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### AN INVITATION TO YOU

The AMERICAN BUILDER cordially invites and urges you to enjoy the privileges and benefits of its Correspondence Department. Any phase of any building question may be profitably and instructively discussed in this department. If your problem is a knotty or technical one submit it to the Correspondence Department and secure the benefits of the opinions of other experienced builders. It's a "give" as well as a "take" department and you are asked to relate your achievements and tell how you have conquered difficulties as well as to ask for information and advice. Rough drawings are desired, for they make clear involved points. We will gladly work over the rough drawings to meet publication requirements. The Correspondence Department is your department. Use it freely and frequently.

The plain or moulded cap head casing has a groove on the under side of the water-drip to prevent water from running back under the head casing.

Accurately joined.

The head jamb is complete with head blind and parting stops in place.

Pulleys of high grade cast iron, made especially for Andersen Frames. Even high quality blued screws are used, and they are screwed all the way in by machines.

Side casings are bevelled to fit the sill, and cut square on upper end to exact length.

All exposed portions of Andersen Frames are of genuine White Pine—America's finest outside building lumber.

Pockets are cut, broken out and refastened with screws. Weights are easily inserted.

Side blind and parting stops cut exact, fitted for the sill, and fastened accurately in place.

This raised shoulder on the sill acts as a wind-break. Neither air nor water can enter into the room.

The Andersen trademark is your guarantee of quality materials and workmanship.

# How to Buy Window Frames

**I**N selecting window frames be sure that they have all the advantages of workmanship and construction shown on this page.

Every Andersen Standard Frame has these features.

Because they are made by specialists, Andersen Frames have other good points that cannot be illustrated. Any dealer can make immediate delivery of 121 different sizes and styles, simply by interchanging heights and widths of the 11 sizes he carries in stock.

Instead of 57 parts as in the case of ordinary frames, each Andersen Frame is shipped in two compact bundles containing only 7 units which are complete with pockets and pulleys in place. This saves much time and labor because any carpenter can assemble the 7 units in ten minutes or less.

The accuracy with which Andersen Frames are made insures easy running yet snug-fitting windows. The use of White Pine, a wood which will not warp, rot, shrink or crack, keeps the frames accurate for all time and gives longer life.

By insisting upon Andersen Standard Frames you save money and get satisfactory performance over a long period of time.

You can obtain the complete story of Andersen Frame economies and advantages by writing direct to us. Please tell whether you are building your own home, or whether you are interested as an architect, contractor, carpenter or dealer.

**Andersen Lumber Company**  
Dept. A-2 Bayport, Minnesota  
(Formerly South Stillwater)

# Andersen FRAMES

# FRIENDLY CHATS *with the* EDITOR



**B**UILDERS are doers. Doers not quitters count.

**U**NLESS the plan is right the finished building cannot be.

## "No Apprentices—No Mechanics"

**T**HE startling shrinkage in the man power of the building trades was well brought out at the recent meeting of the Associated Building Contractors of Illinois at the Hotel Sherman, Chicago.

"Why do we want apprentices?" the speaker, Mr. Bailey, asked. "I will give you some statistics. In 1920 the number of plasterers in the United States was 20 per cent less than in 1910. The brick masons have shrunk in number about 24 per cent; the painters about 27 per cent. Even the comparatively unskilled laborer has decreased 27 per cent since 1910. Yet during the same ten years, 1910-1920, the entire population of the country increased 15 per cent."

The training given by the public school system was partly to blame for the shrinkage, Mr. Bailey said, but the contractors were more largely responsible.

"The main idea of the public school system," he asserted, "is training for college, and every preparatory school course has that idea as a goal.

"The contractors, according to statistics, are decidedly amiss in training apprentices when the opportunity is available.

"In this city of Chicago a year ago, Mr. Andrew Landquist said in an address, 'There are only 52 apprentice carpenters in Chicago. There should be at least 400.'

"Chicago is not alone in this respect. In Wisconsin last July there were exactly 172 apprentices in all the building trades. The average decrease in the number of men in the building trades is about 20 per cent.

"In other words, in 1910 there were five men to do a certain amount of work, and now there are only four men to do three times as much work.

"Our method of training," Mr. Bailey said, "leaves the apprentice so that he is able immediately to be worth the wage that is paid him by the employer.

"Perhaps we have 15 boys in our plumbing class. Do you know how we got those 15? We interviewed about 45 boys and picked out 15 who looked as if they might make good mechanics.

"They were then taught for two weeks just those things that they would be called to do during their

first year as apprentices—cutting and threading pipe to dimensions, cutting soil pipe, caulking and leading. Fifty per cent of the boys in the first two weeks learn how to wipe a fairly good joint. They return after the two weeks' period, one day a week for further instruction.

"I know you will say that this progress doesn't seem possible, but the boys we are placing with the contractors have proved that it is true.

"It all comes down to this one thing. If you want good mechanics, you have got to train them.

"When we send out letters from the school, we often place at the bottom of the sheet these words, 'No apprentices—no mechanics.'"

### Please, Mr. Builder

**S**AY, build me a house that's right, old man,  
The kind that you build to please;  
A house that's wired and fully attired  
For things conducive to ease.

You know what I mean by right, old man,  
Chock full of electrical stuff;  
An outlet here and an outlet there,  
Great guns! There can't be enough.

Put plenty in every room, old man,  
Don't miss an important space;  
Put three right here and six over there—  
Just scatter 'em every place.

I want this house for a home, old man,  
An electric home clear thru,  
It's been my dream and my one pet scheme  
And not a thing else will do.

So chop the cost if you must, old man,  
But touch not a single light;  
And chop no chip from the outlet slip—  
This house must go up just right.

Very truly yours,

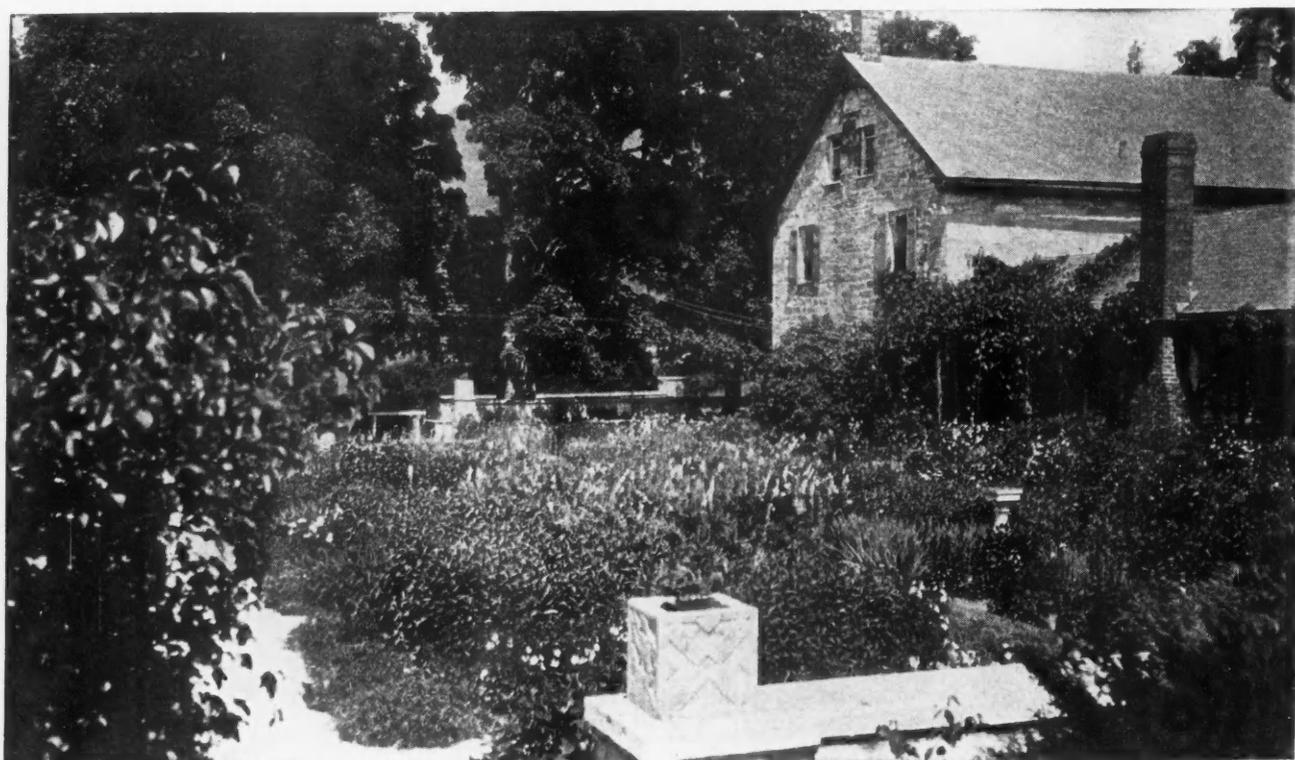
THE FELLOW WHO WILL LIVE IN THE PLACE.

(Electrical League Bulletin, Columbus, O.)

# Gardens And Gold Mines

Glimpses of the Home of Edwin Lefevre at Dorset, Vt.

By DAVID C. GALE



Seats, Vases and a Sun Dial Are Dextrously Worked Into the Brilliant Pattern of the Old-Fashioned Garden, and the Stanch Old Stone Farmhouse, Saved from Neglect by the Intelligent Care of Its New Owner, Glows Again in the Mellowed Promise of Its Youth.

ANYONE who has heard Conwell's lecture "Acres of Diamonds" will remember the gold mine story—how the man sold his little farm in Pennsylvania, his poverty smitten acres which had never yielded him anything except broken promises, and went forth into the great West in quest of an elusive, magical hole in the ground. And while he was searching vainly for the rainbow's end the farmer to whom he had transferred his eastern property made a discovery. It all came about thru observing that the cows disliked the water in the bog hole where they had been drinking the years away. Investigation produced a reason for it. The water was flavored with oil. Soon the old farm was dotted with oil wells and the fortune which the former owner had gone away to seek was being garnered by another from the despised soil of Pennsylvania.

This gold-mine farmer was no different from hundreds of thousands of his countrymen. The human race generally is captivated by the idea that the best things of life lie over the hills and far away. Nor does this apply only to the fortune hunter. Even the home builders are wont to scorn those materials which are common to their locality and gaze longingly at the roseate products from the other side of the continent. As with home builders, so with garden

makers; they too are prone to go off after the gold mine which is hazy in the distance.

Now and then someone comes along who is able to appraise properly the opportunities of his own door step, taking the things which are cheapened and belittled by nearness and rearing them into a beautiful picture. To that class belongs Edwin Lefevre, the author; the evidence thereof rests in his summer home at Dorset in the mountains.

True, it may be argued that Nature was very kind in this case—that she bequeathed to the Lefevre estate a matchless setting, with rows of stately, luxuriant shade trees along the highway, and marble quarries across the valley from which to draw at will. On the other hand she raised what to many would have been a perplexing handicap—an abrupt hill leading up from the rear of the building. On the whole the gardens as they stand today are a rare expression of the art of fitting the grounds to their environment.

It all began with an old stone farm house which Mr. Lefevre bought from one of the pioneer families of Vermont. It was a structure intrinsically sound and good, needing only studied alterations to make it conform to the requirements of the new owner. Such a place as Walter Pritchard Eaton had in mind when he wrote: "In the garden proper, the outdoor living

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room of the dwelling, I have often found more charm on estates which were simply old farm houses fixed over at comparatively small expense than in the great places created by the very rich."

Having restored the old house with understanding and sympathy, adding such parts as were lacking in the original plan, the same kindly treatment was accorded the garden. A marble shelter house reared at the far corner of the lot. On the crest of the slope rose a pergola of the same material, flaunting itself against the sky like a miniature Temple of Saturn. Seats, vases and a sun dial of stone were worked dextrously into the pattern. Even the walls about the inclosure and the walls and stairways were dug out of the neighboring mountain.

Below the pergola a tiny stream of water spreads itself out over a series of shallow marble basins, arranged one below the other in elliptical order. Deftly it is guided down to a sunny pool where it settles back among the flowers in appreciative seclusion.

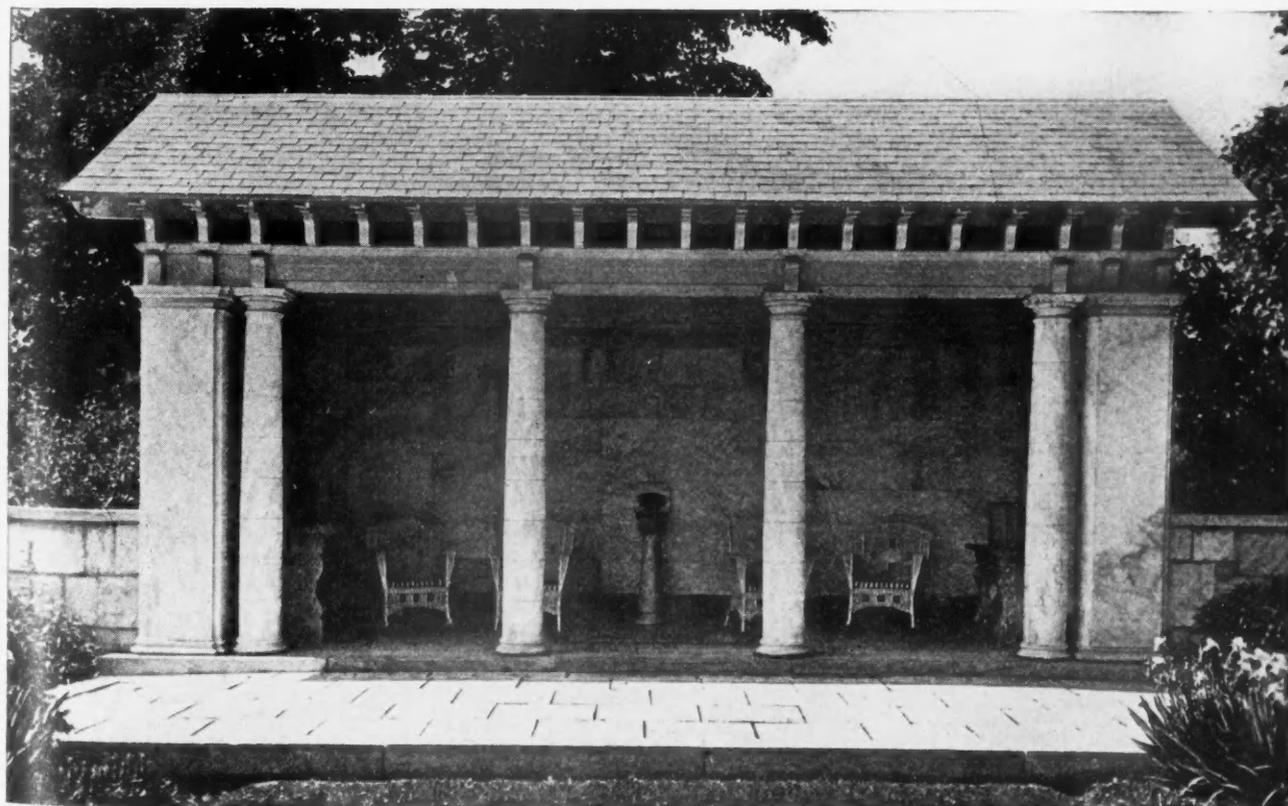
And such flowers! Flowers which the writer can neither name nor classify. The impression one gets, however, on looking out over the witchery of color, is that of a glorified old-fashioned garden, the kind

that our grandmothers would have recognized as the garden of their dreams. Formality has been thrown to the winds and every flower and shrub has been given the widest measure of freedom.

The peonies were holding court when these pictures were taken. A long narrow court it was, with a marble seat at either end, and a storied vase in the center. Never before, I believe, were so many peonies lined up in such array, and as we passed along



Another Vista in Mr. Lefevre's Garden. The well-designed vase with its vines and flowers introduces a colorful note into the foreground and the eye is led easily along toward the inviting garden seat at the farther end.



This Marble Shelter House Rears Its Stately Presence Against the Far Corner of the Garden, and the Wicker Chairs Combine to Make It a Restful Retiring Spot. Vermont marble for this and the garden wall was brought from an adjoining mountain.

the grassy open space they nodded their heads haughtily as a signal for obeisance.

But this is only a one-sided view of the little flower world which flourishes there on the hillside. In every corner is fresh revelation of artistry and versatility. In short it is exactly the kind of garden and home wherein the average person would expect to find an author and yet seldom see one.

Nor should it be imagined that all the inspiration of the township radiates from this one center. The Dorset Valley road was one of the well known thor-

changed but little, nor has there been any deterioration in the matchless expanse of scenery.

Notwithstanding the miracle of civilization—the transformation of woodland into golf links, of pioneer cabins into modern cottages—the contour of the country has not been perceptibly altered. If one of the Green Mountain Boys were to come back today, he would no doubt be mystified over the man-made Dorset Valley. But a climb to the summit of Mount Eolus and a look to the southward where Equinox Mountain stands as godfather to the village of Manchester, would be enough to convince him that he was once more on the old trail.

It may be argued, of course, that this historic setting is no fitting comparison for a gold mine. The answer is that such values must always be dependent on the personality and imagination of the dwellers in the valley. To appraise them rightly one must be in sympathy with New England traditions. Certain it is that the air of the mountains is still vibrant with freedom, if one can but feel the throb of it.

Undeniably the quarries were a gold mine, and the mature shade trees and the old stone house. They were all there waiting for

someone with the initiative to bring them together. Many others have passed that way and hurried along in a feverish search for something unique and original. It was ever the same old chase—pursuing a gold mine in the land of somewhere and literally tramping under foot any number of abandoned opportunities.

What Mr. Lefevre has accomplished in Dorset is no more than may be done in other places. Lying about everywhere are the crude materials out of which houses and gardens are made. There will they remain until someone comes along with a "seeing eye" to assemble and complete the picture.



There is studied artistry in the placing of the pool visible in the middle foreground. Glimpses of white clouds and blue sky are reflected against the dark background of the trees.

oughfares of Revolutionary days. The same highway which passes the Lefevre residence comes a little farther on to an unpretentious marker whose purpose it is to tell the passerby that on that site once stood the Cephas Kent Inn. There it was that the first convention of the New Hampshire Grants assembled in July, 1776. There was no Union in those days, no United States, and Vermont was taking steps to make of herself a free and independent state, the better to withstand the assaults of the enemy.

Across the valley the same Mount Eolus which looked down on the guests of Cephas Kent is still standing guard over the village. The mountain has

## A House in the Woods

The Home of D. Arthur Johnson, Esq., Tenafly, New Jersey

By R. C. HUNTER & BRO., Architects

**A** HOUSE with a wooded setting never fails to appeal. There is such a variety of light and shade, the sunlight filters thru the foliage and the shadows are cool and deep. The trees themselves are very interesting in their everchanging form and colors; they live and grow, they give shelter to the birds (those very desirable neighbors who destroy the insect pests), they sweeten the soil and purify the air.

A wooded setting for the house gives quiet, seclu-

sion and repose, ideal home qualities.

To gain the best effect from such a setting the least possible number of trees should be cut down, only those that actually come within the house area should be removed, even the small saplings should be spared. The trees should not be trimmed too much, but left in their rugged state.

Where the natural beauty of the setting is thus preserved the house will fit in admirably and will

appear to have grown there, entirely avoiding the bald effect so prevalent in houses that have few or no trees around them.

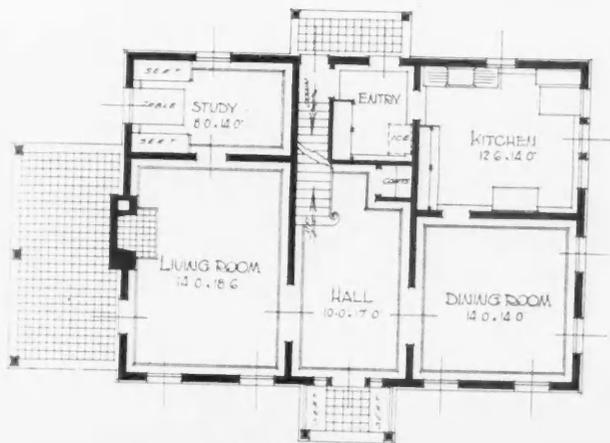
To maintain the natural effect, all formal gardening should be avoided. The walks should be but stepping stones or gravel paths, and they should be narrow; they should wind around among the trees in a careless, natural manner, avoiding the stiff formality of the straight walk.

For the house, plain white walls give excellent contrast with the deep tones of the foliage. They also allow

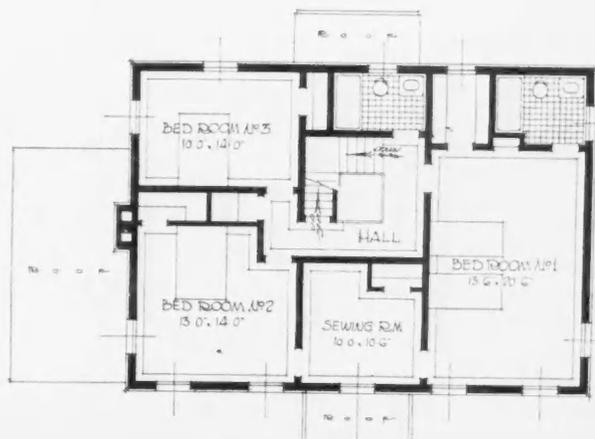
a beautiful play of light and shade from the shadows cast by the surrounding trees. A weathered shingle roof blends well in such a setting and the window shutters give a touch of color.

The house of D. Arthur Johnson, at Tenafly, New Jersey, shows what can be accomplished along these lines. Here the architects have retained the natural beauty of the setting in its entirety; they have fitted the house to the surroundings.

The plan arrangement of the house proper is simple, direct and livable.



First Floor Plan.



Second Floor Plan.



Above the Green and Violet Carpet of the Sward Rise the White, Tree-Shadowed Walls of This Well-Designed Home, Further Enlivened by the Quaint Window Shutters' Touch of Color. Of course weathered shingles were used for the roof. The house was built for D. Arthur Johnson, Esq., Tenafly, N. J., after plans drawn by R. C. Hunter & Bro., Architects.

# Builders' Page Community Boost

## Newspapers Devoting Full Pages to Home Building Heartily Supported by Builders Who Reap Benefits

By ALBERT R. ISRAEL

REMARKABLE benefits have accrued to the individual communities and to the nation as a whole thru the publication by daily newspapers in various parts of the country of "Home Builders," or "Own Your Home" pages, which feature is coming to be regarded as an important and necessary part of the service rendered the public by the daily press.

Considered from the viewpoints of civic development and welfare, the communities themselves derive vastly greater and more lasting benefits from the Home Builders' pages than the combined monetary returns to the newspapers in the sale of advertising space and

to the contractors, dealers and others, who purchase this space and profit therefrom in the sale of service and materials necessary in home building.

### Building Benefits All

There is an element of utilitarianism in this kind of advertising that cannot be measured in dollars and cents, in which both the newspapers and the advertisers contribute to the benefit and progress of their community, the while they are realizing profits in their business.

For certainly the Home Builders' pages render a real and a valuable service to the people of the community in which the newspaper circulates and at a time when the need for such service is pressing. And this advertising feature of the newspaper, which the advertisers make possible by their support, is lifted above and beyond mere selfish exploitation of business for private gain.



Kiddies and New Homes Are Important Assets in a Growing Community. Home builders' pages encourage more home building, and intelligent choice of buyers assures right environment for the little folks.

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### Relief for Serious Situation

About one year ago, when the Home Builders' pages began to appear in the daily newspapers, construction of dwellings in various cities of the United States had been woefully retarded. The housing shortage was keenly felt everywhere and many tenants were obliged to occupy cramped quarters in "made-over" apartments and double houses and were compelled to pay exceptionally high rents.



Information and Encouragement Received by Readers of Home Builders' Pages Lead to the Building of Many Modern Homes Like This.

Many persons of moderate means, who were planning to build homes, were continuing to defer their building operations under the erroneous belief that both labor and materials probably would be much reduced in cost later on.

Into this situation many newspapers came forward with Home Builders' pages, which were made up with the idea of stimulating prospective home-owners to start building without further delay. In most of these Home Builders' pages were shown designs and floor plans of comfortable, attractive residences, that could be built at moderate cost, and that appealed strongly to men and women who cherished the desire to have a real home of their own, to escape high rent burdens and that stimulated them to make an effort to realize their hopes and dreams. Blueprint plans and general specifications of the homes shown usually were offered at a nominal price.

Surrounding the photographs of attractive homes were advertisements of contractors and builders, lumber, material and supply dealers, furnishers and others whose business it is to help make the home complete in every sense. And these advertisements made it easy for the prospective home owner, after he or she had seen the photograph of the residence desired, to find the builders, the materials and the furnishings for the home.

### Adds to Everyone's Wealth

The results achieved by the Home Builders' pages that have been conducted in various daily newspapers during the last year have been highly gratifying. Hundreds and thousands of new homes have been erected

thruout the land, due to the stimulation the owners received from the Home Builders' pages.

A concrete instance of the value of the Home Builders' pages in the daily press recently has come to attention, thru the special Home Builders' anniversary section of the New Orleans Times-Picayune. For 52 consecutive weeks, from June, 1921, the Times-Picayune carried two full pages of building supplies and materials advertisements, each page containing the photograph and floor plans of an attractive home.

In its service to prospective home owners the Times-Picayune, so far as the writer has been able to ascertain, instituted an innovation in such advertising features by obtaining estimates of the actual cost of construction the home shown and by getting local contractors to back up the estimates by guaranteeing to really build the home at the cost stated. This feature was getting down to a decidedly definite basis in service; it permitted the prospective home builder to know exactly what it would cost him to erect the home of his desire and it was a service of notable value to the public.

The building of at least 100 new homes in the city of New Orleans can be traced directly to the influence of the Times-Picayune's Home Builders' pages, while

(Continued to page 154.)

## To Home Builders

*A Guiding Hand  
And a money saver*



How much rent have you paid in the last ten years? Part of it was upkeep—interest on the landlord's investment—and part was profit. That profit would be yours if you owned your home.

Now you have only rent receipts—no home. If you start now to build a home and let your rent money apply on the purchase price, you'll have the profit and the immediate comforts of home ownership.

It takes a little nerve, to be sure, and perhaps you don't know as much about building values as you'd like to, and so hesitate to build. We'll be glad to counsel with you. You can rely upon us for designs to fit your family and pocketbook and for advice on materials that prove most economical in the long run.

## HOME LUMBER CO.

142-52 East Ave

Phone 4612

"LET'S TALK IT OVER"

A Straight from the Shoulder Sincere Advertisement Like This Helps the Undecided to Decide to Build.

# Lightest Wood in the World

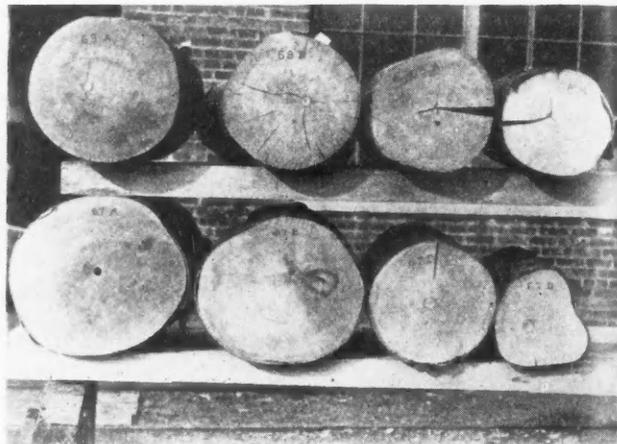
**Balsa Tree of Ecuador Yields Wood That Is Lighter Than Cork and as Durable as Spruce**

**H**ITHERTO considered worthless because of its extreme lightness, balsa wood bids fair to become a genuine "life-saver" for the producers of life-belts, life-rafts and kindred apparatus. It comes from the balsa tree, native of Ecuador, South America, and weighs but 7.3 pounds per cubic foot. This fact explains the otherwise startling impression one would get of the strength of the men shouldering the logs, as shown in the lower picture. Its extreme lightness—it is lighter than cork and six times lighter than hickory—should make it a favorite with stevedores. A load of it would create no appreciable difference in the carrying vessel's draft line, and it would be necessary for the ship to carry its usual ballast.

Not only does its extreme buoyancy in water make it preferable to cork for life-saving equipment, but it is a better investment than the easily-disintegrating cork. Being as durable as our familiar northern spruce at about one-third the weight, it has potentially longer usefulness than cork.

It is unquestionably a "find" in connection with life-rafts. These, in a certain quantity dependent upon the size of the crew, are always specified in connection with life-boats as necessary life-saving emergency equipment on a vessel. Life-rafts usually consist of a number of hermetically sealed metal containers held together within a light wooden frame. These suffer from quick deterioration thru rust and become un-

seaworthy, and even if in good condition run the danger of being stove in when launched at the time of shipwreck. Obviously, balsa logs would be superior, since



**Logs Cut from the Balsa Tree, Hitherto Thought Useless, But Now Rightly Regarded as One of the Most Valuable Products of Nature. It grows in the tropical forests of Ecuador, South America, and was known to the Indians as an ideal wood with which to fabricate their crude native rafts.**

even if the raft were damaged or torn to pieces the logs would still serve to keep the survivors afloat until assistance arrived.



**Looks as Tho These Two Men Were Performing a Superhuman Physical Feat, Doesn't It? They are carrying balsa logs, and their strength is understandable if you realize that the wood is really lighter than cork. At the same time it is as durable as spruce. Some wood!**

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# A Modern Teacherage

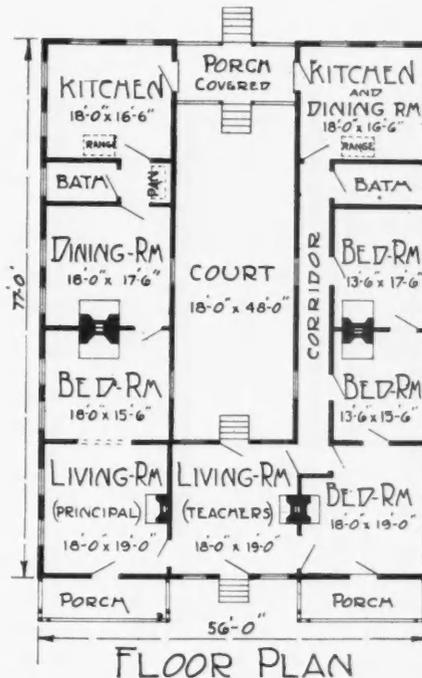
## How They Build Them in Alabama

By MRS. ESTELLE B. MARLOWE

**T**HE housing problem for teachers, which has been almost insolvable in many small towns and communities, has found its solution in many instances thru the admirable idea of building teacherages in connection with the general school system. This has been found by practical application to not only solve the difficulty, but to contribute largely to that contentment of mind and body that renders the teacher most valuable to the town or community that employs her services. The teacherage illustrated here is an excellent example of this idea as it has been put into effect thruout Jefferson County, Ala., where the most rapid strides of any county in that state have been made in educational building facilities.

This particular teacherage is built to accommodate its special faculty, which is composed of four teachers, and a principal. One side of the building is planned for the teachers, and other for the principal and his family. In an emergency the teachers' side could accommodate more than the allotted number of teachers, and with more comfort, withal, than is generally the teacher's fate in the small place where she is usually thrown from pillar to post in her endeavor to find lodgings, and finally lodged somewhere on obvious sufferance. A more positive feature of the arrangement is that the presence of the principal and his family assures a certain protection and friendliness. Two en-

tirely different housekeeping systems are put into effect by the teachers and the principal's family in this teacherage.



Observe That the Floor Plan Is Laid Out with Living Quarters for the Principal's Family at the Left, and Accommodations for Teachers at the Right. Full privacy is assured each individual occupant of the Teacherage.



Model Teacherage as Built in Jefferson County, Ala. Besides the pleasing interior arrangement, the services of willing student helpers could aid in making the teacherage more attractive thru landscaping, and the planting of flowers and shrubbery.

# HOME PLANNING TALKS

*By Our  
Head Draftsman*



***“When We Have Helped a Man Create a Well-Built Structure, We Feel We Are Entitled to Enthuse Over His Success.”***

**S**OME years back a certain builder dropped in to talk over a condition that existed in his locality. It was a new and fast-growing one and the new citizens had the idea—a discouraging one for him—that local conditions changed so swiftly and uncertainly that any kind of building would do.

But somehow we were able to convince him that he should hold to his belief that whatever was worth building was worth building well. And knowing the kind of work that man can do, and having kept in touch with him, it pleased us mightily to have him visit us again the other day and tell us what it had led to.

He was proud of his city. The buildings he had persuaded the new arrivals to put up for their permanent residences had contributed toward making those people the substantial element in the community. Furthermore, they had determined the residential character of a desirable home section, and zoned it against factory and other intrusion for all time. And another thing that has pleased us as we have cooperated with this builder is the way his holding to good building ideals has broadened the man himself. He has become one of the really “big” men in his city.

Another builder that likes to drop in on us occasionally is a man with fine practical imagination, and an ambition to see it develop into handsome buildings. One such building was scheduled for erection in his city, and the builder felt that a real opportunity to realize his ambition had arrived. But it so happened that the prospective client was a pinch-penny individual who seemed to be unhumanly impervious to the ordinary attraction of an artistically-pleasing building.

Well, we sat down and talked it over, and we decided that the way for that builder to approach his client was on the basis of the greater re-sale value an outwardly pleasing structure would always have in the eyes of a prospective buyer. And we had the double pleasure of seeing the builder realize his ambition and knowing that a building had gone up that was a real adornment to the community, and would in time become a landmark, even.

This proves that there is real financial justification in a well-planned and well-built structure. Take our buildings of the Colonial period. Many of our best buildings of that period have come down to us from that fairly distant day, admirably preserved, and a continual source of pleasure and inspiration to all of us. It is worth pondering why, here in America, where things happen so quickly that our viewpoints change over night, the Colonial type of design should still appeal. It means that people realize the inherent worth of a well-designed and an honestly-built house. There is a real need there, and we always like to help the progressive builder to meet it.

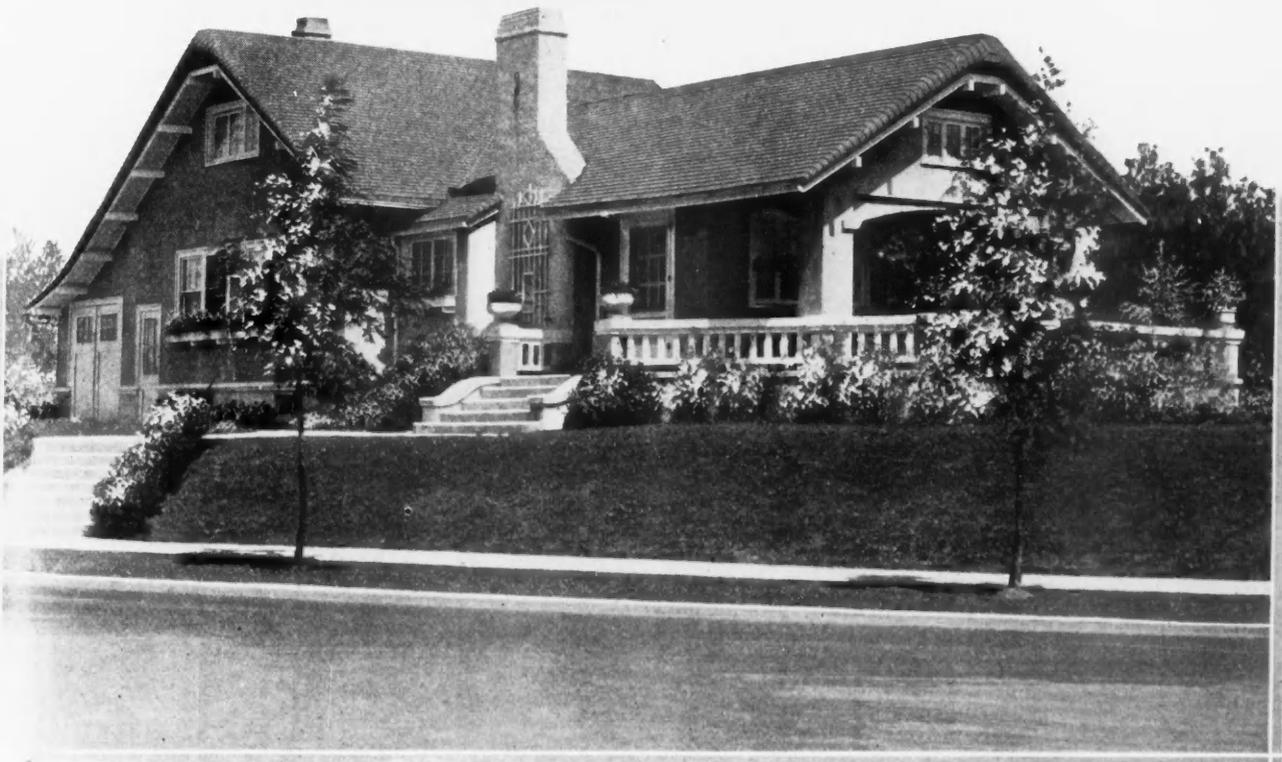
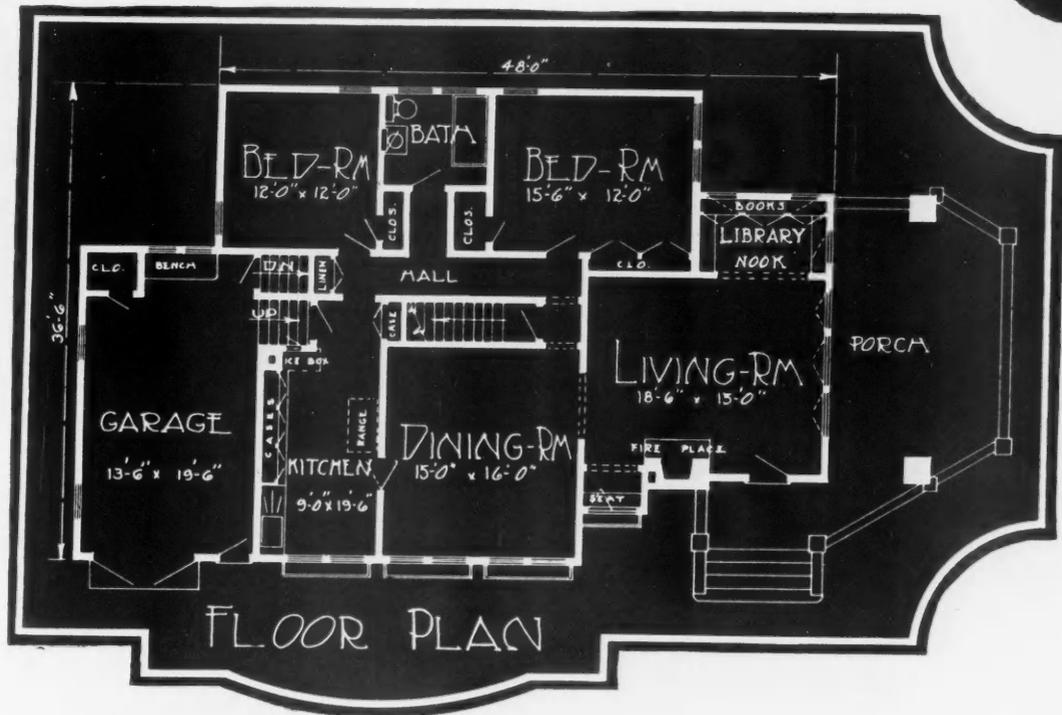
**All buildings illustrated in the American Builder are real buildings that have actually been constructed and found to be practical and popular. Anyone interested in obtaining working plans and other detailed information should consult the nearest architect, builder or dealer, or write the American Builder, 1827 Prairie Ave., Chicago.**

One thing we always like to emphasize when talking things over with our clients who drop in here is that the building itself is the thing. Anyone can duplicate a certain design by using makeshift methods, but it takes a builder with natural pride in his work to produce a building that he is proud to present to its future occupants as being genuinely satisfactory to live in. When we have helped a builder to do that we feel that we are entitled to help him enthuse a little over his success. Don't talk how cheap you can build, but how *well*.

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**BLUE RIBBON HOMES**

PRACTICAL & ARTISTIC



**A BIT OF ENGLAND AND CALIFORNIA.** Here is a stucco bungalow which seems able to snuggle down comfortably anywhere and say: "Live in me and have a home that is a home!" The roof, with its special shingling simulating the soft, curving lines of thatch, leads the eye gently along with never a harsh break, and is set off by the well-designed chimney. The balustraded terrace, an extension of the recessed porch, lends itself to decorative treatment with flowers and shrubbery. There are five rooms, and a built-in garage. Opening from the terrace is the living room, 18 feet 6 inches by 15 feet, with library nook, and fireplace with recessed ingle nook. Directly off it is the dining room, 15 feet by 16 feet, and off this is the kitchen, with unusually ample pantry and closet space. There are two bedrooms. The Garage is accessible from the home interior, and is 13 feet 6 inches by 19 feet 6 inches. The dimensions of the bungalow proper not counting the garage extension are 36 feet 6 inches by 48 feet.



# Our Front Cover HOME of a THOUSAND DELIGHTS

**T**HE illustration on this page shows our front page "Home of a Thousand Delights" without the summer decorative value of tree foliage, shrubbery and flowers as they appear in the painting on the front cover. Yet without these it remains pleasing to the critical eye—a sure test of a well-designed house.

Because of the angle at which the photograph was taken, only a suggestion appears of the covered driveway which balances the sun porch, at the opposite side of the house. Integral with the house is a garage, at the farther side, and entered from the kitchen. The house exterior is brick, with white cornice, door and window trim.

The finely proportioned Colonial entrance gives access to the reception hall. There is a guest clothes closet opening off this hall, and a stairway at the far end which possesses many decorative possibilities. Opening to the left is the living room, splendidly proportioned, with fireplace, built-in bookcases and studied large wall area that lends itself to the best grouping of pictures and furniture. Connecting it with the sun porch are two double French doors that match the window patterns of the porch.

The dining room is insulated against kitchen odors

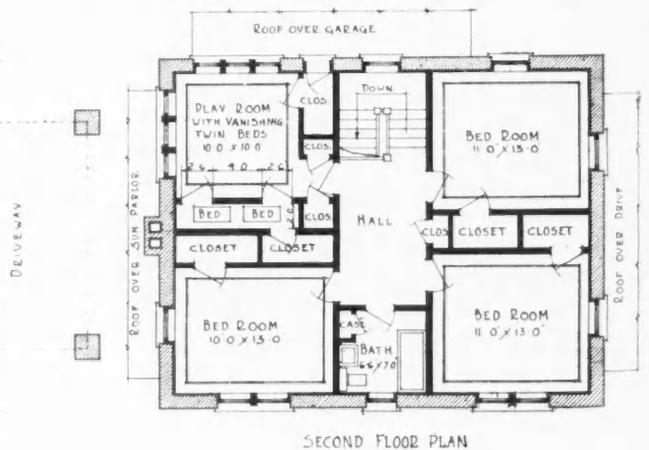
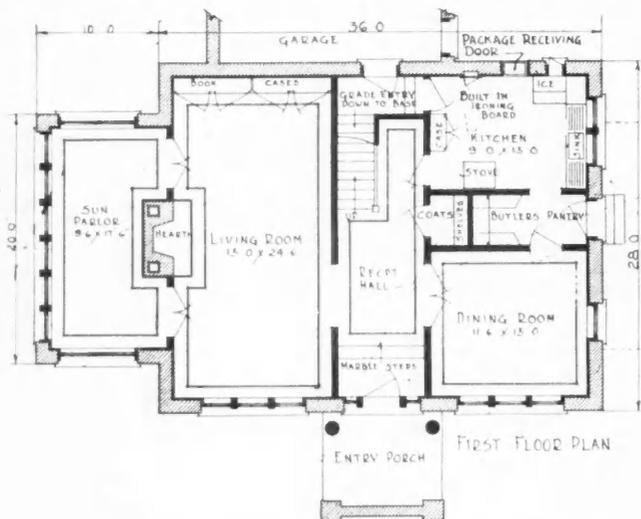
by the separating butler's pantry. This has an outside entrance, and with its shelving and the ample kitchen makes a regular pantry unnecessary. Features worthy of note in the kitchen are the built-in ironing board and the package and ice-receiving doors that serve the kitchen from the outside. The sink and work table are placed right before the double window.

The four upstairs bedrooms are nicely proportioned, with each room having light on two sides. One bedroom becomes a playroom in the daytime, and has been planned with full regard for the health and pleasure of the children who naturally will add considerably to the "Thousand Delights" of this house.

Twin beds disappear into their own closets and are a continual wonder to their little occupants.

## How Idle Space is Put to Work

**I**N a very brief span of years built-in furniture has firmly established itself in the good will of home builders and home owners everywhere. It enables the person living in a small apartment to enjoy all the space advantages of a large one, and it appeals to the home-owner because it does away with cumbersome furniture and fixtures in a way that makes it a never-failing delight to the careful housekeeper.



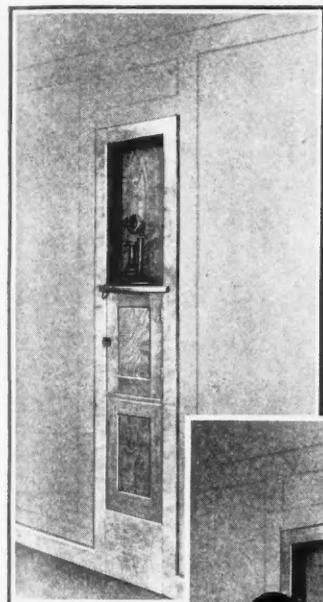
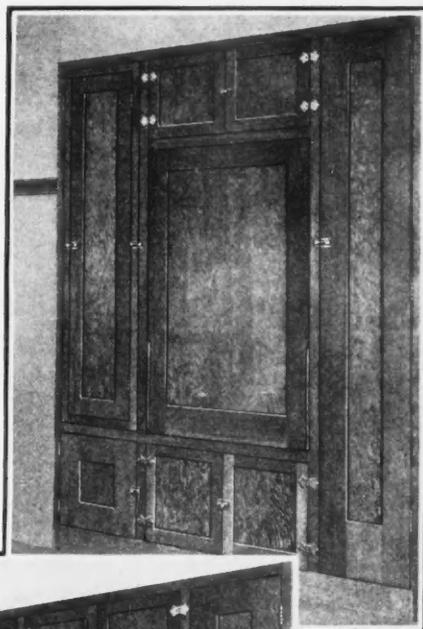
Floor Plans of Front Cover "Home of a Thousand Delights." The covered driveway makes a balanced design in conjunction with the sun porch opposite, and the garage is integral with the house. The Colonial entrance leads into a reception hall, which in turn gives access to the living room with its sun porch and the dining room. Built-in conveniences in the kitchen, disappearing beds in the children's bedroom-playroom and fine closet space help to total up the "Thousand Delights."

What, for instance, could be more helpful than this built-in breakfast cabinet, with its drop-down table that serves four people, and space a-plenty for china-ware, linen, and the breakfast things usually needed in a hurry of a morning. It serves those who must leave for work, and the children who must hurry off to school, besides saving the housewife's own time for

the other work of her busy morning. A built-in help of this nature, taking up just a few feet of space, is just what is needed for the kitchen or the breakfast porch.

Or, take this built-in telephone set. One usually finds the telephone in the hall, and there is very likely a compact table and desk to serve tele-

**Built-in Breakfast Cabinet.**



**Above—Built-in Telephone Set, as It Appears When Not in Use.**



**To Right—There is a call over the telephone. It develops into a chat and the giving of a cherished recipe, so—**



**—what could be more convenient than the quick-opening writing shelf and the instantly available seat!**

phoning needs. But as hall space is likely to be restricted, what is more logical than the built-in idea applied to the telephone set? The telephone is in plain view. Below it is a handy writing shelf that also holds the directory. Below that is another door, and presto! a sturdy, comfortable seat is at the service of the user.

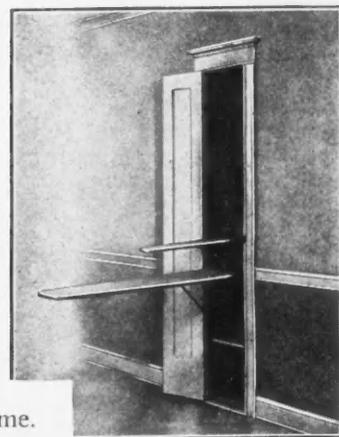
Quite as serviceable and, if anything, more popular, is the built-in ironing board.

Here is a small door in a wall, opening apparently into another room. It matches the other woodwork; you would never imagine that just opening the door presented two complete ironing boards for use. The large board is 54 inches long, solid and secure, with its free

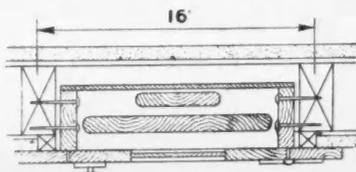
**Breakfast Cabinet Opened, and Table Let Down. Everything ready for the hurrying breakfasters. No need to set the table the night before; everything ready in a minute in the morning!**

end making it possible to slip a skirt or suit over in a way that makes the ironing much easier. The smaller board is out of the way, to be drawn down as needed, for the more convenient ironing of sleeves, shirt fronts, blouses, etc.

Plan on having that new home of yours a built-in convenience home.

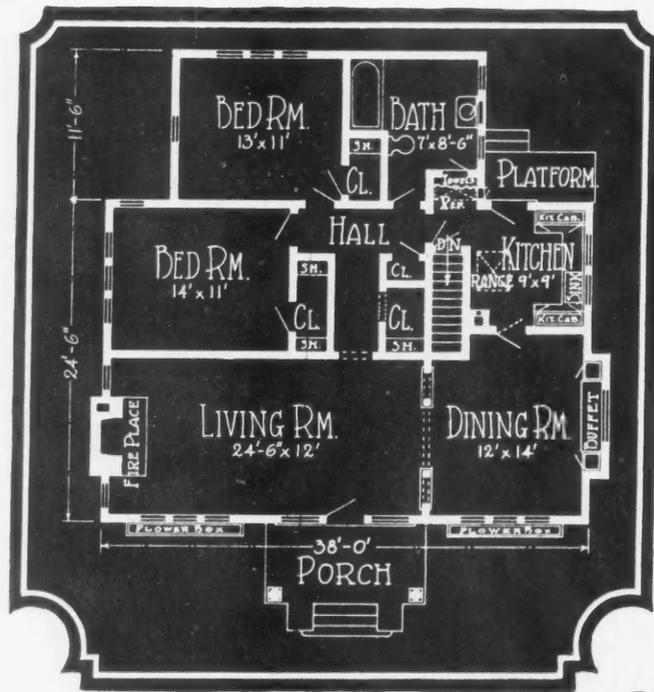


**Built-in Ironing Board Open, Showing Large and Small Boards. At left, cross-section showing wall placement.**



**BLUE RIBBON HOMES**

**PRACTICAL & ARTISTIC**

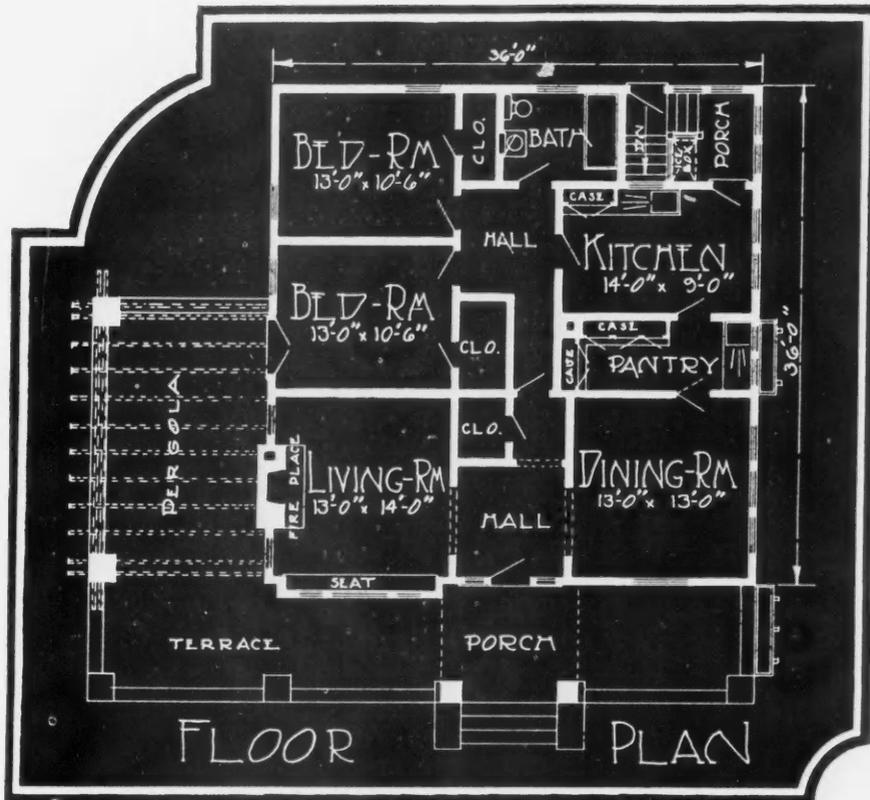


**PLEASING COLONIAL BUNGALOW.** Not the least attractive feature of this low-cost bungalow is the porch, with its well-handled Colonial detail. Does it not give a surprising impression of welcome and spaciousness? This is accentuated by the full-length glassed entrance door, flanked by the long French windows. The spacious feeling of the porch is carried along into the living room, which is 24 feet 6 inches by 12 feet, with a fireplace at one end and the other end opening into the dining room, 12 feet by 14 feet. The kitchen, 9 feet by 9 feet, is compactly arranged and well-lighted. There are five rooms in all, and ample closet space in the two bedrooms and elsewhere. Observe how the window boxes add to the inviting appearance of this bungalow, as well as the chimneys, with their narrowed chimney-pot effect. The bungalow is 38 feet by 36 feet over all, and is finished in siding.

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**BLUE RIBBON HOMES**

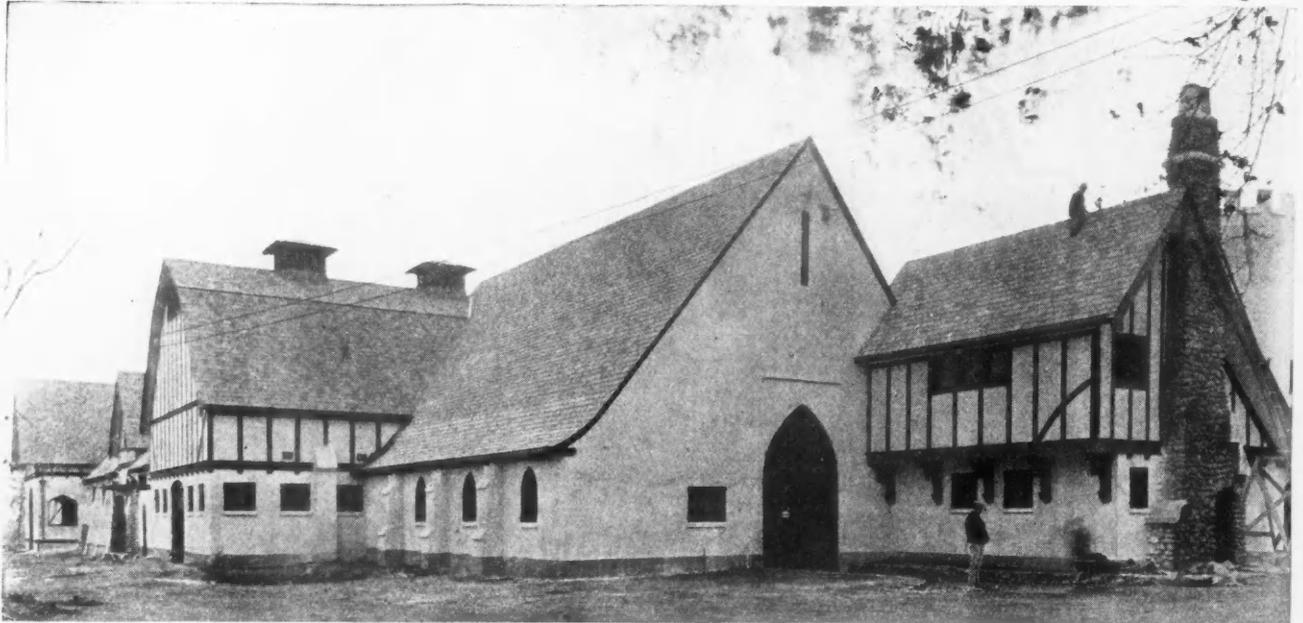
PRACTICAL & ARTISTIC



**SKILLFULLY DESIGNED AND COMFORTABLE BUNGALOW.** There is an attractive, spick and span impression about this brick or stucco bungalow which makes an instantaneously pleasing impression. Why? Its designer handled it on a broad, simple scale. Even the terrace wall carries out the idea; it is simply designed and just the right height. The windows are generously large, the porch roomy, and the pleasing roof line shows that a well built roof needs no falsework to make it attractive. There are five rooms. Entering, you find yourself in the hall. To your left is the living room, 13 feet by 14 feet, with its fireplace flanked by windows that open on the pergola terrace. To your right is the dining room, 13 feet square, and a serving convenience is the pantry between it and the kitchen. This latter is 14 feet by 9 feet and opens on a rear porch. There are two bedrooms, each but a step from the bathroom. There is fine closet space in this bungalow.

# Builds Beauty Into Farm Estates

Practical Application of Beauty to Utilitarian Structures by Young Master-BUILDER Whose Motto is: "If You Want Anything Worth While You Must Work for it"



New Riding Academy, Planned and Built for O. W. Lehmann, Esq., Lake Villa, Ill., by the Designer-BUILDER, Carl F. Clausen, Grayslake, Ill. This is the building which rose, phoenix-like, above the ashes of its untimely-destroyed predecessor. Not only is the interior arrangement ideal for its purpose, but the thoroly distinctive design and well-considered grouping of its component parts reflect much credit upon Mr. Clausen.

**F**OURTEEN years ago a young Danish lad came to America. He had served his apprenticeship for five years to learn the building trade, after leaving school. In those five years he had also studied architecture at night school. Followed two years of wandering thru Europe—and then America!

The glorious examples of the work of the old master-builders he had seen in those far places had fired his imagination. He, too, had ambitions to become a great architect and builder and design and build buildings that would be an inspiration to others. But he was only an immigrant in a strange country with unfamiliar ways. Unlike many geniuses, he took the work which came first to his hand, and began work as a carpenter in Grayslake, Illinois.

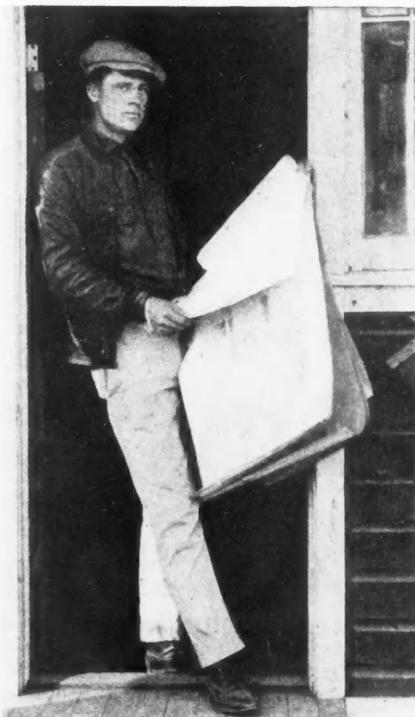
A short while later, hearing that a chance acquaintance intended to erect a dairy barn, Mr. Clausen called, and after the interview had his prospect's permission to submit plans. The chance acquaintance became his first client, and the dairy barn, 36 feet by 100 feet, came into

being—one of the first balloon frame designs erected in that locality. This led to contracts for five other barns. Followed the construction of schools and garages and residences and later, during the slack war period, employment as railway structural engineer.

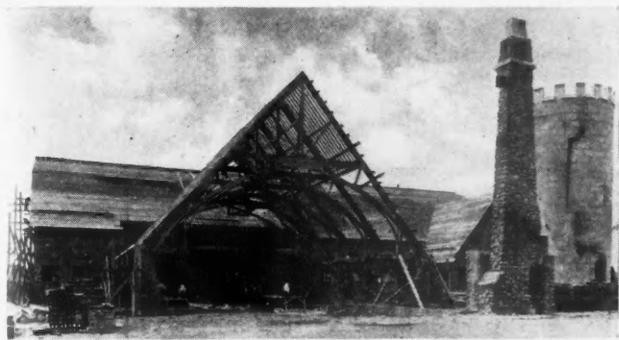
But Mr. Clausen was dissatisfied. His ambition persisted, to design and build handsome and practical buildings, a combined quality one did not always find together.

At this time a patron, Mr. O. W. Lehmann, for whom he had built a summer residence, sent for Mr. Clausen and told him of his plan to erect a riding school. It was to be of the most up-to-date nature, and the project gave the young builder the designing-building opportunity he had been looking for. The riding academy was 180 feet by 68 feet in area, and Mr. Clausen was justly proud of it, his first representative structure. Then, when it had been completed but a few days, it burned to the ground.

He was discouraged, but not to be downed. Inside of three weeks he had prepared new plans. The



Mr. Clausen in the Door of His Office at Grayslake, Ill.



The New Riding Academy as It Appeared in Course of Construction. The chimney at the right was undamaged by the flames, and was incorporated in the newer structure.

burned building has been described by those who had seen it as a truly wonderful building. The new riding academy surpassed it. Now completed, it is one of the most modern in the country, with stables, harness,



Another Riding Academy Erected by Mr. Clausen. Note how his intelligent handling of timbered construction, buttresses and the pointed doorway arches combine to make a pleasing, well-balanced whole. A suggestion here for the grouping of farm buildings, don't you think?

feed and carriage room; reception hall and office, and is fireproof. It has attracted wide attention and interested visitors from New York, Massachusetts, Kentucky and elsewhere, and bids fair to make for Mr. Clausen an enviable position as a specialist in this field.

Mr. Clausen both designs and builds all the structures he erects. A subscriber to *AMERICAN BUILDER* for ten years, he generously gives it credit for helpful assistance along the road to success. He has ambitions to branch out as a full-fledged architect, but as he cannot resist the temptation to build with his hands the designs evolved in his fertile, original brain, we may hope to see for a long time to come more evidences of the ability and fine constructive taste of this truly master-builder.



### Special Truck Hauls Steel

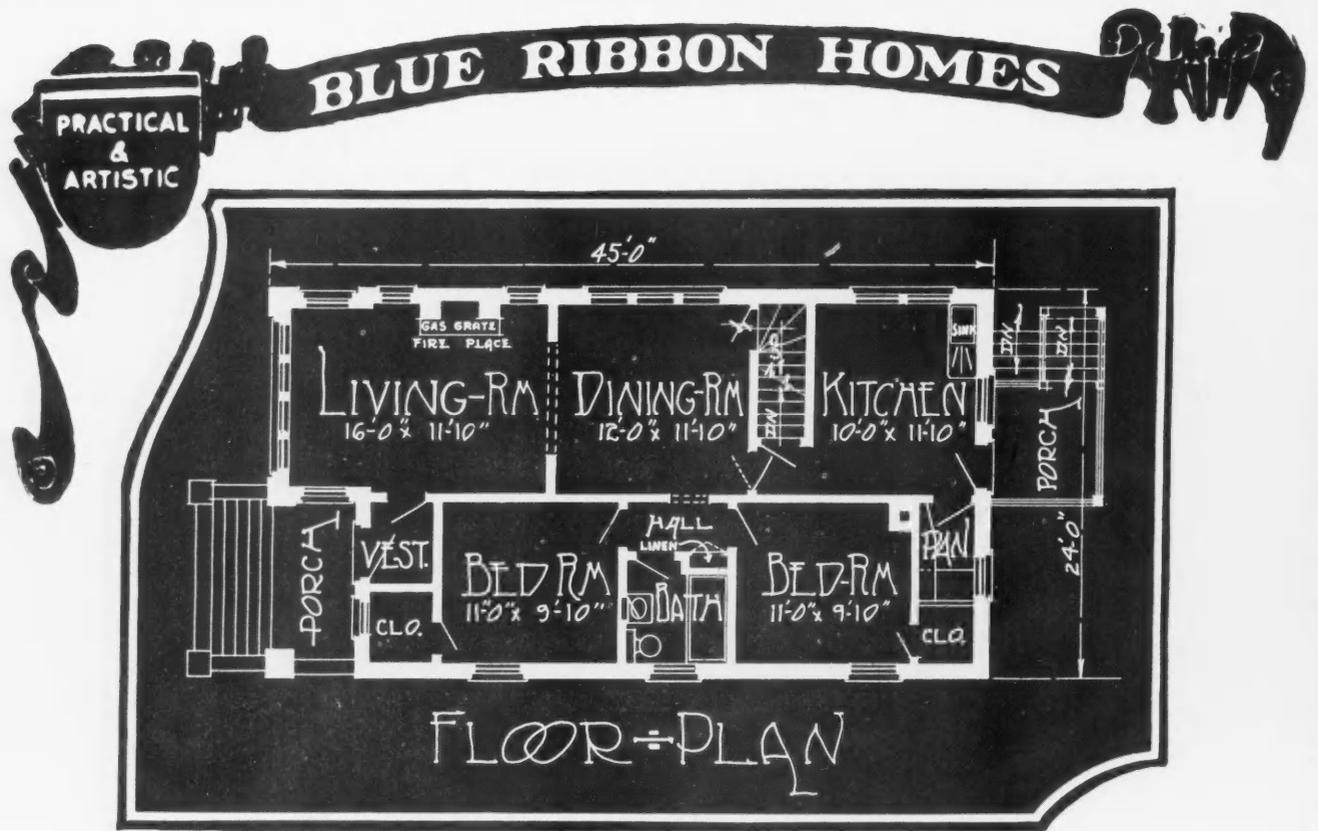
QUITE frequently, tasks, which to the contractor at first seem entirely impossible, can actually be accomplished with very little difficulty thru the proper application of motor hauling equipment. For instance, in building a new addition to a high school at Tulsa, Okla., a number of massive steel beams, weighing up to 15 tons each, had to be transported from the railroad cars to the site of the new structure. W. M. McMichael of Tulsa, who is in the business of hauling heavy material for contracting work, undertook the task. The method used was especially simple and the beams were transported, all without difficulty of any kind. As shown in the illustration, a regular 5½-ton dump truck was used in conjunction with a two-wheeled trailer. The sides of the dump body were removed and a platform arranged on which one end of the beam could rest securely. The beam was fastened at this end upon the truck and at the other end upon the trailer. Of course, a considerable amount of maneuvering was required en route to turn corners, yet in spite of this the work was done in a surprisingly short time.—P. L. SNIFFIN.



A MODEL kitchen was built in a Joliet, Ill., hardware store as part of a "Better Homes" week campaign carried out there recently. A local electrician co-operated in furnishing electrical fixtures and wiring the kitchen. The idea was successful and profitable.



W. M. McMichael of Tulsa, a Hauling Contractor, Transported a Number of Massive Steel Beams from the Railway Cars to a New High School Site by Using a Regular 5½-Ton Dump Truck in Connection with a Trailer. In spite of twists and turns and steep inclines, the job was accomplished successfully and without mishap.

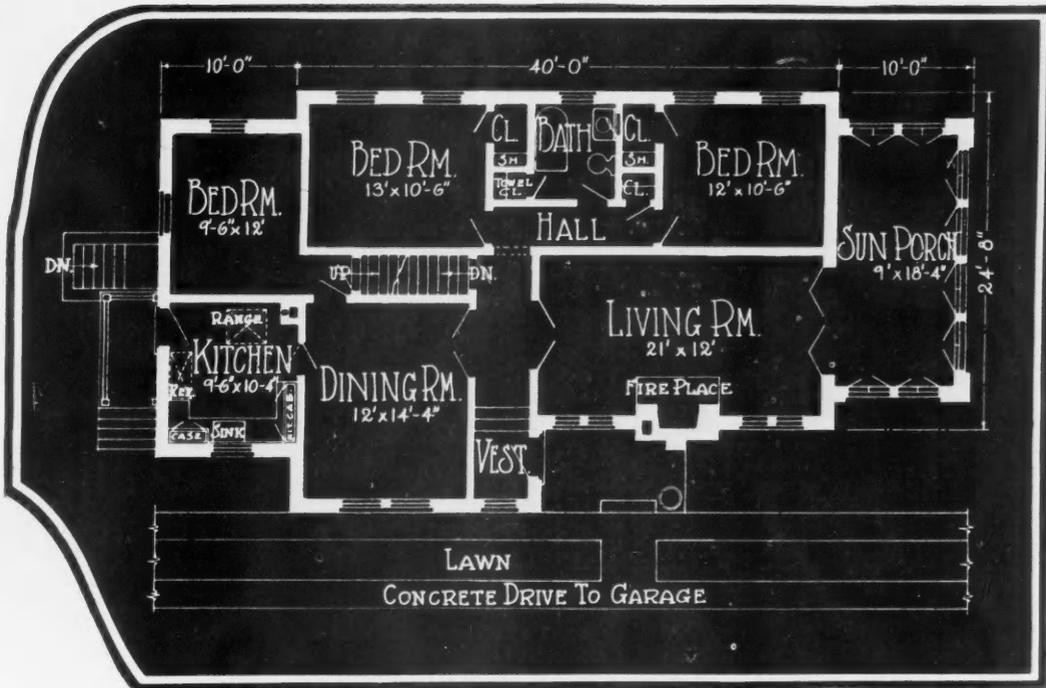


**STURDY, SUBSTANTIAL BUNGALOW.** This attractive design has many features worth more than passing notice by the prospective builder of a small home. The roof line is pleasing, and there are both front and rear porches. Reached thru an entrance vestibule is the living room. It is 16 feet by 11 feet 10 inches, has windows on two sides, and a gas grate fireplace. It opens into the dining room, 12 feet by 11 feet 10 inches. The kitchen, 10 feet by 11 feet 10 inches, has light from two sides, and a windowed pantry that is an ice saver. There are two bedrooms with ample closet space, and a space for linen closet. The bungalow is one story, with possibilities for remodeling the attic to serve as a bedroom or playroom. Exterior is brick with stone trim, and shingle trim above the first floor cornice line. Dimensions over all are 24 feet by 45 feet.

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# BLUE RIBBON HOMES

PRACTICAL & ARTISTIC



**ATTRACTIVE BRICK BUNGALOW.** This is a type of brick built residence that is free from unnecessary frills and flourishes, and appeals to substantial home folks everywhere. There are six rooms. A fine feature is the enclosed sun porch, 9 feet 4 inches—to all intents and purposes an extra, seventh room. Directly off it is the living room, 21 feet by 12 feet, with fireplace and well balanced, unbroken wall space that makes for the most effective grouping of pictures and furniture. The front entrance is at the side—left center. Opening into a vestibule, it insures privacy. The vestibule hall separates the dining room from the living room, another good feature. The dining room, 12 feet by 14 feet 4 inches, directly adjoins the kitchen; 9 feet 6 inches by 10 feet 4 inches, the latter is compact, well arranged, and lighted on two sides. There are three bedrooms and ample extra closet space. Dimensions over all are 24 feet 8 inches by 60 feet.

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# Most Popular of 500 Dwellings

## A Successful Five Room House Plan and Some Reasons for Following It at Morgan Park, a Suburb of Duluth

By A. J. R. CURTIS

**W**HEN Dean & Dean, the Chicago architects who created several hundred beautiful concrete dwellings in the model community of Morgan Park at Duluth, Minn., were asked by the Portland Cement Association to select the most popular small house there, the architects found themselves in a quandary.

With many types of beautiful and serviceable houses continually occupied by satisfied tenants, and many houses "spoken for" should there chance to be a vacancy, the task of picking the most popular house was not easy. However, Mr. Arthur Dean, Mr. John Davidson, builder and manager of Morgan Park, and Mr. Jack Smith, who has occupied house No. 197 since it was built, are agreed that this type is cer-

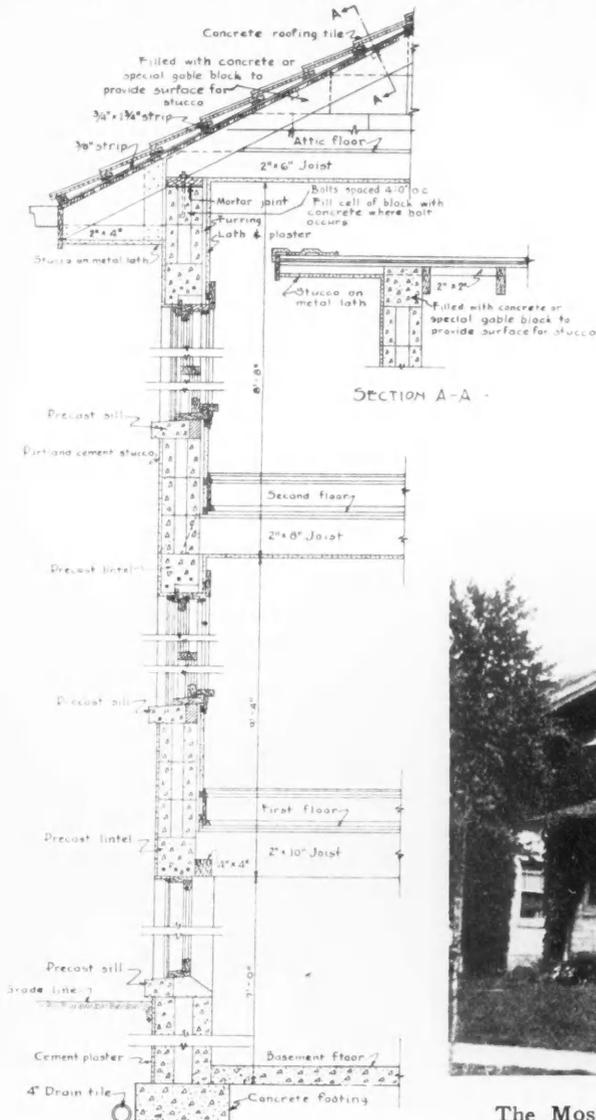
tainly one of the most practical, and that few changes, if any, can be proposed after five years of use.

It means a great deal to say that a house in Duluth is satisfactory. Those familiar with the rigors of winter at the head of the lakes realize that a thoroughly satisfactory house in that vicinity must be absolutely watertight, with well insulated and perfectly wind-proof wall and roof construction. A seasonal storm at the approach of winter may bring continuous, heavy rainfall for forty-eight hours, driven by high winds and likely to end in a blizzard.

The house shown in accompanying illustrations has broad protecting eaves and enclosed porch and entries, designed for security and warmth. The architecture has a Swiss tendency, semi-rustic, making the design especially harmonious and pleasing on a wooded site.

Typical sectional details of the walls show the use of standard plain 8 by 16 inch concrete block, covered with cement plaster below grade and portland cement stucco above. If specially faced block are used, the entire wall above grade or portions of it as desired may be left exposed, entirely omitting the stucco covering, as in some of the accompanying views. Concrete tile roofing or cement asbestos shingles, laid American fashion on wooden frame, is recommended for this building.

The arrangement of the principal rooms down stairs, with a wide opening between living and dining rooms, makes it convenient to entertain large groups. An



SECTION THRU WALL  
Cross-Section of Roof, Wall and Floor Construction Worth Studying for Its Diversified Use of Concrete.



The Most Popular of 500 New Homes at Morgan Park, Minn. Broad projecting eaves and spacious porch combine with luxuriant ivy to make this concrete-block residence very inviting in appearance and appear to excellent advantage in a wooded site. Specially faced concrete was used for these walls; for others, ordinary concrete block with stucco covering. Designed to give comfort in a cold climate by Dean & Dean, Architects, Chicago, Ill.

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Typical Street Scene at Morgan Park, Suburb of Duluth, Showing Some of the Many Beautiful Houses with Which the Design, Described in This Article, Had to Compete. There are an unusually large number of attractive homes here and elsewhere in Duluth, Minn.

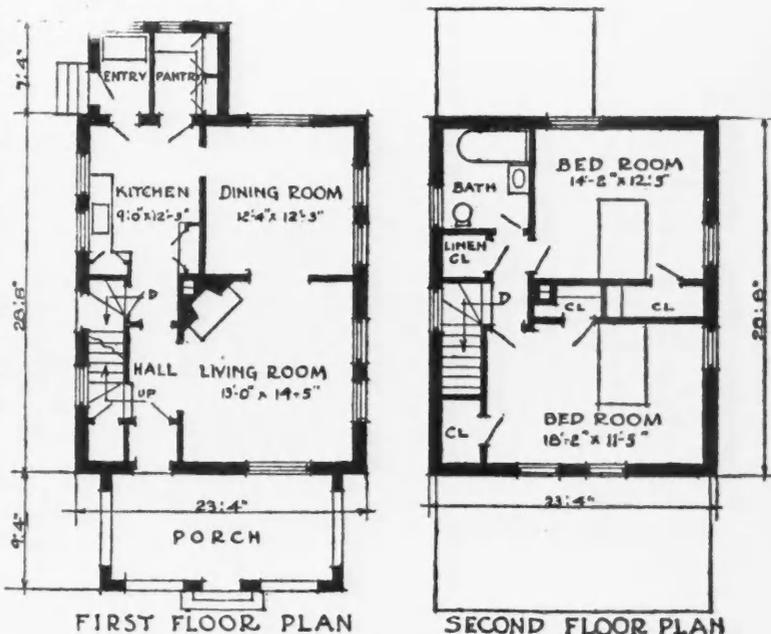
even more ample living room may be obtained by omitting the wall between the living room and the hallway. The front porch, if enclosed, makes a delightful sun room, adding greatly to the available floor space. Both bed rooms are ample and the large clothes closet space, as well as big linen closet, are features which make a strong appeal to every housewife. The kitchen has a large pantry and two kitchen cases. The rear entry can be used for additional storage space or thrown open and screened in, as desired.

If the ordinary type of 8 by 16 inch concrete block is used (those having air spaces running vertically thru the units) the construction of this house requires approximately 750 whole block and 96 half block, 12 inches in width, for the courses below grade. Then for the porch and ell foundations, basement partitions and main building walls above grade 1,990 whole block and 358 half block, 8 inches in width, are necessary, in addition to 71 whole block and 8 half block made with recesses for the joists. There are also required 80 whole jamb block and 80 half jamb block, 8 inches thick and 400 whole and 90 half slab block (4 inches thick without air spaces), the latter for use in area walls, rear entry and coal bin walls.

Other masonry items include five precast concrete sills for the basement windows, length 3 feet 4 inches; 13 similar sills with an average length of 6 feet 5 inches; 29 precast reinforced lintels; average length 4 feet 9 inches, and 5 thresholds. Mono-

lithic concrete items include footings and reinforced slabs for front entry and rear entry floors. In addition, a considerable number of concrete or clay brick are specified as an alternate for monolithic concrete for the front steps.

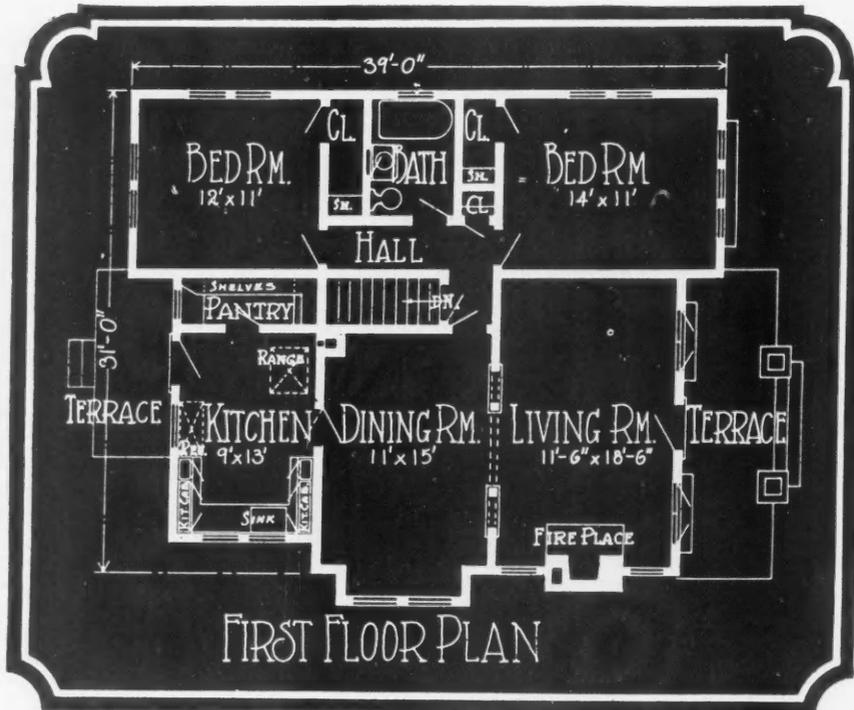
Portland cement stucco is applied to some 241 square yards of surface, 224 square yards of which is concrete base, in the walls, and 17 square yards metal lath in the porch ceilings.



Arrangement of Morgan Park House. The room arrangement is handled on a broad scale. Fine large bedrooms and ample closet room on the second floor.

**BLUE RIBBON HOMES**

**PRACTICAL & ARTISTIC**

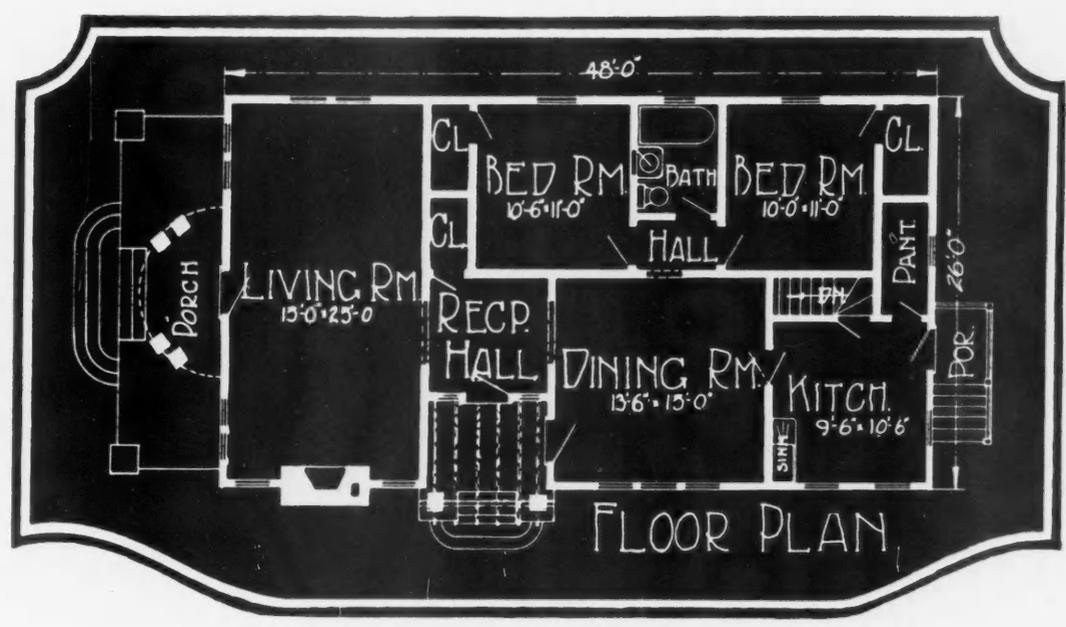


**DIGNIFIED, "HOMEY" BUNGALOW.** Note the pleasing perspective of the low, over-hanging gabled roof and the porticoed Colonial entrance doorway. The curving walk heightens the general pleasing effect. Observe how the trellises laid against the exterior key in with the paned French windows, and how these in turn are improved by the wrought iron railings. The living room, 11 feet 6 inches by 18 feet 6 inches, is directly off the brick or tile paved terrace, and has a fireplace. It opens into the dining room, which is 11 feet by 15 feet. A good arrangement would be china closet shelves on the dining room side backed against book shelves on the living room side. There is not a dark corner in the kitchen, which is 9 feet by 13 feet and opens on the rear terrace. The bedrooms are well dimensioned, with ample closet space. The size of the bungalow is 31 feet by 39 feet.

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**WINNING BLUE RIBBON HOMES**

**PRACTICAL & ARTISTIC**



**IDEAL BUNGALOW FOR WARM CLIMATE.** There are touches to this bungalow which suggest Italy and Spain. The projection of the colored roof line against the cream-tinted or white stucco gives a pleasing note of color, and the balustraded porch and the long French windows carry out the general design. The magnificently proportioned living room, 15 feet by 25 feet, has two entrances, and a fireplace at one end. A reception hall separates it from the dining room, which is 13 feet 6 inches by 15 feet, with triple-window lighting. Leading off the dining room are the two bedrooms and the bathroom, and thru another door is the kitchen, with its window-cooled pantry and rear porch, and light on two sides. Effective use of flowers and shrubbery would be demanded to insure giving this design of bungalow its full decorative value. Given a very wide lot, there is no reason why it could not be built sufficiently wide to allow for an inner court or patio. As it stands it is 26 feet by 48 feet.

# Featuring the Fireplace

By DOROTHEA D. DUNLEA

**A**LIVING room without a fireplace seems incomplete. It lacks the charm that is furnished by an open fire, the beauty and comfort that the hearthside gives. So it behooves the builder of the new home or one who is planning to remodel the old home to give consideration to location of chimneys and the construction of a fireplace in the living room of the house at least.

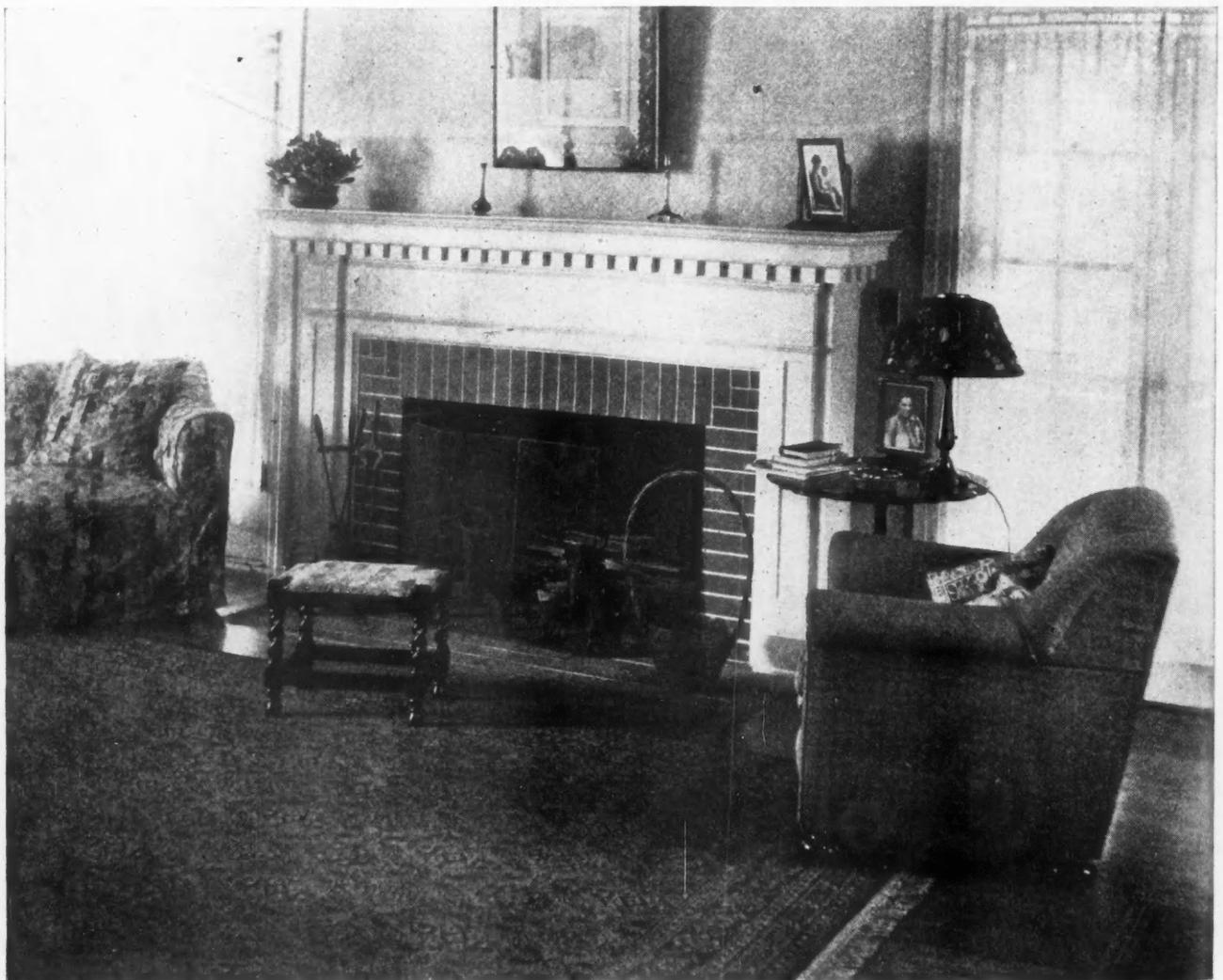
The fireplace usually furnishes the point of interest in the living room for around it are grouped the easy chairs, the reading table and lamp, perhaps a footstool or two, and even the lounge or davenport may be drawn close by.

To live up to this important position in the interior of the house, the fireplace needs be architecturally correct. It must conform to the style of the house, the interior finish, wood trim, and it must be of good proportion to the size of the room.

As to the location of the fireplace in the living room

there is a wide choice of positions. It is a very common practice to place the fireplace on one of the outer walls of the room and this has of course certain advantages but it must be remembered also, that using an outer wall for the fireplace may also be using the space that is available for windows for light and air and sunshine. If the chimney is to be run up on the outside of the house, it is preferable to use the north wall for the location of the chimney, and thus have the fireplace on the cold side of the house, leaving the other walls for light and sunshine.

Very frequently the fireplace is built across one end of the room, and gives a broadening effect to the living room of moderate size by having built-in features placed on each side of the actual fireplace. In illustration (2) this effect has been artistically achieved and an air of spaciousness is given to the room as well as to make the fireplace seem structurally a part of the room.



Cream Woodwork in Contrast with Dark Tiles Makes This Fireplace Very Attractive. Worth noting is how the decorative effect of the well-designed lines is enhanced by the studied limitation of the mantel ornaments to few in number.

Simplicity of line is also another pleasing point to be noted in this fireplace, a bit of ornamentation below the mantel and on the panels of the desk being the only decorative touch. The tendency today in homes being toward simplicity of treatment, a fireplace that depends alone on line and nice finish of woodwork is the one to be favored.

The Colonial style being of conservative and simple design, a fireplace of that design is also good taste. In illustration (1) the white woodwork in contrast to tiles marked off in white gives an interesting and pleasing touch to this room. The low, broad construction of this fireplace also means that a real fire can be enjoyed in this room.

The location of this fireplace, while on an outside wall, has not shut off the light and sunshine from the room but by being placed between two long French doors, is enhanced in beauty, being given proper balance.

Sometimes one sees a fireplace that seems to be crowded into a space and then the only remedy will be to simplify the wall treatment on each side of the fireplace and arrange the furnishings of the room to give an air of spaciousness. The only time a fireplace can be tucked into a space is really when

it is built in a corner of a room. Then its position can be redeemed if it is built along informal lines, a fireplace of rustic type such as is often seen in a mountain cabin. A cobblestone fireplace or one of rough finish brick built to the ceiling may be the choice for such a location.

In some of the newer houses which savor of Old World art, a fireplace of primitive European design is chosen. This type of fireplace being built sloping to the ceiling and relieved perhaps only by a hood of metal or wrought iron decoration goes best with the living room that has a rough wall finish.

A fireplace with a high mantel is looked on with general disfavor for it seems to give a cold and formal air to a room. The fireplace that is built low and broad with only a shelf in place of an elaborate mantel-piece, is to be favored. Mirrors are not built in as much as formerly but are now being hung separately as in the photographs.

The selection of material requires much study to conform to the general style of the house and the interior finish. Brick, stone, tile and cement are available in a variety of patterns and finish. There seems to be no particular favorite in materials now tho composition tiles and cement are used a great deal.

Choosing tiles, one may work out many attractive color schemes to go with the vivid colors now in vogue

for interior decoration. But in choosing decorative tiles or patterns worked out in tiles, one must have a simple wood finish not to overdo the effect. A fireplace of Colonial design with ivory finish woodwork may be given added interest by the use of, say, dull green tiles with a broad panel of tiles across the breast of the fireplace, depicting a scene on sea or land, worked out in natural colors.



A Built-In Bookcase and Desk Tend to Broaden This Fireplace, and Give an Air of Spaciousness to This Living Room. This is done by keeping the mantel and shelf line down to a height which suits the height of the room.

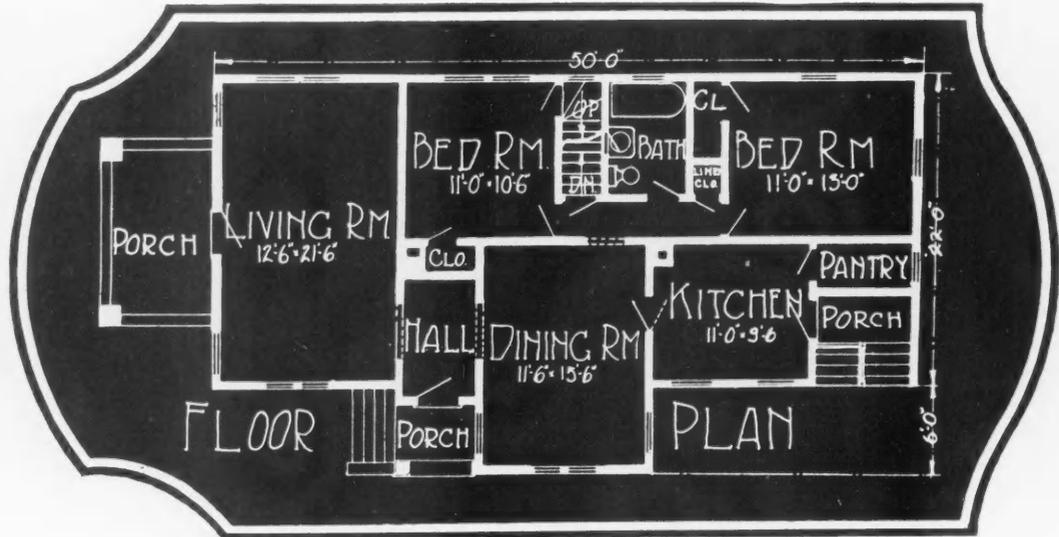
The all brick or cement fireplace is also to be recommended for the room of informal style. Light brick, cream or tan, goes very pleasingly with dark woodwork, such as walnut or mahogany. Cement is very often used for the hearth and it may be of the same color as the tile or brick work of the fireplace, or in contrast.

The practical side of the fireplace question will demand a survey of methods of heating and fuels available. The modern city apartment will not have to do without the beauty of a fireplace just because a chimney is lacking. For dummy fireplaces are quite the thing nowadays in modern buildings. The fireplace can be duplicated in every detail as far as its appearance in the room is concerned, except that it may be shallow in depth. Of course this kind of fireplace can be used only for electric or gas heaters or grates, but such variety of styles are available now that one can be sure of finding some design that will be both pleasing in appearance and practical. Illustration (2) shows a gas grate has been chosen for this living room and gas heat is often preferred because the heat is available with the turn of a cock.

Featuring the fireplace means choosing the right style architecturally, making it a part of the room by good location and building it of harmonious materials.

**PRACTICAL & ARTISTIC**

**BLUE RIBBON HOMES**

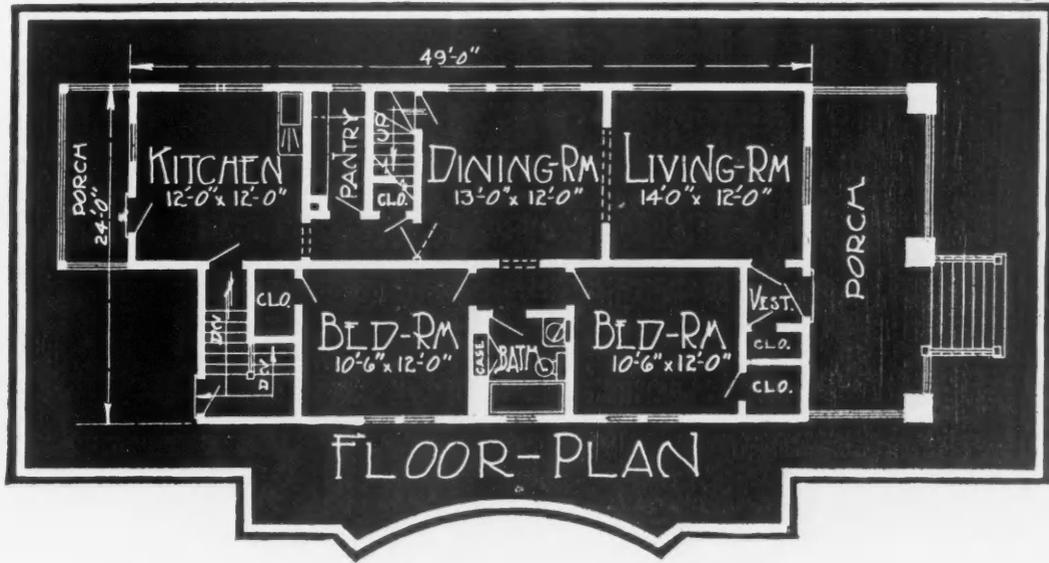


**P**LEASING RESIDENCE FOR THE FAMILY OF MODERATE MEANS. This is a five-room stucco house with the roof and walls handled in a way that gives it the effect of a more commodious and pretentious residence. The front porch is not entered from the outside, and if enclosed could serve as an extra sleeping room. Then there is a stairway that leads upstairs from the front bedroom, which means there is attic space for another room; note its windows at the right, over the porch gable. The living room is 12 feet 6 inches by 21 feet 6 inches, with light on three sides. There is a good place for a fireplace later, against the center of its inner wall, where it could back against the basement furnace flue. The dining room opens off the entrance hall, and is 11 feet 6 inches by 15 feet 6 inches. It has light on three sides, and leads into the bedroom side of the house, where the two sleeping rooms are handy to the bathroom. The kitchen has fine light, a window-cooled pantry and a sheltering porch. The house is 28 feet by 50 feet.

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**BLUE RIBBON HOMES**

PRACTICAL & ARTISTIC



**THIS HAS SOLVED MANY HOME-OWNING PROBLEMS.** Here is an attractive, economically built stucco bungalow which combines all home requirements into the simplest possible arrangement of four walls and a roof. There are five rooms, and the stairway that leads upwards from the dining room means that the attic can be transformed into another room, with the front dormer giving fine light and ventilation. Entering from the spacious porch you find yourself in a vestibule that has useful clothes closet space. Thence you enter the living room, 14 feet by 12 feet. There is side wall space here that could be made to hold a fireplace later. Built-in bookshelves and china closets might separate the living room from the dining room. The latter is 13 feet by 12 feet, and leads by a linen closet and window-cooled pantry to the nice compact kitchen, 12 feet square, and which has its own handy porch. There are two bedrooms, reached from the dining room, and each adjoins the bathroom.

# From a Dirty Back Street to Beautiful "Lantern Lane"

By ROBERT F. SALADE

**S**TRANGER things often happen in real life than some of the tales that are depicted in the "movies." In the motion picture story entitled "The Kid," for example, which is one of Charlie Chaplin's best film productions, appears a scene representing a court in the slum district of a city. Later on in this photo-play Chaplin is supposed to have a wonderful dream in which the dingy court has been transformed into a beautiful street of Heaven. In this dream the original lines of the old houses still remain, but everything is spic and span, and upon all sides are roses and other varieties of flowers. The little alley has been made over into a delightful garden; pretty flowers are blooming even in the gutters of the street.

Yes, romantic settings of this character are really arranged outside of filmdom, and thru a coincidence, the scene that will be described in this article

is directly in the rear of the big Stanley Theater—the house where "The Kid" was first shown in the city of Philadelphia. Truly, "All the world is a stage."

Its old name was Uber Street. It was a thoroughfare about 18 feet wide, running 105 feet from Ludlow to Ranstead Street, west of Nineteenth Street. On either side were eight two-story brick houses. Each house boasted of a tiny back yard which was enclosed by a high board fence. Such things as sewerage, plumbing and lighting were unknown to the colored people who lived in that court. It was just a dirty, insanitary and unsightly place in the heart of a great city—a quarter which was by no means safe for a visitor at night—and as a matter of fact, the alley was so well hidden away by larger buildings on all sides that few people of the city knew of its existence.

It came to pass that one day a Philadelphia business



Here Is the Way Uber Street Looked Before the Magic Touches of the Builder's Art Were Applied. More than eighty Negroes lived in this court, and the little houses rented for \$12 per month.

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man stopped to look into this old, dirty street, and as he stood amazed at the unpleasant sight, he naturally wondered why such a spot should be allowed to stand in back of fine properties on Market Street, Chestnut Street and Twentieth Street. Here was a place which was actually deteriorating into a slum district, yet in the immediate neighborhood were numerous fine hotels, apartment houses, modern business buildings and a number of handsome mansions. And, at the corner of Nineteenth and Ludlow Streets stood the big building of the Board of Public Education.

The name of this man is David Coons, and as he studied the rookeries and their surroundings, he suddenly derived an inspiration—a new idea, which from present indications will result in changing many a Philadelphia back street, into a beautiful, healthful, residential garden. Already, Mr. Coons' idea has been applied to Uber Street; this spot is now called "Lantern Lane," and the remarkable improvements that have been made in it have given a

novel and picturesque turn to real estate development in the central residential section of the Quaker City.

Mr. Coons is not an architect, is not a builder, nor is he a real estate operator. He is a manufacturer of women's underwear with a plant at Tenth and Market Streets. Having been blessed with a strong imagination and a clear vision, Mr. Coons was quick to recognize the possibilities of a re-modeled Uber Street. At first, he thought of transforming the place into an artists' quarter, but after further consideration, he came to the conclusion that artistic homes were wanted by other folks in addition to artists. Therefore, the houses in "Lantern Lane" are now occupied by the same class of nice people that are found in good homes everywhere. The pretty little apartments are ideal as "love nests" for newly-weds, a number of which are included in the colony.



This Is the Same Old Uber Street After it Has Been Made Over Into Beautiful "Lantern Lane." The picture speaks for itself. These houses now bring from \$100 to \$120 per month, because of their artistic character and unique setting in the business district of Philadelphia.

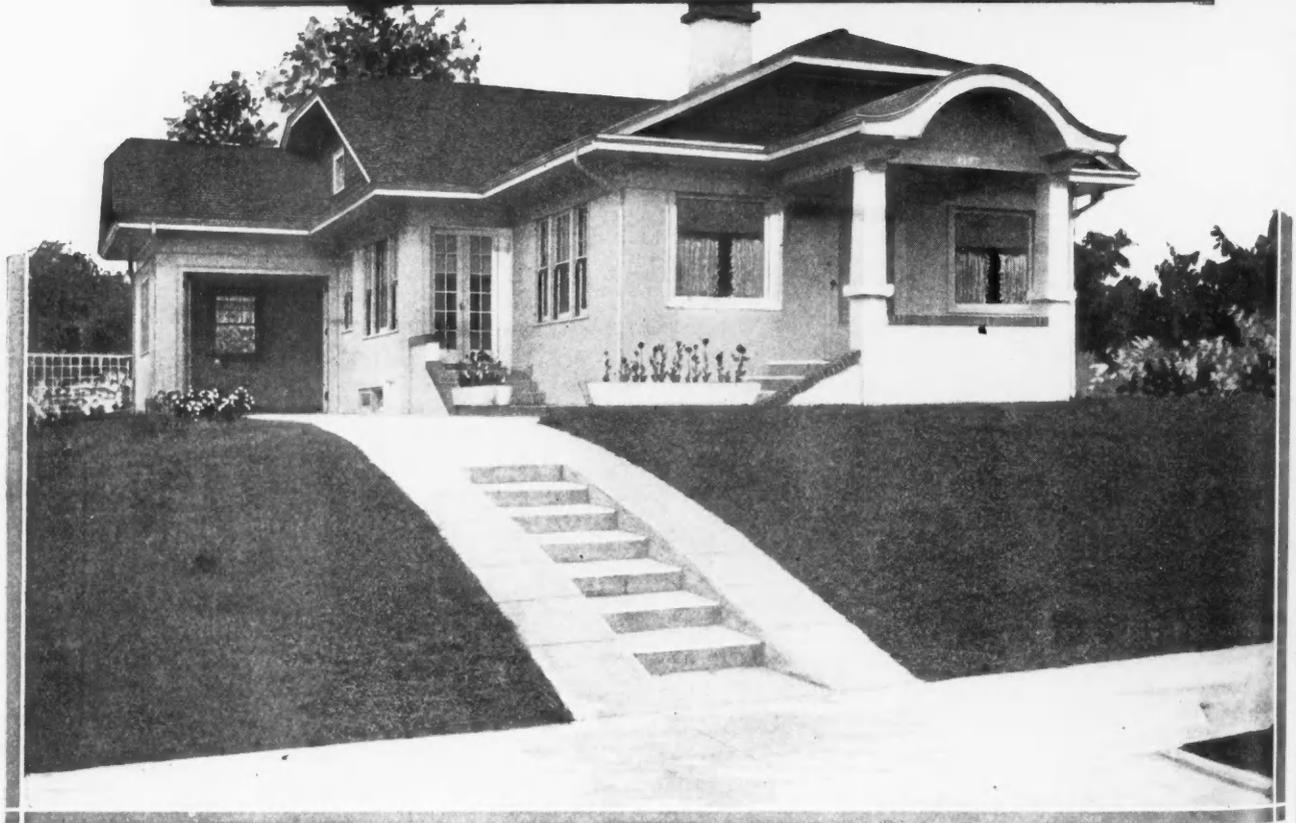
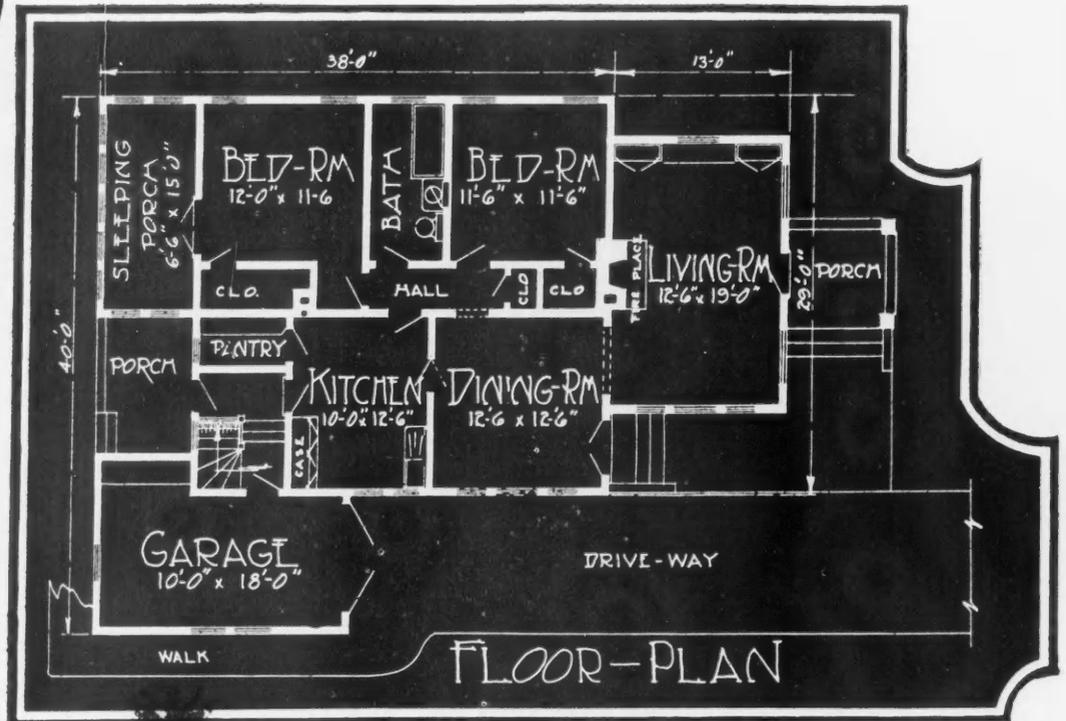
Uber Street had never been officially dedicated to the City of Philadelphia, and for that reason Mr. Coons found it possible to secure title to the little street along with the entire group of houses. The more than eighty Negroes who had been living in the sixteen "shacks" were asked to move to other parts, and after they had departed, at least fifty wagonloads of dirt and rubbish were removed from the houses, yards and cellars. Work was then begun on the rebuilding. All of the old partitions, doors, shutters, etc., were removed, only the brick walls and the floor joists being left standing. Finally, when the work of remodeling had been completed, Philadelphia was richer by sixteen small but beautiful homes.

These little houses are done in the Spanish style of architecture. Both the fronts and backs are finished

(Continued on page 154.)

**BLUE RIBBON HOMES**

PRACTICAL & ARTISTIC



**I**DEAL BUNGALOW FOR WIDE LOT. There is a pleasing appearance to this well-balanced bungalow, and the curving porch roof and beveled gable ends smooth off its upper lines in a restful way. The dimensions over all are 40 feet by 51 feet. The living room, in front, is entered from the porch, 12 feet 6 inches by 19 feet; it has fine light on three sides, a centrally placed fireplace, and built-in bookcases at its right end. The entrance at the side leads thru handsome French doors to the dining room. This, 12 feet 6 inches square, has a nice triple window and fine buffet space. Like the kitchen, which is 10 feet by 12 feet 6 inches, it has a door opening into the hall that connects with the bedrooms. There are two of these, and the rear sleeping porch, if enclosed, could make a third the year around. There is also a rear kitchen porch, and the vestibule which leads to it from the kitchen also gives interior access to the garage.

BUNGALOW the bungalow is carried by 20 feet by 14 feet way, work back for by 51 feet



# ARCHITECTURAL DRAWING



## How to Solve Geometric Problems

The Fourth of a Series of Articles of Great Practical Value to Builders

By M. K. TEACH

*Instructor in Architectural Drawing, Bradley Polytechnic Institute*

THE theoretical method of solving most geometric problems is done away with by the draftsman, since he is equipped with instruments for saving much time and labor. For instance, the draftsman will draw parallel lines as illustrated

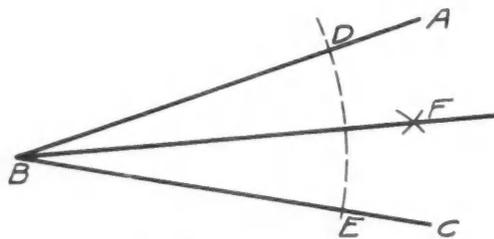


Fig. 1. Method of Bisecting an Angle.

in the previous article but this method has no theoretical value. Such it is with many other geometric solutions. However, there are a number of geometric applications which present themselves many times in the draftsman's career and which should be familiar to him. Only those solutions which he will most likely encounter can be given in this work. In case there are any not given here or not remembered, consult "Kidder's Architects' and Builders' Pocketbook."

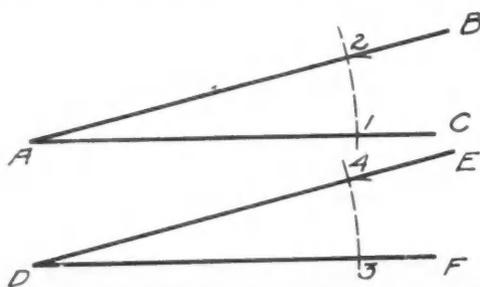


Fig. 2. Method of Constructing an Angle Equal to a Given Angle.

This book is probably the best and most extensively used of all architects' handbooks. It will be best for the student to solve all the following problems for they afford excellent practice in the use of the instruments.

To bisect a given angle  $A B C$ , Fig. 1. With  $B$  as a center and any radius, describe an arc intersecting  $A B$  and  $B C$  in points  $D$  and  $E$ . With points  $D$  and  $E$  as centers and

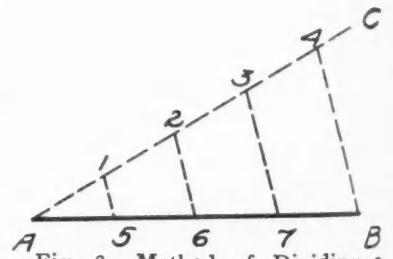


Fig. 3. Method of Dividing a Straight Line Into Any Number of Equal Parts.

with any practical radius greater than half the distance between  $D$  and  $E$ , describe arcs intersecting in point  $F$ . A line drawn thru  $B$  and  $F$  will bisect the angle  $A B C$ .

To construct an angle equal to a given angle, Fig. 2.

Let  $B A C$  be the given angle. Draw the line  $D F$  in the place where it is desired to have the new angle. With  $A$  as a center and any radius, describe an arc intersecting the sides in the points  $1$  and  $2$ . With  $D$  as a center and the same radius describe a similar arc cutting  $D F$  in point  $3$ . Now with radius  $1-2$  and with  $3$  as a center describe an arc cutting  $3-4$  at point  $4$ . A line drawn thru  $D$  and  $4$  will complete the angle  $E D F$  equal to the angle  $B A C$ .

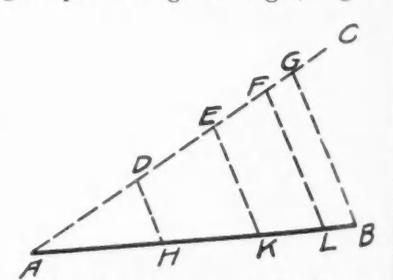


Fig. 4. Method of Dividing a Given Straight Line Into Proportional Parts.

Fig. 5

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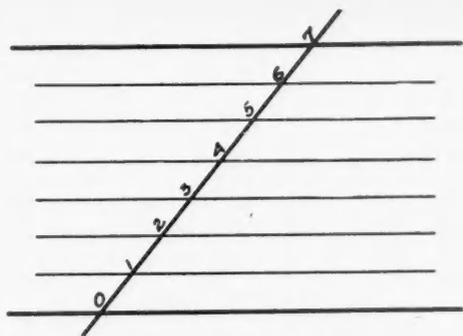


Fig. 5. Method of Dividing the Space Between two Parallel Lines Into Any Number of Equal Parts.

To divide a given straight line into any number of convenient angle and step off on A C four points equal parts, Fig. 3, let A B be the given line which in this particular case we wish to divide into four equal parts. Now from A draw the line A C at any equidistant. It makes no difference what unit is used for laying off these points just so it is convenient. From the last point, 4, draw a line to point B and from each of the remaining marks on A C draw lines parallel to 4 B, intersecting A B at points 5, 6 and 7. The line A B will now be divided into four equal parts. For practical purposes the draftsman will many times approximate the distance and step off the points, varying the distance from time to time until the right location of the points is obtained.

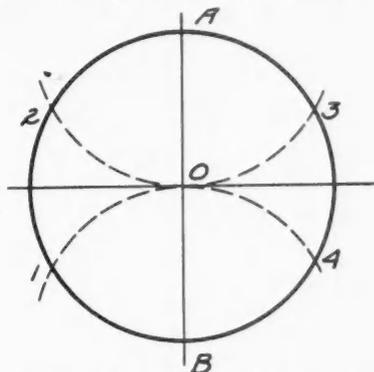


Fig. 6. Method of Dividing the Circumference of a Circle Into Six Equal Parts.

To divide a given straight line into proportional parts, Fig. 4. First draw A C at any convenient angle to A B as was done in the preceding problem. Along this line lay off proportional distances. In this case they are in the proportion 4, 3, 2, 1. From the last point G draw a line to B and from each of the remaining points drop lines parallel to G B until they intersect A B in points H K and L. This divides the line AB into the required proportional parts.

To divide the space between two parallel lines into any number of equal parts, Fig. 5. Place the scale upon the two lines and revolve it until there are as many

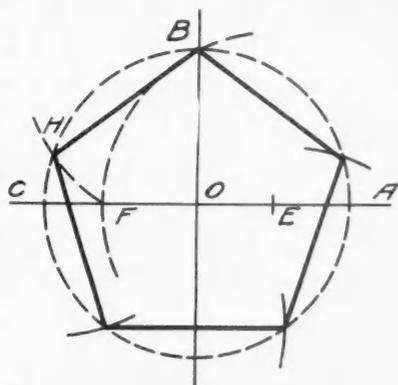


Fig. 7. Method of Inscribing a Regular Pentagon in a Circle.

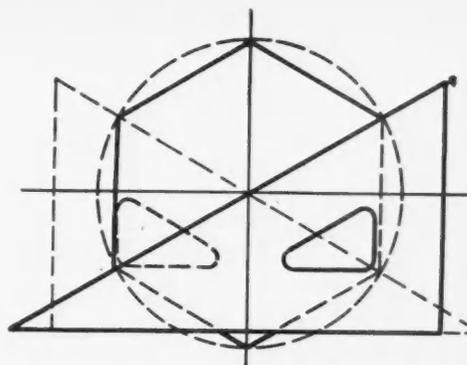


Fig. 8. Drawing a Hexagon with the Help of a 30-60 Degree Triangle.

spaces included along it as there are number of divisions required. Next, draw parallel lines thru these points, thereby dividing the space up into the required number of parts (in this case, seven). The spacing of risers in a stairway is a good practical example of this problem.

To divide the circumference of a circle into six equal parts, Fig. 6. Draw the diameter A B. With the points A and B as centers and with radius A O (or B O) describe arcs intersecting the given circle in the points 1, 2, 3, 4, which with the points A and B divide the circle into six equal parts. Another method of solution of the problem is illustrated in Fig. 8.

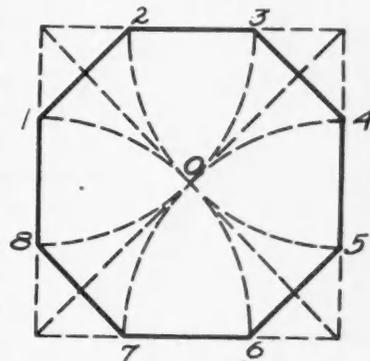


Fig. 9. Method of Inscribing a Regular Octagon in a Given Square.

To inscribe a regular pentagon in a circle, Fig. 7. First bisect the radius O A in the point E. Then with E as a center and radius E B draw an arc intersecting the diameter A C in the point F. Then with B as a center and a radius B F swing the arc which locates the point H on the circumference of the circle. A line drawn between B and H will be one side of the pentagon.

To inscribe a regular hexagon in a circle, Fig. 8.

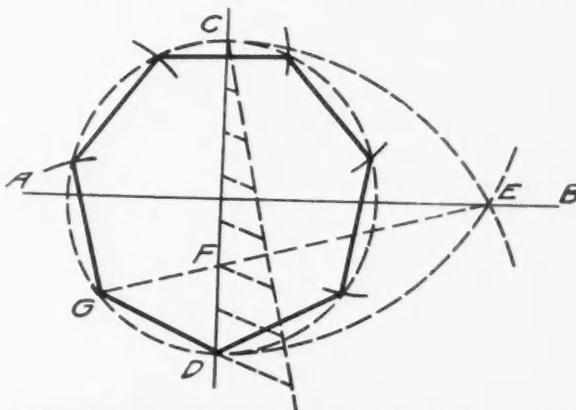


Fig. 10. Method of Inscribing a Regular Polygon Within a Circle.

Fig. 11. Method of Drawing a Tudor or Four-centered Arch.

ceed according to the method for Fig. 6, dividing the circle into six equal parts. Connect the points on the circle. The hexagon may also be drawn by using the 30-60 degree triangle in the manner shown in Fig. 8. It might be a good thing for the reader to remember that the side of an inscribed hexagon is approximately equal to the radius of the circumscribing circle.

To inscribe a regular octagon in a given square, Fig. 9. Draw the diagonals of the square and with the corners of the square as centers and radius of half the diagonal, swing arcs intersecting the sides of the square in the points 1, 2, 3, 4, 5, 6, 7, 8. Connect these points.

To inscribe a regular polygon of any number of sides (in this case, seven) within a circle, Fig. 10. Divide the diameter CD into seven parts, that is, into as many parts as the polygon is to have sides. This may be done by the method illustrated in Fig. 3 of this article. Then with C and D as centers and with radius C D swing arcs intersecting at E on the diameter A B. From this point E just found draw a straight line thru the second point, F of the diameter C D, intersecting the circumference of the circle in the point G. A line drawn between D and G

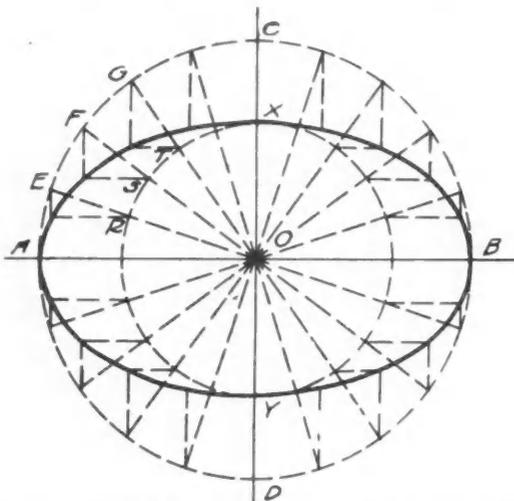


Fig. 12. Method of Drawing an Ellipse, the Major and Minor Axes Being Given.

will be one side of the required polygon. This method is only approximate but is accurate enough for practical purposes. This polygon may also be drawn by trial, by estimating the length of side and stepping this lightly around the circumference with the dividers. If the last division falls short, the dividers should be opened a little and the process attempted again. If the last division be over, a little of the excess should be taken off and the circumference respaced. Altho quite practical, this is only a "cut and try" method.

To draw a Tudor or four-centered arch, Fig. 11. First lay off the desired width or span A B and divide it into six equal parts as at C, D, E, F, G. To find the centers for the curves with the longer radii, with C as a center and radius C G, describe an arc intersecting the center line H K at point L. Draw a line thru C and L, producing it thru M and N. The last point named is the center for the arc M H. Since the arch is symmetrical about the line H K, the center for the arc H R can be determined by projection. Now with C and G as centers and with radius C A, describe the arcs A M and R B which should meet the arcs M H and H R at the points M and R respectively.

To draw an accurate ellipse, the major and minor axes being given, Fig. 12. First method: Let A B

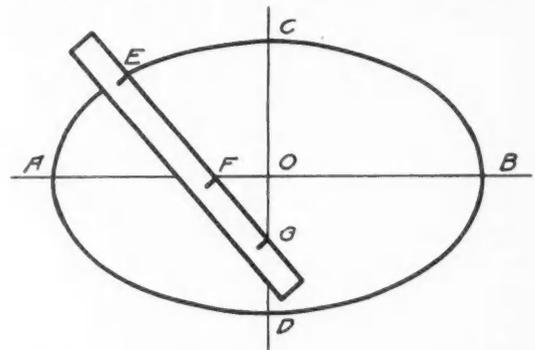


Fig. 13. The Trammel Method of Drawing an Ellipse.

and X Y be the major and minor axes respectively. With O as a center, describe circles on the two diameters. Take any convenient number of points on the circumference of the outer circle, as E, F, G, etc., and from them draw radii to the center O, intersecting the inner circle at points R, S, T, etc. From E, F, G, etc., draw lines parallel to the shorter axes X Y and from the points R, S, T, etc., draw lines parallel to the longer axis A B. The intersection of these lines gives points on the ellipse and by determining a sufficient number of them the ellipse can be drawn. The curve may now be sketched thru these points but later should be made more accurate by use of the French curve. A second method for accurately drawing an ellipse is illustrated in Fig. 13, and is known as the trammel method. On the straight edge of a stiff piece of paper or cardboard mark off the distance E G equal to one-half the major axis and E F equal to one-half the minor axis. Place the cardboard so that the point F is on the major axis and the point G

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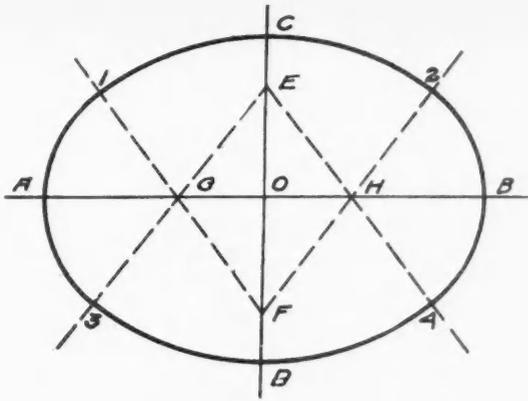


Fig. 14. Method of Drawing an Approximate Ellipse by Means of Circular Arcs.

on the minor axis. The point E will then mark a point on the ellipse. Now if the strip be moved, keeping F on the major and G on the minor axis, the point G will describe other points on the curve. It must be remembered that for both of the above methods of drawing an ellipse, more accuracy may be obtained by a large number of points. To insure the utmost accuracy, points should be taken closer together toward the major axis for that is where the sharpest curve will occur.

To draw an approximate ellipse, by means of circular arcs, Fig. 14. This method is applicable only when the minor axis is at least two-thirds the major axis. Let A B and C D be the major and minor axes respectively. With O as a center and a radius equal to the difference between the two axes, describe an arc intersecting the axis C D in the points E and F. Then make O G and O H equal to three-fourths of O E or O F. With E as a center and radius E D describe an arc terminating in points 3 and 4 on E G and E H produced. With F as center and the same radius describe an arc terminating in points 1 and 2 on F G and F H produced. Lastly, with G and H as centers, describe arcs through A and B connecting the points 1 and 4 and 2 and 3. These four arcs thus described form approximately an ellipse.

In the method just described for drawing an approx-

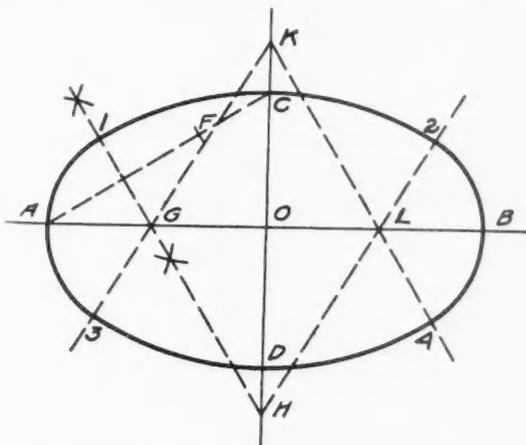


Fig. 15. Method of Drawing an Approximate Ellipse Which Is Not Hindered by Certain Relations Between the Major and Minor Axes.

imate ellipse we noted that the process was not applicable to ellipses where the minor axis was not equal to or more than two-thirds the major axis. Fig. 15 illustrates a method of drawing an approximate ellipse which is not hindered by certain relations between the major and minor axes. Having the major and minor axis A B and C D given, connect the points C and A by a straight line and on this line lay off C F equal to A O-C O. Then bisect A F by a perpendicular line which is produced until it intersects the major and minor axes in the points G and H, respectively. Since the ellipse is entirely symmetrical about the axes, the points K and L will be laid off on O C and O B, the same distance from O as H and G respectively. With G as a center and a radius G A, describe an arc terminating in the points 1 and 3. With L as a center and the same radius, describe an arc terminating in the points 2 and 4. Lastly, with H and K as centers, describe arcs through C and D, connecting the points 1 and 2 and 3 and 4. Half of this ellipse when used in masonry construction is known as the three-centered arch.



### Regional Home Styles

THE most hopeful sign in American building today is not the advent of the heralded "American Style," but the emergence of numerous regional styles. The bungalow has come into its own, and its typical California features have been modified to meet the needs of our more rigorous northern winters. But in California the bungalow is still characteristic of the state and its climate and other dwellings that show the Spanish influence of the old California Missions are popular. It is not reasonable to suppose that a man in northern Minnesota would wish to build a typical Spanish design residence any more than a man in southern California would wish to copy, lock, stock and barrel, one of the colonial homes typical of New England. Here is where the architect and builder can join hands with the owner to produce a home that does not just copy some particular style, but really fits comfortably in among other homes on the same street or in the same locality.



A WOMAN, P. W. Branton, writes of women in a recent issue of "Wood Construction" and she makes some points worth keeping in mind if you are a home builder.

Women, she explains, love to bargain, to shop. You must see that whatever home-building literature you have is where she can see it and make quick judgment as to its availability for her purposes. Your office, she suggests, should be a real reception room and kept in such a condition that a woman, a prospective home builder, will feel comfortable and welcome. It should be clean, for with women at least "Cleanliness is next to Godliness." She likes to shop, but by ascertaining about what price she wishes to pay, the size of the building, the number of rooms, etc., her every answer will narrow your field until you can offer for her selection a very few designs any one of which will meet one or more of her wishes.

She wants a room that a sink and cupboard do not merely qualify for being a kitchen; she wishes a real "culinary studio." She is eager for all the modern devices that save space; the extra shelf and enlarged closet space; back-stair treads that can be hinged and made into handy receptacles and save "dead" space not usable otherwise. She is quick to observe whether you are trying to get for her what she herself wants.

# Well-Planned Four-Flat Building

By CHARLES ALMA BYERS

**T**HE flat building shown in the accompanying illustration, besides being uncommonly neat and pleasing in outside appearance, is especially deserving of notice both for the economical handling of its floor space as a whole and for the very practical designing of its individual apartment units. With a width of but 34 feet and a depth of 51 feet, exclusive of the front terrace and the back stairway, it contains, on its two floors, as will be seen, four flats of four rooms each. The flats, in addition to being provided with all the usual modern facilities, are excellently equipped as to closets and built-in features, and are also convenient in arrangement and quite attractive in interior finish.

The building is of frame construction with an exterior finish of light cream cement-stucco on metal lath, while the roof, which is flat and is hidden by the higher-extending walls, is covered with composition roofing of good quality, surfaced with crushed granite. A built-up wood cornice extends from near the top of the walls not only on the front but also on the rear and sides, and immediately under this cornice there is a neatly designed border, of cast cement-composition, in deep cream and bluish gray tinting.

Frames of the same material and coloring are further used for the front windows, while the window sash themselves are painted white. The building's foundation is of concrete, and the open porch or terrace that reaches across the front is floored with gray cement. The latter is enclosed by a low ornamental railing, and the little balcony on the front is similarly finished. The entrances to the four flats are grouped in a special recessed entry, of loggia style.

The flats are identical in size and general arrangement and nearly alike in all minor respects. The entrances to the ones of the first floor, however, open direct to the living rooms, while on the second floor the stairways necessitate entry by way of the dining rooms. Another difference between the first and second floor planning is to be noticed in that the dining rooms of one floor possess the disappearing-bed closet, whereas it is the living rooms of the other floor which are provided with this feature.

Besides the four principal divisions—living room, dining room, kitchen and bed room—each flat naturally contains a bath room and the usual screen or kitchen-entry porch, as well as a short hall. The living room, in each instance, has a good fireplace and



**How the Four-Flat Building Looks.** Aside from grouping four apartments in the one building and yet maintaining the impression of a splendid private residence, this building is notable for the intelligent use made of pre-cast concrete as a decorative feature. The exterior is of stucco, relieved with a cornice and frame ornamentation made of cast cement composition in a creamy gray tint. Art tiling could be used for similar decorative treatment with excellent effect.

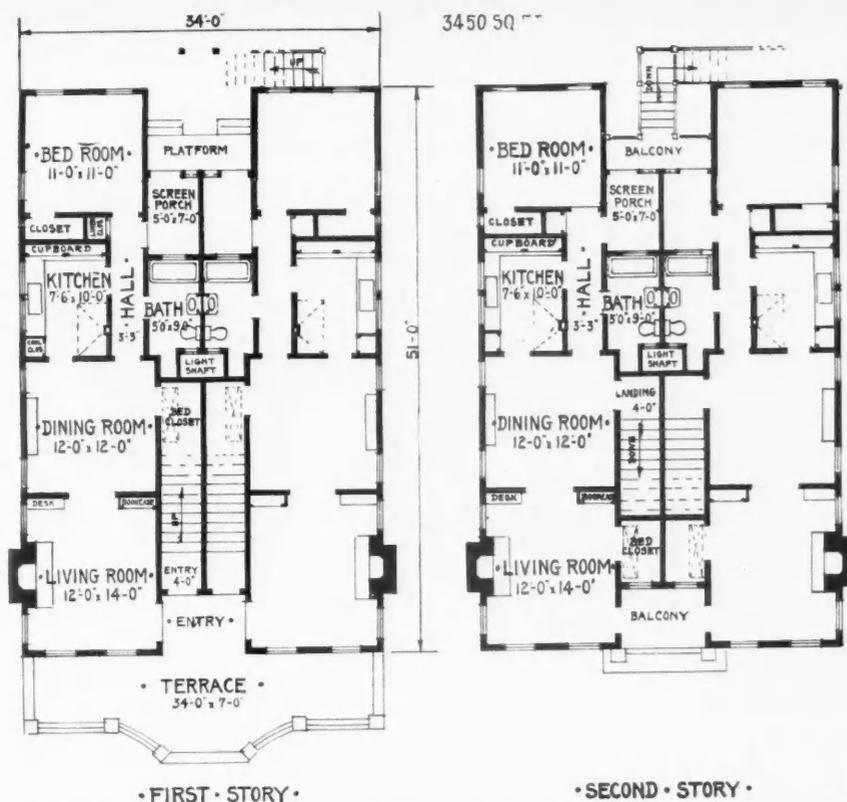
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Floor Plans of Four-Flat Building. There are built-in desks and book-cases in the living rooms; plentiful outside windows for every room; and the kitchen window makes the sink not such a tiresome place after all. Bed closets open off the dining room on the first floor and off the living room on the second floor.

is equipped with both a built-in writing desk and a built-in book-case. The other built-in features include a buffet in the dining room, a draft cooler-closet, excellent cupboards and the other customary conveniences in the kitchen, a cabinet of shelves and drawers for linen in the hall, and a wall medicine

way thereto would doubtless have been very easily provided in close proximity to the back entrances. The flats are, however, equipped with built-in gas radiators, operated on the unit plan, for supplying heat. The building is located in Los Angeles, Calif., and the plans are by Floyd A. Dernier, of that city.

## 5 Rooms Gives 7 Room Efficiency

Built-In Features and Electrical Conveniences Make This Small Home Attractive to All Housewives

By HERBERT C. CROCKER

**E**XTERIOR attractiveness, interior comfort, economy in building the accompanying illustration and plans provide ideas for a home of moderate size, but large enough for the average family. It is a home with electrical efficiency, with lots of light and ventilation and the minimum traveling space to various parts of the home. There is no lost space eliminating the waste of money where benefits are not obtained. The excavation is only 26 by 37 feet, permitting a smaller lot than usual.

The plans show it to be a five-room bungalow, but it has the efficiency of seven rooms and that feature meant a saving of no less than \$2,000. At night, when need be, the dining room may be converted into a bedroom within a few moments thru the bed in the closet idea. The porch is well enclosed and may be

used the year around for sleeping purposes. Again the bed in the closet is used.

If desired, windows may be used in the porch openings in the winter and removed for the spring and summer.

The plans show the location of the bathroom on both floors. With the plumbing assembled to one section of the house providing the needs of the bath, kitchen and laundry there is a considerable saving. If needed the bath on the first floor may be used for a smaller wash room, enlarging the kitchen or it may be changed for closet purposes.

The kitchen of this particular home is one of conveniences. It is filled with electrical appliances. An electric range is located beneath the windows. The plan shows the ease in preparing and serving a meal

case in the bath room, while the bed room, of course, possesses a wardrobe closet. The already-mentioned bed closets, incidentally, not only contain or conceal an emergency bed, but also provide extra wardrobe room.

The interior woodwork consists mainly of pine. The finish in the living rooms and dining rooms, however, utilizes a limited use of mahogany as trim, in conjunction with the pine, which is done in old ivory. In the halls and bed rooms the finish is in old ivory alone, and in the bath rooms and kitchens it consists of white enamel. The bath rooms have tile floors, and their walls, as well as those of the kitchens, are given a smooth, hard plaster surface and enameled like the woodwork. Hardwood floors and plastered and papered walls prevail elsewhere thruout, save in the screen porches, where the floors are of pine and the walls are plastered and tinted.

The building has no basement, but had one been desired, a stair-

in the kitchen—breakfast, for instance.

It's only a step from the stove to the breakfast nook and another from the dining table to the sink. After the dishes are washed only a few moments are lost in placing them in the built-in cabinet until needed again.

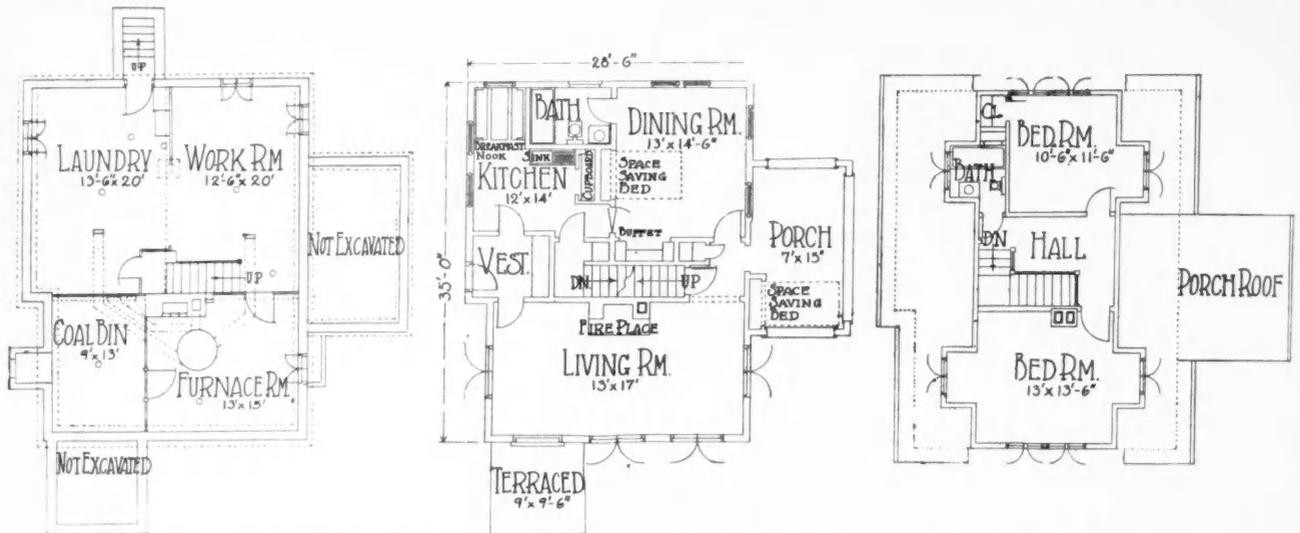
The plan also shows a small cabinet and large hallway to the basement. With the dividing walls of the basement it is almost impossible for the coal dust to reach the hall. Some might find a door at the top of the basement stairs more convenient, making the hall and cabinet a part of the kitchen.

In the kitchen are found an electric iron, toaster and percolator and the cabinet is arranged for the vacuum cleaner, electric iron and other necessary articles of the housewife.

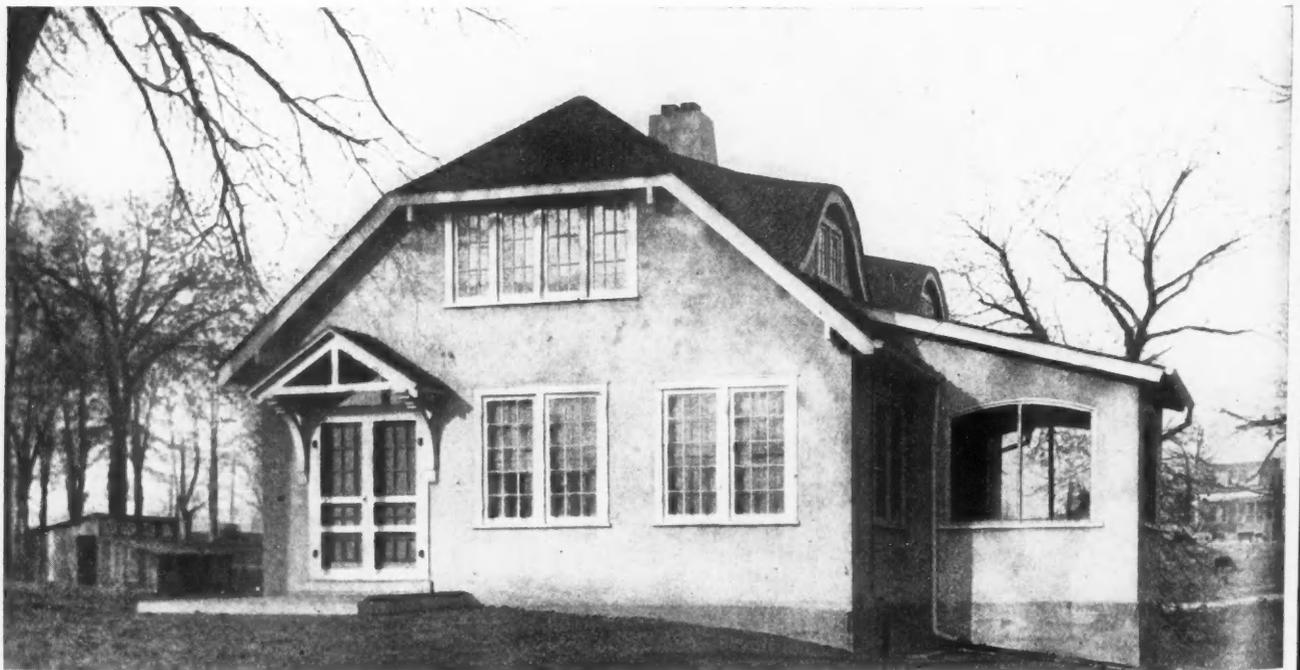
There are three entrances. One is over a terraced area to the living room. The second is a side entrance, either to the living room or kitchen. The entrance is large, providing space for the ice box. The third entrance is to the basement.

The living room was found very attractive. It is spacious and contains a very attractive fireplace of stones. The construction is so simple that it may be built by a novice or the cost low if included in the contract. The windows of the living room, as well as the two upper sleeping rooms, open and close on hinges. The idea adds to the ventilation.

The arrangement of the stairs gets away from the idea of expensive cases. The steps are conveniently located for access from any part of the lower floor.



Floor Plans of Exceptionally Well-Arranged Bungalow. The basement is quartered off, and the coal bin prevented from exhaling its dust into the hall. Apparently there are but three rooms on the first floor: living room, dining room and kitchen. Examination shows in addition, a breakfast nook off the kitchen, a space saving bed closeted off the dining room, and a similar bed on the enclosed porch. In the second floor bedrooms are projections which accommodate cedar chests, chairs and other furniture.



The Space-Saving Bungalow. Quite as attractive externally as it is inside. There are pleasing lines to the roof, which recedes gracefully from the gable ends and droops in a thached effect over the dormers. The square-paned windows open and close casement style. Dimensions, 28 feet 6 inches by 35 feet.

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# DESIGN of SAFE CONSTRUCTION



## Design of Columns

Plain and Reinforced Concrete

By J. F. MANGOLD

Associate Professor of Mechanics, Armour Institute of Technology

**T**HIS series of articles has presented the analysis of both rectangular and Tee-beams used as simple, continuous or fixed beams. The formulae needed have been derived, when possible, by simple demonstration or else may have been indicated and used. Illustrative problems have also been worked out.

We shall now consider the design of the supports for the beams and girders. When the beam is continuous with the wall then reinforcing steel must be placed to take care of the negative bending moment as in the case of the continuous beam over its support. This has been explained in the previous article. In addition, the shearing stress at the support should

be safely within the limit as computed by means of the formulae used in previous problems. However, the interior supports of the beams and girders, which will usually be columns, will now be considered. From the sketch of Fig. 1 we may note how the load is carried, first by the floor slab, then transferred to the beams, and from the beams to the girders and finally from the girders to the columns. These columns will be graduated in size from the top floor to the basement of a building due to the increased loading on the lower columns. Such columns may be built of plain concrete, reinforced concrete or structural steel with a concrete core and concrete shell. These columns, if built of reinforced concrete, are reinforced

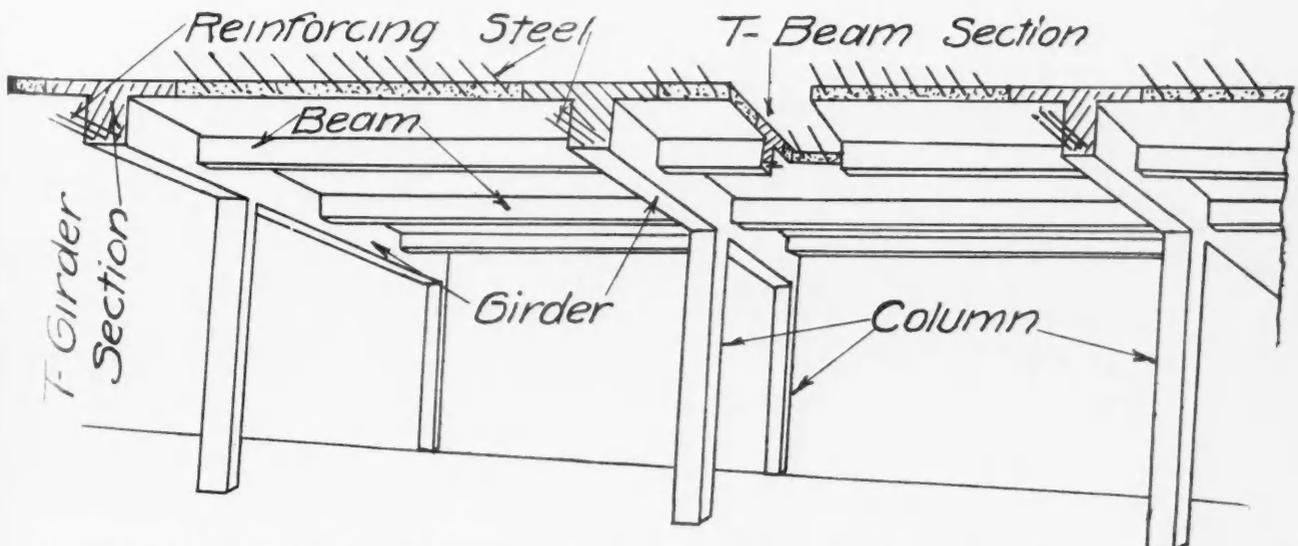


Fig. 1. Showing the Relation of Columns to the Other Structural Elements—Floor Slabs, Beams and Girders. The load is carried, first by the floor slab, then transferred to the beams, then to the girders and finally from the girders to the columns.

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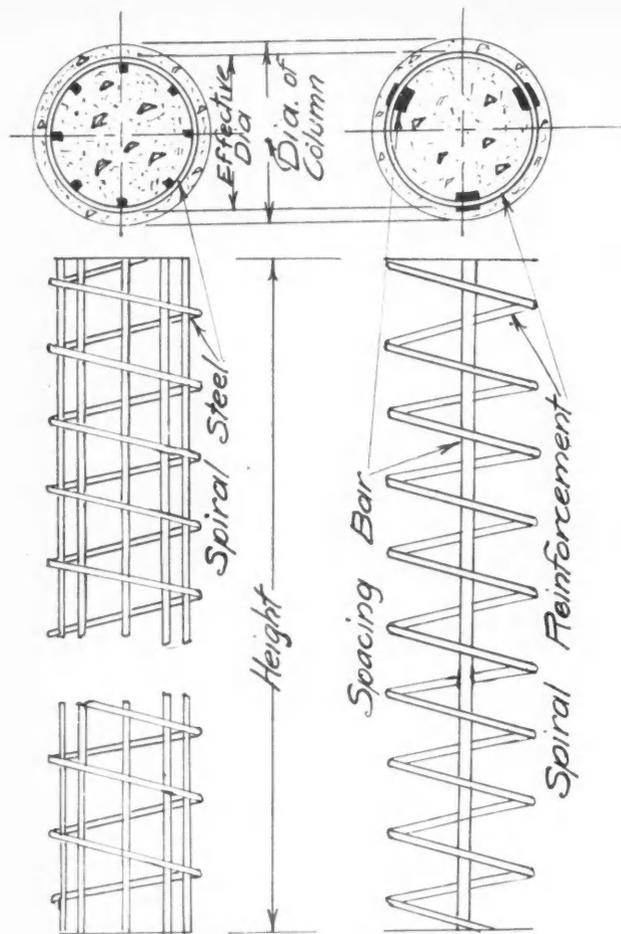


Fig. 2. The Drawing on the Left Shows Longitudinal and Spiral Reinforcement. The rods share the load with the concrete while the spiral reinforcement prevents the expansion of the column due to the shortening caused by the load. The drawing at the right shows spiral reinforcement only. Care should be taken to secure an even position for the steel.

in several possible ways, and frequently as a combination of several ways. Steel rods or longitudinal reinforcement may be placed in the columns parallel to its length, or else wound spirally around the columns, with spirals closely spaced, or, commonly, both longitudinal and spiral steel may be used (Fig. 2). In the first case the rods share the load with the concrete, while the spiral reinforcement prevents the expansion of the concrete column due to the shortening caused by the load, and therefore strengthens the column.

Concrete columns are usually short since the proportions generally work out so that the ratio of the length to the least dimension of the cross section will not exceed 15. Columns or piers not more than four or five times as long as the least dimension of the cross section could be built of plain concrete with no reinforcing if the load is applied at the center of the column, and there is no possibility of some side pressure which could produce a bending of the column. The effective cross section area of the column may then be determined by dividing the total load to be supported by the allowable compressive stress for the concrete, or  $A = \frac{P}{f_c}$ , where  $A$  is the effective cross-

section area of column;  $P$  is the total load to be supported and  $f_c$  is the allowable compressive stress in the concrete. The above effective area of the column should be less than the total area in order to allow for surface injury in case of fire. The extra thickness will vary from one to two inches depending on the fire hazard due to the character of contents of the building. It is recommended that at least  $1\frac{1}{2}$  inches be provided where fire proofing is required. Experience shows that round columns seem to be better than square and further that if square columns are used, the corners should be beveled.

*Steel and Concrete a Unit.*—Tests show that the reinforced columns acts as a unit, since the shortening or compression in the steel is the same as that of the concrete. The unit stress is equal to the modulus of elasticity times the unit deformation, or we may write  $\frac{f_c}{E_c} = \frac{f_s}{E_s}$ . Now the ratio of  $\frac{E_s}{E_c} = n$ , and substituting

in the formula then  $nf_c = f_s$ . The stress in the steel is seen to be equal to the stress in the concrete times the ratio of the moduli of elasticity. Now, if  $P$  is the total load supported by the column, then  $P = f_c A_c + f_s A_s$ , that is,  $P$  is equal to the total stress in the concrete plus the total stress in the steel. This may also be written  $P = f_c A_c + n f_c A_s$ . Now  $A$ , the area of the column is equal to  $A_c + A_s$  and substituting for  $A_c$  above we have  $P = f_c (A - A_s) + n f_c A_s = (f_c A - f_c A_s + n f_c A_s)$ . This expression may be factored by taking out the common factor  $f_c$  and putting  $pA$  in place of  $A_s$ , then  $P = f_c A (1 + np - p)$ . By rearranging this formula it will be possible to solve for various quantities depending on the particular approach to the problem. The above applies to a column with longitudinal reinforcement. If spiral reinforcement is used the column will be treated by formula above, the only difference being in the assumed working values of the concrete. The breaking strength of a column with spiral reinforcement depends on the amount of vertical steel and the amount of the spiral. Therefore the spirals must be considered in formulas for the breaking strength. But in design the elastic limit is the important value and this is little affected by the spiral steel which enters into the problems through the higher unit stress permitted in the concrete.

The proper working stress of hooped columns should be selected with reference to the elastic limit as in the case of structural steel. The hooped column is tougher than the unhooped and seems to give a more uniform strength and resistance against large deformation. In consequence of this a larger proportionate unit stress may be permitted in such a column.

For length of columns of 20 to 25 diameters little difference in strength is shown for different lengths. Very long columns should be avoided and the limit of length set at above 30 times the least width. Very

common ratios of length to diameter equal to 12 or 15 are specified in building codes of large cities.

*Care of Placing Steel.*—Much care should be exercised in placing and holding steel in its proper position in order to produce good work in columns as well as in beams. If the steel rods are out of place or the concrete is uneven in quality, there may result serious weaknesses at some section, causing deflection of the column and throwing the load off center. The stress in the steel will always be low. Since  $f_s = n f_c$  and if  $f_c = 500$  pounds per square inch and  $n = 15$  then  $f_s = 15 \times 500 = 7,500$  pounds a square inch, which is a very low stress for the steel.

*Economy.*—From actual computation by means of the column formulae it may be found that the use of steel does not result in any apparent economy, since the cost of the reinforcement increases in a greater ratio than the strength. However, bending may result from unforeseen conditions, and the resulting tensile stresses might produce the failure of the column if without steel. About one per cent of spiral steel is recommended. Ordinarily not more than about four per cent of vertical steel can be used to good advantage, altho up to six per cent may be introduced. If an excess of six per cent of steel is needed, then structural shapes should be introduced in order to reduce the size of the column. If angle iron or channels are used and laced or tied together at frequent intervals, the previous column formulae may be used (Fig. 2). Sometimes, however, in order to reduce the size of the column, structural steel might be used up to 20 per cent of the concrete area. In such a case the column is to be considered as a structural steel column reinforced by the concrete. The strength of such a column will be computed as the strength of a structural steel column, plus the strength of the concrete core enclosed by the steel.

*Illustrative Problems.*—Let us assume that the effective area of a column is 100 square inches. Let the working stress in the concrete be assumed as 450 pounds per square inch. Take  $n = 15$ . What safe load will this column support if two per cent of longitudinal steel is used? Referring to the formula pre-

viously derived  $P = f_c A (1 + np - p)$ , and substituting in this equation then  $P = (450 \times 100) (1 + .15 - .01) = 45,000 \times 1.14 = 51,300$  pounds.

As another illustration of the use of our formula, let us assume that the total load to be supported by the column, 10 feet long, is 70,000 pounds. The working stress in the concrete will be assumed at 600 pounds a square inch. Let  $n = 15$ . If  $\frac{l}{D} = 12$ ,  $D = \frac{l}{12}$  where  $D$  is the effective diameter and  $l$  is the strength of the column in inches. Solving for  $D = \frac{10 \times 12}{12} = 10$

inches. The 10 inches will be the diameter within the spiral reinforcement; to this diameter should be added another  $1\frac{1}{2}$  inches at each end, for the protective covering, giving us a column 13 inches in diameter.

The concrete will carry a load of  $P = \pi r^2 \times 600 = \pi \times 25 \times 600 = 47,140$  pounds. The difference,  $70,000 - 47,140 = 22,860$  pounds must be supported by the steel. With  $n = 15$ , the steel stress will be  $15 \times 600 = 9,000$  pounds a square inch. Then  $\frac{22,860}{9,000} = 2.54$  square inches of steel required. The

corresponding percentage of steel will be equal to  $\frac{2.54}{\pi r^2} = \frac{2.54}{\pi 25} = .0323 = 3.23$  per cent of steel.



### Something New in Cement

**G**REAT strides are being made abroad with alumina special cement, which produces a concrete having a greater strength in 24 to 28 hours than ordinary portland cement concrete develops in 28 days.

There are many brands. The raw materials used are ferruginous bauxite and limestone, practically the same as for portland cement but in different proportion. Fusion of the ingredients is accomplished in an electric or water-cooled blast furnace. If pure alumina is replaced by commercial bauxite in the lime aluminate, the small amount of silica and iron oxide introduced give a new series of products which set normally like portland cement, are quick hardening and specially resistant to chemical attacks from sea water or alkali soils.

Its use permits the dismantling of floors of concrete after 24 hours, and of beams at the end of three days. One contractor saved 14 weeks by using it for caissons. Another removed a labyrinth of small rooms and corridors, replacing them with a few concrete columns, and creating a spacious banking floor without interrupting the work and the service of a bank.

It is a slate color when set. Its use is freely predicted for the construction of bridges and large arches, with the labor and expense of false work and centering largely eliminated. It suggests itself for cofferdam work; for reservoirs, for water pipe, roof tile, paving blocks and pre-cast concrete. While its cost abroad is at present over twice the cost of portland cement, there is a saving in form outlay, and in the logical reduction of beam and column dimensions.

Its strength is materially reduced by the absorption of moisture. It must not be used together or mixed with other cements or lime, and all mixers, shovels and other utensils must be free of any trace of other cement.

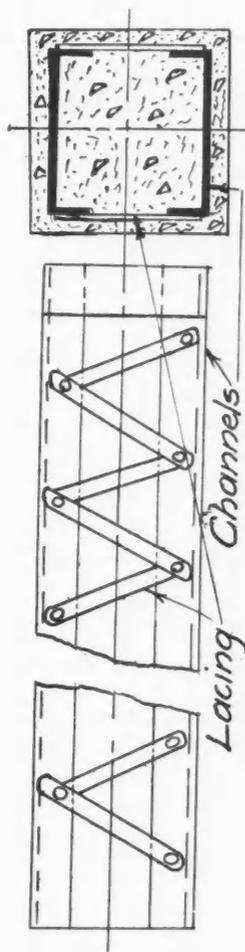


Fig. 3. Square Column of Reinforced Concrete, Showing the Structural Shapes for the Case.

# GOOD CONSTRUCTION



## Nails Wanted for Bungalow Roofs

By HENRIETTA WILSON

**T**HE bungalow roof is lost—worn out before its time—all for the want of a nail, a shingle nail of the right sort.

Steel manufacturers are not making the proper nail, contractors are fuming while they use an inadequate article, and the public is paying for materials which break down under service.

The bungalow is a leading type of residential architecture in this building era. Its distinctive lines are found in the fifty-thousand-dollar home, and they are repeated in the modest dwelling. Nails of various kinds are used in their construction.

"What we carpenters need," says a builder and contractor living on the West Coast, "is a short, stubby shingle nail for use on the bungalow roofs we make. We use the three-penny, fine, nail where, on the older style buildings, we were accustomed to use the three-penny, common, which is a longer, larger nail. We are not endeavoring to erect structures as lasting as the pyramids, but it would be heartening to know that our work could withstand weather conditions a reasonable number of years. Formerly a roof was expected to be all right after fifteen or twenty years' exposure to the weather in this region. The bungalow roof has changed that, and now the tap, tap of the roof repairer is heard in less than eight years after a bungalow has been built."

"Just what is a bungalow roof," I inquired, "and how is it different from all other roofs?"

He explained, "the bungalow rafters that extend over the walls are on the under side exposed to view; the upper side is covered with a thin board sheeting on which the shingles are nailed. The other type of roof has a closed cornice and does not show the exposed rafters. For this roof we use the longer and heavier shingle nail, the three-penny, common, but the points show on the under side of the bungalow roof, so we

have discarded it in favor of the three-penny, fine, a short slender nail. The finer nail rusts thru in a few years and the owner must meet the expense of repair work while his house is a comparatively new building.

"Not many months ago," he continued, "I met the expense of galvanized wire nails to repair the roof of a friend's house. I wished him to obtain a good roof, which would last well, and the three-penny, fine, nails fail to produce such a roof."

"Why," I asked, "do you not use both kinds of nails, three-penny, common, on the main roof and three-penny, fine, where the rafters are visible?"

"That," he said, laughing at my ignorance of building methods, "would not be practical. We carry, in our carpenters' aprons, enough nails for ten or twelve times across a roof space, and it would take too much time to choose a different kind when we reached an exposed edge. Sometimes we do leave the edges and go up on the roof a second time with a different nail supply to finish them, but it is impractical. Besides it leaves the same defects where the fine nails are used. The contractors must think of time in its equivalent of work production. There is considerable lost motion when, to complete a job in the best possible way, it must be gone over twice."

"The steel manufacturers should make us a short, stubby shingle nail, and then advertise and advertise that nail until we can procure it anywhere in the United States and in foreign countries, too.

"We want shingle nails," the builder reiterated, "for our bungalow roofs."



**I**N reference to the above, why not get away from all shingle nail troubles and short life roof troubles by always using *everywhere* the solid zinc or zinc coated shingle nail? No roof can last longer than its nails. It may be a little more costly to use zinc, but it's cheapest in the long run.—EDITOR.

# The Housebuilder's Tools

By W. S. DAVENPORT

**I**N the days when carpenters worked more in their shops than they do now, they had full kits of tools and good workbenches to work with. At present many of the house fittings they then made by hand are now made by machine, and all of the housebuilder's work and most of the jobbing carpenter's is done outside, under conditions that necessarily waste men's time. The men get high wages, the building industry is very large, it is the only important trade that is still largely hand work and yet the work is done with incomplete kits of tools carried to the job and the workbenches are makeshift affairs, knocked together on the spot and without the side vises that save much time in setting both hands free to hold the tools. Evidently the question of a possible increase in the working outfit and the second question of choosing the most useful patterns of the few tools carried to the work are extraordinarily important, and yet one may doubt whether contractors give to these matters the same careful thought that the manufacturer gives to saving his men's time.

I shall give most of my attention to the second question, but the first is of course very important, too. A contractor who is putting up a row of bungalows has to weigh the expense of running several times a day to the woodworking mill, against carrying a universal machine to the new buildings to be run by the convenient and cheap electric power. The light motor and trailer are important factors; with their advent a contractor is able to have on hand a number of really good knock-down workbenches with side vises that are much better than the make-shift slots in bits of wood. The jobbing carpenter might take to his work better saw trestles than he now uses, one with a sunk-in metal bench stop not too near one end, permits that end to be pushed against a wall leaving both hands to use the plane. A trestle with a light shelf underneath and the whole designed to save as much weight as possible is really worth while.

In finishing rooms and stores the light finishing nails can be driven faster with a 13-ounce hammer than a 16-ounce. The heads of most 13-ounce hammers are rather too small, but the Plumb make have larger faces and a Plumb 13-ounce hammer is a time saver for finishing work. On the other hand the concrete carpenter would save time with a 20-ounce hammer. He does most of his work with three tools, the claw hammer, 4-inch broad hatchet and the cross-cut hand saw, and therefore these three tools need much more care in choosing them. The hatchet should be chosen according to the relative amount of uses of the two ends. The broad hatchet is made with a thick bit to hew well, but it is not as good a hammer as the flooring hatchet with a thinner bit, a straight top, and more weight in

the hammer side. Between the flooring hatchet and the lathing hatchet comes the half hatchet, used little except by farmers and yet the best balanced of all hatchets for equal use of the two ends. Its double bevel can easily be ground to a single bevel, and when so ground the 20-ounce head is a very good all-around tool.

Carpenters sometimes buy the cheapest hand saw bearing the name of a good maker. As it comes from the store it is apt to be slower than the best grades, but after filing and setting the difference in speed is not important. But its softer steel dulls more quickly and one sees rather dull saws in use by housebuilders. The men also buy the very best grade of standard shape, full width at point and butt, straight back and stand-off handle. This shape can be filed many times but it is not so light and handy as the shape with a close-up handle, narrow point, straight back and medium narrow butt. A close-up handle, brings an inch or two of blade under the handle where it is not used in a common stroke, but the overall length is less and the next size longer blade may be chosen. The Disston D-23 shape is much handier than the No. 12, the 28-inch size is not too heavy and clumsy and the 26-inch is almost as handy as a panel saw.

The rip saw needs close attention, for it saves much time in ripping a long board or plank if the speed of this saw is good. The 26-inch, 6-point saw has about 75 per cent of the speed of the 28-inch, 5-point, but the latter forms a rougher kerf that needs more planing and is not so good on hard woods. The set of the rip saw outweighs all other factors. If set to clear comfortably like a cross-cut saw, the speed is reduced to 60 per cent, while there is very much less difference in speeds between the different shapes, and a cheapest grade rip saw when filed and set right has 95 per cent of the speed of the very best grade.



**T**HE attention the builder bestows upon his small tools is an excellent indication on the manner in which he will prepare his new building for occupancy. If his tool box is hoary and cracked and decrepit with age, and cared for by a careless helper who may even forget to padlock it when work ceases for the day, the chances are that the prospective tenant of the building going up will find it lacking in even the essentials that go to make up the contract.

Many carpenters who have later branched out as contracting builders on their own account realize the value of carrying the same first-class care they gave their kit along to the tool box and all the implements properly identified with it. The buildings they erect are characterized by a neatness and workman-like finish which is its own recommendation.

A well-made, well-fitted and well-cared for tool box is a prime essential for the successful builder.



## How Paint Helps to Make Buildings Fireproof

By HENRY A. GARDNER

**M**ANUFACTURE of fire resisting paints and varnishes has progressed beyond the experimental stage, to a degree that makes it possible to assert positively and without qualification that these products play an important part in making buildings fireproof. The modern builder can no longer afford to neglect making sure that his painting contractor supplements the structural features designed to afford protection against fire by the application of finishes of demonstrated fire retardant value.

Even buildings not technically of fireproof construction should have the protection afforded by properly selected external finishes. This is particularly necessary for buildings exposed to sparks from railroads, from the furnaces of industrial plants or from other sources. It has been demonstrated that the fire risk from such sparks can be materially reduced by proper painting of roofs and exterior surfaces.

As a result of experiments by the Scientific Section of the Educational Bureau of the Paint Manufacturers' Association of the United States, what are known as the Standardized Pamak Fire Retardant Paints have been developed. The formulas and the trade name are the property of the association, individual members being permitted to manufacture the products under licenses. These paints have demonstrated their fire resisting properties.

Ammonium phosphate has been in common use as component of fire retardant preparations for many years. When dissolved in water to make a solution of 10 per cent to 12 per cent strength and applied to cotton or like fabric, the cloth so treated is very resistant to fire. When ignited, the flame will go out almost immediately. The effect is probably due to the volatil-

ity of the salt, a fume being produced which does not support combustion.

Similarly, ammonium phosphate has been occasionally applied for many years as a constituent of fire retardant paints. For this purpose, the salt in finely divided condition is ground to paste form with linseed oil, and the paste added to prepared paints in amounts usually from 10 per cent to 20 per cent of the pigment portion. The salt may also be applied in aqueous solution as a component of an emulsion liquid.

In order to determine whether the fire retardant value of paints is really increased by the addition of such salts, Henry A. Gardner, director of the Scientific Section, has conducted some laboratory tests. Standardized Pamak Fire Retardant Paints were applied in two-coat work to white pine shingles. The same paints were then admixed with 10 per cent of ammonium phosphate pigment-paste and applied to duplicate shingles. After drying for a week, the panels were submitted to a flame test. After being fully ignited, they were withdrawn from the flame. The flame on each set went out quite rapidly.

While it was indicated that those paints containing ammonium phosphate showed slightly greater flame exit than the others, there was no very marked difference in the samples. Since the standardized paints used in these experiments are probably the most durable fire retardant paints produced so far, having shown but slight defects after weathering for four years, it would be inadvisable, in Mr. Gardner's opinion, to recommend the addition of water soluble salts such as ammonium phosphate. This suggestion is made on account of the fact that such salts during damp weather might cause "washing" troubles.

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# How to Make Soft Woods Beautiful as Hardwood

It is generally admitted that wood finished in its natural shade cannot be worked as successfully into color schemes of decoration as stained wood. It is also true that color brings out the grain and enhances the natural beauty of most woods. For these reasons we manufacture a line of wood color known as Johnson's Wood Dye.

Johnson's Wood Dye is for the artistic coloring of wood. With it inexpensive soft woods such as pine, cypress, fir, etc., may be finished so they are as beautiful as hardwood. Johnson's Wood Dye is very easy to apply—it goes on easily and quickly without a lap or a streak.

Johnson's Wood Dye is a *dye* in every sense of the word. It penetrates so deeply that the natural color is not disclosed if the wood becomes scratched or marred—it brings out the beauty of the grain without raising it in the slightest—it dries in four hours and does not rub off or smudge.

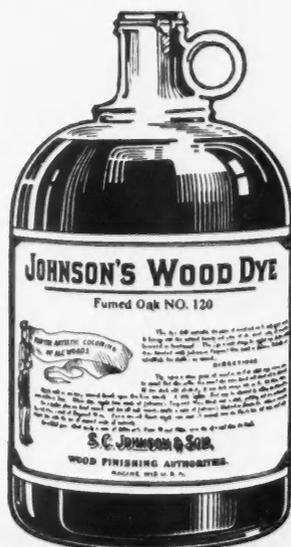
Johnson's Wood Dye is made in 15 shades, all of which may be easily lightened, darkened or intermixed—full directions on every label.

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For certain paints that are not subjected to exterior weather conditions, the use of ammonium phosphate might prove valuable. For instance, interior flat or gloss whites for slow-burning (wood) mill construction might be experimented with in this connection. There might also be a use for "phosphated" varnishes.

As shown in one of the service bulletins of the National Varnish Manufacturers' Association, varnishes when applied to wood greatly reduce the fire hazard. This is due to the fact that the varnish film acts as a seal and prevents the combustible gases in the wood from escaping and becoming ignited.

Zinc borate, in experiments conducted by the Forest Products Laboratory, Madison, Wis., is another pigment that has given interesting results in fire resistant paints. This product, when mixed with color pigments and ground in oil produces a paint that has given excellent service on exterior exposure. The zinc borate pigment fuses to a somewhat glass-like film under the action of heat, and thus produces a seal that prevents the escape of combustible gases from the wood over which the paint is applied.



**A**LUMBER company in New Jersey sends along a pink slip if it has found it necessary to make alterations in the delivery of an order. This slip itemizes the substitutions made, which may be in the length or grade, and is handed to the customer by the truck or wagon driver on delivery.

If the substitution is not entirely satisfactory to the customer the driver is instructed to return the material and the lumber company immediately takes other steps to provide the deficiency.

It should be borne in mind that the substitutions are *bona fide*, and do not consist of trying to force the sale of one trade-marked product as against another, for instance. We all like to get what we order, but are open to reason if delivery is not immediately possible for any good cause.



### Grinding a Cubic Inch of Rock Into Billions of Pieces

**G**RINDING the raw materials is only the first step, but a very important one, in the manufacture of portland cement—for on the thoroughness with which they are ground and intimately mixed depends the ease and completeness with which they can be later combined under the intense heat in the rotary kilns.

The watch in your pocket scarcely calls for a more complicated and carefully adjusted process.

The rocks from the quarry, often as big as a piano, and heavier, go first into a gigantic "coffee mill." It bites at these huge chunks, chips them, and finally crushes them—to pieces six inches or so in diameter.

Two finer mills follow, one after the other, reducing the stones to the size of coarse sand. After this they must be ground in a great revolving cylinder half filled with steel balls, until every cubic inch of the rock has been reduced to billions of pieces—until 85 per cent of them will shake thru a sieve that will actually hold water, a sieve with 40,000 holes to the square inch.

And all of this is less than half of the necessary grinding. The coal must be ground. For the object of all this fine grinding of the raw material is only that it may be fused into crystalline clinkers. And to fuse it requires pulverized coal—or its equivalent. Some plants use fuel oil—some natural gas. Most plants use pulverized coal.

The coal must be ground as fine as the raw stone. Eighty-five per cent of it or thereabouts must go thru the sieve that holds water. And that often means two grinding operations.

There is still the clinker to be ground. It is white hot when it rolls from the kilns, glass-hard after cooling. Then it must be ground first to the fineness of sand, and then ground and reground in another cylinder of steel balls—until at least 78 per cent of it will go thru a sieve woven finer than silk. An excellent quality of silk dress goods has 187 threads per linear inch. This sieve has 200 fine copper wire per inch. Nearly four-fifths of a representative sample of the finished cement must shake thru the openings between these wires or it will not meet the exacting specifications of the U. S. Government and leading engineering societies.

Huge boulders to an impalpable dust. Common coal to an impalpable dust and finally, after the burning, glass-hard clinker to a impalpable dust. That is the making of cement. And eight heavy grinding operations are required in the process.

To keep the bearings of these great grinding machines cleaned and well greased in the dust-laden air of the grinding departments—but that is a story itself.



The Fire Resistive Properties of Paints as Well as Their Weatherproofing Qualities Are Appreciated by Architects, Builders and Their Clients.

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# You don't have to wait for re-roofing business

**RE-ROOFING** with Johns-Manville Asbestos Shingles right over the old roof is the kind of business that you don't have to wait for.

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the slack and helps free them from business conditions beyond their control.

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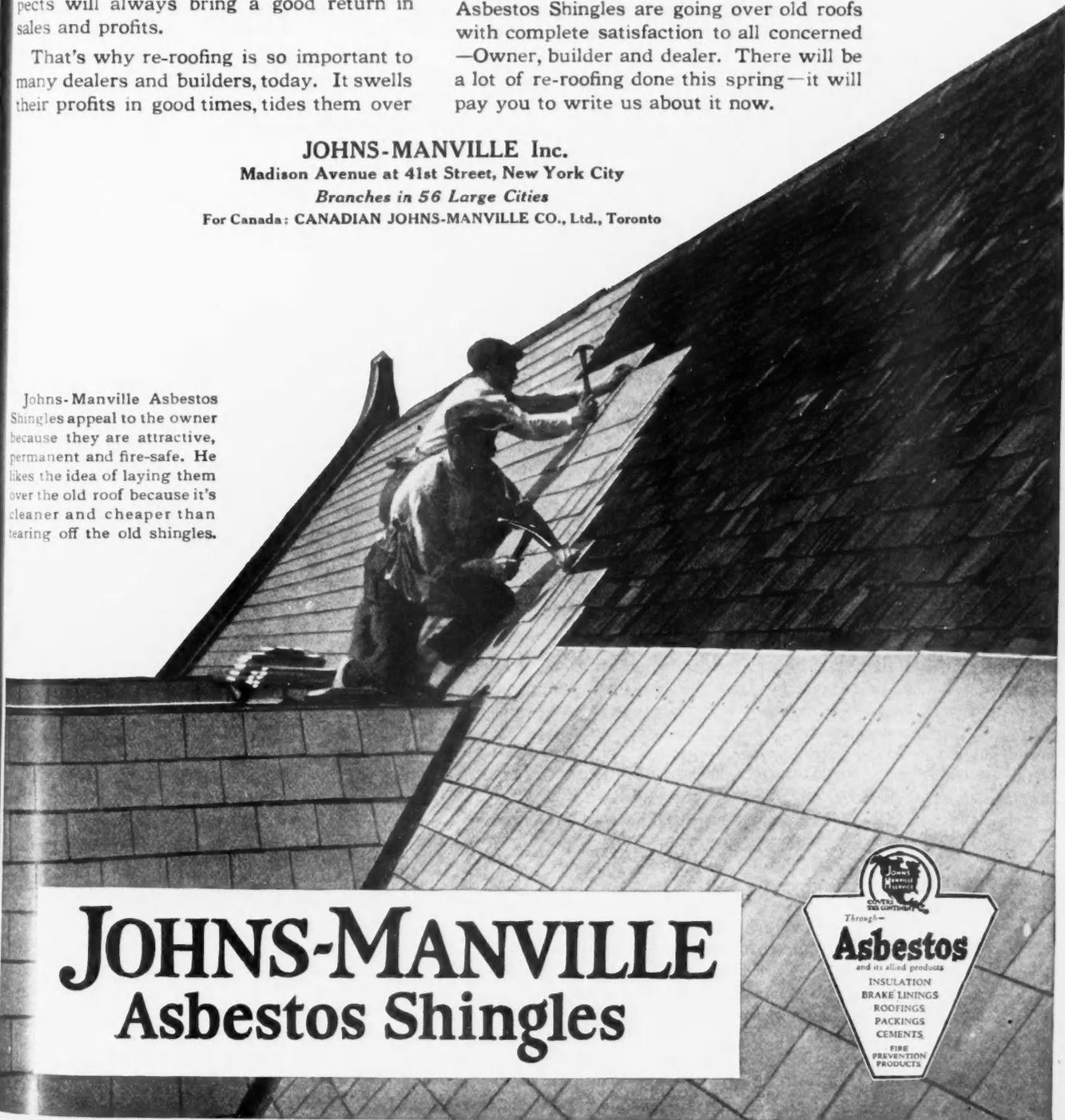
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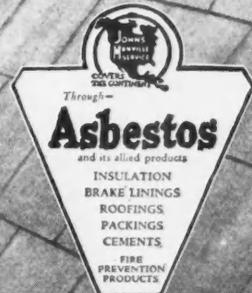
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Johns-Manville Asbestos Shingles appeal to the owner because they are attractive, permanent and fire-safe. He likes the idea of laying them over the old roof because it's cleaner and cheaper than tearing off the old shingles.



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# MODERN USES of BRICK

## A Talk on Brickwork

Given Before the Toledo Builders' Exchange

By WILLIAM CARVER, Architect

IT seems rather presumptuous to give a talk on brickwork to a group of contractors. Everybody who has even a distant connection with the construction business knows about brickwork and every contractor who amounts to anything is a past master in its use. Bricks and brickwork are bound up not only with the art of building in every civilized country but with the history of civilization itself. But the wonderful record of brick, its successful use everywhere, and the fact that the name "brick" itself is a household word thruout every land, is not only a proud record upon the strength of which the brick industry can go out with confidence to sell its product in ever-increasing volume, but strange to say those same things which should count only in its favor also work against its use to some extent. I refer to the occasions, and such occasions have arisen frequently during the past few years, when someone comes along with a new substitute for brick, making all kinds of claims for it and arousing a lot of interest primarily because the substitute is something new. Sometimes there is danger of attributing virtue to newness. The newest thing is the very latest thing out, and altho it may not be as good as the old and well-tried material which it aims to supplant, yet many will use it because they want to be thought right up to date. And where a new material is being actively exploited, advertised and pushed, some of the merits of the materials we are thoroly used to may be overlooked or forgotten. And that is the reason I am here today—to remind you of some of the advantages of brickwork.

A brick is a solid building unit of burned clay, according to twenty-two dictionary definitions. Clay suitable for brick-making is found pretty evenly distributed in almost every state of the Union and in every part of the world. While the details of handling the material vary greatly in various places and from one age to another, the basic principles of its manufacture remain the same, namely, the clay is first formed into the proper shapes, dried, and then burned in a fire of sufficient intensity and duration to transform the brick, into a hard, dense mass capable of resisting the elements for generations, wonderfully strong, and as near fire-proof as any building material is ever likely to be.

And again referring to the strength of the individual brick, some of you who have visited brick yards know that even

before the brick are burned they will stand tremendous stresses without suffering any damage. The "green" brick are piled up sometimes to a height of twenty feet in the kilns with no chance of lateral support, inasmuch as they have to be spaced a slight distance apart to permit the fire to pass between them. After being burned, the strength of the brick is, of course, increased, and the A. S. T. M. specifications define what a brick should be expected to stand. In practice, however, these minimum requirements are very often exceeded. We have records in our office of a test made at Watertown Arsenal in 1904 of a brick produced in the northern part of New York State which sustained the enormous load of 26,763 pounds per square inch at failure, or 1926 tons per square foot. That is, of course, exceptional.

Just now contractors are very much concerned about getting as much work completed this winter as possible, owing to present conditions and to the conditions which those who forecast business conditions tell us may prevail next spring. In many buildings the contractor is rigidly bound by specifications of course but I submit to you that in cases where you are allowed a free hand you can use brickwork for any masonry walls or footings you may have to place this winter and lay them at less cost and with less fuss than any other kind of masonry construction.

I was talking to a contractor only a few days ago in Cleveland who will be shortly laying the foundation of a large apartment house which he is building for himself as owner. His plans do not call for brick footings, but he told me that he had satisfied himself that he could save money by putting in brick footings, laying brick on edge without end joints, simply bedding the brick above. He said that the only protection he would use would be to spread some manure on the bottom of the trench in case the trench diggers get too far ahead of his brick masons. He said also that brick footings would not only save him money right now in the winter time, but he was rather surprised to find that they would show a saving also in the summer time.

Everybody knows that the danger of winter construction lies in the freezing of the water content of the masonry. That sums up the whole problem, apart from keeping the bricklayers warm. It stands to reason, therefore, that the

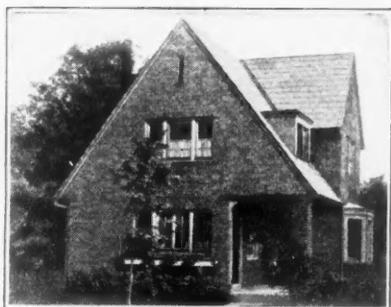
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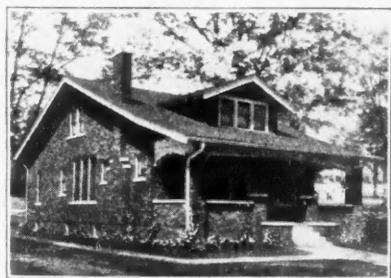
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most suitable masonry for winter construction is that containing the least water. After the masonry is built it should, of course, be capable of resisting fire and have all the other favorable characteristics which masonry is supposed to have, but which some types of masonry do not have. With all these points in mind, brick shows up as a very desirable and practical material for winter use. The fewest precautions have to be taken with brickwork, and if the weather does not get too cold the job may be so run that hardly any extra precautions have to be taken; and precautions against freezing cost money, and a lot of money too. When the brick arrive on the job they should immediately be covered with a tarpaulin to keep off the snow and prevent ice forming on the brick. Brick with ice on them are dangerous to use because they will not get the proper bond with the mortar. That, of course, is self-evident. When the sand is brought on the job it can be heaped in a long, high heap, the outside of which will, of course, freeze. The sand required can be tunneled out from the ends, and a tarpaulin placed over the holes. As to mortar, I know that what I am about to say will be questioned by any architect or structural engineer here present; and that is that a successful winter job can often be put thru with no other source of artificial heat than hot lime, freshly slacked, mixed directly into the mortar and laid in the wall before it gets cold. Theoretically, conservative architects and contractors are perfectly correct when they say that there is a chance that the lime might not be properly slacked before it is placed in the wall and that such mortar might pop out afterwards, but I personally know of many jobs that have been built with such mortar, and upon close inspection the brickwork shows no flaw, altho the buildings have been standing for years. On some of these buildings I have been told by men who were working on the wall that the mortar was frequently brought up to them smoking hot. I am not putting forward any new theory; I am simply drawing your attention to facts. Before recommending such practice promiscuously, however, I believe that a thoro investigation by the Lime Association or the Bureau of Standards would be in order. It is a subject on which more enlightenment will be of great value to the building industry. This method of putting up brickwork in cold weather is vitally interesting to every contractor because of its money-saving possibilities. There is really no good reason why brickwork should be stopped when winter starts, except, of course, when a blizzard or something unusual is actually going on. I have seen brickwork

laid in Winnipeg, Manitoba, when the temperature was hovering around 40 degrees below zero. I have also seen buildings wrecked that had been built some years previously during the winter months, and it was a difficult matter to get the brickwork down.

One of the most interesting operations recently put thru that has come to my attention was the building of about thirty-five or forty small homes by the Chicago Housing Association. The brickwork of all these houses was done in the terribly severe winter we had three years ago. The men worked every day except when it was actually storming and no trouble was experienced on any of the houses except in the case of one wall, in one house only, which was drawn out of plumb a little when the warm rays of the sun struck it one afternoon. The bricklayer foreman, however, told me that it settled back into position again and there was no harm done.

All contractors know, of course, that very impervious bricks offer a little difficulty to the bricklayer in very cold weather because he has to nurse the wall along a little more. The walls should be kept at about the same height all around, and the use of metal wall ties and clipped bond should always be avoided as these invite trouble in case the sun's rays should strike one side of the wall. The wall should be thoroly well bonded together with real headers. In case the cold is very intense or if for any special reason it is deemed necessary to take precautions other than I have mentioned, sand may be heated by piling it around a culvert or some similar round iron section. Water may be heated either by placing it in a can over a fire or by building a fire within a coil connected to the city water supply. Light screens for the bricklayers can also be constructed, altho this is generally unnecessary as the bricklayers keep warm enough working.

These are only some of the advantages of using brick in cold weather. No doubt other reasons will occur to you as practical contractors which I have not touched on.

The contractor is, of course, pretty well tied up by specifications, and seldom has a free hand in his choice of materials. Some of your number, however, no doubt build apartment and other houses for sale, and I would draw your attention to the wonderful results which can be obtained by the use of common brick—hard burned, of course, as every brick exposed to the weather should be. Did you ever try picking out some good quality common brick and laying it up in a good sized panel, say four or five feet square, laying it up carefully with a suitable bond and mortar joint.

Everyone will recall the charm of the old buildings erected in the Eastern states in the early days, built with common brick. Fashions in brickwork, in texture and effect have come and gone since those days, and yet there are many who would desire nothing better than to reproduce the beautiful effects of those oldtime common brick. Who shall say whether in ten, twenty or fifty years the present effects now popular in some parts of the country will still be fashionable? But common brick walls properly built then and now will remain as welcome heritage from one generation to another.

I would like to say a word in passing, however, as to the use of mortar color. It is to be feared that too much mortar color is being used in many cases to the detriment of the appearance of many buildings. To get the very best effects in brickwork, the mortar joints should be of such a nature that the individual bricks stand out in strong contrast



Hollow Wall Brick Cottage Erected by the Cleveland Builders' Supply and Brick Company at a Recent Exposition in Cleveland. Attractive, isn't it? It attracted many prospective home builders.



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ANACONDA AMERICAN BRASS LIMITED, NEW TORONTO, ONTARIO, CANADA

# ANACONDA

## BRASS PIPE

to them, and I invite your attention to the fact that if the joints are made too much like the brick in general appearance, the finest brick that you can use will have a muddy and unsatisfactory appearance. There are many things to consider about what joints shall be used. The joint is a simple looking thing, but when you come to consider it you have to think of its color, its texture, its width, and its cross-section, and each of these should be given some consideration to get the very best effect. When brick with a sufficient amount of color is available, many architects are now favoring natural colored joints. If you have a white or light-colored brick, use a strong dark color to get a contrast. It must be understood, of course, that it is impossible to lay down hard and fast rules for getting any desired effect in brickwork. Every case must be a law to itself.

I would also like to draw your attention to the possibilities of the Ideal wall which our association has been promoting for the past three years, as a possibility of promoting business for those of your members who build homes. I think the wall has been advertised enough so that every contractor is familiar with the principles of its construction, which is simply that of laying the bricks on edge instead of on their flat bed, thus making a hollow wall of solid brick. This rather simple change produces far-reaching results. In an 8-inch wall, for instance, it reduces the number of brick from  $12\frac{3}{4}$  per square foot to 9 brick per square foot; and mortar required, from .193 cubic foot per square foot to .08 per square foot. With the saving in labor and in the elimination of furring, the cost of the brickwork is reduced fully one-third. This is the claim we made shortly

after we started to promote the use of this wall, and this claim has been made good over and over again. I was talking to a man yesterday who built the first two Ideal wall homes in a suburb of Cleveland and he is now an enthusiast for this type of construction. We feel that the Ideal wall has not only removed another selling obstacle to the use of brick for homes, but it may well tend to increase the number of individual homes built. The prospective home owner is now being liberally educated as to the real cost of a house. He knows that the cost of a house is not the cost which is mentioned to him when he signs the contract to have one built, nor when he buys one already built. He knows that the cost of that house to him is going to include its upkeep cost for all the years until it is fully paid for, and he knows that even when the house is built with ordinary brickwork with a little higher price tag on it than a frame house, even in spite of this handicap the real cost of his house is going to be less than if he had built it of wood. Many home owners know this already and more are learning it every day. In other words, a brick house is a much better investment than a house of more temporary construction and a lot of people who have been afraid to begin to own a home thru fear that its upkeep cost might be excessive can now proceed with their plans with the assurance that by using brick their upkeep cost will be but nominal, and that by using brick construction of the Ideal type even the nominal first cost of their home can be kept down to about the same cost as even the cheapest of other types. This is not theory. It has been proved in practice all over the United States. You have at least one very successful Ideal wall house in Toledo. The Ideal wall is an assured success.



Here are a World of Suggestions for Home Planners—a Kitchen That Would Be a Daily Joy to the Mother of the Family; or a Maid Would Think Twice Before Leaving Such Pleasant Working Quarters. A good kitchen means good meals.



**FOLLOW UP TO PRODUCTION DEPT.**

No. 386

Due *FEB 14, 1922*

**Overdue Ten Days**

Reason: *No Material*

Signature: *L. Switzer*

Foreman must fill out, sign and return to Routing Dept. **AT ONCE**

**WAR DEPARTMENT**

**SELLING PROGRAM**

**FEBRUARY**

Feb. 13th—Q. M. SUPPLIES — Jeffersonville, Ind., Auction. For catalog write Q. M. S. O., 1819 West Pershing Road, Chicago, Ill.

Feb. 16th—Q. M. SUPPLIES — Columbus, Ohio, Auction. For catalog write Q. M. S. O., 1819 W. Pershing Road, Chicago, Ill.

Feb. 20th—Q. M. SUPPLIES — Philadelphia, Pa., Auction. For catalog write Q. M. S. O., 1st Ave. and 59th St., Brooklyn, N. Y.

Feb. 23rd—Q. M. SUPPLIES — Schenectady, N. Y., Auction. For catalog write Q. M. S. O., 1st Ave. and 59th St., Brooklyn, N. Y.

Feb. 27th—Q. M. SUPPLIES — Boston, Mass., Auction. For catalog write C. O., Q. M. Intermediate Depot, Boston, Mass.

**SEND FOR CATALOG**

Feb. 28th—ORD. SUPPLIES—Watertown, Mass., Auction. For catalog write C. O., Boston Dist. Ord. Salvage Board, Watertown Arsenal, Watertown, Mass.

**MARCH**

*(These sales dates subject to change)*

March 1st—Army Base, Port Newark, N. J. Sealed Bid. For proposal write Quartermaster General, Room 2024, Munitions Bldg., Washington, D. C.

March 6th—Q. M. SUPPLIES—Brooklyn, N. Y., Auction. For catalog write Q. M. S. O., 1st Ave. and 59th St., Brooklyn, N. Y.

*The Government reserves the right to reject any or all bids*

**SEND FOR CATALOG**

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War Department  
Booklet

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# WAR DEPARTMENT



***Judicial Construction of Building Contract Which Provides That Work Shall be Performed "Satisfaction of the Owner"***

By LESLIE CHILDS

**T**HE question of the legal effect of a stipulation in a building contract requiring the work "to be performed to the satisfaction of the owner," is one of interest to every contractor and builder. Such stipulations are frequently met with, have been the cause of many lawsuits, and as a general rule have been held valid by the courts. However, in enforcing compliance with such a stipulation the courts have, by the weight of authority, placed certain limitations upon the owner.

In the first place an owner cannot, by virtue of such a stipulation, arbitrarily refuse to accept work or make payment therefor, and thereby deprive a contractor of what is rightfully due him. In other words it seems the owner must base his dissatisfaction upon a reasonable cause, a cause that would impress a fair minded person of its justness, before he may defeat the right of the contractor to payment. This phase of the subject is illustrated in an interesting and instructive manner in *Erikson vs. Ward*, 266 Ill. 259, a decision that may be read with profit by every contractor and builder.

The readers of this magazine will doubtless recall an article published herein some time ago which discussed the question of the right of an architect to willfully, or without reasonable cause, withhold a certificate. It will be remembered that the architect has no such right, and in the event a certificate is wrongfully withheld the contractor has a remedy in court. So, it appears, as we have seen, much the same rule is applicable in situations where the contract contains a stipulation that the work shall be done to "the satisfaction of the owner."

**Contract Proving Work to be "to Satisfaction of Owner"**

In this case the contractor entered into a contract with the owner to erect a building for the agreed price of \$4,800. The contract, among other things, provided that the work was to be done "according to plans and specifications made by architect Walter, in a good, workmanlike, and substantial manner, to the satisfaction of the owner."

The work, it seems, was completed, and a dispute arose over the settlement which led to the instant action by the contractor to recover a balance alleged to be due of \$2,495. The trial in the lower court, which was before a jury, resulted in a judgment in favor of the contractor for \$2,000. The owner thereupon carried the case on appeal to the Supreme Court of Illinois.

Upon this appeal a number of questions arose and were disposed of, among them being the question of the effect on the right of the contractor to recover in the face of the dissatisfaction of the owner with the work. This in view of the clause in the contract which provided that the work should be done "to the satisfaction" of the owner. In passing upon, and construing this stipulation in the contract, the Illinois Supreme Court, in part, said:

"The question then arises: What is the proper legal construction of the language in the contract that the work was to be done to the satisfaction of the defendant? [Owner.] We cannot agree that this language in the contract authorized the defendant [owner] arbitrarily to defeat payment solely on the ground that the contract had not been performed to his satisfaction. The contract bound the contractor to furnish the materials and do the work in accordance with plans and specifications prepared by defendant's [owner's] architect and under the direction of said architect. It was not a simple agreement to construct a building that would be satisfactory to defendant. If it was in good faith constructed of material and in the manner specified in the plans and specifications prepared by the defendant's architect, defendant could not refuse payment merely because he was dissatisfied.

**The General Rule Stated**

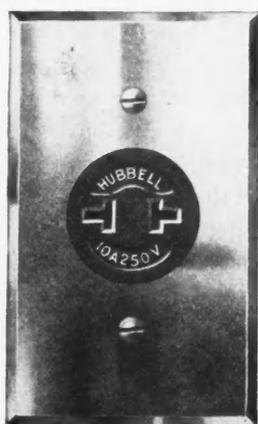
"We have held that where a building contract provided the work done or the material used shall be subject to the approval of the architect before payment is to be made, a capricious and unreasonable refusal of the architect to approve the work or material will not defeat payment. In such cases the architect has not the

# HUBBELL

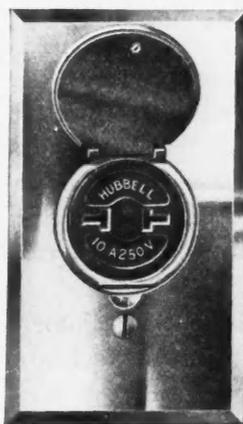
## COMPLETENESS



**DUPLEX**  
Convenience Outlet  
Body: 6257; Plate: 6258



**SINGLE**  
Convenience Outlet  
Body: 5547; Plate: 5548



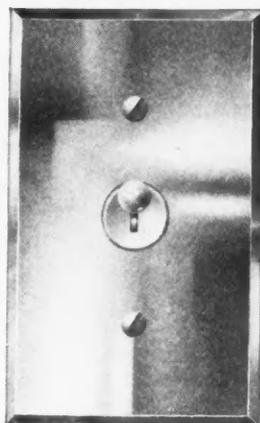
**HINGED COVER**  
Convenience Outlet  
Body: 5579; Plate: 5580



**ROUND**  
Convenience Outlet with  
Plate Assembled  
Plate: 2 3/4" 6282  
Plate: 3 1/2" 6283



**SURFACE**  
**TOGGLE SWITCH**  
Complete 8171



**TOGGLE**  
**FLUSH SWITCH**  
Body: 8141, Single Pole  
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Plate: 8401  
Also two-, three- and  
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tell the story to your prospects with full color illustrations, taking up every detail they would wish to know. These may be of some aid to you. We shall be glad to supply you with a complete set. Write us—or your distributor.

## CONVENIENCE OUTLETS *and* TOGGLE SWITCHES

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You can obtain Hubbell Toggle Switches, to include with Hubbell Convenience Outlets. The toggle switch has come into wide popularity because of its beauty, reliability, and simple operation.

Besides Convenience Outlets and Toggle Switches, we manufacture Pull, Key, Push, and Keyless Sockets, Porcelain Wall Receptacles, Disappearing Door (Flush-Door) Receptacles, Attachment Plugs, Plug Caps, and hundreds of other electrical wiring devices. Ask your distributor, or write us.

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# ELECTRICAL SPECIALTIES

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right to arbitrarily withhold his approval, if, acting reasonably and in good faith, he ought to have been satisfied with the work or material and have approved the same. \* \* \*

After the foregoing statement of the general rule in situations of this kind, in relation to building contract, the court reviews a number of authorities in support of it. In the course of this review the court quoted from *Handy vs. Bliss*, 204 Mass. 513, where in reasoning upon the justness of the rule it was, in part, said:

"The erection of a building upon real estate ordinarily confers a benefit upon the owner, and he should not be permitted to escape payment for it on account of a personal idiosyncrasy. Indeed, under the law of Massachusetts this question is usually of little practical application to contracts for buildings upon real estate; for, if the contract is not performed by reason of the failure of the owner to be satisfied with that which ought to satisfy him, there can be a recovery upon a *quatum meruit*."

"The instructions given on behalf of plaintiff [contractor] were in harmony with the law laid down in

the cases cited, which, in our judgment, announce a just and proper rule. \* \* \*"

After a discussion of other points, not material to the subject here being considered, the Illinois Supreme Court concluded by affirming the judgment rendered in the lower court in favor of the contractor.

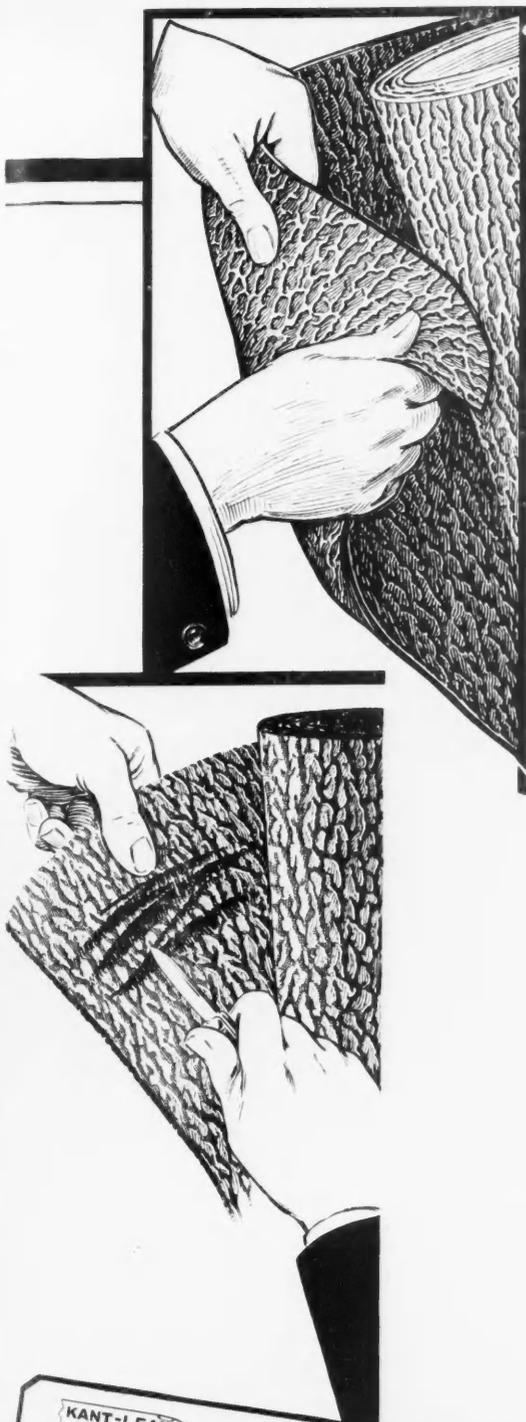
### Conclusion

As noted, at the beginning of this article, it is believed that the rule announced in the foregoing Illinois decision fairly represents the reasoning followed by the weight of authority upon the point decided. This rule seems eminently just and fair for it would indeed in many cases work a hardship if an owner were permitted to defeat recovery by the contractor, after the work had been substantially performed, merely on the ground that the work did not satisfy his (the owner's) fancy. As we have seen by the weight of authority, this is not the law in relation to building contracts.

In this connection, as pointed out by the court in the foregoing decision, the reasons given for denying an owner, under a "satisfaction" contract, the right to arbitrarily defeat recovery by the contractor are in effect the same as those that preclude the defeat of payment when this "satisfaction" clause relates to the architect.



Exterior Design Is Important, But After All It Is the Home Interior That We Live in, and It Is on the Inside—the Furnishings and the Decorations—that the Home Planner's Best Thought Is Given Today. This delightful living room is full of good suggestions.



## Bend it! Twist it! Then scratch its back!

You can prove the quality of Genasco Roll Roofing for yourself—its tough, pliable, rugged construction—its heavy waterproofing through and through.

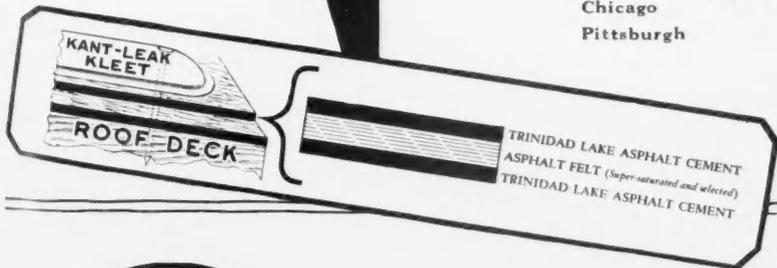
Bend it. Twist it. Try to pull it apart. There's no cracking or splitting—no "blistering" or sealing of the surface.

Then scratch its back. You can see the thick undercoating of Trinidad Lake Asphalt Cement—the famous "Sealbac" feature that adds years to the life of a roof.

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# CORRESPONDENCE

*Questions Answered—  
Ideas Exchanged*

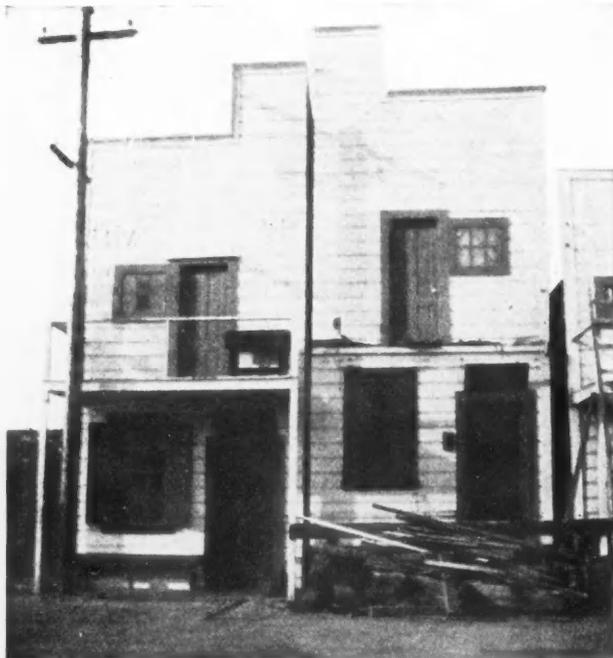


Our Readers Are Requested and Urged to Make Free Use of These Columns for the Discussion of all Questions of Interest to Architects and Builders

## Equal Division—Chinese Style

To the Editor: Salinas, Calif.  
I am sending you a photo of a job that I did a short while ago. You will note that the building is cut in half and one part raised about two feet above the other.

The cause is this: Two Chinese tongs were at war with each other. They owned the house together, but one of the tongs owned all of the lot. When they fell out neither side would sell to the other. The court ruled that the tong



"A House Divided Against Itself Shall Fall" Unless Proper Precautions Are Taken. A job undertaken by Mr. Grau when the tenants, two Chinese tongs, decided to fall out with each other.

owning one-half of the house but no lot should move the building off the other tong's lot.

So the fun started. The roof had to be supported, then the ridge boards were pulled off and the rafters sawed apart and so on down to the foundation until the two buildings were parted.

Can anybody beat this for equal division?

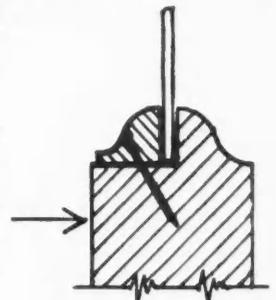
JOHN GRAU, General Carpenter Work.

## Which Side is Outside?

To the Editor: Watertown, S. D.  
I have had a good deal of argument about outside doors. The question is "which side should be the outside of a glazed door?" I think it should be the side indicated by the arrow.

I think the only reason anyone has for putting the solid moulded side of the door out is "so the thief cannot take the glass out and enter the house." I would like to hear the opinion of other builders.

O. B. BUCKINGHAM, Builder.



Which Side of This Door Should Be Outside? Mr. Buckingham wants to know.

## Back Band on Half Casing

To the Editor: Flandreau, S. Dak.  
In the August AMERICAN BUILDER Mr. B. D. Blom wanted to know whether it is proper to continue back band around on half casing. I think it is the proper way to do when you use back band.

In casing doors and windows when the casing comes next to a corner or partition or where there is not enough room for full size casing and back band, I just rip off the casing to fill up the space and it doesn't need to fit next to the corners. Then I take the back band and rip off the back part of it and nail the face of it on the casing, fitting it to the corner and miter the top end. It makes a neat job and it looks as if the whole back band was on.

JAMES WHEELER.

## Frieze Cuts—Change of Pitch

To the Editor:  
Mr. Crawford asked about a rule for making cuts of frieze where there is a change of pitch. This cut is the same as for rafters on a two-pitch roof. I have never seen a practical method to find this cut. I have had occasion to use a rule for such cuts but I usually solved the problem at the drawing board. That master of the steel square, Mr. A. W. Woods, gives a solution for this in the March, 1916, number, but is not convenient because it requires two



## Why it Pays

WHICH would you rather spread — warm butter or cold butter?

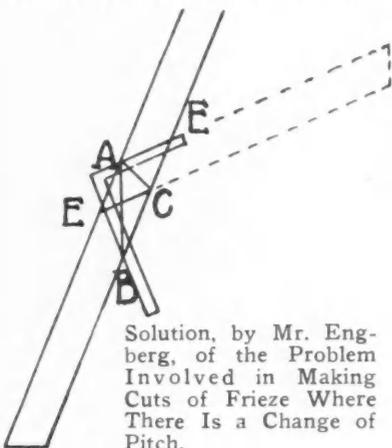
It's the same with lime.

An easy spreading lime enables you to cover a greater surface more quickly and reduce costs.

That's why builders and plasterers prefer the lime that "spreads like warm butter".

The Kelley Island Lime & Transport Co.  
World's Largest Producer of Lime  
Leader-News Building  
CLEVELAND

squares and also either a drawing of the rafters in proper pitch or laying out the rafters. Mr. J. C. Becker in the September number suggests making a layout of the rafters and get the cut in that way. If I had to do this on the

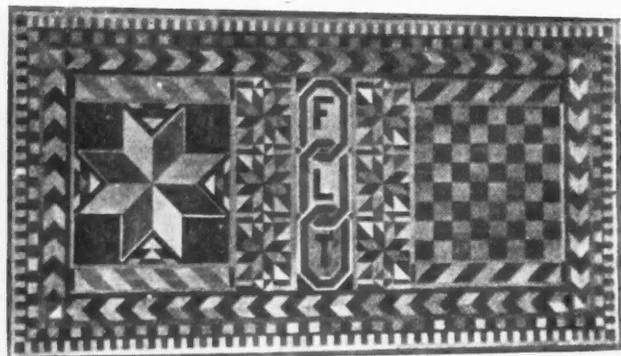


Solution, by Mr. Engberg, of the Problem Involved in Making Cuts of Frieze Where There Is a Change of Pitch.

marking on. Draw AC, which is line for required cut. J. A. ENGBERG.

Good Example of Inlay

To the Editor: Overton, Neb. I am a reader of your magazine and often see pictures of fancy table tops so am sending you a photograph of a table which I made and if you care to show it in your magazine



1600 Pieces of Rare Woods in This Ornate Inlaid Table Top Made by Mr. Anderson.

I will be pleased. This table is 28 by 48 and has 1,600 pieces in the top part.

A. G. ANDERSON.

Who Could Resist This?

To the Editor: Morris, Ill. I am thinking that I would like to get some ideas from my brother carpenters to install in my own home. I know that the carpenter has ideas of his own and if I could get some of them and bunch them together I may be able to get something useful to the housewife who has her own work to do and would be a help to her. This is what I would like to have you put into the correspondence column:

Wanted An Idea

To the Editor: Morris, Ill., Box 177. I am contemplating building a bungalow and ask my brother carpenters for ideas to install in my kitchen. I want a necessity to be for the convenience of women and used in a kitchen. Let us get our ideas together and see what we carpenters can do.

H. A. TAYLOR.

Some Good Questions

To the Editor: Otsego, Mich.

I wish to find out how to clean terra cotta. This is a bank front and has been washed with soap and water; also washing powder. Will acid injure the glaze on the terra cotta?

I also would like to know how to refill between tile on tile floors. Would white portland cement be suitable instead of stucco? These floors are deteriorating, perhaps from floor compounds.

What is the most suitable mortar to lay smooth pressed brick in fireplaces and hearths? Mortar with cement cleans off hard; pure lime mortar cleans off very well, but will not attain as much permanency in a brick hearth.

SCOTT HEALY, Contractor.

Wants to Build Swinging Couch

To the Editor: Bridgewater, Va.

I have been a reader of the best building paper published, the AMERICAN BUILDER, for something like ten years. I would like to have some brother builder give thru the magazine a bill of lumber for making a porch couch. I wish to make one as I prefer one of wood to buying one of steel. This is for a swinging couch.

JACOB T. CLICK.

How Do You Lay Out Brick Job and Determine Courses?

To the Editor: Detroit, Mich.

I want to ask some of the bricklayers who read the AMERICAN BUILDER to give me information about the proper way to lay out a brick job and the method of getting the number of brick courses to work in with the door and window heights. I am interested in an ordinary brick house as an example.

J. THOMPSON.

Top Cut of Porch Rafter

To the Editor: Victoria, B. C.

I would like to ask some of my brother carpenters who are readers of the AMERICAN BUILDER how to obtain the

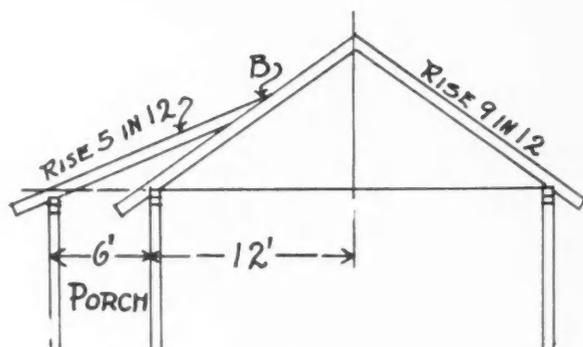


Diagram Showing Porch Rafter Whose Cut and Length Mr. Cooby Wishes to Determine, Using Steel Square.

cut at B, top end of porch rafter, which rests against the top of the main roof rafter.

I would also like to know how they find the length of this board rafter. I would like to know how this problem can be solved with steel square.

WM. COOBY.



# Building Experts Wanted

## Can YOU Handle a Big Job?

WHAT you make out of your trade or business depends upon what you can deliver. If you are a good mechanic you draw the regular wages. If you are taking work on contract you get the class of jobs that you know how to handle. A good living is yours in either case—but are you satisfied with that?

If you are a workman why not become a foreman or superintendent? It's easier work, and there's more money in it—you know that. If you are a small contractor, why not get in on the big, profitable jobs?

What fits a man to become a foreman or a superintendent? Why do some men become bosses while others keep on at the bench?

There's no secret about it—and it isn't "pull" or "luck". It is simply because these men know how to plan, how to estimate costs, how to direct construction—they use their heads instead of their hands.

### Use Your Spare Time To Make Yourself Worth More Money

Stay on your job. Draw your regular pay. But put in a few hours a week of your spare time to pleasant, fascinating home study under the direction of experts of the Chicago Technical College which for more than 20 years has been known as America's Greatest School for Builders.

These experts will give you practical training in a way that will be easy for you to understand. From the very start you can apply your increased knowledge to your daily work—you will be a more efficient workman—have a better understanding of how things should be done—and, almost before you realize it, you will have the same expert training that has put thousands of other men in big pay positions.

To put in spare time learning more about your trade or business is like depositing money in the bank.

#### Building Boom Means Thousands of Big Jobs for Trained Men

Right now there is the biggest building boom on that this country has ever known. Thousands of men will be needed to boss the work on building of every kind, and they are the men who will make the most money as foremen, superintendents and contractors. Some of them have come up from the ranks after years of hard work. Others took the short way—they trained under the Chicago "Tech" experts and saved themselves all that time and labor—and got quickly into the big pay class. There, for instance, is S. J. Dickerson, of Rhode Island, who writes that under our instruction he learned more about building in a few months than in all his life before and that

his salary has been increased from \$50 a month to \$150 a week.

And R. S. Carey, of Illinois, writes us that his salary is now four times as much as it was before he took Chicago "Tech" training. P. Marchand, of Louisiana, writes that ten days after completing his course, his income was increased 100 per cent. J. D. Simpson of South Carolina, says that the training he received from Chicago Tech enabled him, as foreman and general plan reader, to handle the construction of a \$175,000.00 memorial building and a \$250,000.00 school building with ease.

#### You Have the Same Chance

You can quickly get the same expert training in plan reading, estimating labor and material costs and all the ins and outs of the building business that has put Dickerson and thousands of other ambitious men to the front.

No better time than right now, while wages are high and there is plenty of work ahead, to prepare for a more important, bigger paying job. Or if you are contracting in a small way, you can get the training that will enable you to take on larger propositions.

At least find out about this training which has put so many men ahead. All you need do, to get the facts, is to send the coupon.

### FREE 2 Books and Blue Prints

Your request brings our two books, one on "How to Read Blue Prints," containing a lesson in Plan Reading and with it we send blue prints, drawings, etc. With this lesson you can test yourself. See how easily you can learn by our method before you decide about enrolling. The other explains the Chicago "Tech" method of training by mail.

Just sign and mail the coupon and these books will go to you by return mail.



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Please send me your Free Books and Blue Prints for men in the Building Trades. Send postpaid to my address below.

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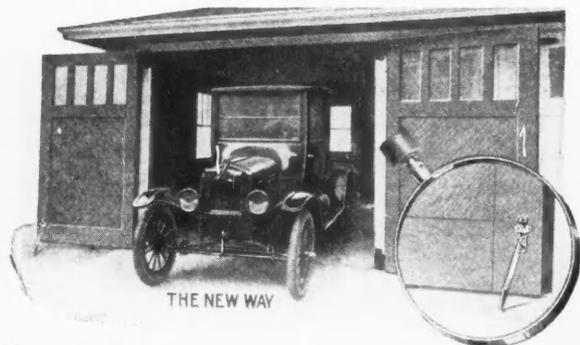


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### Ingenious Garage Door Stopper

A NEW device, simply made of brass and steel in a variety of finishes, does away with the use of wedges and other makeshift stoppers for swinging garage doors. It consists of three parts—bracket, lever and shoe, and is easily fastened with screws to the inner surface of the door near the bottom and the outside edge.

In operation, the blocking lever is snapped up or down with a light movement of a person's foot. When up it is not



A Convenient Stopper for a Garage Door Drops Down and Grips the Driveway. A simple, inexpensive idea that guards against dented fenders or more serious damage.

in use, and is out of the way. When down, the shoe or point of the blocking lever grips the dirt, gravel or concrete driveway. The door is held back securely without pressure and without any forced springing of the hinges.

Aside from its apparent usefulness in leaving a clear doorway for the car in windy weather, the door stopper is also useful in the case of doors given to idling on their hinges. It holds them back out of the way, to permit the owner of a car to have proper light and air when engaged in cleaning or repairing work in the garage.

### Windows for Porch or Sun Parlor

SOME sun parlors are anything but sunny and are rather unparlorlike when the window sashes permit too free a circulation of air. And yet the conversion from a closed room to an open one must be always possible.

Weather-tight windows are secured thru one appliance by the extension of the sash outside the top of the storm threshold. This stops wind and rain entering the joint between the sash and the threshold. The threshold itself is equipped with a track, along whose lip the sash is fitted

to slide snugly. The sash is grooved along the bottom, to stop moisture seeping thru by capillary attraction and the whole, with the air insulating space formed by the conjunction of the sash, the track and the threshold, makes a real barrier against the entrance of wind and water. Yet the windows open and close, casement style, with the greatest ease imaginable.

### New Self-Furring Ceiling Plates

THE custom has been to use wood furring strips in erecting ceiling plates, but these new patterns are especially designed to eliminate these wood strips and the consequent extra expense and time in erecting. The plate shown in Fig. 1 is not only self-furring, but adjustable, so that in case of variation of spacing between joists, the plates may meet and lap on joists. The small beads running crosswise between the oblong panels make graduated lapping possible so that a variation of two inches in length is allowed when erecting.

Both these plates (Figs. 1 and 2) have large beads running lengthwise of plate, which gives the necessary rigidity without furring strips. The No. 1200 plate is made 24x98 inches long to allow for 2-inch lap where necessary. The

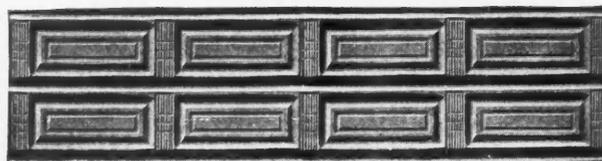


Fig. 1. Self-furring Ceiling Plate. Size 24 x 98 inches.

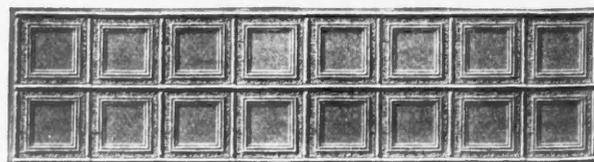


Fig. 2. Self-furring Ceiling Plate. Size 24 x 96 inches.

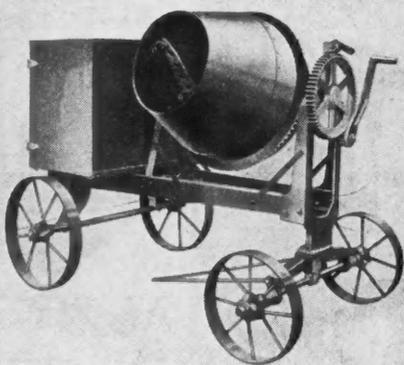
extreme length and width of plates makes their erection so easy that they are very popular for show rooms, warehouses, auditoriums or other places where large surfaces are to be covered and economy is an important factor. They may be erected without border, moulding or filler, altho the manufacturers furnish appropriate borders when desired.

### Makes Paint Hold to Galvanized Iron

EVER since the introduction of galvanized iron (zinc-coated iron), the painter has been confronted with the problem of making paint adhere to it. The illustration is of a building that has suffered.

After considerable experimenting and investigation a new

# STEWART CONCRETE MIXERS



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SQUARE

SOLD  
ON THE  
SQUARE

## WRITE!

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1923  
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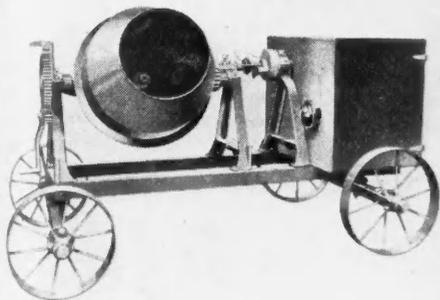
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If you don't find what you are looking for in our advertising pages, write us. We will be pleased to furnish you with lists of reliable manufacturers of any line in the United States. This is only one service we offer free of charge to subscribers.

AMERICAN BUILDER  
1827 Prairie Ave., Chicago

chemical solution has been developed that is producing excellent results. It is a clear, thin, non-volatile liquid of such chemical properties that when applied to the galvanized iron it changes the outer surface into a stony substance, which cannot be washed or chipped off and to which the paint strongly attaches itself.

The new chemical contains no oils, varnishes, pigments or volatile solvents; in fact, it is not a paint in any sense of the word. Being a thin, non-volatile liquid, its covering properties greatly exceed that of a paint or varnish. When applied with a brush, one gallon will cover from 1,500 to 2,000 square feet.



**No More Need to Feel Discouraged Over the Non-Adhesiveness of Paint Applied to Galvanized Iron. A newly invented paint combines with the galvanized surface and gives a non-peeling finish resembling stone.**

As a gallon will cover such a large area, the cost per square foot of material is very small, and as it requires no "brushing out" to produce a satisfactory coat, the time taken to apply the chemical is much less than that required to apply a coat of paint.

After the chemical treatment the surface produced on the zinc or galvanized iron closely resembles stone. It is firmly attached to the surface of the metal and slightly absorbs the first coat of paint. After applying this chemical the surface can be treated as if it were an absorbent stone, and is not affected by baking temperatures.



### A New Aluminum Line Level

**A** NEW aluminum line level has just been placed on the market.

The extreme lightness of this little level eliminates any sag in the line. It weighs but one-half ounce and is 3 inches in length, being made from  $\frac{3}{8}$ -inch hexagonal stock so that it may be used effectively as a surface level. The level may be conveniently carried in the pocket.



**Useful New Hexagonal Pocket Level of Aluminum with a Wide Range of Usefulness.**

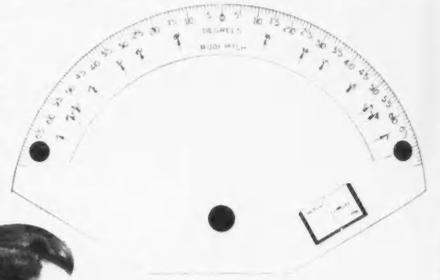
A luminous level glass with a yellowish fluid is used for the vial. The slots on the protruding pieces are carefully constructed so that the part of the slot which comes in contact with the line is true in relation to the level. The design of the slots prevents the level from dropping off the line when in use. Carpenters, masons and contractors will find this line level especially useful in laying foundations, tile pipe, cement and brick walls, working ditches, determining grades, building roads, etc.



### New Drafting Instrument Out

**A**RCHITECTURAL and mechanical draftsmen will be interested in learning of a new drawing instrument recently patented. The photograph illustrates it in use.

It is adapted for drawing arcs of circles, with the pointer pivot as the center, and right or diagonal lines, parallel or



**New Device Is Attachable to Any Side of the Drawing Board and Is Useful for Charting, Plotting and Drafting Generally. Above, the Method of Using It to Determine Roof Pitches.**

converging, making it very convenient for charting, plotting or ordinary drafting. It is well constructed and will not get out of adjustment. Its operation is readily understood.

The instrument is easily adjusted to all four sides of the board. As seen by the illustration the protractor is slidable on a cross rod clamped to the board. The round stem of the protractor carries a scale endwise to receive the stem.



### Architects Assist Chicago Home Show

**A**N architectural committee representing the architects of Chicago has been appointed by Alfred Granger, president of the Illinois Chapter of the American Institute of Architects, to cooperate with the Chicago Real Estate Board in staging Chicago's Third Annual "Own Your Home" Exposition at the Coliseum, March 24 to 31, 1923, under the auspices of the Chicago Real Estate Board, Robert C. Spencer, Jr., has been named chairman of this committee and the following members appointed: R. S. DeGolyer, Charles H. Hammond, J. C. Llewellyn, Elmo C. Lowe, F. T. Puckey. This committee, in cooperation with another committee to be appointed will submit, for the consideration of the Committee of Administration of the Exposition plans for a five-room bungalow which will be built in the center of the Coliseum floor as the feature attraction of the Exposition.

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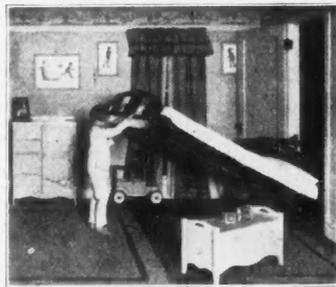
Residence of H. W. Krause, 3322 Guilford Avenue, Indianapolis, Indiana

# Making Room with a Murphy!

The Murphy In-a-Dor Bed solves one of the real problems in planning a roomy small home. It provides that extra room without extra building cost.

Just for example in the house shown here—the kiddies' play room becomes a bed room by night. You may apply this same idea to a sun room, den, library or sewing room by the simple installation of a Murphy In-a-Dor Bed.

The Murphy In-a-Dor Bed is *not* a folding



Swings Through a 3-foot Door

bed—but a safe, simple scientifically constructed bed—approved by many leading architects and building authorities. They come in plain or period designs—wood finish if desired—full size or twin types. Murphy Beds offer the very utmost in comfort and beauty.

Our Service Department is always at the service of architects to assist in your layout problems. May we send you full information and examples of Murphy In-a-Dor installations?

THE MURPHY DOOR BED COMPANY  
Offices in all Principal Cities

## The MURPHY IN-A-DOR BED

There is only one "In-A-Dor"

Bed—THE MURPHY

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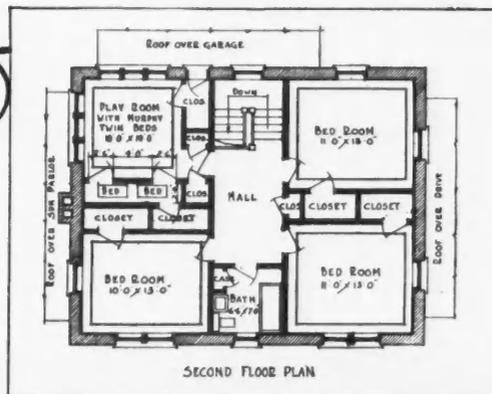
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- 1534 Blake Street, Denver
- 112 Kresge Bldg., Detroit, Mich.
- 205 O'Connor St., Ottawa, Can.
- Crocker Bldg., San Francisco

The MURPHY CABINET IRONING BOARD

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is meeting with enthusiastic approval. Ask about it.



# OUT ON THE JOB

*What Builders Are Finding Good*

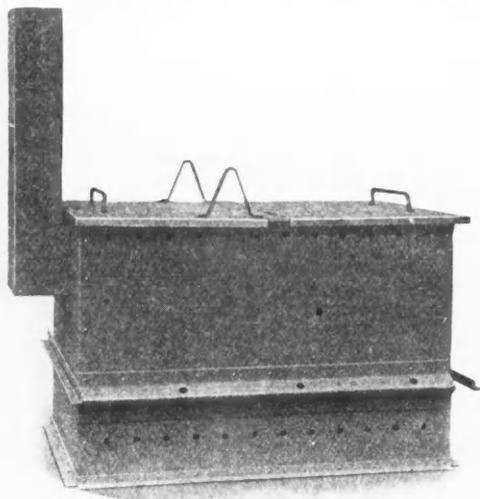


**EDITOR'S NOTE:** The AMERICAN BUILDER does not accept payment in any form for what appears in our reading pages. In order to avoid any appearance of doing so, we omit the name of the maker or seller of any article we describe. This information is, however, kept on file and will be mailed to anyone interested; address AMERICAN BUILDER Information Exchange, 1827 Prairie Ave., Chicago.

## New Continuous Roofing Kettle

**A**FTER being designed and tested under actual working conditions a new 100 gallon continuous roofing kettle has been perfected possessing a number of attractive features. It has demonstrated it will handle 1,000 pounds of asphalt in one hour and a half.

The asphalt is ready for the roof within ten minutes after this kettle is started. A supply of hot asphalt is available at all times and less than ten pounds of fuel are required for each 100 pounds of asphalt melted.

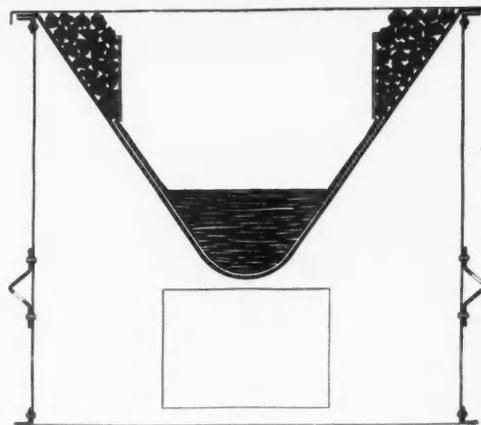


**New Continuous Roofing Kettle Handles 1,000 Pounds of Asphalt in 1½ Hours. It is ready for roof 10 minutes after kettle is started.**

The continuous feature of the kettle, secured by the arrangement of the pockets for the cold asphalt, where the material is warmed and from which it flows into the bottom of the tank, insures a supply of hot asphalt as long as the fire is kept burning. There is no need for waiting for hot asphalt in the midst of a job.

Another economical feature is it does not require a kettle man to be on the job two or three hours in advance of the roofing crew.

The kettle is 38½ inches wide by 54 inches long. It is 36 inches high. The stack is removable, and requires no bolts or rivets for fastening and the machine is easily shipped from job to job.



**Cross Section Line Drawing of the Kettle Which Enables Contractor to have a supply of hot asphalt available at all times.**

## New Trailer-Mixer with Rubber Tires

**A** NEW trailer-mixer equipped with automobile wheels and pneumatic tires is shown in the photograph. It is built in two styles, a four-wheel machine and a two-wheel machine.

Both are being received with favor in all sections of the country. The smaller is ideally adapted for contractors handling a number of smaller and medium-sized jobs such as foundations, sidewalks, curbs and gutters, garage floors, culverts, tanks and silos. The larger is being successfully used by a large number of contractors on their road work.

They mix mortar and plaster as well as concrete. The only difference in the two is the four-wheel has a larger capacity. The engines can be used to operate other machines.

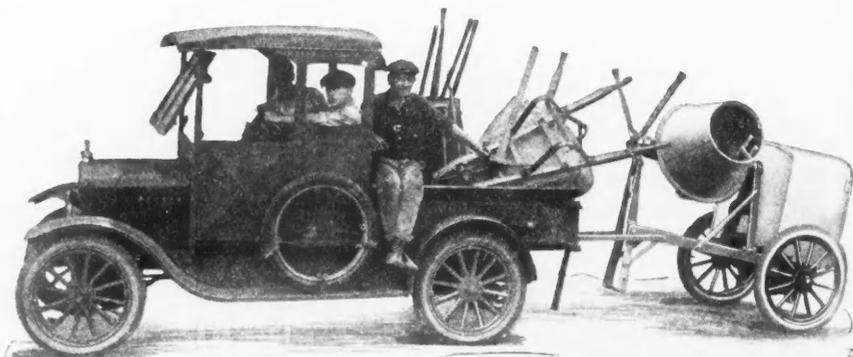
In the mixer in the photograph, in place of front wheels is a foot or support to hold the machine level when mixing. When ready to move, the contractor loads his equipment in his truck or auto, attaches the trailer and instead of traveling a careful but slow five miles an hour may drive safely at thirty.

The tilting-drum of the two-wheel machine has a capacity of 3 to 4 cubic feet of unmixed material with a capacity up to 25 yards a day. It weighs 985 pounds, is operated by a 2 horsepower hopper cooled motor and the size over all is 3 feet 6 inches by 5 feet 6 inches. The four-wheel machine has a capacity up to 7 cubic feet of unmixed materials and weighs 1,760 pounds.



**T**HE Austin Machinery Corporation has consolidated the main sales office at Chicago with its engineering and production departments at 35 Dorr Street, Toledo, Ohio.

A branch sales office will be maintained at Chicago, Railway Exchange Building, for the convenience of contractors in and near Chicago.



**This New Trailer-Mixer with Rubber Tires, Mixing Mortar and Plaster as Well as Concrete, Will Enable Contractors to go from Job to Job More Rapidly.**



## One Man Instead of Three 10 Minutes Instead of 85

In ten minutes one man—a mason—can completely install a Fenestra Basement Window. It takes three men—a mason, a carpenter and a painter—a total of an hour and twenty-five minutes to install a wooden window of the same size. An hour and fifteen minutes saved *on every window!*

It's easy to see how this saving is made. To install a Fenestra Basement Window a mason sets the window on the sill and lays up the wall on either side, using the extending leg of the window jamb as an anchor. Then he grouts in the sill, trowels the mortar flush and the job is done. Total time—ten minutes.

Compare this simple operation to the steps necessary to install a wooden window. 1. A mason sets the frame, plumbs it, braces it, and builds the wall around it. Thirty minutes. 2. A carpenter planes the sash, mortises it out, mortises the frame, attaches the hinges, mortises for the locks and attaches them. Forty-five minutes. 3. A painter gives the sash and frame one priming coat. Ten minutes. Total time—one hour and twenty-five minutes.

An hour and fifteen minutes saved *on every window!*

Fenestra Basement windows are made in four standard sizes. Ask your building supply or lumber dealer to show them to you.

DETROIT STEEL PRODUCTS COMPANY

*The World's Largest Manufacturers of Steel Windows*

2102 East Grand Boulevard

Detroit, Michigan

# Fenestra

STEEL WINDOW WALLS

### Fenestra Advantages for the Owner

- Admit 40% to 80% more light
- Last as long as the building
- Provide better ventilation
- Fire resisting
- Easy to operate—never warp nor stick
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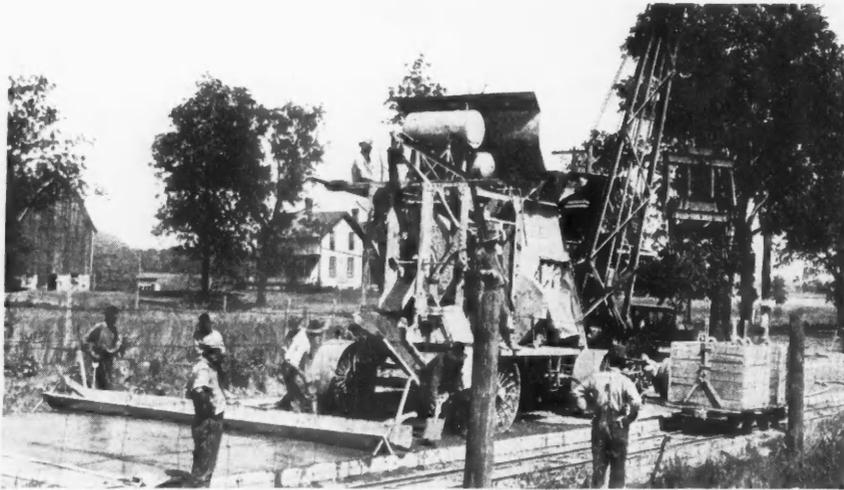
Detroit Steel Products Co., **MAIL NOW!**  
2102 East Grand Blvd., Detroit, Mich.

Gentlemen:

Send me your book showing standard types of Fenestra Basement Windows. No obligation incurred.

Name \_\_\_\_\_

Address \_\_\_\_\_



The Crawler Tractor Crane Furnishes Traction for the Mixer. A constant distance was maintained between these two pieces of equipment. Twenty-five to 30 batches were run thru per hour, and 800 to 1000 feet of roadway completed each day.

### Quick Service Method of Building Roads

RECENTLY a Milwaukee, Wis., contractor planned and used a mechanical plant of exceptional proportions where machinery replaced men, to a very large degree. One of the first requirements was a mixer with a capacity which should be at least twice the size of the customary paving mixer. Then the surrounding of this unit with a proper hauling and handling equipment to keep the mixer supplied with materials was an urgent need.

In the road job under construction there was  $6\frac{1}{2}$  miles of 16-foot pavement, 6 inches thick at the sides and 8 inches thick at the center, to be paved. Expansion joints of  $1\frac{1}{4}$ -inch bituminous filler were installed every 50 feet. The sub-grade was prepared well in advance of the pouring of the concrete and the forms were set to line and grade.

At a station on the railway line near the scene of operations a large material yard was laid out. Unloading of cars of material was performed by using a homemade locomotive crane which consisted of a steam shovel with boom and clamshell attachment. This machine was mounted on a flat car and was moved to desired locations by chains connected from the axle of the shovel to the axle of the car. In the yard were two tracks about 400 feet in length with 20-foot centers. Cars of materials were placed on one of these tracks and on the other the sand and stone hoppers on railroads cars



Dump-bottom Batch Boxes Were Hauled in 15-car Trains to the Mixer, Where the Crane Bridle Picked Them Up and a Tug of the Releasing Line Dumped the Contents Into the Charging Hopper.

with the crane operating between them on the same track. It proved very successful to place the storage bins on flat cars so that they could be moved to any point where the aggregate was being unloaded. Usually in yards of this nature it has been found very difficult for a switch engine to do sufficient switching in order to make possible the unloading of 500 cubic yards of material a day without rehandling large quantities. A 2-foot industrial railroad connected the unloading yard with the mixer and was situated between the two unloading tracks. When there was no opportunity to load industrial cars with material for the mixer the crane unloaded from the cars into stock piles paralleling the crane track. A stationary cement hopper was situated between the standard gauge tracks and over the industrial road.

The industrial cars were operated in trains pulled by three or six-ton gasoline locomotives. Each car carried a batch box with a capacity of about 55 cubic feet. When the locomotives double-headed they were handled in 15-car trains. At the loading station the proper quantity of stone was first placed at the outlet of the hopper. This pipe had a gate at the top and one at the bottom. Upon closing the bottom gate and opening the upper gate the cement is allowed to fill the pipe which held 5 cubic feet. When full the upper gate is closed and the lower gate is opened and the cement passes into the batch box underneath. This action was repeated for each batch until the proper amount of cement was added to the rock. Loss of cement by wind was eliminated by a piece of canvas which was attached to the bottom of the cylindrical pipe and to a hoop on the other. This piece of canvas was lowered into the car when filling and raised when the car was moved on. Then the proper amount of sand was added at the sand hopper.

The boxes were designed with two bottom dump doors and when arrived at the mixer were picked up by a two drum power crane. Channels and I-beams forming an iron and steel bridle made possible the picking up of the boxes by irons attached to the door, singing them into place and releasing of this line and the picking up of the line attached to the side of the box caused the contents to be dumped into the charging hopper of the mixer. The crane operated on caterpillars moving under its own power furnished the traction for the mixer. A constant distance was maintained between the two pieces of equipment by attaching the mixer rigidly to the crane and the necessity of raising or lowering the boom was overcome. Twenty-five to thirty batches were run thru the mixer every hour.

The mixer was 16 feet in height, equipped with 4-foot wheels with 20-inch tread and has a drum 5 feet 8 inches in diameter and 4 feet 10 inches long. The height of discharge above the ground was 6 feet.

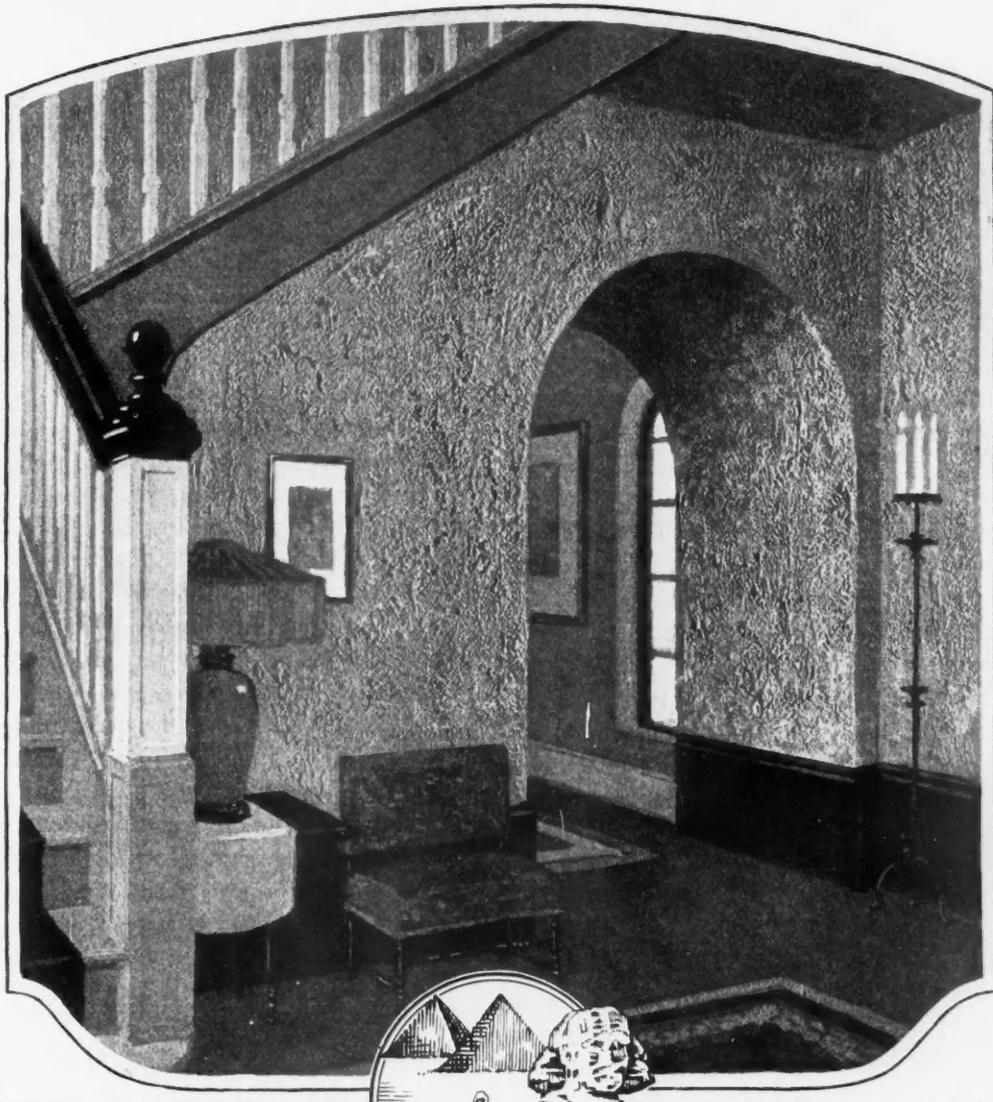
With this equipment 800 to 1,000 feet of road a day or a mile of pavement every working week of six days was completed.

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## Walls That Endure

*Lasting as  
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**G**REAT THINGS come when the world needs them most. The development and perfection of *Kellastone Super-Plaster* for interior walls, marks a new chapter in construction history. It is a highly fibrous flexible wall surfacing, as light and tough as hardwood. It is mixed and applied like ordinary plasters, but when set possesses tremendous strength that prevents cracking or breakage occasioned by strains or blows encountered in customary usage.

*Send for full information and prices.*

# **KELLASTONE**

IMPERISHABLE STUCCO

STUCCO ~ SUPER-PLASTER ~ FLOORING

*National Kellastone Company ~ Chicago ~ New York*

**WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER**

## From a Dirty Back Street to Beautiful "Lantern Lane"

(Continued from page 113.)

with white and buff stucco, decorated with colored tile insets. In the center of the street is a concrete garden walk, trimmed with red brick, and in front of the houses are well-kept lawns with shrubs and evergreens. At the end of the walk is a high gate with a trellis above it. At the entrance are two posts of red brick, iron gates of artistic design, and on the top of each post sits a lantern.

At the doors of every house, both back and front, are lanterns, and at night when all of these are illuminated, the atmosphere of "Lantern Lane" is indeed cheerful and inviting. Ornamental iron balconies, iron hand railings, and bright brass and copper trimmings, enhance the attractiveness of the fronts to a high degree. Odd as it may seem, the doors and shutters are painted bright red, yellow, blue and green, but the color scheme has been so carefully planned that the effect of the bright colors is delightful.

The interior of each house is as follows: On the first floor is a combination living and dining room, with a kitchenette in the rear. On the second floor are two bed-rooms with a new-style bath-room between them. The cellar is smoothly cemented, and may be used as a "den," or storage room, if desired. At the rear of each row of houses is a service court which affords plenty of air and light.

There is a central plant for the supply of heat and hot water, and there is a janitor and maid on the premises. The group of houses is really a form of apartments, only each tenant has the advantages of living in a private house having two floors and a basement.

Does it pay as a business proposition to beautify the little back streets of a great city? Here are the figures which will answer that question? When Mr. Coons bought Uber Street the houses were renting for \$12 per month, and in not a few instances, it was hard to collect that modest sum. Today, the houses in "Lantern Lane" are bringing from \$100 to \$120 per month, and practically all of them have been taken by a desirable class of people some time before the operation had been completed. The great success of this venture has prompted Mr. Coons to build another "village" on a more elaborate scale in an exclusive residential section of the city. This project calls for an "English Village" to be built in a large area south of Walnut Street and east of Twenty-second Street. The new group of houses are expected to be finished by next autumn.

In Philadelphia a number of other back streets are now being reconstructed along the same lines as "Lantern Lane," and it is hoped that this idea will be extended to all of the courts and alleys which for many years have not been a credit to the good city of Philadelphia.

## Publicity for Builders

(Continued from page 91.)

many others have been built outside New Orleans, in surrounding territory, as a result of the stimulus received from those pages. Exactly how many new homes have been erected in New Orleans and vicinity from the plans shown in the Times-Picayune's Home Builders' pages, probably never will be known. Many contractors can build houses from a view of the design and floor plans, without having the blueprint plans and specifications, and a number of such homes recently have been found in New Orleans built from the plans shown in the newspaper.

Another indication of the influence of these pages on home building in New Orleans is obtained from the statistics of permits issued. During the first three months of 1921 permits for 22 dwellings were issued in New Orleans, but in the first three months of 1922 more than 670 permits for dwellings were issued in this city. Today in all sections of the city there can be seen new homes completed and others in course of construction, and the same evidences of the value of Home Builders' pages in the daily press can be found in every other community in the country where these pages have been conducted by some daily newspaper.

Experts say that the homes recently built in various cities from plans shown or furnished by the newspapers' services, are of better type than many of the smaller houses erected in former years. Generally the new dwellings are erected in conformity with sound building principles, making for greater durability, convenience, comfort and attractiveness.

The influence of these Home Builders' pages in the daily newspapers upon the progress, welfare and prosperity of local communities cannot fail to prove up large in the scale of betterment. Good building makes attractive cities; home owners make the most loyal and prosperous class of citizens. And the daily newspapers are helping to make happy and contented home owners out of thousands of men and women, who heretofore have resentfully endured the discomforts, inconveniences and high rent burdens of tenants.

And these accomplishments could not have been possible without the support, co-operation and active interest of the dealer, contractor and all others in the building industry.



## Japan Best Lumber Buyer

JAPAN is the best foreign patron of the Pacific Coast lumber industry. In recent years she has become a heavy buyer of what is known as "Japanese squares." These are large square sticks, which the Japs resaw to meet their peculiar requirements. During the first three months of 1922 the Japs took 119,000,000 feet of lumber from the State of Washington and 54,271,000 feet from Oregon. China is also coming to the front and even now vies with Australia for second position as buyer of American lumber.



A NATION of homes never fears destruction.





## Record Construction Year Review of Building Activity in December and the Year 1922

THE year 1922 broke all records for the volume of construction activity, according to The F. W. Dodge Company. December building contracts in the twenty-seven Northeastern States (including about three-fourths of the total construction in the country) amounted to \$215,213,000. Altho this was 12 per cent less than the November figure, it was 8 per cent greater than that of December, 1921.

The December figure brought the year's total for these twenty-seven states up to \$3,345,950,000 (which would indicate about  $4\frac{1}{2}$  billions for the entire country). This was an increase of 42 per cent over 1921. Had such an enormous increase been predicted a year ago, it would have been considered impossible.

Analysis of the year's record shows the following important items: Residential buildings to the amount of \$1,341,009,000, or 40 per cent of the year's total; public works and utilities, \$562,066,000, or 17 per cent; business buildings, \$496,145,000, or 15 per cent; industrial buildings, \$325,100,000, or 10 per cent; and educational buildings, \$303,272,000, or 9 per cent.

Residential building, the dominant factor of the year's program, increased 53 per cent over the previous year. Contracts in this class called for the construction of over 310 million square feet of new floor space, enough new housing to accommodate nearly 200,000 families.

While residential construction was the outstanding feature of the year, the investment in structures of all other kinds was 36 per cent greater than in 1921, showing a marked trend toward a normally proportioned building program.

### Forecast for 1923

The revival has been somewhat uneven as to class and locality. Residential construction and certain other classes that usually accompany it such as religious and educational buildings, have led the way. The revival has proceeded further in the Eastern states than in the Middle West. It has been accompanied by rising prices and wages, and by a shortage of facilities to complete the program.

With the probable increase in general prosperity in 1923 there is likely to be an increased demand for business and industrial buildings, in which considerable improvement was noted last year. With the demands for money, men, and materials for these classes of structures and for general business and industrial expansion, there is likely to be a restriction of the residential construction program. It seems unlikely that increases in industrial and mercantile buildings will make up for the decline that is likely to occur in residential construction. Consequently, altho 1923 should be a year of enormous activity compared with years previous to 1922, it does not seem probable that it will exceed, or even equal, the high record year just past. The Middle West seems

more likely to equal last year's record than the Eastern sections.

### New England

December building contracts in New England amounted to \$20,880,000, a decrease of 22 per cent from the previous month and of 21 per cent from the corresponding month of last year.

Total contracts let during the entire year 1922 amounted to \$333,572,000, the largest recorded yearly total for this district, and an increase of 63 per cent over the year 1921.

Last year's total included: \$145,501,000, or 44 per cent, for residential buildings; \$67,679,000, or 20 per cent, for business buildings; \$30,687,000, or 9 per cent, for public works and utilities; \$30,297,000, or 9 per cent, for educational buildings; and \$28,614,000, or 9 per cent, for industrial buildings.

Contemplated new work reported during the year amounted to \$504,985,000, compared with \$333,572,000 for work actually started.

### New York State and Northern New Jersey

Contracts let during December in New York State and Northern New Jersey amounted to \$56,263,000. This was 22 per cent under the preceding month and 10 per cent under December, 1921.

The December figures brought the year's total up to \$893,250,000, the largest annual total on record for the district. The increase over 1921 was 38 per cent. It is interesting to note that 1922 construction in New York City alone amounted to \$523,299,000, nearly one-eighth of the total construction in the entire United States. The increase for New York City in 1922 was 33 per cent; for the rest of the district, 47 per cent.

Last year's total for the district included the following important items: \$469,077,000, or 52 per cent, for residential buildings; \$142,918,000, or 16 per cent, for business buildings; \$84,525,000, or 9 per cent, for public works and utilities; \$68,260,000, or 8 per cent, for educational buildings, and \$51,815,000, or 6 per cent, for industrial buildings.

Contemplated new work reported during the year amounted to \$1,464,863,000, compared with \$893,250,000 for work actually started.

### Middle Atlantic States

December building contracts in the Middle Atlantic States (comprising Southern New Jersey, Eastern Pennsylvania, Delaware, Maryland, District of Columbia, Virginia and the Carolinas) amounted to \$37,636,000, which was 14 per cent over the figure for November and the same increase over December, 1921.

The year's total for this district amounted to \$488,942,000, an increase of 38 per cent over the preceding year. The 1922 total was the largest on record for this district.

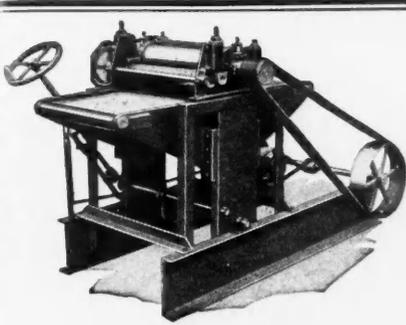
Included among last year's figures were the following important items: \$208,456,000, or 43 per cent, for residential buildings; \$91,348,000, or 19 per cent, for public works and utilities; \$67,315,000, or 14 per cent, for business buildings; \$44,892,000, or 9 per cent, for educational buildings; and \$34,244,000, or 7 per cent, for industrial buildings.

Contemplated new work reported during the year amounted to \$827,150,000, compared with \$488,942,000 for work actually started.

### Pittsburgh District

Contracts awarded during December in Western Pennsylvania, West Virginia, Ohio, Kentucky, and Tennessee, amounted to \$29,651,000. While this was a decrease of 29 per cent from the previous month, it was an increase of 33 per cent over December, 1921.

December figures brought the year's total up to \$580,748,000.



**Parks**  
**"Endurance"**  
 20 in. Planer  
**\$340**  
 f.o.b. Cincinnati

**Single Surfaces 8 x 20**

**THE** Parks "Endurance" Self-Feed Single Surface 20 inch planer is big enough for any job you need it for, and it does the small jobs as well as the big ones. Heavy and vibrationless. Does clean work. No waves or marks.

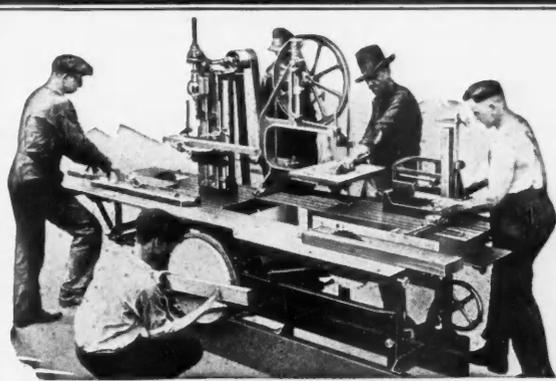
Accurate adjustment for thickness. Sets to plane one-eighth inch material. *This is an accuracy test on any planer!*

Strong, rigid all-steel electric-welded frame. One-piece steel table machined level and true. Self-feed, two speeds. All bearings babbitted and equipped with oil-cups.

Write for Parks complete catalog of woodworking machinery including individual and combination machines for any kind of woodworking.

**The Parks Ball Bearing Machine Company**  
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 Canadian Factory: 200 Notre Dame East, Montreal, Can.

3-23



**Parks "Planing Mill Special"**

**\$525**  
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8 machines in 1  
 Circular rip and crosscut saw, Band Saw, Swing cut-off saw, 12 in. Jointer, Tenoner, Upright Hollow Chisel Mortiser and Borer, Shaper, Sander

**THIS** big, husky machine is a complete woodworking equipment for any shop. Does anything and everything in woodworking. Saves labor, material, wages, and time. Requires only 5 ft. x 10 ft. space. Runs all attachments at once with 7½ H.P.

Five men can work at the different machines at one time, without interfering. Makes every man's time worth six hand workers. Lasts a lifetime. Guaranteed 10 years.

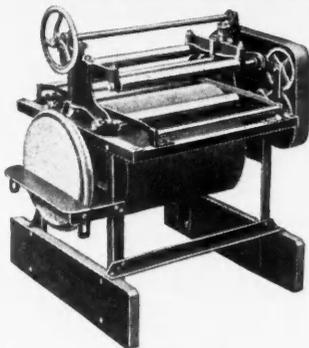
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1-23

**PARKS**  
**WOODWORKING MACHINES**

**PARKS**  
**WOODWORKING MACHINES**



**Parks Sanders**

- Economy 24 in. \$60.
- Economy 36 in. \$75.
- Peerless Belt Sander \$200.
- 24 in. Self Feed Single Drum \$150. (as illustrated)
- 36 in. Self-Feed Single Drum \$200.
- 24 in. Self-Feed Double Drum \$275.
- 36 in. Self-Feed Double Drum, \$350.
- f. o. b. Cincinnati

**Put a Parks Sander in Your Shop**

**PARKS** sanding machines include single and double drum sanders, disk sanders, and belt sanders to meet any shop requirements.

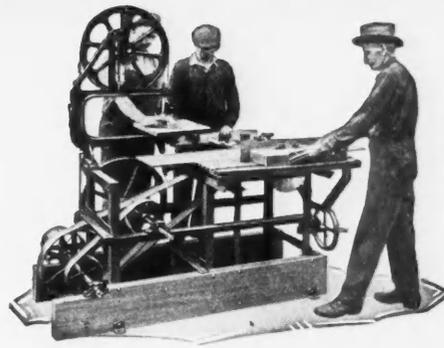
Every Parks sander is built for hard service. Rigid angle-steel electric-welded construction. Frames and drums are guaranteed 10 years. The Parks 24 in. Self-feed Sander illustrated sands material up to 4½ inches. Has handwheel adjustment for thickness. Has two-speed feed allowing coarse and fine sanding. Sand-drum is built of laminated wood covered with heavy Brussels carpet and sand paper, and is equipped with oscillating device.

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2-23

**PARKS**  
**WOODWORKING MACHINES**



**Make Your Shop a Factory!**

**Parks**  
**"Four-in-One"**

- Circular Rip and Crosscut Saw
- Band Saw
- 12 in. Jointer
- Boring Machine

**\$225**

f. o. b. Cincinnati

**A** PARKS "Four-in-One" speeds up the four most important woodworking operations — sawing, band-sawing, planing, and boring. The one-man shop with a "Four-in-One" is as productive as a small factory of hand-carpenters.

The "Four-in-One" is a strong, sturdy, fast woodworker. Thousands in use by carpenters, contractors, cabinet-makers, toy-makers, and pattern-shops everywhere.

Write for complete catalog of Parks Woodworking Machinery.

**The Parks Ball Bearing Machine Company**  
 Fergus Street & C. H. & D. R. R. Cincinnati, O.  
 Canadian Factory: 200 Notre Dame East, Montreal, Can.

8-23

**PARKS**  
**WOODWORKING MACHINES**

the record figure for the district, an increase of 38 per cent over 1921.

Last year's record included the following: \$183,466,000, or 32 per cent, for residential buildings; \$115,893,000, or 20 per cent, for public works and utilities; \$104,144,000, or 18 per cent, for industrial buildings; \$81,975,000, or 14 per cent, for business buildings, and \$46,802,000, or 8 per cent, for educational buildings. These figures show more nearly normal proportions for the various classes than those of any other district.

Contemplated new work reported during the year amounted to \$837,827,000, compared with \$580,748,000 for work actually started.

### The Central West

December building contracts in the Central West (including Illinois, Indiana, Iowa, Michigan, Wisconsin, Missouri, Eastern Kansas and a small portion of Nebraska) amounted to \$66,462,000, practically the same as the figure for the preceding month, but an increase of 45 per cent over December, 1921.

The year's total amounted to \$970,874,000, the record figure for the district, an increase of 51 per cent over 1921.

Included in last year's record were: \$309,040,000, or 32 per cent, for residential buildings; \$223,662,000, or 23 per cent, for public works and utilities; \$125,059,000, or 13 per cent, for business buildings; \$99,584,000, or 10 per cent, for educational buildings, and \$99,268,000, or 10 per cent, for industrial buildings.

Contemplated new work reported during the year amounted to \$2,058,045,000, compared with \$970,874,000 for work started in the same period.

### Wayne Officials in New Building

THE Wayne Tank & Pump Company, of Fort Wayne, Ind., celebrated its thirtieth birthday recently by moving the executive offices into a handsome new office building.

The new administration building is separated from the main plant buildings and is modern in every respect. It is of fireproof construction, of handsome tapestry brick, and is one of the most distinctive industrial buildings in Indiana.



New Office Buildings of the Wayne Tank & Pump Co., Ft. Wayne, Ind.

Thirty years ago the Wayne company began the manufacture of oil storage tanks in a small way and today it is the largest manufacturer in its line, with a system of direct branches in every prominent city in this country and well represented abroad.

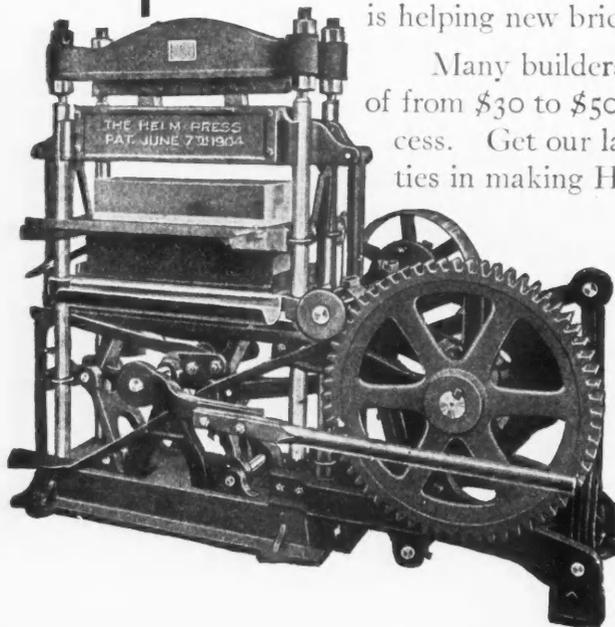
The line of products now consists of oil pumps and storage tanks from the small portable size to great industrial equipment, oil filtration systems, oil burning equipment, air compressors and the Wayne Rapid-Rate Water Softening System. The last named product is a development of the Borroman patents which the Wayne company acquired about a year ago.

## More Helm Brick Needed

Wherever brick is used in building there is an ever increasing demand for HELM cement brick and the HELM DRY WALL CONSTRUCTION.

The absolute reliability of this acknowledged leader in modern building is helping new brick builders to success.

Many builders in this country and Canada are making profits of from \$30 to \$50 daily. Investigate the reasons for their success. Get our latest catalog and learn for yourself the possibilities in making HELM BRICK AND DRY WALL BLOCKS.



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Attract more business for the Builder as well as the merchant. Builders who handle our store fronts are kept busy the year round and still the demand for Brasco fronts requires more Brasco men.

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is the time to get into this profitable business. Our Service department will give you all the co-operation necessary to land new contracts.

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# BOOKS, BOOKLETS and CATALOGS RECEIVED



**T**HE literature and publications listed below are now being distributed and the publishers will be glad to send any of our readers copies who will write and ask for them.

**"Cheating the Junk Pile."** By Ethel R. Peyser. Published by E. P. Dutton & Company, New York City, is untechnically and interestingly written with a flare of humor, but always technically accurate as attested by the many experts and manufacturers who investigated every chapter before publication. In these days when the home is an electric and mechanical agglomeration, this book tells the housewife, husband or housekeeper how to buy, how to take care of and how to use home machinery to get the money's worth out of them and their highest service.

**The Use of Metal Columns** for both public and private buildings, as well as for pergolas, is advocated by the Union Metal Manufacturing Company of Canton, O. A folder illustrating nine styles of authentic, artistic worth is sent on request.

**"Natco on the Farm"** is an extremely interesting and informing book advocating the use of Natco Hollow Tile for farm building purposes. It lists the various uses,

together with construction details and complete construction information. The book may be obtained on request from the National Fire Proofing Company, Fulton Building, Pittsburgh, Pa.

**Fireproof Roof Decks** which have the added merit of being easily and inexpensively laid, are handled informatively by the Porete Mfg. Co., 26 Verona Ave., Newark, N. J., in two recently issued circulars. Circular No. 12 treats of Porete Roof Decks as a base for slate or tile and No. 13 of Porete for Fireproof Roof Decks.

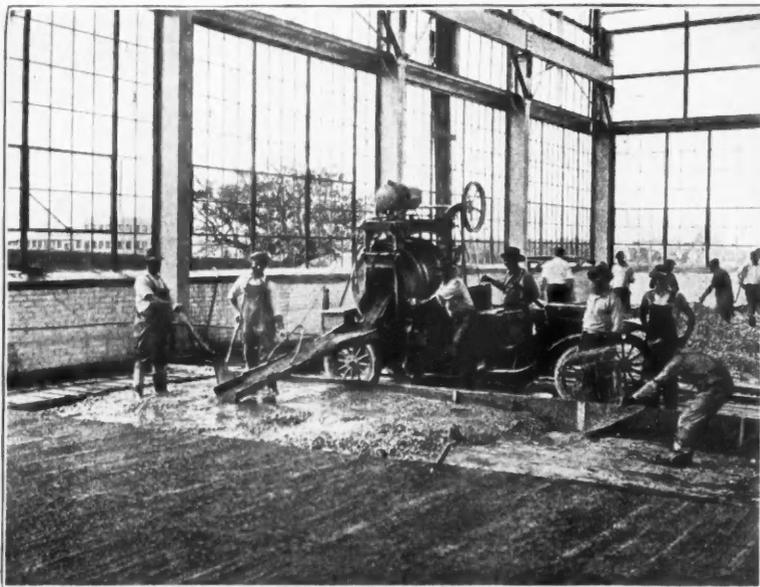
**The Necessity for Commercially Pure Iron in Home Construction** is emphasized by the American Rolling Mill Company in a folder. Armco Ingot Iron is suggested on account of its rust-resisting qualities, and its wide range of usefulness to the builder and home owner is noted. The company's foundries and offices are at Middletown, Ohio.

**"Ripolin at the South Pole,"** issued by the Glidden Company, Cleveland, Ohio, acquaints the architect, builder and painter with the merits of Ripolin, the original Holland enamel paint. The expedition ship, "Fram," was painted with Ripolin prior to Amundsen's departure for the South Pole, to his entire satisfaction. Ripolin, with other Glidden endurance marine coatings, is treated of fully in the booklet.

**"The Link-Belt Crawler Crane"** is described in a folder at hand from the manufacturers, the Link-Belt Company, 910 South Michigan avenue, Chicago, Ill. They recommend it as making full locomotive crane service available in places where there are no tracks, and under conditions under which a locomotive crane could not operate.

**"Brass Pipe & Piping,"** issued by the Bridgeport Brass Company, Bridgeport, Conn., is a faultless presentation of the superiority of Bridgeport brass pipe for hot water service, for cold water supply concealed piping, and for

## Handle all Jobs in Less Time



Paul Reisen & Sons, Milwaukee, pouring reinforced flooring in record time. Mixer was moved across flooring, eliminating the necessity of wheeling concrete.

### Think of the Labor You Save

It often takes as much time to move the old type, slow-moving mixer up to the job as it does to do the work. Time and labor lost—figured on your bid—making competition more difficult to meet.

The "MIXERMOBILE," built as a unit on the standard Ford Truck Chassis, may be moved quickly on the job, or from one job to another. Drive it anywhere you would a Ford—and practically as fast.

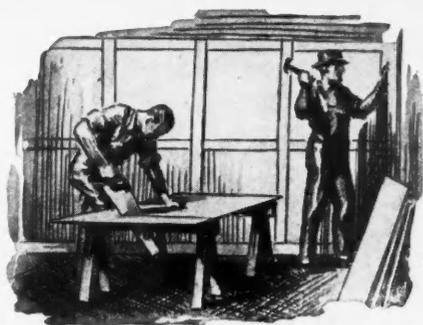
With a 7 cu. ft. drum, turning 17 R. P. M. and driven by the dependable Ford Engine, this Mixer mixes and discharges with maximum speed.

The Drum Rollers and Drive, Clutch and Countershaft and all wearing parts, including the heavy riveted channel and plate Frame, are made of the finest materials available. The "MIXERMOBILE" is fully guaranteed for one year against all defects in workmanship or material.

Write for complete information,  
Specifications and Prices.

## MILWAUKEE CONCRETE MIXER COMPANY

Milwaukee, Wisconsin



**Harder and more enduring than plaster, yet can be cut with ordinary tools**

**Just What You Need for that Model House**

Use it for lining kitchen, laundry, closets, storeroom, stairway, ceilings, hallways and wainscoting generally, where it saves all the difficulty of plastering and gives fire protection as well as distinctive appearance.

**AMBLER ASBESTOS WALLBOARD**  
called "LINABESTOS"

can be sandpapered, sawed, nailed, also wallpapered and painted, though it does not require special finish, as it comes in a pleasing natural buff color. Can be used on floors in place of linoleum at great saving in cost and with superior wear. Sizes, 48x48 and 48x96 to fit standard joists and studding.

*May we send you samples and information about distinctive uses?*

**Asbestos Shingle, Slate & Sheathing Company**

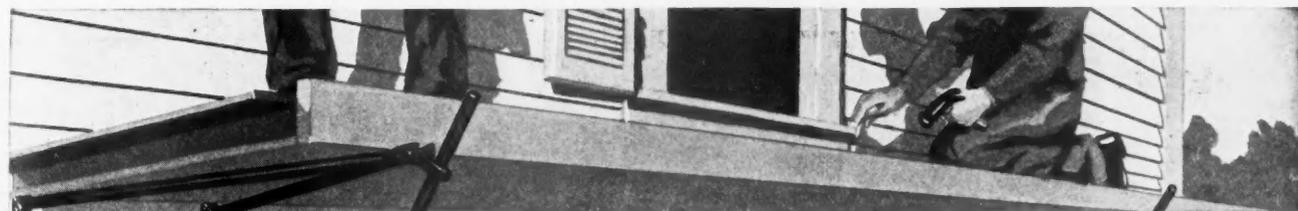
Department A - - - AMBLER, PENNA.

Branch Offices: Atlanta, Baltimore, Boston, Buffalo, Chicago, Cincinnati, Detroit, Cleveland, Minneapolis, New York, Omaha, Philadelphia, Pittsburgh, Washington, Wilkes-Barre; Montreal, Canada; Toronto, Canada

Southwestern Distributor: R. V. ATCOCK CO., Kansas City, St. Louis, Tulsa, Houston

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**"I Saved \$75 On One Job"**

That's what a contractor told us after he had cut his costs the first time he used Reliable Scaffold Brackets. He underbid every competitor and got the contract because he was saving \$75 by using Reliabilities.

You can save money on all your jobs, too. Use Reliable Scaffold Brackets instead of wooden scaffolds. Save lumber and labor. A pair of Reliabilities can be put up with 4 nails, for each bracket, in ten minutes, and they can be used hundreds of times. They are strong and absolutely safe.

John Sawyer of Hornick, Iowa, proved his Reliable Brackets were strong. Read what he says—

"I saw in your last ad that that you have seven men on two Brackets. I can beat that. My brackets have gone through two cyclones and only two of them were damaged, one was slightly bent and a lug was broken on the other.

"The brackets were on a 36' x 60' barn which was completely destroyed. They were all that was left of any value and they came through with only this slight damage. That's more abuse than any other brackets will stand."

Save money this year by using steel brackets. You can see for yourself how Reliable Scaffold Brackets work before you pay a penny. **We ship on approval C. O. D.** Write for our catalog and price list.

**ELITE MANUFACTURING COMPANY**

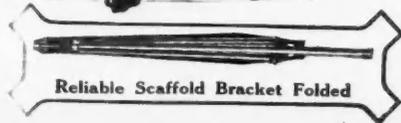
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ASHLAND, OHIO

**Reliable Scaffold Brackets**

Patented Oct. 4, 1910

**No holes to plug after they are removed**



Reliable Scaffold Bracket Folded

salt water piping. Literature of this sort is highly creditable, both to the house issuing it and to the printing house co-operating in getting it out.

"Decorative Floors" is an informing, generously dimensioned folder in which the Armstrong Cork Company, Lancaster, Pa., offers colored illustrations of Linoleum floor interiors. The company makes out an excellent case for its product, and while the interiors shown are those of the everyday home, office and shop, the manner of presentation is brilliant and brimful of suggestion.

"Yates Quality" is issued by the P. B. Yates Machine Co., Beloit, Wis., to advance the cause of Yates Quality Woodworking Machinery with the mill owners and workers in that particular field. Few house publications are as informing and interesting in a practical way as this attractively printed periodical.

"Fences and Fence Posts of Colonial Times" is Volume VIII, No. 6, of the White Pine Series of Architectural Monographs. It makes out an excellent case for the fence modelled along Colonial lines, and describes and illustrates designs which every architect, builder, contractor and home owner could follow with profit and pleasure. There is no doubt that our forebears of Colonial times have left us a valuable legacy in Colonial design.

"Your Next Home" is the title of a book issued by the Common Brick Manufacturers' Association of America, Cleveland, O. Sixty modern brick homes, illustrated from the actual buildings, are shown, together with floor plans, and are designed to appeal to the man of small means who wants a small house of distinctive design. Ten cents in stamps brings the book to any address.

"Modern Oak Floors" is the title of a handsome booklet issued by the Oak Flooring Manufacturers Association, 1014 Ashland Block, Chicago, Ill. It considers compre-

hensively the advantages of oak flooring on the score of beauty, economy and serviceability and from the standpoint of sanitation. It is informatively illustrated with halftones and colored plates.

"Utica-Imperial Super-Smokeless Boilers" are attractively described in a well-gotten up booklet issued by the manufacturers, the Utica Heater Company of Utica, N. Y. It describes these boilers and suggests the ample range of fuels users may choose from. Some of the more important installations, both here and abroad, are mentioned, and the illustrations dovetail well with the text.

"Metropolitan Subway and Elevated Systems" is the title of an extremely informative book issued by the General Electric Company of Schenectady, N. Y. Its official number is "Digest Bulletin 44018," and it presents the principal characteristics of several great rapid transit systems from an electrical engineering viewpoint. The facilities for power production, transformation, transmission and utilization are outlined briefly for each of the systems in the cities of Boston, Chicago, New York and Philadelphia.

"Progress Review of Twenty Years" is a handsomely gotten up book issued by the Portland Cement Association in commemoration of its twentieth annual meeting. The history of the association is outlined and the objects for which it stands—the furtherance of the best use of Portland Cement—are stated comprehensively and convincingly. All phases of the use of this product are described and well illustrated, and the book is a dignified undertaking well qualified to mark with distinction the mile post of twenty years of progress. The association's headquarters are at 111 West Washington street, Chicago, Illinois.

"The Fireplace" is the title of an interesting booklet published by the Grand Rapids Marble & Fireplace Com-



Your best painting year is ahead of you—let us submit further interesting facts and figures on making your profit grow.

This system of spray-painting is 4 to 5 times faster than hand brushing. Besides this, it insures a more thorough and more uniform coating. Another feature is the ease with which any kind of paint is applied with the DeVilbiss spray gun on outside or inside surfaces, whether of stucco, brick, metal, wood, plaster or concrete.

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Spending less time on each painting job, enables you to increase the number of jobs you can do in your present working time. . . . Or, using fewer men to turn out each job in the time now required, reduces your cost of production. . . . In either case, there's an increase of profit for you.

This greater-profit way of painting is provided by the well established

**DeVilbiss**  
**Spray-painting System**

**The DeVilbiss Mfg. Co. 3676 Detroit Ave. Toledo, Ohio**

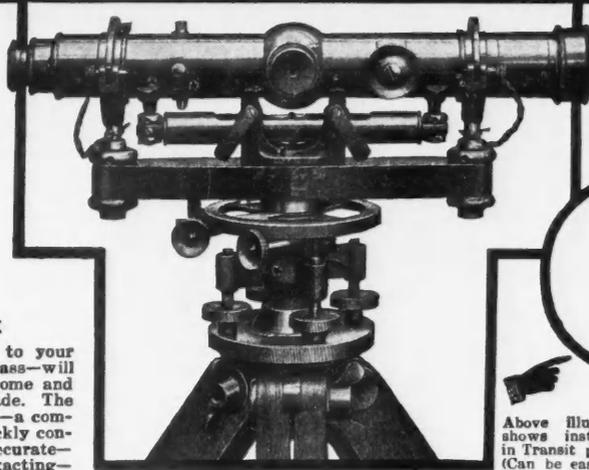
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**\$5.00**

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This instrument will add immeasurably to your efficiency and put you in the big builder class—will do more to increase your business, income and prestige than any investment you ever made. The Aloe Convertible Level is the world's best—a combination of both level and transit and quickly converted to the use of either. Absolutely accurate—satisfies the requirements of the most exacting—yet so simple that anyone can use it.



**Free Trial**  
Order the Aloe—try it for 10 days—put it to the most rigid tests. If you are not pleased, return it at our expense and your \$5.00 will be refunded.



Above illustration shows instrument in Transit position. (Can be easily and quickly converted.)

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Just \$5.00 brings it to you—for a free trial. If perfectly satisfied, pay the balance in small monthly payments. The instrument will be sent at once and from the first day it will be working for you—paying for itself by saving you the cost of borrowing an instrument or the fees you have been paying other men for this work.

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Our free book—"Be A Bigger Builder"—tells you how to increase your income—how to get the profitable jobs and become a bigger man in your community. Write for this book today.

**A. S. ALOE CO., 621 Olive St., St. Louis, Mo.**

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Without obligation, send me your **FREE** book, "Be A Bigger Builder". Also full particulars about the Aloe Convertible Level and details of your easy payment plan.

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COMPOSITION FLOORING



## A New Floor to Put Over Your Old Floors

Easy to Put Down—Economical—Attractive

Wherever you have to lay a new floor which must be durable, easy to clean, attractive and economical, put down Magnestone Composition Flooring.

Magnestone is much superior to other good floors because it is noiseless, moisture proof and sanitary. The office buildings, hospitals, apartment houses, schools and private homes which you work on, all need just this kind of a floor in hallways, rooms, kitchens, toilets and basements.

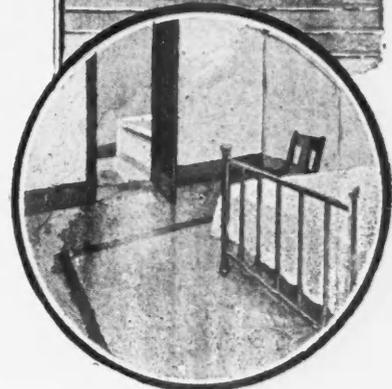
Magnestone Flooring will increase your business by making more satisfied clients for you. It is easy to lay and can be put down over wood or concrete in cold or warm weather by any competent mechanic. You have eleven attractive colors to choose from.

**AMERICAN MAGNESTONE CORPORATION**  
DIVISION OF FLOORS

General Offices: **SPRINGFIELD, ILLINOIS**

Also Manufacturers of Magnestone Quality Stucco

Factories at Ottawa, Ill., Springfield, Ill., Kansas City, Mo., and Detroit, Mich.



A Typical Magnestone Installation in Hospitals, Hotels, Clubs, etc.

### REAL PROFITS

Every contractor and builder who is using Magnestone Flooring is making good profits on his flooring jobs.

Write for our flooring proposition and let us show you how much you can make by using Magnestone on your next job. The profits will probably surprise you.

Installations Made Thruout United States and Canada

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

pany, Grand Rapids, Mich. It is printed on excellent paper and the illustrations are very clear. It illustrates and describes designs of various fireplaces manufactured by this company. Quite a number of pages are also devoted to fireplace equipment. The book is 9¼ by 12 inches and contains 60 pages.

"A Study of Air-Steam Mixtures" is a new booklet published by the Engineering Experiment Station, University of Illinois, Urbana, Ill. Tests recorded in this bulletin show that an air-steam mixture increases the efficiency of engines from 5 to 30 per cent over the use of either air or steam separately. It has 96 pages, its size is 6 by 9 inches, has numerous charts and insets and is fully illustrated. It may be ordered for 75 cents a copy as bulletin No. 131.

The American Society for Testing Materials has issued the proceedings of its twenty-fifth annual meeting. These are printed in a two-part volume, which is No. 22 of a series. Part I is devoted to committee reports and to new and revised tentative standards. Part II is devoted to technical papers. The information contained in the proceedings comprises the sum total of the most recent painstaking research, experiment and progress in every part of the structural material field. Obviously, the highly technical and involved nature of the contents of this volume is such as would not interest the casual reader, but no progressive architect, contractor, engineer or manufacturer of structural material can afford to be without the information it offers. The society's address is 1315 Spruce street, Philadelphia, Pa.

Highwood Dumbwaiters are illustrated and described in a booklet issued by the manufacturers, the Highwood Dumbwaiter Co., Closter, N. J. Aside from the undoubted convenience of dumbwaiters in the home the point is

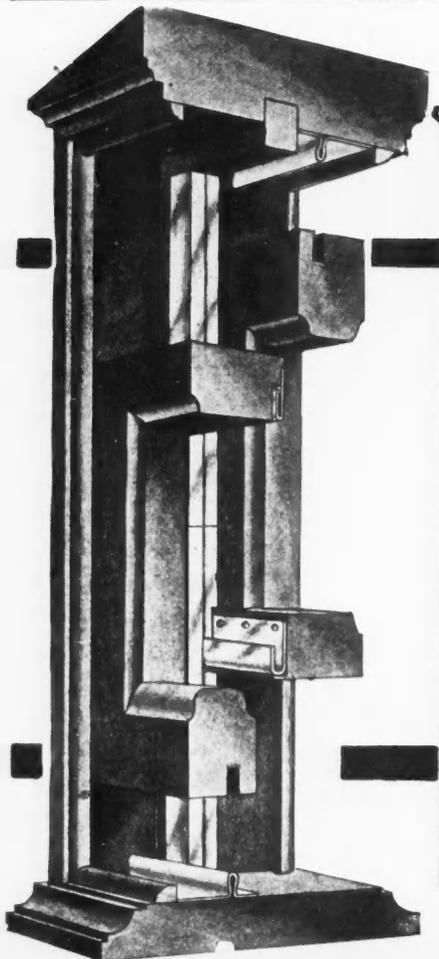
brought out in connection with the Highwood company's "Glen" model of the advantage of the vanishing cellar dumbwaiter as a food conservator also.

"Dickey Clay" is the attractive name of a new entrant in the house organ lists. It is issued by the W. S. Dickey Clay Manufacturing Co., Kansas City, Mo., and is designed to spread the gospel of "Dickey" fire clay superiority for flue linings, drain tiles, meter boxes and flashing blocks. The company makes out an excellent case for all of these products and cites authoritative cases of users. As it felicitously refers to its service bulletin as the "Dickey Pipe Organ" in a letter to this department we are led to hope that it will always find an eager hearing among this progressive concern's many business friends.

"Whooping the Loop" is what the Bostwick Steel Lath Company, Niles, Ohio, call their clever and interesting house-organ they have recently started publishing. It is packed full of valuable information for dealers and others in the organization.

The DeVilbiss Manufacturing Company, Toledo, Ohio, are distributing a new folder describing their new series of portable spray-painting equipment. The booklet is clearly illustrated and will be interesting to those engaged in spray-painting houses, building interiors and exteriors, railway equipment, bridges, ships, and all kinds of large or stationary work.

As the result of a survey made by the Metal Lath Manufacturers' Association at the suggestion of the United States Department of Commerce it has been decided to eliminate more than seventy varieties of expanded flat metal lath and more than sixty varieties of ¾ inch expanded rib lath. As a consequence, ten of the first kind and seven of the second will be permitted in use. A second conference on sheet lath was recently held in Pittsburgh. The results of this conference will soon be announced.



## Sager Metal Weatherstrip

The fastest selling weatherstrip of them all. It's sound, apparent real value make it the best strip for the new contractor to begin with. Our fair and square dealers policy make it the all-time favorite of every Sager dealer.

We want a man in every locality who will maintain a selling and installing agency.

Now is the time to begin while the demand is greatest.

The demand was created by the coal shortage.

It is met with Sager Metal Weatherstrips that reduces the coal cost ⅓.

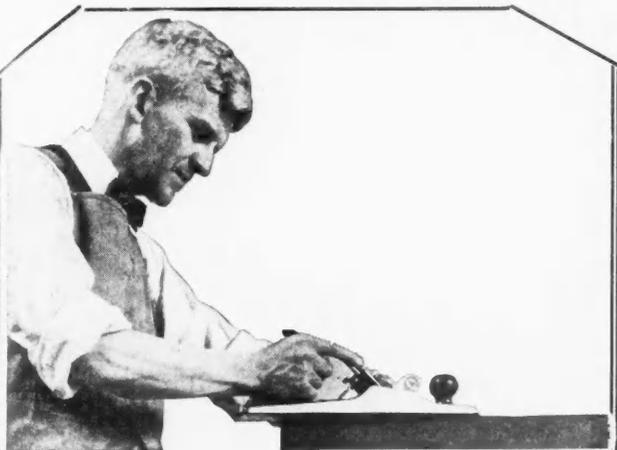
Those far-seeing men who are going to answer this ad will be the ones to benefit by this unusual opportunity.

*Write now for full details*

**Sager Metal Weatherstrip Co.**  
162 West Austin Ave., Chicago

# SARGENT

*Tools & Hardware*



## SARGENT PLANES Save Time and Energy

A Sargent Plane cuts smoothly and speedily through the toughest wood—cross grain and into hardwood without a chatter. Will not splinter or pull the wood on difficult end work. Always makes shavings. Never clogs. Sargent construction does it. Solid frog below cutter. Cutter tightly supported down to the edge. Firm clamp. Bar half inch from cutting edge gives added pressure.

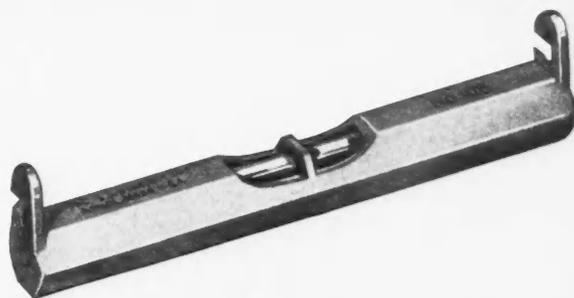
### Sargent Auto-Set Bench Planes

Quickly adjusted for fine or coarse cuts. Chromium steel cutter may be removed, sharpened and replaced in exactly same position without changing adjustment. A Sargent Plane makes the job easier. Use it.

**Sargent & Company**  
*Manufacturers*

51 Water Street New Haven, Conn.

*Sizes and styles for every possible purpose. Write for descriptive booklet today*



*It weighs almost nothing*

One-half ounce is the weight of this New Starrett Aluminum Line Level (No. 108). It is light enough to prevent sag in any line—compact enough (only three inches long) to be carried conveniently in the pocket—strong enough (made of  $\frac{3}{8}$ -inch hexagonal aluminum stock) to take a lot of punishment without damage.

Slots are true in relation to level and keep the tool from slipping off the line. Can be also used as a surface level (notice shape). Furnished with the preferred yellowish fluid in the luminous level glass.

Next time you're in a hardware store ask about this new Starrett Aluminum Line Level. The price is sixty cents.

Write for Catalog No. 22 "6" and the Supplement describing the new Starrett Tools.

**THE L. S. STARRETT CO.**  
*The World's Greatest Toolmakers  
Manufacturers of Hacksaws Unexcelled*  
ATHOL, MASS.

4685

# Use Starrett Tools



The 1923 Calendar Crop

OUR business friends are again with us thru the medium of their always interesting calendars introducing another year. These are messengers of good will that foster good will among those fortunate enough to be on the sending firm's mailing list. The AMERICAN BUILDER is glad to be so favored for it is apparent that much careful thought and effort has been expended to make these calendars for 1923 more unique and representative than ever before.

**Radford's Blue Ribbon Panorama Poster Calendar.**—This, like its predecessors of previous years, is a grand symposium of Blue Ribbon Farm Buildings and Blue Ribbon Live Stock. It is a twelve-sheet calendar with a binder-hanger, printed in four colors by the soft-toned offset process. Each sheet shows one outstanding example of modern home or farm building, as well as grand champion live stock, and possesses not only calendar interest but is in the highest degree informative and educational as well. This calendar is published by William A. Radford, 1827 Prairie Ave., Chicago, Ill., and is distributed as usual by the lumber dealer in each community.

**Lehigh Portland Cement Co., Allentown, Pa.**—Large single-sheet calendar, with the figure-pads for each month in bold, easily read numbers. The bottom of each pad shows the preceding and succeeding months, and a small map showing Lehigh mill locations. It is a distinctly utilitarian calendar, but not a little artistic skill has been shown in the grouping of the various colors of paper used and the choice of inks.

**Paine Lumber Co., Ltd., Oshkosh, Wisc.**—Showing "The Miracle Door" in colors as natural and artistic as the real article, this company's calendar is both handsome and practical. It is not merely a monthly reminder of days and dates but has excellent sales value. The calendar brings out the

point that "The Miracle Door" costs but \$1 more than an ordinary door, and this is worth emphasizing, since its manufacturers consistently aim to produce what is really a cabinet shop product at the price of an ordinary stock door.

**Century Lumber Co., Des Moines, Ia.**—Large single-sheet calendar with figure-pads for the individual months and which also show the preceding and succeeding months in smaller scale at the bottom of each one. Representing as it does high grade lumber mills and city yards, the company makes its calendar illustrations logically call attention to its equipment, ample yard space and efficient trackage facilities.

**F. E. Myers & Bro. Co., Ashland, O.**—A long wall-hanger calendar, similar in general makeup to other predecessors issued for thirty-five years by this progressive company. The calendar for this year is more complete as to illustrations and general finish, however, and the company slogan "Take Off Your Hat to the Myers" is pictorially emphasized to give it human interest. The full Myers' line of pumps, hay unloading tools, door hangers, etc., is shown by the familiar arrangement of cuts and stock numbers which make of a Myers' calendar a catalog for their many customers here and abroad.

**Universal Portland Cement Co., Chicago, Ill.**—Twelve-sheet with binder-hanger; eight colors used, with two on each month's sheet in pleasing variation. Passed and coming dates graduate into the regular dating of each month and besides the addresses of the various mills of the company there are small topical illustrations which show concrete construction. A feature is the pithy saying printed at the bottom of each sheet which condenses to the size of an easily-read sentence a sermon on some building truth.

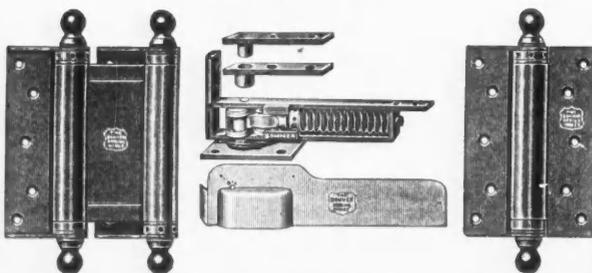
**Colonial Fireplace Co., 4604 Roosevelt Road, Chicago, Ill.**—Two calendars were received, one showing mother and the kiddies at night prayers and the other story book time before the fireplace. These handsome pictures make telling use of

A melancholy chap was he  
Until an "Ad" he chanced to see  
which said!  
"BOMMER SPRING HINGES" are the best

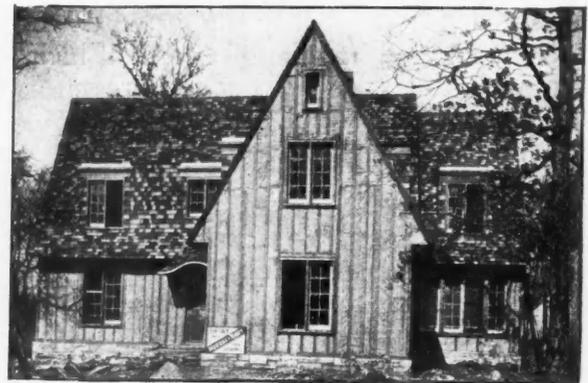
And now he is a happy man  
with every comfort blessed—  
It pays to take that "Ad's" advice—  
be wise  
"BOMMER SPRING HINGES ARE THE BEST"



**BOMMER SPRING HINGE CO., Brooklyn, N. Y.**  
ESTABLISHED 1876



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



House near Chicago, showing its "underclothing" of Cabot's Quilt, with furring strips over the Quilt, on which the outside finish is laid. Roof also insulated. Leon E. Stanhope, Architect, Chicago

**Underwear for Houses**

Underclothing makes people warm because it prevents the heat of their bodies from escaping. You can make your houses warm in the same way.

**Cabot's Insulating Quilt**

prevents the house heat from escaping. It insulates the whole house and saves the heat from the heater—that costly heat. It keeps the house warm on the smallest amount of coal; saves one-quarter to one-half of the coal bill. Makes the house comfortable for all time. Preserves health and saves doctor's bills. Makes the house cooler in summer. Quilt is not a mere felt or paper, but a scientific insulator that makes the house like a thermos bottle.

Sample of Quilt with full details, and references to dozens of users, sent FREE on application

**SAMUEL CABOT, Inc., Mfg. Chemists**  
BOSTON, MASS.

342 Madison Ave., New York 24 W. Kinzie St., Chicago  
Cabot's Creosote Stains, Conservo Wood Preservative, Stucco and Brick Stains, Damp-Proofing

**You Don't Have to Stop Concreting in Freezing Weather When You Use "ANTI-HYDRO"**

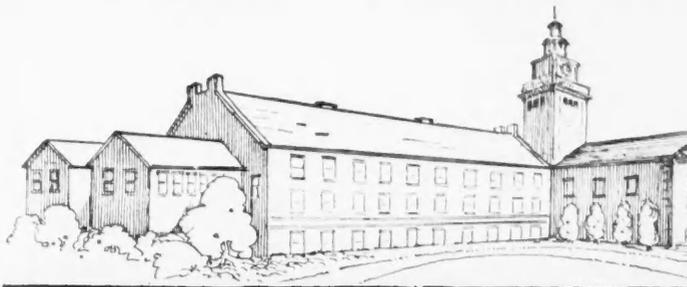
"ANTI-HYDRO" lowers the freezing point of concrete to 15 degrees F. *without weakening it.* Instead of holding up your concrete, cement and masonry work during freezing weather, use "ANTI-HYDRO" and keep right on. You can finish your job on time and eliminate loss of time and money.

All of the brick work on this building was laid during freezing weather with the aid of "ANTI-HYDRO". Results were entirely satisfactory.

"ANTI-HYDRO" also permanently hardens and waterproofs concrete, all in one operation. Being a liquid, it mixes easily with the gauging water.

For 18 years "ANTI-HYDRO" has been in continuous use. You know in advance that results will be *permanent.* Use it on your next job.

**ANTI-HYDRO WATERPROOFING Co.**  
**NEWARK . . . . . NEW JERSEY**



POLYTECHNIC PREPARATORY SCHOOL, BROOKLYN, N.Y., ARCH. LORD & HEWLETT



CONTR. GEORGE MERTZ' SONS.

**Have You Got a Skylight or Ventilator Job?**

If you are about to install skylights or ventilators it will pay you to look over our line.

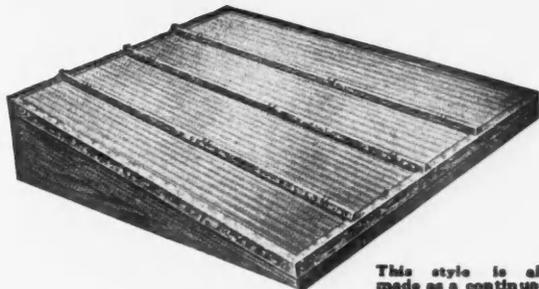
**Write for Catalog Number Eight**

This book with its discount sheet will prove of the greatest service to you in estimating your work. A copy will be sent you immediately upon your request.

**WILLIS MANUFACTURING CO.**  
**GALESBURG, ILLINOIS**



These side sashes are operated singly or in batteries. The sashes are pivoted and very easily operated.



This style is also made as a continuous skylight for factory buildings.



We construct skylights of this style such as is used for lighting hotel lobbies, etc.

**WILLIS**

indirect suggestion, bringing out as they do the comfort and general sense of well-being associated with "Colonial" fireplaces. A word on the calendar advises the recipient that the company furnishes, besides fireplaces, everything required for the fireplace.

**Milwaukee Corrugating Co., Milwaukee, Wisc.**—This is a single-sheet calendar with a greeting from the company on the cover of the calendar pad, and which carries conviction by its sincerity. The illustration is a reproduction in colors of a painting of Winona, an Indian maiden who would, we feel sure, have reconsidered her fatal rejection of TAMDOTKA had her Indian suitor been able to offer her the secure shelter of an "Invisible Joint" corrugated roof.

**Winchester Granite Co., St. Cloud, Minn.**—An attractive medium-sized calendar which reminds the user of the structural merits of Minnesota Light Gray Granite. It is illustrated with the picture of a hunter in colors, "A Tense Moment," when, with ducks on the wing, the hunter synchronizes himself and gun for the psychological moment.

"Long Life to America's Shrines" is the appealing title on the cover of the small calendar, in colors, issued by the Paint and Varnish interests in connection with the campaign to "Save the Surface and You Save All." Ours was received through the courtesy of the Hilo Varnish Corporation, Brooklyn, N. Y. There are colored reproductions of fine drawings of the Capitol, Independence Hall, Mount Vernon, Faneuil Hall, White House, Lincoln's Home, and Old South Meeting House, whose fine present state is cited as proof of the campaign slogan that saving the surface saves all. Informing histories of each of these notable places are at the back of each picture, making it a calendar which appeals for more reasons than one.

**Street of Beautiful Homes.**—This magnificent calendar in its 1923 edition is at hand from the publisher, William A.

Radford, 1827 Prairie Ave., Chicago, Ill. It is a twelve-sheet, four-color offset publication, showing twelve beautiful designs of modern homes that will appeal to the heart and purse of prospective home owners and builders everywhere. Placed side to side, these twelve sheets, one for each month, make a panorama eighteen feet long—a street of homes worth building that would be a credit to any locality anywhere. The calendar is fitted with a binder-hanger and as usual is distributed thru the lumber dealer in each community.

✱  
**W**HILE excavating in Washington on the site of a proposed new hotel, the steam shovel dipper struck into logs and stumps of undecayed and unfossilized wood. It was reported to the United States Geological Survey, and the geologists state that the wood, cypress, grew in that spot 20,000 years before.

✱  
**B**RASS fittings for the home interior are much in vogue at present. Reproductions of the artistic designs of the Colonial period vie with original designs which adapt the best features of the standard decorative period to modern requirements.

Small knockers for the doors of sleeping rooms come in designs of the Statue of Liberty and the Lincoln Log Cabin, as well as that of the Shakespeare House. The knocker for the outer door is also very much in evidence, even when there is the installation of the less noticeable, if more efficient, electric bell.

Hanging lamps of brass, wall candles, floor candlesticks, heavily designed chests and boxes for fireplace wood, all of brass, added to the decorative charm of a room. The glimmer of the metal, whether dull or polished, adds a high-lighting which does add to the effectiveness of a well furnished interior.

## Carpenters—Contractors

*Is Your Job or Business Making You More Than a Mere Living?*

Don't stand still when you can easily and quickly work up a profitable business of your own—paying you \$5,000 or more a year.

### Capital Required a Mere Trifle

Allmetal weatherstrip contractor-agents do not have to carry much stock. We ship goods promptly—24 hour delivery.

### Ready Demand for Allmetal

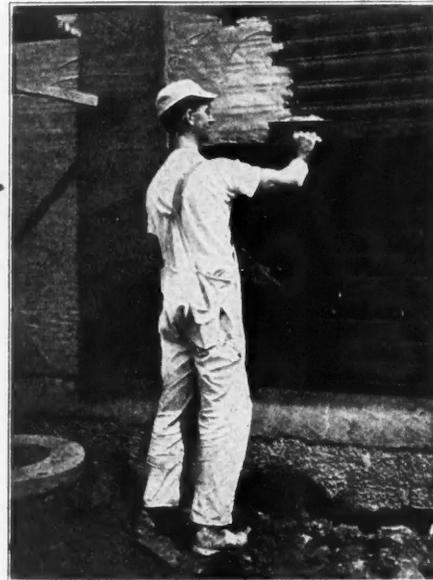
Architects, contractors, builders have come to know the wisdom of specifying and recommending "the very best" in weatherstrip—types to fit the design of any window.

*Send for descriptive literature and agency plan*

**ALLMETAL WEATHERSTRIP CO.**  
 124 West Kinzie Street CHICAGO

Gentlemen:—Please forward your descriptive literature and agency plan.

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



*Applying scratch coat to E-Cod Fabric*

## FOR ALL PLASTERING

*Exterior and Interior*

E-Cod Fabric builds better for less. It costs less and saves money in every operation. E-Cod Fabric is

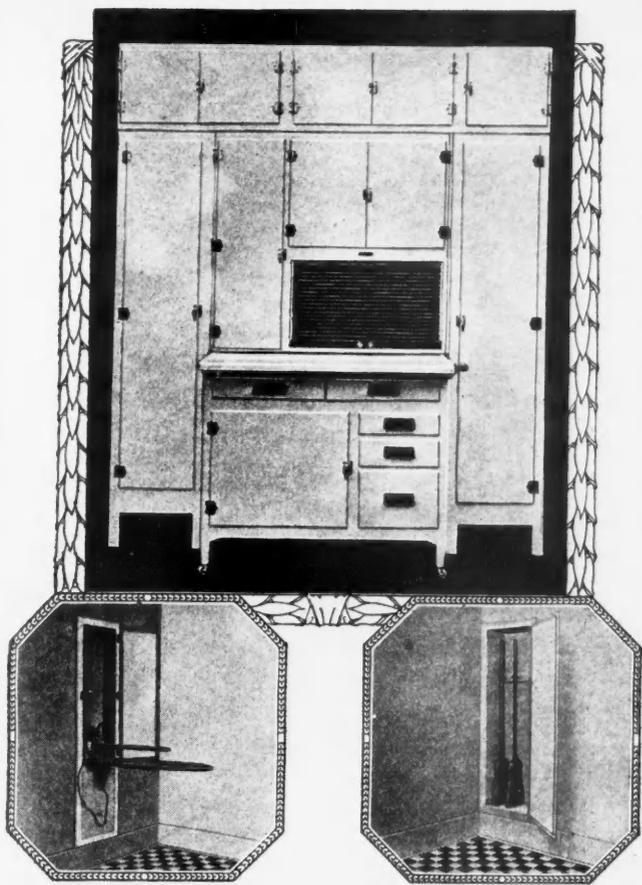
**Fire Retardant, Rust-proof, Insulating  
 Sound Deadening, Cold and Heat Proof**

It saves 40% to 60% of the plaster which goes to form the key on any ordinary open mesh lath.

*Write for full information to*

**M. J. MacADAMS CORPORATION**

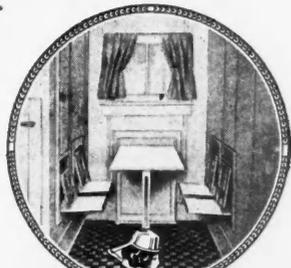
Conway Building, CHICAGO 101 Park Avenue, NEW YORK



## Build a Better Kitchen —and Save Money!

Ready-made standard kitchen units will save space, make it possible to build the kitchen more compactly—and cost no more than ordinary cupboards. Above is "Combination 1-X"—a Kitchen Maid kitchen cabinet in combination with dish closet, broom closet and storage cupboard. The small illustration at the left is an ironing board which unfolds from the wall. At the right is a broom closet. Below is the "Pullmanook"—which disappears into the wall when breakfast is over.

Get our catalog of many other convenient modern units which save you space and money in building the kitchen. Write today for our special proposition to builders.



WASMUTH-ENDICOTT Co. 302 Snowden Street  
Andrews Indiana

# KITCHEN MAID

STANDARD UNIT SYSTEMS

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

## Our Reputation Is Yours!



\*\*\* We must make good \*\*\* to the user—yes, but always thru the man whose integrity and sound judgment stand behind the selection and installation of door hangers.

\*\*\* Architects, dealers, contractors everywhere today unhesitatingly mark with full approval our "1080" Garage Door Hanger for folding-sliding installations. Trolley-swivel in type, these sets handle from three to six doors \*\*\* designed for utmost strength, yet with a thot to light weight; hangers and brackets our own malleables, operating parts finely machined, high carbon steel; ball and roller bearing equipped with vertical side rollers to insure easiest operation, "1080" stands unexcelled.

\*\*\* A full tribute to "1080" established in our adoption of this type hanger and track for use with our "Electromatic" door operating device \*\*\* which is today operating garage, warehouse, factory and fire station doors the continent over. Our engineering department is constantly extending advisory service to prospects on this type of problem.

\*\*\* For straight sliding installations Reliable Round Track Hangers (originated by us) have for over two decades set a standard for easy installation, operation and long life.

Adaptations of "Reliable" are found in our overhead carrier equipment and Approved Fire Door Hardware.

\*\*\* A-P goods are noticeable at a glance by their very fine finish \*\*\*

*Beside the above, our entire line of door hangers, light hardware, spring hinges, rolling ladders, etc., is described in our catalog.*

## ALLITH - PROUTY Company

DANVILLE

ILLINOIS

All cast parts, of course, are made from our own "Certified Malleable Castings."





## Whitney Casement Window

- a practical window
- a beautiful window
- a trouble-proof window
- a durable window
- an economical window

The greatest satisfaction to your customers and to yourself is assured by the use of Whitney Windows.

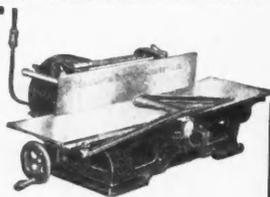
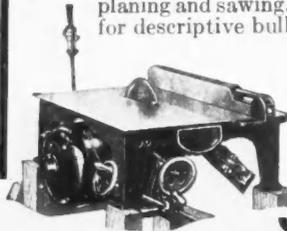
They are shown in detail in your "Biltwell" and "Universal" millwork catalogs.

Write for full information

**Whitney Window Corporation**  
15 South 6th St., Minneapolis, Minn.

## Wallace Bench Machines

In the shop or out on a building job, Wallace Bench Machines will speed up work by eliminating 80% of all hand planing and sawing. Send for descriptive bulletins.



- Wallace Bench 16" Band Saw
- Wallace Bench Universal Saw
- Wallace Bench Plain Saw
- Wallace Bench 4" Planer
- Wallace Bench 6" Jointer
- Wallace Electric Sifter
- Wallace Electric Glue Pot

**J. D. Wallace & Co.**  
1407 W. Jackson Blvd. CHICAGO, ILL.

## Save the Surface and You Save All

**S**PEAKING about paint, a general contractor told us recently that this great city of Chicago, if abandoned completely at some possible time by its great population, would rust out and crumble into dust in about fifty years. If this is possible over not such a long space of years with an immense concrete and steel fabricated skyscraper, what is to prevent the buildings you erect from perishing likewise and in less time? The only answer is: Advocate the regular application of good quality paint to the buildings you erect. It is an advertisement as well as a good investment.

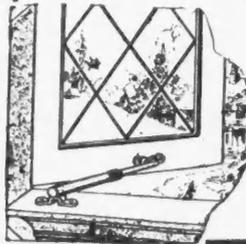


### FOR LARGE AND SMALL JOBS

Smith Mixers are made for all kinds of concrete construction work. Their "end-to-center" action insures a thorough mix and a speedy, clean discharge. Complete details in Catalog 405-B which will be forwarded promptly on request.

**THE T. L. SMITH COMPANY**  
1196 32nd Street MILWAUKEE, WIS.

## INTERLOCK CASEMENT WINDOW ADJUSTER



Instantaneously adjustable by a thumb nut placed within easy reach. The friction lock holds window in any desired position. INTERLOCK Adjusters are of the simplest construction yet they give the best and longest service.

Write us for further information.

**LYONS MFG. CO.**  
NEW HAVEN CONN.

# BOGALUSA

Trade-Mark Reg. U. S. Pat. Office

## Extra Dense Longleaf Pine

Manufactured, graded and shipped on a scale and in a manner befitting the world's largest sawmill. Capacity 1,000,000 feet daily.

BOGALUSA'S HISTORY-MAKING REFORESTATION OPERATIONS ASSURE A PERPETUAL SUPPLY TO OUR TRADE

**GREAT SOUTHERN LUMBER COMPANY**  
1600 FOURTH AVENUE BOGALUSA, LA.

10 11 3 F



## K & E MEASURING TAPES

are well made of good material, and are reliable.

Send for latest revised prices

**KEUFFEL & ESSER Co.**

NEW YORK, 127 Fulton St. General Office and Factories, HOBOKEN, N. J.  
CHICAGO 516-20 S. Dearborn St. ST. LOUIS 817 Locust St. SAN FRANCISCO 30-34 Second St. MONTREAL 5 Notre Dame St. W.

Drawing Materials • Mathematical and Surveying Instruments • Measuring Tapes

## Increase Your Business with

### KEITH'S PLANS



Establish a reputation for building houses of distinction. Keith's Plans have a national reputation. They satisfy the demand of home

builders for homes of beauty, individuality, convenience and comfort at moderate cost.

Keith's Magazine, well illustrated, contains new ideas and practical suggestions on homebuilding. For 23 years an authority on planning, building and decorating homes. Single subscription, \$3.00 a year.

**Special Offer to Contractors.** Four plan books, showing 130 designs and floor plans of artistic Bungalows, Cottages or Two-story Houses in frame, stucco and brick, and eight months' subscription to Keith's Magazine—all for \$2.50.

Set of 10 plan books (320 homes) and TWO years' subscription to Keith's, \$6.00

**KEITH CORPORATION, 615 Abbay Building, Minneapolis, Minn.**



## If You Could Hire this Man-

If you could hire a man who was an A-1 carpenter, a corking good mason, a good plasterer, an expert plumber, a first-class cabinet maker, an architect and a few other things—and if he handled each class of work better and quicker than other men specializing in these different lines—you'd be willing to pay him a good bonus to secure his services, wouldn't you? It would save you a lot of time, expense, and worry to have an efficient, dependable worker of those qualifications on the job.

You probably can't hire a manlike that—but you CAN put an **Oshkosh Eveready Saw Rig** on the job. It won't do your plumbing, masonry work or plastering, but it WILL handle twelve important woodworking jobs. And it does the work more accurately and much quicker than it can be done by hand. Four men can work on it at the same time on different jobs. And you can always depend on it. It's put together the way you would do it yourself—strong and durable. It never quits. It's an "Oshkosh."

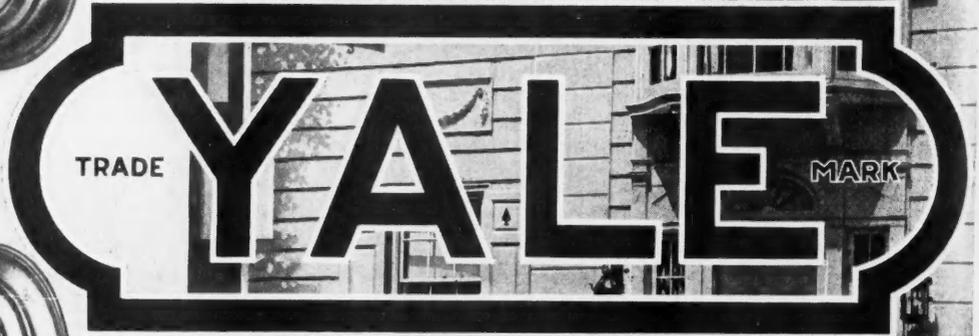
*Get our catalog which shows this outfit in detail together with the various attachments with which it may be equipped. An OSHKOSH EVEREADY SAW RIG will pay for itself in 30 days operating time.*

**OSHKOSH MANUFACTURING CO., 118 Amber St., Oshkosh, Wis.**

New York Office, 30 Church St.

DISTRICT REPRESENTATIVES IN ALL PRINCIPAL CITIES

# OSHKOSH EVEREADY SAW RIG



Aymar Embury II  
Architect.



# Protected by a name

ATTRACTIVE, well-built homes *should* be Yale protected. More than that, with the many artistic and beautiful designs to select from, there is an unusual opportunity presented in the Yale line to give the touch of distinction and individuality which appeals to discriminating buyers.

When a prospective home-owner sees the name YALE on the cylinder of a Yale-locked entrance door it immediately awakens an added feeling of confidence in the house and its appointments.

Yale door knobs and escutcheon plates, wrought in heavy brass and bronze, preserve their beautiful appearance indefinitely, and the mechanical excellence in every detail of a Yale door set insures the convenience, smoothness of operation and freedom from annoyance so much to be desired.

It's the little touches of distinction and the little evidences here and there of careful planning and wise expenditure in the building of a home that really influence a prospective home-owner. See that the hardware is Yale made — YALE marked. Sold by hardware dealers everywhere.

The Yale & Towne Manufacturing Co.

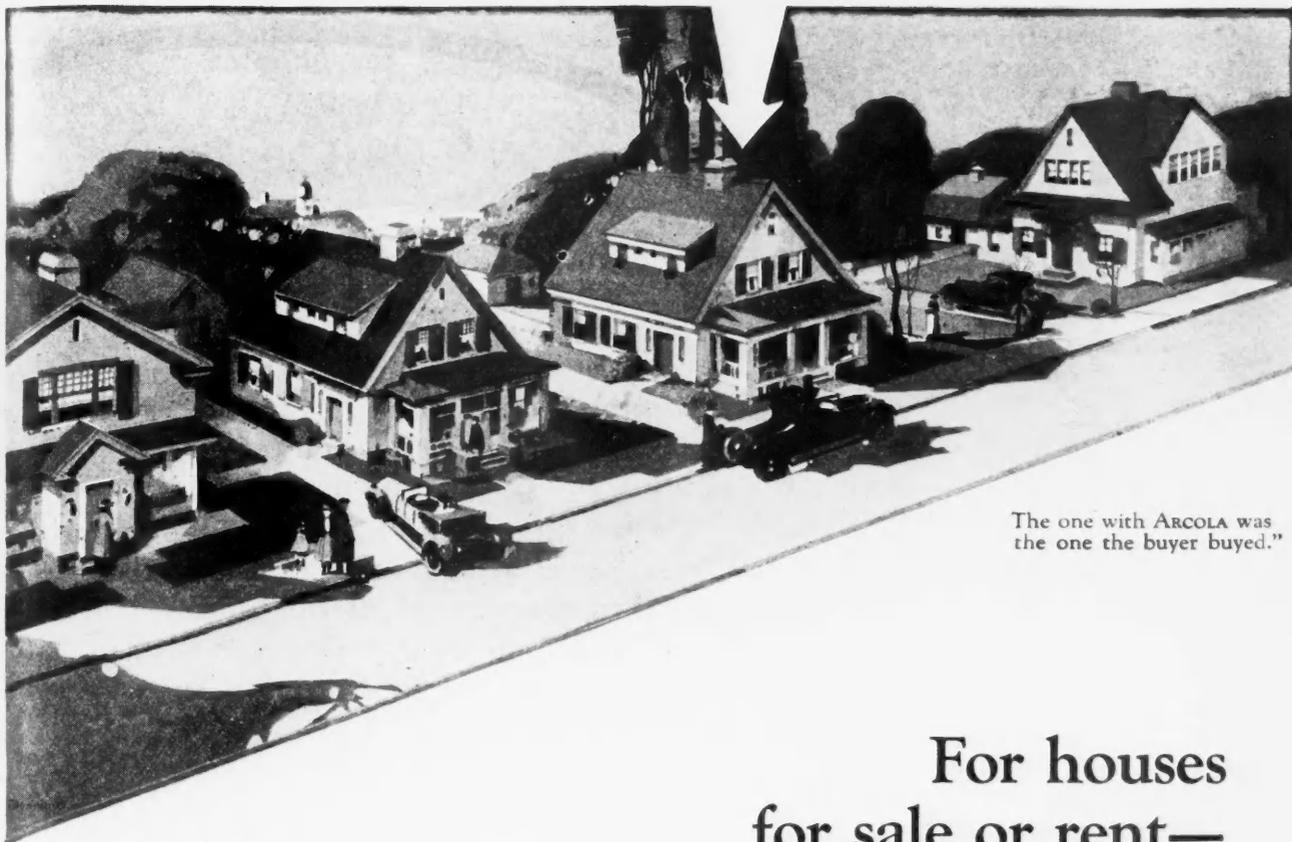
Stamford, Conn., U. S. A.

Canadian works at St. Catharines, Ont.

**YALE MADE IS YALE MARKED**



Padlocks, Night Latches, Dead Locks, Builders' Locks and Trim, Cabinet Locks, Trunk Locks, Automobile Locks, Bank Locks, Prison Locks, Door Closers, Electric Industrial Trucks, Chain Blocks, Electric Hoists, Trolleys



The one with ARCOLA was the one the buyer bought."

"A row of little houses standing side by side.

From a painting by BEN RIMO © ARCO 1923

## For houses for sale or rent— ARCOLA is a Salesman

"I WISH to inquire how long it would take to get another ARCOLA, similar to the one you sold me last year, as I have sold my house," writes E. R. Saunders, of Alton, Ill.

"Possibly you will be interested in knowing how the ARCOLA entered in the deal," he continues. "My neighbor and I owned houses adjoining, that were built by a Housing Company and exactly alike; both of us were trying to sell and a prospective buyer after looking both houses over, paid me six hundred dollars more than my neighbor was asking, because my house was hot water heated by an ARCOLA, and American Radiators."

ARCOLA is an investment on which it is impossible to lose. If you are building houses for sale you discover that buyers are glad to pay more for a house with ARCOLA and an American Radiator in each room. If you are building houses for rent, you can justifiably ask a higher rent; and the tenant saves at least one-third on his fuel bill.

Whether you are building small homes, offices or stores for sale or for rental purposes, send today to either address below for an illustrated ARCOLA book; it describes in full detail how simply ARCOLA can be installed in any small building and why it pays handsome dividends in the fuel it saves. Your name on your letterhead will bring it at no obligation.



# AMERICAN RADIATOR COMPANY

IDEAL Boilers and AMERICAN Radiators for every heating need

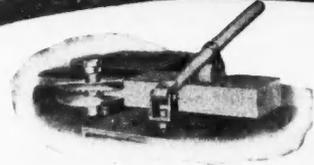
104 West 42nd St., Dept. T-45  
NEW YORK

AMERICAN IDEAL  
RADIATORS BOILERS

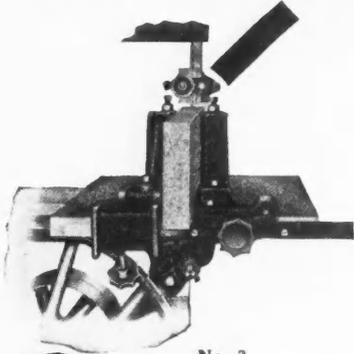
816 So. Michigan Ave., Dept. T-45  
CHICAGO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

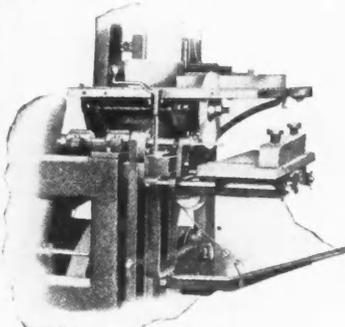
# If You Have A Wood Working Problem—



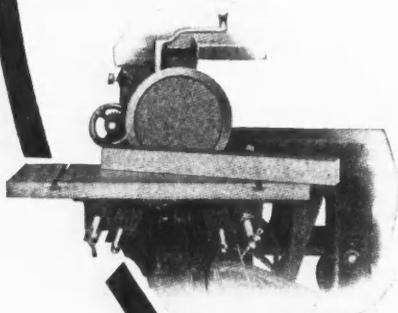
**No. 2**  
**TENONING ATTACHMENT** for straight or bevel work. Cuts tenon up to 3 1/2" and 1/4" to 3/4" 1/2" and 3/8" thick. Easily attached or detached.



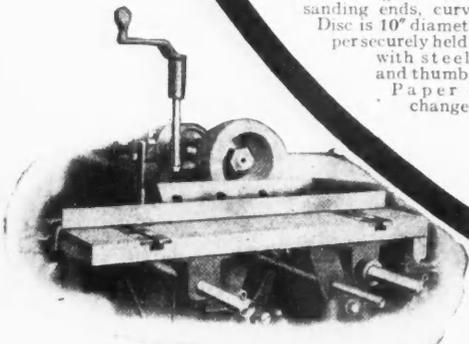
**No. 3**  
**BAND RESAW** for cutting stock up to 8". Makes it easy to work up all waste and narrow stock.



**No. 4**  
**HOLLOW CHISEL MORTISER** for use with borer. Capacity 1/4" to 3/8" square or oblong mortises. Cuts a perfect mortise in length and in desired angle.



**No. 5—DISC SANDER** used with boring attachment for sanding ends, curves, etc. Disc is 10" diameter. Paper securely held in place with steel wheels and thumb screws. Paper quickly changed.



**No. 6—KNIFE GRINDER** attaches to boring spindle with handy knife sliding attachment fit to table. Makes it easy to grind all straight knives for use on jointer, shaper, etc.

A few weeks ago a man came to see us about our woodworking machinery. He frankly stated, however, that he thought our machines too light for his work, but wanted to see them just the same.

At first we thought he must be doing extra heavy work, but found instead that he operated a regular woodworking shop, doing interior trim. When he told us that, it afforded us just a little pleasure to show him

## Some of the Things You Can Do With the Famous Junior "30"

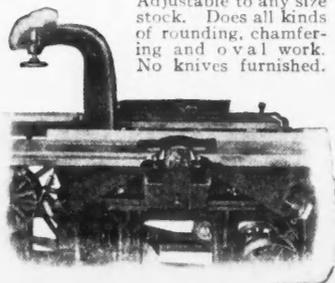
The thing that opened his eyes was the number of attachments we had designed for use with this one machine. Altogether there are fourteen or fifteen of them, and collectively they transform the Junior "30" into a wonderful equipment.

There isn't space to show them all on this page, but we can illustrate enough of them to give you an idea of the completeness of the Junior "30".

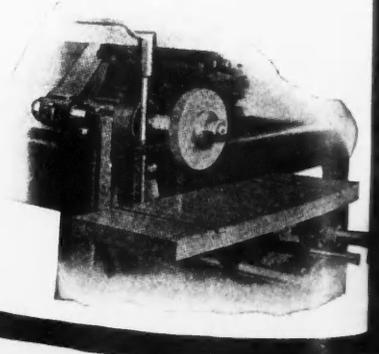
About our friend referred to above: Yes, he bought a Junior "30" and banked the difference—and there was some difference, too! If you're up against the same problem better fill out and mail the coupon over on the other page and get further information about the Junior "30". Money may talk, but the Junior "30" delivers the goods. Try it once.

**The Sidney Machine Tool Co.**  
**SIDNEY, OHIO**

**No. 7**  
**POLE ROUNDER** attachment which works in connection with jointer. Adjustable to any size stock. Does all kinds of rounding, chamfering and oval work. No knives furnished.



**No. 8—EMERY GRINDER** attaches to boring spindle. A 6"x1" emery wheel fit to steel stub is furnished for attaching to spindle. Does all kinds of tool grinding, molding, and shaping cutters, etc. Larger wheel if desired.



**VELLY R...**  
connection  
attachment.  
sizes of P  
with one he  
radius u  
ordered.

**No.**  
**VEL RAISER**  
st or bevel  
paper for wor  
as desired. C  
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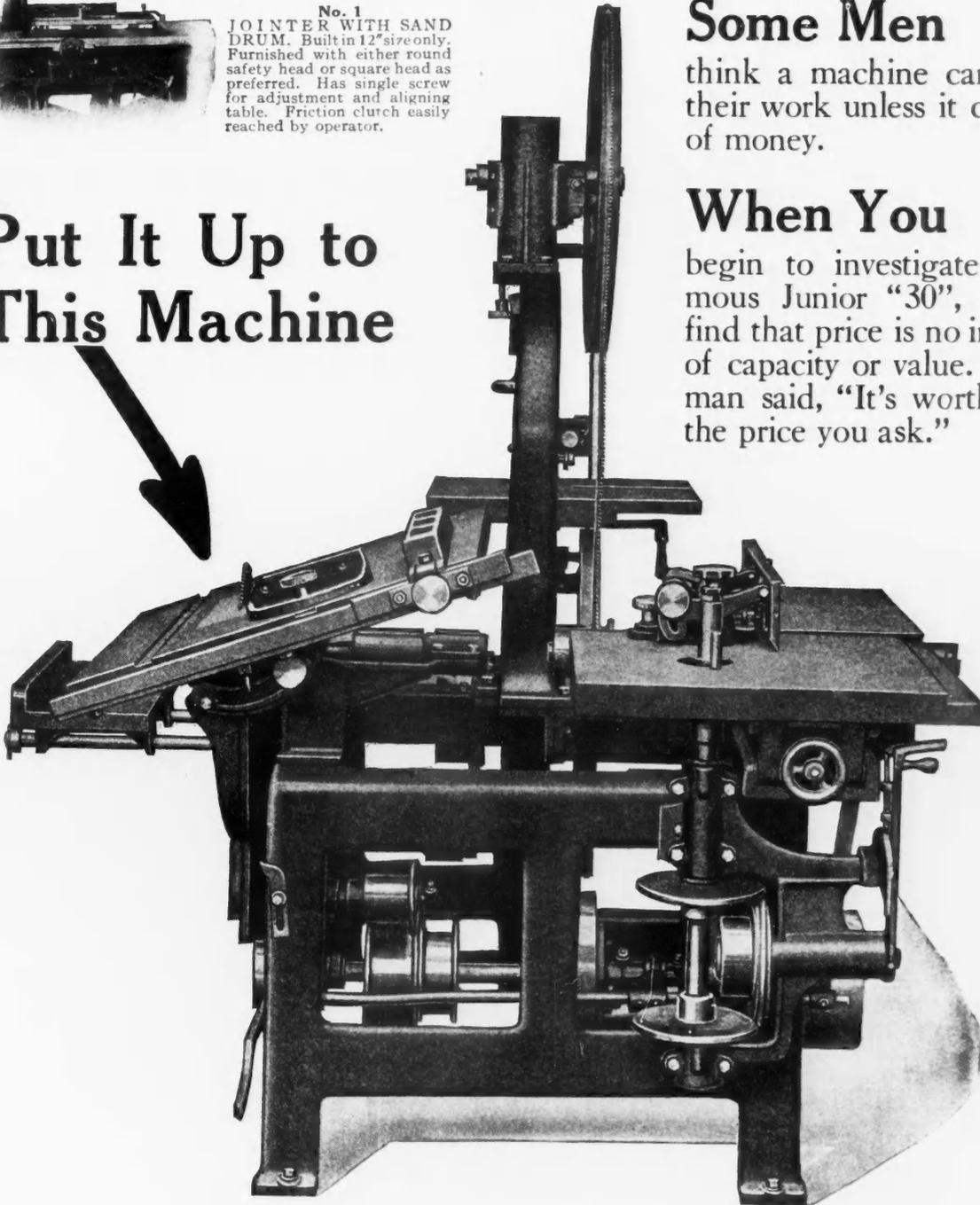
# Some Men

think a machine can not do their work unless it costs a lot of money.

# When You

begin to investigate the Famous Junior "30", you will find that price is no indication of capacity or value. As one man said, "It's worth double the price you ask."

## Put It Up to This Machine



**No. 1**  
JOINTER WITH SAND DRUM. Built in 12" size only. Furnished with either round safety head or square head as preferred. Has single screw for adjustment and aligning table. Friction clutch easily reached by operator.

**No. 10**  
FELLY Rounder for use in connection with boring attachment. Adjustable for all sizes of Fellies. Furnished with one head and knife with 4" radius unless otherwise ordered.

**No. 9**  
FELLY RAISER for all kinds of set or level work. Attaches to the top of the machine for working one or two pieces as desired. Can also be used with boring attachment.

## Mail This Coupon Today!

THE SIDNEY MACHINE TOOL CO., Sidney, Ohio

Gentlemen: Please send us complete information on your Junior "30" and tell us if it is suited for handling the following described work:

.....  
.....

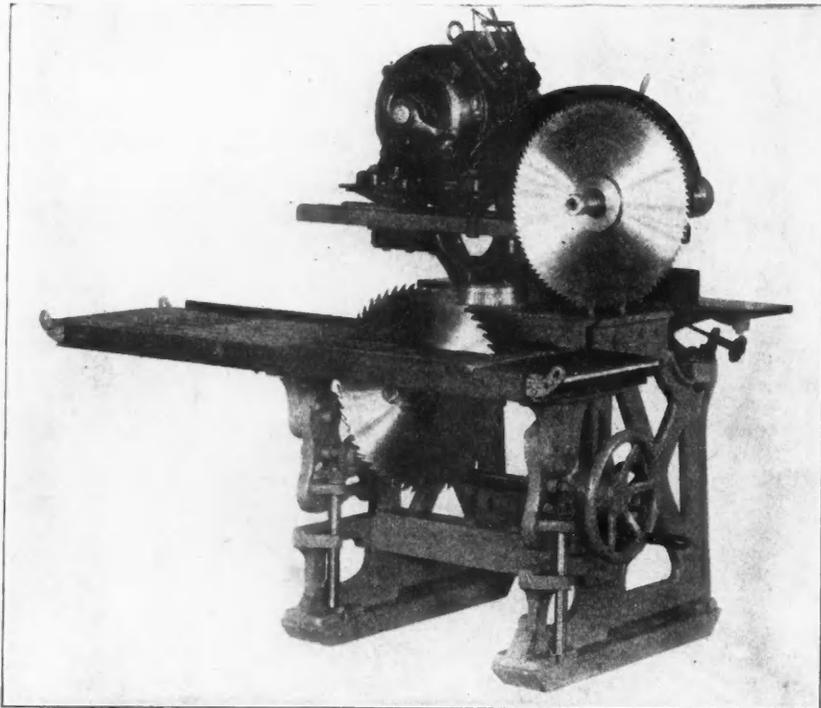
Also quote price on machine with attachment Nos.

Name.....

Street.....

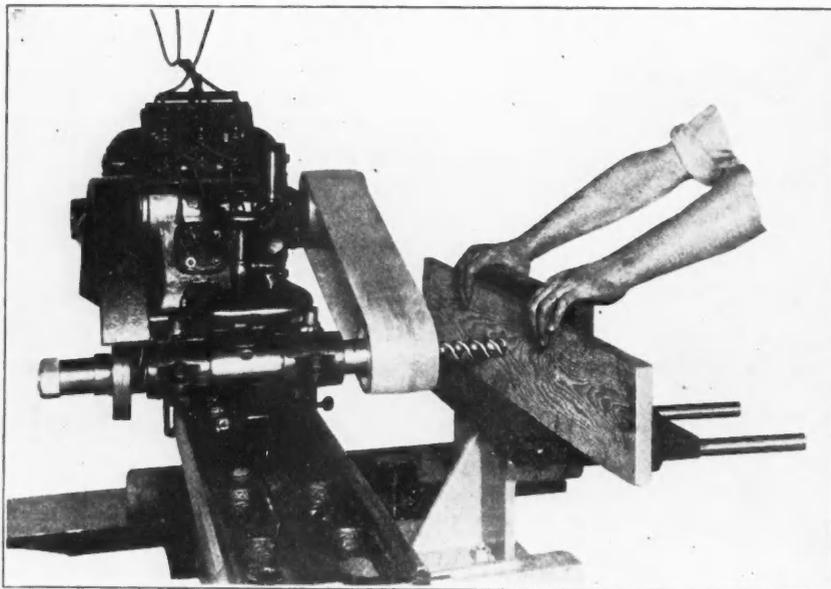
City..... State.....

# The "Master" Woodworker



Underslung Rip Saw. Overhead cross cut that works like a swing saw. Bores, mitres, dados, rabbets, planes, moulds, rips and joints on the bevel, makes jack rafters, fire cuts, houses stair strings, and every other cut necessary in building.  
Will rip 6-inch thick without overload. No power wasted on countershaft.  
Built to last a lifetime. Two men can carry it. Goes through a 2-foot 6-inch door. Powerful, sturdy, and wonderfully accurate.

## MODEL No. 8



This illustration shows the machine in a boring operation.  
The machine is equipped with a sliding table, working back and forth on gibs, and a boring chuck, which takes any carpenter bit after cutting square shank off. High-grade Jacob's Boring Chucks regular equipment on all Master Woodworkers.

## BORING

## A Great bo

The multiplication of man power will p  
by the use of machinery is fas oor, an  
becoming an actual necessity tractor-B  
Even now, man power is aqualifi  
economical waste when there blessing  
a machine that can do his wor with it f  
better and for less money. Th not get a  
task of convincing an employe Our No.  
that man power costs more tha ese pag  
electric horse power is becomin it is a po  
easier every day. It is admitte riven by  
that man exerts about one-eight countersh  
horse power and costs from \$4.00 ce jointe  
to \$6.00 per day, while one-eight to the to  
horse power derived from elec up any l  
tricity under average rates wil ores, m  
cost less than 10c per day, with anes, m  
out a stop for rest or gossip. uts, hou

In the building industry, the very cut  
greatest labor saving machine in other  
know of is the "Master" Wood woodwor  
worker. It is the last word in out a uni  
universal woodworking machin ng the p  
ery, and is fully protected by machines  
U. S. A. and Canadian patents individ  
It does not need a machiner shafts.  
mover to take it from job to job wide-aw  
but a simple Ford pickup bo Ford to b

THE WOODWORKING MANUFACTURER  
Cor. Brush and Congress Sts. DE

# 'Woodworker

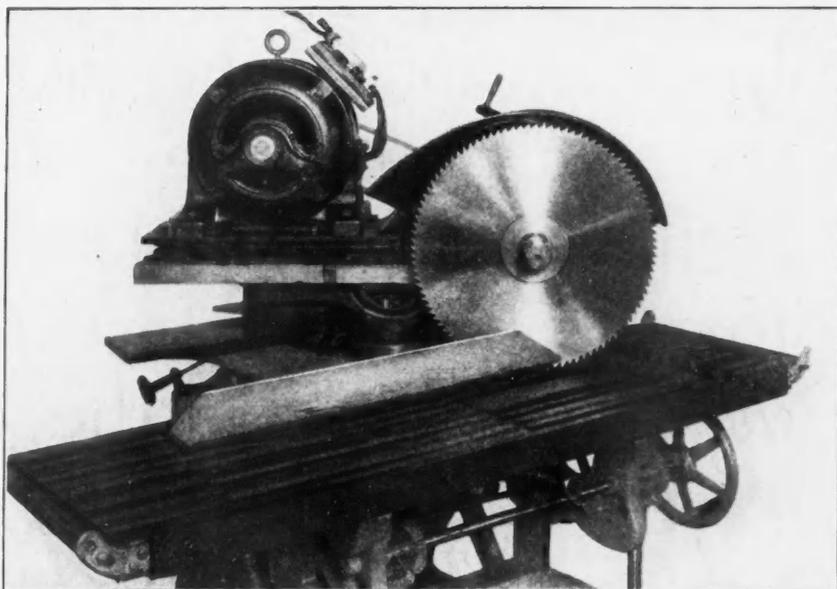
## at Labor Saver

an power will pass through a 2-ft. 6-in.  
 y is fas door, and as one firm of Con-  
 necessity tractor-Builders said, "It is an  
 er is a nqualified success—a boon and  
 there blessing. We would not part  
 his wor with it for \$1,000.00 if we could  
 ey. Th not get another."

Our No. 8 machine illustrated on  
 these pages is our latest triumph.  
 it is a powerful, rugged machine,  
 driven by special motors, with no  
 countershafts—no cross belts on  
 ce jointer and delivers its power  
 to the tooth of the saw. It will  
 up any lumber, wet or dry, and  
 ores, mitres, dados, rabbets,  
 lanes, makes jack-rafters, fire-  
 cuts, houses stair strings, and  
 every cut necessary in building.  
 In other words, the "Master"  
 Woodworker is not a saw table,  
 but a universal woodworker tak-  
 ing the place of twelve different  
 machines without the expense  
 of individual motors and coun-  
 tershafts.

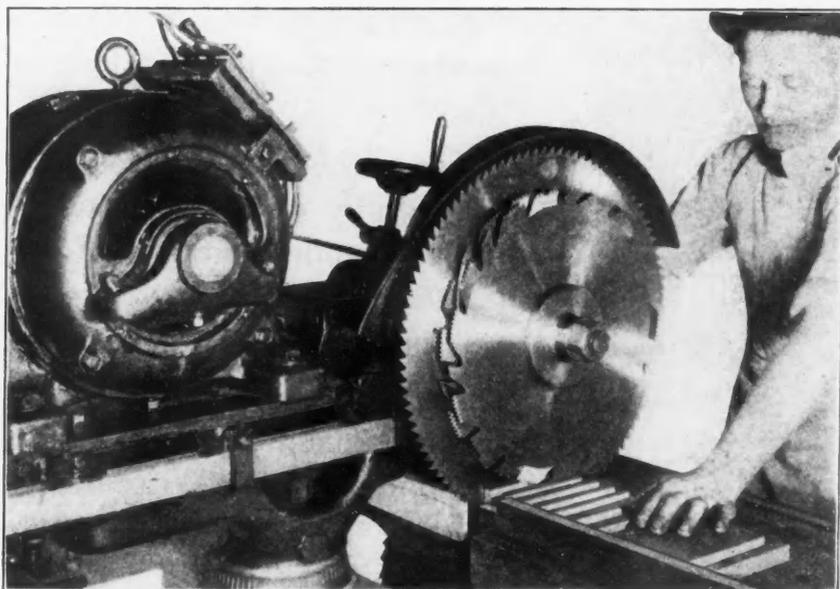
wide-awake Contractor cannot  
 afford to be without one.

WORKING MANUFACTURING CO.  
 ss Sts. DETROIT, MICHIGAN



Jack rafter cut made by setting slide at an angle and tilting table, or using tilting jointer fence. Cut made in one operation.

### JACK RAFTERS CUT



This illustration shows the machine routing and cutting off a side door jamb in one operation. By putting on saw a 1-inch collar and 3/4-inch dado on overhead mandrel, door jamb can be cut to length and dadoed in one operation.

1 3/4-inch Dado is supplied with the machine, as an extra, for gaining out ribbon studs. Guaranteed to Rout any Groove without Chipping.

### SIDE DOOR JAMB



# Reliability—

Integrity and quality are essential to the successful upbuilding of business. The high reputation that has been established for the products of this Company, is *not chance*—but is the recognition of

## *Merit and Superiority*



PITTSBURGH



PITTSBURGH



PITTSBURGH

Good materials, extensive facilities and equipment, together with splendid corps of experienced experts in all departments, combine to produce Steel Sheets and Tin Plates that reflect the highest standards of excellence, and meet in the most satisfactory manner the demands of roofers, builders and contractors who build to last.

Users of these products realize that better work is secured by purchasing sheet metals where the *maintenance of quality* is the first consideration. Economy is certain to follow as a natural result.

Each brand of our manufacture has behind it a service, the scope of which has a tangible value to consumers of Black or Galvanized Sheets. These products are sold by leading metal merchants. Write nearest District Sales Office for information covering your particular sheet metal requirements.

## American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

DISTRICT SALES OFFICES:

Chicago Cincinnati Denver Detroit New Orleans New York Philadelphia Pittsburgh St. Louis

Export Representatives: UNITED STATES STEEL PRODUCTS COMPANY, New York City

Pacific Coast Representatives: UNITED STATES STEEL PRODUCTS COMPANY, San Francisco, Los Angeles, Portland, Seattle



**F**OR BETTER ROOFS and sheet metal work in building construction—use Keystone Copper Steel Galvanized Sheets and Roofing Tin Plates.

# Apollo

Best Bloom Galvanized Sheets  
Apollo-Keystone Galvanized Sheets  
Formed Roofing and Siding Products

This Company constantly endeavors to improve the standards of service and quality for Sheet and Tin Mill Products. An achievement of importance to the building field is the alloying of Steel with Copper to increase rust-resistance. Keystone Copper Steel products will resist rust and withstand wear more effectively than any other steel or iron manufactured. These claims are based upon the indisputable tests of time and weather. This is of direct interest to builders.

Send for booklet "*The Testimony of a Decade*" containing a few of the outstanding facts, and showing graphically the superiority of Copper Steel in service. This book is of particular interest to buyers of sheet metal for building construction, Roofing, Siding, Spouting, Gutters, Culverts, Tanks, Flumes, and similar uses where resistance to rust is an important factor.



Send for set of new and revised Weight Cards and Bundling Tables for Black and Galvanized Sheets, and Formed Roofing and Siding Products

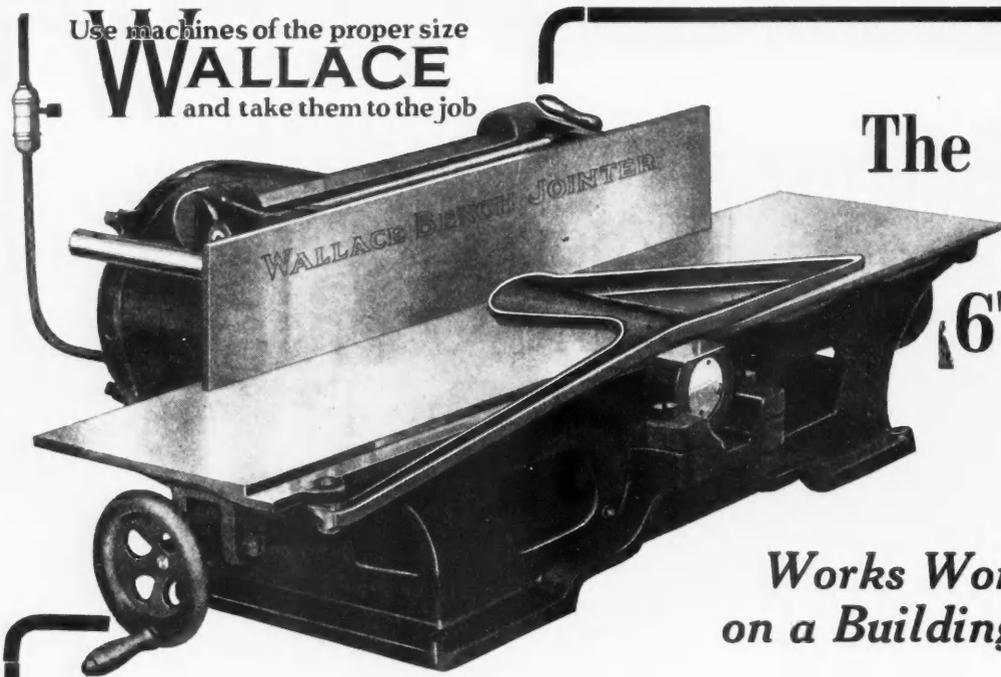
## American Sheet and Tin Plate Company

General Offices: Frick Building, Pittsburgh, Pa.

MANUFACTURERS OF

Sheet and Tin Mill Products for all purposes—Black Sheets, Galvanized Sheets, Tin and Terne Plates, Special Sheets for Stamping  
Corrugated and Formed Roofing and Siding Materials, Electrical Sheets  
Wellsville Polished Steel Sheets, Automobile Sheets in all grades, Deep Drawing Sheets, Stove and Range Sheets, Black Plate, etc.

Use machines of the proper size  
**WALLACE**  
 and take them to the job



## The Wallace Bench 6" Jointer

*Works Wonders  
 on a Building Job*

**Y**OU know how much planing, jointing and rabbeting has to be done out on the job and how tedious and tiresome it is to work a hand plane. A Wallace Bench 6" Jointer operates from any electric lighting circuit, and although it is heavy enough for practically all of the work, it is light enough to carry out on the job. It will take a heavy bite in stock 6" wide or give the most precise finish on the smallest pieces. Direct connection of motor gives added power and speed. Operates from electric lighting circuit.

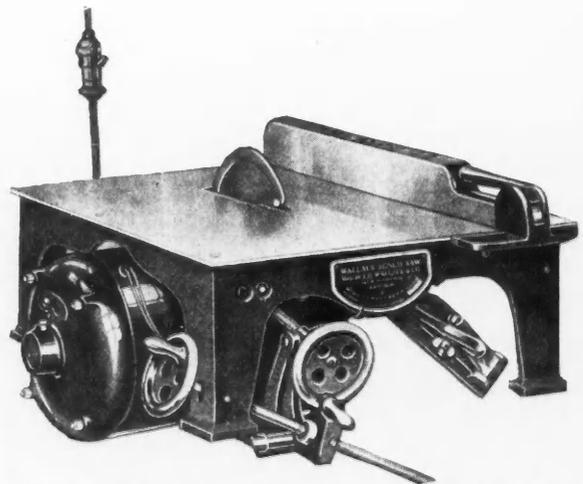
### For Real Production in the Shop

Most woodworking shops know the benefits to be derived from the Wallace Bench 6" Jointer. For quantity production on large or small pieces it has no equal. The other machines in the Wallace Line are equally efficient.

Wallace Bench Universal Saw  
 Wallace Bench Plain Circular Saw  
 Wallace Bench 16" Band Saw  
 Wallace Bench 4" Planer  
 Wallace Bench 6" Jointer  
 Wallace Electric Glue Pot  
 Wallace Electric Sifter

*Send for Bulletin and Prices*

**J. D. Wallace & Co.**  
 1407 West Jackson Blvd. Chicago



This machine is for the endless fitting and sawing incidental to building. A sturdy, powerful machine, that will do more precise and better finished work. Cutting at any angle, rip or crosscut. Readily adapted for dado work. You will be interested in the Universal Saw Bulletin. Send for it today

# CH&E.

## NO. 16 SAW RIG

**YOU** *can* RIP

CROSS CUT  
BORE  
DADO  
GAIN  
MITER  
MORTISE  
RABBET  
TENON  
BAND SAW  
AND JOINT

*Write for Catalog*

**C.H.&E. Manufacturing Co.**

322 MINERAL ST.

MILWAUKEE

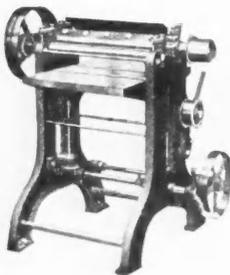
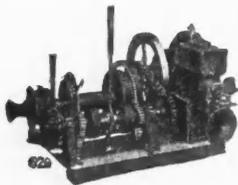
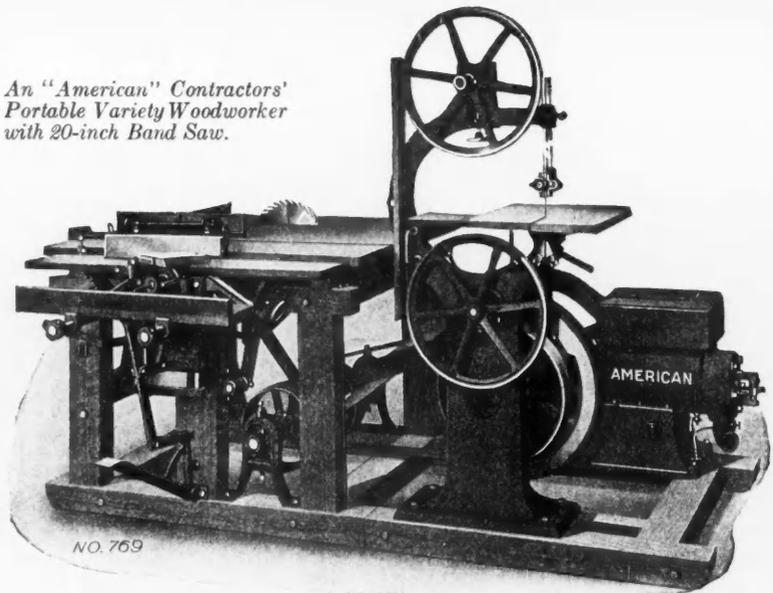
WISCONSIN



*Four  
Cylinder  
Engine  
or Electric  
Motor  
Mounting*



An "American" Contractors' Portable Variety Woodworker with 20-inch Band Saw.



## Take Your Shop Right on the Job

DO what a great many other carpenters and builders are doing—take an American Contractors' Portable Variety Woodworker on the job and have the equal of a complete mill right at your elbow.

Those vexing delays and the costs of running back to the shop to do this or that are eliminated when there's an "American" on the job. Each one of its fourteen machines (all in one unit) are high grade woodworking machines—the equal of any simple machine. You will actually save money on every building contract that has an "American" on the job.

*Write for Catalog No. 77 that illustrates and describes our full line of woodworking machinery*

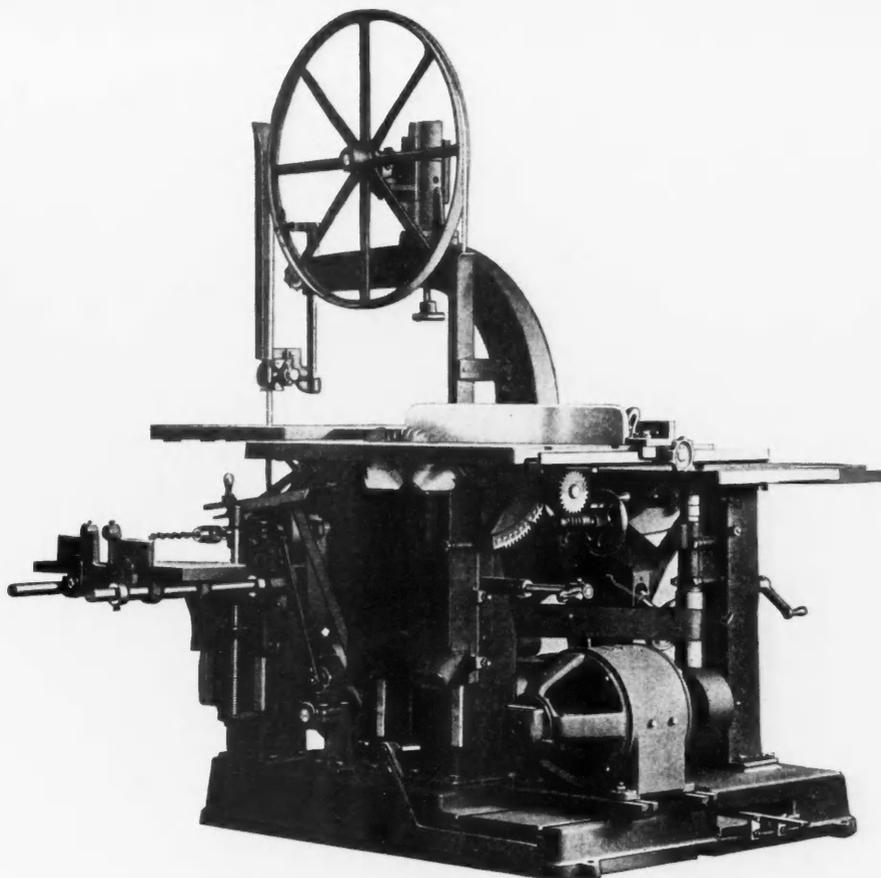
**American Saw Mill Machinery Co.**

60 Main Street

HACKETTSTOWN, N. J.

# "AMERICAN" Woodworking Machinery





# New Model Crescent Universal Wood Worker

No. 101 to No. 112

is being given an enthusiastic welcome by particular users of wood working machinery. The intensity of the interest aroused by the announcement of this machine indicates that there is a tremendous demand for machines of Crescent quality.

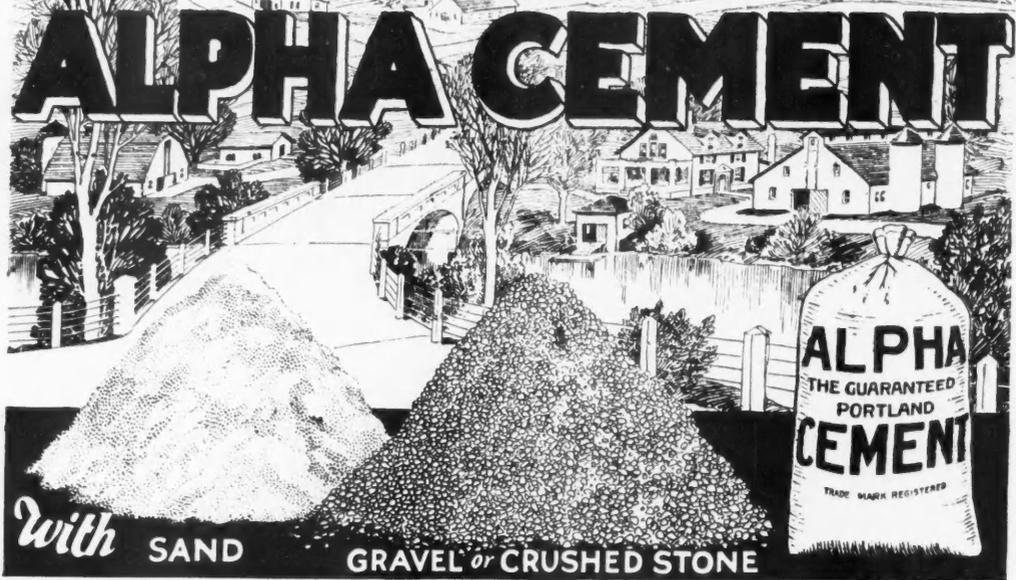
*Ask for special circular giving complete description*

**THE CRESCENT MACHINE COMPANY**  
224 Main Street

LEETONIA, OHIO, U. S. A.



*For Your Permanent Improvements  
You Need Only*



Ask the local ALPHA dealer to give you a copy of the helpful, 104-page handbook, "ALPHA CEMENT-How to use it" which includes descriptions and illustrations of many successful cement constructions. Tells how to build forms, mix, place and reinforce concrete.

The ALPHA dealer will also gladly give you the practical ALPHA Special Bulletins and Service Sheets on any of the thirty or forty home, yard and farm improvements that may particularly interest you--walks, driveways, foundations, posts, walls, cellars, pits, troughs, floors, dams, culverts, drain-pipe, etc.

Mixed thoroughly with clean water and the sand and stone that very likely are right on your property, or close by, ALPHA CEMENT will bring you building improvements that can never rot, rust or burn.

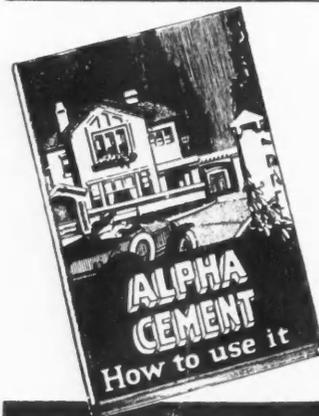
ALPHA CEMENT improvements keep you out of the mud; save paint and repair, preserve your produce; keep your live stock healthy and comfortable. They give lifelong satisfaction and add more than their cost to the value of your property--- make it distinctive.

The name ALPHA represents more than thirty years of cement-making experience and assures you the strongest and most permanent kind of cement job. Use ALPHA in making your 1923 improvements.

See the local ALPHA dealer. He will be glad to serve you.

### ALPHA PORTLAND CEMENT CO.

Easton, Pa. 140 S. Dearborn St., Chicago, Ill.  
Philadelphia Pittsburgh New York Boston  
Baltimore St. Louis, Mo. Battle Creek, Mich. Ironton, Ohio  
Plants at: Martins Creek, Pa. Jamesville, N. Y. Cementon, N. Y.  
Alpha, N. J. Manheim, W. Va. St. Louis, Mo. LaSalle, Ill.  
Ironton, Ohio Bellevue, Mich.



Reproduction of the first advertisement in the 1923 Alpha Portland Cement Company's campaign. This message has appeared as a full page in eighteen of the best farm magazines of the East, South and Middle West, the total circulation of which is 3,253,703.

This is an indication of our effort to induce more substantial building improvements on American farms. Farmers will attempt some small improvements themselves, but for all larger work they will call in the competent local contractor and builder.

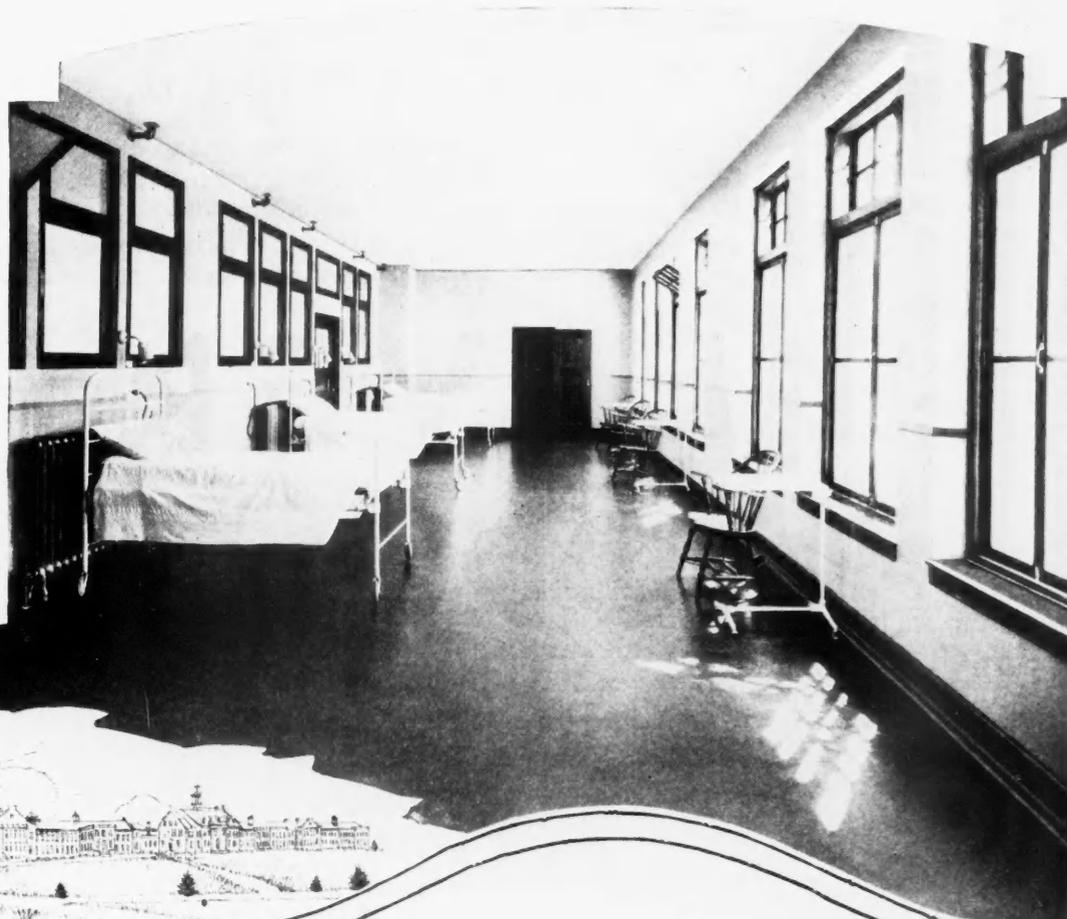
We are glad not only to interest the farmers but to cooperate with you. See the local ALPHA CEMENT Dealer for our 104-page, illustrated Handbook, "ALPHA CEMENT—How to Use it," and for any of the Service Sheets or Special Bulletins on the farm or suburban cement subjects that interest you.

### ALPHA PORTLAND CEMENT COMPANY

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# Armstrong's Linoleum

for Every Floor in the House



Look for the  
CIRCLE 'A'  
trademark on  
the burlap back



Essex County  
Tuberculosis  
Hospital,  
Middleton, Mass.  
John H. Bickford Co.,  
Insr., Archts.

22,500 sq. ft. Armstrong's  
A gauge Brown No. 20 Lino-  
leum cemented to concrete  
underfloors.  
Linoleum Contractor: Leslie  
Dry Goods Co., Haverhill,  
Mass.

For complete and accu-  
rate specifications for in-  
stalling linoleum floors over  
wood or concrete, presented  
in convenient file-size form,  
write for the folder "Arm-  
strong's Linoleum Floors."  
A brand new, completely  
revised edition is now ready.

Armstrong's Linoleum  
specifications are also con-  
tained in Sweet's Architec-  
tural Catalog, Seventeenth  
Edition, pages 442-447,  
and the American Archi-  
tects' Specification Manual  
for 1922, pages 125-127.

## Germicidal Floors in This Institution

**I**N this hospital, where sanitation,  
and cleanliness are elementary, the  
floors are Armstrong's Linoleum.  
Linoleum was used in halls, corridors  
and wards alike.

A property of linoleum that recom-  
mends it particularly for tuberculosis  
hospital use is its germicidal charac-  
ter, due to the oxidized linseed oil  
which forms one of its chief ingredi-  
ents. Dr. Ludwig Bitter, a German  
bacteriologist, working in the Hygi-  
enic Institute in Kiel, on inlaid lino-  
leum seven years old, found that  
". . . virulent typhosus and strep-  
tococci or pus formers were killed in  
eight hours and that all impure micro-

organisms brought in by dirty shoes  
were killed.

"This bactericidal power of lino-  
leum," he concludes, "is due to the  
fact that acid gases, including formal-  
dehyde and formic acid, strong bac-  
tericidal agents, are constantly being  
given off as a result of the linoxin for-  
mation (*i. e.*, oxidized linseed oil)."

By installing floors of Armstrong's  
Linoleum in the hospitals you build,  
you can insure for your clients floors  
that are always sanitary and easy to  
clean, quiet and comfortable, exceed-  
ingly durable and relatively inexpen-  
sive to install and to maintain in  
good condition.

**ARMSTRONG CORK COMPANY, Linoleum Division, LANCASTER, PA.**

B-14

*We Announce a*  
**Half Million Dollar**  
**Advertising Campaign**  
*in the Interests of Busy Beaver Dealers*

**M**ORE new homes, factories, stores, garages, etc., will be built and more repairing and remodeling will be done in 1923 than for many years. In fact, eminent authorities forecast one of the biggest and most profitable years in the history of the country. Recognizing this fact, The Beaver Products Co., Inc., has invested a Half Million Dollars in a great "year-round" national advertising campaign for dealers, featuring

# BEAVER PRODUCTS

Wall  
Board

Vulcanite  
Roofing

Gypsum  
Wall

This campaign—the largest and most imposing ever used by this company or, we believe, by any other manufacturer of such products—is built around the carpenter, the lumber and building supply dealer.

It means a wonderful opportunity for every carpenter, contractor and dealer to do a greatly increased business.

Early in March this campaign will start with a big, double-page spread in color. From then on, practically every week, a double-page ad in color will

tell the Beaver story to the millions of possible buyers who read *The Saturday Evening Post*, *The Literary Digest*, *The American Magazine* and *The Country Gentleman*.

We will be glad to send you complete details of the Beaver Proposition. We build "quality" products. We build them right. We welcome dealers who are "Busy as Beavers."

Line up with "Beaver" before the Half Million Dollar campaign starts—in March. Write for information desired.



THE BEAVER PRODUCTS COMPANY, Inc.  
*Administration Offices, BUFFALO, N. Y.*  
 THOROLD, CANADA                      LONDON, ENGLAND



To the left is a miniature of the first big, double-page smash that will appear early in March, 1923.



**I**F YOU have never used a Jaeger mixer, grasp these big facts before making another mixer purchase.

The Jaeger is the product of the largest factory in the world devoted exclusively to the manufacture of concrete mixers.

The Jaeger is the perfected product of mixer specialists who have made nothing but mixers for 10 years.

Many exclusive and valuable features have made Jaeger absolutely superior in the mixer world.

Quality, service, value-for-your-money—these you get in the fullest measure when you buy a Jaeger.

There are 18 Jaeger outfits—the most complete line of mixers made. There are 18,000 Jaeger owners—every last one a Jaeger booster.

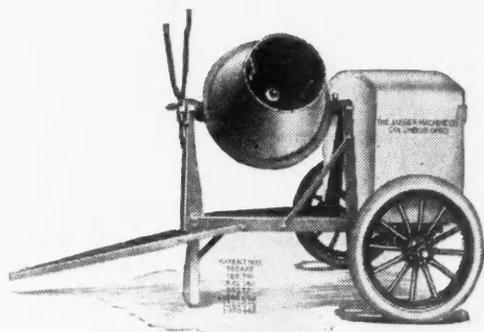
Every Jaeger is a tilting-drum mixer. Every outfit delivers "A Mix a Minute." If you are considering the purchase of a concrete mixer this year, you owe it to yourself to investigate the Jaeger—the product of the largest concrete mixer factory in the world, a concern whose word and service are as reliable as their product. Write today for full particulars.

## The Jaeger Machine Co.

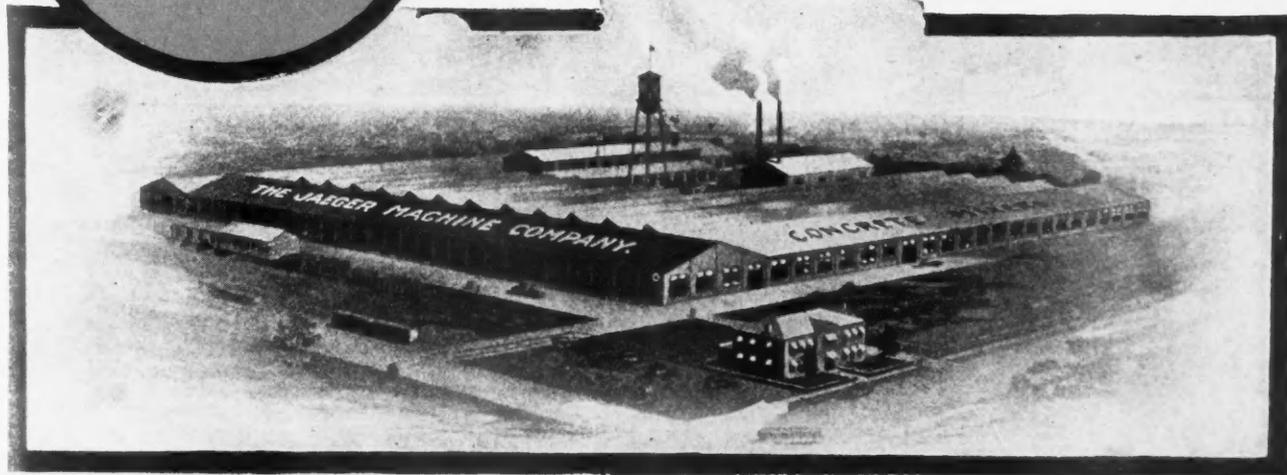
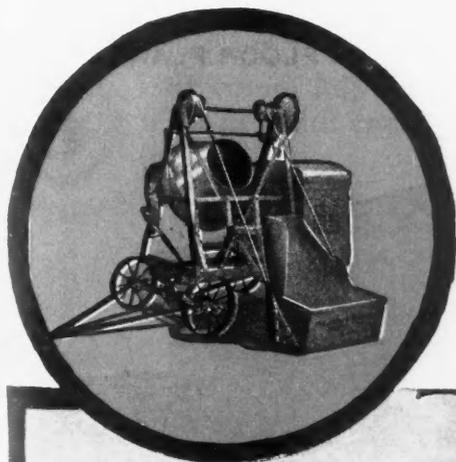
318 Dublin Ave.

Columbus, Ohio

It is infringement to make, use or sell a patented invention without authority under the patent. Our patents have been sustained by the United States Courts in six different instances. Purchasers of Mixers are protected.



3-E Trailer-Mixer



## CON-SER-TEX

**A** TOUGH, specially weatherproofed, carefully prepared cotton fabric used in fine buildings for outside porch floors and roofs. It is unequalled for valleys, hips, gutter linings, and durable flashings.

CON-SER-TEX will not crack, stretch, peel, leak or rot. The very thorough and careful scientific treatment prevents these defects.

A new delight to home owners is the knowing that now it is possible to have a very durable, attractive porch covering at a reasonable cost.

The ease of handling and laying CON-SER-TEX has won high favor for itself with every builder of better homes and buildings.

See page 115 of this issue.

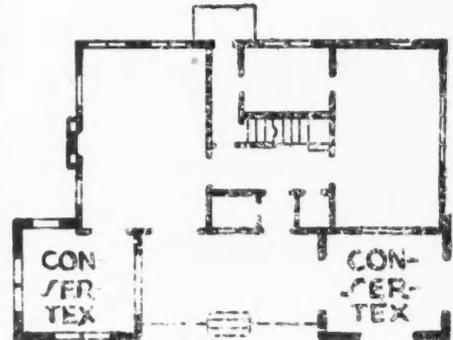
Write to Department B for the booklet

"ROOFING FACTS AND FIGURES"

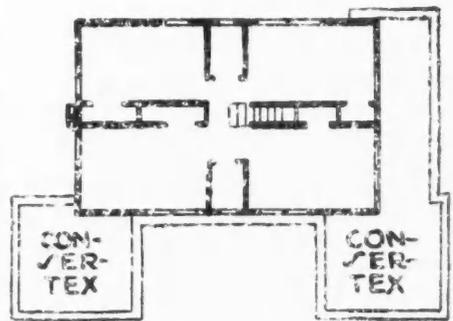
**Wm. L. Barrell Co. of New York, Inc.,**  
50 LEONARD STREET, NEW YORK CITY.

Chicago Distributors  
**Geo. B. Carpenter & Co.**  
430-40 N. Wells Street

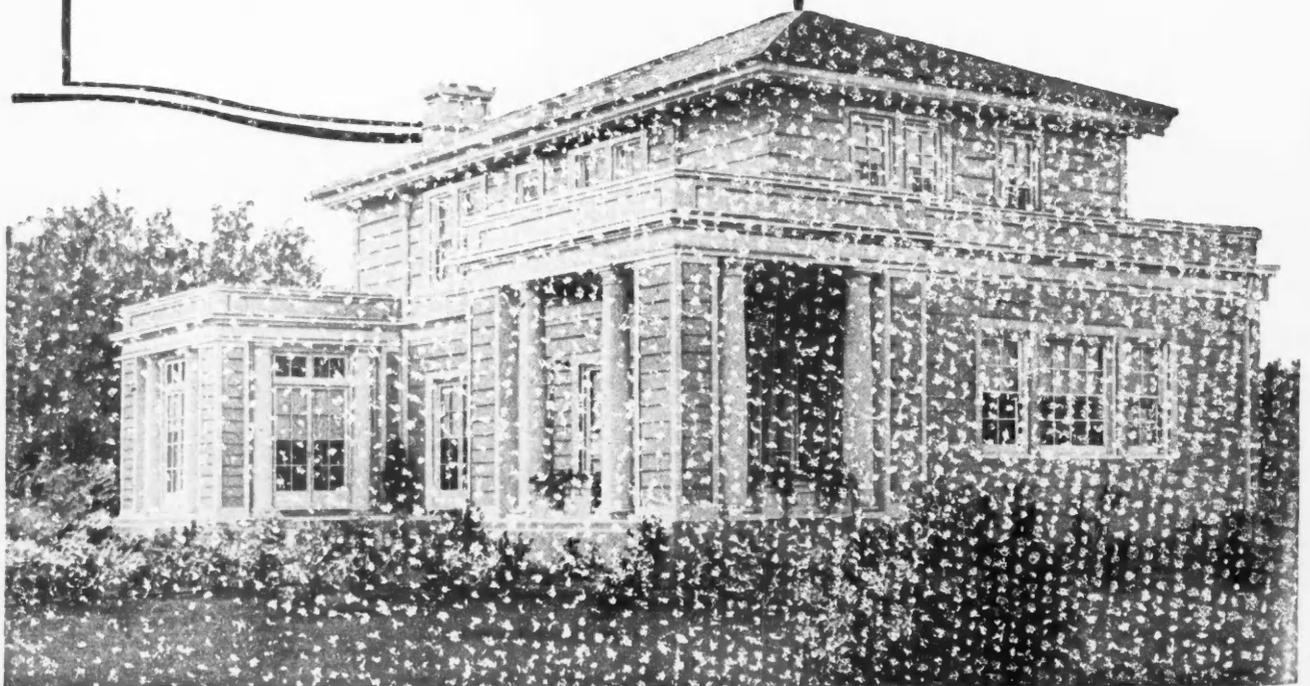
California Distributors  
**Waterhouse-Wilcox Co.**  
San Francisco & Los Angeles



1ST FLOOR PLAN



2ND FLOOR PLAN



# Long-Bell Lumber

# Saves \* my time

"LONG-BELL trade-marked lumber is milled at the mill," said a carpenter.

That was his way of saying:

Long-Bell lumber comes to the job surfaced four sides.

It has had unusual care in trimming.

It comes full length—uniform in width and thickness in all surfaced stock.

It is as nearly straight and true as good milling can make it.

The tongued and grooved stock fits snugly.

To the carpenter these things mean he can do a *better* job in *quicker* time because—

He can fabricate Long-Bell lumber with a minimum of planing, sawing and sorting.

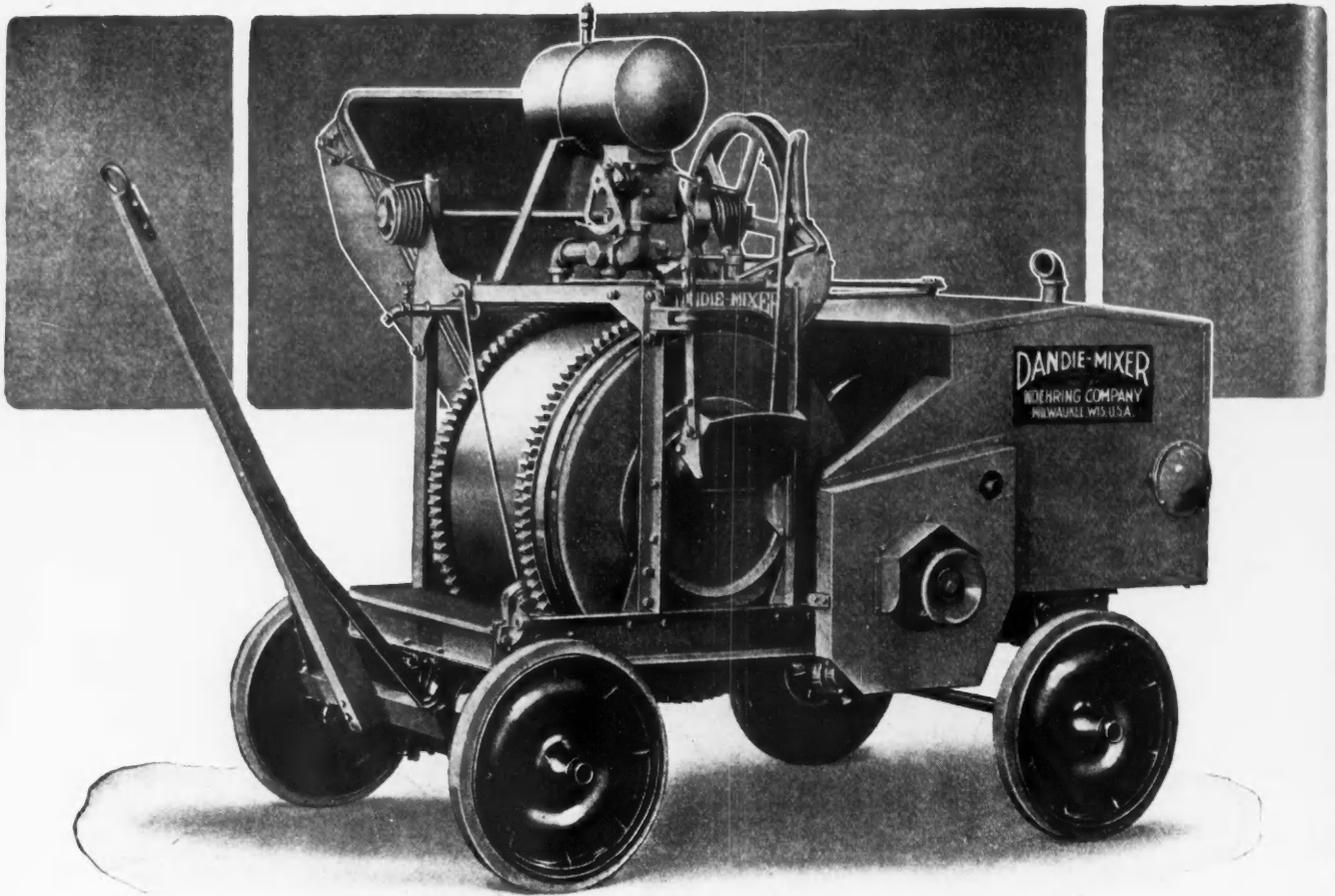
To those for whom he is working, these things mean they will get a *better building* for *less money*.

*Ask Your Lumberman  
for Long-Bell Lumber*

**The Long-Bell Lumber Company**  
B. A. LONG BUILDING Lumbermen since 1875 KANSAS CITY, MO.

\* *My time is your money*





## Here's your easiest profit

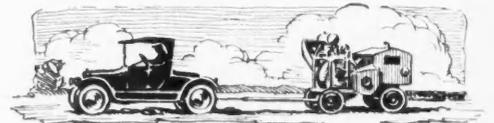
**S**AVE time moving from job to job, and use the time for putting concrete in the forms. That's turning overhead into profits.

Hitch the rubber tired Dandie behind your truck and speed from job to job. That means more jobs done per season, and a bigger working field. Where could you find an easier, surer profit?

Neither can you find a surer profit than by investing in the light mixer of utmost reliability — of greatest minute by minute capacity and longest service life.

The Koehring Dandie light mixer is the remarkable value in the light mixer field — built light, but with best Koehring construction — yet selling within the price range for light mixers.

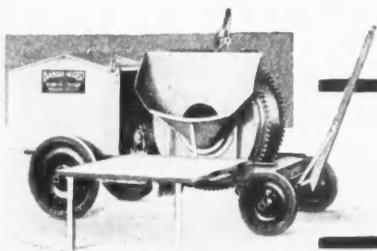
*Learn to judge mixer construction — send today for Koehring Dandie Catalog No. D 1*



### Koehring Dandie Capacities

4 and 7 cubic feet mixed concrete. Steam and Gasoline. Power charging skip or low charging platform — automatic water-measuring tank. Discharge control from both sides. May be equipped with light duty hoist. Mixes mortar as well as uniform concrete.

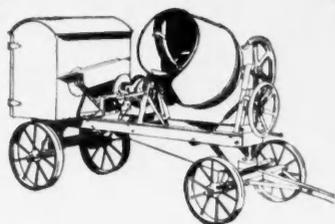
KOEHRING COMPANY, MILWAUKEE, WIS.  
MANUFACTURERS OF CONCRETE MIXERS AND CRANE EXCAVATORS



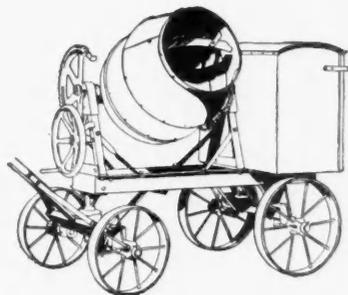
**KOEHRING**  
**DANDIE**  
LIGHT MIXER

# Kwik-Mix

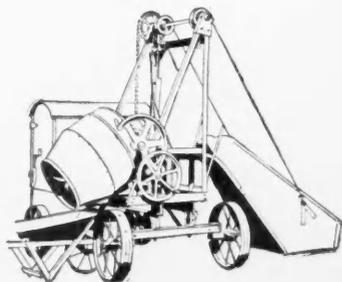
A Size and Style For Every Job



**Kwik-Mix No. 3 1/2-H**—Capacity 3 1/2 cu. ft. mixed. Complete with Builders' Hoist. This model is also furnished in the 4 cu. ft. size, and can be had on trucks without engine.



**Kwik-Mix No. 4-E**—Capacity 4 cu. ft. mixed. Comes also in 3 and 3 1/2 cu. ft. sizes. Can be had on trucks, without engine.



**Kwik-Mix No. 4-LH**—Capacity 4 cu. ft. mixed. Shipped complete with Engine and Housing, on Trucks and with Loader, and Builders' Hoist, all ready to run.



## Mixer-Wise Contractors Mix Concrete The "Kwikest" Way

Keen contractors know the value of fast operating mixers. Their equipment purchases are prompted by that big idea. And they get it in Kwik-Mix Mixers. Put a Kwik-Mix on a job and watch the fun. It keeps a husky crew jumping every minute—pours out a thoroughly mixed batch every 45 seconds. That's **speed**. It's so full-o'-pep it acts as a pacemaker. It's built to endure. Fast, snappy action is continuous day after day. That's the "Kwikest" way to mix concrete and it actually costs you less.



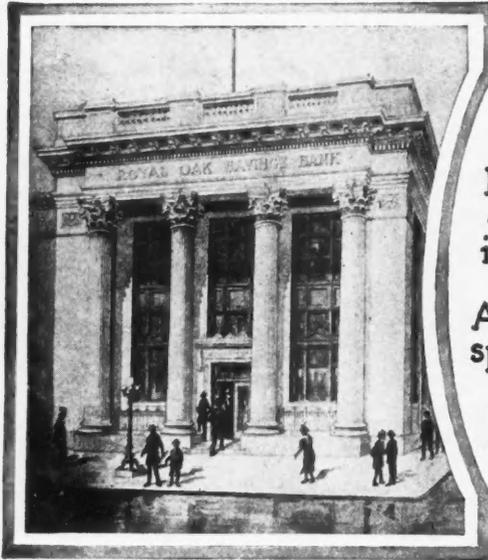
are made in all the regular small mixer sizes. You can get a Kwik-Mix of 2 cu. ft. capacity up to 7 cu. ft. You can get them with or without engine, loader or hoist—rubber tired wheels as optional equipment. Kwik-Mix is positively the fastest small tilting mixer made—let us show you why. Send for detailed information that will tell you about its many Special Features and Exclusive Advantages.

Take a few seconds "out" to fill in coupon below—you'll never regret it.



**KWIK-MIX CONCRETE MIXER CO.**  
1005 Cleveland Ave. Milwaukee, Wisconsin  
Without any obligation to me, please mail me your Valuable New Kwik-Mix Catalog.

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



For two  
of the  
Largest  
Buildings  
of the Year  
in this Town  
the  
Architects  
specified the  
Use of  
**DUNTILE**



Hundreds of Thousands of DUNTILE were required here. DUNTILE manufacturers can compete successfully on such jobs because DUNTILE Builds Better Buildings Cheaper.

## Wherever DUNTILE Is Made It Soon Becomes Preferred Building Unit

ANY man in the building field who would like to enter a business with an assured future, or any company that seeks to extend its activities with a very moderate outlay of money, should investigate DUNTILE. While the illustrations above tell a graphic story of an opportunity that exists in every community, they barely hint at the almost unlimited market awaiting new DUNTILE manufacturers.

### DUNTILE

the great light-weight building unit, which is made in eight standard sizes on the DUNN Automatic Machine,

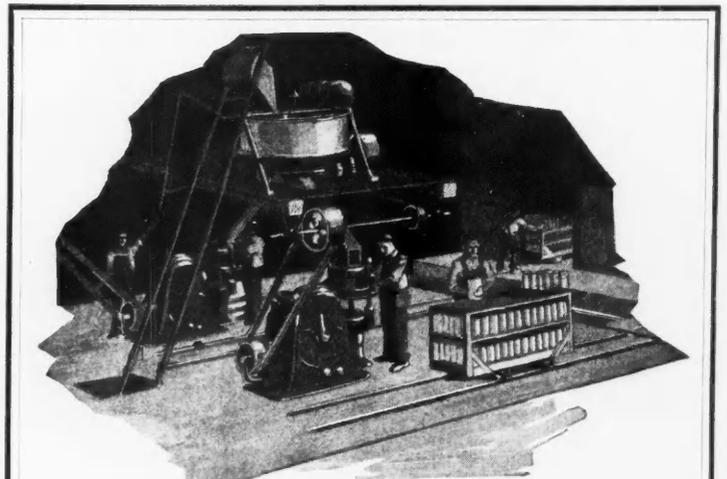


### BUILDS BETTER BUILDINGS CHEAPER

This unique concrete unit has proved its adaptability to every type of construction. It has demonstrated over and over again that it is an actual money saver for the builder, a great convenience to the architect and a producer of extra profits for the contractor. Is it to be wondered, then, that DUNTILE speedily becomes the preferred building unit wherever it is introduced? Or that the demand for it results in remarkable returns for its manufacturers?

### Of Course You Want "Basic Facts"

This is the name of an extremely interesting book we will gladly send without any obligation on your part. It outlines the truly stupendous future of this business and provides facts and figures from the experience of others that are of utmost importance to you. By all means send for it now; it is FREE.



### The Standardized DUNTILE Plant Which Paves the Way to a Highly Successful Business for You

If it were not for the fact that everything entering into the making of DUNTILE has been standardized to the last possible degree, it would be far more difficult—and costly—to get started in this profitable business. As it is, the most highly developed of power equipment is scientifically arranged in a standardized building. Raw materials enter one end of the building and with least man power and no waste motion are turned out at the other end of the building finished products. Naturally this means quantity production, at a profit, from the start. Incidentally, the same equipment that has a capacity of 1500 to 2500 DUNTILE daily (depending on size) can be adapted in twenty minutes to making any size drain tile, conduit tile or silo tile. Investigate!

## W. E. DUNN MANUFACTURING Co.

415 WEST 24TH STREET

HOLLAND, MICHIGAN

DUNN STANDARDIZED TILE PLANTS  
COMPLETELY EQUIPPED FOR MANUFACTURING  
BUILDING, DRAIN AND SILO TILE.

DUNN TILE MACHINES  
DUNN SHOVEL MIXERS FOR PRODUCTS PLANTS  
DUNN CONCRETE, MORTAR AND PLASTER MIXERS.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# WONDER "7" MIXER

**B**UILT into the **Wonder "7"** is the best of **Wonder** design. In this popular size, the **Wonder** principles of fast, thorough mixing action have their fullest opportunity to function effectively and when combined with **Wonder** rapidity of pouring discharge, has earned the reputation for the **Wonder "7"** of the fastest one bag mixer on the market.

Equipped with the **Wonder** rapid and efficient track loader and the highest type of power plant, the **Wonder "7"** also offers you many years of economical mixer service.

## Ask for the New Wonder Catalog

It thoroughly describes **Wonder** design and contains the biggest mixer values on the market.

Write today.

(Also built in one-half bag size)

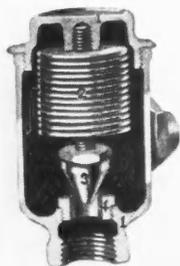


## Construction Machinery Company

Formerly Waterloo Cement Machinery Corporation

103 Vinton Street  
Waterloo  
Iowa

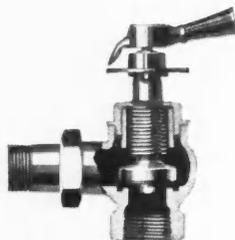
THE  
WISE  
CONTRACTOR  
WORKS  
WONDERS



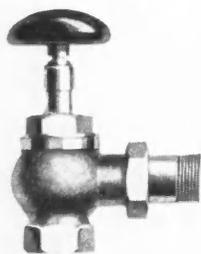
Bishop-Babcock  
Multiflex Trap



Bishop-Babcock  
All-Metal Thermostat



Bishop-Babcock  
Modulation Valve



Bishop-Babcock  
Multiflex Valve



Charles Platt,  
Architect,  
John Gill &  
Sons, General  
Contractors

Meyer, Strong  
& Jones, Heat-  
ing Engineers  
W. G. Cornell  
& Co., Heating  
Contractors

## The experience of the Hanna Building with Bishop-Babcock Multiflex Traps

THAT Bishop-Babcock Heating Equipment and Temperature Control are accorded the highest recognition by leading architects and engineers is proved again by the use of this equipment in the Hanna Building, Cleveland. Mr. J. E. Flury, Chief Engineer of this building, writes:

"Regarding the operation and efficiency of the heating system in the Hanna Building, Hanna Building Annex and Hanna Theatre, and the working of the Bishop-Babcock Multiflex Thermostatic Traps, I have operated the above systems for two seasons and I have not experienced any trouble in maintaining a uniform circulation and a steady vacuum as to the Multiflex Traps. They have not given us any trouble, either in our direct or indirect system."

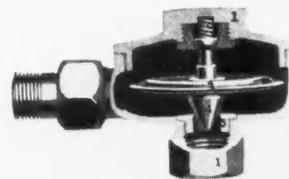
May we send additional facts?

The Bishop & Babcock Company  
Cleveland, Ohio

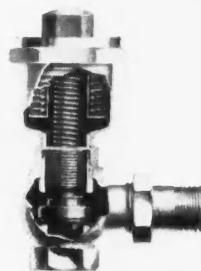
# Bishop-Babcock

HEATING EQUIPMENT &  
TEMPERATURE CONTROL

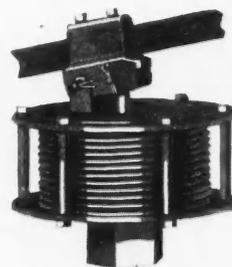
World's Most Complete Line of Heating Specialties



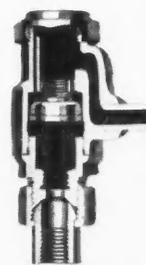
Bishop-Babcock  
Vacu-Trap



Bishop-Babcock  
Pneumatic Valve



Bishop-Babcock  
Steam Damper Regulator



Bishop-Babcock  
Vacu-Stat

## Sales and Service Offices of The Bishop & Babcock Company

AMSTERDAM, N. Y.—F. E. Dwyer, 447 Guy Park Avenue.  
ATLANTA, GA.—D. F. Stevenson, 60 W. Mitchell Street.  
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BUFFALO, N. Y.—M. C. Beman, 311 White Building.  
CHARLOTTE, N. C.—I. Hardeman, 816 Realty Building.  
CHICAGO, ILL.—E. Vernon Hill Co., 64 W. Randolph Street.  
CINCINNATI, O.—C. R. Lingo Engineering Sales Company, 901 Gerke Building.

CLEVELAND, O.—General Offices, 1200 E. 55th Street.  
DALLAS, TEX.—Fred Colbert, 1106 Commerce Street.  
DENVER, COLO.—A. G. Reuter, 1724 Lawrence Street.  
DETROIT, MICH.—T. R. Woolley, 661 W. Jefferson Street.  
KANSAS CITY, MO.—Engineering Sales Co., 1314 McGee Street.  
MINNEAPOLIS, MINN.—W. P. Nevins Co., 120 S. 9th Street.  
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PITTSBURGH, PA.—E. A. Hauschildt, 412 Third Avenue.  
PORTLAND, ORE.—J. M. Main & Co., 1114 Northwestern Bank Bldg.  
RICHMOND, VA.—Virginia Equipment & Supply Company.  
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WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



**Packard**  
**TILTER**  
**FORD TRAILER**  
**MIXER**

**MOST REASONABLY PRICED**  
**MIXER IN AMERICA**

Built In All Sizes And Types

Get New Prices—Terms. Just Off Press

**The American Cement Machine Co., Inc.**

Branch Offices and Warehouses

Chicago  
 Los Angeles  
 Seattle  
 Kansas City

Minneapolis  
 San Francisco  
 Dallas  
 Cambridge, Mass.

Buffalo  
 Montreal  
 Pittsburgh  
 Milwaukee

**Keokuk Iowa**  
 THE 300,000 H.P. ELECTRIC CITY

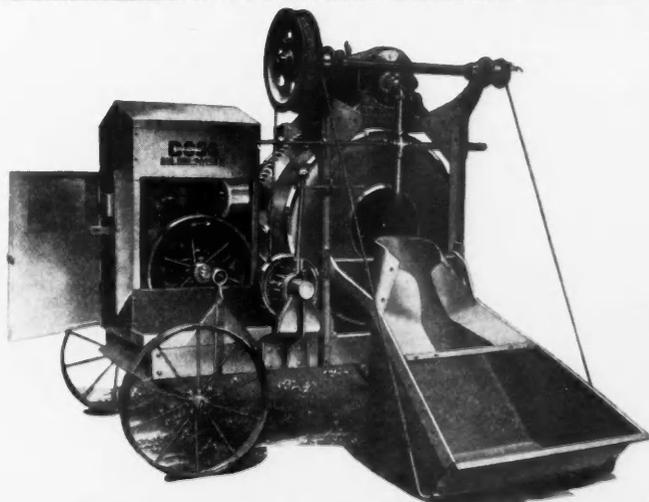
Branch Offices and Warehouses

St. Louis  
 Louisville  
 Knoxville  
 Tulsa

New York  
 Detroit  
 Philadelphia  
 Salt Lake City

Atlanta  
 Indianapolis  
 New Orleans  
 Washington, D. C.

**BOSS MIXERS 1/2 to 5 BAG SIZES**

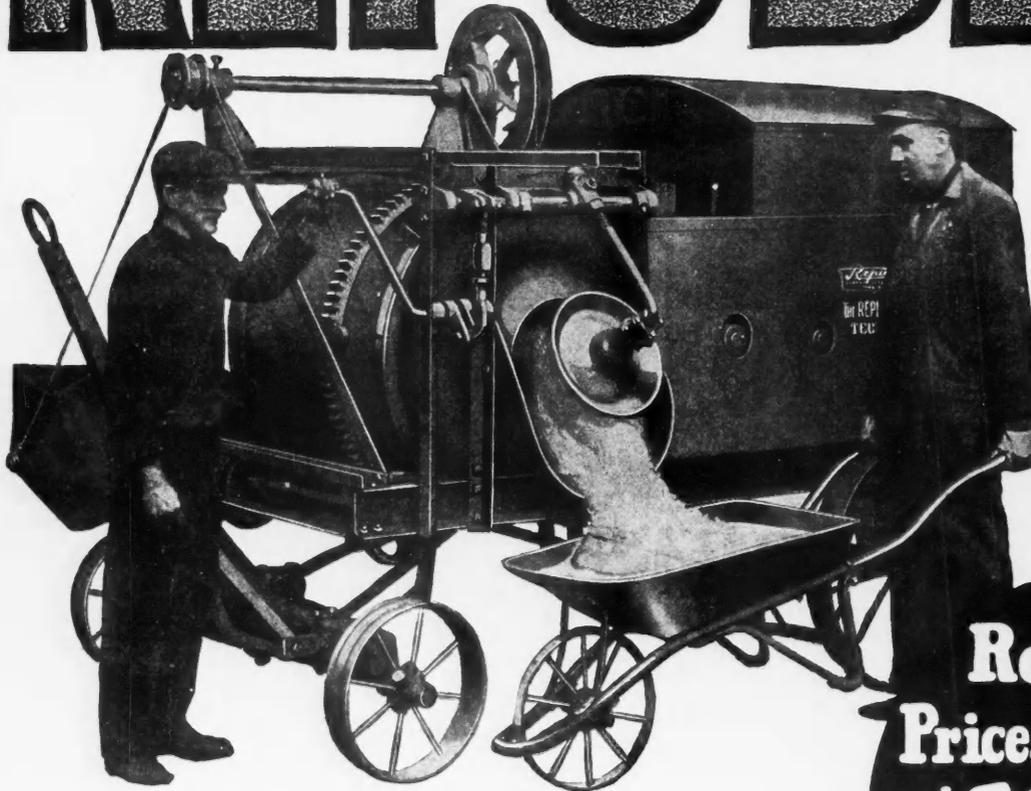


**BOSS HOISTS - \$125<sup>00</sup> UP**



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# REPUBLIC



## COMPLETE STOCKS AT THESE CITIES

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|---|--|
| Allentown, Pa.<br>Atlanta, Ga.<br>Baltimore, Md.<br>Birmingham, Ala.<br>Bluefield, W. Va.<br>Boston, Mass.<br>Buffalo, N. Y.<br>Canton, O.<br>Chattanooga, Tenn.<br>Chicago, Ill.<br>Charleston, W. Va.<br>Clarksburg, W. Va.<br>Cleveland, O.<br>Columbus, O.<br>Dallas, Tex.<br>Davenport, Ia.<br>Des Moines, Ia.<br>Detroit, Mich.<br>Duluth, Minn.<br>Grand Rapids, Mich.<br>Green Bay, Wis.<br>Holyoke, Mass.<br>Horseheads, N. Y.<br>Indianapolis, Ind.<br>Jacksonville, Fla.<br>Kansas City, Mo. | Knoxville, Tenn.<br>Los Angeles, Cal.<br>Montreal, Canada<br>Muskogee, Okla.<br>Nashville, Tenn.<br>New Haven, Conn.<br>New Orleans, La.<br>New York City<br>Norfolk, Va.<br>Omaha, Neb.<br>Philadelphia, Pa.<br>Pittsburgh, Pa.<br>Raleigh, N. C.<br>Richmond, Va.<br>Saginaw, Mich.<br>St. Louis, Mo.<br>St. Paul, Minn.<br>Shreveport, La.<br>Spartanburg, S. C.<br>Springfield, Mass.<br>Syracuse, N. Y.<br>Tampa, Fla.<br>Terre Haute, Ind.<br>Toledo, Ohio<br>Wilmington, N. C.<br>Winton-Salem, N. C. |
|---|--|

*Buy a Republic and Save Money—*

Republic  
 Prices range from  
**\$185.00**  
 and upward

REPUBLIC Mixers represent maximum value at minimum cost—Mixer that will stand up under hard usage—that can be operated economically—that will prove a profitable investment from every standpoint.

Quantity production on a few sizes enable great manufacturing economies which are passed on to the buyer.

Complete stock of REPUBLIC Mixers are carried in almost every large city in the world, enabling quick delivery and low freight. Get full information on this splendid line—use the coupon.

## MAIL COUPON

Don't buy an outfit until you fully investigate the entire Republic line. You save money on first cost and you save money in operation and upkeep. Hundreds of Republics in daily use. Just mail this coupon for full details, circulars and name of your nearest dealer. Fill out and mail tonight.

Republic Iron Works  
 325 Evans St., Tecumseh, Mich.

Please send me circulars and full information regarding a REPUBLIC Mixer.  
 I am in the market for a ..... foot outfit.

Name .....  
 Address .....



**The Republic Iron Works**  
 325 Evans St.      TECUMSEH, MICH.

# Make More Money—Be a Bigger Builder

The Good Things—the Big Things—of Life are for those who will reach out for them. You can have them for the grasping—just an energetic thought—saying "I Will" and they are yours. Are you content to make a small profit slowly on hand labor or—will you make a large profit quickly by means of a modern machine? Which?



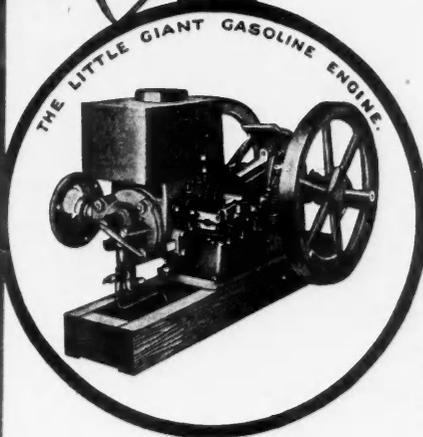
## Let The Magic Mixer— & Mix Your Concrete



**Does it faster—better—cheaper**  
This Mixer will put you in position to do all kinds and classes of concrete work. It will enable you to work faster, do more work, do bigger work, do better work—and will help you build up a permanent and substantial business.

**\$ 25**  
**BRINGS IT TO YOU**

Balance on Aloe's Easy Rental Purchase Plan—you have **TEN MONTHS TO PAY**—and the mixer will be making money for you faster than the easy payments come due. Certainly this is a rare opportunity for you to get away from the old shovel method and get into the class of the big men who are doing the big jobs in the modern way.



### Your Big Opportunity For Greater Prosperity

With this wonderful machine and two men you can do as much work as you formerly did with six men. And you can do it easier, quicker and better, producing an absolutely uniform batch every time. It will mix 4½ to 5½ cubic feet per batch—can be speeded up to a batch every minute—over 2,000 cubic feet per day. It is the most practical and efficient mixer made—scientifically constructed of the best materials—light in weight, portable, simple and durable. Backed by the Aloe iron-clad guarantee to give the utmost service and satisfaction.

#### The Engine

Fitted with 2½ horse-power four cycle, horizontal gasoline engine with high-grade Webster magneto. Simple, powerful, reliable, economical—requires only two gallons gasoline a day. Protected by all-steel housing. Two doors at rear make it easy to get at.

#### Anyone Can Run It

Nothing complicated—nothing to get out of order. Can be operated by anyone who will read and follow the simple directions which are furnished with each mixer. It comes complete—ready for work the day you get it.



#### Free Trial Offer

So confident are we the Magic Mixer will please you in every way we will gladly send it to you for **10 DAYS FREE TRIAL** on payment of only \$25.00. Take it out on your jobs—put it to the most severe tests. Then, if you can be induced to part with it again ship it back at our expense—and we will promptly return your money without a word.

#### Get This Free Book "The Concrete Road to Success"

You ought to have this booklet of invaluable facts about the wonderful opportunities the Magic Mixer offers you. Sent **FREE** together with full particulars of our Easy Rental Purchase Plan by which the Magic Mixer will pay for itself and put you on the road to greater success at the same time. Get this remarkable offer.

#### Mail The Coupon Today—NOW

The road to success is open to you. The opportunity to make yourself a big man is before you. The simple act of signing and mailing this coupon may be the turning point of your career. Don't sit idly by while other men are forging to the front. Start the coupon on its way. Get the facts. The time to act is NOW.

**A. S. ALOE CO.**  
**621 Olive St., St. Louis, Mo.**

#### MAIL COUPON TODAY

**A. S. ALOE CO.**  
**621 Olive St., St. Louis, Mo.**

Send me **FREE** booklet, "The Concrete Road to Success", full description of the Magic Concrete Mixer and particulars of your Easy Rental Purchase Plan.

Name \_\_\_\_\_

Address \_\_\_\_\_



## Complete Warehouse Stocks

***Sterling***

WAREHOUSE STOCKS

MILWAUKEE, WIS.  
 BOSTON, MASS.  
 NEW YORK, N. Y.  
 CLEVELAND, OHIO  
 DETROIT, MICH.  
 CHICAGO, ILL.  
 ST. LOUIS, MO.

WHEELBARROWS are very seldom ordered until required and then it's all in a hurry. For this reason we have established warehouse stocks at leading centers to enable us to render quick service. In addition to these warehouse stocks we have over fifty distributors located in most all important cities and who purchase our product in carload quantities. It pays to buy "Sterlings", as you can get them, also repairs most any place, any time.

*Agency Stocks Everywhere*

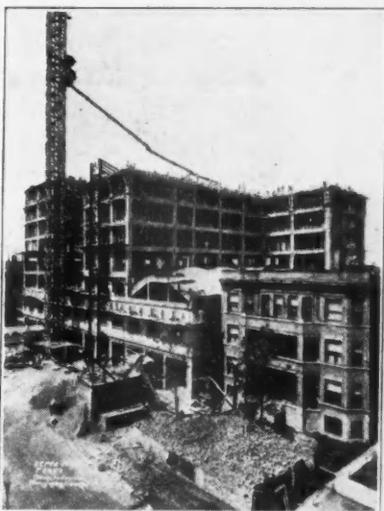
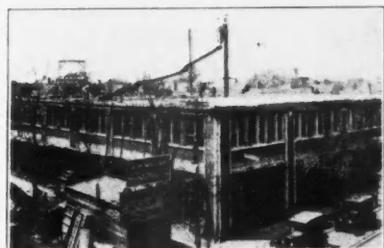
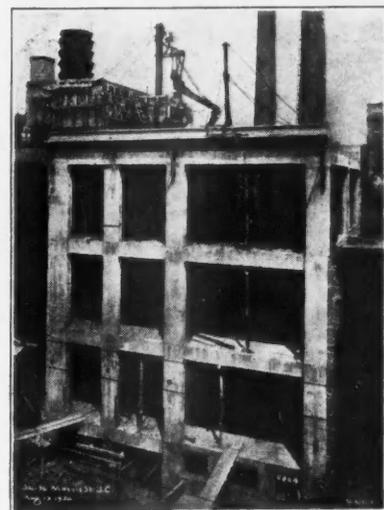
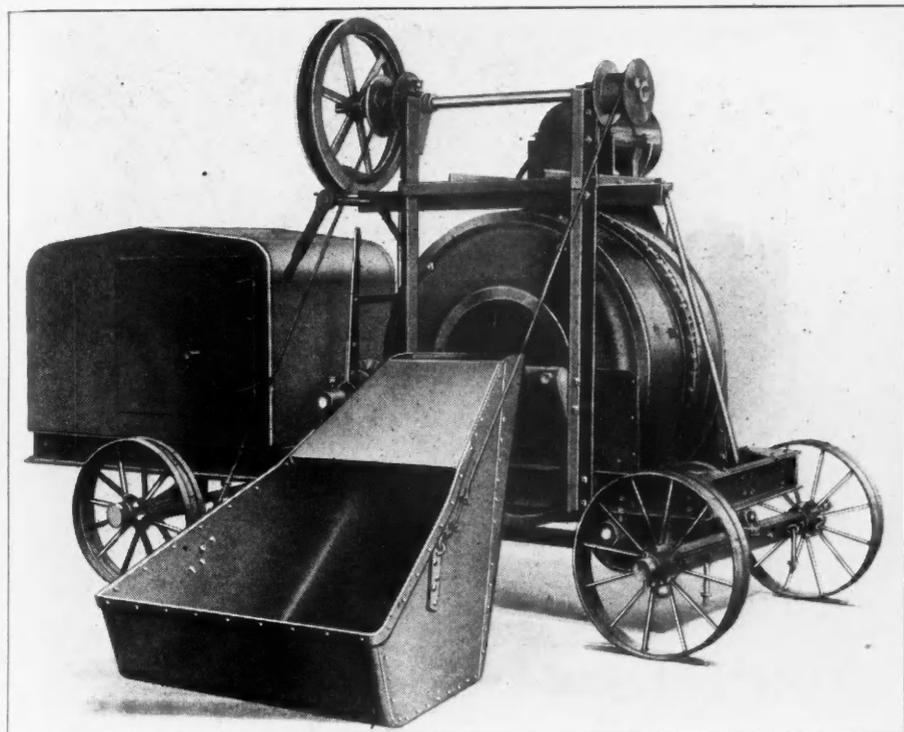
**Sterling Wheelbarrow Company**

NEW YORK  
 BOSTON  
 CLEVELAND  
 BUFFALO

**MILWAUKEE, WIS.**

CANADIAN AGENTS-MUSSENS LIMITED, MONTREAL, TORONTO, WINNIPEG, VAN COUVER

DETROIT  
 CHICAGO  
 ST. LOUIS  
 SPOKANE



## More Contracts, More Profit

During these days of keen competition in the building field, the successful contractor—the one who gets the best jobs and makes the most profit on each job—is the one who uses the most efficient labor-saving equipment. And a concrete mixer is a necessary part of such equipment. Any mixer is better than *no mixer* but all mixers are not equally efficient or dependable.

Buy the *best*—especially when it costs no more. Put your trust in the sturdy, heavy duty construction and efficient, high speed service of an *Oshkosh Mixer*. You can depend, absolutely, on any mixer that bears this name. It's a guarantee of first-class work and non-stop production. *Oshkosh Mixers* don't quit—and they turn out more batches of concrete per day than most mixers because of special features which contribute to rapid charging, high speed mixing, and rapid discharge. They help the contractor get more contracts and make more profit on each job.

*Oshkosh Mixers are made in five sizes: 5, 7, 14, 21 and 28 cubic feet of mixed material per batch. The two smaller sizes are recommended for general building jobs. Write for complete catalog which describes and illustrates these dependable mixers in detail.*

Oshkosh Manufacturing Company, 118 Amber St., Oshkosh, Wis.

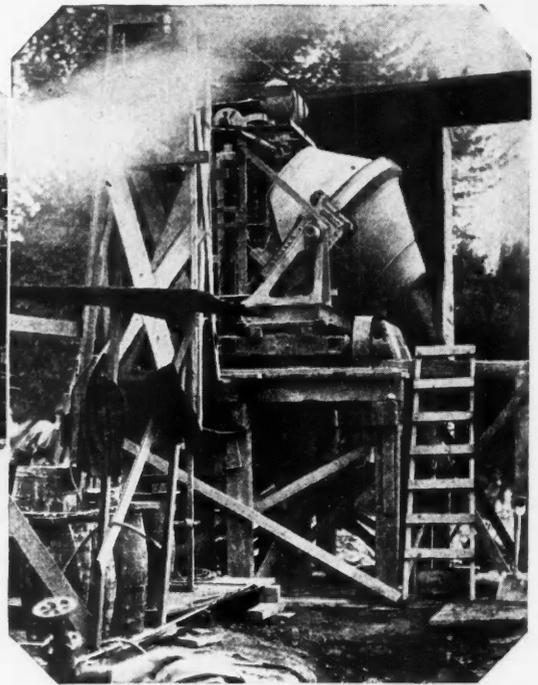
NEW YORK OFFICE: 30 Church Street

DISTRICT REPRESENTATIVES IN ALL PRINCIPAL CITIES

# OSHKOSH MIXERS



Mississippi  
State Sanitarium  
Built by Smith Co.  
"Industrial Builder"  
Birmingham, Alabama



## Smith Mixed Concrete Used in Big Million Dollar Sanitarium

The 4000 yards of reinforced concrete required for the new institution—530 ft. x 30 ft. with 80 ft. x 40 ft. wing were poured in two months—the concrete being mixed by a Smith 10-S Tilting Type Mixer.

Like other contractors and builders mentioned in recent advertisements, the Smith Company has standardized on Smith Mixers, thereby gaining additional advantages through the familiarity of their concrete crews with this one make of mixer.

The practically endless life of Smith Concrete Mixers, proven by a quarter of a century of satisfactory service, has convinced contractors that the design and construction are right.

The responsibility of the contractor does not end with the completion of the job—a Smith-mixed concrete job remains as a monument to his credit—the thorough "end-to-center" mixing action insuring enduring concrete.

### *For Large and Small Jobs*

Smith Mixers are made in sizes to suit all kinds of concrete construction from the smallest to the largest—for sidewalks, gutter and culvert construction—and for the largest concrete building, dam, road, bridge and grain elevator, the largest mixers in the world (used on the Muscles Shoals project) being Smith 112-S Mixers. Our catalogs are sent for the asking.

### The T. L. SMITH COMPANY

1187-32ND ST., MILWAUKEE, WIS.

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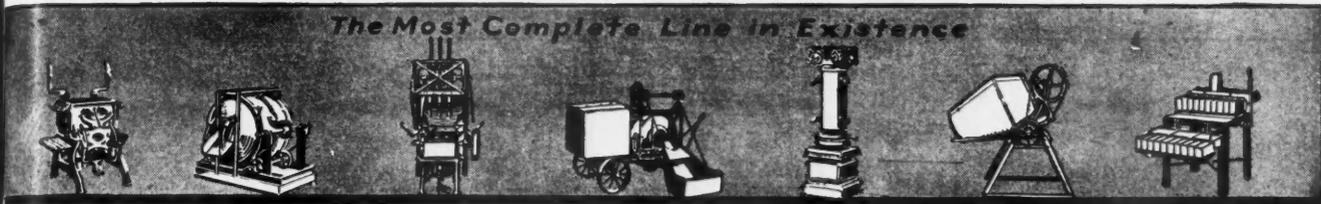
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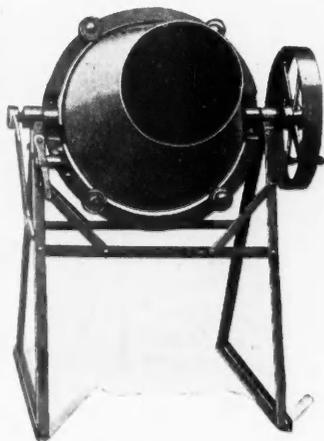
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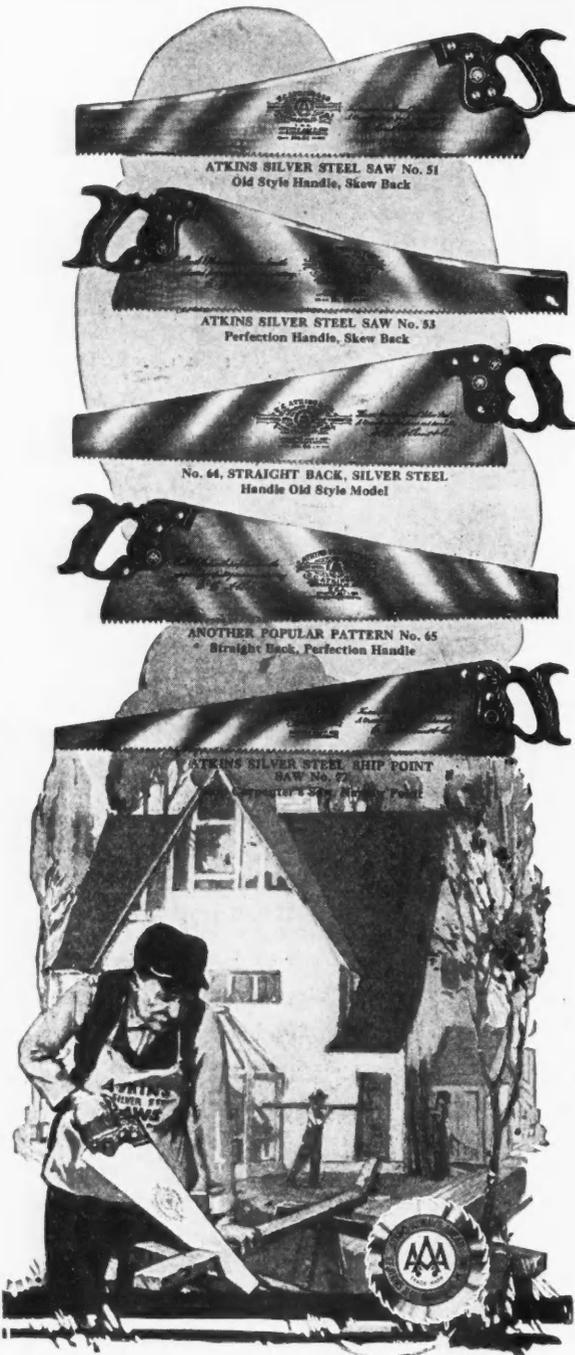
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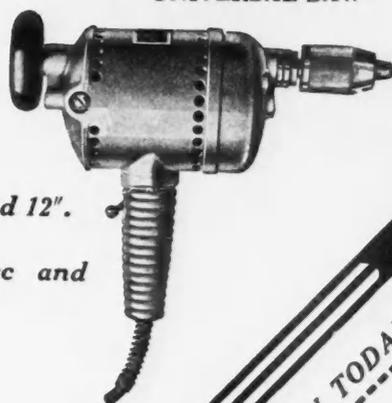
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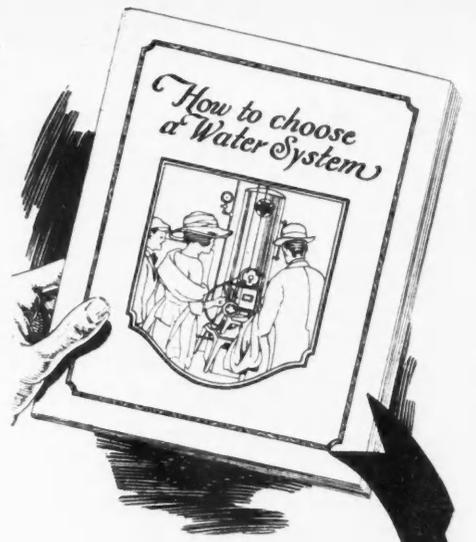
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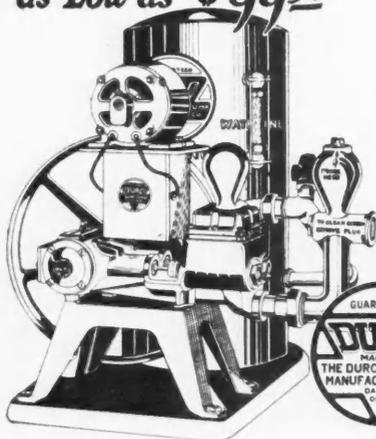
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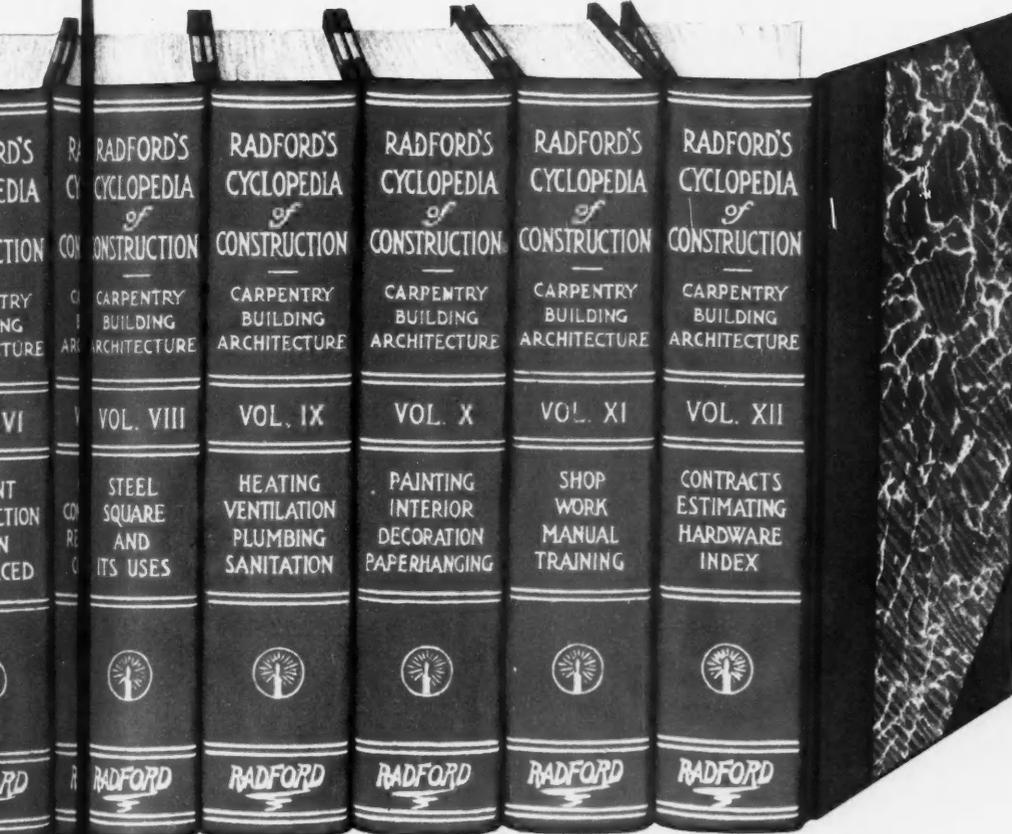
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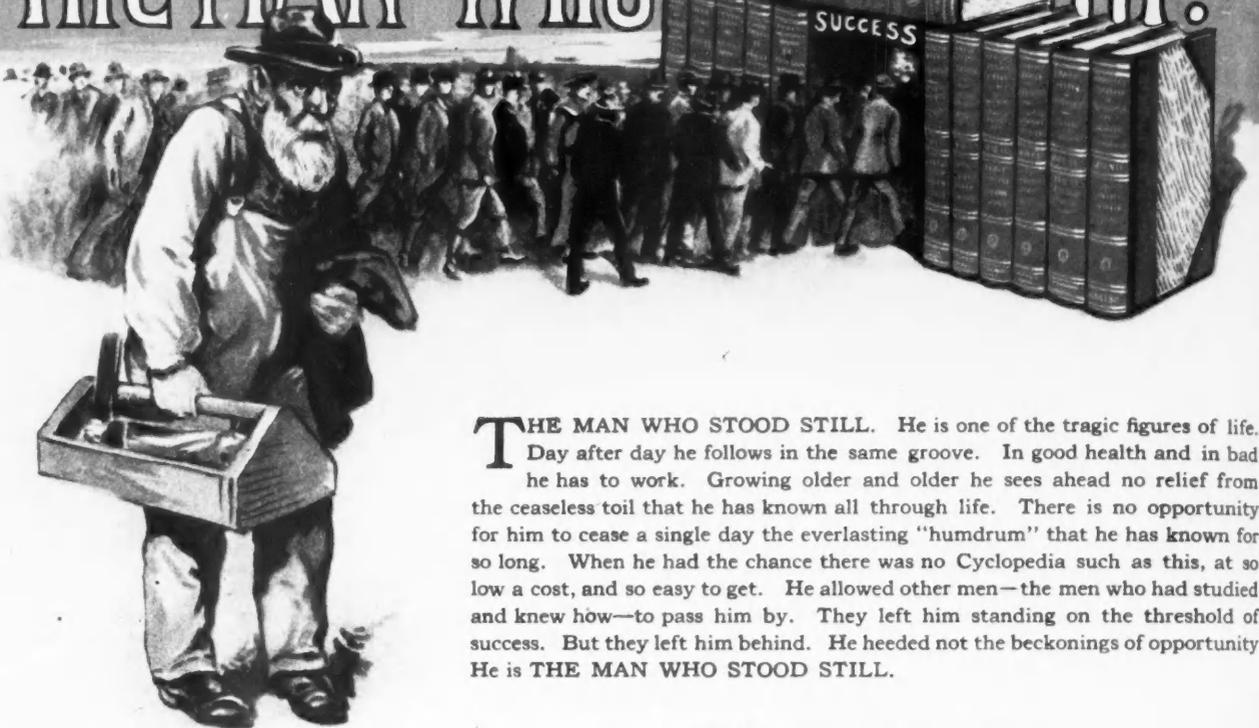
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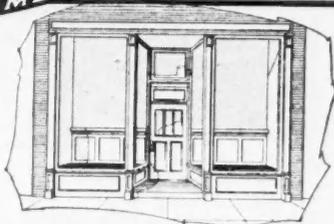
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1654 Fort Street West Detroit, Michigan

### These Distributors Carry Complete Stocks of Desco Construction

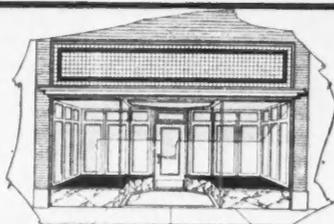
- |  |   |  |
|--|---|--|
| Pacific Builders Supply Co., Los Angeles, Calif. | Atlas Paint & Glass Mfg. Co., Kansas City, Mo.      | John Lucas & Co., Inc., Pittsburgh, Penna. |
| John J. Kinsella Co., Chicago, Ill.              | S. Schemer, Baltimore, Md.                          | Akron Mirror & Glass Co., Akron, Ohio.     |
| Thoma & Son Inc., Fairfield, Ia.                 | St. Paul Glass Co., St. Paul, Minn.                 | Riddle Co., Nashville, Tenn.               |
| H. Neuer Glass Co., Cincinnati, Ohio.            | Toronto Plate Glass Importing Co., Toronto, Canada. | Patek Bros., Milwaukee, Wis.               |
|  | Jamaica Plate Glass Co., Inc., Jamaica, N. Y.       | (105)                                      |

Write for name of the Desco dealer nearest you if it is not convenient to buy from one of the above distributors

# Desco STORE FRONTS



This Type of Front is Fast Being Replaced by Modern Fronts

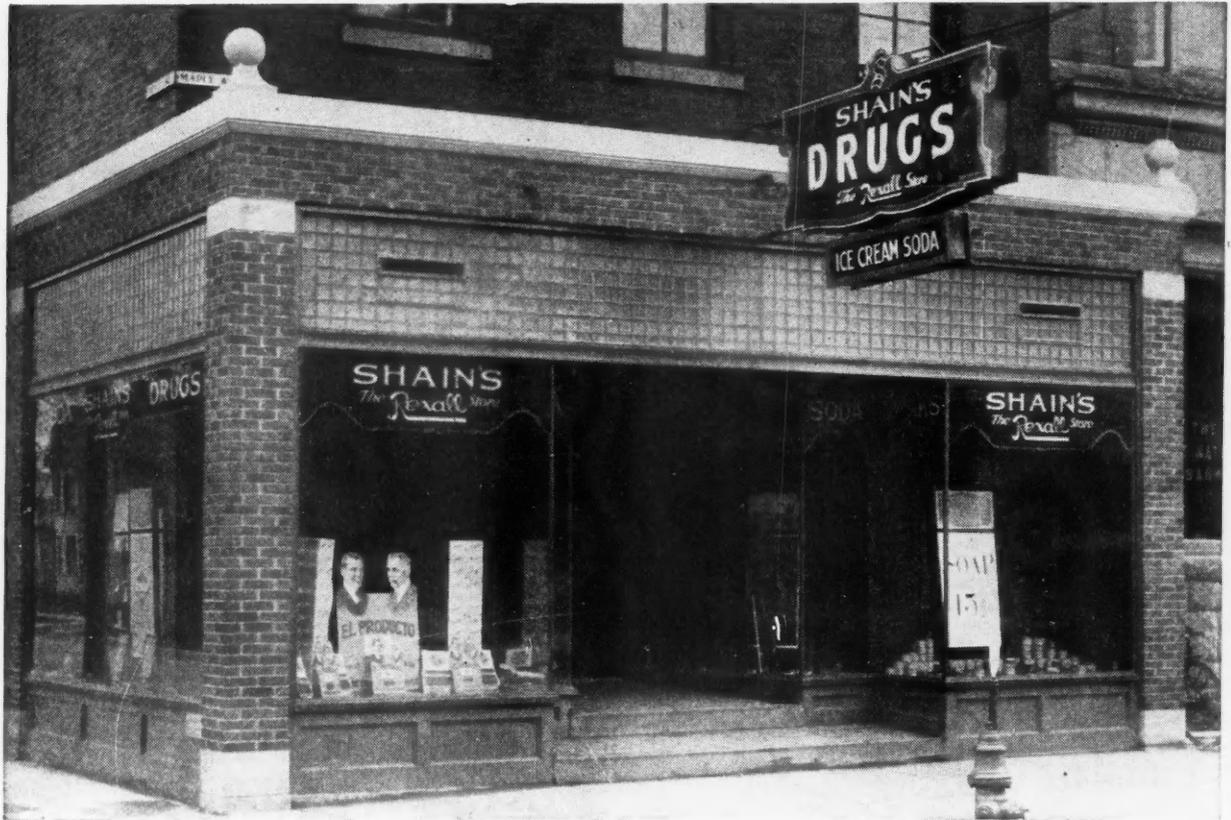


Thousands of Contractors Make Money Installing Fronts Like This

Detroit Show Case Co., Detroit, Mich.  
1654 Fort Street West

Gentlemen: Without obligation on my part you may send me a copy of your book containing information regarding store fronts.

Name \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_  
Street \_\_\_\_\_  
Business \_\_\_\_\_



# Kawneer

SOLID COPPER

## STORE FRONTS

Remodeling Old Buildings into Modern Sales Emporiums is quite easily accomplished by installing Kawneer solid copper Store Fronts. The above shows but one of thousands of cases in which contractors have brought about wonderful transformations by installing Kawneer fronts thereby making a nice profit for themselves.

The  
Kawneer  
Company  
2626 Front Street  
NILES, MICH.

Please send me  
full particulars about  
Kawneer Store Front  
work.

*Fill out the coupon today and let us  
show you how you can handle this  
profitable work in your locality.*

**The Kawneer Company**  
2626 Front Street  
NILES MICHIGAN

Name.....

Address.....



# You can stop that loss!

## Millions of Dollars In Plate Glass Windows Lost Every Year From Setting Breakage

A is the point where the outer member presses against the glass, when the delicate watchlike turning of the key at C brings the glass automatically into contact with the rabbet of gutter B sliding on the anti-friction Murnane Self-Adjusting Setting Block.

The Sill covering D extends from the inner side of the rabbet to the lower edge of the face, eliminating joints—perpendicular screws or nails—positively protecting the wood against deterioration, for leakage is impossible.

Carpenters and contractors, you can gain an unlimited good will among the merchants and storekeepers of your town by showing them this loss is unnecessary. They do not give their windows a thought until one breaks. Then they wonder at your neglect to supply them with sound window construction. They rely on your judgment absolutely. Do not abuse their faith! Recommend Zouri Construction, it is the right way.

### Architects—Contractors—Specify

All Metal Sash, Corner Bars, Division Bars and Self-Adjusting Setting Blocks used in store fronts must be listed by the Underwriters' Laboratories,

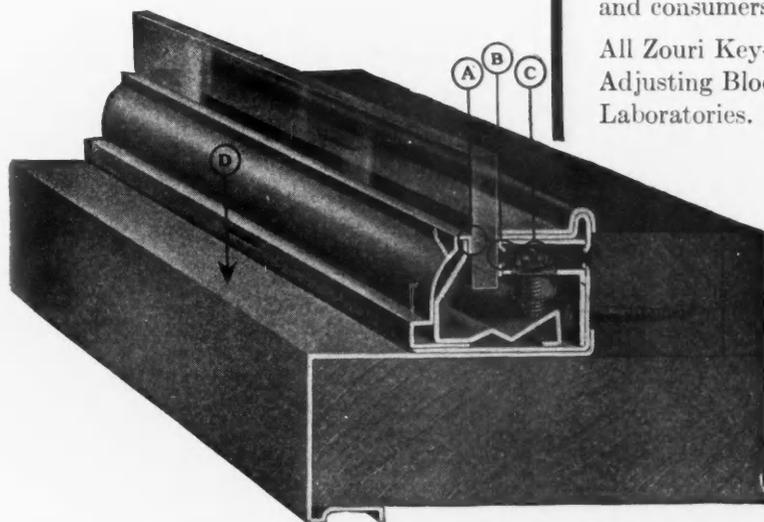
The installation of Zouri Key-Set construction will prove a boon to insurance companies, manufacturers, merchants and consumers.

All Zouri Key-Set Sash, Corner, Division Bars and Self-Adjusting Blocks have been listed by the Underwriters' Laboratories.

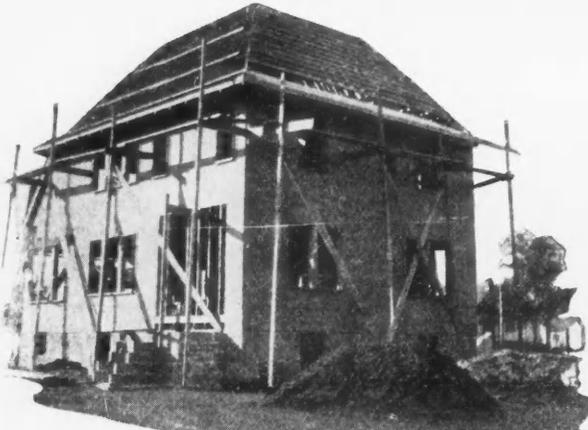
*Write for Details*

## Zouri Drawn Metals Co.

Factory and General Offices  
1622 East End Ave.  
Chicago Heights, Ill.



No. 110 Zouri Combination Key-Set Sash and 705 Sill Covering



*Residence of Bruce Flemming,  
Royal Oak, Mich. Celotex used  
as a combined sheathing  
and insulation.*



*Insulation against heat and  
cold is combined in  
all its uses.*

## AN AGE-OLD PRINCIPLE AND MODERN-DAY CONSTRUCTION

Insulation, for generations, has been recognized and used in the construction of ice-houses, cold-storage warehouses and refrigerator cars, as a fundamental necessity to maintain a steadily and evenly regulated temperature.

Isn't it but logical, therefore, that we should apply the same age-old, demonstrated temperature-retaining principles to the construction of our modern-day homes?

Then just as long as an insulated house exists, the tenants are assured of a cool interior in summer, and a warm interior in winter.

Due to its possessing the insulating value of cork, its remarkable board-form strength and convenient sizes, Celotex Insulating Lumber completely fulfills this economic need. Use it for sheathing, applying it directly to the studding of the building. *It replaces wood sheathing*, and shows greater strength. By using Celotex you obtain both insulation and sheathing at the cost of one material.

*There is a use for Celotex in every building.*

WRITE FOR DETAILED INFORMATION TO DEPT. 3-A

### **THE CELOTEX COMPANY**

111 W. Washington Street, Chicago

N. W. Sales Office—McKnight Bldg., Minneapolis

Plant—New Orleans

# CELOTEX

## INSULATING LUMBER

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



### WALLS OF STRENGTH

Cracked and falling plaster and stucco is but the inevitable result of poor and therefore costly construction.

As ordinarily applied, plaster and stucco is held in place by means of "keys."

"Keys" are that quantity of plaster or stucco forced through the openings provided between or in the lath or base in order to hold in place, over the face of the lath, the specified amount of material.

"Keys" therefore, add nothing to the strength of the slab, and the quantity of plaster or stucco used to form the "keys" would be actually wasted if there were another and better way to hold it in place.

And there is a way to insure permanent interior plaster walls and ceilings, and exterior stucco walls; namely, by reinforcing them.

National Stucco-Plaster Reinforcement introduces a new chapter in permanent ceiling and wall construction. It is a combined reinforcement and base which does not rely on fragile "keys" to hold the plaster or stucco in place; its net-work of galvanized, electrically-welded, cold-drawn steel wire (which develops more than 60,000 pounds per square inch tensile strength) becomes an integral part of and thoroughly embedded in the material, and thereby insures truly reinforced, monolithic, permanent walls and ceilings.

The cost of National Stucco-Plaster Reinforcement per room completely plastered is but little more than the cost of ordinary but non-the-less primitive and inferior wood lath construction. It is cheaper, in place, than other Stucco laths and bases.

When building, insist on the use of National Stucco-Plaster Reinforcement—aside from its reinforcing value, it is the best and cheapest insurance you can carry on your walls and ceilings.

*Carried in stock by local dealers*

*Write for literature, samples and prices*

**National Steel Fabric Company**

*(Subsidiary of Pittsburgh Steel Company)*

706 Union Arcade

Pittsburgh, Pa.

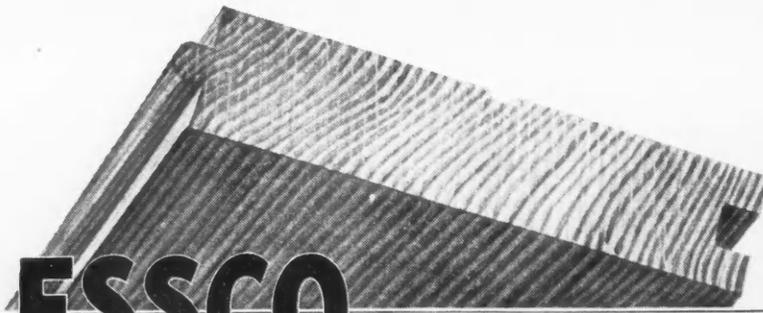


# NATIONAL STEEL FABRIC CO

Subsidiary of PITTSBURGH STEEL CO

UNION ARCADE BUILDING

PITTSBURGH, U.S.A



# ESSCO Heart Flooring

" From the HEART of the PINE "



Write for the interesting story of  
"Beautiful Floors at Low Cost."

**E**ACH bundle of Escco Heart Flooring is identified with the heart-shaped symbol as indicated above. It is pasted on the underside of the flooring. Contractors, builders, and home owners can accept it as the mark on flooring of the very highest quality.

Here are ten reasons why Escco Heart Flooring is a product on which you can depend.

1. Escco Heart Flooring is made only of the heart-wood of the pine; therefore, it is remarkably durable.
2. It comes through the mills under the personal direction of the mill manager himself.
3. It is finished so smoothly that almost no sanding or scraping is necessary after it is laid—an economy in labor.
4. It can be finished in a wide variety of ways, thus insuring perfect harmony with the woodwork, decoration and furnishings of your home.
5. It compares favorably in beauty and durability with the more expensive woods commonly used for flooring.
6. It comes in long lengths, thus making it easy to lay—another economy in labor.
7. In our process of manufacture, it is graded and regraded and graded again.
8. It is closely inspected for regularity of grain and uniformity of color.
9. It is protected from the weather from the moment it is made.
10. It is tied carefully into neat bundles and loaded for shipment in clean cars.

*Escco Heart Flooring and other Escco lumber products are obtainable through retail lumber dealers. If not obtainable in your community, write us.*

## EXCHANGE SAWMILLS SALES Co.

(Formerly Missouri Lumber & Land Exchange Co.)

Long Building,

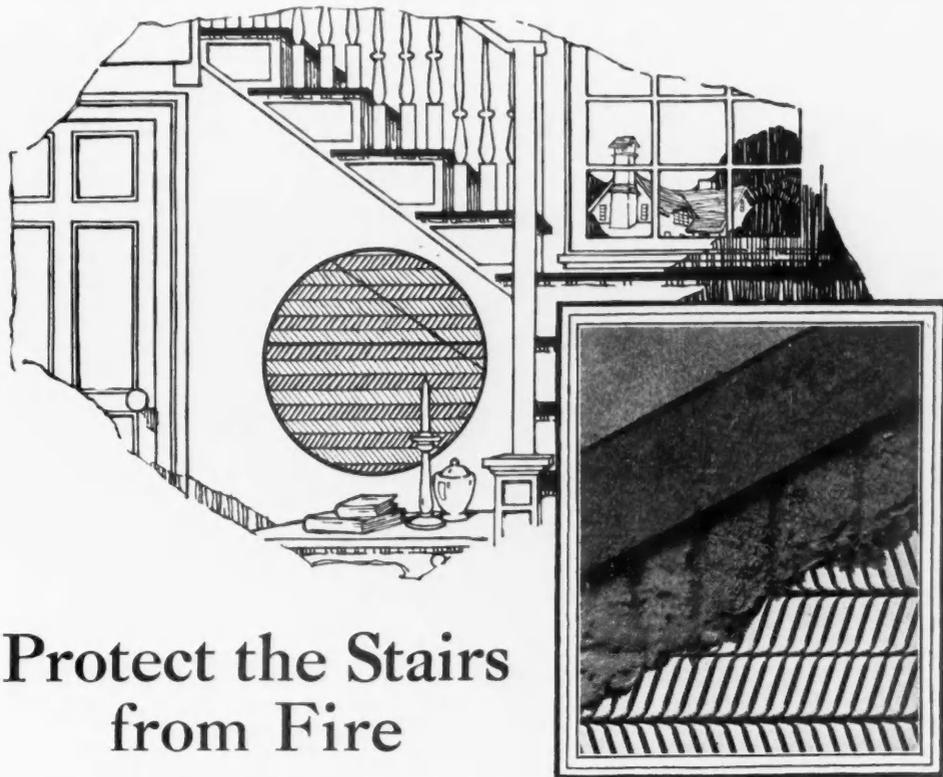
KANSAS CITY, MO.

R. B. WHITE, President and General Manager

F. R. WATKINS, Sec'y and Mgr., Yard Sales

R. S. PRICE, Mgr., Railroad and Timber Sales

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



## Protect the Stairs from Fire

The only fire escape in a house is the stairs. They must be protected. Fire comes upward. Protect the under side of the stairs and you protect all. Use metal lath and plaster.

For a dependable, fire-resisting lath use Herringbone. It spans sixteen inches. The increase in cost is but a small fraction of the increase in value.

*Send for illustrated literature*

*Herringbone — strong, rigid, easily handled — has met the demand for an economical, practical, fire-retardant lath*



# Herringbone RIGID METAL LATH

THE GENERAL FIREPROOFING COMPANY, Youngstown, Ohio

BRANCHES:

SYRACUSE  
CHICAGO  
BOSTON  
MILWAUKEE

KANSAS CITY  
MINNEAPOLIS  
SAN FRANCISCO

PHILADELPHIA  
OMAHA  
NEW YORK

LOS ANGELES  
BALTIMORE  
CLEVELAND

Export Department, 438 Broadway, New York City

When they stop and ask



“Where do you turn the light on?”—you show them how you have provided for their convenience with switches that light one room from another so that it is never necessary to enter a dark room or go back to turn the lights out.

### The model “Home Electrical” and the houses you build

Last year more than 1,000,000 prospective home buyers showed their interest in electrical comfort and convenience by visiting the model homes exhibited in seventy odd cities.

This year there will be many more exhibits—and many more visitors.

The national interest in “electrical homes” is every builder’s chance to “cash in” big on a small investment.

It is only a matter of complete convenience wiring. You can make every home you build a model “home electrical”—and sell it at a price that will bring back to you several times the small extra cost of complete convenience wiring with G-E Reliable Wiring Devices.

G-E Reliable Wiring Devices, nationally known as the standard of excellence, are the home buyer’s assurance of dependable electrical service.

Merchandise Department

General Electric Company

Bridgeport, Connecticut

G-E Wall Elexit outlet for “plugging in” side lights or electrical appliances.  
G-E Two-Gang Tumbler Switches at every doorway give complete control of light from one room to another.

All dependable and experienced contractors using General Electric Reliable Wiring Devices are prepared to cooperate with you in making your houses “complete electrical homes.”

Our national advertising and the booklet “The Home of a Hundred Comforts” are focusing the attention of hundreds of thousands of home builders and buyers on complete wiring and quality wiring devices.

Send for your copy of this booklet today.

Address Section AB-3.



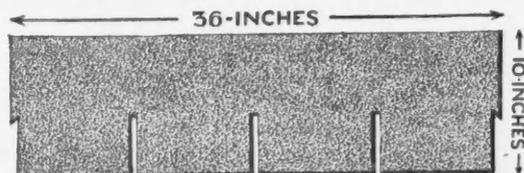
# Wiring Devices

A GENERAL ELECTRIC PRODUCT

# Will You Trade \$20 for \$100

It may cost you an average of only \$20.00 more to use

## NATIONAL AANA (Asbestos and Asphalt) SHINGLES



On the houses you build for resale  
But the house can be sold for \$100.00 more, because you can furnish the buyer, along with the deed, our

### 20 Year Guarantee that

- 1—Water cannot leak through the material
- 2—Fire cannot burn through the Asbestos layers
- 3—The shingles will not curl

If the house was roofed with any other asphalt shingles (no matter whose make) the buyer could only secure from the maker a 10-year guarantee (most makers give no guarantee), and the chances are that before 20 years a new roof would be required, and this would cost two or three times \$100.00.

#### LOOK AT THESE DIFFERENCES!

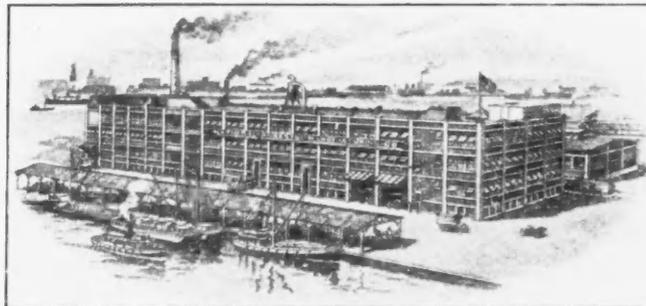
National Aana Shingles

Rag Felt Type

Two layer base of sheet Asbestos; origin mineral, consequently non-perishable and fire-proof, plus double layer or 50% more of solid asphalt (the real weather resister).	<b>Wear Resistance</b>	One layer of Rag Felt; origin animal and vegetable. Perishable and not fireproof, plus only one layer of solid asphalt.
Class "B" Fire Underwriters' Rating (the highest awarded asphalt shingles).	<b>Fire Resistance</b>	Class "C" (or lower) Fire Underwriters' Rating.
Guarantee against curling.	<b>Non-Curling</b>	Known fact that Rag Felt base shingles do sometimes curl.

**National Aana Shingles Cost Less to Apply** because of their full 36" width in the strip or 4 in 1 form against 32" width in other makes. This difference in width means a saving of 12 1/2% in labor and nails, or approximately 40 cents per square, equivalent to a 40-cent less price.

**Price**  
\$7.25 Per Square  
F. O. B. Cars  
Jersey City  
N. J.



**Buy From**  
Your Building  
Material Dealer  
Or Direct  
From the Factory

The Factory Back of the Guarantee

## NATIONAL ASBESTOS MFG. COMPANY

163-193 HENDERSON STREET, JERSEY CITY, N. J.



## Your Prospects Can See the Advantages of Concrete

"Concrete Houses" is a book every builder should have.

When you show these twenty-five houses of popular types and sizes, all designed by good architects, your prospect instantly recognizes two essential characteristics he is seeking in his home—beauty and comfort.

Concrete provides strength; stucco adds charm and refinement.

Then, too, houses of Concrete Block, Stuccoed, are easily built. They are durable, fire-safe, and do not require paint. They can be built at practically the cost of frame construction.

### You Can Save Money

"Concrete Houses" is more than a book of plans. There is, back of it, a complete service to the builder. You can obtain blue prints, specifications and quantity surveys of every plan shown in the book at a nominal cost. You save money by having accurate information upon which to bid for a job.

#### Blue Prints

The blue prints are complete in every detail.

#### Specifications

Plumbing, heating, wiring and all the usual necessary work are included in the specifications. Everything is perfectly understood between yourself and the house-

owner as to what the building contract implies, when you use these specifications.

#### Quantity Surveys

In keeping with the other features of this building service, the quantity surveys include every necessary detail. When the items listed are totaled, you are able to give an exact cost of the job.

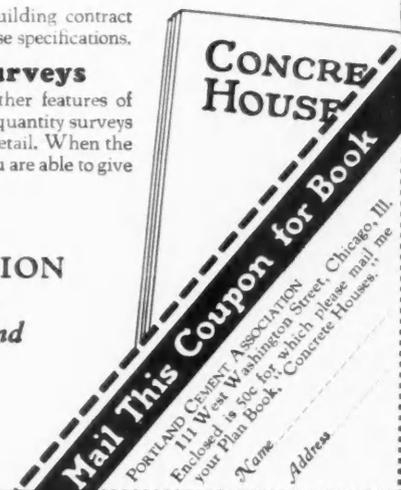
*Send for "Concrete Houses." Every builder needs it*

### PORTLAND CEMENT ASSOCIATION

111 West Washington Street, CHICAGO, ILL.

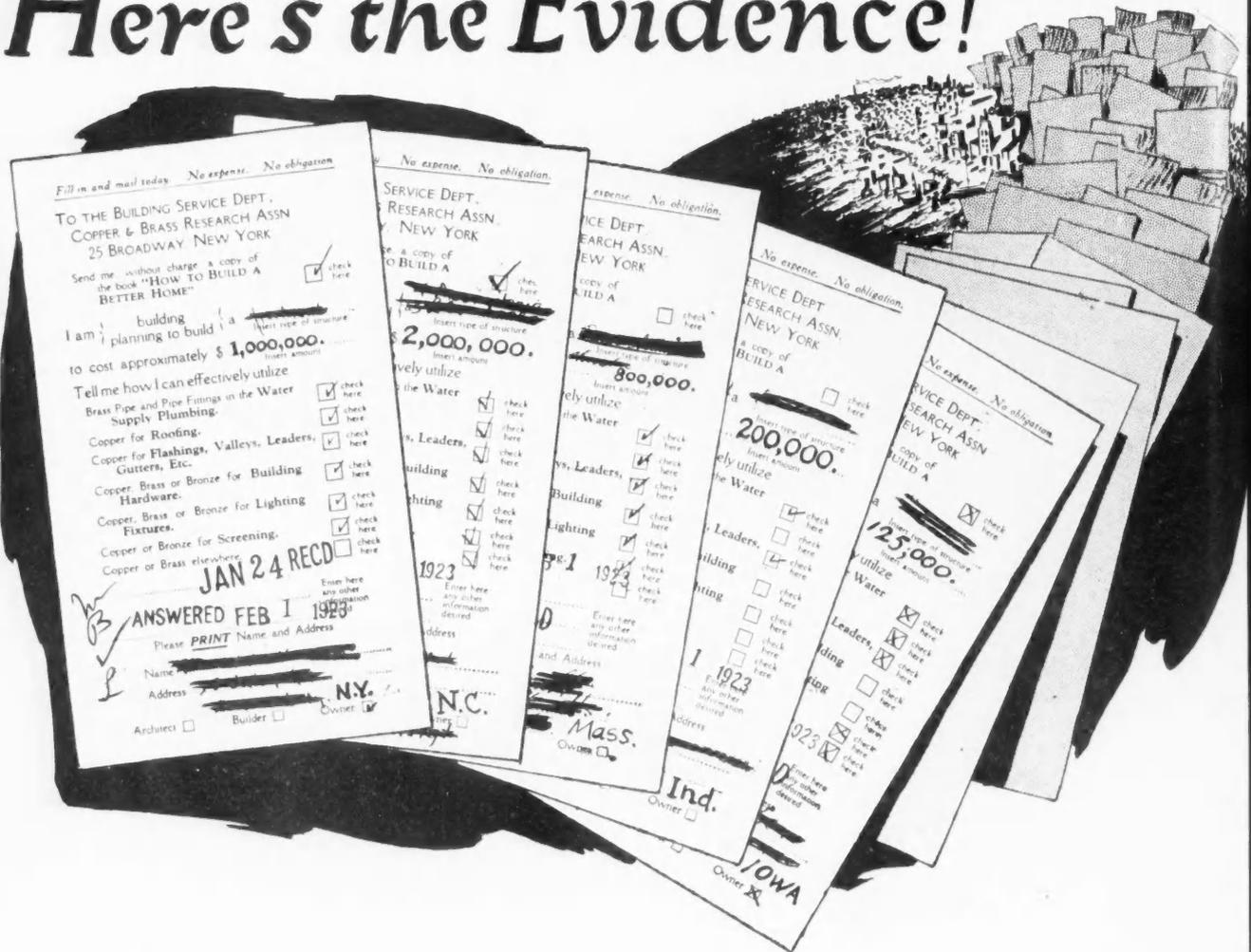
*A National Organization to Improve and Extend the Uses of Concrete*

Offices in 24 Other Cities





# Here's the Evidence!



**H**ERE is first-hand evidence of the huge amount of building going on—and of the demand for Brass and Copper.

These cards were selected from one day's mail of our building service department. Hundreds like them are coming in all the time. That's one reason why we *know* people these days want Copper sheet metal work, Brass pipe plumbing, and solid Brass or Bronze hardware and lighting fixtures.

Quick-rusting substitutes for Brass and Copper have built up huge maintenance charges. Leaking roofs, rusted out leaders and gutters, unsightly plated steel hardware, rust-consumed plumbing pipe, have multiplied their lower first costs many times over, in paint, repair and renewal charges.

Your customers now see the enduring value of Brass and Copper. They know Brass and Copper do not rust, and that they last as long as the house.

The idea of rust-proofing their buildings with Brass and Copper has made a big hit with the public.

Travel along with this popular demand for Copper and Brass.

Use our building service Department to your best advantage. Tell us your problems. It's our work to help you. Fill out the coupon and let us send you a quantity of interesting booklets for distribution to your clients.

## COPPER & BRASS RESEARCH ASSOCIATION

25 Broadway - New York

COPPER & BRASS RESEARCH ASSOCIATION  
25 Broadway, New York

Please send me without charge:

- Copies of "Once Upon A Time," a booklet showing in good humored illustrations the error of using materials that rust.
- Copies of "Copper, the Ideal Roof."
- Copies of "Brass Pipe Plumbing," which treats of the advantages of Brass and the relative costs of Brass and Iron.

Name \_\_\_\_\_

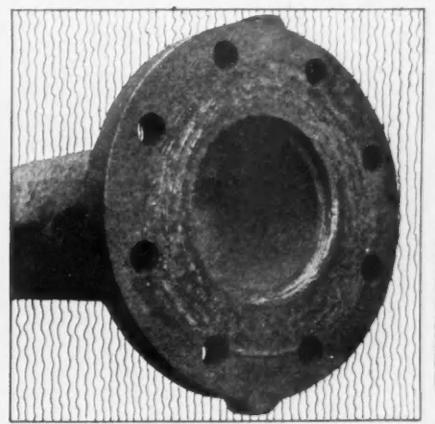
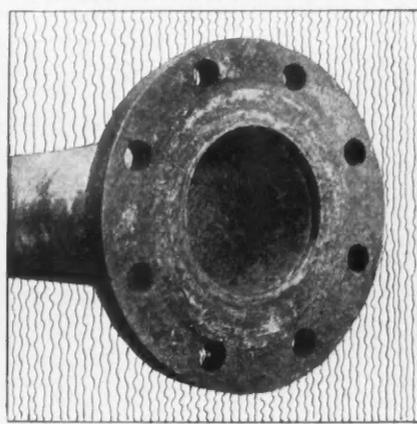
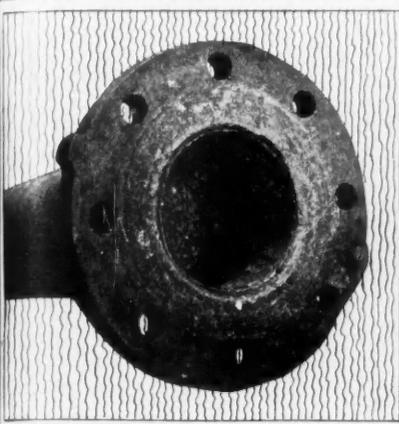
Street No. \_\_\_\_\_

City and State \_\_\_\_\_

AB

# The story of a HOT WATER FEED PIPE

## In Three Parts



**Part 1**—Black Steel carried hot water at 200 degrees F. for eight years.  
*Worn down to threads; rough, pitted.*

**Part 2**—Galvanized Genuine Wrought Iron carried hot water at 200 degrees F. for eight years.  
*Worn down to threads; projecting nodules of rust.*

**Part 3**—Bridgeport Plumrite Brass Pipe carried hot water at 200 degrees F. for seven years.  
*No wear; surface smooth and clean.*

## Which is the best? —which do you use?

CONSIDER the relative amounts of friction in these three pipes—the color of the water delivered by the steel and iron pipes and their probable condition three years later. If experience counts they will be

worn out and replaced by Plumrite Brass Pipe.

Only in Plumrite Brass Pipe do you get the right combination of metals, evenly distributed, and correctly heat-treated to withstand severe service conditions.



BRIDGEPORT BRASS COMPANY, Bridgeport, Conn.

# Bridgeport Plumrite *The Improved* Brass Pipe

REG. U. S. PAT. OFF.

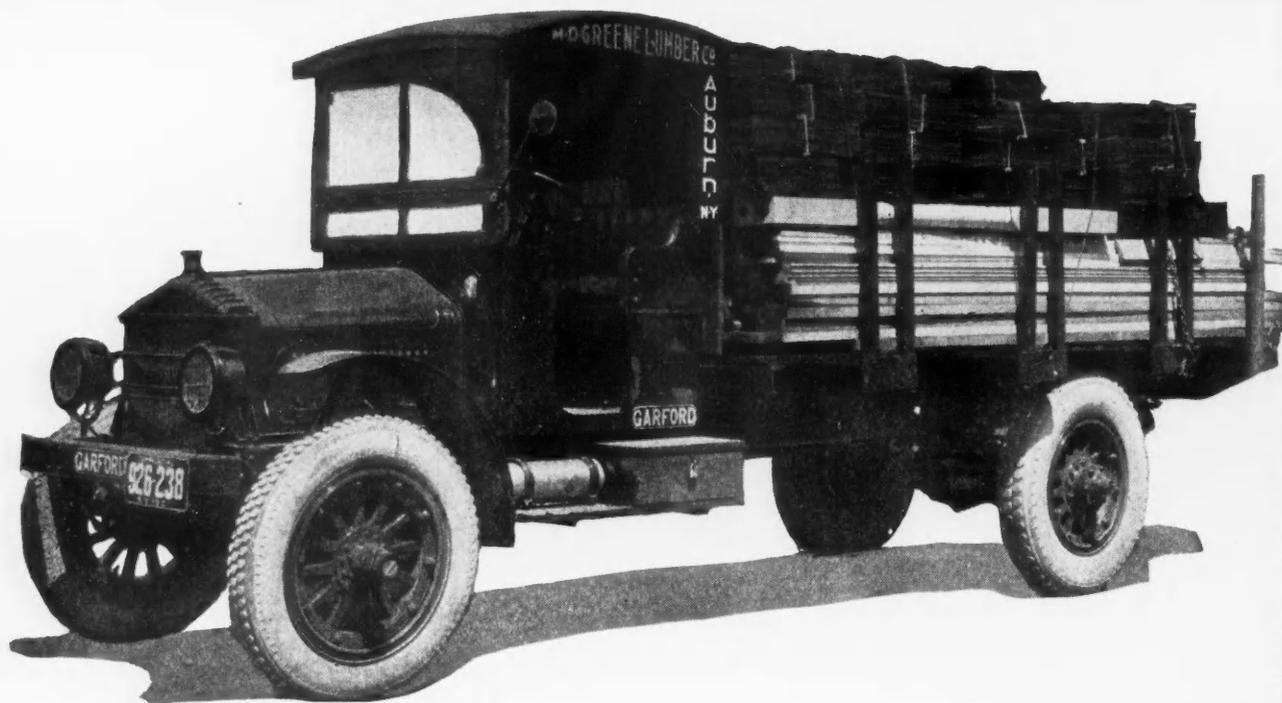
If you are at all interested in the subject of water service piping, we shall be glad to send you a copy of our book, "Brass Pipe and Piping." It deals with corrosion, its theory and prevention; discusses the ad-

vantages and disadvantages of the various pipe metals; and gives instructions for handling brass pipe, laying out installations and figuring costs. Copies are gratis on request—use this coupon.

Name \_\_\_\_\_

Firm \_\_\_\_\_

Address \_\_\_\_\_



## Long Lengths, Short Lengths, Shingles

*Note the diversified character of load this Garford handles  
—Special type of stake body speeds loading and unloading.*

The Garford in use by the M. D. Greene Lumber Company, of Auburn, N. Y., is another example of fitting the truck unit to the work in hand, a practice for which Garford Engineers are noted.

Long lengths, short lengths, shingles—whatever the owner needs to haul in the way of lumber products, is handled easily and handily with this type of Garford body.

Removable stakes along the sides save much time and labor in loading and unloading. Pneumatic tires afford

the speed over the good roads in and around Auburn which, in a season, means a distinct economy.

The requirements of your hauling probably are peculiar. If they present a problem, why not ask the Garford Engineers to assist you in solving it. A rich experience in adapting truck units to specific requirements, is available for you at no expense.

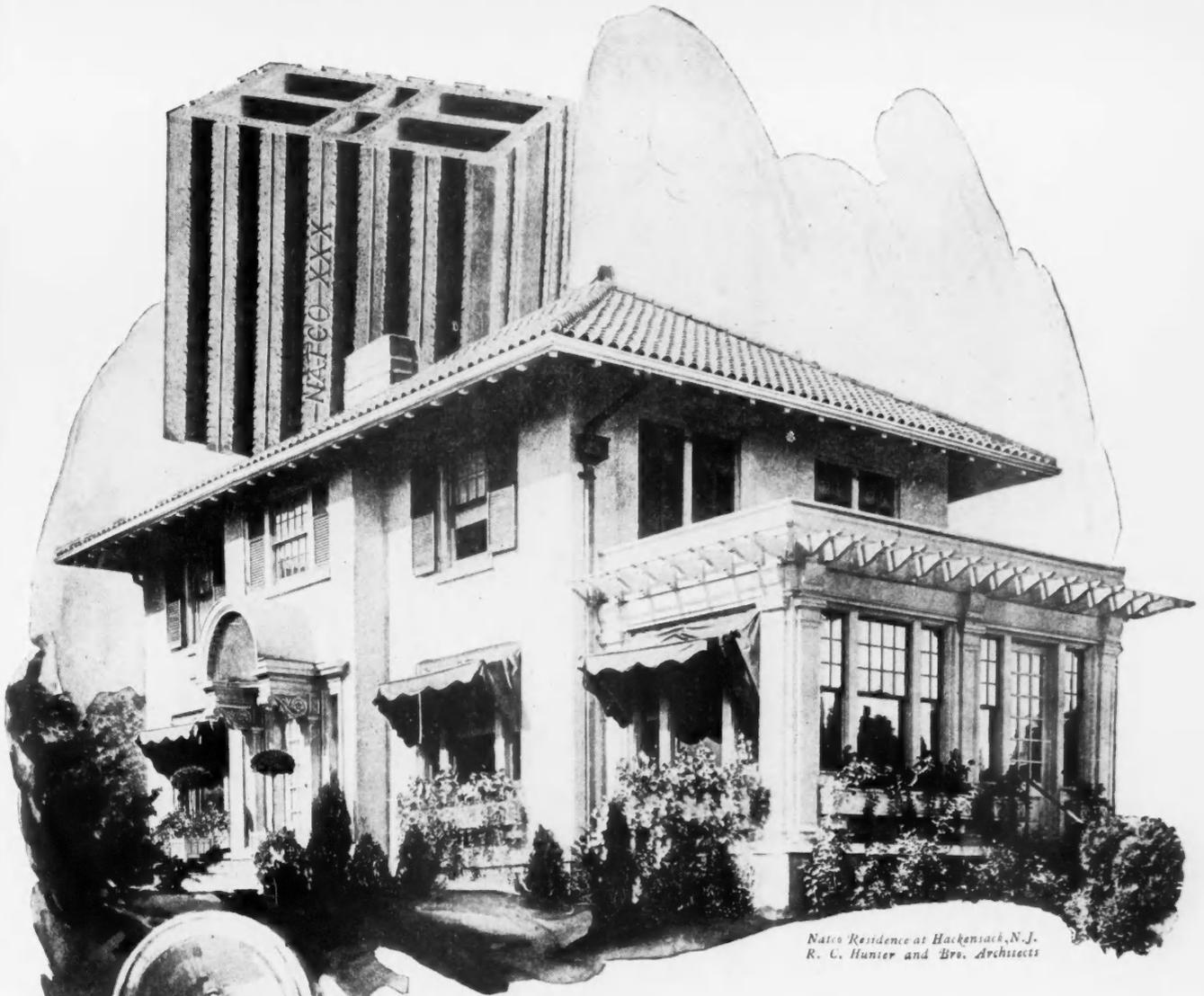
Consult Garford Engineers, no matter what your hauling problem may be. It is a matter of economy to you.

**The Garford Motor Truck Company, Lima, Ohio**

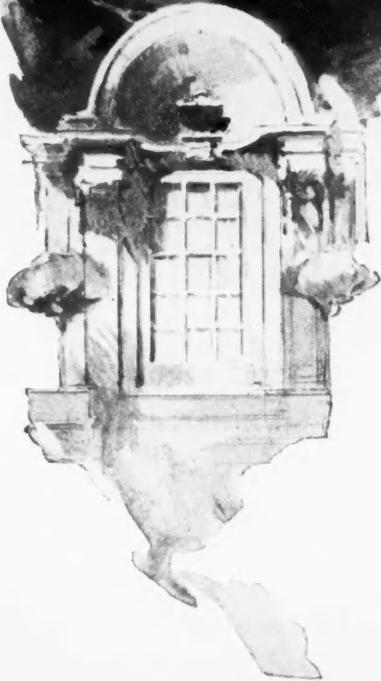
Manufacturers of Motor Trucks 1 to 7½ Tons

# GARFORD

## DEPENDABLE TRANSPORTATION



*Natco Residence at Hackensack, N.J.  
R. C. Hunter and Bro. Architects*



# Natco Homes

The greater number of American architects have been long familiar with the superior merits of Natco Hollow Tile. They know it to be an ideal building unit possessing exclusive home comfort values as well as great possibilities for attractiveness.

We want every architect to become acquainted with Natco and for this purpose maintain in the larger cities hollow tile experts who will be glad to explain Natco's merits when and where you desire. A post card will bring a representative to your office.

Natco Book of Homes Free on Request.

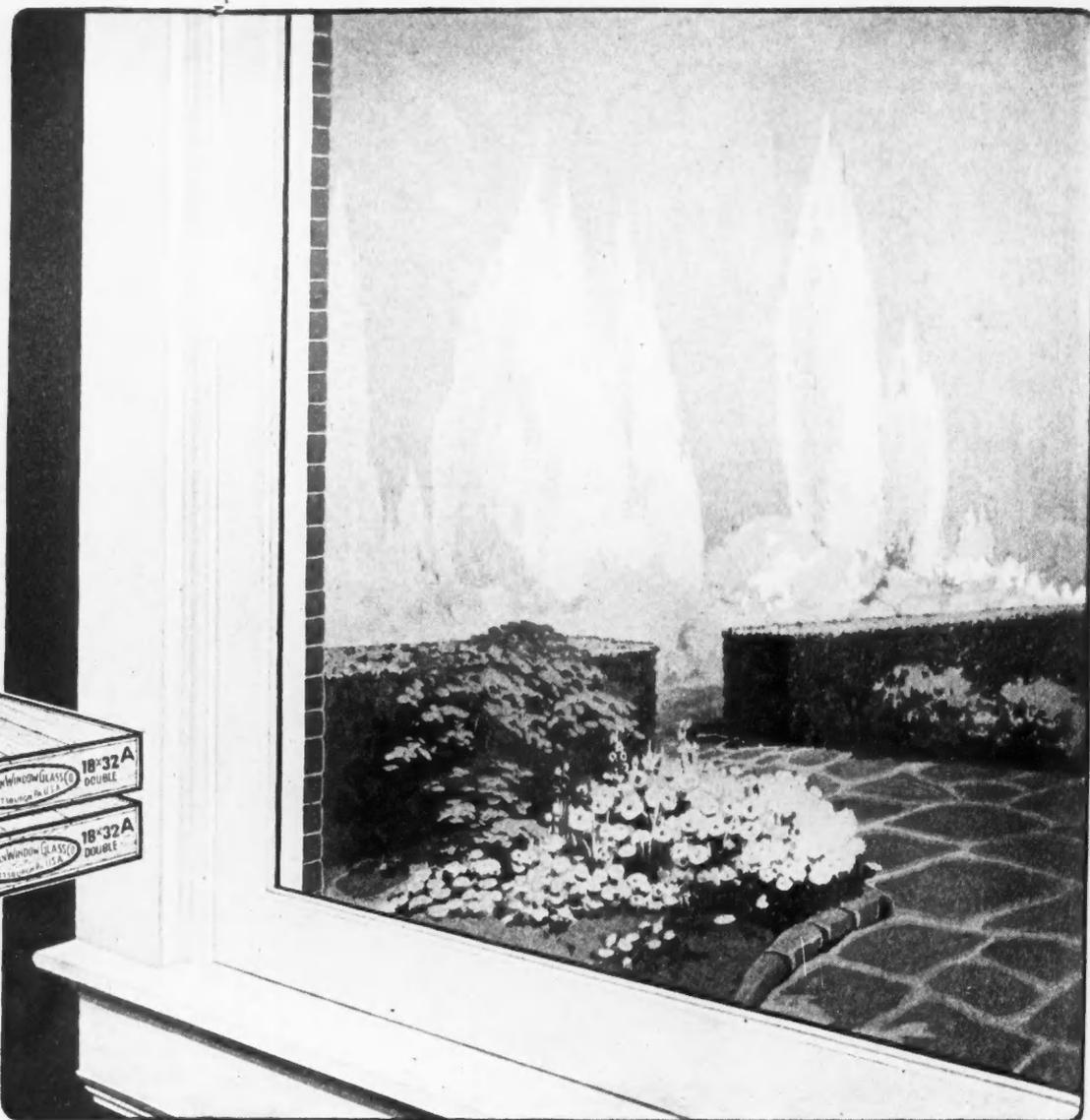
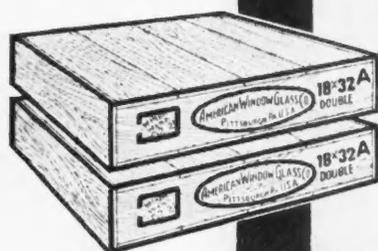
NATIONAL FIRE PROOFING COMPANY  
417 FULTON BUILDING - PITTSBURGH, PA.

# NATCO

## HOLLOW TILE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

*"Let in  
the  
Sunlight"*



## *Bring in the out-of-doors*

### *The Best Glass*

**Y**OU can rely on all single or double strength glass of the American Window Glass Company to be uniform thickness, well flattened, of high quality generally, and carefully packed.

See that the grade marking on the box has not been altered.

**W**INDOWS of clear, flat glass extend a glad welcome to the returning glories of summer, and bar the last fleeting harshness of winter. Through them one enjoys in secluded ease the varying moods of Spring, ever interesting, always different.

More glass means more sunlight, more cheerfulness, more of the joy of living that you seek in the great out-of-doors. When you build, make sure that your house is adequately supplied with windows.

# AMERICAN WINDOW GLASS CO.

GENERAL OFFICES: PITTSBURGH, PA.

BRANCHES IN PRINCIPAL CITIES

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER



RICHARDSON  
Product

From the makers of  
Flex-a-tile House-  
tops, Viskalt Mem-  
brane Roofs, Fiskote,  
Wall Board and sim-  
ilar products

The Super-Giant  
Shingle—50%  
thicker, 100%  
stiffer, and 35%  
more economical in  
cost of laying

Super-Giant



Never before such a shingle as this!

50% THICKER; 100% STIFFER; with  
entirely new color possibilities

New profits in roofing are now open to you. Here's a shingle with *distinctive* selling points, one that is steadily gaining favor with home-owners.

The new Richardson Super-Giant Shingle gives you the highest degree of serviceability and beauty, as comparison with standard shingles will prove. Take, for example, its serviceability.

Its greater size (10" x 14") saves 35% in cost of laying. Its 50% greater thickness makes it last much longer and casts a deeper shadow line on the roof. And, its 100% greater stiffness keeps it rigid in all kinds of weather and gives twice the firmness to the whole roof.

Moreover, the quality of its inner materials, felt and asphalt, is exceptional. Richardson felt, as you know,

has for the last fifty years been used and recognized as the best. And the asphalt which goes into it is of the highest grade raw materials refined exclusively by the Richardson process.

#### Beauty hitherto unknown

On this super-shingle is used a color in slate hitherto unknown—a rich *weathered brown* found only in the Richardson quarries of Georgia.

It is as beautiful as the russet of November fields, and with use, it mellows and deepens to a shade like the thatch of an English cottage.

Architects are enthusiastic over its rare color effects, especially when it is blended with other Richardson shingles of jade green, tile red, or black pearl.

#### These facts will sell it

A super-shingle, indeed, when you weigh its points one by one! First—unusual dimensions which give added life to the roof at  $\frac{1}{3}$  less in cost of laying. Second—exceptionally high test standards in its materials. And finally—absolutely exclusive color effects.

These definite talking points will clinch sales. Especially appealing to your customers will be the exclusive color effects. And, of course, Richardson Super-Giants are equally good for new or "over the old roof" jobs.

Send for our beautiful new color chart, together with samples of Richardson Super-Giant Shingles in *weathered brown* and other colors. Whatever your roofing need there is a Richardson product to meet it, as our booklets will show. Just use the coupon below.

The RICHARDSON COMPANY  
Lockland (Cincinnati), Ohio  
Melrose Park (Chicago), Ill., New Orleans, La.

# RICHARDSON ROOFING

Clip and mail this coupon

THE RICHARDSON COMPANY  
Lockland, Ohio

Gentlemen:  
Please send me samples of Richardson Super-Giant Shingles, your new color chart, and further facts about Richardson Roofing

Name .....

Address .....

# A Richardson product for every roofing purpose

**B**ESIDES the Super-Giant Shingle, there are many other Richardson products—one, in fact, to fit every roofing need. The kind of roofing you buy depends upon the purpose for which you want it—whether for garage or house, for barn or factory.

Here are a few of the Richardson Roofing products. Each one contains the same quality materials of the Richardson Super-Giant Shingle adapted to a specific use. Pick out those best fitted for your job.

## *Other Richardson Shingles*

**Flex-a-tile Standard Individual Shingles** are stiff, strong, and uniformly well made for a wide variety of uses. Surfaced in green, red, or blue-black slate.

**Flex-a-tile Wide Space Shingles** 1 1/4 inches wider than standard shingles are considerably stiffened by a slight reverse curve which gives a pleasing thatched effect. Surfaced in green, red, or blue-black slate.

**Flex-a-tile Style 4 Slabs** combine 4 shingles in one. Being self-spacing, they are easily and quickly laid. Surfaced in green, red, or blue-black slate.

## *Richardson Roll Roofing*

**Rubbertex Roll Roofing** is a flexible, durable, all-purpose product especially adapted to factories, barns, warehouses, and garages. Use Zinc Pyramid Kaps when applying.

**Flex-a-tile Shingle Roll Roofing** with a permanent shingle design embossed right on the roll gives at very low cost the effect of individual shingles. It can be laid either over old shingles or new sheathing.

**Flex-a-tile Slate Surfaced Roll Roofing** combines the quality of Richardson products with the economy of roll roofing. Its firm surface of slate flakes is enameled on to stay. Packed with Zinc Pyramid Kaps.

## *Other Richardson Products*

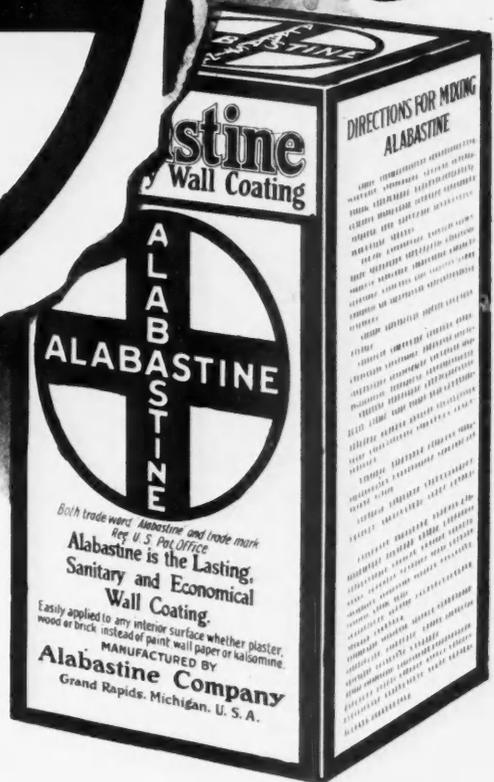
**Viskote**—a sanitary sound-deadening and insulating material, is especially suitable for laying under linoleum. It is one of several similar products which it will pay you to follow up.

**A**S you see, these principal Richardson products fit every type of customer, every kind of roofing problem. And remember—one Richardson roofing job sells another. For complete details and for our latest price list, write us today.

*The* **RICHARDSON COMPANY**

Lockland (Cincinnati), Ohio

Melrose Park (Chicago), Illinois    New Orleans, Louisiana



# There is Profit in Pleasing Walls

Alabastine's pastel tints and tones add wonderfully to the warmth and attractiveness even of empty rooms. Bare, white walls are cold and uninviting.

Whether you build for the investor or for permanent residence, your work will be more acceptable if you give the inexpensive finishing touch of Alabastine wall coating. To the owner of the new home it will appear more valuable and the man who builds to sell will find it easier to please those who inspect the premises if instead of looking at broad expanses of white plaster he sees a room finished and ready to be furnished.

But use only Alabastine, the nationally accepted wall tint—a product which is used everywhere and is recognized instantly by the trade-mark shown above printed in red. Almost all stores selling paints have Alabastine in stock in many standard colors. It comes in dry powdered form in five pound packages, mixes instantly with cold or warm water and may be applied with a suitable brush to any interior surface.

## The Alabastine Company

802 Grandville Avenue

GRAND RAPIDS, MICH.

EVERY PACKAGE OF ALABASTINE HAS THE CROSS AND CIRCLE PRINTED IN RED

# ROYAL



## Five—Plus

**H**ERE are five outstanding advantages which the Royal Typewriter possesses—advantages which have a direct bearing on the quality, volume and cost of your typing:

*The most responsive and swiftest key action to be found in any typewriter today.*

*The "touch" of all the keys is absolutely equalized. And the stenographer herself can adjust them all by turning a single, conveniently located thumbscrew.*

*A greater accessibility of all working parts.*

*The elimination of friction in the two parts subject to the most wear in other typewriters—the carriage tracks and escapement.*

*A longer period of service, because of simpler and more rigid construction, less vibration and less friction of moving parts than any other typewriter offers.*

We don't expect you to share our enthusiasm for the Royal until you have seen it actually operated in your own office and had the above practical advantages demonstrated to your satisfaction. May we arrange to do this at your convenience?

**ROYAL TYPEWRITER CO., INC.**

Royal Typewriter Building  
364-366 Broadway, New York

*Branches and Agencies the World Over*

**"Compare the Work"**

# Cannon Ball

## STOP

### *Door Hanger Troubles!*

**A** DOOR is the only part of a building that "works". It satisfies *only* when the hangers and track which hold it up are satisfactory. Faulty hangers make faulty doors and bring condemnation on the whole job.

## Cannon Ball Hangers Cut Out Complaints

*Cannon Ball* goes up easy, stays put when you get it up and you never have to go back and doctor up the job. After years of service, *Cannon Ball* works just as easy as the day it was put up. This is because the wheels are made of pressed steel and will not wear lop-sided. Roller bearings in wheels are over an inch long and cannot twist. *Cannon Ball* Track is perfectly round and self-cleaning.

Why recommend something else and risk your reputation? The best dealer in your town has *Cannon Ball* or he can get it for you.

*Yours for the asking—full particulars about new CANNON BALL features, including sets of complete hardware for all types of garage doors.*

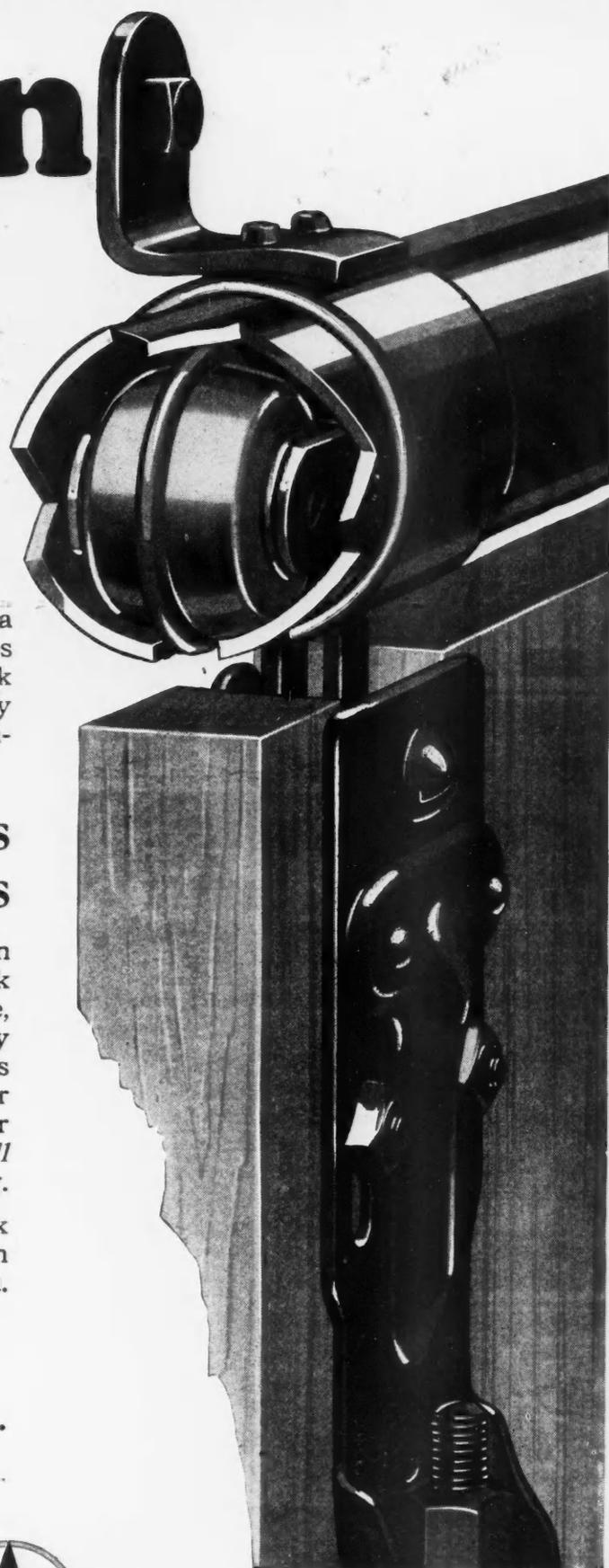
**HUNT, HELM, FERRIS & CO.**

Harvard, Illinois

SAN FRANCISCO, CAL. ALBANY, N.Y. LOS ANGELES, CAL.

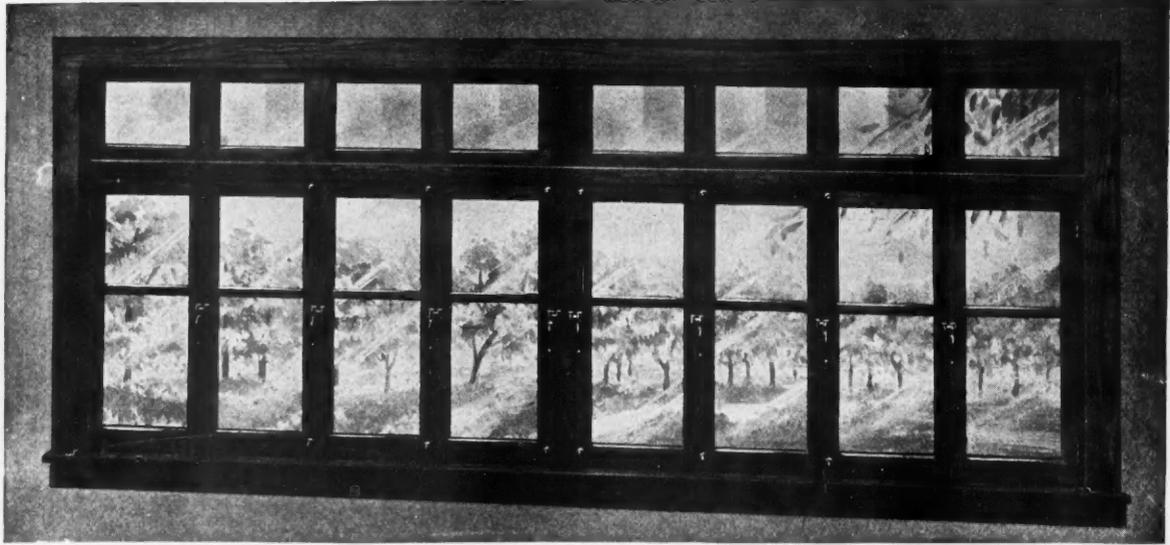
Manufacturers of

**STAR**   
**Equipment**



**The STAR line  
sells all the time**

Stalls, Stanchions and Pens  
Litter Carriers Water Bowls  
Door Hangers Feed Trucks  
Harvester Hay Tools  
Garage Equipment Coaster Wagons  
Steel Fence Posts  
and Farm Specialties



This AiR-Way installation consists of two series of four sash each. One series folds to the right; the other to the left. In this illustration all sash are tightly closed against the weather.

## How AiR-Way Operates

New things become simple when once we understand them.

One of the new things today is AiR-Way Multifold Window Hardware. Not only is it a simple matter to install AiR-Way, but, as these pictures show, it is extremely easy to operate.

The many illustrations in Catalog G-28 will give you an even clearer understanding of AiR-Way. Write for your free copy today.

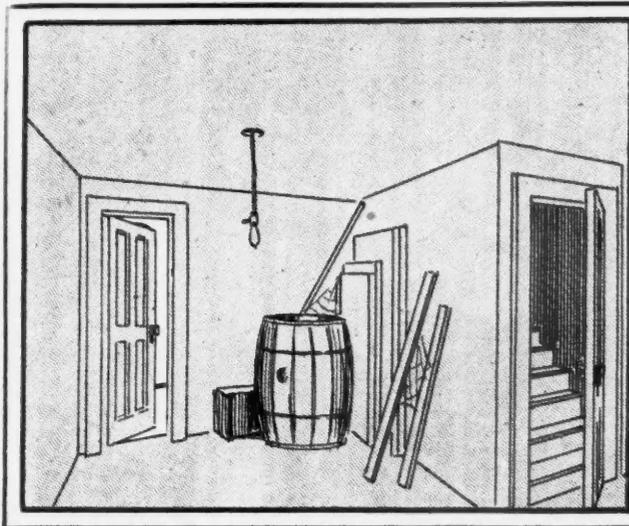


Showing how the AiR-Way link opens each window. In each series of sash, the sash hinged to the window casing opens first. Then the remaining sash slide toward this end as they are opened.

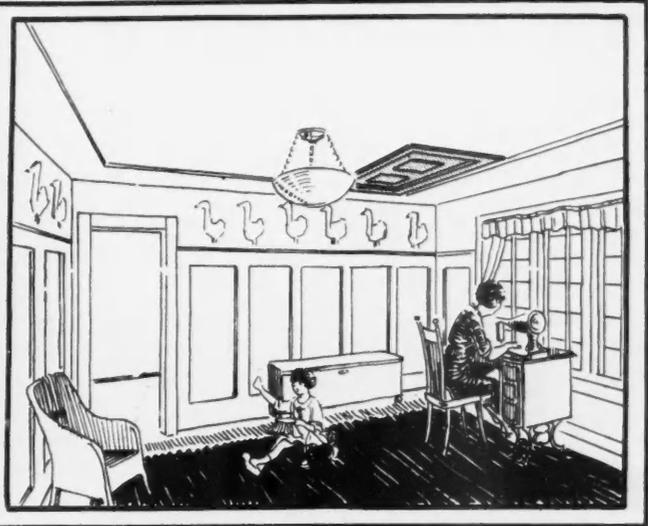
**Richards-Wilcox Mfg. Co.**  
 A Hanger for any Door that Slides  
**AURORA, ILLINOIS, U.S.A.**  
 Chicago New York Cleveland  
 Boston St. Louis Indianapolis  
 RICHARDS-WILCOX, CANADIAN CO. LTD.  
 Winnipeg London, Ont. Montreal



This illustration shows all sash in an open position, affording an unusually wide and unobstructed opening. Note that AiR-Way does not in any way interfere with the screen outside.



THE OLD WAY



THE NEW WAY

# ADD An Extra Room \$500 to the Value of the Homes You Build

Space taken up by stairs to the attic of a house is pure waste. Save it in the homes you build by installing Bessler Movable Stairways. Your clients will be delighted with the additional space; you will get the reward.

## *Bessler Movable Stairways*

are built into the ceiling. When they are not in use they disappear. The opening is closed by a panel that makes a neat appearance. They are easy to operate, being delicately balanced. Yet the Bessler Movable Stairway is sturdy, built of the best materials and absolutely safe.

Be sure and see the Bessler Movable Stairway at your dealers, or write to us. Your name and address on the attached coupon will bring complete information about the Bessler Movable Stairway. Fill it out today and mail it. You owe it to yourself and your clients to have complete information about this modern method of increasing space in the home, or any other building.

## **BESSLER** Movable Stairway Co.

General Office: AKRON, OHIO  
New York Office: 103 Park Ave.

COUPON

**BESSLER MOVABLE STAIRWAY CO.**  
Akron, Ohio

Please send me without obligation complete information about the Bessler Movable Stairway, and how it adds extra room to a home.

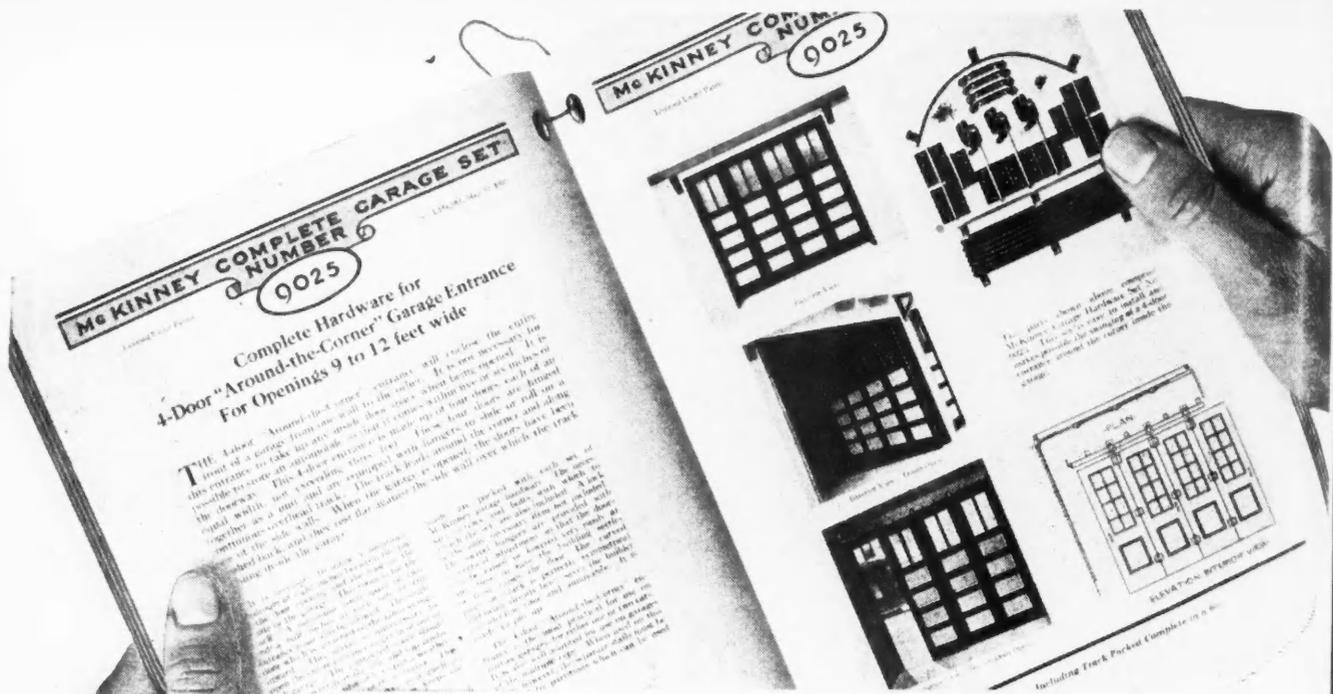
Name.....

Street.....

Town.....

My Dealer's Name.....

State.....



## This booklet will solve some vexing problems

**T**HE planning of a garage is almost an essential part of planning a new home. The McKinney Booklet, "Complete Garage Sets," is a helpful booklet to keep before you when planning the garage.

It illustrates swinging, sliding-folding and around-the-corner doors that answer every problem of space allowance and entrance widths. It visualizes the completed entrance for your clients as no description will do.

And, best of all, it will allow you to control the purchasing of the necessary hardware for the hanging of the doors. Too often, an otherwise perfect plan goes

awry because the purchasing of the hardware has been largely a matter of guesswork. All that is necessary to insure a perfect installation of the proposed doors is to write on the specifications the number of the McKinney set that corresponds to the entrance you have planned.

The hardware is delivered to the builder boxed, ready for use. Not a piece is missing. The various parts harmonize throughout. It is good hardware—McKinney made.

The McKinney Booklet is full of valuable suggestions for the architect and builder. It will be sent free on request.

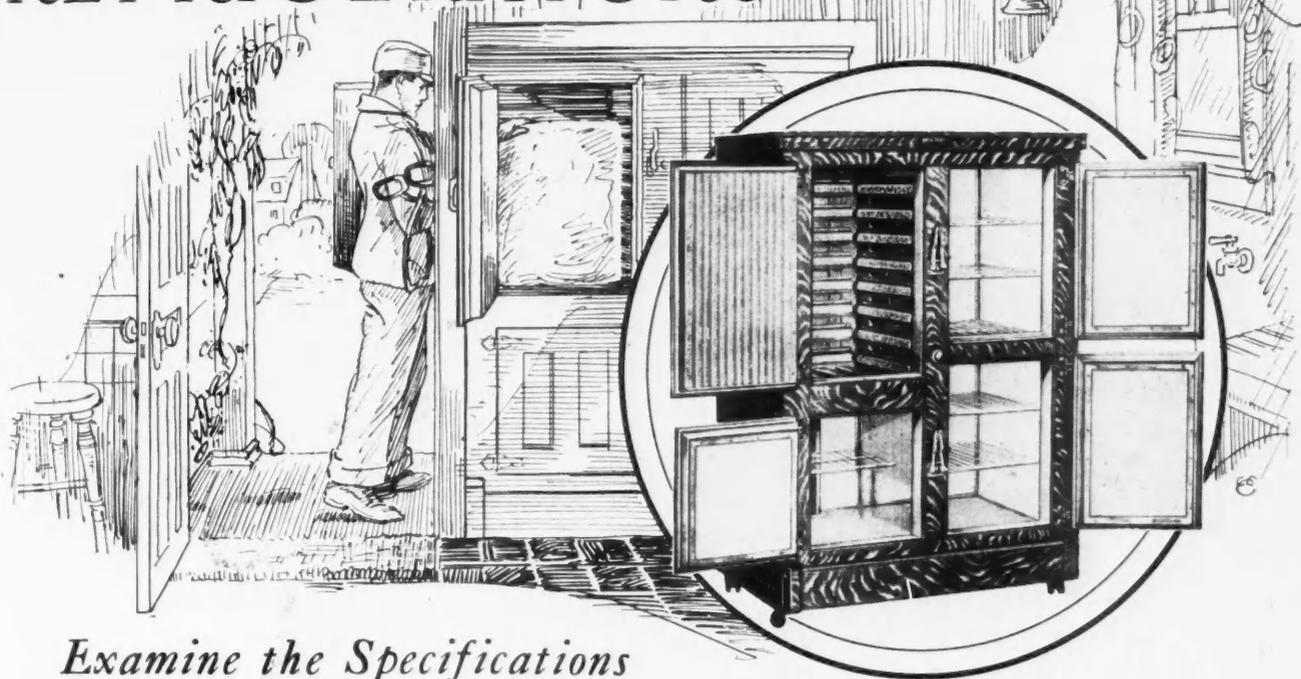
McKINNEY MANUFACTURING COMPANY, Pittsburgh  
 Western Office, Wrigley Bldg., Chicago      Export Representation

### McKINNEY Hinges and Butts and Hardware

Also door hangers and track, door bolts and latches, shelf brackets, window and screen hardware, cabinet hardware, steel door mats and wrought specialties.

# McKINNEY Complete Garage Door Sets

# MCCRAY REFRIGERATORS



## Examine the Specifications

YOU architects and builders are accustomed to going beneath the surface, investigating materials and details of construction when passing judgment on an item of equipment.

The deeper you go into such an investigation of the McCray refrigerator the more thoroughly you will be convinced of McCray quality. These are some of the things you will find:

- every bit of material is carefully selected, of the highest grade, and proved to be the best possible kind for each particular purpose;
- the insulation is so placed that it always keeps its place, does not sag and leave some parts of the wall unprotected;
- all lumber is thoroughly seasoned, air-dried and cured in our own kilns, so that every part fits perfectly, doors close tightly and retain their shape permanently—there is no warping or sagging;
- every process of manufacture, every detail of construction down to the last hinge and door fastener, is given the care and devotion which McCray standards of quality demand.

There are stock sizes of McCray refrigerators and coolers for all purposes, in residences, hotels, clubs, hospitals, institutions, florist shops, grocery stores and markets. Besides McCray builds equipment to order to meet special needs. Send a sketch of your client's requirements and we will provide blue prints of suggested equipment, without obligation.

Outside icing, a feature originated and developed by McCray, is available on all residence models. The McCray is readily adapted for mechanical refrigeration if desired.

Send the coupon now so you will have our latest catalogs on file. McCray engineers will be glad to discuss any refrigeration problem with you without obligation.

MCCRAY REFRIGERATOR CO.

2360 LAKE STREET

KENDALLVILLE, INDIANA.

Salesrooms in All Principal Cities

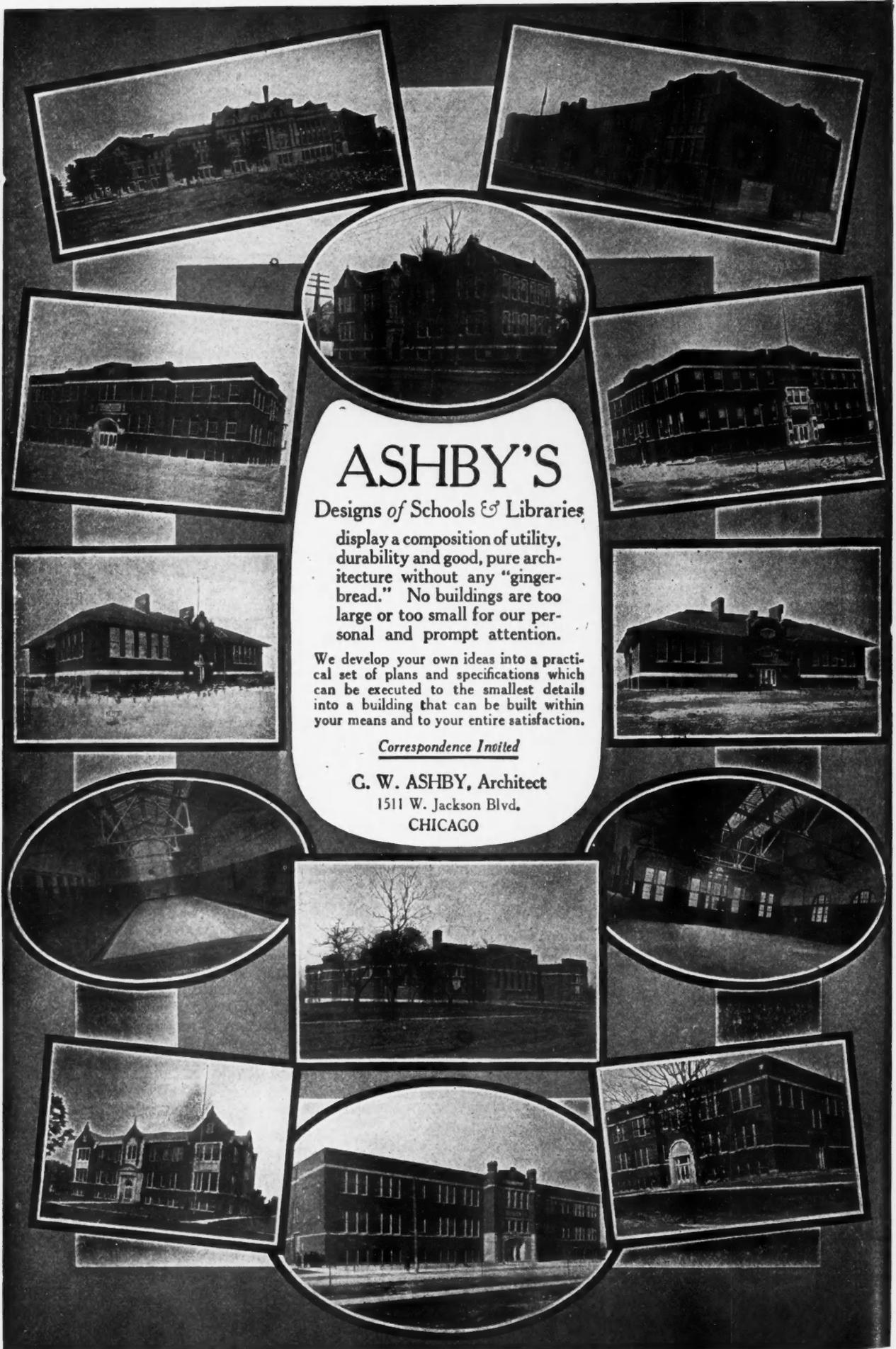
MCCRAY REFRIGERATOR CO  
2360 Lake St., Kendallville, Ind.

Gentlemen: Please send catalogs and information concerning refrigerators for:

- Residences     Florists
- Grocery Stores     Markets
- Hotels, Restaurants
- Hospitals, Institutions

Name.....  
St.....  
City.....

MCCRAY REFRIGERATORS FOR ALL PURPOSES



# ASHBY'S

*Designs of Schools & Libraries*

display a composition of utility, durability and good, pure architecture without any "gingerbread." No buildings are too large or too small for our personal and prompt attention.

We develop your own ideas into a practical set of plans and specifications which can be executed to the smallest details into a building that can be built within your means and to your entire satisfaction.

*Correspondence Invited*

**G. W. ASHBY, Architect**  
1511 W. Jackson Blvd.  
CHICAGO

# There is *only one* PEARL Wire Cloth

*The genuine has two copper wires in the selvage.*



*Rust is a compound that is formed when iron, or steel, and the oxygen in air or water come in contact. Scientifically it is known as*

## FERRIC-OXIDE

**B**ECAUSE of Rust, ordinary Painted or Galvanized screening fails to give satisfactory service. The wire becomes pitted and corroded, particularly at the points of intersection, and is soon destroyed. When screening, use

### PEARL WIRE CLOTH

Due to its metallic coating, a special process, *exclusive with us*, Pearl is longer lasting. This coating is a part of the wire itself, does not peel or chip, is rust-resisting, insures long life, making it the *most economical* wire cloth, as well as the most

***Durable, Handsome, Sanitary and Clearest of Vision***

Insist upon the genuine which has TWO Copper Wires in the selvage and our round red tag on every roll.

*We have a dealer in your town. See him or write us if you are interested in permanently screening doors, windows or porches. Samples and literature FREE.*

Address Department "A"

**The Gilbert & Bennett Mfg. Co.**  
 New York                      Georgetown, Conn.                      Chicago                      Kansas City

PEARL is made in Regular Grade (12x13 mesh) and 14, 16, 18, 20, 24 and 30 mesh; also Extra Heavy Grade (14 mesh only).

The best hardware dealer in your city sells "PEARL"

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

*Now  
is the Time to  
Screen*

*Ask for  
Our Porch Plan  
It's Free*



# The Choice of Experienced Builders

"The Furnace is the  
Heart of the Home"



## Holland Heating Systems Identify Good Builders

USUALLY, those who do anything worth while are identified by their work.

Reputations are made by apparent evidence of sincerity and intention to serve and as quickly unmade by careless service and faulty equipment.

Builders who standardize on HOLLAND HEATING SYSTEMS have no fear of complaint or loss of business from being identified with poorly heated homes.

Every HOLLAND FURNACE is Holland-installed and guaranteed in writing to render the full measure of service required of it. Every home equipped with a HOLLAND stands as a testimonial to good judgment of the man who specified the heating equipment.

More and more, builders are coming to recognize that "HOLLAND FURNACES Make Warm Friends" for those who recommend them.

### HOLLAND FURNACE COMPANY WORLD'S LARGEST INSTALLERS OF FURNACES

General Office: HOLLAND, MICHIGAN

Two Factories: Holland, Michigan, and Cedar Rapids, Iowa

Central Chicago Office: Building Material Exhibit, 6th Floor, Leiter Bldg., 15 East Van Buren St.

# Nothing to Heat But the Air in a Warm-Air Heating System



*Because the Sunbeam Warm-Air Heating System* warms the air *directly*, it requires no costly or complicated heating equipment in the basement, in the walls or in the rooms of the building. *There's nothing to heat but the air.* That means a great saving in the first cost of the heating plant, savings in cost of upkeep, savings in useful floor and wall space all over the building. Sunbeam direct heating saves a tremendous amount of fuel, too. It gives a remarkably quick heating result and Sunbeam Heating is always under perfect control.

*The Sunbeam Warm-Air Heating System* means better health and greater comfort. The Sunbeam Furnace warms fresh air to the proper temperature, healthfully moistens it and circulates it evenly and constantly through every room. The air is kept in perfect condition—always changing—always fresh and pure.

*Considering all these advantages* it is nothing more nor less than good, sound business for any builder or contractor to recommend Sunbeam Warm-Air Heating for the homes, stores, schools and other buildings of moderate size he builds this spring. A Sunbeam Furnace—either Pipe or Pipeless—will do more than any other single piece of equipment to insure the owner's complete and permanent satisfaction in his building.

*It will be worth your while* to make the acquaintance of the Sunbeam Dealer nearest you. He is a warm-air heating specialist. And we shall be glad to send you interesting descriptive literature on the subject of warm-air heating. Let us hear from you.

THE FOX FURNACE COMPANY, ELYRIA, OHIO  
 Boston Atlanta Cleveland Chicago Omaha Denver San Francisco

# SUNBEAM

## WARM-AIR HEATING

Copyright 1923 by  
 The Fox Furnace Company

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN BUILDER

# PLAN *for* COMFORT

THE layout of a heating plan is a simple matter to the expert, but the difference between a **House** and a **Home** is often the difference between a well-planned heating system, and one wrongly designed.

## *Free Heating Plans*

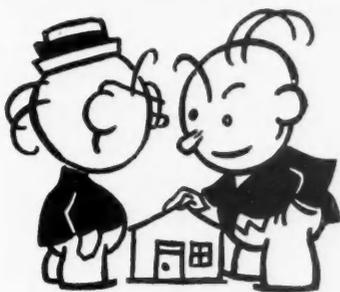
embodying the Hess Welded Steel Furnace are yours for the asking. Our drafting room is at your service, and will show you how a proper heating system may be arranged for your house;—efficient, economical with any fuel, and inexpensive.

### *Hess Furnaces Burn Anything Deliver All the Heat*

Send us your sketches—get our plan and free book on heating—and you are then in line to have a comfortable home.

**HESS WARMING & VENTILATING CO.**  
1220B Tacoma Building, CHICAGO

### What the Builder Told the Owner



"Now in building this house, Mr. Jenkins, don't put *all* your money in *hidden* quality. A 10" foundation, 8 x 10 beams, 2 x 6's over windows, etc., are fine but let's proportion the cost so we can put in some quality features that'll be *in evidence* should you ever need to sell.

"We'll figure on a Round Oak Heating System, Kohler sinks and tubs, a Certaineed roof and a few other standard, nationally known units that can be pointed out and seen.

"They will be outward proof of the quality we've put in the house. Besides, if you never have to sell, you're sure of continued satisfaction with them. So you're ahead either way."

## It's what they *SEE* that sells a house

The wise builder, of course, recommends good building even if it is not always visible.

But he also keeps in mind that unforeseen circumstances frequently compel an owner to sell, and that if the house can then be readily sold without loss, it is another feather in the builder's cap.

Accordingly he recommends the use of nationally known, branded units which have a reputation for merit and can be *seen* by people who are looking over the premises.

For he knows that the average buyer judges value largely by what he can see.

So the builder lays particular stress upon the heating system. That is why Round

Oak Heating Systems are going into so many new homes these days.

They are nationally recognized as the best. On the other hand, if an owner does not sell, a lifetime of economical and entirely satisfactory heating is assured—which also reflects favorably upon the builder.

Have you the latest catalogs on Round Oak Moistair Heating Systems, Round Oak Pipeless Furnaces and Round Oak Ironbilt Furnaces for pipe installation?

We will gladly forward copies, quite without obligation, on request.

THE BECKWITH COMPANY, Dowagiac, Mich.  
"Round Oak Folks" Established 1871

# ROUND OAK

## HEATING SYSTEMS

ALSO GAS, COAL AND COMBINATION RANGES

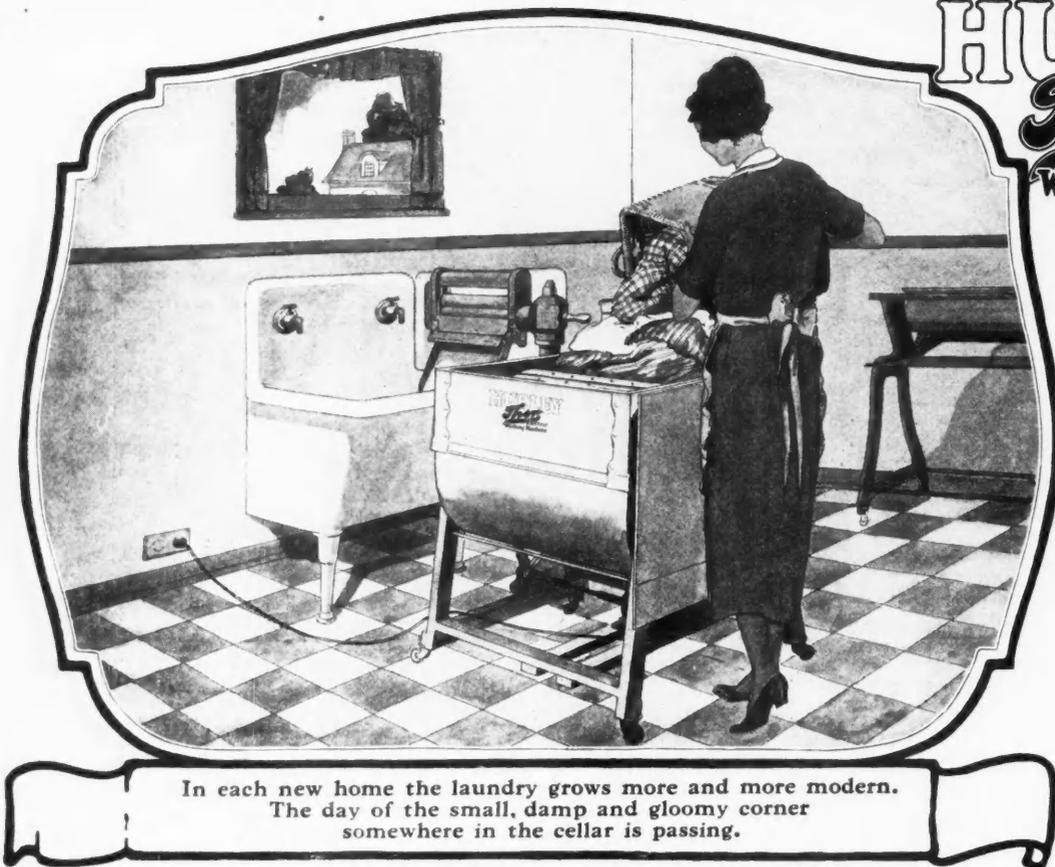
The Round Oak Engineering Department will gladly co-operate with you through the local Round Oak Dealer, or direct if there is no dealer in your city. Heating plans are furnished without charge, if you supply sketch or blue prints.



# HURLEY

## Thor

### Electric Washing Machine

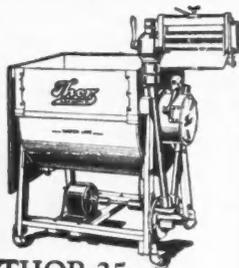


In each new home the laundry grows more and more modern.  
The day of the small, damp and gloomy corner  
somewhere in the cellar is passing.

## Laundries Should Be Planned!

THE planning of the laundry should have a prominent part in the designing of any home. A pair of stationary tubs in a basement corner is no longer sufficient—the modern home laundry must be conveniently located, well lighted, tiled and equipped with convenience outlets and drains to make the installation of electric washing and ironing machines really practicable.

The Hurley Machine Company is doing a great share in the development of home laundries by the perfection of electric home laundry appliances—the architects and builders of the country have an equally great share in the proper planning of the laundries into which these appliances go. We will be glad to co-operate with home builders everywhere in the planning of better home laundries.



### THOR-25

A full-size machine with the famous Thor revolving-reversing cylinder—with swinging wringer and cushion wringer rolls. All Thor features of service and reliability. Equipped with special Metalo cylinder if requested.

### HURLEY MACHINE COMPANY

Manufacturers Chicago

22nd Street and 54th Avenue

New York . 147 West 42nd Street

Toronto . 66 Temperance Street

Western Office, Rialto Building, San Francisco, Calif.

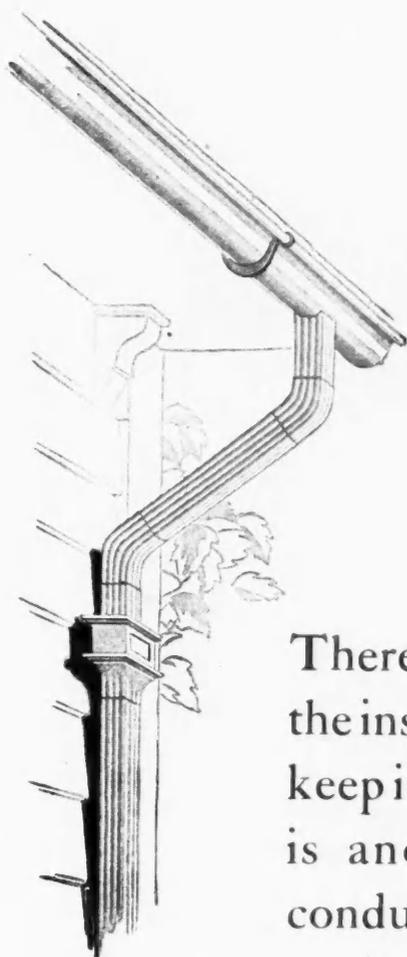
*The Largest Electric Washing Machine Manufacturers in the World*



### THOR IRONER

Automatic Electric Ironer

Has one-finger control. The motor does all the work—irons all kinds of clothes; shirts, dainty frilled dresses, as easily as flat work. Let us send you details.



There is no way to paint the inside of a small pipe to keep it from rusting. That is another reason why conductor pipes should be made from Horse Head Zinc. It cannot rust.

THE NEW JERSEY ZINC COMPANY  
160 Front Street (Established 1848) New York City

CHICAGO: Mineral Point Zinc Company  
PITTSBURGH: The New Jersey Zinc Sales Co.  
SAN FRANCISCO: The New Jersey Zinc Sales Co.  
CLEVELAND: The New Jersey Zinc Sales Co.



Mr. Manufacturer! —

(of EVERYTHING that enters into the Construction, Equipment, Decoration or Furnishing of a Home—)

*Just a minute, please—*

**Mrs. and Mr. Home-wanter Invite You**

to meet them among the prosperous and eager throngs who will (as heretofore) attend the **1923 Own Your Home Expositions** at Chicago and New York this Spring.

Architects, Builders, Contractors, Decorators, Furnishers, Artists, Craftsmen and Ambitious Citizens—EVERYBODY, in short, within a long radius of travel, who means "a sale," or who helps to "make a sale," for you will be there.

They will be there for the sole purpose of learning all about what you have to offer and to compare **your** product with that of your strongest competitor.

There is going to be a tremendous volume of home building this year, and you can get a large portion of your share of it at these standardized and popular

## COMPLETE BUILDING SHOWS

Remember that these exhibits are operated by the original Own Your Home Exposition Company. With this enterprise there are co-operating **more than seven hundred men and women**, representing **over 75 civic and business organizations**.

### CHICAGO

The Third Annual  
**OWN YOUR HOME  
EXPOSITION**

conducted under the supervision and direction of the Chicago  
Real Estate Board

**THE COLISEUM**

March 24th to 31st, 1923

### NEW YORK

The Fifth Annual  
**OWN YOUR HOME  
EXPOSITION**

conducted under the supervision and direction of the Allied  
Real Estate Boards of the Metropolitan District

**69th REGIMENT ARMORY**

April 21st to 28th, 1923

## GET YOUR SPACE NOW

Space reservations for both shows are already several thousand square feet in excess of this time during past years. Prompt action is therefore necessary if you desire to talk to these vast audiences this season.

*A special train will be run from Chicago to New York to transport exhibits from the Chicago Exposition*

For space or further information address

## OWN YOUR HOME EXPOSITION

ROBERT H. SEXTON, Managing Director

Chicago Office:  
111 West Jackson Blvd.  
Fred C. Balthaser, Assistant Manager

New York Office:  
512 Fifth Ave., at 43rd St.  
Edwin J. Stewart, Assistant Manager



## The Shingle Question

The answer to the question "What shingle shall we use?" is found in these facts which apply to Ruberoid Strip-shingles.

1. **Quality.** Felt, saturant and coatings are of the highest quality that can be made. Ruberoid roofs, laid more than thirty years ago, are still giving excellent service.
2. **Attractiveness.** These shingles are surfaced with natural crushed slate in sage green, Venetian red and steel-blue—colors which will blend harmoniously with any surrounding.
3. **Many Designs.** Due to the patented form of Ruberoid Strip-shingles, they may be laid in various attractive designs, each of which gives a distinctive character to the roof.
4. **Your Reputation** is closely linked with the materials you choose. The home owner knows what you are putting on his roof. Ruberoid Strip-shingles further your reputation as a quality builder.

Send for further information about Ruberoid Strip-shingles.

**The RUBEROID Co.**

95 Madison Avenue, New York

Chicago

Boston

# RUBEROID

## SHINGLES AND ROOFING

# Servicised Roofs Are Less Expensive

**B**UILDING a more durable roof that is more quickly laid and with less material—that is the **SERVICISED** method of construction.

The illustration shows our Shingle Span Open Sheathing method of laying and Individual Interlocking Shingles. This simple and effective method will save better than three dollars per square and assures a dependable roof.

The spurs are quickly and easily spaced and shingles laid over them in a jiffy. The shingle ends are locked to prevent blowing up in the wind and at the same time imparts a beautiful interwoven pattern. The expansion and contraction is taken up from one row to the other over the entire roof surface through the interlocking ends. These shingles are self-spacing and can be laid a greater length to the weather.

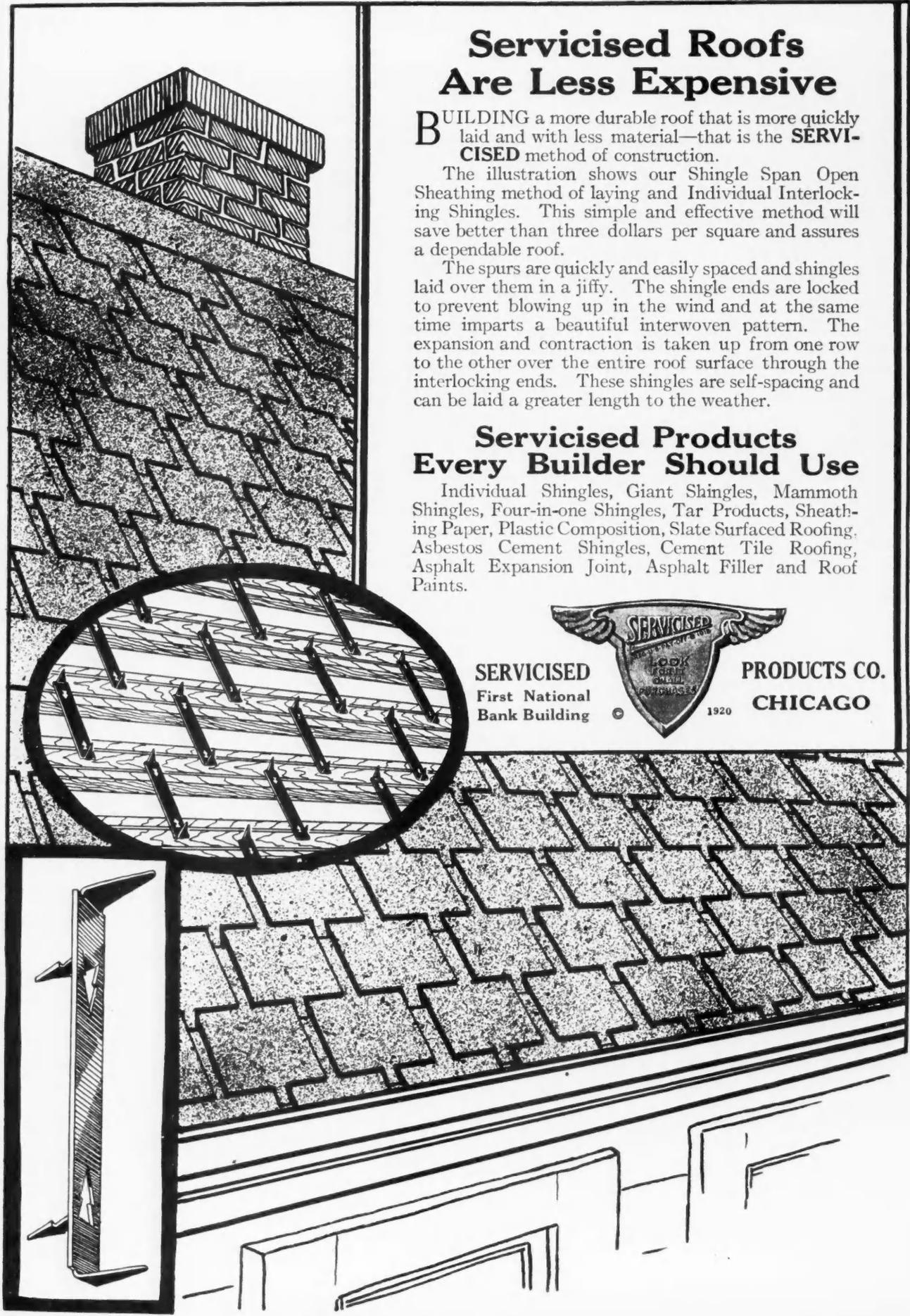
## Servicised Products Every Builder Should Use

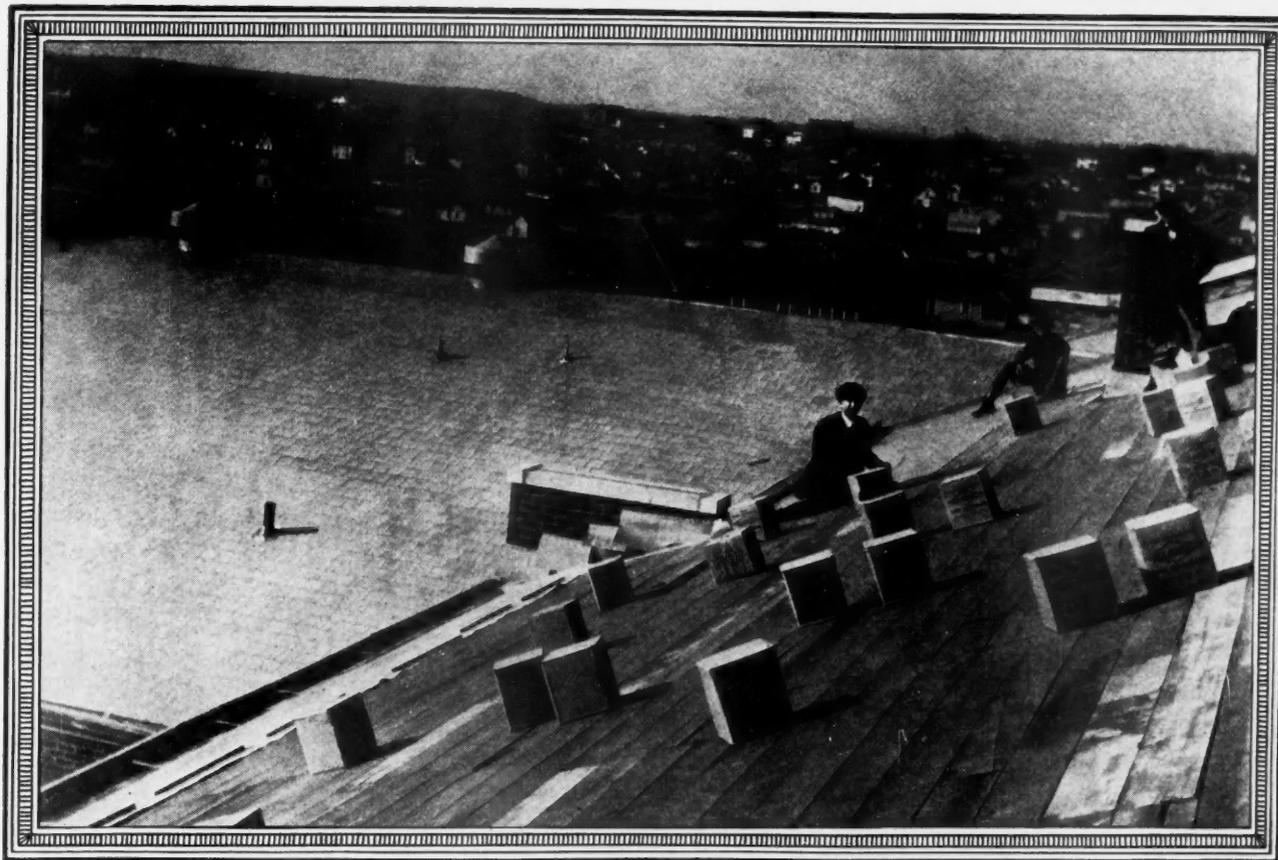
Individual Shingles, Giant Shingles, Mammoth Shingles, Four-in-one Shingles, Tar Products, Sheathing Paper, Plastic Composition, Slate Surfaced Roofing, Asbestos Cement Shingles, Cement Tile Roofing, Asphalt Expansion Joint, Asphalt Filler and Roof Paints.



**SERVICISED**  
First National  
Bank Building

**PRODUCTS CO.**  
**CHICAGO**





Laying Illinois Zinc Shingles on the roof of the Prudom School, Pawhuska, Okla.  
 Architect: John O. Bradley, Pawhuska, Okla. Contractor: Earl Smith, Pawhuska, Okla.

## All You Need are Snips and a Hammer

If you don't believe it look at this picture! It shows a couple of roofers in the act of laying 180 squares of Illinois Zinc Shingles on a large school in record time. In the background is a section of the roof that has just been shingled. For beauty, simplicity, durability—where will you find its equal?

The boxes lying around on the section where the roofers are working each contain a half square of Illinois Zinc Shingles with a full quota of zinclad nails. Packing the shingles this way helps to make a quicker and neater job.

Besides the 180 squares of Illinois Zinc Shingles required for this roof, there were 7

ventilators, 472 feet of guttering and 200 feet of down-spouting, all fabricated from Illinois Zinc Sheets.

Write us for samples and specifications of our Illinois Zinc Shingles, and let us help you sell that school, church or public building in your territory. Our Dealer's Proposition will surely interest you.



## ILLINOIS ZINC COMPANY

332 So. Michigan Avenue, Chicago, Ill.  
 280 Broadway, New York City 1331 Filbert Street, Philadelphia, Pa.  
 Smelters and Rolling Mills, Peru, Ill.  
 Established 1870

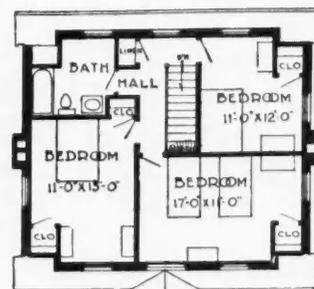
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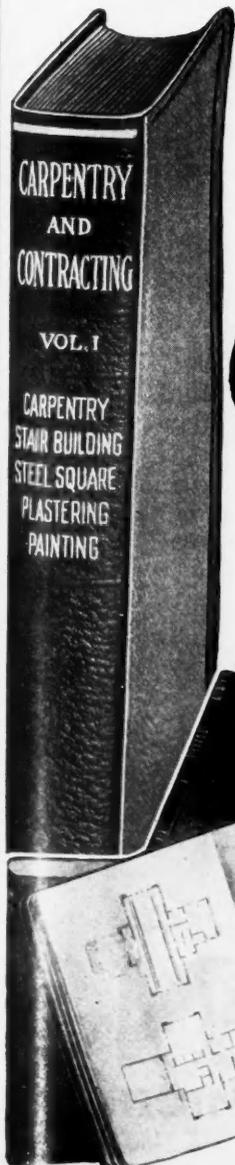
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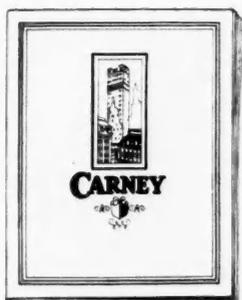
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