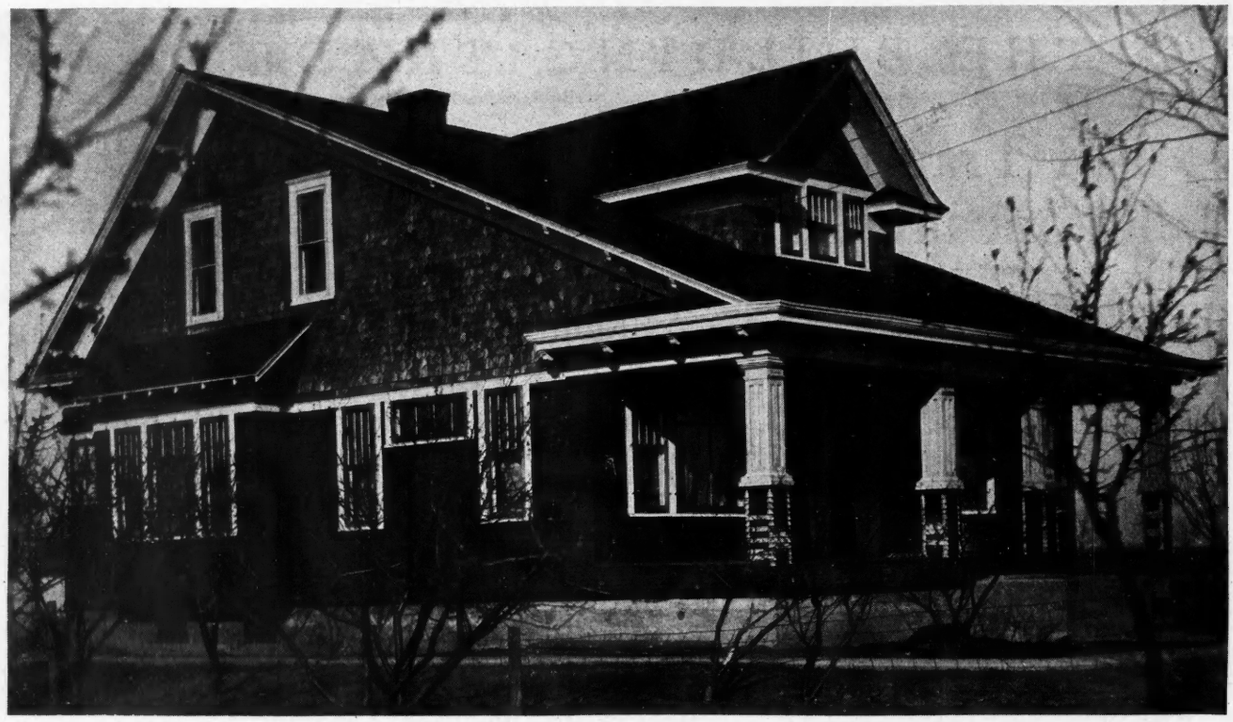


Commodious Seven-Room House at Tripp, So. Dak., Planned and Built by Hoellwarth Bros.

Home Building in South Dakota

To the Editor: Tripp, So. Dak.

Here are sketch and photo of Christ Hoellwarth's house that has been planned and built by us at Tripp, South Dakota. The house contains seven rooms and presents an attractive appearance.

The dining room and living room occupy one side of the house and are connected by a wide cased opening and a colonnade which gives a large unobstructed floor space.

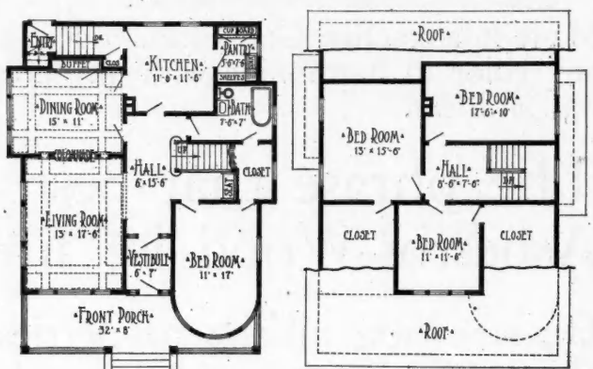
The entrance from the front porch is into a vestibule which has a hall leading out of it. This hall connects up the various rooms.

On the opposite side of the house from the living room and dining room is a bedroom, a bathroom, pantry, and the stairs to the second floor. The kitchen is between the dining room and pantry in the back.

The second floor has three bedrooms and a hall. Plenty of closet space is provided under the eaves. The plan is well arranged for the comfort of the family.

We get your magazine and could not get along without it any more.

HOELLWARTH BROS.,
Contractors and Builders.



First Floor. **Second Floor.**

Slap Dash on Brick Wall

To the Editor: West Bend, Iowa.

We are about to put a slap dash coat of cement on the outside of a brick building, and would like some information regarding same.

Give us recipes for mixtures and the way it is put on; in other words give us all the information you can concerning this outside cement work. We would like to know as soon as possible so we can figure on same.

DIXON & ANDEREGG,
Contractors and Builders.

Answer—Exterior plastering should be applied in three coats though the second coat is often dispensed with. The first two coats are made up of 1 part Portland cement to 2½ parts of sand. The finish coat is made up of 1 part of cement and not less than 2 nor more than 3 parts of sand. All parts are measured by volume.

If the stucco is to be applied to a brick, stone or block wall the joints should be raked out to a depth of about ¼ inches to provide a key for the plaster.

The surface to be plastered should be thoroughly dampened so that no moisture will be absorbed from the plaster.

The first coat should be applied with sufficient force to secure a good key. This coat must be scored with diagonal lines to furnish a key for the second coat. After this is dry, screeds are placed at 5-foot intervals and the second coat applied and floated to a true even surface. Both these coats should be at least ⅜ inch thick.

The finish coat is troweled smooth and, before final set, a mixture of 1 part of cement and 2 parts of sand which is thrown against the wall with considerable force from a wooden paddle. This method gives the slap dash finish.

The other styles of finish can be found in any of the hand books of the various metal lath manufacturers. EDITOR.

Asphalt Shingles Will Please Your Customers *Better*

YOU know that looks play a large part in making your customers well satisfied with the houses you build for them. Asphalt Shingles will probably do more to brighten the appearance of a house than any other building material. A roof of richly colored

Asphalt Shingles

in any one of the red, gray, green, brown or other shades, will give the "class" and "tone" that every home builder likes.

"Destined to Roof the Nation's Homes"

You can get a double benefit by using Asphalt Shingles—make your customer *better satisfied* and make a *larger profit.* The saving in the labor cost of applying will net you many dollars under what any other similar type of roofings would cost you—an extra profit which is *legitimately yours.*

Asphalt Shingles are all the same size, which means speedy handling, and there are considerably fewer of them needed to cover a "square," which means a large saving in your labor costs.

All manufacturers who contribute to this advertising will use this trade mark on their Asphalt Shingle packages. Make this your guide to dependable roofing. Always look for it.

We want to tell you more about the advantages of Asphalt Shingles—the extra profits to you, their long life, beauty and fire-resistant qualities. Send coupon NOW—while you think of it, for our interesting book, "*The Roof Distinctive.*"

Asphalt Shingle Publicity Bureau
855 Marquette Building, Chicago

This Coupon Brings Interesting Facts

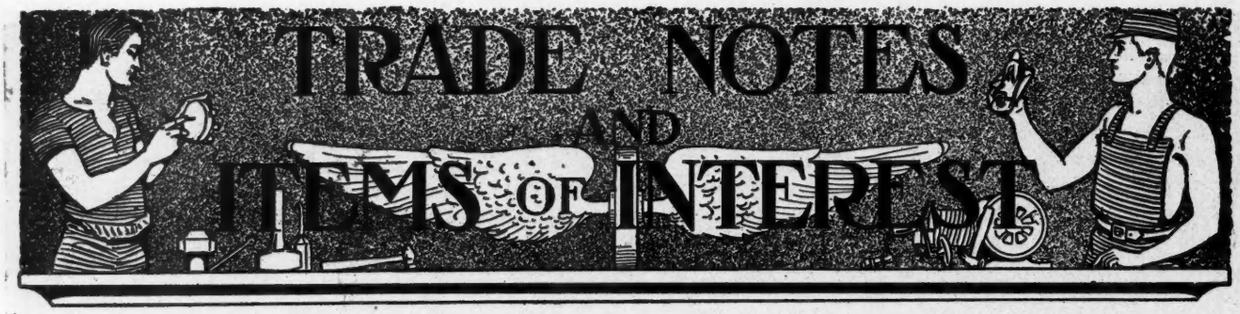
Asphalt Shingle Publicity Bureau
855 Marquette Bldg., Chicago

Gentlemen: Send me your free book, "*The Roof Distinctive,*" and tell me how I can make larger profits and please my customers better with Asphalt Shingles.

Name _____

Street _____ Business _____

Town _____ State _____



Through this department the Editors aim to keep builders, contractors, carpenters and architects in touch with what their friends, the manufacturers, are doing for them in new or improved tools and machinery, methods and materials—pertaining to building. Items for these columns must have real news value; they are offered here as interesting information for our readers; they are not advertising. No matter will be printed here simply because some advertiser wishes it. Likewise, no matter will be excluded simply because the article described is not advertized in this magazine. Suggestions for the betterment of this department are requested of our readers.

Booklet about Graphite Brushes

Operators of electric power machinery are interested in the subject of commutation and are fully aware of its importance in the electrical field. A large percentage of breakdowns in the present day motor or generator must be charged against improper operation of commutator and brushes. Graphite brushes are designed and marketed with the express purpose of reducing commutator troubles to a minimum. A booklet, "Dixon's Graphite Brushes," explains how the characteristic lubricating qualities of graphite are utilized to this end. The entire booklet is recommended to your careful consideration, especially page three, where the advantages of graphite over carbon as a brush material are clearly set forth. An electrical service department for the solution of brush problems invites detailed statements and will advise whether Dixon's brushes are adapted to the stated operating conditions. Frequently trial orders have made enthusiastic supporters of graphite brushes. A copy of the booklet may be obtained free upon request from the Joseph Dixon Crucible Co., Jersey City, N. J.

✣

New Accessory Product Booklet

The sheet metal trade is now receiving a very handy vest pocket size booklet, covering the conductor pipe and eaves trough, accessory products of The Berger Manufacturing Company, Canton, Ohio.

The booklet has a substantial paper cover, is printed on good quality enamel paper so that the details of the illustrations are brought out clearly.

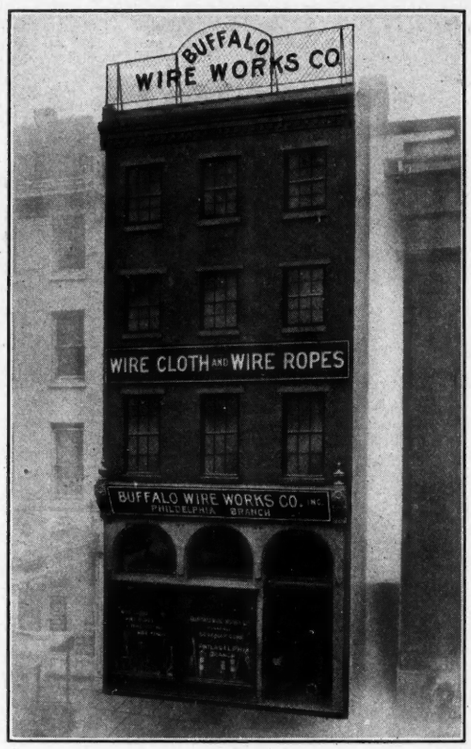
A brief, concise description of each article is given with the latest list prices.

This booklet is much more convenient to consult than a large catalog and contains complete working information. Any one desiring a copy can secure it free by writing the campany, asking for booklet No. 894.

New Branch Office of the Buffalo Wire Works Company

In order to take care of the business in Philadelphia and the surrounding territory, the Buffalo Wire Works Company has established a branch office and warehouse at 11 South Seventh St., Philadelphia, Pa. A complete stock of all the grades of "Buffalo" wire cloth will be carried so that all the orders of customers in this territory can be filled with the minimum loss of time.

The accompanying illustration shows the building that they



Philadelphia Branch of Buffalo Wire Works Co., at 11 So. Seventh St.

will occupy. It was formerly occupied by the Rogers Wire Works, Inc. It is located in the heart of the business section on South Seventh St. next to the Franklin Institute, which is an excellent position to care for rush jobs in the territory.

The main office remains at 413 Terrace, Buffalo, N. Y.

✣

Building Material for all Purposes

There are many advantages in being in touch with a company that handles a complete line of building materials. It enables the builder to get all the material for a house in one shipment, including everything from the lumber to the hardware.

The catalog of The Huber Builders Material Company is ready for distribution to our readers and contains a list of all the materials that are needed in building.

Quality is the most important feature of their work as mentioned in their catalog. Their reputation has been based on this and low prices are not allowed to affect it. They also make a feature of their prices, which they say are extremely low for their high grade of goods.

They handle a large amount of stock material that is ready for shipment and can be sent the same day that the order is received. If work is wanted in a hurry, they advise the selection of their stock material as shown in their most complete catalog. Special designs can also be furnished, but of course more time is required for this class of work.

George F. Lovdall—Architect

USE MIDLAND STOCK TERRA COTTA

—— the picture at the top of this page conveys the "REASON WHY" far better than words ——

Every inch of trim is MIDLAND stock white enamel and we think you will grant that our material lends to this exterior the essential elements of attractiveness and refinement.

A distinctive building is the aim of every progressive architect or builder —if you want snappy stock terra cotta suggestions for your next building—write us—we will cheerfully submit ideas.

MIDLAND TERRA COTTA CO.

1515 LUMBER EXCHANGE BUILDING

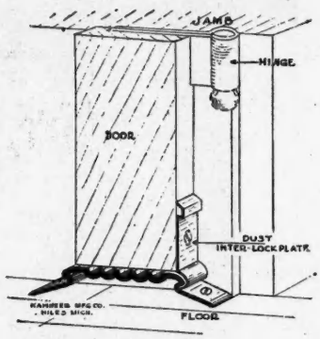
CHICAGO, ILLINOIS

A copy of their catalog should be in the hands of all of our readers as it will be invaluable when any kind of building supplies are wanted. Interior trim, building hardware, flooring, siding, shingles, and mantels are some of the materials listed in this useful book. Write to The Huber Builders Material Co., 45-49 Vine St., Cincinnati, Ohio, and get your copy.

✣

Thresholds Once More

About a year ago one of our subscribers asked in our Correspondence Department for practical schemes used by our readers for keeping the water from running under doors and wetting floors and carpets. It seemed that nearly everyone had some special way of constructing a threshold so that it would be water and weather tight. No two of them seemed to agree as to the proper method of doing this. One cut a trough in front of the door on the inside and then drilled drain holes back through the threshold—meaning to first let the water in and then gently lead it out again! Various slopes were suggested for the threshold and methods of close and loose fit so that they would drain readily.



Section through the New Kawneer Threshold.

The best kind of a threshold is one of metal that is carefully made. The many makeshift weather proof thresholds that were suggested are often hard to make, and when they are done, the result is never assured. A much better product is possible when a manufacturer makes a special effort to build something for a definite purpose than when it is made in various ways with whatever materials are handy on a job.

The brass threshold shown in the accompanying illustration is made with the definite intention of making the bottom of a door weather, rain, and wind proof. A close fit between the door and the threshold is assured and at the same time the door will not bind in any way. The top of the brass strip which forms the threshold is corrugated, which gives several points of contact with the door without giving a broad, flat surface which will cause binding. The hook strip is fastened to the inside of the door if it opens inwards or outside if it opens outwards. It fits around the projecting top of the threshold and gives a dust proof joint.

More complete details can be secured from the Kawneer Manufacturing Co., Dept. A. C., Niles, Michigan.

"Cannon Ball" Has New Feature

The track carrying a sliding door is often ruined by rust which accumulates and keeps the door from sliding. To prevent this the "Cannon Ball" track is now made with a substantial, water-proof cover that prevents the rain from running down and rusting the track and the rollers.

This riveted cover comes well down over the door, and can be used in conjunction with the regular track if desired. It is made in 4, 6 and 8-foot sections.

Hunt, Helm, Ferris & Co., 304 Hunt St., Harvard, Ill., can furnish more detailed explanation and will be glad to do so for any of our readers. Any of our readers who build barns will find their "The 'How' Book for Contractors" mighty valuable also.

✣

What Holds the Nail?

Many different methods have been tried for holding nails in cement, brick, or stone walls. Sometimes wooden plugs are set in the walls and the nails are driven into them. Often the nails are simply driven into the mortar joints. In the first case, the wood is liable to shrink and thus become loose, so that there is nothing to hold the nail. In the latter case, any little jar is almost sure to loosen a nail that is imbedded in mortar.

Bostwick Wall Plug.

Metal wall plugs have none of these disadvantages. They are set in the mortar and when the mortar hardens they become a part of the wall. A nail driven into one of these plugs is held tightly and has no way of working loose.

The wall plug shown here is made by the Bostwick Steel Lath Co., Niles, Ohio. They will be glad to send free samples and give further information.

A Chimney with a Good Draft

One of the most disagreeable things that can happen in a house is to have the draft in the chimney run the wrong way. Did you ever light a fire and have all the smoke come out into the room? Another nice trick of chimneys is to allow the rain to beat in, run down the inside and discolor the walls.

"Best" Revolving Chimney Top.

Both of these troubles can be prevented by the use of chimney caps. The "Best" cast-iron chimney caps are made in two styles to suit the various conditions that are encountered. One is made in the shape of a "T" with the openings turned slightly downward at each side. This acts as a protection against the rain and also furnishes a good draft, no matter which way the wind is from.

The other is of the revolving top type. The opening is always away from the wind, which causes a suction, thus insuring a good draft. The top also protects the inside of the chimney from the rain.

Cast Iron Chimney Cap.

A more detailed description of this useful building specialty can be obtained from the Sterling Foundry Company, Sterling, Ill.

✣

One-Ton Truck Success in Country

Edward Franzmeier, a farmer near St. Paul, Minn., milks twenty head of grade cows every day and hauls the milk to some retail grocers in St. Paul. He also raises squash, lima beans, melons, sweet corn, potatoes and small grain. Last

July Mr. Franzmeier bought a one-ton KisselKar Truck to save time and wear and tear on his teams.

Before he bought his motor truck Franzmeier got up at midnight and left at 1:00 a. m., arriving at the St. Paul market at 4:00 or 4:30 a. m. Now he rises at 4:00 a. m., starts at 4:15, arriving at the market at 5:00. He says that when the market is good he is often home again at 7:00 a. m. ready for a day's work. By the old method he was away from home from midnight until noon and came back with a tired team and himself in no condition to do very much work that day.

Mr. Franzmeier says he would not be without a truck and the car he bought suits him exactly. All of his farm hauling is done with it—such as hauling machinery or taking plows to the blacksmith, so that his horses are reserved for work in the fields.

✣

Make Dollars from the Air

Every farmer desires the best of protection for his live-stock and property. The main factor in securing such protection is fresh air and good ventilation, which is easy to get after the proper equipment is once installed. If the builder can put in equipment that will result in healthier live-stock, less dampness in the barn, and more cows that are big milk producers, he will make a more than satisfied customer—the best advertisement he can have.

Don't let your farmer friends build a barn without putting ventilators on it. Suggest a substantial, dependable type.

An attractive offer to builders is made by the Philip Bernard Company, the makers of the "O. K." cupola. Their ventilating cupola is shown in the accompanying illustration. The manufacturers guarantee that it is rain proof, snow proof,

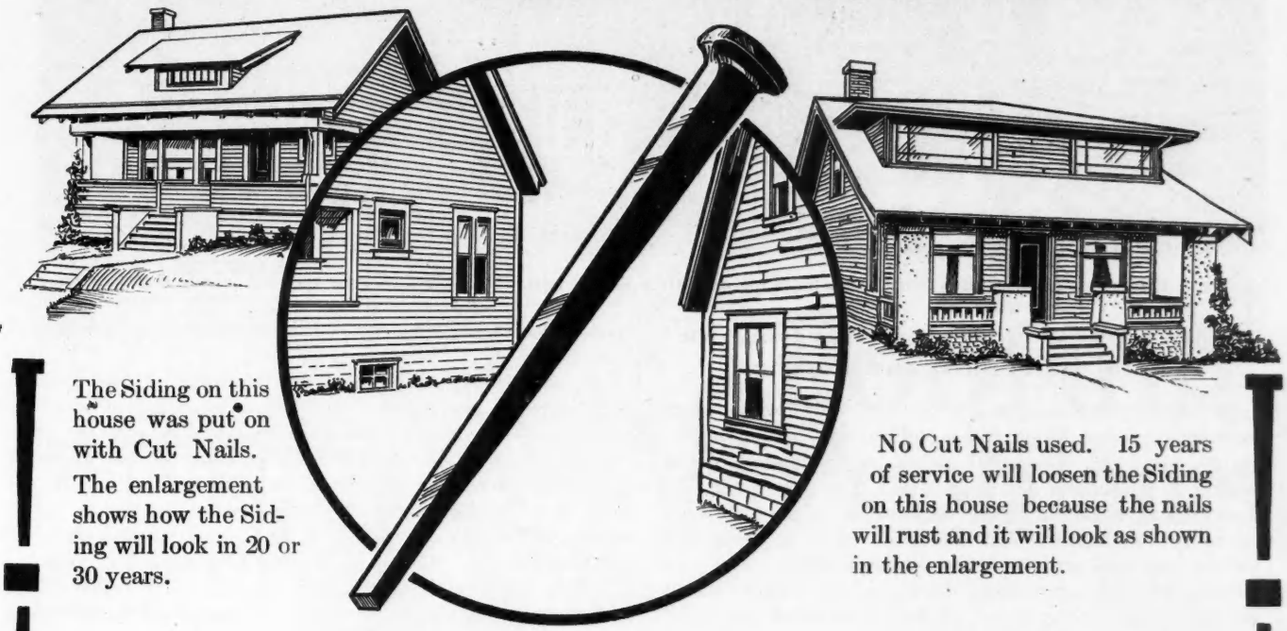
High Quality but Moderate Price "O. K." Ventilator.

bird proof, and wind proof. All the material used, such as bolts, rivets, screen, and fittings are absolutely rust proof.

This company is making a special offer to contractors and builders with a liberal discount that is worth investigating. Write them at Sioux City, Iowa, and get the full details of their proposition.

Cut Nails

MAKE A WORLD OF DIFFERENCE



The Siding on this house was put on with Cut Nails. The enlargement shows how the Siding will look in 20 or 30 years.

No Cut Nails used. 15 years of service will loosen the Siding on this house because the nails will rust and it will look as shown in the enlargement.

They Hold Siding Tight and Firm as Long as it Lasts

Because Cut Nails cannot *rust*. Because They Grip, They Hold and cannot loosen. The Houses of our forefathers were built with Cut Nails—can you beat them for durability? Some of them are over 200 years old.

CUT NAILS

are again coming into Universal use. Other Nails have been given good long tests, and have been found wanting—they couldn't equal the good old reliable Cut Nail in any respect. Cut Nails not only outlast them, but possess far greater holding power, always as tight as the day they were driven in.

Now, Mr. Builder, be sure and use Cut Nails on your future jobs if you are not already using them. It will pay you well—your buildings will offer more resistance to Father Time and it will help your Reputation. There's a Cut Nail for every purpose.

If your Local Dealer doesn't carry Cut Nails, write to nearest manufacturer listed below and he will send you FREE Samples and see that you are supplied.

CUT NAIL MANUFACTURERS

Van Alen & Co., E. G. Van Alen . . . Northumberland, Pa.	Geo. B. Lessig Co. . . . . Pottstown, Pa.
E. & G. Brooke Iron Co. . . . . Birdsboro, Pa.	Williamsport Iron & Nail Co. . . . . Williamsport, Pa.
Tremont Nail Co. . . . . West Wareham, Mass.	La Belle Iron Works . . . . . Steubenville, O.

Abingdon Mill Y. M. C. A. at Huntsville, Ala., built for operatives of the mill. "Con-ser-tex" used on roof, porch roof and floor.

"Con-Ser-Tex" the Ideal Covering for Roofs, Balconies, and Porches

For many years contractors, builders and manufacturers have been seeking to solve the problem of securing a permanent, attractive, economical roofing material which would be easy to install and render satisfaction to the owner. In modern building construction, the porch roof is often subjected to considerable wear and tear, as it is continually walked upon and often used as a sleeping balcony As such surfaces are constantly under the eye of the owner, a neat and attractive job is essential A durable material which will shed moisture, will not rot, crack, stretch, shrink, or peel must be used

For some time past, cotton duck fabrics have been used with more or less satisfaction The only objections which have ever been raised to this class of material were due to the burning of the canvas by the linseed oil in paint, or to the growth of mildew and the subsequent rotting of the material. Both of these objections have been overcome by the proper chemical treatment of canvas, and as a result, "Con-ser-tex," produced by the William L. Barrell Company, New York City, has been found to give entire satisfaction. In fact, it may well be called the ideal roofing material for flat surfaces

CON-SER-TEX

Solves All Roofing Problems

Investigate the merits of this roofing material. Its claims for your consideration are based on the following facts:

Costs very little.
Is easy and inexpensive to lay.
Makes a neat, smooth, durable surface.
Will not leak, rot, stretch or shrink.

Con-ser-tex is a specially woven canvas roofing which is chemically treated to preserve the fibre from mildew and the detrimental action of the oil in paint. It is water-proof, weather-proof, rot-proof and wear-proof. When properly laid, it will last as long as the house itself.

Contractors, builders and carpenters in all parts of the United States continually express their satisfaction with this material when used for roofings, porch-decks, sleeping verandas and bungalow construction.

It is furnished in such widths and weights as are best suited for various classes of work, thus practically all waste is eliminated.

CON-SER-TEX

Economical, Serviceable, Attractive, Profitable.

Certainly the above facts are of sufficient interest to justify your immediate request for samples, prices and complete information.

Better write today before you forget it.

Chicago Distributor:
Geo. B. Carpenter & Co.
Wells and Michigan Sts.

William L. Barrell Company
8 Thomas Street, New York

California Distributors:
Waterhouse & Price Co., Los Angeles
Pacific Building Materials Co., San Francisco

or where the pitch is less than four inches to the foot. From the standpoint of the carpenter, builder or owner, it is a most satisfactory material to use wherever economy and durability are required, and a neat and attractive finished job is desired. It costs very little, is easy to lay and is almost as permanent as the structure itself.

"Con-ser-tex" is a specially woven canvas roofing which is chemically treated to preserve the fibre from mildew and the detrimental action of the oil in paint. It is made of high grade canvas and so treated that when painted the oil in the paint, which is a natural enemy to the cotton fibre, cannot injure it through natural oxidation.

The full merit of "Con-ser-tex" lies in the protection given the fibre of the fabric from the action of mildew germs. In addition to the destruction of the fibre by the oxidation of the oil contained in paint, mildew makes untreated canvas deteriorate very rapidly. This is caused by the checking and cracking of the paint into which cracks and checks water and moisture gather and, being held in a confined space and not permitted to evaporate, immediately creates an ideal condition for mildew. Both of these conditions are obviated and practically made impossible through the use of the "Con-ser-tex" treatment.

This material is found to be more durable than ordinary shingles and much cheaper to lay on the job. It is said to be cheaper than tin, or prepared roofing, and to give better satisfaction. In addition to the fact that the cost of laying it is less than one-half the cost of putting down other materials on the same surface, the amount of paint which is required to properly finish the given surface covered with this material, is less. This roofing is furnished in desired lengths and widths, consequently there is very little waste and the experience of those who have used it after years of service in all kinds of climates and under the most severe and constantly changing weather conditions, prove that it continues to give the greatest satisfaction years after it has been installed. The following endorsements of some of those who have used it speak for themselves:

"I have used 'Con-ser-tex' on several jobs, and have an order for more at the present time. I have found it very satisfactory and as cost goes, it is as cheap as tin and far more lasting. I have laid roofs with 'Con-ser-tex' five years ago and they have never required any attention aside from paint. I would recommend it anywhere a good roof or floor is desired. It is easy to lay. I prefer painting the roof or floor before laying canvas as it lays better and firmer."—H. B. BLOOMFIELD, Builder, Meriden, Conn.

"I have used considerable of your 'Con-ser-tex' roof and deck covering, and when laid according to instructions think it a fine article. The fact that it is evenly and thoroughly treated with preservative, makes it a particularly desirable article."—WILEY B. BLACKMAN, Contracting Builder, Danbury, Conn.

"I have used 'Con-ser-tex' on my home, and it has been perfectly satisfactory."—E. H. DUVAL, Cheraw, S. C.

"We know it ('Con-ser-tex') seems very satisfactory material to our customers."—CHURCH & MORSE, Dealers, Meriden, Conn.

The manufacturers, William L. Barrell Company, 8 Thomas St., New York City, have prepared a special booklet giving instructions as to the best way to lay this material, and they will send a generous series of samples and complete information, prices, etc., upon request.

✣

Two New Rockford Tools

The Rockford Mitre Box Co., of Rockford, Ill., readily realized the needs of carpenters when they brought out their patented "Honeycomb" mitre box a few years back. The success these people are having with this box is wonderful;

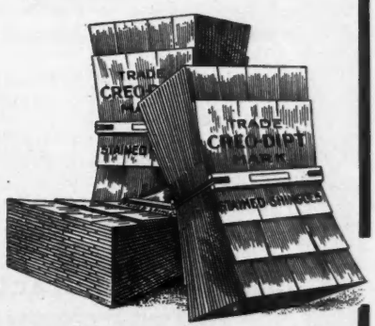
WHY DON'T YOU?

Get Your Lumber Dealer to Carry 3 Standard Shades in Stock

I USE "CREO-DIPT" STAINED SHINGLES

For Side Walls as Well as Roofs.

For New Houses or Re-Shingling.



BECAUSE—One manufacturer takes entire responsibility for quality of shingles, quality of stain, permanence of color and quality of workmanship that makes even stains.

REASON it out yourself. If you dip shingles on the premises, lumber dealer surely is not responsible for inferior quality of stain a paint dealer may sell you. You cannot blame the stain manufacturer if your lumber dealer does not supply the best grade of shingles to take the stain. You certainly cannot blame the workman when he does the best he can with material supplied him.

You should use **"Creo-Dipt" Stained Shingles** only, for both side walls and roof, whether it is a new job or whether it is a re-shingling job, because with **"Creo-Dipt" Shingles** you

SAVE WASTE—"Creo-Dipt" Stained Shingles are cut from first growth British Columbia Cedar—no stumpage—no wedge-shapes—all vertical grains.

SAVE LABOR—Handling such shingles saves time in laying. You save cost of extra men to stain.

SAVE TROUBLE—With **"Creo-Dipt" Stained Shingles** you always please your customers. You know that the manufacturer stands behind his guarantee that every order will be entirely satisfactory in every respect.

Colors are all ground twice in pure linseed oil and suspended in fine creosote oil—no kerosene, benzine or other cheapener used. Process of staining fills the pores. Shingles last twice as long as brush-coated shingles or natural wood. Colors never fade out in streaks.

All Grades 16, 18, 24-inch. 30 Color Shades.

Literature, Dealer Helps, Book of Houses, Sample Colors on Wood on request.

Get Your Dealer to Carry Three Standard Colors in Stock.

Standard Stained Shingle Co.

Originators and Sole Manufacturers

General Office, Warehouse and Factory, 1028 Oliver St., No. TONAWANDA, N. Y.

Factory in CHICAGO for Western Trade

they say that wherever their boxes are sent they usually get a letter from the user telling how satisfied they are with the "Honeycomb." They have hundreds of letters on file received from "Honeycomb" users all over this country, as well as Canada, which are well worth being proud of.

They have recently gotten out a glue clamp which is meeting with great favor among the woodworking industry. The irons do away with the mortising of the wood bar; and they claim they have the only clamp in which is used a full tapped thread to both the screw and the hub. This means greater wear and clamping power.

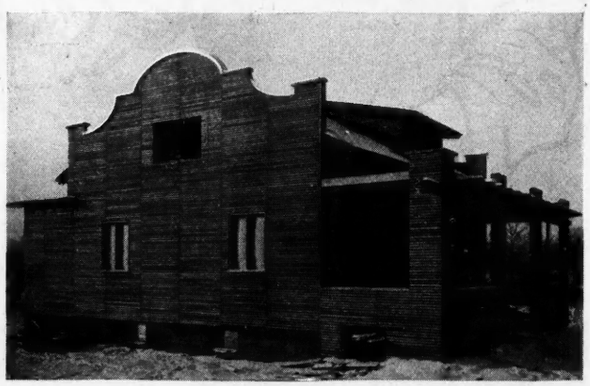
Another tool which they are just placing on the market is a saw jointer, for making the teeth of a saw of uniform height, which is half the trick in getting a saw to cut right. All the tools turned out by these people are of the highest quality, and are well worth looking into. Illustrated circulars will be mailed on request.

✣

Creosoted Lath for Stucco Work

The durability of wood is greatly increased if it is thoroughly creosoted. It will not shrink or swell and will stand exposure to all kinds of weather.

Bishopric stucco board is made up of lath that is creosoted, which makes it particularly desirable for stucco work. These creosoted dovetailed lath are placed on a backing made of asphalt mastic and sized, waterproof fiber board. The combination of the fiber board and the asphalt makes a good insulator that will protect the house against changes in temperature.



Bishopric Stucco Board Bungalow Ready for Plastering.

The two illustrations show the application of Bishopric Stucco Board to this class of work. One shows two houses that are finished and the other shows the frame covered with stucco board ready for the stucco.

Two Modern Cement Stucco Homes of Bishopric Stucco Board Construction.

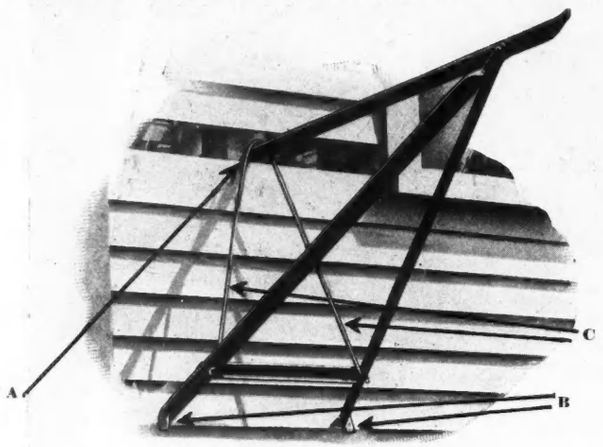
The Mastic Wall Board & Roofing Company, 663 Este Avenue, Cincinnati, Ohio, will be glad to furnish further details of the usefulness of their material for this purpose and for interior plastering also.

Promoters of Efficiency

The best way to get efficient work is to provide safe working conditions for the men. No man is at his best when he is worrying all the time about getting hurt through the lack of proper safety devices.

Temporary work such as scaffolding around a new building is often made in a ramshackle way because it is to be taken down soon. Work like this can be made perfectly safe in less time than it takes to erect the old-fashioned scaffolding by the use of "Trouble Saver" steel scaffold brackets.

These brackets are extremely easy to put up and it is practically impossible for a scaffold erected on them to collapse. They do not require a bolt, screw or nail to hold them up, but merely hook around the studding. When the job is finished they can be unhooked and taken to some other part of the building where a scaffold is required, or they can be folded up to be stored away for the next job.



"Trouble Saver" Steel Scaffold Bracket
A. Hook around studding.
B. Two legs to prevent wobbling.
C. Braces to hold legs firmly in place.

These brackets afford the best insurance that carpenters can have. They combine safety with low cost, an ideal insurance system.

The proposition which The Steel Scaffolding Company have for builders to show the benefits that can be derived from their scaffolds will be explained by them on request. Their address is Evansville, Ind.

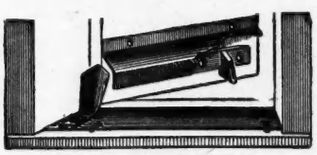
✣

Protect the Floors

There is no use in letting the rain pour under the doors and under swinging windows when the ingenious arrangement shown here will effectually prevent it.

As seen in the illustration, the "Axtell" metallic weather strip consists of two strips of steel 36 inches long and 1½ inches wide. These strips can be easily cut to fit narrower doors with a file or a cold chisel.

The bottom plate is flat and has a striker riveted to it. On closing the door, the top plate hits against the striker, thus raising the lower plate fastened to the sill. The lower plate then slides under the edge of the upper plate and over the wedge placed inside the door plate. This forces the lower plate tightly against the upper and makes a water and weather proof joint.



"Axtell" Threshold Strip.

E. I. Church & Co., West Hanover, Mass., have agency plan for wide-awake carpenters and builders that will help in getting some of the extra profits. They will be more than glad to furnish all details.

Cabot's Shingle Stains on the Home of Redwood

In finishing the Home of Redwood, which was described in our last month's issue, it was thought desirable to retain the beautiful grain of the redwood. The roof was finished with redwood shakes and a mighty artistic effect was created by not covering up the grain of the wood.

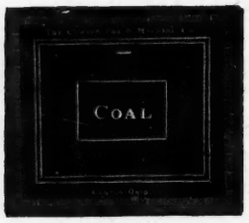
The shakes were protected and the grain of the wood left exposed by the use of Cabot's Creosote Shingle Stain. The shakes were dipped in this and were thus protected against the weather. The creosote carries the stain into the wood and colors the wood in the same way that dye colors cloth—without covering it in any way. The value of creosote as a wood preservative is well known to everyone.

Samuel Cabot, Inc., who make this shingle stain, have many colors to select from in this class of work and are ready to suggest color schemes for various kinds of houses. Full information will be sent to anyone addressing them at 15 Oliver St., Boston, Mass.

✣

He Can't Get In

The coal chute window with its battered frame and broken panes affords the handiest entrance for the burglar into the house. It's hardly worthy of his skill to "jimmy" a window that is in the condition of the average cellar window leading to the coal bin. Install a "Canton" coal chute and the night prowler moves on to the next house.



"Canton," the Coal Chute that Defies the Jimmy.

This chute has a self-locking door which can be opened from the outside only by the use of a special key that is furnished with

the door. It can be opened from the inside merely by unlatching. When the door is open it furnishes a hopper into which the coal is thrown so that it is not scattered all over the yard. It will protect the foundations and add many times its cost to the value of the building. These chutes come in three convenient sizes and are easy for the builder to install.

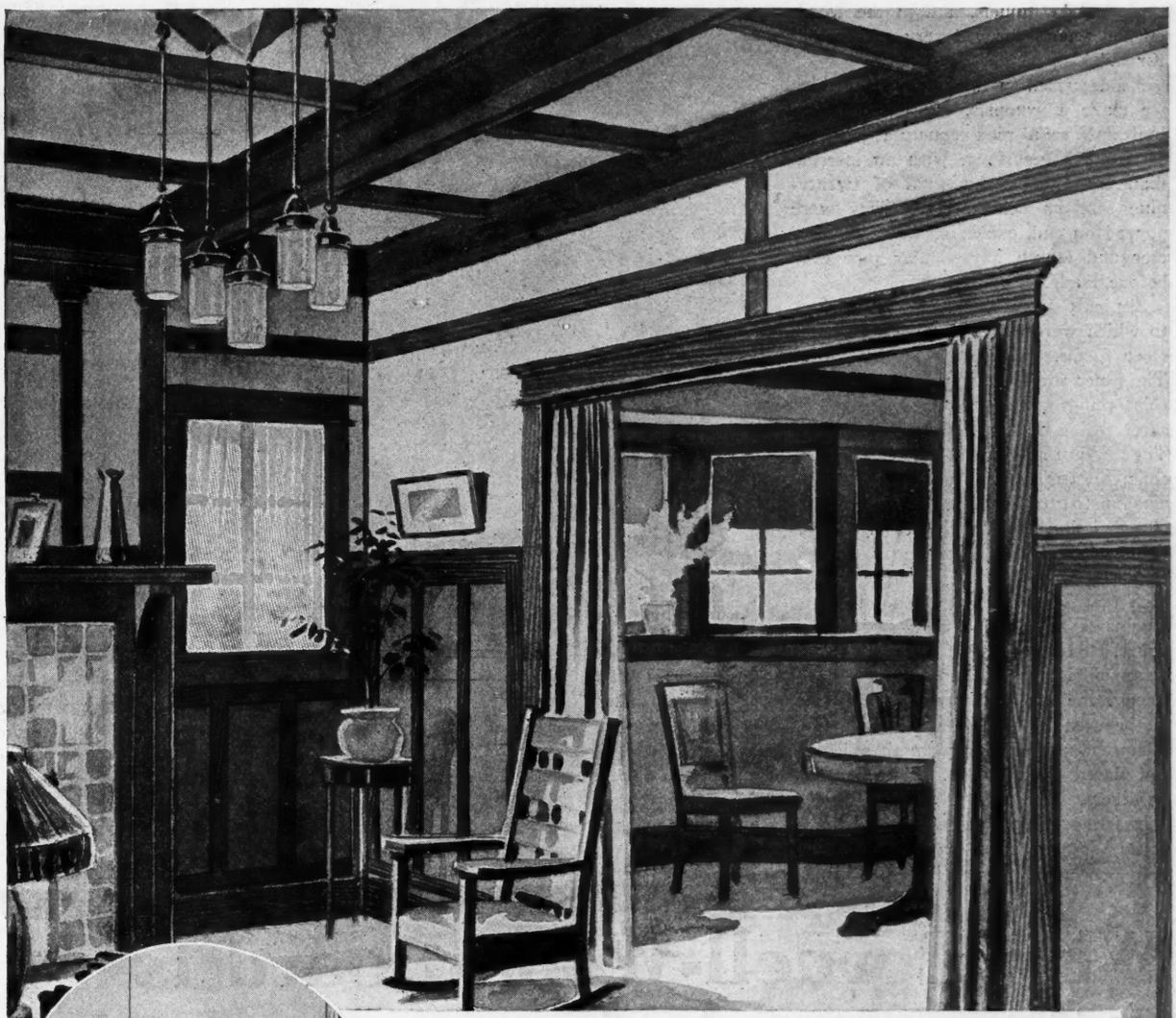
Builders and contractors will find it worth their while to get a line on this building improvement and the other building accessories that are carried by the Canton Foundry & Machine Company, Canton, Ohio. Ask for their catalog.

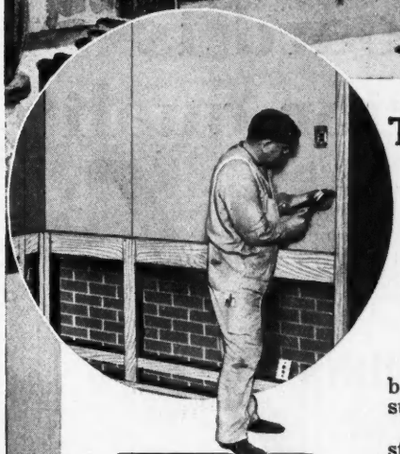
✣

Little Wonders on Big Jobs

The recent construction of new intake discharge tunnels for the Westport power station of the Consolidated Gas, Electric Light and Power Company of Baltimore affords good evidence of the wide range of utility of "Wonder" mixers, which are manufactured by the Waterloo Cement Machinery Corporation, of 103 Vinton St., Waterloo, Iowa.

Another interesting aspect of the work in question is the value of the small unit idea and the flexibility of equipment obtained thereby. This is seen in the fact that the Lock Joint Pipe Company, who had the contract, has in operation at various points a total of thirty-eight Little Wonder "Five" mixers, two of which mixed all the concrete used in building





There are Fine Money-Making Possibilities in Your Handling

Fiberlic

For Walls and Ceilings

It's an easy matter for any dealer to build up a fine, profitable business on Fiberlic, because Fiberlic meets every requirement for substantial wall and ceiling construction.

Fiberlic is made from long, tough, imported root fiber of remarkable strength. The root fiber is itself a guarantee of the strength and rigidity of our product.

The density of this fiber makes Fiberlic a better insulator than ground-wood boards. An excellent fire-resister, too.

Made in one highly efficient plant from start to finish, with but one basic raw material—root fiber. Fiberlic is positively uniform—it can't possibly vary in any way.

Write for samples of Fiberlic—they will surely convince you of the superiority of our product.

Sell Fiberlic—There's Money In It

THE FIBERLIC COMPANY, Camden, N. J.

New England Branch:
140 Washington Street North, Boston, Mass.

New York Branch:
Fuller Bros. Co., 139 Greenwich St.

LONDON (England) BRANCH: MacAndrews & Forbes, Ltd., Finsbury Court, E. C.

Use Fiberlic Paints

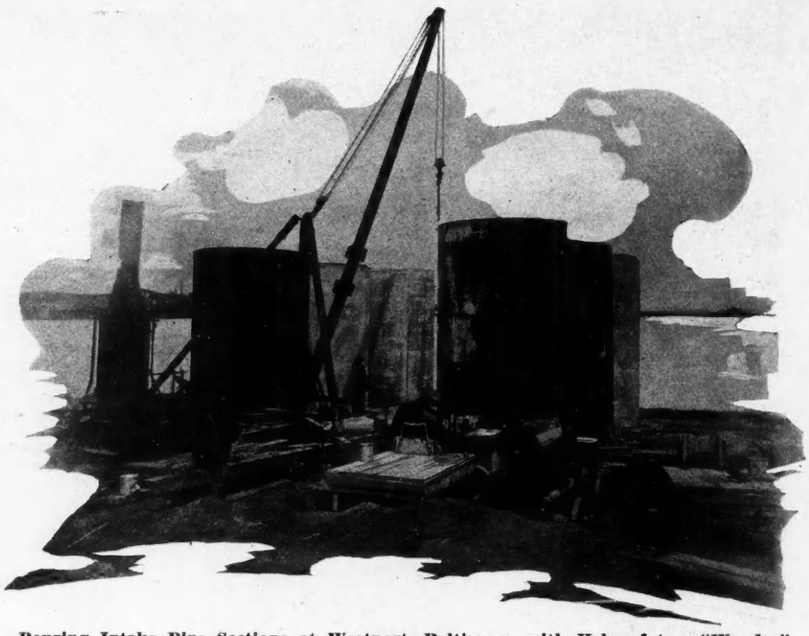
To insure the best finished results for our product, we recommend using Fiberlic Paints and Stains. They are made in many colors and tints, and make a soft, velvety finish of surpassing richness. These paints have been specially developed for Fiberlic use and will give the best results wherever our product is used.

these intake tunnels, and in the words of the report, "proved very satisfactory for it."

As described in this report, of which we make a synopsis, the tunnels were built of reinforced concrete pipe, in sections 15 feet long, with an internal diameter of 9 feet, a total of twenty-nine sections being built. They were poured on end, exceeding in both diameter and length any similar pipe ever before made.

Six cast iron bases were furnished, to which were attached inner and outer steel forms, two sets being provided. The inner form was placed first and the reinforcing material erected around it, after which the outer form was placed. The surface coming in contact with the concrete was well oiled. The concrete was hoisted to the top of each section of pipe and shoveled into the form. It was then carefully spaded down.

One or two of these pipes were poured each day, live steam being admitted to the inside of the pipe for about twelve hours. At the end of this time they were sufficiently cured to permit removal of the forms. After curing, the sections were laid on wooden skids and rolled to the water's edge, where a wooden cradle was fastened to each section and they were then lifted by a floating derrick and placed on pile bents. The joints were calked with oakum by divers.



Pouring Intake Pipe Sections at Westport, Baltimore, with Help of two "Wonder" Mixers.

It is apparent that contractors who are owners of the Little Wonder "Five" have reason to congratulate themselves upon the performance of work of this character by this machine. It is conclusive evidence that such contractors are equipped for practically everything that offers in concrete construction, and, knowing what the machine will do, they can bid with confidence on all classes of work.

Among the largest and most advanced contractors it is recognized that it is more economical to employ a number of small mixers than one large, bulky machine of the old steam

There's a Lot of Difference in Wall-Boards

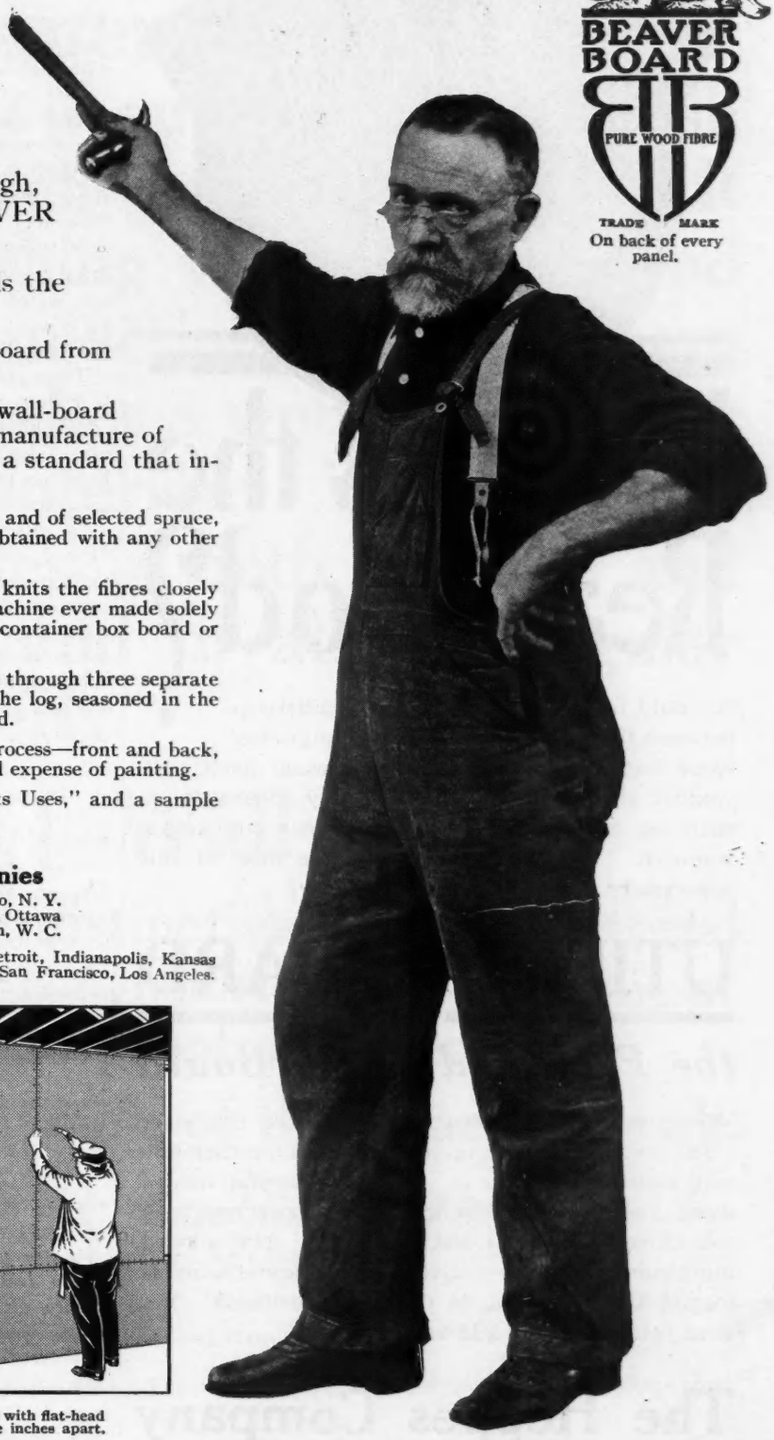
If it hasn't this Trade-Mark, it isn't Beaver Board.

BEAVER BOARD

PURE WOOD FIBRE

TRADE MARK

On back of every panel.



Some contractors and builders, though, seem to think all wall-board is BEAVER BOARD.

That's because BEAVER BOARD is the original and the most widely used.

And because it's difficult to tell one wall-board from another just by feeling or looking at it.

BEAVER BOARD, however, is the only wall-board produced in a plant devoted solely to the manufacture of wall-board (including all processes) and on a standard that insures long and satisfactory service.

It is made of pure wood fibre, not old paper stock, and of selected spruce, not jack pine. This means longer life than can be obtained with any other material, as shown by government tests.

The logs are ground by an exclusive process that knits the fibres closely and the fibres are built up into layers on the only machine ever made solely for the purpose. All other wall-boards are made on container box board or other machines designed primarily for other purposes.

BEAVER BOARD is the only wall-board that goes through three separate seasoning and drying operations. It is seasoned in the log, seasoned in the building-up process, and seasoned in the finished board.

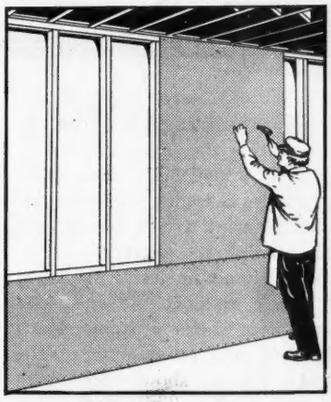
It is still further protected by an exclusive sizing process—front and back, which keeps out moisture and saves half the labor and expense of painting.

Send for free booklet, "BEAVER BOARD and Its Uses," and a sample piece of the Board.

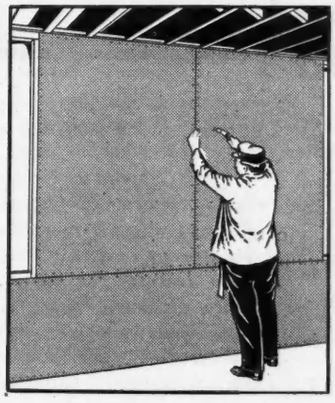
The Beaver Board Companies

United States: 222 Beaver Road, Buffalo, N. Y.
Canada: 422 Wall Street, Beaverdale, Ottawa
Great Britain: 4 Southampton Row, London, W. C.

Branch Offices in Baltimore, Boston, Chicago, Cleveland, Detroit, Indianapolis, Kansas City, Mo., Minneapolis, New York City, Omaha, Philadelphia, San Francisco, Los Angeles.



Always nail to intermediate studding, before nailing edges.



Nail edges with flat-head nails, three inches apart.

BEAVER BOARD

WALLS & CEILINGS

driven type. "Wonder" mixers require only half the initial investment of heavy machines and yield equal output; or, it is possible to double the equipment and double the output for the same investment as that required for a heavy machine. This takes no account of the time and labor saved, the elimination of much wheeling, the wages of licensed engineers, difference in fuel costs, interest, etc.

Easy portability, of course, is what turns the trick and gives flexibility of equipment which enables the contractor to concentrate all his machines on one big job, or detail some of them to smaller ones, as emergencies require. However, easy portability is by no means the whole of the secret of "Wonder" mixer success. It requires time and wide experience under various conditions to perfect a new machine and bring to fruition the full value of an idea so ingenious as that which is the fundamental principle of "Wonder" mixers. It is very strong and durable, very simple in design and economical in operation.

These are points that anyone contemplating the purchase of a modern mixer will do well to keep in mind, because they are insurance of safety in selection of this machine. They are evidences of its profitable operation by contractors who have too much at stake to risk the use of any but the best equipment they can command.

"Wonder" mixers are built in two sizes,—Little Wonder "Five," capacity 5 cubic feet per batch, or 35 to 50 cubic yards per day, according to conditions; the Wonder "Ten," capacity 10 cubic feet per batch, or 60 to 90 cubic yards per day. Both sizes are furnished with side loader when desired, which increases the output 50 to 100 per cent. Also, when specified, the equipment may include automatic water-measuring tank and rotary pump—the latter for use when city water-pressure is not available, at small extra cost.

✣

"Ideal" Aluminum Levels

Every carpenter and builder would like to have a level containing the features outlined below. They are found in "Ideal" aluminum levels made by the Ideal Level Works, Detroit, Mich. This firm is already well known to our readers through their advertising in the AMERICAN CARPENTER AND BUILDER. They have sold a good many levels on their "money back" plan if not satisfied; and it is with considerable

"Ideal" Aluminum Level.

satisfaction that they state that not one level has been returned; on the contrary the majority of customers did not really expect half as good an article as they received.

"Ideal" Aluminum levels are sold by mail only. This saves the middlemen's profits and gives you a high-grade level for only a few cents more than an inferior article would cost you at your dealers. They pay all delivery charges.

The features you get in "Ideal" aluminum levels are great accuracy; cannot warp, split, crack or dent the ends and edges; and made in a rigid one-piece skeleton frame which has great strength though lightness and on account of the original design is easily handled. The cut shows the 30-inch sive having four plumbs and two levels. This means that you can use it high or low—up or down; no matter how you pick it up it is always in correct position for use. Handy, convenient and a time-saver.

They are of double construction, making inaccuracy impossible. This feature alone is worth the price of the level. The spirit glasses are quick-acting and set in such a manner as to give the least amount of trouble and the greatest efficiency. The clear distinct wire bands on the spirit glasses, one at each end of bubble. Defining exact center, allows easy reading of the bubble even at a considerable distance.

The above features with many more describing a full line of levels in their big circular is yours for the asking. It explains the reason why "Ideal" levels are being used by the best craftsmen—why you should use them. Write for this circular today.

✣

Rush Order Service on Sheet Metal

Mr. Contractor, did you ever have to get building material for a rush job in double-quick time? If you never had this experience, you are one in a million. If you know a good, reliable firm that will handle rush orders of this kind your difficulties disappear to a large degree.

No doubt this fall some of you will want sheet metal materials of various kinds. Skylights, ventilators, and architectural sheet metal of all kinds. The Willis Manufacturing Company, Galesburg, Ill., is well prepared to handle orders of this kind that are wanted in a hurry. They are carrying in stock their complete line of sheet metal goods and can thus fill orders the same day that they are received. Their special service department is arranged with this particular object in view and is anxious to help out all builders that wish to take advantage of prompt service.

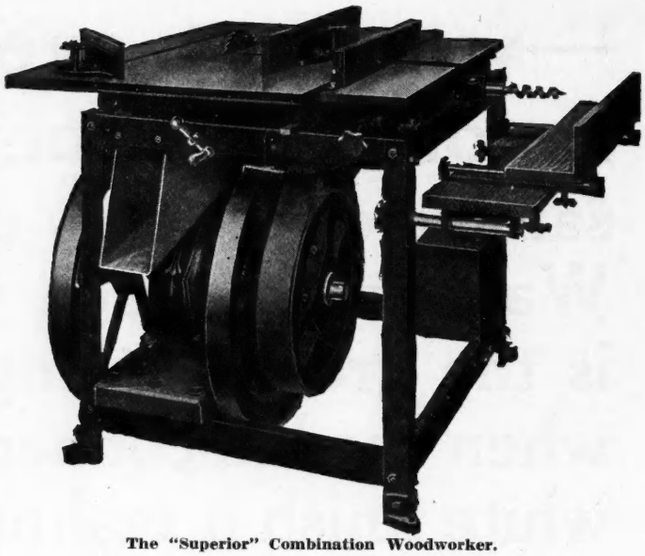
Their 180-page catalogue describes fully their line and is mightly valuable as a reference book for anyone that is interested in building. A copy can be secured by writing to them at the address given above.

✣

Durability a Feature of This Woodworker

A combination woodworker that will stand up under the work it has to do must be built strongly. With the many attachments it operates, it is subjected to heavy strains in different parts of the machine.

The woodworker shown in the accompanying illustration is designed so as to stand all these strains, according to the manufacturers. The frame is of iron, strongly put together. Plenty of power is furnished to operate every attachment smoothly.



The "Superior" Combination Woodworker.

This machine has the following attachments: two rip saws, 10-inch and 8-inch; two cross cut saws, 10-inch and 8-inch; a 6-inch jointer; three pairs of moulding knives; a 6-inch dado head; a 10-inch disc sander; three auger bits, ½, ¾, and 1-inch; and an 8 by ½-inch emery wheel.

The makers of this machine, the Superior Woodworker Machine Co., say that in a year's use the "Superior" woodworker will pay for itself several times over. They will be glad to furnish further details of their machine if addressed at 58 Carleton Street, Buffalo, New York.

"Kawneer" Patents Again Sustained

The validity of the "Kawneer" patents has been again sustained in the District Court of Detroit by Judge Tuttle. The suit was against the Toledo Plate & Window Glass Company, of Toledo, and was defended by the Zouri Drawn Metals Company of Chicago.

This is the tenth time that these patents have been sustained in the various Federal Courts. The decree given this time to the Kawneer Manufacturing Company is the broadest and most sweeping that they have ever received.

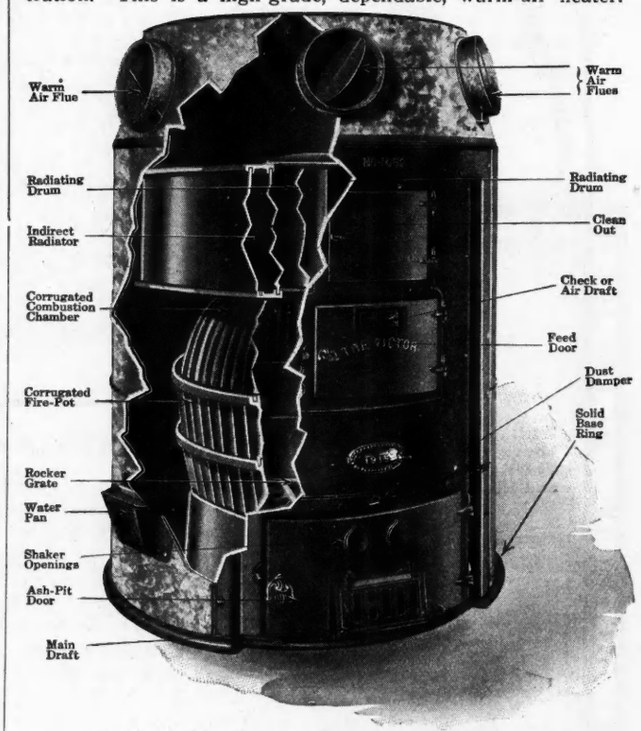
✣

Co-Operative Furnace Service

It's a cinch that the manufacturer of a furnace knows more about the installation of his product than anyone else. A furnace that is installed according to the complete directions of the manufacturer is sure to give the best kind of service.

The Simons-Leedle Furnace Company have a service method of this kind. They deal directly with the contractor or consumer and will send an expert mechanic any place within a radius of two or three hundred miles from their factory to install their furnace complete, ready for fire. Each furnace is placed under a positive guarantee of satisfactory results or all money refunded. Where distances are too great to send a mechanic, detailed information is sent so that the furnace can be installed perfectly by anyone of ordinary intelligence.

Their "Victor" furnace is shown in the accompanying illustration. This is a high-grade, dependable, warm-air heater.



"Victor" Furnace of Simons-Leedle Furnace Co.

Their furnaces are not experiments, as they have been on the market for nearly fifty years, and can be depended upon to do their work right. One of the features of this furnace is the return flue. All the products of combustion must travel both sides of the top before entering the smoke exit. This type of construction insures high efficiency and the minimum of heat loss.

Contractors and builders can get full details of their service system and complete descriptions of their furnaces by writing to W. R. Simons, manager Simons-Leedle Furnace Company, 404 River Street, Marshall, Mich.

Tests of Insulating Materials

The United States Bureau of Standards has recently completed a test on the conductivity of various insulating materials. A table has been made up showing the conduction and specific conductivity of the insulators included in the test.

Cabot's "Quilt," made by Samuel Cabot, Inc., proved to be the most effective in specific conductivity. The specific conductivity is the heat leakage corrected with regard to the thickness of the material and the time of the test.

Full descriptions of "Quilt" and the results obtained with it can be secured from Samuel Cabot, Inc., at 15 Oliver St., Boston, Mass.

✣

Everything for the Builder

In the 264-page catalog of the Gregg Hardware Company are shown all the various kinds of builders' hardware that can be used on any building. Everything from shovels to door locks is listed and can be furnished on short notice. A complete index is shown that makes it very easy to find any of the things that are wanted. A full line of all the materials indexed is carried which insures promptness on all orders.

A copy of this catalog can be had for the asking and will provide a valuable reference volume when any building hardware is needed. Write to the Gregg Hardware Company, 44-46 Cadillac Square, Detroit, Mich.

✣

Hess Pipeless Furnace

The Hess Warming & Ventilating Company, 1220 Tacoma Bldg., Chicago, Ill., announce its new pipeless or cottage furnace.

This is a furnace of the same type as the steel furnace long manufactured by the Hess Co., excepting that instead of the usual pipes and registers for each room, and the ordinary air supply duct, no horizontal pipes are used. As a substitute one large register grating is placed directly over the furnace, in the main room of the house to be heated. The register is divided into three sections; a large center opening for warm air, and a smaller opening at each end, through which the cold air at the floor returns to the furnace. This cold air travels down outside, next to the galvanized casing, thus preventing any loss of heat in the cellar, and it returns upward through inner chambers of the furnace, next to the welded steel radiator.

The Hess, Welded Steel, Cottage or Pipeless Furnace.

The whole outfit costs no more than a base burner stove of equal capacity; it can be installed by any handy man, and it will heat any ordinary cottage or bungalow, or church, or store, more uniformly than stoves, and it has the advantage of saving the room occupied by stoves, and of having all the fuel and ashes handled in the cellar.

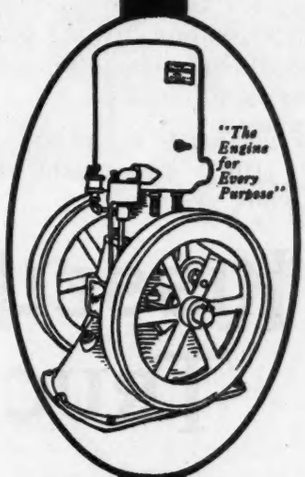
This does not supersede the regular Hess furnace, which is sold more extensively than ever, but meets a want for smaller and less expensive equipments.

The Company is pleased to send printed matter on request.

Novo Helps Build Chicago's New Speedway

Automobile records were not the only things smashed on this most modern of all speedways. A new record was hung up for high-speed construction work. Work on this two-mile track was begun May 8th and completed in forty-two days—forty of which were *rainy*. Millions of feet of lumber were used; tons of steel; and carloads of cement. *Novo Engines were used!*

NO TANK
NO FAN
NO FREEZING
TROUBLE



NOVO ENGINES and OUTFITS

REG. U.S. PAT. OFF.

In turning 320 acres of weeds into a 100-mile-an-hour track in 6 weeks' time Christian F. Wiehe performed a miracle in construction engineering. He had the *men*. He had the *engines*. Both men and engines had the "never-say-die" spirit.

Novo Engines never say die. No matter how heavy the job or the kind of work—Novo Engines have never been known to "lay down." Of all kinds of power NOVO is the most economical, most flexible, most reliable, the steadiest. Superior handiness and economy of fuel over steam and electricity make NOVO invaluable to anyone who wants to cut power cost.

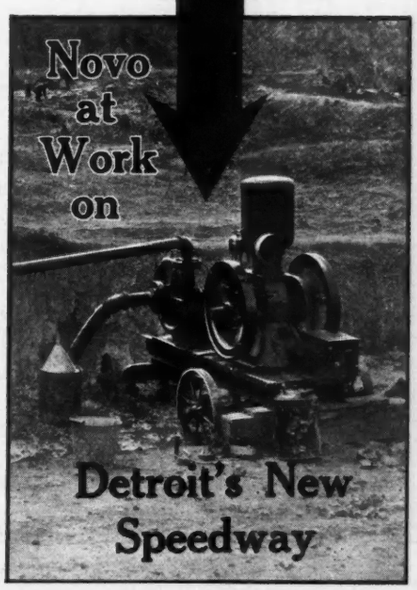
NOVO is designed right and made right. Fewest working parts. Practically nothing to get out of order. Every ounce of metal is the best suited for the purpose. NOVO will run in any weather. Guarantee-bond against damage by freezing with every engine.

We have made a special study of contractors' requirements. We believe we have an outfit for every conceivable kind of pumping or hoisting work that requires less than 20 H. P. For instance, we make 7 distinct types of NOVO hoists. NOVO outfits include all kinds of POWER PUMPS, HOISTS, AIR COMPRESSORS, SAW RIGS—over 75 different outfits in all—all of them portable.

Our book, "Reliable Power," is free if you will write for it on your business letterhead

NOVO ENGINE CO., 440 Willow Street, Lansing, Michigan
or Station A, San Jose, Cal. CLARENCE E. BEMENT, Secretary and Manager

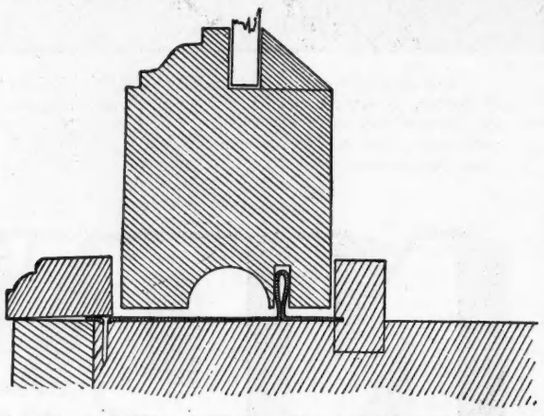
Novo Engines can be furnished for operating on gasoline, kerosene, alcohol or distillate



Metal Weatherstrip Inventions

About seven or eight years ago, there was a period of great activity on the subject of metal weatherstrip inventions. The records of the U. S. Patent Office at that time show a surprisingly large number of applications for patents, and it is a well-known fact that at about that time metal weatherstrips came to be recognized by architects and heating engineers as an important factor in the building industry. Previous to this period, there had been but one pattern of metal weatherstrip which was well-known and used, one pattern which made metal weatherstripping a business; and this same pattern retains its high standing to-day, being endorsed and recommended by architects and heating experts everywhere. It is made by the Allmetal Weatherstrip Co., of Chicago, and its chief qualities are that it is simple and practical.

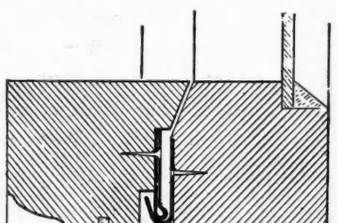
If all windows and doors were fitted carefully and accurately in the first place and if they did not get out-of-square, or warp or shrink, there are a great many metal weather-



Section Through Side of Window Showing Edge of Lower Sash.

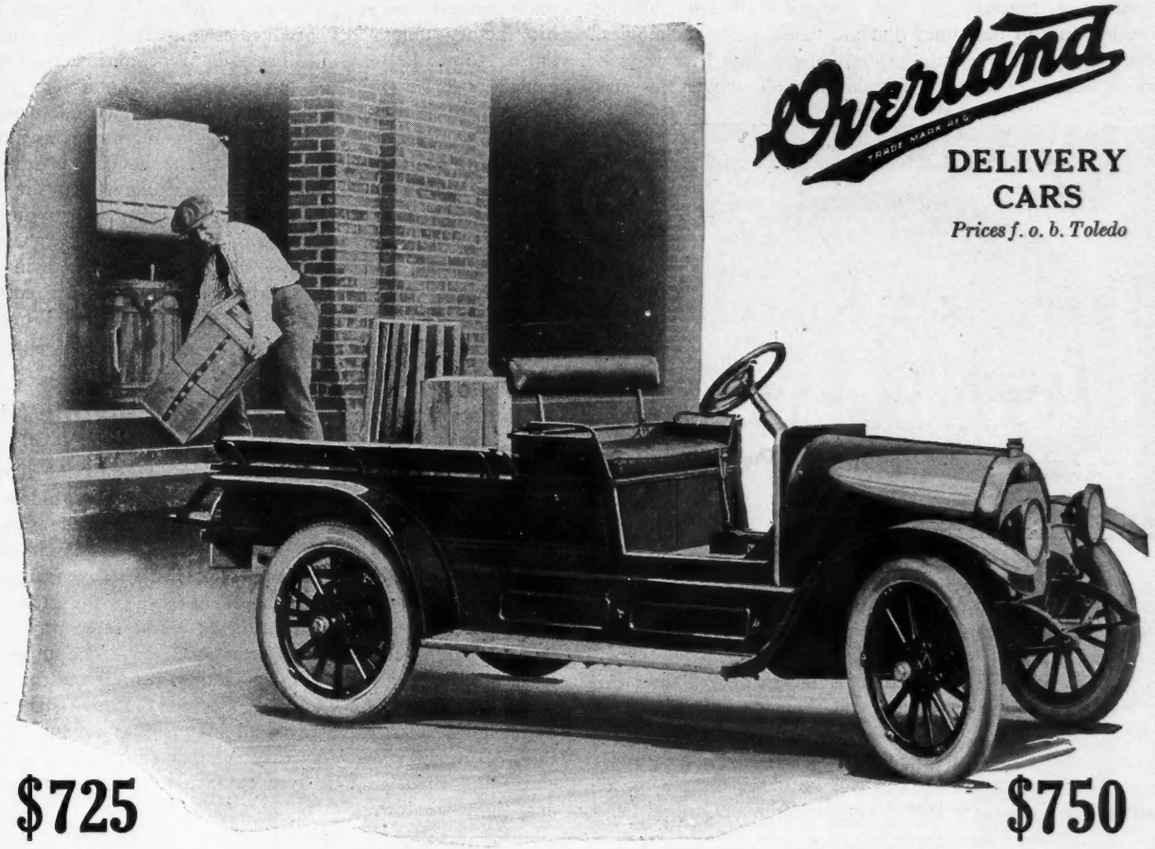
strips which might be used. But the old, shrunken and warped openings are the ones which need the weatherstrips most of all, and the best metal weatherstrip is the one which will adapt itself best to all conditions with the least work and worry to the carpenter and the greatest efficiency to the owner.

"Allmetal" weatherstrips are not an experiment or a new invention. It is claimed that there is more of this pattern in use than all other kinds combined. The management of the Company is in the hands of a veteran in the business, J. D. Pierce, who in 1911, originated the plan of teaching carpenters by mail how to sell and install metal weatherstrips. He believes the continued success of the Company depends on the success of its agents, and, therefore, gives an unusual amount of support and co-operation to new contractors starting in the metal weatherstrip business. Samples and full information may be had by addressing Allmetal Weatherstrip Co., 226 W. Madison St., Chicago.



Section Through Meeting Rails.

Allmetal weatherstrips for sliding windows are made of heavy zinc, with a raised rib which fits into a slot in the edge of the sash all around, except across the meeting-rails, where the two sash come together. Here the equipment consists of two parts, one of which interlocks with the other. So all the joints are made wind-tight and dust-tight at every place.



Overland

TRADE MARK REG. U.S. PAT. OFF.

DELIVERY CARS

Prices f. o. b. Toledo

$725

Open Express Delivery Car

$750

Panel Body Delivery Car

A Substantial Delivery Car at a Low Price

THIS announces the new Overland Delivery Car—now ready for immediate shipment.

Unusually low in first cost, and inexpensively maintained, this sturdy vehicle will soon *pay for itself in quick deliveries.*

In it you get full benefit of the saving in price made possible only by the extensive manufacturing facilities of the great Overland plant.

The Overland Delivery Car is faster than a horse or team. It is far more reliable. It is much cheaper in proportion to the work done. It gives you the quick action you need in your businesss.

The 35 horsepower motor has a big surplus of power over anything you will ever require.

You can depend on it absolutely at all times—under all conditions.

The Overland Delivery Car is electrically lighted and started. It has high tension magneto ignition, revolving oil indicator, electric control switches on the steering column, large tires, and many other advantages found on no other delivery car at this low price.

In every respect it maintains the high standard for which Overland has always stood. It is a substantial, money-making investment for any business man who maintains a delivery system.

The following specifications attest the car's remarkable value:

BY INVITATION MEMBER OF

NEW YORK, U.S.A.

- 35 horsepower motor
- High tension magneto ignition
- 5-bearing crankshaft
- Thermo-syphon cooling
- Underslung rear springs
- 33"x4" tires; non-skids in rear
- Demountable rims
- Electric starting and lighting system
- Large, powerful brakes
- Rain-vision, ventilating windshield
- Instrument board on cowl dash
- Left-hand drive
- Center control
- Electric switches on Steering column
- Magnetic speedometer

"Made in U. S. A."

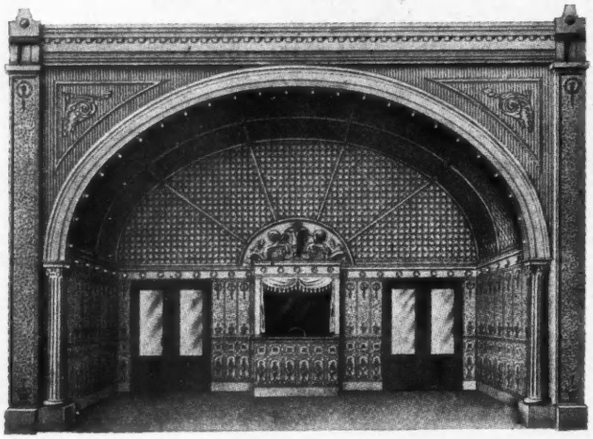
Write for a special delivery car catalogue. Please address Dept. 255

The Willys-Overland Company, Toledo, Ohio

Theatre Fronts and Ceilings of Sheet Metal

Nearly every contractor and builder has the opportunity of getting a contract for the alteration of old buildings or the building of new ones that are to be used for "movies."

Metal fronts and ceilings present one of the best ways of finishing buildings intended for this use. To cover this class



Movie Play House Front of Canton Art Metal.

of work the Canton Metal Ceiling Company has issued a special booklet showing some ceiling designs and suggestions for theatre fronts.

In the accompanying illustration is shown one of their theatre front suggestions. Aside from these designs, as shown in the booklet, this company is prepared to create special designs to suit all requirements.

A copy of this useful booklet can be obtained free by addressing this company at 1947 Harrison Avenue, Canton, Ohio.

Master Builder Tools

The secret of good tools lies in careful inspection. No manufacturer can expect to get uniformly good results from his factory unless his product is inspected from start to finish. Careful attention to every detail of construction means a high-grade product that can be depended upon.

Such is the care that is put into the manufacturing of "Master Builder" tools, say the makers. Everything from the initial forging to the fitting of the handles is carefully inspected and all pieces that do not come up to the rigid requirements set by the manufacturers are thrown into the discard. With such a system, it is no wonder that "Master Builder" tools have attained the position of enjoying the confidence of builders and carpenters all over the country.

These tools are made by the Germantown Tool Works of Philadelphia, Pa., and 62 E. Lake St., Chicago.

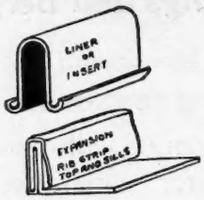
✣

The Expanding Rib with the Flexible Strip

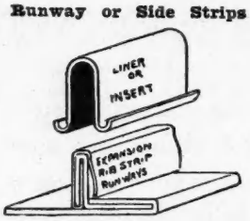
The illustrations on page 124 show the latest development of the "Diamond" metal weather strip. One of the illustrations shows the strip installed on a double hung window and the other shows the details of construction of the strip.

The strip that is used on the head and sill consists of an expansion rib strip that is fastened to the window frame, and a metal liner that is inserted in the groove in the sash. The strip used on the sides is constructed in the same way except that the base of the rib strip is made heavier. The upper sash is equipped with a hook strip at the meeting rail and the lower sash has an expansion strip that fits into the hook strip when the window is shut. The metal inserts that are put in the sides of the sash insure an easy running window and give the expanding rib a smooth even surface to bear on, making a dust-tight window.

Top and Sills.

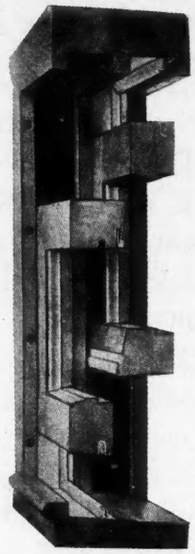


Runway or Side Strips



Meeting Rail.

Details of "Diamond" Strips.



Double Hung Window completely protected with "Diamond" Metal Weather Strips.

The flexible feature of the side strips is still retained in this new design so that the sash can be readily removed without breaking the weather strip in any way.

Weather stripping offers one of the best propositions for extra profits to the carpenter and builder. If you don't believe that this method of protecting a house against cold, dust, and excessive coal bills is effective, write to the Diamond Metal Stamping Company, Columbus, Ohio, and get their folder, "Positive Proof from Particular People." It shows a few of the many satisfied users of metal weather stripping. Satisfied users of a builder's product mean more business for the builder.

If a contractor can show a marked reduction in a house-owner's coal bill he has made a friend for life.

The weather strip is useful to a house at all times of the year, but is exceptionally so in the winter time. The fall is, therefore, the ideal time to interest the house-owner in weather strips.

The Diamond Metal Stamping Company have an attractive agency proposition that will make money for any progressive builder or carpenter. Write for their catalog describing the various types of metal weather stripping they handle. It's a good chance to get some of the extra profits. Write them at Columbus, Ohio.

✣

What Determines the Success of Interior Decoration?

Do you know which colors will make a room "look larger," which will seemingly cause it to "shrink," and which will keep the walls and ceilings "well in place"?

The color scheme of the rooms in which we live and work has an important bearing upon our health, happiness and efficiency. While discerning owners and builders have long recognized this, still they have had more or less difficulty in determining just what colors or combinations of colors would give most pleasing and artistic results. Then, too, dealers have not always been in position to offer advice, although fully realizing the advantages this knowledge would give them.

To enable every dealer in Berger's "Classik" steel ceilings and sidewalls to give real helpful suggestions to his customers regarding their decorative problems, the Berger Mfg. Co., of

Canton, Ohio, has prepared a brief monograph entitled "Decorative Suggestions." There the essentials of successful indoor decoration are set forth in clear, non-technical language which anyone can readily understand and apply to his particular problems.

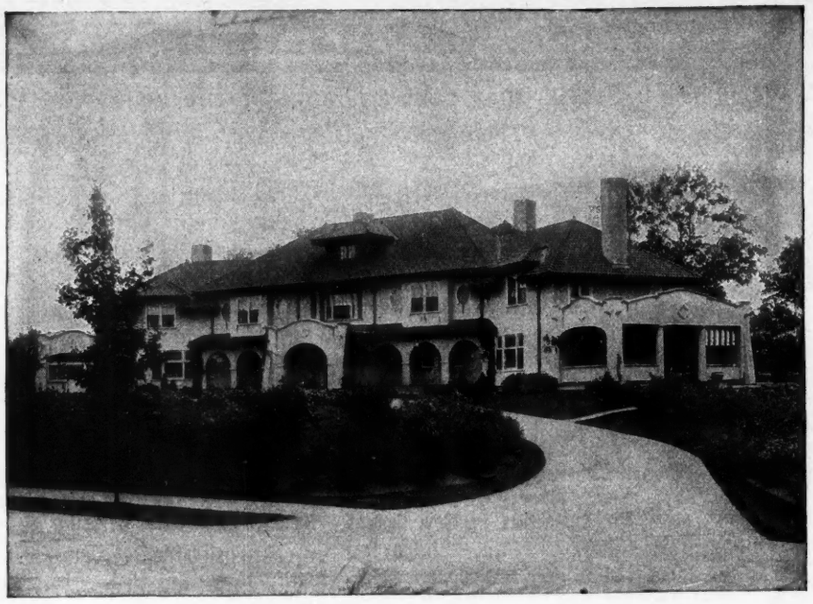
Any reader of AMERICAN CARPENTER AND BUILDER who is interested in this subject may secure a copy of "Decorative Suggestions" by writing The Berger Mfg. Co., at Canton, Ohio, and mentioning this publication.

✣

"Successful Stucco Houses"

The book with the above title is one of the most complete that has been issued on the subject of stucco and stucco houses.

The first part of the book is devoted to a discussion of the advantages and practicability of stucco walls for houses of various kinds. This is most complete and gives also a comparison of cost between this type and other types of construction.



A House at Chestnut Hill, Mass. Chapman & Frazer, Architects. Clinton Wire Lath Used.

The second part of the book takes up the construction of stucco houses. This part is well illustrated with detail cuts showing methods used in the walls and other parts of the exterior construction. The methods used in coloring stucco are also given.

Complete specifications are then given for both the lathing and plastering. This is followed by a description of the types of Clinton wire lath and other Clinton products.

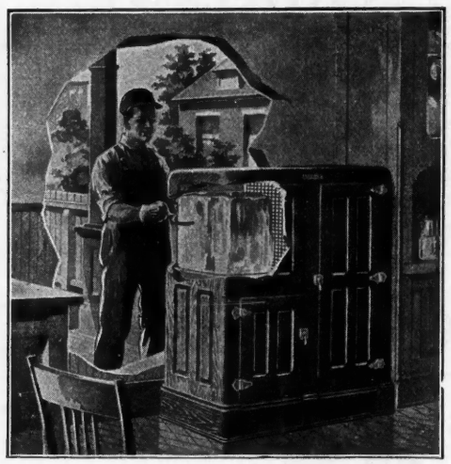
In the back part of the book are a number of illustrations of houses that have been built in the ways described in the book. One of these handsome illustrations is reproduced here.

A copy of this book should be in the hands of every contractor and builder and can be secured from the Clinton Wire Cloth Company, Clinton, Mass.

No Ice in Winter

During the cold weather a person hates to buy ice. It doesn't seem consistent to invest in ice when the thermometer is hovering around well below freezing. Still, with furnace-heated basements, one has to do it. But—

"Don't do it," is the reply of the Herrick Refrigerator Company. Install a "Herrick" outside iced refrigerator now, and ice becomes unnecessary in winter. The outside door can be left open and the refrigerator will be kept cool and there will be no danger of losing the food that is stored in it, either through spoiling or theft.



Provide a "Herrick" and keep the ice man on the outside.

This company has a new catalog that shows the many types of refrigerators that they manufacture. The catalog is very attractively gotten up with many handsome illustrations. Cuts are shown illustrating the "Herrick" system of dry air cooling, which insures the circulation of the dry cool air in the refrigerator and prevents all stagnant air from collecting in the bottom of the food storage section.

Full information concerning their refrigerators can be secured from this company by addressing them at Waterloo, Iowa.

✣

Giving the Touch of Beauty to Cement

By A. M. MacMurray

It was recognized almost at the beginning of the great development of the American cement industry, that cement for building purposes would be a leading, if not the leading material. Its superiority, its strength, durability and economy had been proved, and it was to be expected that a way would be found to overcome its few disadvantages.

Chief of these was the tendency of cement and concrete to absorb moisture.

Because of its character and its adaptability to almost any kind of construction, cement has often been the logical material to use; but its dull, blue-gray color so detracted from the artistic effect desired that it was much less employed than it otherwise would have been.

Ten or twelve years ago the use of cement was greatly retarded by these objections, held not only by architects and builders but also by those for whom buildings were to be erected.

But the very objections to cement were an incentive to finding the means of overcoming them. Obviously, the remedy was to discover how to preserve cement and concrete from external influences by an appropriate coating, yet one which would have no deteriorating effect upon the cement itself.

It is essential in any cement coating that it contain no elements of a corroding nature. It is equally desirable that it dry on the walls without destroying the texture of the material.

It is generally accepted that the only medium is one which does not contain an oil affected by alkali, and one which evaporates at once as soon as applied. This leaves the base of the coating an integral part of the surface; it preserves the distinctive texture of the cement because it settles in the pores.

In the manufacture of Bay State Brick & Cement Coating, Wadsworth, Howland & Co., Inc., 139-141 Federal St., Boston, have a coating which has been proved by the most practical tests to be ideal. Leading architects and contractors throughout the country have tried it and pronounced it entirely satisfactory; and this is having a marked influence upon the popularity of cement and concrete for homes as well as office buildings.

Sears Roebuck Building, Seattle, Wash. Blackwell & Baker, Architects. A Notable Example of "Bay State" use.

This coating is manufactured from a base of a concrete nature, does not turn yellow and admits of many pleasing tints. It has opened an unlimited field of artistic possibilities to the architect, contractor and owner.

In hundreds of cases the superiority of this coating has been proved by the fact that neither rain nor snow can penetrate the cement walls. Consequently there is no discoloration and the natural dampness of the cement is reduced to a minimum. Moreover, the early tests, made as long ago as a dozen or fifteen years, have established the durability of Bay State Coating.

Architects and builders here and there still adhere to antiquated methods, or continue to experiment in the treatment of cement, but hundreds of architects and contractors in all parts of the country have tested Bay State Coating and endorse it as the practical means of overcoming the objections

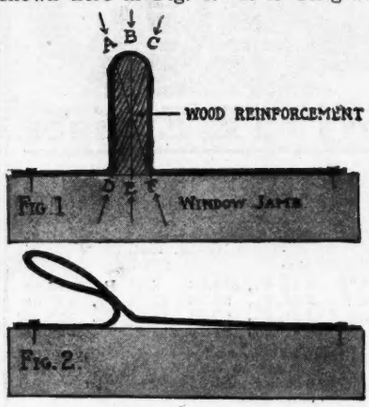
that have been made to cements, concrete and stucco.

One of the most interesting pieces of evidence which the manufacturers of Bay State Coating submit to architects and builders is the comparative photograph showing a concrete or stucco building before it has been coated and afterward. This is only one of the many interesting photographs reproduced in the new catalog which Wadsworth, Howland & Co., Inc., have published and will be glad to send to those interested.

✣

Reinforced Weather Strip

The construction of the "Peace" metal weather strip is shown here in Fig. 1. It is designed to guard against any collapse or bending. As shown in the illustration, the strip is strengthened by the inserting of a wooden strip in the metal rib. From this sketch it will be seen that a pressure exerted at "A" in the direction of the diagonal line is met by the resistance of the wood with a pressure at "F." In the same way, pressure at "B" and "C" is met by the counter pressure at "D" and "E" respectively.



Wood Reinforcement Prevents Collapse.

The failure of an unreinforced strip due to the sides drawing together at the base, as shown in Fig. 2, with the upright rib filled with wood, as in Fig. 1, is impossible. The sides cannot draw together in this way, and cause collapse. The strong base is thus retained by keeping the sides apart, and the reinforced weather strip is practically unbendable.

Any weather strip, no matter how efficient, is a poor investment, unless it is strong enough to protect its efficiency against ordinary abuse.

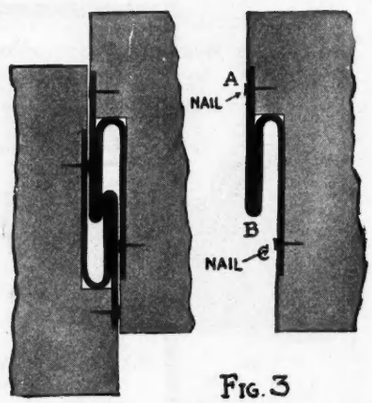


FIG. 3

Construction at Meeting Rail.

Zinc is a soft metal and should be reinforced in some way, the makers of this strip maintain. They say it is easily bent out of position, and once bent is hard to get straightened up again.

The double hook as used at the meeting rail, shown in Fig. 3, can be made very deep because of its double construction. Any strain on it is opposed by either a pushing or a pulling force at "A."

The appearance of the entire window equipped with "Peace" strips is exceedingly neat and trim. The manufacturers say that the metal liners make a hard running window as they cause excessive wear on the strips. The zinc deposits a coating on the inside of the wooden grooves and the window thus runs very smoothly.

The Niagara Metal Weather Strip Co., 737 Main Street, Buffalo, N. Y., have a plan for builders and carpenters that presents good money-making possibilities to a hustler. Write to them and get the particulars of their agency plan and their co-operation.

The Home Made Concrete Mixer

A simple home-made mixer that is capable of doing good work would sound pretty good to many builders who do not have enough of this work to justify the expense of a regular factory-made one.

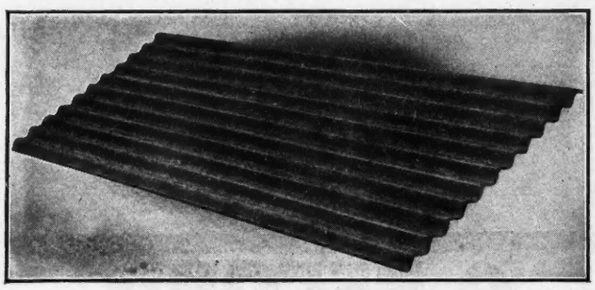
The Sheldon Mfg. Co., Box 320, Nehawka, Neb., will furnish blue-prints showing how the mixer frame and body is made and will furnish the specially designed set of irons to complete the mixer at a small cost. Write to them and get their catalog and a full description of their handy mixer. It would be mighty useful to a lot of our readers. Investigate their proposition. You can't lose anyway.

✣

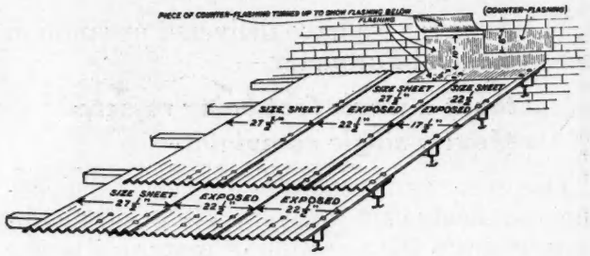
Corrugated Asbestos Sheets for Roofing and Siding

The problem of manufacturing corrugated asbestos sheets was taken up some ten or twelve years ago by interests connected with the Keasbey & Mattison Company, of Ambler, Pa. Their first endeavor was to take the flat sheets of asbestos building lumber and to bend them while still soft into the corrugated form, one corrugation at a time. Later the process of manufacture was so modified that the materials could be compressed while in the corrugated condition, a pressure of about 100 tons per square foot being employed.

The result has been to produce a dense and thoroughly compacted structure, which will not only withstand rough treatment, but is unaffected by weather influences. For covering large surfaces, asbestos concrete sheets made up in corrugated form offer great strength and the corrugations lend themselves to the ready making of joints where the material is applied as roofing or siding. They are made of a uniform width of 27½ inches, comprising eleven complete corrugations, and in length of 4, 5, 6, 7, 8, 9 and 10 feet. The corrugations are 2½ inches wide and 1 inch deep from top to bottom of corrugation. The material varies in thickness from 3/16 to 5/16 inch and weighs from 2.8 to 3 pounds per square foot.



Individual Sheet of "Ambler" Corrugated Asbestos Roofing. 27½ inches wide, 4, 5, 6, 7, 8, 9 and 10 feet long.



Method of overlapping and fastening sheets of "Ambler" Corrugated Asbestos Roofing.

The method of applying and supporting the material for roofing and siding purposes is shown by the accompanying drawing. Roofing is lapped two corrugations sidewise and 6 inches endwise, the inclined joints in succeeding courses being staggered from those of the preceding courses by the amount by the side overlap. Supporting purlins are so spaced that the greatest distance between purlins shall not be more

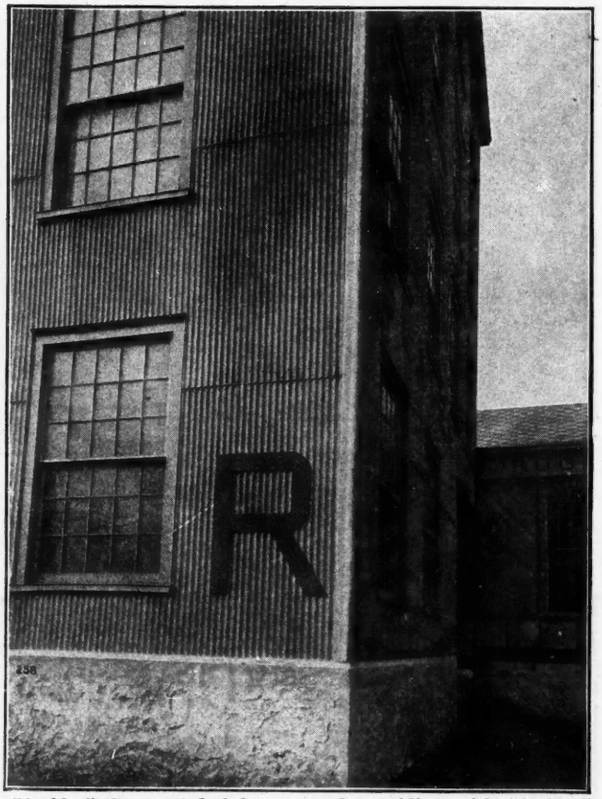
than 36 inches for roofing or 44 inches for siding.

The best device for attaching roofing to steel and iron frame work has been found to be aluminum tie wires. Two holes are drilled through the asbestos, one just above and one just below the purlin, care being taken to locate the holes in the tops of the corrugations and to make them no larger than necessary for drawing through the wire fasteners. The outer end of each tie wire is provided with a head similar to that of a wire nail and holds a soft lead washer and before the wires are drawn up against the roofing, the inner surface of the washer and the head of the wire are daubed with plastic asbestos slaters' cement. The inner ends of the two wires are then twisted together around the purlin. In applying the material to wooden purlins, iron wire nails with lead washers take the place of the aluminum tie wires.

The fastening for siding is somewhat different, consisting of a galvanized iron clip, bent so that the inner end rests over the purlin or other horizontal iron support. The clip is fastened to the corrugated material by two ¼-inch stove bolts, the heads of which are outside and rest against soft lead washers. Siding is secured to wooden frame work by means of nails, as in the case of roofing.

For the protection of corners and ridges, rolls of the same material as the roofing and siding are used. Those for corners are half cylinders made in lengths of 16, 42 and 56 inches, and so applied that the ends overlap. The ridge rolls are provided with 6-inch wings, which overlap the corrugated roofing. To admit of applying the ridge roll to any peak or angle, it is made in two parts, the half cylinder parts turning one within the other to give the desired angle of two wings.

Corrugated asbestos roofing furnished by the Keasbey & Mattison Company is being widely used for covering the buildings of steel and iron companies, gas works, elevators, chemical works, machine shops and foundries, warehouses, pier sheds, etc. Its permanent character renders it economical in the long run.



"Ambler" Corrugated Asbestos used as siding with "Ambler" Flat Asbestos Building Lumber for window framing, and Asbestos Ridge Roll on corners. Neighboring building covered with "Century" Asbestos Shingles.

A Gauge for Uneven Surfaces

A handy and useful little gauge has recently been placed on the market for getting an accurate outline of mouldings and other uneven surfaces. It consists of a frame containing narrow metal strips set on edge. These can be pushed into any uneven surface so that the outline can be obtained.

This unique little device is made by S. I. Atwater, 335 Broadway, New York, who is making a special offer to builders and carpenters. It is a mighty ingenious tool that every carpenter and wood worker should have in his kit. Write to the maker and get the details of his offer.

✣

A Tip That Brought in Big Returns in Winter Business

HOW ONE CARPENTER CONTRACTOR'S IDEA TURNED A DULL SEASON INTO A SPLENDID PROFIT PRODUCER

Three carpenter contractors in a Middle Western town were discussing business conditions in general on a Sunday afternoon in early autumn. All agreed that while summer business had been unusually good, the outlook for the winter season was no better than in any previous year. One was counting on going South to visit a brother-in-law for a few months; the other two did not know exactly what means they would employ to pass the dull season. Simpson, the youngest of the three—the one who had announced his contemplated trip South—spoke up suddenly:

"I wonder why some bright fellow doesn't discover a way that we could keep busy the entire year 'round. It certainly does seem wrong that the weather should shoot such holes in the contracting business."

"It is wrong, Simpson. Why don't you fellows wake up and grasp the opportunity that's right in front of you?" None of them had noticed the entrance of the man who made the latter remark. They turned to greet him. "Hello, Jerry," said Simpson. "Who let you in?" Jerry seated himself and lit a cigar. "I just overheard Bob's remark about the weather cutting into business. I suppose you three have been sitting here for a couple of hours grieving about the bad prospects for doing anything this winter. Well," said Jerry, puffing contentedly, "you seem to be so down in the mouth that I guess a little tip as to how you can get lots of business won't go bad. What do you say?"

"Come on let's have it," the three said in unison.

Jerry settled himself more comfortably in his chair and began: "I just signed up enough business to keep me going until well past Christmas. I'll get lots more of it too when I get around to it—but that's enough for a little while. I'm not going to loaf. I'm going to work this Winter. You fellows can work too if you want to do the same thing.

"Ever hear about Utility Board?" Jerry asked. "Of course you have—you've all used it from time to time. Well—that's the secret for you. There are lots and lots of jobs in this little old town that call for Utility Board—lining garages, remodeling attics, partitioning offices, making new rooms and other needed alterations in residences. All this work can be done in the rottenest kind of weather. It doesn't make a bit of difference whether it's rainy or cold, or what's the matter with things, Utility Board is absolutely impervious to weather conditions.

"Why, the very first job I landed was—guess who?" The other three couldn't imagine. "You know old Sam Marsh, the fresh air fiend they call him. Well, Sam wants to sleep outside this winter. He was telling me about it the other day, said it was great stuff for the health and all that sort of thing. He has an enclosed porch, you know—but it's pretty chilly without any wall lining on a cold night. I said to Sam: 'You ought to have that porch lined if you're going to sleep out there.' 'What'll I line it with?' asked Sam. 'Utility

Board,' said I, and landed my first off-season job then and there.

"Now I'm not telling you fellows this because I want you to go into this Utility Board thing against your own judgment," Jerry went on. "But I know you're all just as quick to appreciate a good thing as I am, and there's plenty of Utility Board business in this town for us all.

"Utility Board," mused Simpson, "that's made by the Heppes Company in Chicago, isn't it? Yes, now that I think of it, I got some samples from them a day or so ago. They're putting out what they call a wood grained board, too. I didn't have a chance to do more than take a look at the stuff they sent me, but I remember there were several different kinds of wood grains and they certainly did look mighty attractive."

"You're right, Bob," said Jerry. "They put out that Utility Board now in plain oak, flat oak, Circassian walnut and mahogany as well as in the standard finish, which can be painted or tinted any way you like. I'm going to do over Mrs. Harrison's entire dining room in the Circassian walnut. It will look like an expensively wood panelled job and won't cost her much. There's a nice profit in it for me, too."

"By George," said one of the older contractors, "that is a real idea, Jerry. We fellows ought to keep good and busy this year, eh boys?"

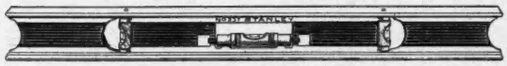
"Well, I know one little trip South that's been cancelled," remarked Simpson. "If Jerry can get the Utility Board business this winter so can the rest of us."

Jerry laughed. "Go to it, boys. I won't charge you a penny for the tip."

Construction Features of New Aluminum Level

An aluminum level has recently been placed on the market by the Stanley Rule and Level Co. It has both top and bottom milled and ground to insure two perfectly parallel surfaces. This is a distinct advantage, as the tool can be used to level by placing the bottom on the work in the ordinary way, or the top under the work as required in leveling ceiling beams, girders, etc.

The glasses are what are known as "proved" and are set



Stanley Aluminum Level.

in metal cases which rest at each end on a support cast in the frame of the level. The cases are held on the supports by means of eccentric cone centers at each end, having screw adjustment.

Both the plumb and level cases are completely protected. This protection feature consists of a metal shell or cover, called the "Eclipse Case," which can be turned so as to cover the glass entirely when the level is not in use.

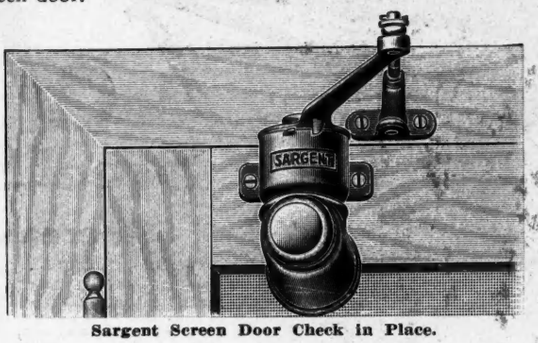
On account of their light weight, great strength, and the fact that they will not rust or warp, they are especially adapted for carpenters' use.

This level is made in three lengths to suit the various personal desires, 12, 18, and 24 inches long.

The manufacturers at New Britain, Conn., will be glad to furnish further details to all those interested.

An Efficient Screen Door Check

Sargent & Co., New Haven, Conn., have just placed on the market a new liquid screen door check and spring which closes the door quickly so that mosquitoes, flies and other insects are kept out, and closes it without slamming so that the occupants of the house are not disturbed by the "slam-bang" which has heretofore been an accompaniment of the screen door.

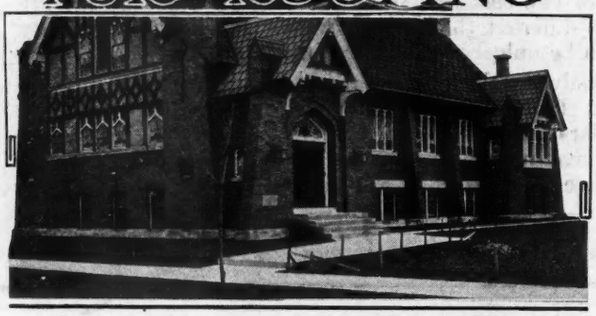


Sargent Screen Door Check in Place.

This article which is designated as No. 20 has been very carefully built after much thought and planning and is designed especially for screen doors, but can be used also on light partition doors. It is well adapted for the purpose for which it is made, therefore no adjustment of spring or checking power is necessary; the construction is substantial and all working parts are inclosed in the case so that dust and dirt cannot get in and interfere with its operation. It may be applied to either right or left-hand doors without changing any of the parts, a blue-print template being packed with each check to show the exact position on the door.

Each check is packed in a separate box and the goods may be obtained from hardware dealers.

SLATE FOR ROOFING



Slate Pointers, Chapter 2

Rules for Measuring Slate Roofs

The following are the standard rules for measuring slate work. These rules are recognized and followed by roofers, architects and engineers wherever slate roofing is used, and in all standard works on the subject:

For Plain Roof—Measure the length of the roof and multiply by the length of the rafter, and to this add the eave course.

For Roofs with Hips, Valleys, Gables, Dormers, etc.—Measure each section through the center and multiply by length of rafters; and in addition to the actual surface of roof measure the length of all hips and valleys by one foot wide, also what the first, or eave course shows to the weather by the length of eaves. In some localities this rule is not adhered to strictly, but hips and valleys are always measured wherever slate is used. The extra measure on eave course is to compensate for lost time in starting and laying the undereave course, which does not show or count in the surface measure. The extra measure on hips and valleys is intended to compensate for extra labor and loss of material in cutting, fitting and laying same. No deduction is made for dormer windows, skylights, chimneys, etc., unless they measure more than 4 feet square. If more than 4 feet square and less than 8 feet square, one-half is to be deducted. If more than 8 feet square, deduct the whole. The reason for not deducting the whole of all openings is the extra work in cutting and fitting the slate, and putting in the flashings. Hips and valleys on spires are measured extra, same as above. If hips are mitred and flashed they should be charged for extra. If ridge-roll is put on, it is charged for extra. Gutters, valleys and all flashings are charged extra.

It should always be remembered, in measuring roofs, that if the pitch of the roof is the same, size of building and projections the same, the mere fact that there are hips and valleys does not add to the surface of roof. As an example: Two buildings of the same size may be roofed—one with plain pitch and gable roof (that is, two plain sides), and the other may have four hips, four gables and eight valleys. If both roofs are the same pitch, the roofs will measure exactly the same, and two measure is all that is necessary in measuring either—that is, the length of one eave and the length over both rafters, except that the extra measure on hips and valleys would have to be added on the cut up roof.

Laying Slate on Felt—Before starting, the slater should be sure the roof is ready. The carpenter should put on a cant strip about ¼ inch thick, nailed about 2 inches above the eave line of the slate. Carpenters often refuse to do this, saying it is the slater's work. This is not true. It is as much part of the carpenter work as the sheathing. There should be cant boards put in behind all chimneys before the chimney back or gutter is put in. The cant board should fall to each end so that no water will stand in the gutter, as is the case where no cant board is used.

When chimneys require braces they should be put on where practicable, so that the end that is fastened to the roof will be higher than the end fastened to the chimney; this will prevent water from following the iron rod down through the slate.

(*To be continued*)

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Death of George G. McMurtry

We note with sincerest regret the death of Mr. George G. McMurtry, the Chairman of the Board of Directors of the American Sheet and Tin Plate Company. The death of Mr. McMurtry occurred Thursday, August the fifth, at Pittsburgh, Pennsylvania.