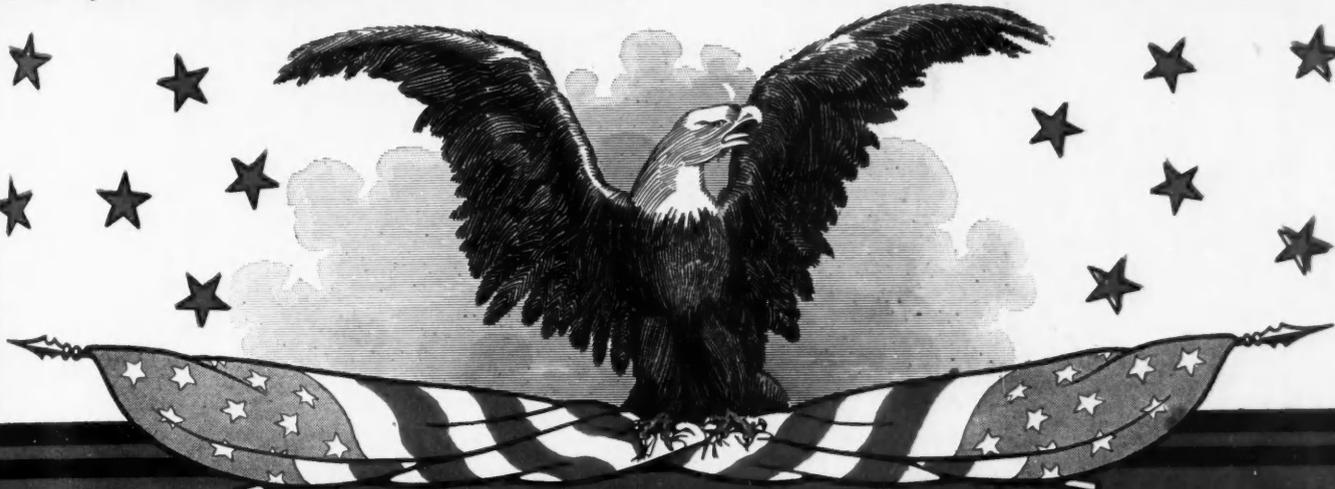


JANUARY 1917

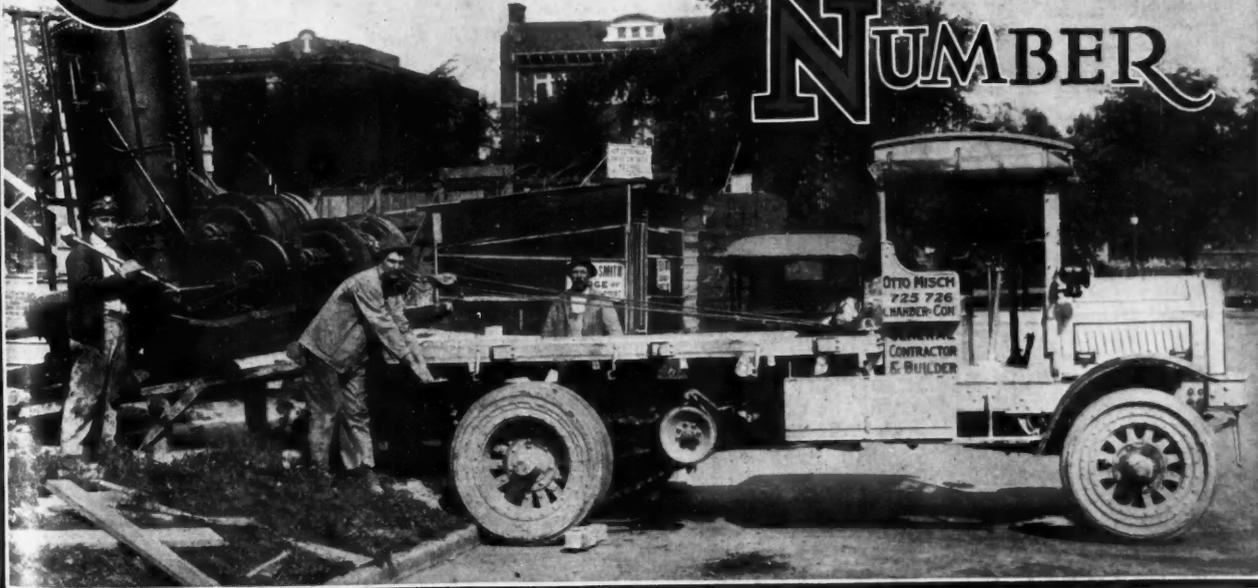
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AMERICAN CARPENTER AND BUILDER



THE WORLD'S GREATEST BUILDING PAPER

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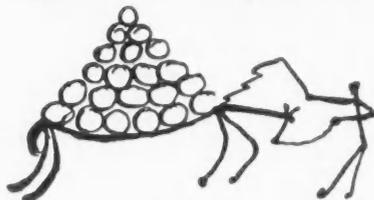


Price 20 Cents

Can't a Horse Pull More Than He Can Carry Can't a Locomotive Engine, a Tugboat and an Automobile



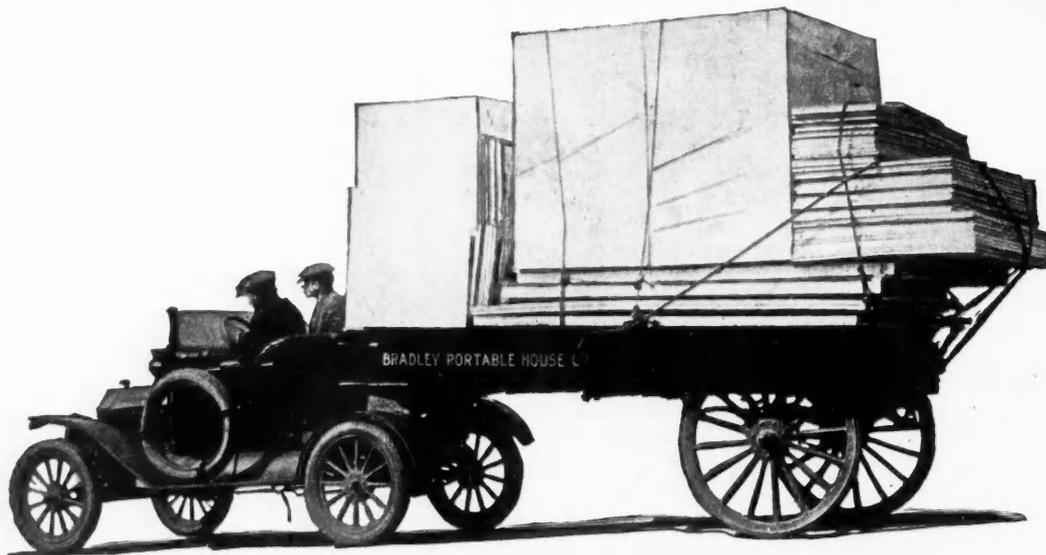
A horse can pull a ton.



He'd have hard work carrying that much.



A light roadster might carry it for awhile, but it would soon break down.



With a Martin Semi-Trailer, a Ford Can Easily Pull a Ton Without the Least Strain on the Driving Mechanism
(The reason why this is possible is fully explained in a circular which will be sent on request.)

The Martin Semi-Trailer and Ford Combination make the lowest priced one-ton truck in the entire commercial car field. It is very little longer over all than the conventional truck of the same loading space.

The Only Trailer that is 100% Efficient Because:

It can be backed, turned and handled with ease in the narrowest quarters. (Unless a trailer can be backed and manipulated in freight yards and narrow spaces it is far from being 100% efficient.)

It allows sufficient weight for traction. (Unless there is enough weight on the driving wheels for traction they will slip on the wet asphalt, ice and snow. With the Martin Semi-Trailer enough weight is carried on the driving wheels for traction.)

The Ford and Semi-Trailer combination make a unit, and is permitted on all streets and ferries. (Some cities have legislated against the use of four-wheel trailers, but in no case does this adverse legislation apply to the semi-trailer.)

The Martin Semi-Trailer was designed by automobile engineers. It is high grade in material and construction and can easily carry a ton. A Ford used as a tractor can easily draw a ton. The Rocking Fifth Wheel connects with the Semi-Trailer Ford Roadster. The connection can be made and unmade instantly. It enables the Ford to be used either as a commercial vehicle or as a pleasure car at will, since the Ford is not mutilated in any way.

It Puts Hauling Costs at—



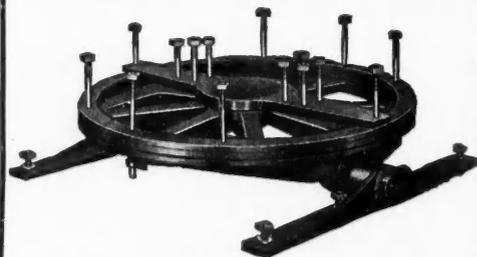
the lowest level ever known. The Fifth Wheel and Semi-Trailer together cost only

\$180

Made in nine and twelve-foot bodies

MARTIN ROCKING FIFTH WHEEL CO. SPRINGFIELD MASS.

Contractor - Builders



Martin's Patent Rocking Fifth Wheel is made in four sizes:

Ford or Light Roadster size is 18-in. circle complete. Makes tractor-semi trailer 1 ton capacity. Price \$35.00.

24-in. circle complete, \$65.00. For one and two ton trucks. Makes tractor-semi-trailer 2-4 tons capacity.

30-in. circle complete, \$85.00. For two and three ton trucks. Makes tractor-semi-trailer 6-8 tons capacity.

36-in. circle complete, \$118.00. For five and six ton trucks. Makes tractor-semi-trailer 10-12 tons capacity.

Send for Special Fifth Wheel Circular



What We Are Proud of

A FEW months ago "The Man from the Lumber Yard" remarked that the purpose of his writing was not so much to impart information as to inspire action. The Editor, in speaking for the entire staff, would modify that to read, "both to impart information and to inspire action."

We don't know how much of the information we present in each issue actually strikes home and is retained; but we do have occasionally evidence that our efforts have been a source of inspiration to our readers. And it is of this we are most proud. Note, for instance, the following letter:

To the Editor: Columbia, Mo.
Your article on page 35 of the November issue reminds me that you once asked for a write-up of my house. I have just got off the last proof for a group of three books I have been writing for the Manual Arts Press and have a moment to breathe before beginning on another for another company.

By the way, your first statement on page 35 interests me. My father was a carpenter and builder, always the "brains" on the job; his father was the same—I do not know how far back it runs. My observation bears out your statement that the carpenter is almost always the "brains" on the job—that is, he is the one to take the initiative.

I am going to send you a copy of "Carpentry"—you will be interested in it. I have been teaching carpentry here and have tried in that book to connect up the theoretical and the practical.

I will also send you a copy of "Griffith's Roof Framing Tables" which is being published by the Manual Arts Press and will be out soon.

In your article you take credit for spurring your readers to better things. My first writing was done for the "A. C. and B." My tenth book will be out when "Carpentry" is off the press, which will be this month. I certainly found a "winter job," for I have been putting in my winters writing ever since 1905. Among other places, they are in use in public schools of Boston, Minneapolis, Kansas City and Portland, Ore.

I wonder if you really do know how much help such a publication as yours is to the carpenter. I well remember when I first learned to read a blueprint. I have met carpenters, fine mechanics, who couldn't read blueprints and who ridiculed others who made use of them, saying that "good carpenters could build houses without having to have blueprints." Queer thing about the work of such men is that all their houses look alike. They can build without blueprints, but only houses very much like those they were taught to build. With the growth of our country our young men who expect to advance with the trade have got to better prepare themselves than their elders were prepared.

I like the note you strike on page 35, November issue, for a more open-minded use of materials. It's painful to think in terms of new materials, especially when one has got in the habit of thinking in one only; but it pays.

IRA S. GRIFFITH,
Dept. of Normal Arts,
University of Missouri.



BY the way, don't any of you neglect to see next month's AMERICAN CARPENTER AND BUILDER. It will be our Third Annual FARM BUILDING NUMBER; and it will be a dandy. If you or any of your friends are interested at all in rural building improvements you can't afford to miss this great annual issue.
Editor, AMERICAN CARPENTER AND BUILDER.

Contents for January, 1917

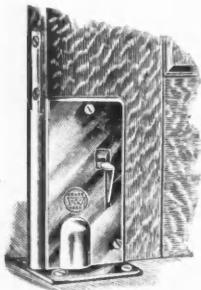
Page	Page	Page
American Concrete Pine Assn. to Meet in Chicago.....	Designing a Heavy Timber Factory.....	Sliding Sash that Sheds the Rain.....
52	74	102
And Here's the Machine that Did It.....	Details of a Fireplace Alcove.....	Specially Designed Barn.....
38	52	51
Better Building.....	Distinctive Stucco Cottage.....	Steel Square.....
64	49	51
Brick Construction for Modern Carpenters and Builders.....	Encourage the Home Craftsman.....	"Thanks to My Concrete Mixer".....
54	106	38
Brick Home of the City Type.....	Extra Wide Bungalow.....	That Aeroplane Bedroom an Amusing Mistake.....
62	47	104
Brick Houses for \$2365.00.....	Farm Buildings Arranged for Convenience.....	Trade Notes and Items of Interest.....
59	70	108
Cold Weather Work Fattens Both Dealer's and Contractor's Bank Account.....	Finishing Off an Attic.....	Two-Car Brick Garage.....
66	46-48	63
Colonial Square—The Old Favorite.....	Guaranteed Building Plans.....	Wall Board the "Young Hopeful" of the Carpenter.....
50	45	37
Colonial Two-Family House.....	Home Craftsman.....	Wants Plans for Hangar.....
45	72	106
Combination for Beauty and Strength.....	Homecraft Porch Swing and Table.....	Wants to Build a Clapboard Boat.....
57	72	102
Contractor-Dealer Friendship Best Protection for Local Building Business Interests.....	How We Finally Built a Home of Brick.....	Wants to Make Reading Lamp.....
88	78	106
Contractor-Dealer Good-Will Section.....	Man from the Lumber Yard.....	What a New Brick Porch Will Do.....
64	78	54
Correspondence Department.....	Motor Trucks Making Money and Reputation for Builders.....	Why Sell or Use Advertised Building Materials?.....
100	90	64
	Narrow Five-Room Brick Cottage.....	Yours for Safer Building.....
	58	74
	Noon Hour Talks by the Boss Carpenter.....	
	74	
	Possibilities of the Steel Square.....	
	51	
	Power on the Job.....	
	42	

1-34 add

TRADE
CHICAGO
MARK

**SPRING HINGES
REPUTATION**

Do you specify a spring hinge with distinctive features which will appeal to your client and assure satisfaction to all concerned?



**Chicago "Relax"
Spring Hinges**

are in great demand. They are substantial in construction and readily applied. The EXCLUSIVE FEATURE of spring action release, allowing the door to be placed at any desired position and automatically re-engaging when the door is closed,

is of recognized merit and utility.

Send for Catalogue C32. It fully illustrates and describes the most complete line of Spring Hinges manufactured

Chicago Spring Butt Company.

CHICAGO

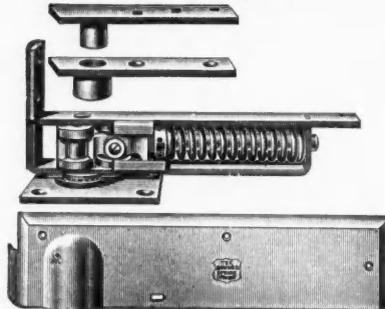


NEW YORK

BOMMER

**Floor Surface Spring Hinge
For Double-Acting and Single-Acting Doors
Release and Holdback Ball Bearing
Alignment Device**

Every moving part of this hinge can be oiled from a single hole on outside of side-plate.



The most durable hinge of its type, holds the door open when swung to 90 degrees at either side. The spring-action can also be entirely released as long as desired so that the door will swing free, without spring-action, in either direction, by inserting a wire nail (when the door is open) into a hole provided in the side plates for that purpose. The spring-action can be restored by withdrawing the nail.

Your Hardware Merchant Can Supply Them
Bommer Bros., Manufacturers Brooklyn, N.Y.



Stained with Cabot's Stucco Stain
Percy D. Bentley, Architect, La Crosse, Wis.

Smoky, Dusty Stucco Houses
look dirty and discouraging. They can be transformed into cheerful and attractive habitations at small expense by tinting them with

Cabot's Stucco Stains
(Waterproof)

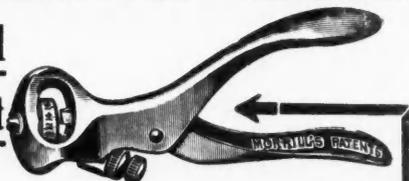
The tints are rich and natural—don't look "painty"—and they are easily and quickly applied, and lasting. Anyone can put them on. They are not like the thick and heavy coatings, and therefore spread farther, go on easier and cannot crack or peel off. They make the stucco rainproof, so that it is protected from dampness, freezing and crumbling. Artistic coloring is the one thing needed to make stucco houses good to look at, and Cabot's Stucco Stains do the work perfectly. Send for Color-card and Catalog—Free.

Samuel Cabot, Inc., Manfg. Chemists, Boston
1133 Broadway, New York 24 W. Kinzie St., Chicago

Cabot's Shingle Stains, Heat and Cold-proof "Quilt", Old Virginia White, Waterproofings, etc.

Worth Much to You

**Morrill
Saw Set**



All master carpenters are using this Saw Set. In one operation it takes out the wrong set and puts in the right one. Write for FREE booklet "Saw Points". It tells how to properly joint, set and file hand saws.

CHAS. MORRILL

94 Lafayette Street
NEW YORK



Trade **SIMPLEX** Mark
Reg. U. S. Pat. Office

ROOFING NAILS

FOUR NAILS at PRICE OF ONE
When You Buy Them

ONE NAIL in place of FOUR
When You Drive Them

BECAUSE the Simplex has four times the head area of an ordinary roofing nail—hence four times the holding power, as head area is the all-important point in laying prepared roofing or sheathing papers.

Demand Simplex Nails from your hardware dealer. Don't buy prepared roofing unless Simplex Nails are packed in the rolls. FREE samples sent on receipt of request accompanied by dealer's name.

H. B. Sherman Mfg. Co. Battle Creek, Mich.

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Circulation Audited and Verified March 27, 1916

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American Carpenter and Builder
Entered as second-class matter July 1, 1905, at the postoffice at Chicago, Ill., under the act of Congress of March 3, 1879.

Published on the first day of each month by
AMERICAN CARPENTER AND BUILDER COMPANY
PUBLICATION OFFICE:
RADFORD BUILDING, 1827 PRAIRIE AVE., CHICAGO
EASTERN OFFICE: 345 FIFTH AVE., NEW YORK CITY

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SUBSCRIPTION RATES
One year, \$2.00; six months, \$1.00; payable always in advance
Single Copies, 20 cents. Canadian Subscriptions, \$2.50. Foreign Subscriptions, \$3.00.

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VOL. XXII January, 1917 No. 4

Wall Board the "Young Hopeful" of the Carpenter

A GOOD many carpenters and contractors are beginning to look on wall board in the same light as a doting father looks on a son who is "growing up to be a big help to his father."

There is reason for this attitude.

Wall board has made good its claims for consideration as a legitimate material in all forms of building construction.

It is now found in all sorts of private edifices, from the costliest mansion to the humblest garage. In factories it has shown that it can withstand the strain and vibration of heaviest machinery. It is employed advantageously for walls, ceilings and partitions of office buildings, and used both as an interior lining and for general display construction in stores. You find it standing the stress and weight of the widest ceilings in public edifices—churches, theaters, etc. And, incidentally, employed instead of thin lumber to make

small household articles and furnishings, it offers itself as a handy filler-in for bench work at the carpenter shop.

Noted architects specify it for its artistic possibilities in interior decoration, as well as for its physical merits. Building contractors use it in some of their most important operations.

Another reason for carpenters' growing interest is that wall board promises to throw the carpenter's idle month into the discard. Wall board can be installed, and is, any month of the year. So that, if the "boy" grows up properly, no carpenter need be dependent on the building seasons for steady jobs. Wall board installations should keep him hustling.

But Insist on Good Quality

Yet, altho wall board gives promise of an exceptional opportunity, it also constitutes a grave menace to the carpenter and builder.

In fact, wall board is best likened not to one "son,"

(Continued to page 80.)

"and Here's The Machine That Did It"

How Carpenters are Traveling up into
the Ranks of the General Contractors
via the Power Mixer Route

"WHEN I bought that concrete mixer it was the best investment I ever made. It has helped me to get up out of the hand-saw class and into the real building business where the money is."

This statement, made to the Editor within the past month by a successful Iowa building contractor, is not true by any means of him alone. We will venture the assertion that if the inner history of *all* general builders could be known, nine out of every ten would turn out to be graduate carpenters, with investment in a power mixer the real "commencement," at which they graduated into the bigger field.

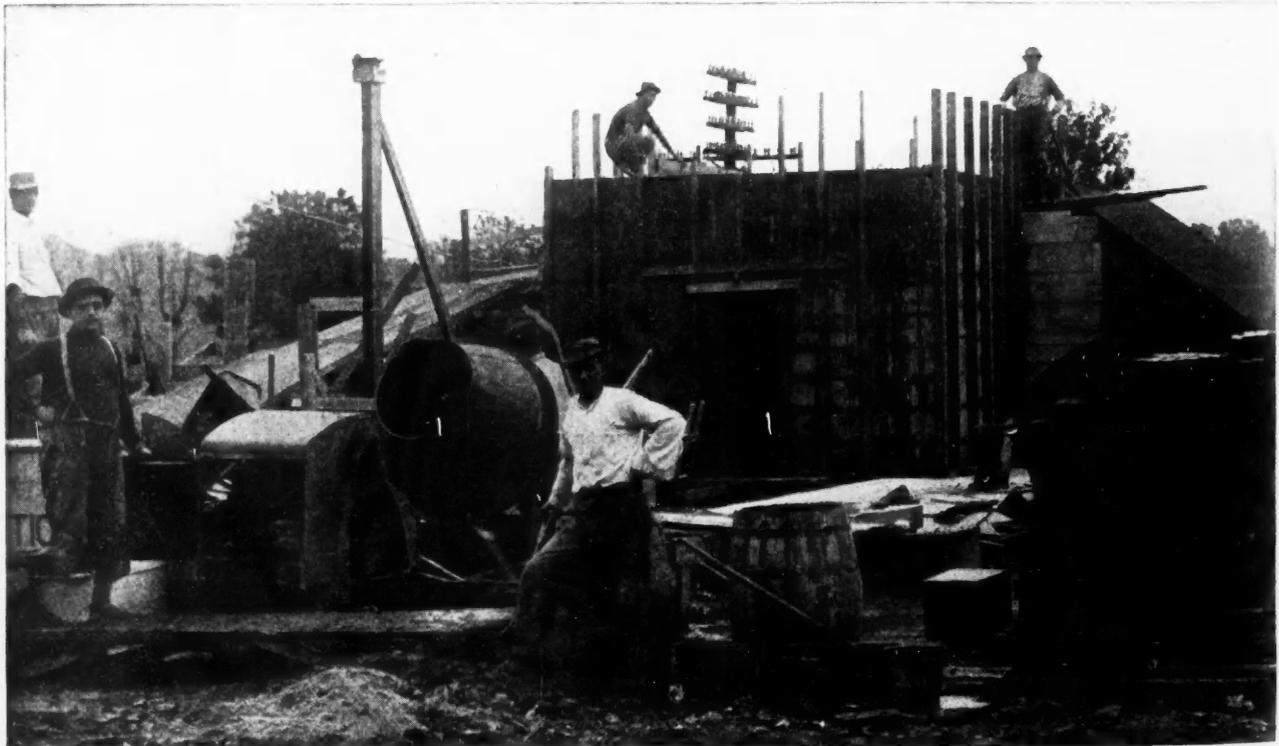
It is natural for the enterprising man, in these days of labor-saving devices, to be on the lookout for what will benefit him in his particular work. Even if that work is not large, there is still the desire to investigate and search out the small equipment and see if by any chance—in the constant process of bettering and cheapening power machines—just the right outfit may not have been developed that will do the

small job better, quicker, and cheaper.

For years the big contractor has used power equipment as a matter of course. Now it's the turn of the small builder. Concrete mixers are on the market that handle a split sack batch; are mounted with power on wheel truck that can travel right along hitched behind a wagon, auto, or power cart, and so is no trouble to get onto the job, no matter if it is away over on the other side of town. Also the engines have been developed to the place where they always start and run when wanted. The day of balky gasoline engines is past.



"Wonder" Mixer Building Foundation for St. Joseph Hospital, Providence, R. I.



Claude Rice and Men, of La Grange, Mo., Concreting New Burglar-Proof Vault for the Farmers & Merchants Bank. Is He Proud of His "Big-an-Little" Mixer? One Guess!



"C. H. & E." Continuous Mortar Mixer Giving a Good Account of Itself

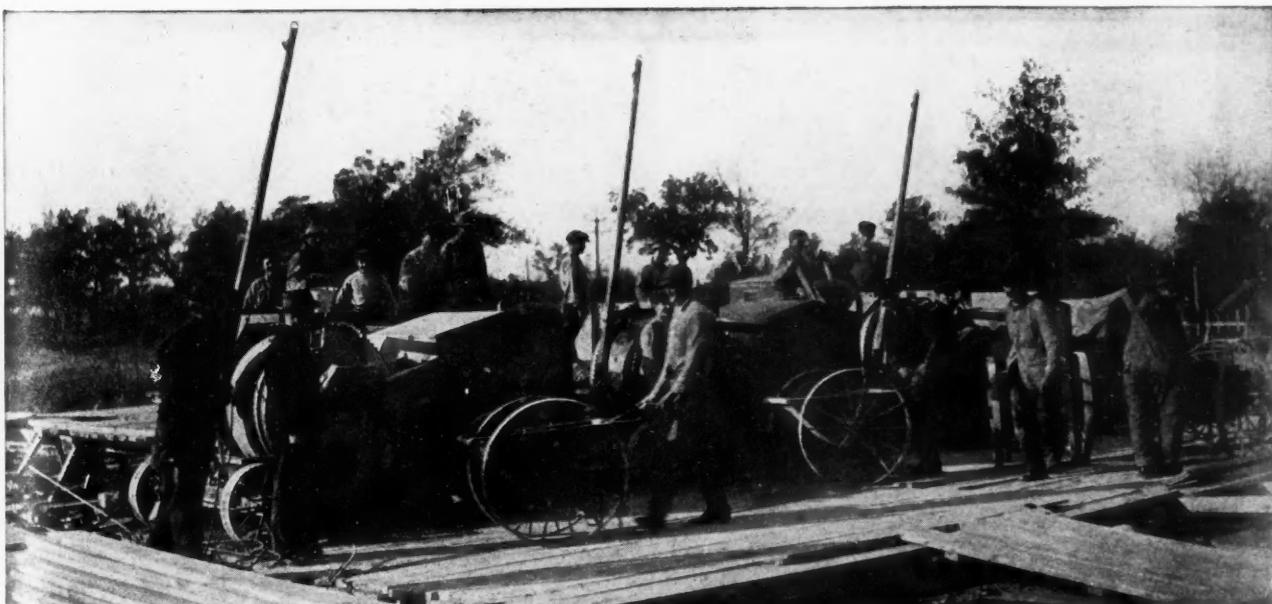
These facts are bringing concrete mixers down where they are very interesting to carpenters and builders. *Some* concrete work is required these days on practically every building job—foundations, floors, walks—and the enterprising carpenter handling the general work hates to have to call in some other contractor to do the concreting. It isn't always convenient to do this—there is delay waiting for the other fellow—and why split up the profit on the job anyway?

A small portable power mixer is the answer.

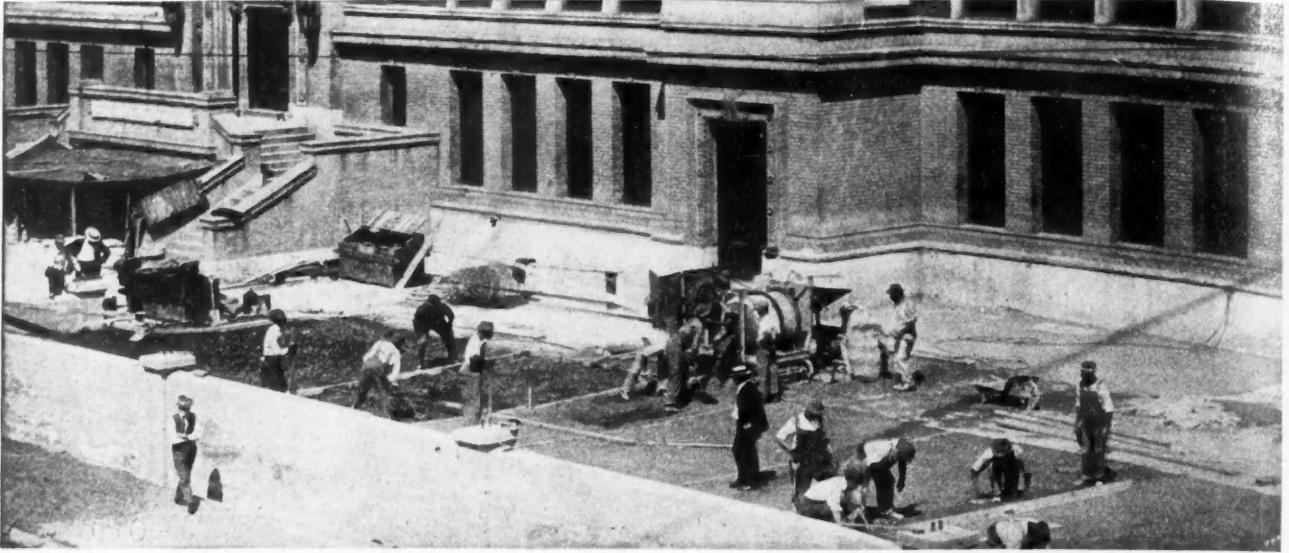
Just the minute the carpenter-builder is equipped he finds more opportunities than he ever dreamed of opening all around him. Instantly he finds himself in position to bid on work that he never before had a chance at.

It's just another example of opportunities coming to the man who is ready for them.

This is not mere theory. It is not an untried proposition. Carpenters by the thousands are working up



Battery of "Koehring" Mixers Illustrating How Many Contractors Prefer a Group of Several Small Type Mixers to One Big One.



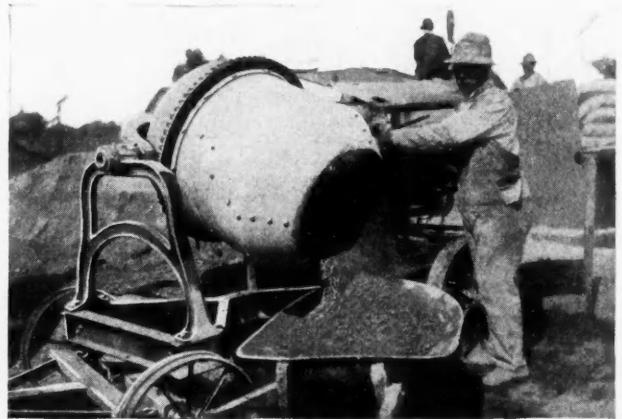
"Ideal Cincinnati" Batch Mixer at Work Laying Sidewalks Around New Sands School, Cincinnati, O.

into the broader field of general contracting *via* the power mixer route.

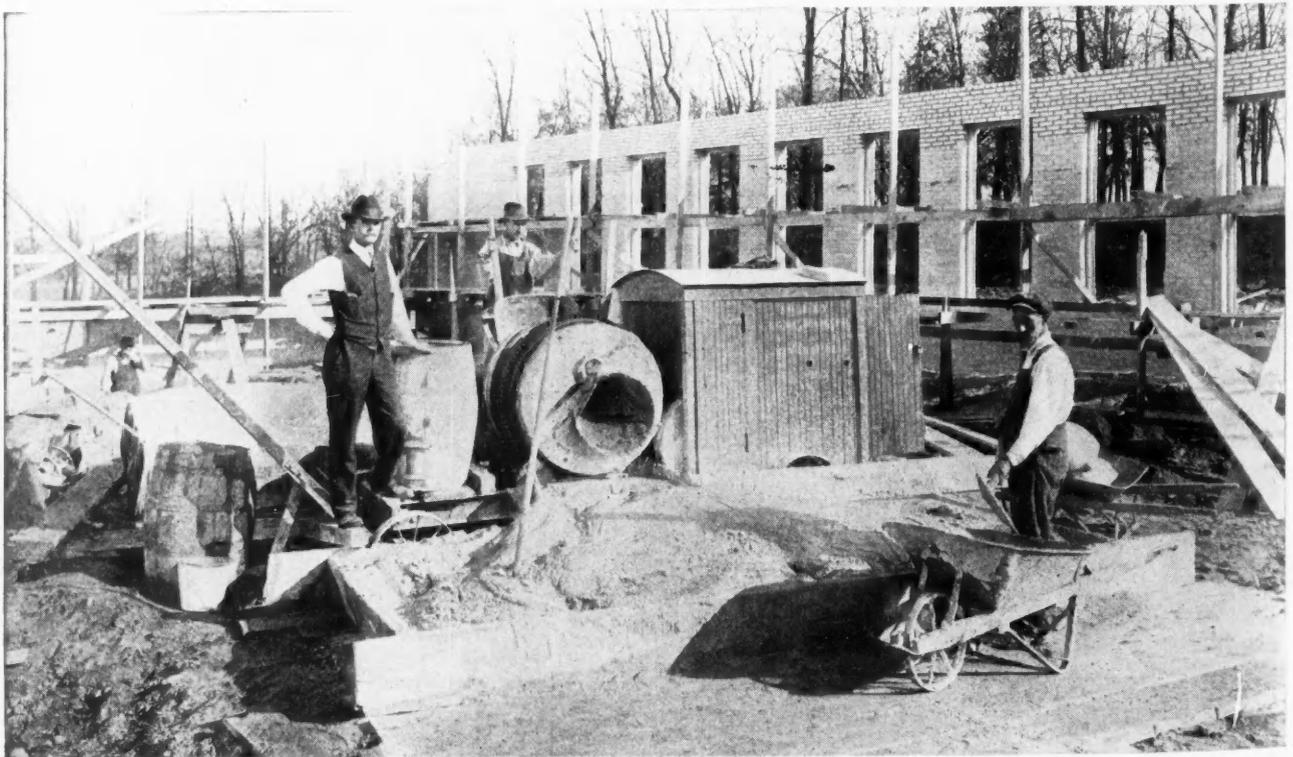
The Economy of Using a Concrete Mixer for Mixing Mortar

The great economy in building construction of using a single concrete mixer for mixing all concrete for the foundation walls and mortar for the bricklayers and plasterers is demonstrated by the methods of E. J. Panos, general building contractor, Thirty-first Street and Crawford Avenue, Chicago. This contractor erects the buildings complete and sells them when finished. He specializes in houses and small apartment buildings and usually has a row of half a dozen or more under construction at a time.

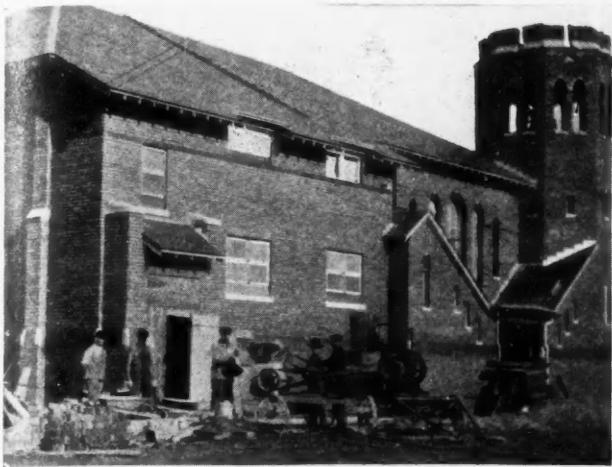
His methods are to construct all foundations and



"Dunn" Mixer Belonging to Contract Department of the City of Holland, Mich.

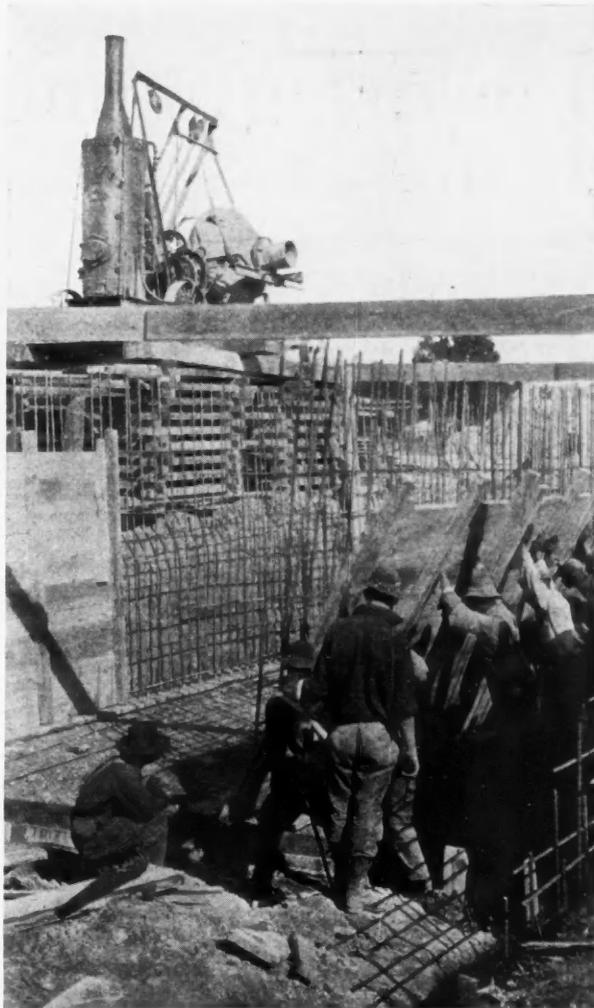


"The Standard" Low Charging Mixer Handling Mortar for J. E. Nelson & Son, of Minneapolis, Minn.



The Little "Cummings" Mixer at Work for Contractor W. W. Aufderhaar, on M. E. Church, Knoxville, O.

basements, first using sectional wood forms and mixing the concrete with a machine. For mixing the mortar for brickwork and plastering he uses the same mixer employed in mixing the concrete for the foundations. The mortar box is placed on the ground about 15 feet from the charging side of the mixer. A preliminary mix is given the mortar in the mortar box



"Austin" 11 Cu. Ft. Mixer on P. & I. R. E. Culvert near Paducah, Ky. O'Hagan & Lake, of Chicago, Contractors.

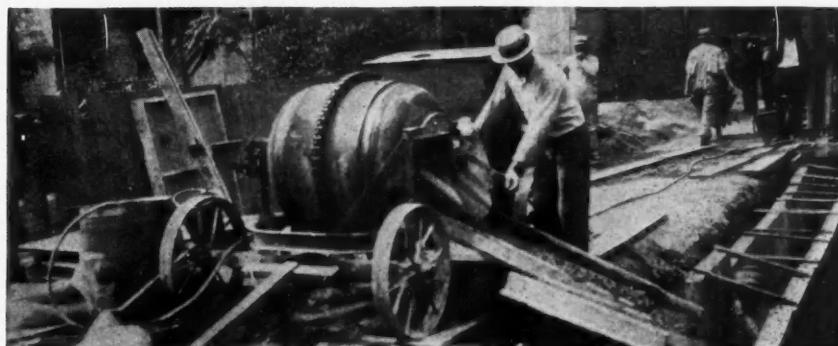


Contractor Ed. Panos of Chicago Using "The Standard" Mixer for Preparing Mortar.

and it is then shoveled on boards by the side of the mixer. Sufficient mortar to last one or two days is usually given the preliminary mix at one time. The final mixing is done in the machine and two men are able to turn out enough mortar in half an hour to supply fifteen bricklayers for half a day. The usual practice is to mix enough in the morning to last until noon and immediately after the noon hour mix the additional quantity required during the afternoon.

The daily economy of mixing mortar for fifteen bricklayers with the

machine as compared with mixing by hand is estimated by this contractor as follows: Owing to the thorough mixing of the machine, one barrel less lime is required for each box of mortar. It requires but one hour a day for two men to mix enough mortar with the machine to last the bricklayers the entire day, whereas the entire time of two men is needed to perform the mixing by hand. On account of the very thorough mixing of the machine no time of the bricklayers is required in tempering the mortar which is figured as a saving of one hour a day for each bricklayer. At present prices this is estimated a total saving of \$18.00 a day. There is also an advantage in cold weather of mixing dryer.



"Rex" Mixer Used by W. G. Nelson, of Chicago.

Power Equipment *on the Job*

Gas Engines—Saw Rigs—Hoists—Pumps

WINTER is that season when the prudent contractor checks up the results of the year's work to ascertain what it has brought him in profits, experience and knowledge. Sitting back in his favorite chair he mentally reviews the methods he has been employing, and plans improvements for the future.

Perhaps his thoughts hover longest about that phase of his work which relates to *Power Equipment and Its Correct Use*.



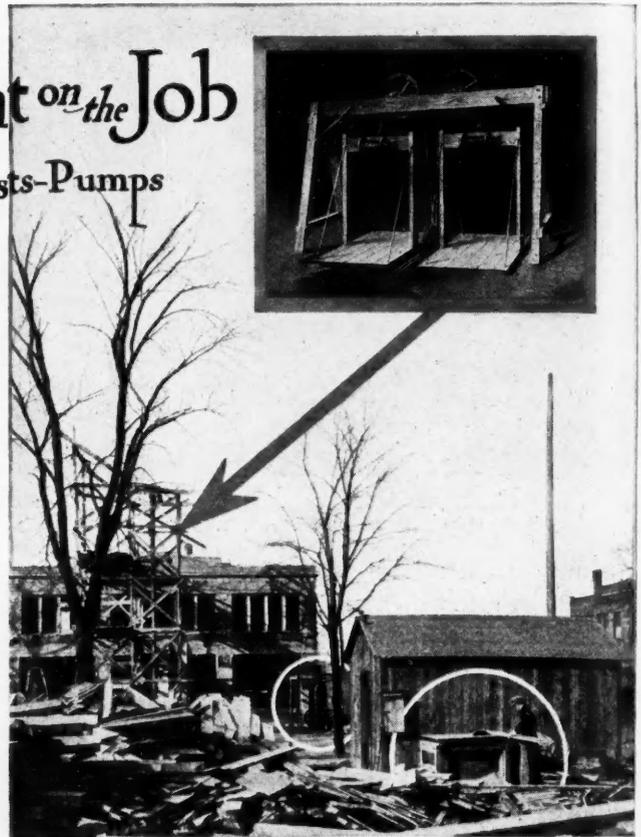
Gasoline Power Mixer and a Small Gang on Sidewalk Job at Richmond, Va.

Power is supplied to "machinery on the job," by steam or gasoline engine or electric motor. For exceptionally heavy work the portable steam engine usually is employed to operate elevators, derricks, cranes and hoists.

For the lighter work of the same character and for the operation of small machines, gas engines and elec-



Small Gas Engine and Bilge Pump Are Mounted Together on Low Truck.



Electric Power Saw Rig and Steam Power Double Platform Hoist on New Racine, Wis., High School.

tric motors are the most mobile, the most adaptable and the most economical.

Credit should be given automobile engineers for developing the gasoline engine to its present high efficiency and for rendering it virtually fool-proof.

The great practical points for the average contractor to decide are—how, where and when to use power equipment.

It excites no particular interest or curiosity in the mind of the average contractor, or layman either, for that matter, to witness the use of machinery for shaping and handling the heavy materials used in great engineering and building enterprises. Everybody realizes that power equipment is necessary to handle great steel columns and girders, blocks of granite and other stone and vast quantities of concrete, brick and tile. Such use of power equipment is regarded as a matter of course and an exhibition of common sense, because it is impracticable to use man power for such work.

The exact point at which the economical use of one power or the other begins or ends cannot be definitely established; but it exists; and taking into account special and local conditions may be ascertained readily for practical purposes.



The Power Saw Rig Has Revolutionized Building Methods and Cut Down Costs on Every Building Large and Small.

In deciding this question the contractor should bear in mind the cost of the equipment, its probable life and the actual cost of operation.

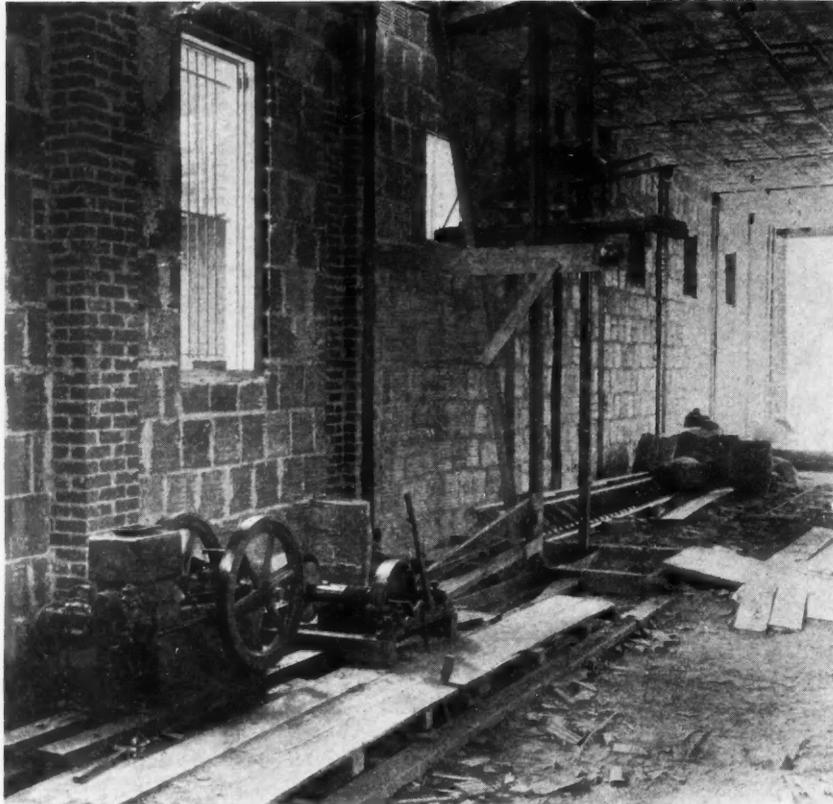
Rules, suggestions and methods of procedure never will wholly displace hard common sense in planning and carrying on building and construction enterprises. Employment of common sense on a liberal scale is essential to the successful and profitable use of power equipment in any undertaking.

Frequently contractors are confronted with the extra work of getting the water out of a flooded basement or excavation. The contractor may have it bailed out, pumped out by hand or pumped out by machinery. With a good pump two men might be able to get the water out in a day and the pumping cost would be, say

\$5. With a power pump the same work would be done in the same or less time and the operating cost would be, probably, 30 to 40 cents.



For Large Concrete Projects the Hoisting Towers and Spouting System are Most Economical.



Small Material Hoist Arranged Inside the Building.

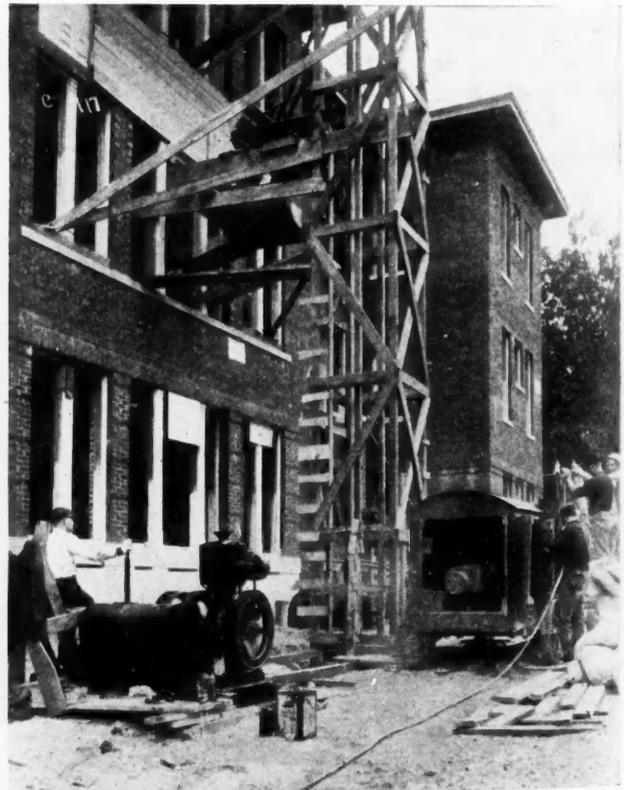
Relatively few contractors have exhausted the possibilities of the ordinary saw rig. It costs money to hand-cut heavy joist and timbers. With a saw rig on the job the drudgery is eliminated and the work is done quickly and cheaply. The uses of a saw rig on the job are manifold. With and sometimes without an extension table, long rafter cuts can be made, joists

accuracy and economy.

Where there is a large volume of work it has been found that electricity is cheaper than elbow grease and that it costs less to buy a gallon of gasoline than to produce a gallon of perspiration.



Centrifugal Trench Pump Operated by Gas Engine.



Material Hoist Arranged in Tower Outside the Building.

gained, studding notched, heavy joist ripped or shaped and bridging and special lengths cut easily and quickly.

Hoisting devices are employed for many purposes. Where large quantities of heavy materials are to be handled, the hoisting device is employed as a matter of course. There are several types of these machines. One of the more pretentious is designed to elevate and distribute concrete for a large building. The mixed concrete is carried to a great height above the walls and flows from the tower to the point in the walls where required. Neither the concreting materials nor the mixed concrete is handled at all by man power.

If the man who stops to watch the work on a great office building should find the mechanics employed in building his home using saw rigs, hoisting devices and concrete mixers he might be inclined to question the judgment of his contractor. But such machinery insures dispatch,

T
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dow
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Colonial Two Family House

The house design illustrated here is an exceptionally attractive example of a pleasing type. The predominating features of the design are the roof outlines, shingled walls, paneled windows and shutters.

The house is U-shaped and is arranged symmetrically about the center. A single porch, set under the roof at the front serves both sides of the house. A reception hall is located between the porch entrance and the living room. The dining room is at the rear of the living room. A buffet is built against the back wall of the dining room and the ceiling in this room is paneled.

The kitchen and pantry occupy the rear outside corner of each side of the house. Along the inner court there is one bedroom and the bath. A second bedroom is placed beyond the bathroom. Double glass doors connect this bedroom with the screened porch in the central portion of the house.



Arrangement of Double House. Size 77 feet 6 inches by 40 feet 6 inches.



Two-family house of artistic design. Size 77 feet 6 inches by 40 feet 6 inches. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$14.00 per set. Blueprints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6873.



HOW TO FINISH OFF THE ATTIC OF A NARROW LOT COTTAGE—LOOKING TOWARD STREET. Compare This View with that on Page 48. The Front of the Long Space is Made Into a Cherry Sun Parlor. Wall Board Panels and Ceiling Beams Give the Central Space a Cozy Air.

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An Extra Wide Bungalow

This bungalow has an air of quiet distinction and a home quality that appeal strongly to all interested in structures of this type and approximate cost.

"Everything on one floor" is a thought that strikes an affirmative chord in the heart of nearly all women who do their own work.

Design No. 6881 shows a modernly appointed bungalow, the over-all size being 50 feet by 23 feet 6 inches. Buildings of this type are suitable for the more distant suburbs and for summer homes, their width precluding their construction, to advantage, on city lots and other high priced property.

The low-lying gable over the front porch and entrance break up what otherwise would be a monotonous spread of shingles and give the front of the house a good appearance.

A recessed porch is a hobby with many. In this plan the arrangement is a practical one that should meet the approval of all who favor the recess. The steps and that part of the floor which extends beyond the house line are hooded by the projecting cornice. The brick walls, capped with stone, introduce a suggestion of materials other than wood that is pleasing and harmonious.

A pair of triple windows in the front facade break up the wall spaces to excellent purpose.

Breaks in the end walls will satisfy those who cry for relief from monotony of any character. There are practical reasons for these breaks, also. They give extra room for kitchen, pantry and porch and also for the rear bedroom.

A double grill separates living room and dining room. In the slight recess between—at the front—a window seat is provided that is sure to prove the favorite location of at least one member of the family. A somewhat similar, though longer, seat is provided for the recess between fireplace and rear wall.

In all houses of this type the interior arrangement should be convenient and

One part of the arrangement will meet the hearty approval of the fastidious. The door between dining room and kitchen leads into and thru the pantry, thus blocking the view and shutting out the kitchen odors. A small china cabinet in the dining room is an added attraction of use and value.

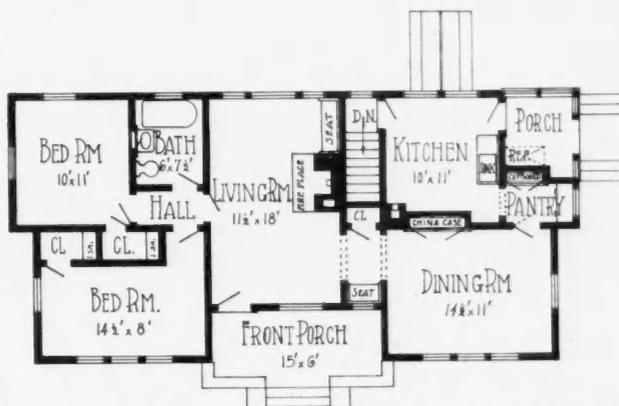
While opinions and tastes differ with respect to the relative values of the several kinds of materials employed in fashioning the walls of a residence, experience has demonstrated the value of frame, frame with brick veneer, brick backed with hollow tile and similar methods of construction.

In this case a wooden building is shown and the finished home should be attractive and comfortable.

This is one of the low types of buildings requiring a lot at least level with the sidewalk grade. It will not show to advantage if set either on a very high or a very low lot.

The great thing for the prospective builder to do is to endeavor to visualize this plan into actual rooms, closets, baths, passages, etc., to arrange furniture according to the wall spaces available and then, and then only, to come to a decision.

The exterior appearance is sure—no guesswork here, since it will look exactly like the photo drawing herewith, provided the plans are faithfully carried out. Find the design that suits and use it.

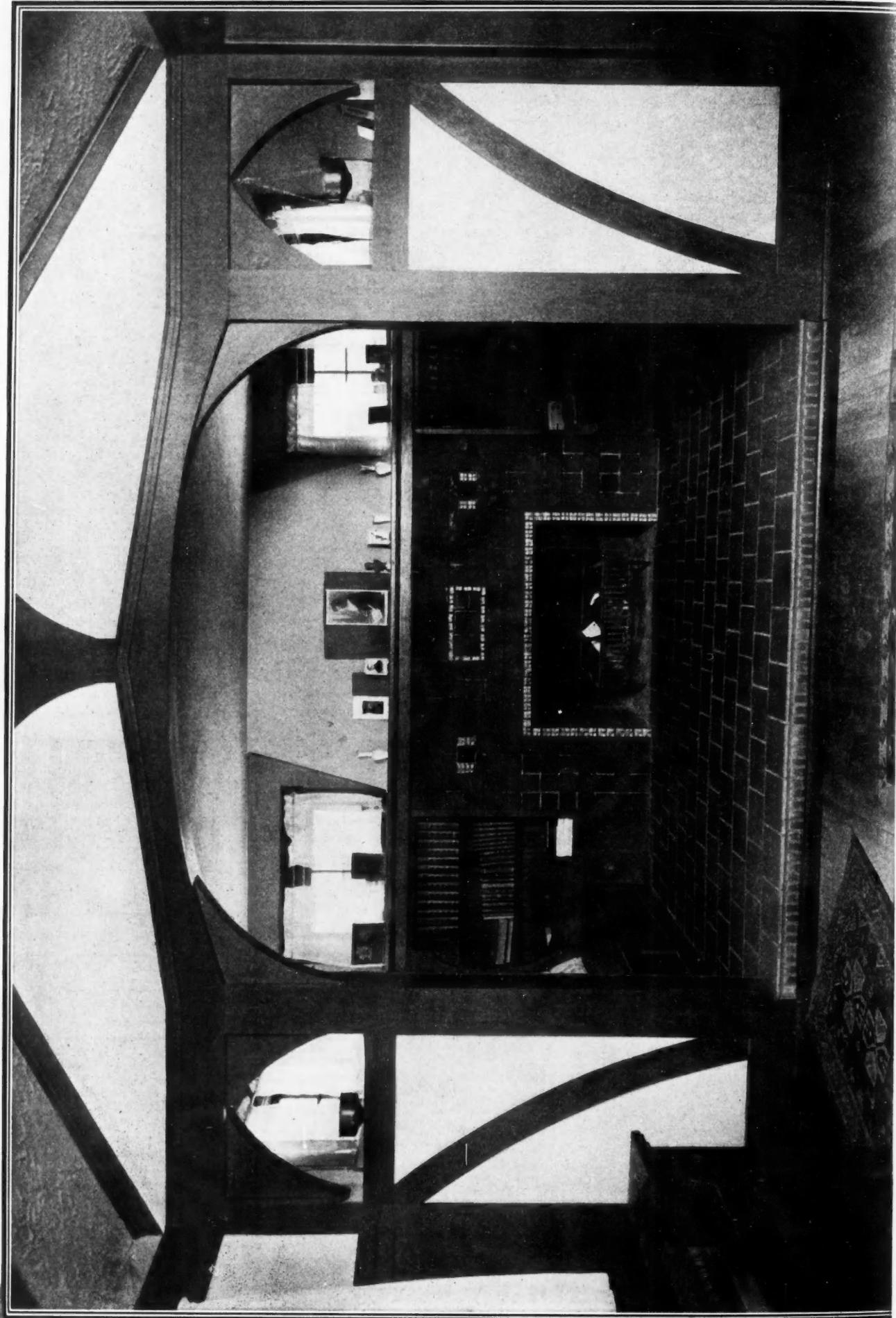


Arrangement of House. Size 50 feet by 23 feet 6 inches.

practicable and the exterior should be an example of good taste in building. The sale value of any structure is regulated largely by adherence to or departure from these two value-governing factors.



Five-room bungalow type house. Size 50 by 23 feet 6 inches. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$7.00 per set. Blueprints consist of basement plan; roof plan, and floor plan; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6881.



HOW TO FINISH OFF THE ATTIC OF A NARROW LOT COTTAGE—LOOKING TOWARD REAR. Compare this View with that on Page 46. At the Back of the Long Attic Space This Cheery Fireplace Library Nook is Built In.

Distinctive Stucco Cottage

Good architecture consists of arranging lines—lines straight, concave, convex and concentric—in proper relation to each other.

Design No. 6871 is a fine example of good architecture. This stucco cottage is suitable for a flat or an elevated plot of ground but scarcely adaptable to sunken location.

This house makes a practical as well as a beautiful home for a small family. The living room is large, the kitchen compact and convenient and the dining room ample in size and beautifully lighted.

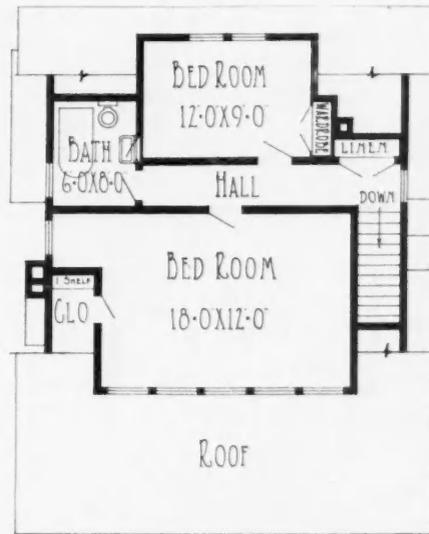
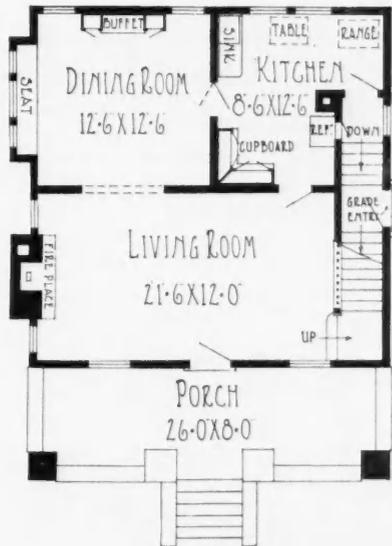
One large and one small bedroom, bath and hall comprise the second-floor arrangement.

A feature that will appeal to the orderly housekeeper is the grade entrance at the side. This provides access to cellar and kitchen and a means of replenishing the refrigerator in the latter without tracking up the kitchen floor.

Contractors will find prospective builders turning again and again to practical houses of this character, the appearance of which leaves little to be

desired. Architecturally the beauty of this design is derived from the straight lines of the eaves dormer and the arched space between the porch columns. Break into either and the symmetry of the plan

is marred if not entirely destroyed. If the house is set facing east, the large porch—8 by 26 feet—may be screened and a summer parlor secured in that way at a very small cost.



First Floor Plan. Second Floor Plan. Arrangement of House. Size 26 feet by 26 feet.



Small stucco house. Size, 26 feet by 26 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$10.00 per set. Blueprints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6871.



Six-room Colonial style. Size 33 feet 6 inches by 28 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$12.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two-side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6870.

The Colonial Square—The Old Favorite

No type of house is susceptible of greater diversity of arrangement of the interior than the old-style rectangular structure, which usually is designed, externally, in accord with the old Colonial type, or a modification thereof.

The square or rectangular plans of the floors may be divided to suit the wishes of the owner. The design here given, design No. 6870, shows a modern arrangement, one large living room instead of the conventional parlor and second parlor, being the feature of the first floor plan.

The hall treatment is excellent. The entry serves effectually as a guard against invading cold winds of winter and affords facilities for taking care of dripping umbrellas.

The lavatory at the extreme rear of the hall is a feature that will be appreciated by all who value comfort and convenience.

The passageway be-

tween kitchen and dining room, occupying the projection shown on the floor plan is an effectual guard against kitchen odors invading the dining room, and also provides space for pantry and refrigerator.

The second floor arrangement is notable for the convenient location of the bath, which brings it immediately over the plumbing in kitchen and lavatory, thus calling for the use of a minimum quantity of pipe.

The large bedroom, usually designated as "owner's" bedroom, is a valuable feature as, also, are the two large closets

which are provided for the use of its occupants.

Every available inch of space in the upper hall is utilized to advantage. In many second floor plans for houses of this type the hall is planned to extend thru to the front wall. In this plan one-half of the space is thrown into the smaller of the two front bedrooms and the other half is made into closets.

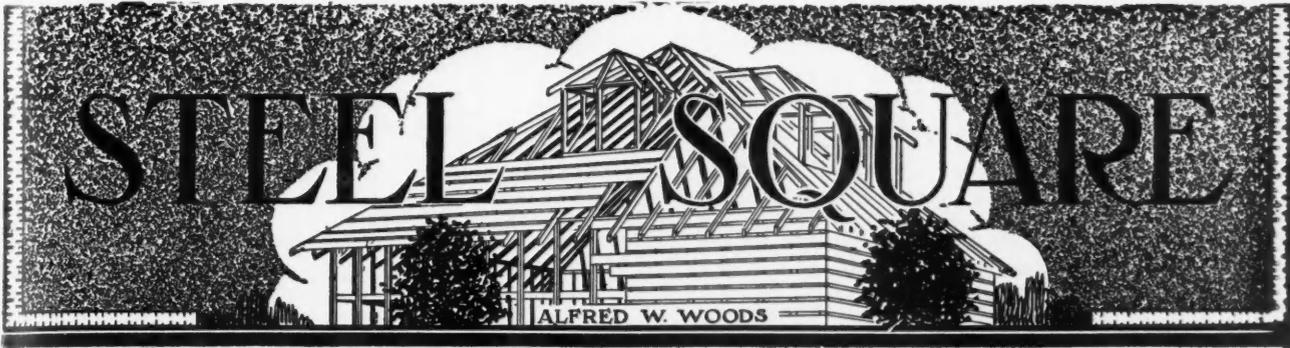
The porch adjoining the living room, which could be glazed or screened, if desired, will prove a great attraction to many.



First Floor Plan.

Second Floor Plan.

Arrangement of House. Size 33 feet 6 inches by 28 feet.



STEEL SQUARE

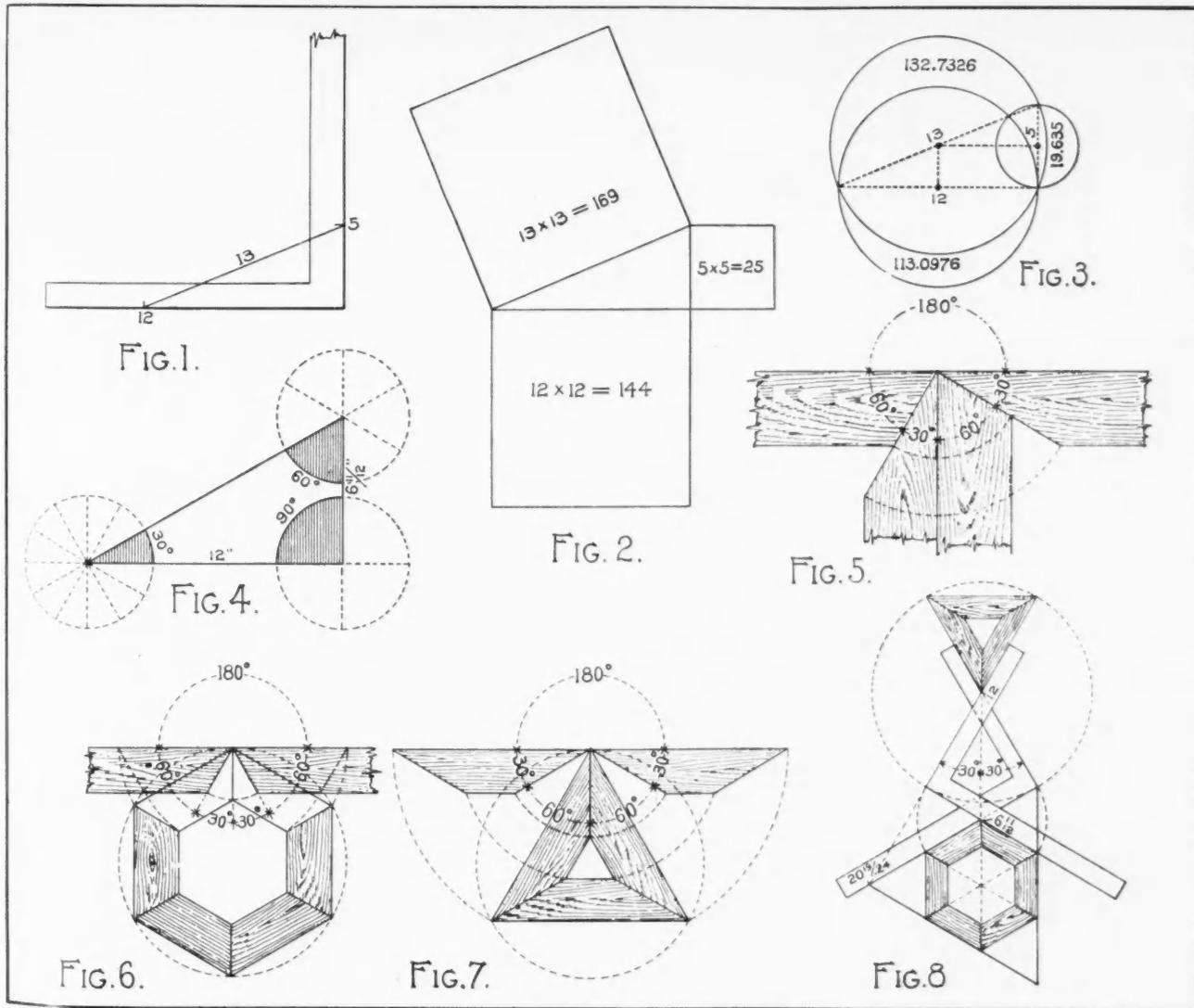
ILLUSTRATING THE USE OF THE STEEL SQUARE IN SOLVING GEOMETRICAL PROBLEMS

By A. W. Woods

IT might truly be said that there is no end to the problems that can be solved by the aid of the steel square. Why? Because all angles are solvable by throwing them into a right angle triangle and that is just what the steel square furnishes. The juncture of the blade and tongue constitutes a right angle. With the standard measurement that is stamped on the blade and tongue and with a knowledge of

circular measure and how to apply it in connection with the steel square, it is but little less than wonderful what may be wrought with it.

The angles in roof work, as well as all of the cuts and bevels required in the framing of the rafters, can be obtained with the aid of the steel square, if one but knows what relation the angles of a right angle triangle have to the rafter cut, or other calculation in



The Steel Square as a Right Angle Triangle for the Solving of All Geometrical Problems.

question. The heel of the square furnishes the right angle as before mentioned and from this the other angles are governed according to the plan or pitch given the roof. In this, the miters are governed by the shape of the plan, while the rafter cuts and bevels are governed by a combination of the plan and pitch given the roof. A rafter is the same as the hypotenuse is to the right angle triangle, while its base and altitude are represented by the run and rise respectively. But we will not go further into the rafter proposition at this time, but will conclude with a few simple illustrations, tho not generally understood.

In Fig. 1 we have created a right angle triangle on the square by drawing a line from 12 to 5. We have chosen these figures for illustration purposes because the length of the hypotenuse results without fractions and we might incidentally add that there are only two other places on the blade (while working from 12 on the tongue), that result without fractions in the hypotenuse; this occurs at 9 and 16.

Now everybody knows that the length of the hypotenuse is found in a mathematical way by squaring the other two sides of the angle and extracting the square root of the sum of the two. As proof of this, the square of 5 = 25 and the square of 12 = 144, and the sum of these squares equals that of 13, as shown in Fig. 2.

The same holds good in the area of circles when letting the sides of the triangle represent the diameter, as shown in Fig. 3. By adding the figures given for the two smaller circles, it will be found that the sum will equal that given for the larger circle.

Now, we will take another angle known as the 30 and 60 degree angle, which falls at practically 12 and 6 11/12 on the square. Note the square corner, or 90 degrees, occupies 1/4 of the circle, the 30 degrees occupies 1/12 and the 60 degrees occupies 1/6 of the circle. The area of the two latter angles equals that of the former and this is the case no matter what angle may be taken on the steel square, the sum of the two smaller will also equal 90 degrees, as shown in Fig. 4, but this (30 and 60) is the only case where the degree and its complement taken on the steel square will each give the miter cut for a regular polygon; that is, if we take 12 on the tongue and 6 11/12 on the blade, the latter will give the hexagon miter, while the tongue will give the miter for the triangle. This occurs again at 12 and practically 20 19/24, but the cuts will be reversed on the square and in each case the figures used on the blade will be the length of the side of the polygon when the inscribed diameter is one foot. The reckoning is from 180 degrees, which is made to represent the straight edge of the board, as shown in Fig. 5. NOTE: By taking 90 degrees or a square corner out of a board, we will have 90 degrees left and by folding the pieces together, will always make a square corner, because there is 90 degrees left, which is made up of two angles and by using the figures on the

square that represent the degrees for any of the regular polygon miters, the complement will give the required miter.

Thus, if we place the square to take 60 degrees out of the board, which would require placing of the square twice, taking out 30 degrees each time, the board when closed up will form the true hexagon corner, as shown in Fig. 6, while if the cut is reversed on the square, it will give the miter for the triangle, as shown in Fig. 7.

In Fig. 8 is shown the proportions to use on the square for the cuts shown in the three preceding illustrations. NOTE how the angles formed by the two squares conform to the angle of the respective polygons. These angles furnish the basis for all of the cuts and bevels for plan of roof, of like shape.



Details of a Fireplace Alcove

Designed by Ralph W. Ermeling, Architect

IT cannot be successfully denied that nooks, fireplaces and built-in seats give a house a more home-like and cozy appearance. The fireplace alcove shown here is built in connection with a stairway which reduces the height of the ceiling in the alcove and provides a space for low bookcases under the stairway, just enough to fit in over the seat.

As a matter of construction the beam at the front of the alcove supports the low ceiling and is in turn supported by the column. This column helps to form the hallway which connects the living room with the dining room back of the stairway.

The face of the beam consists of a piece of stock 7 by 7/8 inches, which is set far enough out for the plaster to be finished against it. The narrower opening into the hallway is spanned by a segmental arch, plaster finish. A simple paneled screen with spindles at the top forms one back and the sides of the built-in seats.

The column itself is octagonal in form and simple in construction. The unusual ornamentation at the top consists of a little carving, shown in detail, such as any man skillful with a chisel can do.

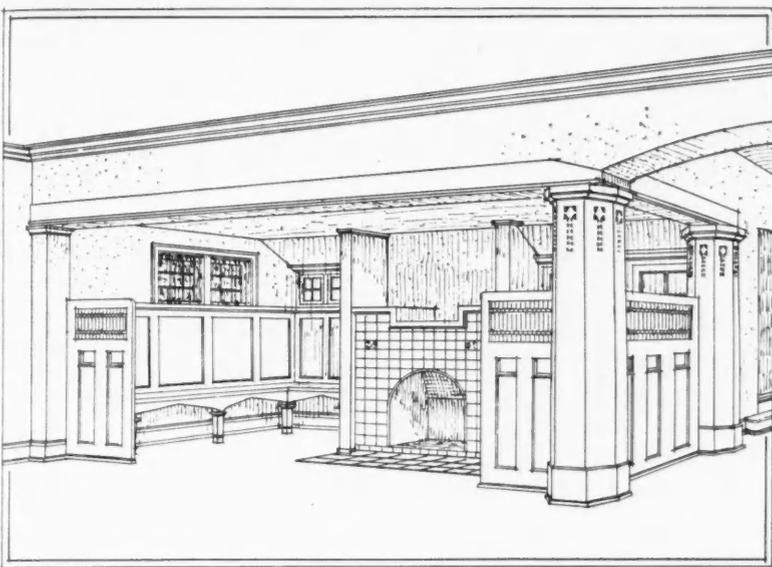
The fireplace itself is placed between two vertical panels which extend to the ceiling and furnish a stop for the bookcases and seats. This feature makes a deep shelf over the fireplace for the usual fireside ornaments.

A variation of the screen treatment would be to add a shelf to the top of the screen between the two columns. This could be used to good advantage also as a resting place for household objects of art.

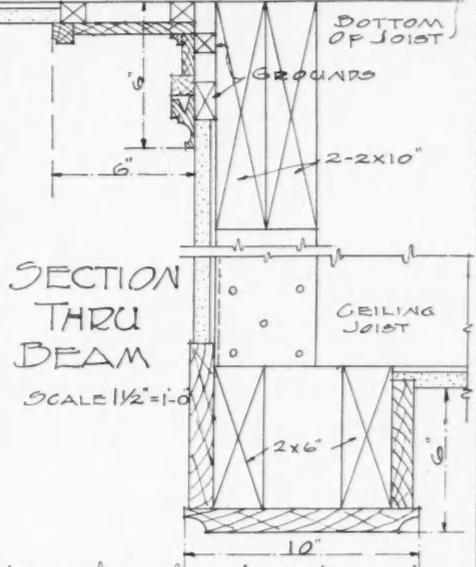


American Concrete Pipe Association to Meet in Chicago

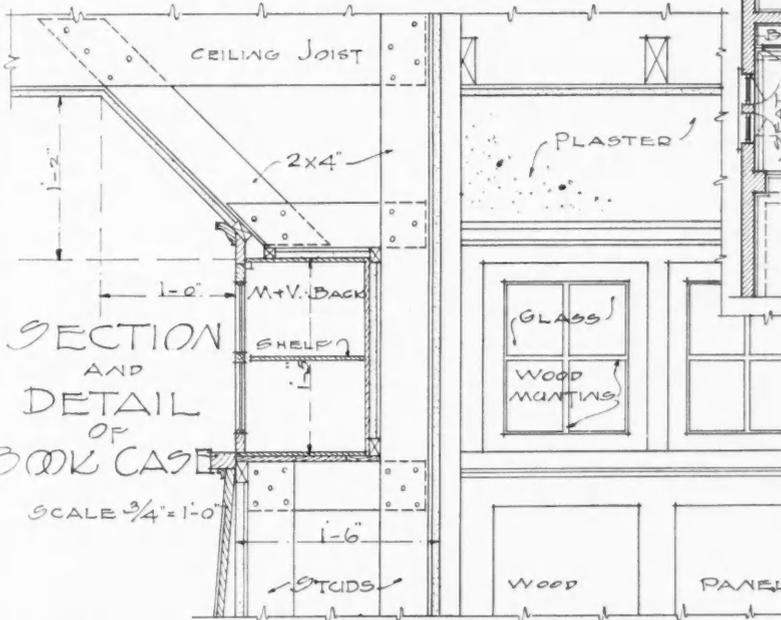
The annual convention of this association will be held in Chicago, February 12, 13 and 14, 1917, these dates falling during the second week of the Cement Show.



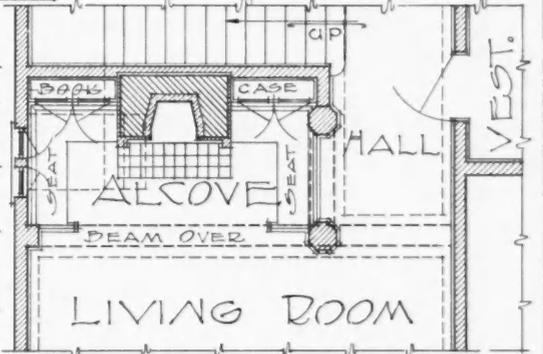
PERSPECTIVE



SECTION THRU BEAM
SCALE 1/2" = 1'-0"



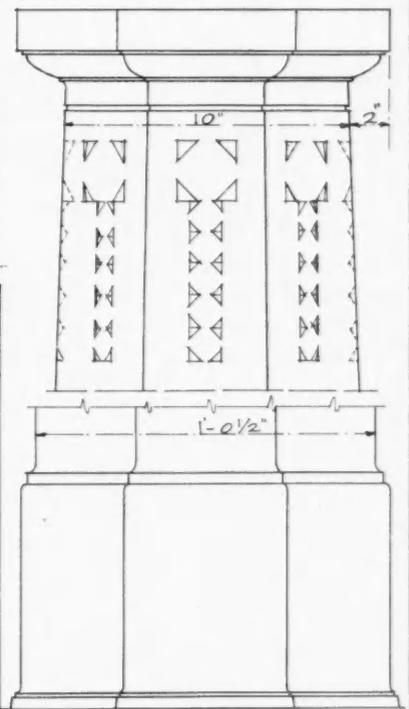
SECTION AND DETAIL OF BOOK CASE
SCALE 3/4" = 1'-0"



PLAN SCALE 1/8" = 1'-0"



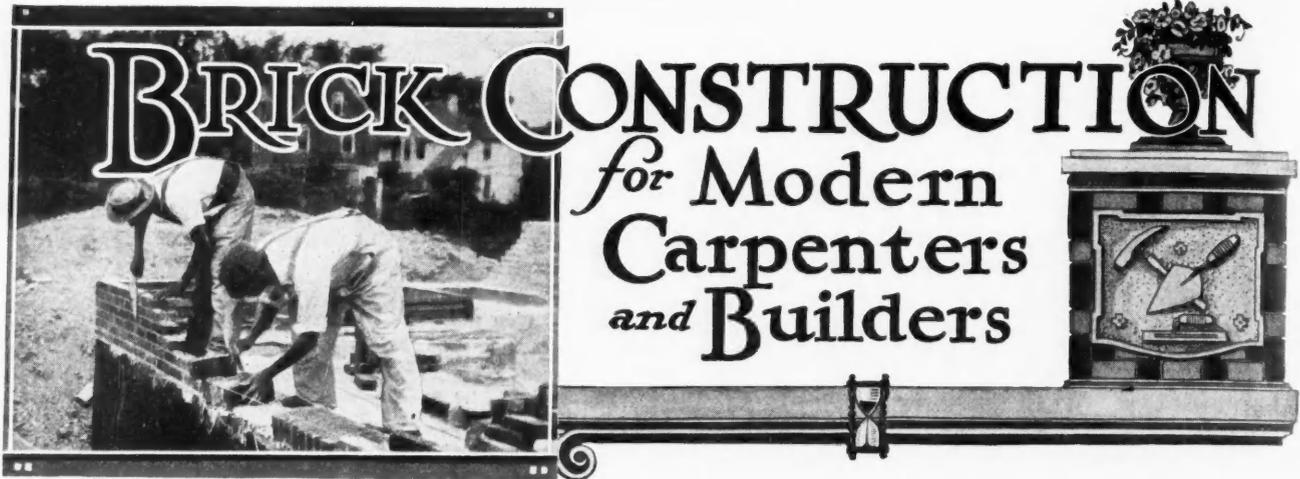
ELEVATION
SCALE 1/4" = 1'-0"



DETAIL OF POST
SCALE 1/2" = 1'-0"

A FIREPLACE ALCOVE

Sketch, Elevation, Plan and Details of Fireplace Alcove Suitable for Large Elaborate Living Room. Designed by Ralph W. Ermeling.



What a New Brick Porch Will Do

PUTTING THE MODERN FINISHING TOUCH ONTO OLD-STYLE HOUSES

YOU wouldn't believe what a difference a broad front porch of nice looking face brick will make on an old-style frame house. As an easy inexpensive remodeling device, nothing is so effective. The accompanying photographs show what a new brick porch and an exposed face brick chimney did for one old house of the regulation upright-and-wing style. The detail drawing shows just how this porch was designed and constructed and how the brickwork was

bonded to the house sheathing by means of 10-penny cut nails.

It is a well handled example of the fortunate combination of artistic rough texture face brick of reddish brown coloring, white stone cap and turned columns painted white. The steps and porch floor are concrete laid over an earth filling.

Here is an idea for business. Practically every street has a dozen plain front houses that simply cry for a



Photograph After Remodeling. Substantial Brick Porch Clear Across the Front Takes Away that Bleak, Bare Appearance. The Good Looking Chimney On the Side Suggests a Cheerful Open Fire Inside.

new brick porch. The fronts of a dozen others are mussed up with old-style narrow jigsaw affairs that used to be called piazzas. All of these should come off and new clean-cut, substantial brick porches built on.

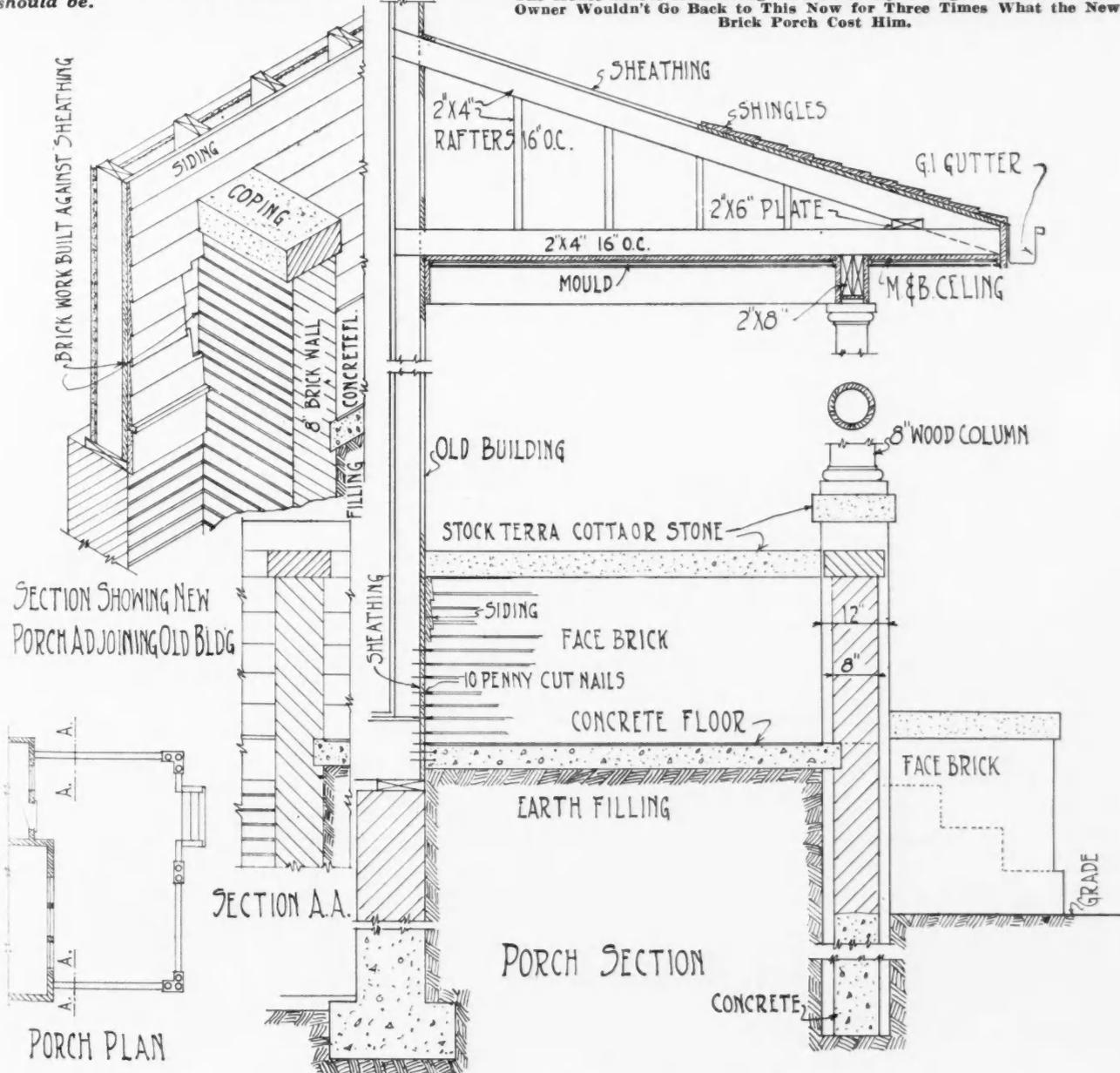
The cost is surprisingly little. A builder can go down the street and line up these remodeling jobs almost as quick as he can present the idea.

Lumber and building material dealers in many places are carrying samples and stocks of face brick suitable for brick porch and exposed chimney work.

NOTE:—The Architectural Department of the American Carpenter and Builder will furnish, free of charge, remodeling sketches for any of our readers. Send us a photograph of the house as it is, and we will fix it as it should be.



The House Before Remodeling Had Decidedly a Singed-Cat Look. The Owner Wouldn't Go Back to This Now for Three Times What the New Brick Porch Cost Him.



Plan and Details of Brick Porch Built Onto Old Frame House.

A Combination for Beauty and Strength

SEVEN-ROOM RESIDENCE OF FACE BRICK VENEER AND METAL LATH CEMENT STUCCO CONSTRUCTION PRESENTS MANY DESIRABLE FEATURES

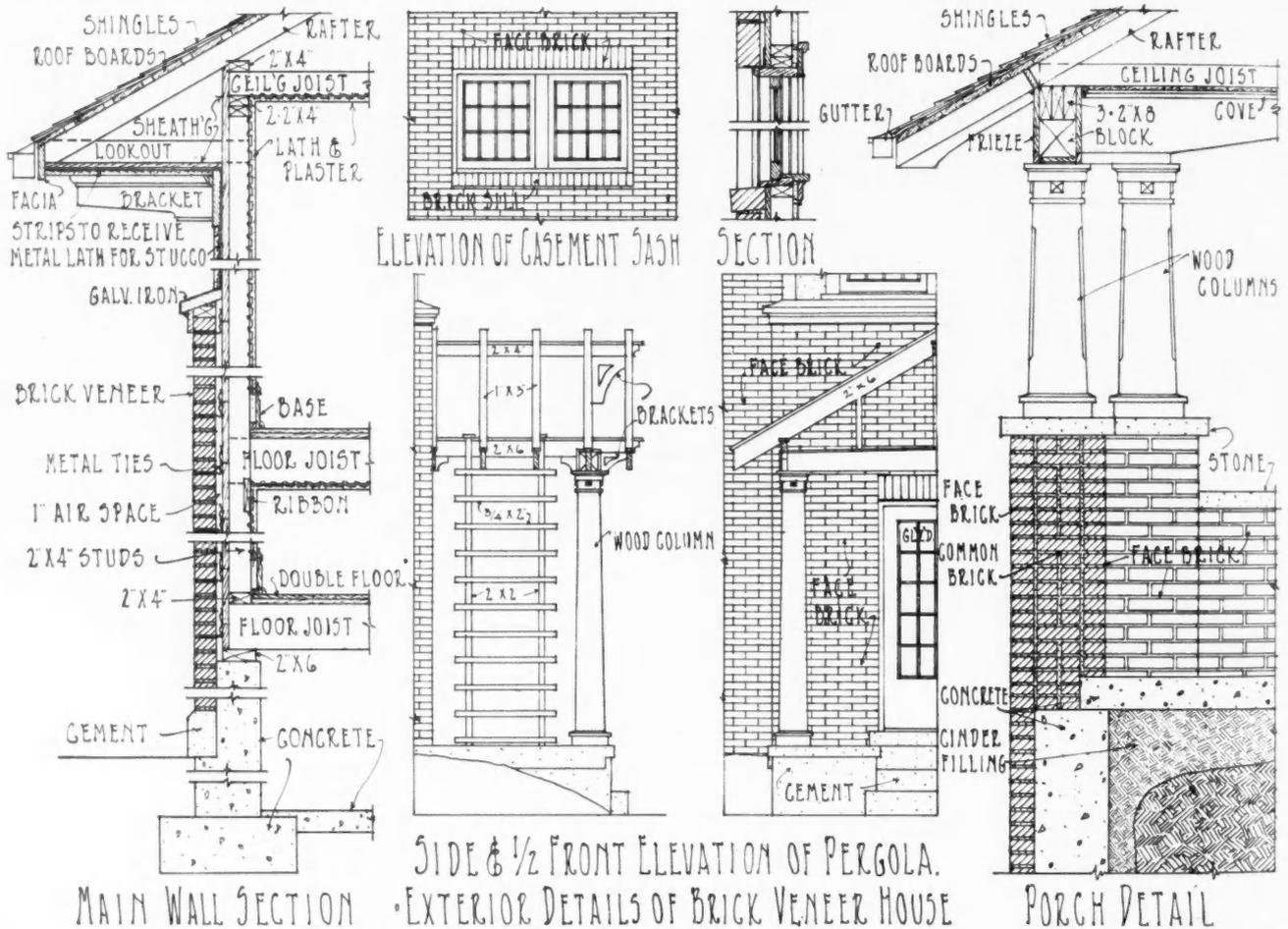
NOTHING is too good for the home, and the majority of home builders would like to build in a substantial, good-looking style, if the fear of exorbitant cost did not discourage them.

Estimates of costs are risky things to make, especially without knowing exactly where and under what conditions the work is to be done. And yet, when responsible builders in cities and smaller towns widely scattered, some in the East, some in the Central States and some in the Central West, make affidavit that face

appeal. They get enthusiastic over the thought of building a really good-looking residence—one that they can feel really proud of, and moreover, one that they can feel is a permanent investment. When building, one is in a spending mood, and a hundred dollars or so more doesn't stand in the way if it is a real improvement and what is wanted.

On the other hand, an extra charge of \$500.00 or more is an obstacle that is hard to overcome.

This means that the builder undertaking improved



Details of Construction, House Design No. 6860, Illustrated on Opposite Page. Face Brick is Bonded to Sheathing by Means of Galvanized Wall Ties in Every Fifth Mortar Joint Course.

brick veneer over sheathing is being built by them every day at only about four per cent more than all frame, and that if they leave out the sheathing boards and bond the brick work to the studding, there is no difference in cost, we must conclude that this relative cost can be relied on for other localities and for other builders, provided they understand how to handle a brick veneer job.

It is really so simple that there is nothing to it. The obstacle that has kept a good many builders away from face brick veneer jobs and has led them to bid high on all such work is really an obstacle in the mind only.

Home builders are influenced mightily by the quality

construction, such as face brick, tile or cement stucco, should watch his details very closely, and simplify wherever possible to bring down the cost to a parity with a shingled or sided house.

For one thing, heavy foundations are not required. The same foundation that will carry a sided house will carry a brick veneer or stuccoed dwelling. We believe in adequate foundations extending down below frost to a solid bearing, but we do not see any reason for putting in two hundred dollars worth of foundation work that is not needed, just because it is a brick veneer job.

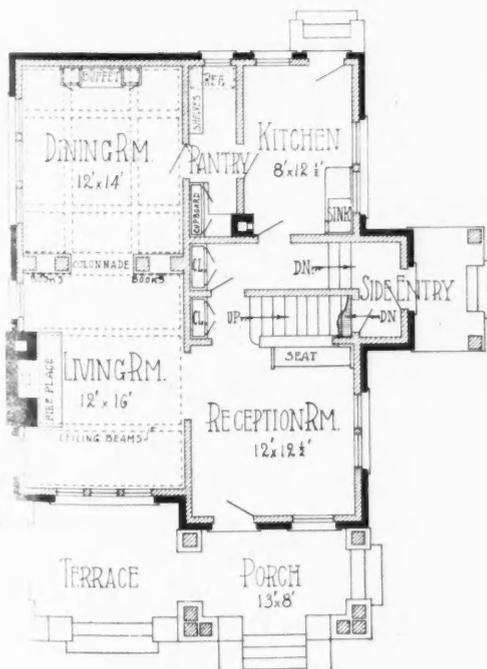
The best carpenters and builders in every community



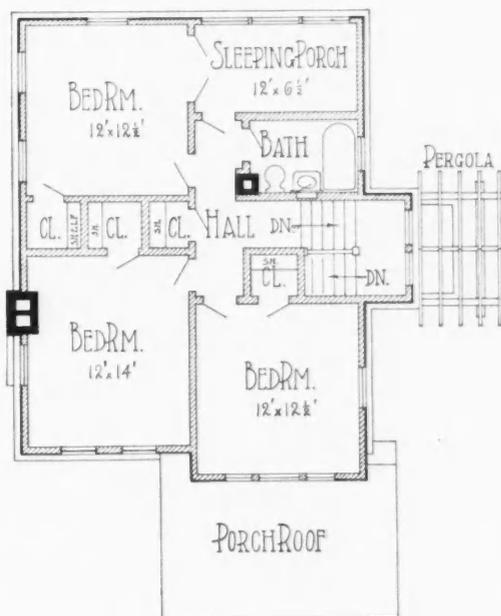
Photograph of Modern Design Face Brick and Stucco Residence, Design No. 6860. This Seven-Room Residence Has Been Built for \$5,300.00.

are taking a new interest in face brick construction, and the lumber dealers are stocking brick and have samples of many sorts which they can furnish on short notice. As a help to permanent high-grade building

improvements of the sort that everyone is proud of and which are an example leading to other work, this growing interest in face brick is very commendable.



First Floor Plan.



Second Floor Plan.

Arrangement of Residence, Size 26 Feet 4 Inches by 34 Feet 10 Inches.

The accompanying illustrations show a popular design of the newer sort, face brick veneer up to the second-story window sills and cement plaster on metal lath from there up to the box cornice. This is a seven-room house. It has been built as illustrated for \$5,300.00.

The details on the opposite page show good construction for any building of this sort. To cheapen, leave off the sheathing.

“How We Finally Built a Home of Brick—The Kind We Had Always Wanted”—G. W. Moore

BEING A SEQUEL TO MR. MOORE'S INTERVIEW PUBLISHED IN THE DECEMBER ISSUE

A Further Interview, by C. L. Rorick

IF you remember, I told you in the interview published in the December issue of the AMERICAN CARPENTER AND BUILDER that we built our first home of frame instead of brick, when we really wanted the latter, and that some day I hoped to build a brick house—the kind we really wanted.

“Well, that day has come and we are now living in our cherished home of brick and tile construction, identically the same in size and arrangement as the one we built of frame two years before for \$3,240.00. It cost, instead of \$6,000.00, as we were told it would at that time by Frank Cooley, our local building contractor, exactly \$3,547.00; yet it was built just two years later by the same contractor and the material was furnished by the same lumber dealer. They both admit now that they were not familiar with these materials at that time and simply ‘thought’ such a house in brick and hollow tile would cost \$6,000.00. So far as I was concerned it might just as well have actually cost \$6,000.00 as to have them think that it would, for I had to be guided by their figures in building.

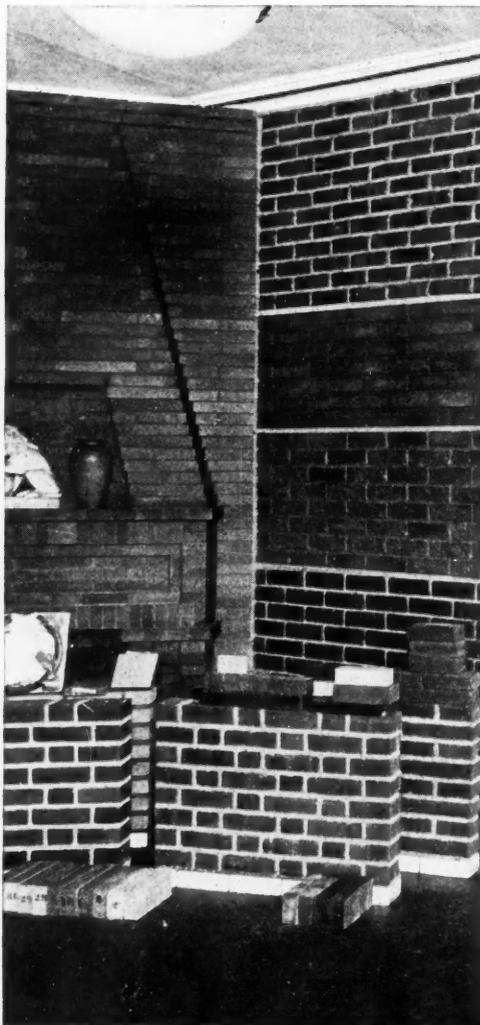
“Shortly after we built the frame house—it was an attractive house—I had an opportunity to sell it at a slight profit; but it suited us as far as the arrangement was concerned, and being apparently no nearer a brick house than we were before, I declined, for I knew that it would not depreciate materially in a year or two or need re-painting. I did, however, go to Contractor Cooley and tell him to get busy and find out why the brick and tile manufacturers were advertising that houses could be built of their materials at an increase of only 5 to 10 per cent over frame—I had remembered their claims and the fact that Contractor Cooley and our building material dealer said it was “bunk”—if it could not be done. I further told him of my opportunity to sell the frame house and that if I could build another house of brick and tile at a cost claimed

by the brick and tile manufacturers I would sell. This meant another possible contract and while he did not believe that it could be done, yet he had the local building material dealer write to a number of manufacturers of face brick and hollow tile and put the question up to them. I saw their replies and in every case they said it was being done every day in all parts of the country. They not only sent him pictures of such houses and comparative costs, but gave him the names of the contractors who were doing it. He wrote a number of these contractors and they all replied that they, too, used to think that it was ‘bunk,’ but so many people wanted brick houses that they finally built a few, on a cost and percentage basis, however, and were surprised to find that they ran about the same in cost as frame—that is, when built in brick veneer. Where hollow tile was used and faced with brick the cost ran slightly higher—the average was about 10 per cent more.

“This looked very encouraging and Mrs. Moore was of course greatly elated—I began to warm up a little to our prospective purchaser. Even in the face of these statements, Contractor Cooley said it didn't seem reasonable, but he got prices on brick and tile thru the local dealer and figured it up, but the best he could do was about 25 per cent more than frame.

“Those letters from contractors, giving their actual experiences to the contrary, stuck in my mind and I told him that if he could not get his price down I guessed it was up to me to get one of them; for I had made up my mind to build a house of brick and tile. He saw I meant business and asked for a couple of weeks more—I told him to take a couple of months if necessary, for I did not want to get an out-of-town contractor. He came back in about three weeks and said he was now able to do it.

“Naturally I inquired how he

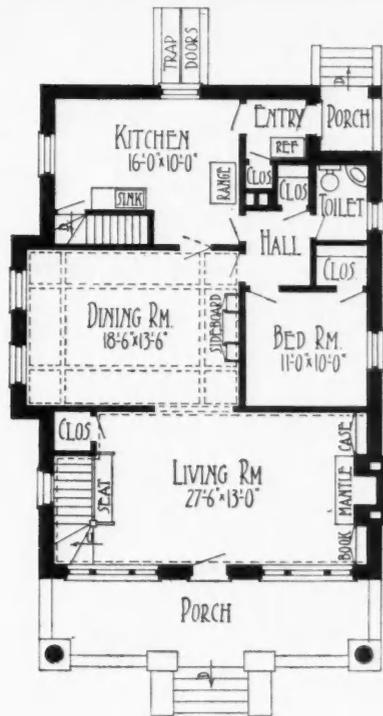


Corner of Dealer's Office Devoted to Face Brick Displays which are Arranged to Show Various Bonds and Mortar Joints, and Types of Modern Brick.

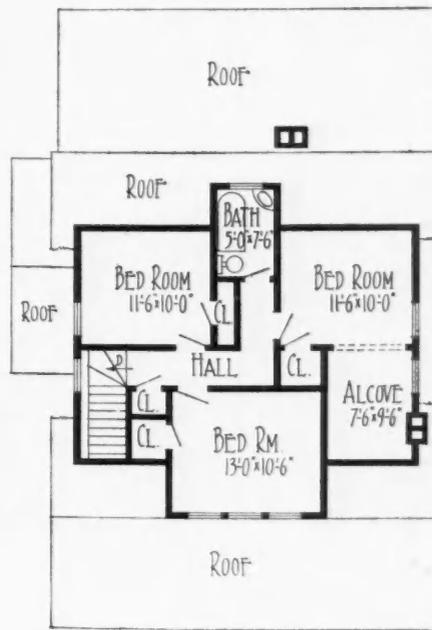
found out, and he told me that he made up his mind if others were doing it that he could, and that he went to see two of these contractors personally to find out just how they handled the work. To his great surprise he discovered that he had figured on a lot of labor and material that was unnecessary. He had supposed that a brick house needed a much heavier foundation than a frame house and had figured some \$200.00 more for this item alone than these contractors were doing. By spending a day or two with his brother builders he was able to cut his labor costs still further by seeing just how the work was done—how the window and door frame were fastened in, the rafter and cornice put on and other little short cuts all Greek to him before.

“In short, when he prepared his first estimate—the one which ran about 25 per cent higher—he did not know how to do the work and this difference was not an actual difference in cost, but simply Contractor Cooley’s ‘factor of safety.’ After he had become familiar with the details of construction and figured his labor costs accordingly he was in line, and so I sold the frame house and built one of face brick and hollow tile.

“When it was finally completed it ran slightly under 10 per cent more than frame, but even at 25 per cent more we would not exchange it now for the frame



First Floor Plan.

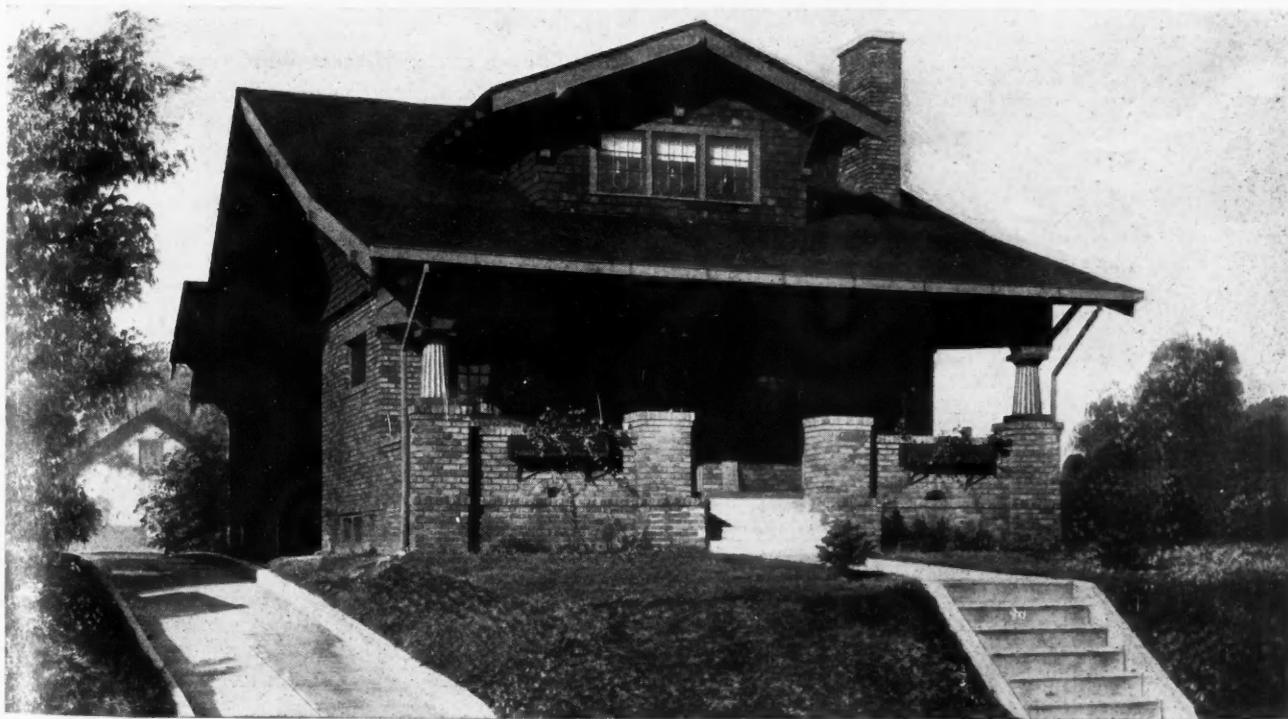


Second Floor Plan.

Arrangement of Mr. Moore's New Home.

house, for so far this winter we have been much more comfortable and the coal pile is not playing out as fast—coal at \$9.75 ‘per’ is worth considering—besides. I’ve had several opportunities to sell it at a worth while profit, but we are happy now and I’m not in the real estate business.

“Contractor Cooley is as much pleased as we are and he has thanked me a dozen times for my insistence—he has four good prospects for brick houses this coming spring.



Contractor Cooley's First Experience in Brick and Tile Construction.



Row of New Brick Houses on 10th Avenue, Beaver Falls, Pa., Costing \$2,365.00 Each. They are Six-Room Houses, Size 22 by 28 Feet. The Floor Plans are the Same, But the Exterior is Varied in the Different Houses.

"I guess you must have done some investigating on your own book, for I see in the December issue, a copy of which you so kindly sent me, has a lot of the very data that Contractor Cooley had to spend his carfare and time to get, or lose a job. With this educational help on your part, if I were ever to move away from our little town and wanted to build a brick house in another town, I feel that the contractor would know how to go about it. It would seem to me that your readers would very much appreciate this help, for there are so many influences at work these days to cause men to build more permanently that there must be an ever-increasing demand for brick and tile construction, and with such fine detail plates your readers cannot only figure intelligently, but on a basis that will prove of advantage to both the contractor and the home builder. If you had started this work a few years ago I probably could have built our first home of brick, instead of frame,—the kind we had always wanted."



Six-Room Brick House for \$2,365.00

At Beaver Falls, Pa., they understand how to get a lot of substantial building value for the money invested. The photograph shows a group of six-room dwellings, 22 by 28 feet in size, full two stories high, slate roof, face brick construction trimmed with stone, first-class construction thruout, plumbing complete for hot and cold water in bath and laundry, furnace heated; cost complete, \$2,365.00.

The following is the contractor's itemized statement of cost:

Excavating	\$ 60.00	Plumbing and Fixtures	225.00
Stone Foundation	200.00	Labor	300.00
Brick and Laying.....	500.00	Glass and Hardware..	100.00
Cement Work	100.00	Painting	100.00
Stone Work	100.00		
Lumber	500.00		
Lath and Plastering ..	180.00		
			\$2,365.00

He states that if built of frame instead of brick the saving of \$300.00 could have been made.

The main floor gives living room and dining room each of good size, a convenient kitchen, and an entrance hall with open stairway. A brick fireplace is the feature of the living room, and dining room and kitchen are supplied with china closet and kitchen cabinet respectively. On the second floor are three good-sized bedrooms, four clothes closets and bath room.



Typical Floor Plan of Six-Room Brick House, Size 22 by 28 Feet.

A Narrow Five-Room Brick Cottage

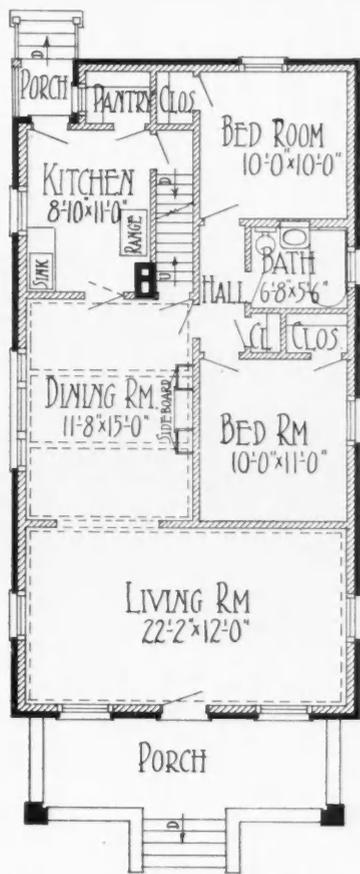
Contractors who are keeping step with progress are handling brick and brick veneered structures without trouble of any sort just as they are successful in building homes and other structures with other materials.

That trait in human kind which causes it to balk at the unknown is responsible for the failure of many contractors to undertake brickwork. Those builders who have eliminated fear from consideration and who have and are studying this character of buildings are progressing rapidly and successfully.

For their consideration and for that of others is presented here a perspective view and a floor plan of a tasty and conveniently arranged five-room brick veneered cottage.

Starting with the foundation of this structure it may be pointed out that the ordinary 9-inch foundation wall of brick, concrete or concrete blocks will carry the weight of this building. In this case, as in all others, the footings should be put down to a solid stratum of clay, sand or gravel. It is well to use a 4-inch sill for the 2-by-4 studding and to leave a ledge of a width sufficient to receive the brick.

The building is framed and floor joist laid before the brickwork is started.



Arrangement of brick veneered cottage. Size 24 feet by 45 feet.

Brick and studding members of the combination wall are bound together with galvanized iron wall ties, usually placed every four or five courses. The ties are securely imbedded in the mortar and nailed to the studding, or sheathing, as the case may be. This makes a secure and rigid bond.

The appearance and arrangement of the house, of which the floor plan and photograph are here given, should recommend the house strongly to the prospective builder.

Every inch of the enclosed space is used economically and the arrangement is made with a view to minimizing the labor of housekeeping.

Building codes in many cities specify the use of a fire-resisting material for the outer walls of all structures, to lessen the danger of a great conflagration; and that fact emphasizes the advisability of every contractor and builder mastering the art of building with brick.



Brick Cuts Insurance Rates

The Salt Lake, Utah, *Tribune* says: "A pleasant surprise was sprung upon the building community of Salt Lake by the Pacific Insurance board, when it announced a cut of 33 per cent in the insurance rate on brick mercantile buildings, and extends the time on such risks from one to three years."



A tasty and well-arranged brick veneer cottage. Size 24 feet by 34 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only \$5.00 per set. Blue prints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering ask for Design No. 6882.

A Brick Home of the City Type

Lighting a home built on a narrow city lot is one of the more difficult problems the builder encounters. Usually the light must be admitted from front and rear. Side windows in many cases are impossible, and in very few instances are they desirable.

The accompanying brick house design is notable for its excellent architecture and efficient lighting. The large multiple windows in living room and dining room insure a diffusion of light thruout both.

This home is 22 feet by 33 feet and is designed for a 25-foot lot. Set at one side of the lot ample room for passage is secured.

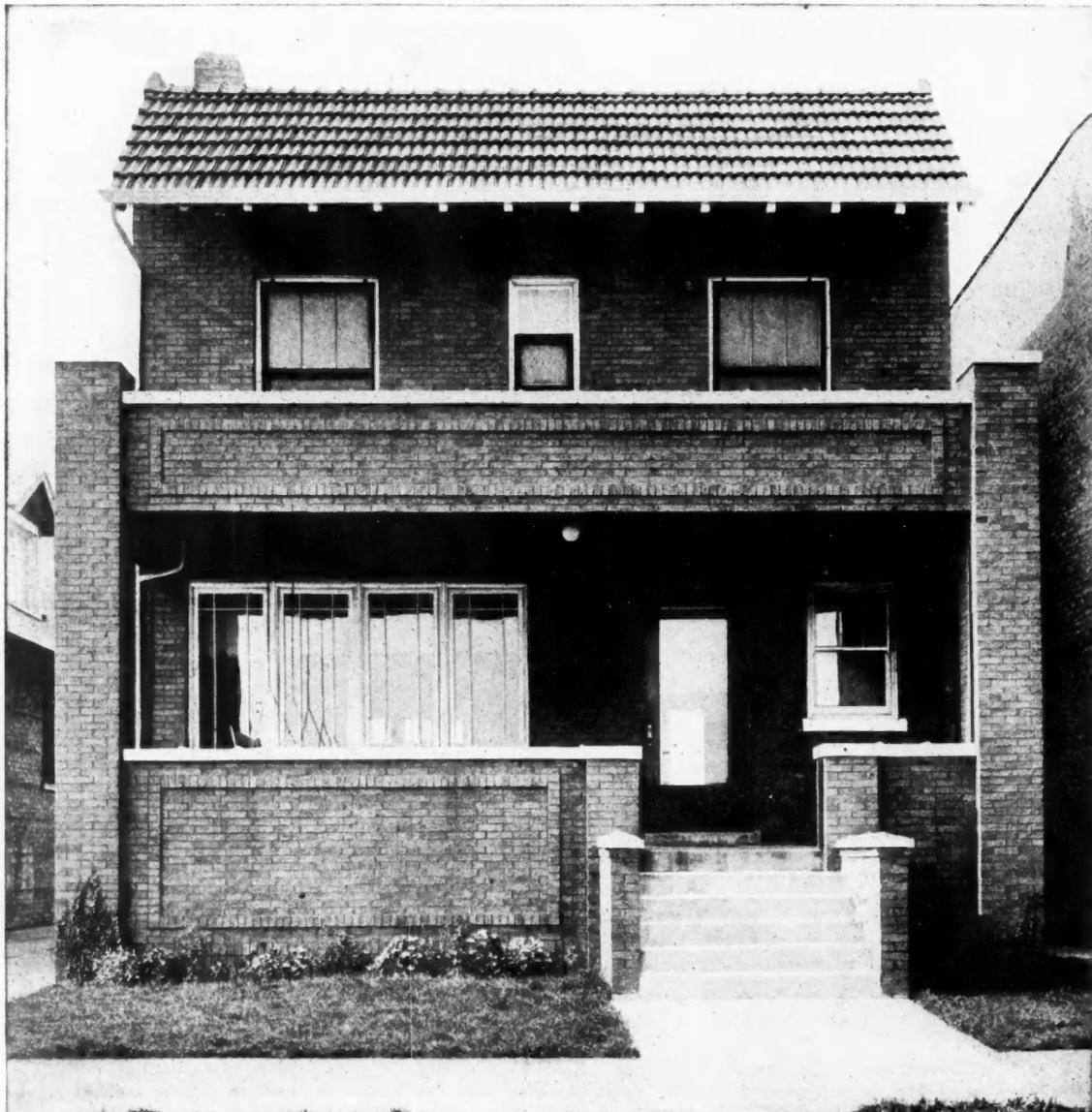
Much of the beauty of the front is derived from the straight lines of porch and roof which may be enhanced by the use of brick of subdued—not dark—color, for the beauty of the brick is augmented by the six white terra cotta caps. The color for the tile on the roof should be studied with care. Green is a favorite, as is also red. The really important thing is to have the brick, trim and tile harmonize.

This is a six-room home with hall, pantry and bath and the rooms all are of fair size. The arrangement utilizes all the space to advantage, and vestibule, halls and closets are provided.

It will be noted that the walls of the first story are 13 inches thick, while those for the second story are 9 inches thick, a material saving in space and cost.



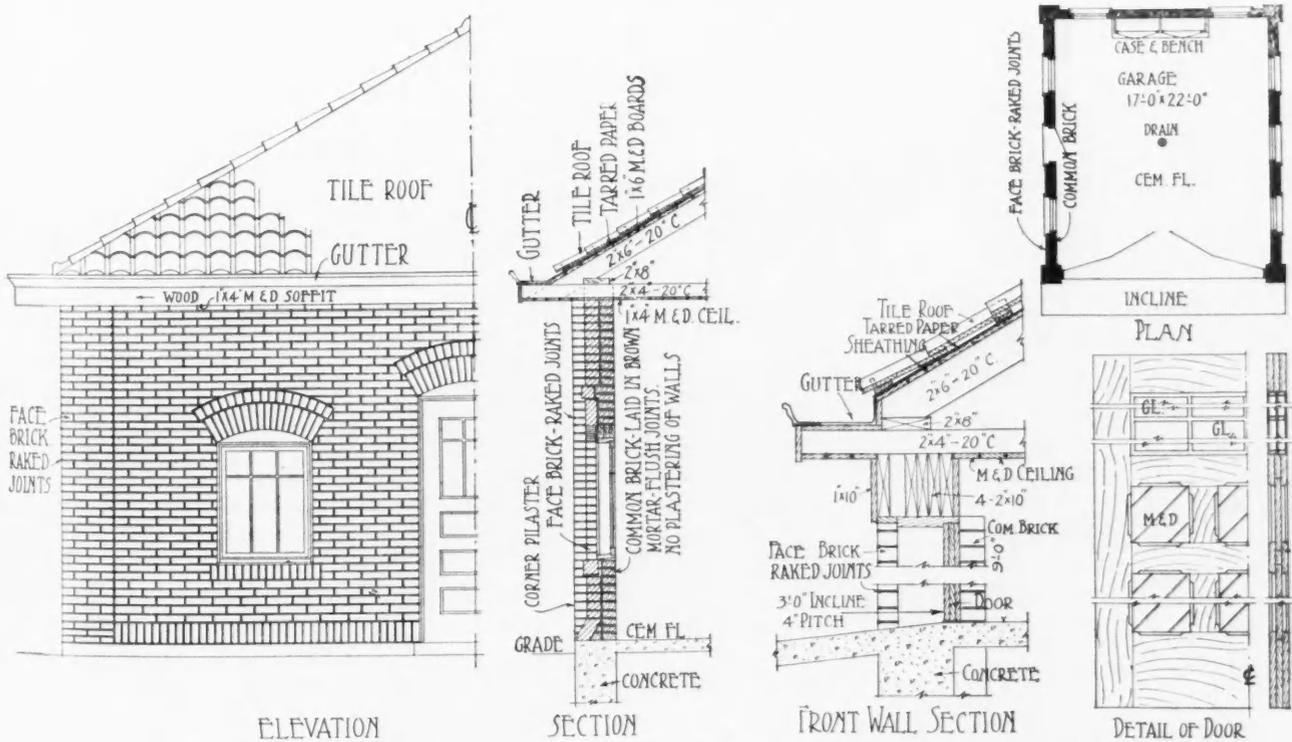
Arrangement of House. Size, 22 feet by 33 feet.



A city type brick home. Size, 22 feet by 33 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only \$8.00 per set. When ordering, ask for Design No. 6885.

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Photograph, Plan, Elevation and Details of Two-Car Brick Garage. Design No. G 174.

A Two-Car Brick Garage with Tile Roof

It doesn't cost much more to build a garage right. It is an important building intended to house valuable property. It should be fireproof and burglar-proof and make a nice appearance. A cheap, flimsy-looking garage spoils the general appearance of many a good house.

The accompanying photograph, plan and details of construction show a two-car garage, 17 by 22 feet in size, the walls faced with good grade front brick backed with common brick laid in a brown mortar with flushed joints which makes a good-looking inside finish without plastering. The roof is green Spanish tile. The doors can be of the double folding sort indicated, or arranged to slide in several different ways, as preferred.

The accompanying photograph, plan and details



Dealer-Contractor Good-Will Best for Building

Why Sell or Use Advertised Building Materials?

By S. Roland Hall

Adv. Mgr., Alpha Portland Cement Co.

IT MAY not be easy for an advertising man to say exactly what he would do if he were in the shoes of some other fellow, but if I know myself, I would, if I were a dealer, sell building materials that are well advertised, and if I were a contractor or a builder, I would, as a rule, prefer well advertised building materials.

That a thing is well advertised does not necessarily always mean that it is of superior quality; but, as a matter of fact, the well-advertised article usually is of superior quality. For one thing, successful advertising is a difficult and costly process, and in the long run a commodity of any kind must really have some distinctive feature or some superiority in order to make successful advertising possible. If a commodity lacks these distinctive features its advertising is on a shaky foundation and I, for one, would not want to have any stock in such an enterprise.

Advertising Does Not Increase the Price

Among the most moss-grown statements that still pop up here and there is this old friend—"advertising merely increases the price!" The manufacturer who does not advertise is usually ready with the argument that he can make you a better price because he does not advertise. "We put the money into the quality of our goods instead of advertising," says he, and he chuckles over this cute argument. When he names a lower price for the commodity that he markets he

usually pays a great tribute to the power of advertising by making a difference between his price and the price of the competitive article that is five or ten times as much as the advertising manufacturer spends in publicity. The simple truth is, as everyone knows who goes deeply into questions of this kind, that successful advertising—which is only one form of selling—tends to lower selling costs instead of increasing them. Everybody is familiar with the fact that if you can sell 100,000 of an article you can make both the price to the consumer and the selling cost lower than if you sold only 1,000 to 10,000, and that if you can sell millions of the article you can reduce your price to the consumer and your selling cost still more. This is well illustrated by the Ford automobile and a great many other commodities. If advertising does not greatly increase sales and thus greatly reduce overhead costs, that in itself is evidence that the advertising is not successful and that its cost in the long run is going to come out of the manufacturer's capital instead of out of the pockets of the buyers and users.

Giving Your Goods a Wider Acquaintance

If we could be sure that we could interview personally and at reasonable cost everybody who ought to buy and use our products, there would be no reason for advertising. But the world is big, and it takes time and money to go around and see everybody. The number of people that any manufacturer or building materials dealer can interview is comparatively limited.

Therefore, we have to tell people about our products by means of advertising, which may be magazine advertising, newspaper advertising, letter advertising, advertising by means of samples, or some other form. Advertising not only brings a building materials dealer new customers, but it saves a lot of his valuable time. When the manufacturer has done the educational work—that is, made the buyer familiar with the product—the dealer's work has been greatly simplified. This is well illustrated by a safety razor experience related to the writer.

A Safety Razor Story

Some years ago, when the Gillette safety razor was the only article of its kind that was thoroly known, a large concern that wanted to give a safety razor as a premium to people who were rendering it some service asked a hardware store for prices on a new safety razor that had some striking features. The prospective buyer had thought of the Gillette razor, but concluded that it had been sold and used as a premium so extensively that it had lost its strongest appeal.

"Why don't you buy the Gillette?" was the first question of the hardware man. On being told why the Gillette had been dropped from consideration, he said: "Would you be interested in my views? All right. Well, then, I make as much on one of these razors as on the other, so it makes no difference which one I sell you. But when a man comes in here for a good safety razor, he knows what the Gillette is as soon as you mention it. He regards it as a standard article, and its value is already fixed in his mind. We don't as a rule, have to do any selling of the Gillette. It's just an exchange of a five-dollar bill for a safety razor. But whenever we put the other razor forward, we find that, tho it is a good article, it isn't known. We always have to sell it, have to take our time to explain it, to prove that it really and truly is as good as a Gillette, and then some people don't believe us. Finally, the demand for the Gillette is such that we buy a gross at a time; we buy the other outfit in lots of six at a time. Does that mean anything to you?"

It did mean something—meant that the buyer chose the Gillette razor for his premium; he didn't want something that he had to explain, something whose value he had to prove.

This little razor story illustrates the power of good advertising. Good advertising will bring you some new customers, but don't expect people generally to lay down everything and rush to your place of business as soon as they read an advertisement. Very likely all that will happen will be that they will read enough of the advertisement or notice enough of the illustration to get a favorable impression of the article and to be influenced to prefer it and to buy it at your place of business when they are again in need. The impression will be there, even when the advertisement has been forgotten; people daily buy well-

advertised goods without being conscious of any particular advertisement that influenced them.

Advertising Saves the Dealer's Time

The gist of the whole matter is that people prefer the goods whose names and merits are familiar. A busy dealer hasn't time, nor is it his business, to make known the names and merits of all the many products he handles. If this burden is thrown on him his labor is greatly increased. He can't make as many sales; he can't turn his capital quickly.

The manufacturer of non-advertised goods is lucky indeed to get a good dealer to take on this big burden of making the product known to the community, for it requires time, work and patience.

Good advertising will always bring some new customers. But usually its greatest value is that it paves the way for the dealer's work by making the consumer familiar with the product and making him willing to receive it without question or argument when it is offered.

Advertising standardizes goods in the public mind. It makes turnovers instead of leftovers.

Following Up Inquiries

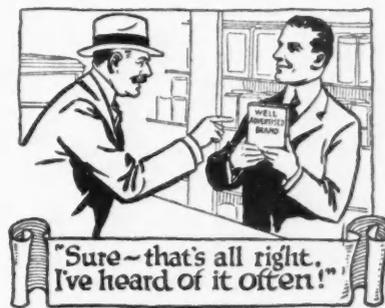
The writer of this article has talked and corresponded with a great many manufacturers who advertise nationally—concerns that produce building materials, hardware, tools, etc., and on every hand there is the complaint that most building material dealers do not give the attention that they should give to inquiries that are referred to them by the manufacturers. This criticism does not apply to all retail dealers, for undoubtedly a good percentage of dealers are as enterprising as manufacturers could wish. But the attitude of a great many retailers seems to be expressed about like this:

"I am a busy man with a great many little things in the day to look after. I haven't time to chase down inquiries, especially as many of them are from people who just write to the manufacturer for catalogs or booklets. Let him answer these things, and if these people are in the market for goods and will come around I will serve them."

(Continued to page 84.)



Unknown Goods Are Hard to Sell.



Steady Demand for Goods of Proven Quality.

Cold Weather Work Fattens Both Dealer's and Contractor's Bank Account

By M. A. Berns

Of Universal Portland Cement Co.

"**C**OLD weather used to cut down my bank account each year until I realized that it was up to me to stop it," said an Ohio dealer. "If local contractors throw up their hands with the first icy winds, if concrete products makers lay low until spring and if drain tile manufacturers decide to await the first robin—I lose. But now since I keep my finger on the push button which controls these conditions, we are all making money the year around.

"A trip to Chicago during the Cement Show several years ago first convinced me of the possibilities of cold weather construction. While in that city I saw several jobs under way on some mighty cold days in February. I took the bull by the horns and winter no longer calls a halt on my business—sales continue in cold as well as in warm weather. I haven't missed a Cement Show since.

Winter Work Grows More Popular Each Year

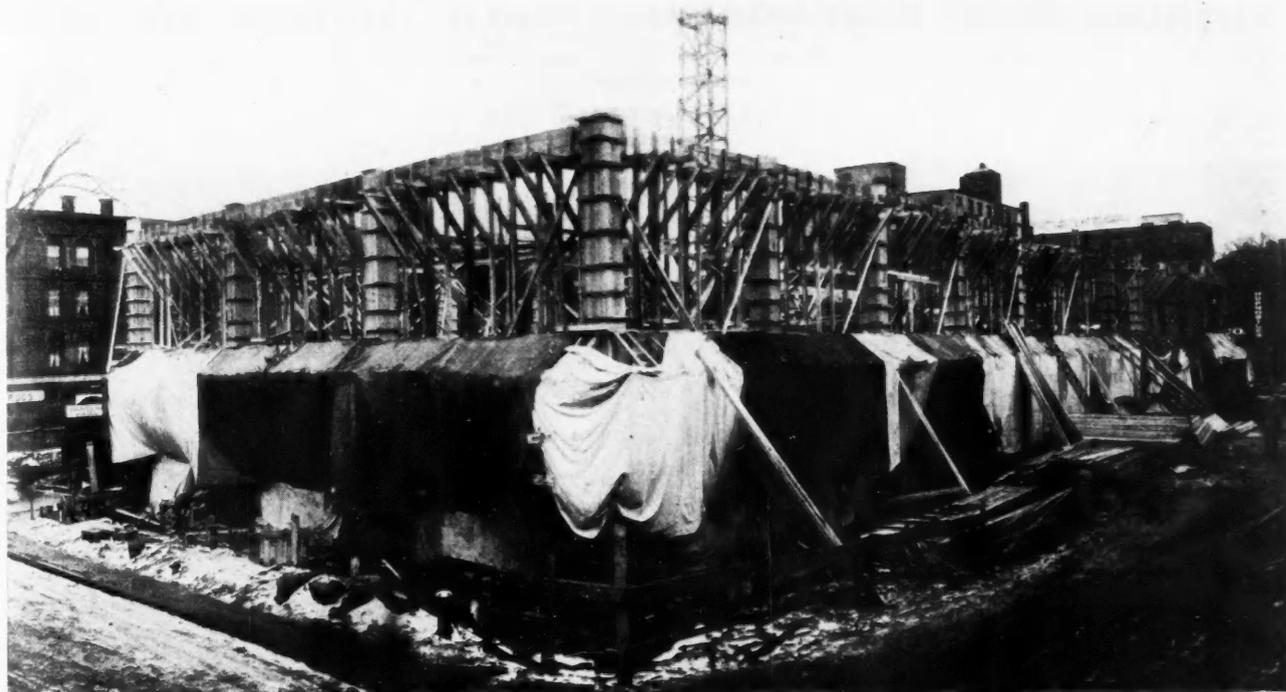
"I figured that an extension of the building season into the winter would swell my bank account, but I didn't realize what it would amount to. Those who tried it out the first year doubled their work the

following year and influenced others to follow suit. They gained courage from the fact that the first year's efforts panned out well and actually netted extra profits. Now a number of contractors, concrete products manufacturers and builders have had a year's experience and the confidence that experience brings. They tackle more and bigger jobs each year and are hot on the trail of new work to do during the coming winter.

"Before I was converted I used to lay off about half my force each winter and I found that many of my customers did the same. But now that work is going on all winter we find we can keep our organization almost intact and that it is much more profitable than to drop men each winter and then break in green hands when the building season opens again. To be content, workmen want all-year jobs and unless we can furnish them with such work, they drift elsewhere and into other kinds of employment. I talked this over with contractors and found that it is even more vital with them and so we just put our heads together and decided that it was to our mutual benefit to keep the building business boom-



Successful Winter Concreting for the Jackson Park (Chicago) Golf Shelter. Note Method of Heating Aggregate.



Showing How the Fred T. Ley Co., Builders, of Springfield, Mass., Protected the Fresh Concrete on the Overland Service Section. The Work Was All Done Last Winter During January and February, Much of the Time Zero Weather.

ing all winter, and in every sort of weather.

"Our contractors do almost every sort of construction now because they are not held up by concrete foundation and floor work. Manufacturing and store buildings, as well as houses, are ready for use early in the spring instead of after the best part of the summer is gone. Owners were afraid at first, but now demand it.

"I really was surprised the way farmers jumped at the idea of doing building work during their slack season after I showed them how easy and safe it was. Now they are cashing in on the otherwise idle winter months by laying barn and cement floors, foundations and walls. Many of them work inside making concrete blocks, fence posts and watering troughs. Nor do they stop with the foundation work, for they are buying lumber, roofing and wall board all winter long."

Another Dealer Sets Example by Cold Weather Work Around His Yard

In order to keep as many of its men as possible busy all winter, the Miller-Olcott Lumber Company, Cumberland, Wis., does most of the construction work necessary about its own yard and shed during cold weather. Most of the concrete foundations for a new lumber shed and a new cement and lime storage shed were laid during zero weather. "We heated aggregates and water for mixing, placed shavings in a compartment outside the forms to keep the freshly placed concrete from freezing and left the forms in till spring," is the way Mr. Miller described it. "Several days were pretty cold, but we encountered no trouble whatever and you can see for yourself that the concrete is good and solid. This work proves the practicality of laying concrete as well as of doing other

building work in cold weather and the value of keeping one's men busy all winter."

Observance of Simple Precautions Makes Winter Work Safe

Winter work is recommended to builders who are willing to take the necessary precautions to prevent damage by freezing. These precautions are simple. First of all water for mixing, sand and pebbles or stone must be heated before or during mixing. Next, concrete must be protected until it has hardened sufficiently so that freezing will not harm it.

Keep the Prosperity Wave at Its Crest

Instead of allowing the present prosperity wave to "peter out" at the first sign of snow, we can keep it at its crest by seeing to it that every cement user knows how to do winter work. We must influence concrete workers to keep their working clothes on all year. Consistent advertising, including newspapers, form letters, circulars and movie slides will help to knock out the false idea that winter is the time to hibernate. Advertising will pave the way with the public and it will be easy to show the contractor, farmer and concrete products manufacturer that it is to their advantage to keep busy all winter.



Mid-West Cement Users Plan Big Show

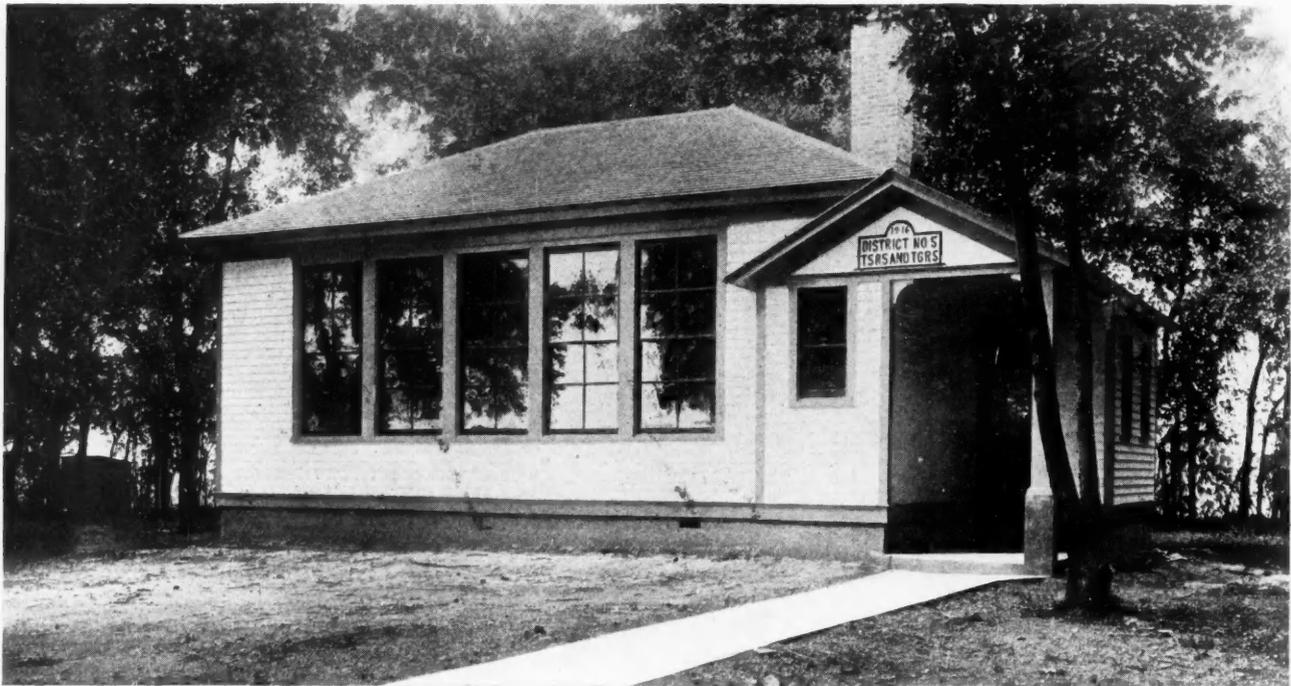
The twelfth annual Mid-West Cement Show and Convention of the Mid-West Cement Users' Association will be held in the Omaha Auditorium, March 6, 7, 8, 9, 10, 1917.

Firms intending to exhibit should make their reservations at once. Plats and space blanks may be obtained by communicating with the secretary, Frank Whipperman, Twenty-eighth Avenue and Sahler Street, Omaha, Neb.

Illinois Must Remodel Her Rural School Houses

DETAILS OF A NEW STATE LAW AND HOW IT IS BEING ENFORCED FOR SCHOOL BUILDING IMPROVEMENTS.

By Herbert C. Crocker



New Type of Rural School Being Put Up in Illinois. Note Grouping of Windows to Give Lighting All From One Side.

THOUSANDS of dollars have been spent in Illinois during the past summer in erecting new city and rural school buildings and remodeling others to make them comply with the new state law taking effect on March 1, 1917, to improve the surroundings of the thousands of children attending them. The law provides the minimum requirements for heating, ventilation, lighting, seating, water supply, toilets and safety against fire.

Districts failing to comply with the law will be losers. Thousands of dollars are apportioned annually by the state to the 102 counties and in turn it is divided up by the Superintendent of Schools in accordance to the number of minors in each district. Boards of Education and Directors failing to comply with the law will not receive their portion until the necessary changes are made.



Remodeled School Building.

State Superintendent of Public Instruction Francis G. Blair, of Springfield, was asked what results were being accomplished by the new act. He said it would be some time before detailed reports were received from the 11,000 districts.

He added that nearly every county in Illinois was erecting one or two buildings and that some averaged between five and twenty. From his reports improvements are under way or have been completed on 90 per cent of the buildings in the state.

The new law permits one of the greatest strides toward betterment of the schools of any time since the little log building of pioneer days was outlawed, a poorly lighted room, with little ventilation and hard benches and no thought of the sanitary conditions. It will mean many new buildings in the next year or two.

In many localities the residents were taken unaware. They were without sufficient funds to build and did not have enough time to call a special election to issue bonds. If there was not enough money on hand the voters were required to approve by a vote an indebtedness, either for a new building or repairs. Many places voted a few hundred dollars to comply.

In many instances a new style of architecture and general appearance is noticeable in recent buildings. Everything of an elaborate appearance is eliminated. They are well built and of better proportions. The old-time belfry has disappeared from many of the schools. Most buildings are frame, but some of the wealthier districts voted to build of brick at a cost

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ranging from \$2,500 to \$5,000, in the rural districts, according to the financial conditions of the community.

In districts where changes of location were made the officers selected a clump of trees to improve the surroundings, but are such as to secure proper lighting.

Concrete walks are very much in evidence. They lead from the entrances to the building and connect the school with the well and outbuildings. The writer visited a number of districts in Southern Illinois recently and found the premises very tidy.

The State Board of Health, the State Architect and the State Fire Marshal will take an active part in the conduct of the schools in the future. If they are unsanitary the Board of Health shall make an investigation. If a building is unfit for occupancy the State Architect may condemn it and the Fire Marshall will act in case of danger from fire.

The County Superintendent of Schools is required to approve plans of a new building to be erected. He must pass upon the numerous provisions of the law. When state officers condemn a building they are required to state in writing in what particular the building is unsafe, unsanitary, or unfit for occupancy. The County Superintendent will condemn upon receiving the notice.

A section of the law directs at least a seven months' school each year and longer if practicable.

When a room heater is used it must be large enough to heat the room in all parts during coldest weather to a temperature of 70 degrees F. without keeping too hot a fire. The heat-proof jacket, at least five feet high, must surround the stove.

Hot air and steam heating plants may be installed in the basement and modern ideas are provided for the fan system, the gravity system, air passed thru or over radiators and the moistening of the air. There must be an inside and outside entrance to the basement. The floor of the basement must be either brick or concrete.

The children must be seated so as not to face the light. In all buildings hereafter erected the windows are to be at the left of the seated children. Windows are permissible at the rear of the room, but must be 6 feet above the floor. The smallest space possible shall be left between the windows on the left.

If the light enters the room from the north or with trees nearby the glass surface of the study room is not to be less than one-fourth of the floor space. In other cases it may be one-fifth of the floor space. The windows are to be provided with adjustable shades.

In cases where children face windows in old buildings the windows are to be permanently walled up. If windows on the right of children are full length the lower part is to be shaded to completely shut out the light.

Seats must be provided in each room for the smallest as well as the largest child. Only single desks are



Remodeled Rural School.

to be used. The aisles between the desks and walls are to be 24 inches wide and those between desks not less than 18 inches.

Adjustable seats of six sizes are recommended. They must be arranged so the heels of the child rest on the floor when his back touches the back of the seat. When the child is sitting erect in his seat with the forearm resting on the desk, as in writing, the shoulder of the writing shoulder is to be no higher than the left.

The interior of the school room must be kept clean. A sweeping compound shall be used on the floor and a moist cloth for dusting. The floors must be scrubbed as often as necessary.

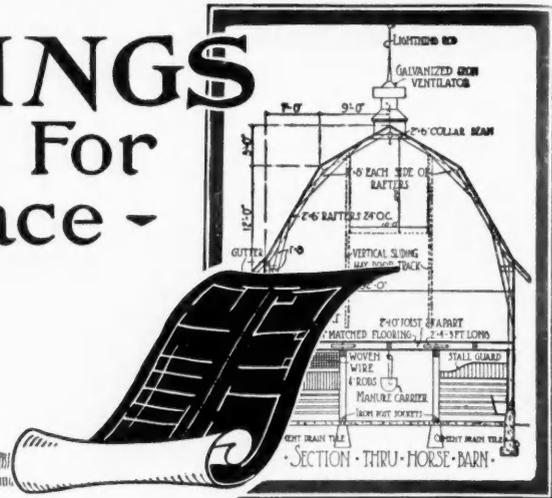
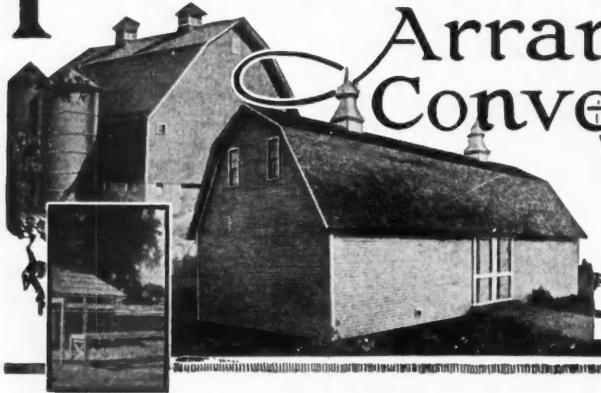
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New Type of Illinois Rural School.

FARM BUILDINGS

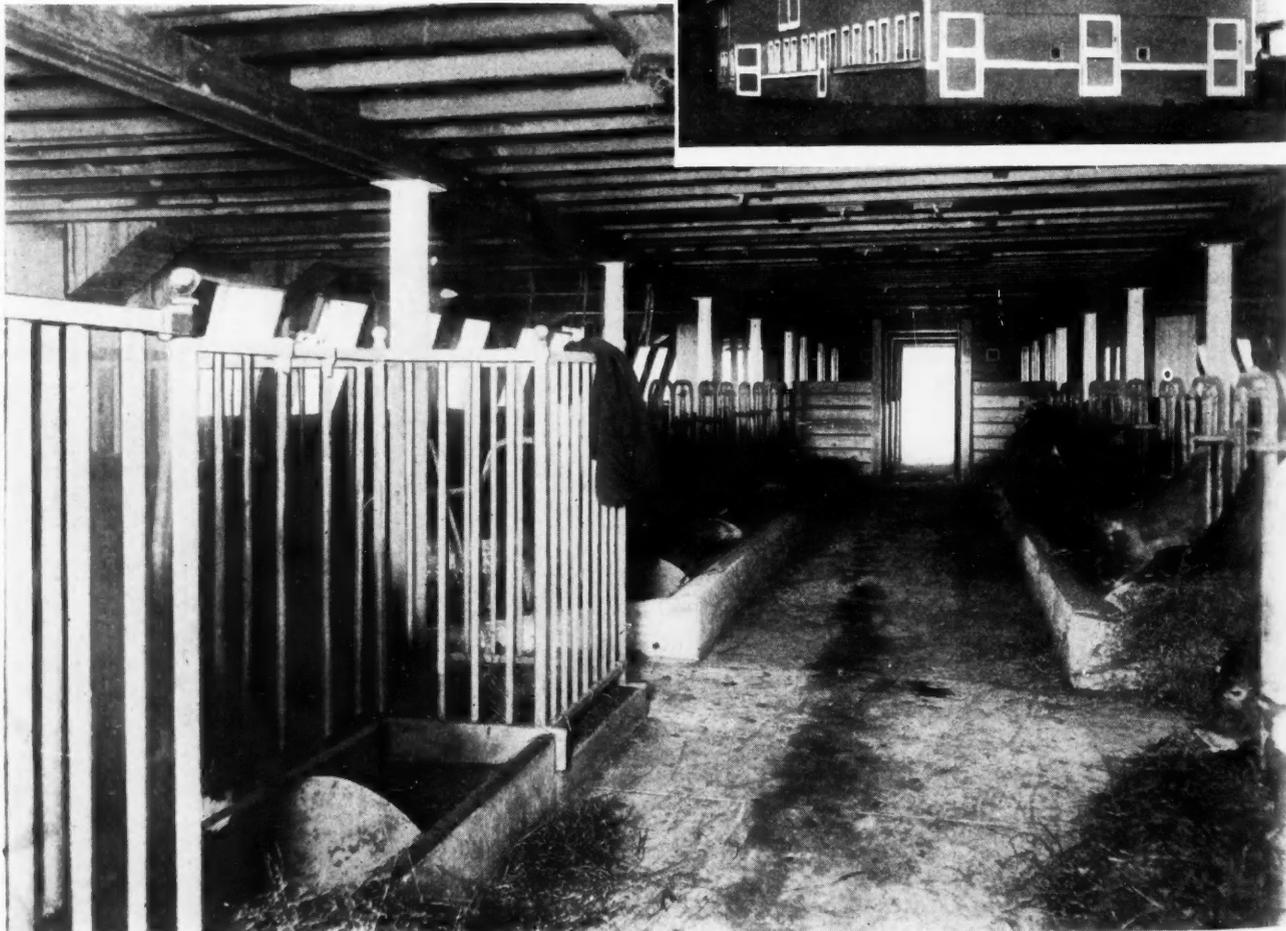
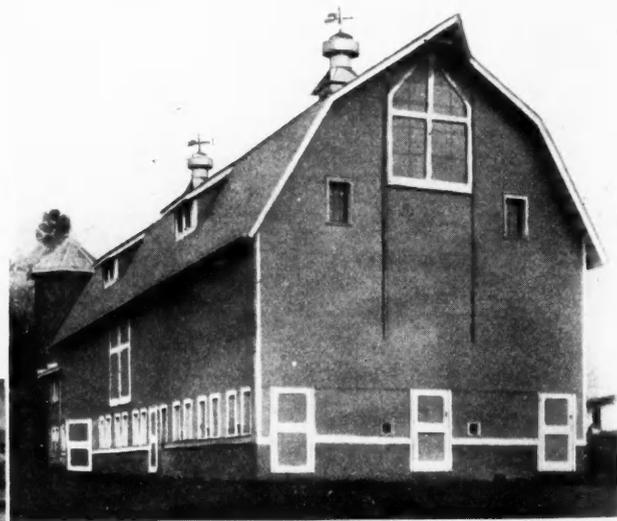
Arranged For Convenience -



A Specially Designed Barn

PLANS for this general utility barn were prepared by our architectural department, The Radford Architectural Company, and supplied the owner by the retail lumber department of the Marietta Chair Company, Marietta, Ohio, who also furnished the building materials. This is an example of the real service we perform for the lumber dealer and the contractor, an instance of co-operation worthy of the name, and serves to emphasize the part now taken by this organization in the big work of assuring the builder full value for every dollar he invests.

In far too many cases a few dollars saved in the cost



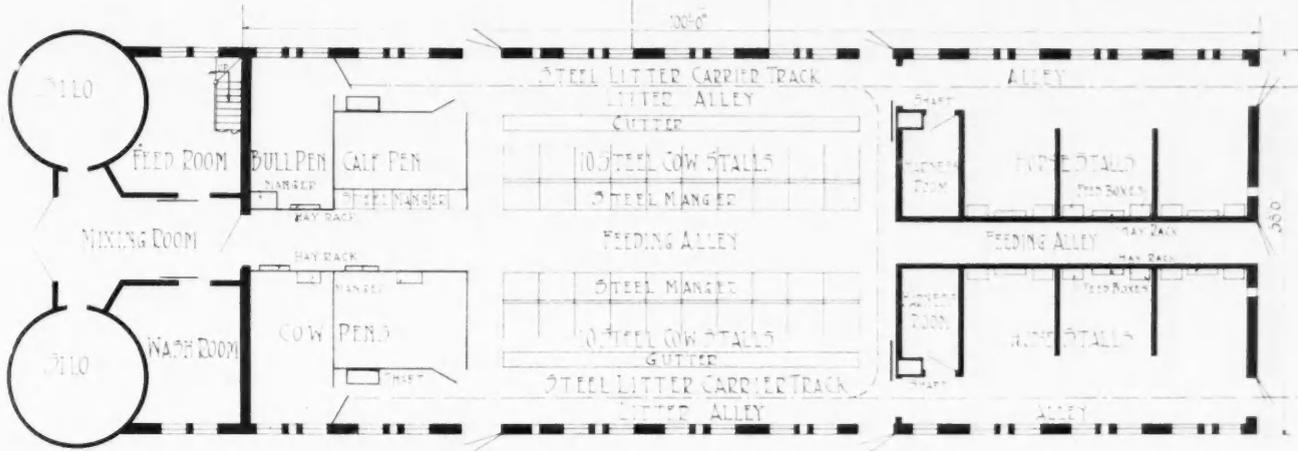
This illustration shows a portion of the Marietta barn interior while in use, and will give a very definite idea of the convenience of the barn.

of plans means the loss of much of the cost of farm buildings, for if the latter are not designed by competent architects and farm engineers, keenly alive to the progress being made and to the needs of the owner, their use and sale values are restricted.

The external appearance of the building is excellent. It will add more than its original cost to the value of a farm in the event of sale. It will prove an equally good investment for the farmer.

Here everything is under one roof and the stock can be fed and the stables cleaned very quickly. The sliding doors and a solid partition effectually screen the cows from the horses. Twenty stanchions are provided for cows, also four pens which may be used as circumstances require.

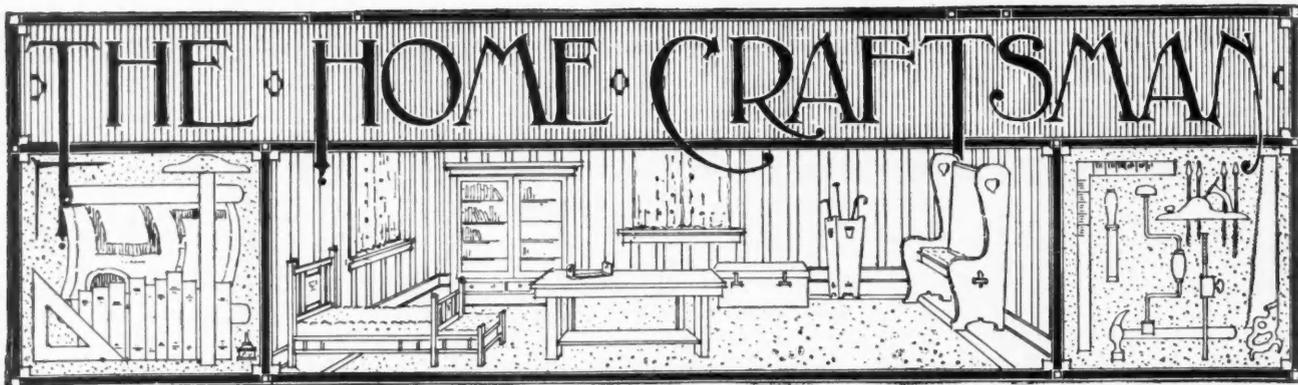
Stalls are shown for twelve horses and dust proof rooms are provided for the harness. The arrangement of the silos, feed rooms, etc., is convenient.



Floor Plan of General Utility Barn, Design No. A369.



General Photographic Perspective of Big General Barn Built by H. G. Chamberlain, of Marietta, Ohio, from Plans Furnished the Retail Lumber Department of the Marietta Chair Co., by Our Architectural Department. (Design No. A369.)



A Homecraft Porch Swing and Table

By George E. Chandler

Supervisor of Manual Training, Rochester, Minn., High School

EACH year we are learning to make more and better use of the living porch. Only a few years ago it was looked upon as a luxury, while today it seems almost a necessity. Certainly it repays its cost many times in added comfort and health. We should strive to make the porch a *livable* place, yet in keeping with the "great outdoors." The porch need not be large—in fact, many of the most attractive ones are very modest in size. A swing or

cot, a small table or stand and one or two rustic or wicker chairs will furnish the average porch, while a rug and a few pillows will give it a homelike air. If it is exposed to the hot afternoon sun, a rolling porch shade is inexpensive and will add greatly to the comfort of the occupants.

We illustrate this month a porch swing and table or stand of craftsman design suitable for the living porch. Both designs are simple and may be easily made in the home workshop.

Spruce or chestnut would be excellent material for these pieces, altho oak or any hardwood may be used.

STOCK BILL FOR THE PORCH SWING (FINISHED SIZES)

Bottom—2 pieces $1\frac{1}{4}$ by 3 by $61\frac{1}{2}$.

3 pieces $1\frac{1}{4}$ by $2\frac{3}{8}$ by 19.

Back—2 pieces $1\frac{3}{4}$ by $1\frac{3}{4}$ by $26\frac{1}{2}$.

1 piece $\frac{3}{4}$ by $2\frac{1}{2}$ by 24.

Front—2 pieces $1\frac{1}{4}$ by $1\frac{3}{4}$ by $15\frac{1}{2}$.

Arms—2 pieces $1\frac{1}{2}$ by $1\frac{3}{4}$ by 25.

Slats (back)—6 pieces $\frac{5}{8}$ by 2 by $49\frac{1}{2}$.

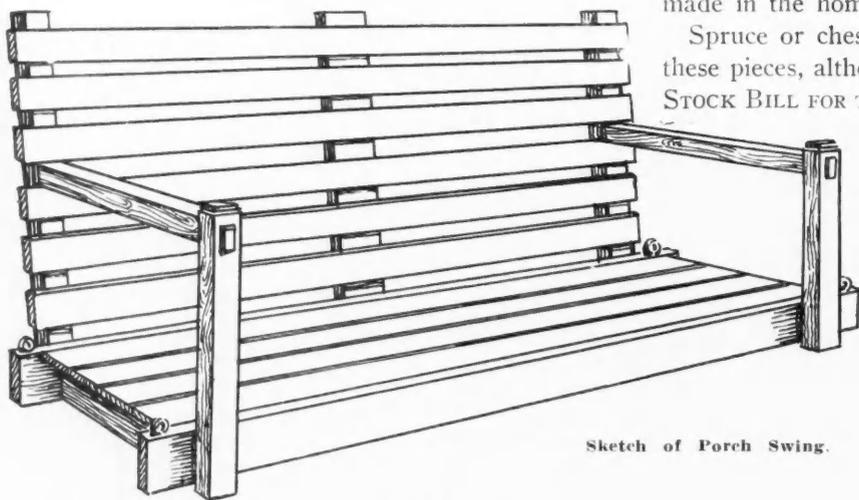
Slats (bottom)—8 pieces $\frac{5}{8}$ by 2 by $49\frac{1}{2}$.

Four hardwood pins.

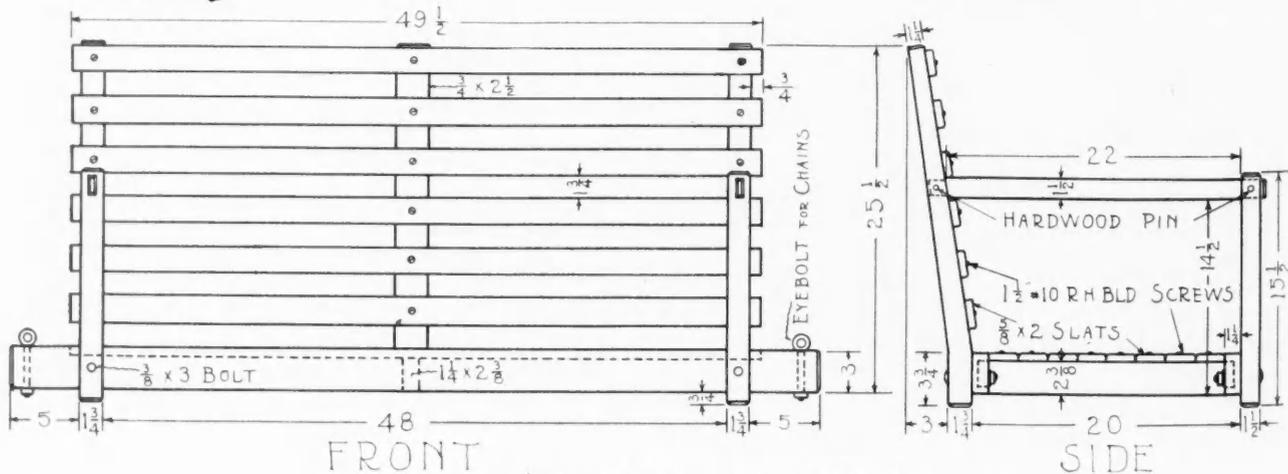
Hardware—

Four $\frac{3}{8}$ by 3 carriage bolts and washers.

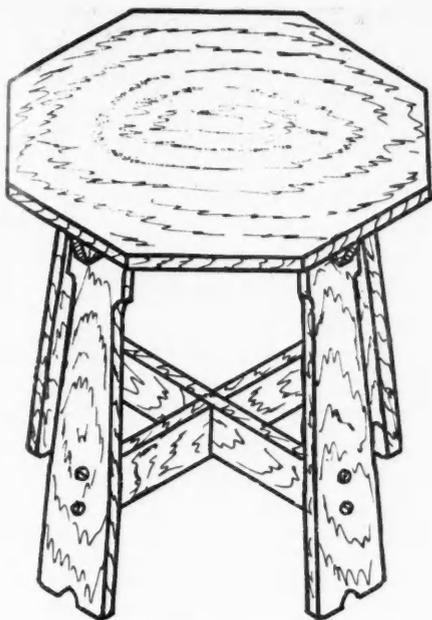
Four $\frac{3}{8}$ by 3 eyebolts.



Sketch of Porch Swing.



Dimensioned Details of Porch Swing.



Sketch of Small Table.

Forty-two 1½-in. No. 10 R. H. blued screws.

Note that the three cross pieces in the bottom are mortised into the long runners to make a substantial frame. The back and front pieces are bolted to the runners, while the arms are mortised into both back

and front and pinned. All projecting ends on the framework should be chamfered. The slats in both back and seat should be well rounded on the corners as well as the front edge of the runner.

STOCK BILL FOR THE TABLE AND STAND

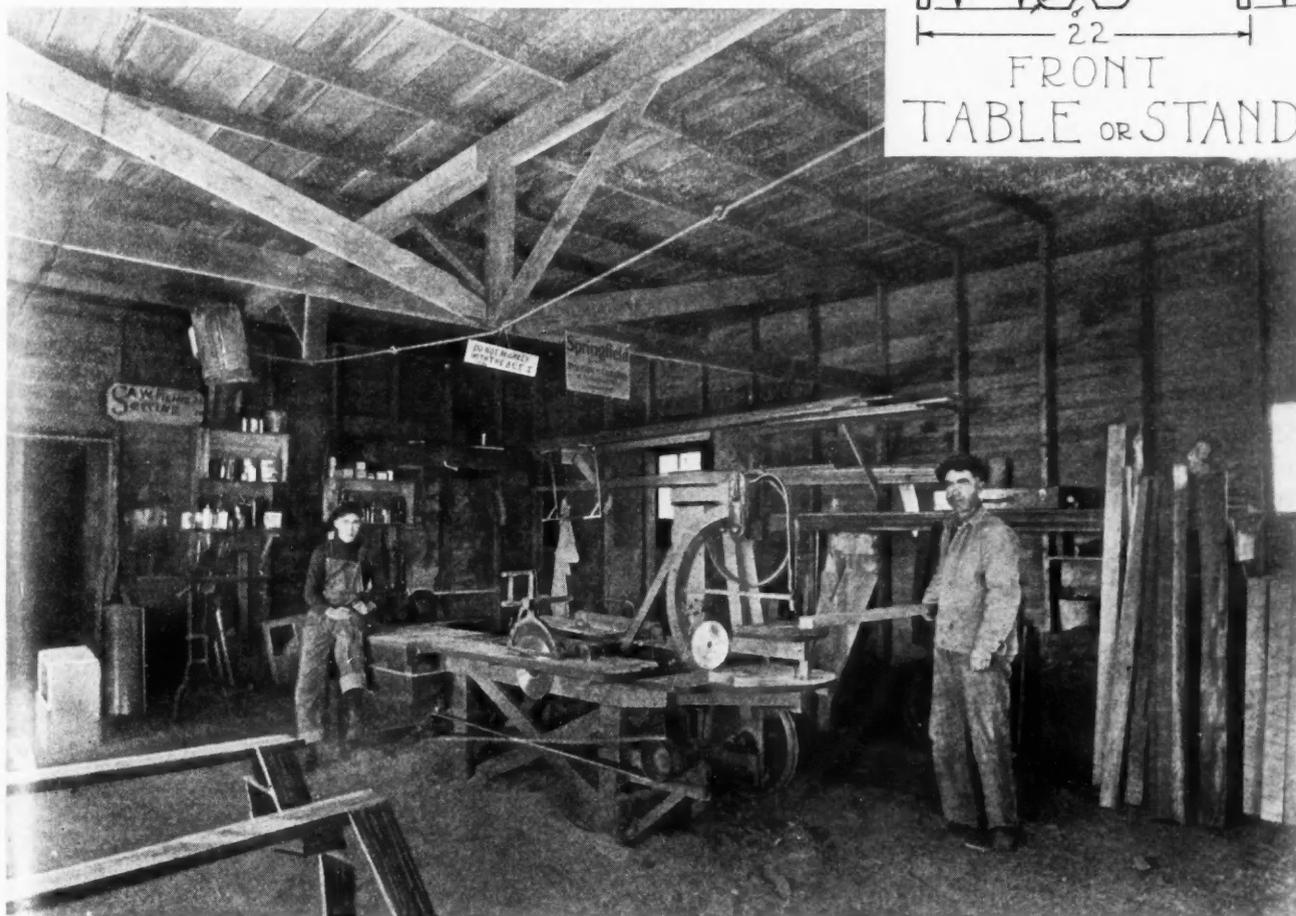
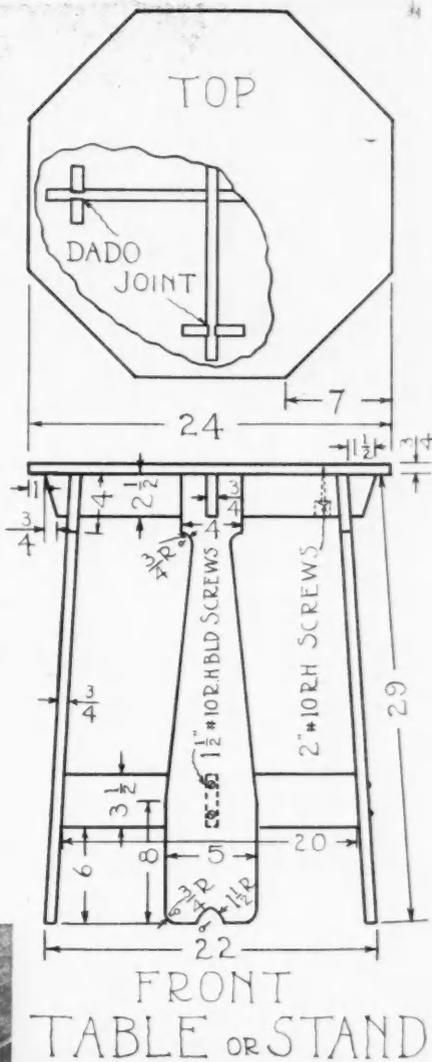
(FINISHED SIZES)

- Top—1 piece, ¾ by 24 by 24.
- Legs—4 pieces, ¾ by 5 by 29.
- Top crosslap—2 pieces ¾ by 2½ by 22.
- Bottom crosslap—2 pieces ¾ by 3½ by 20.

Hardware—

- Eight 1½-in. No. 10 R. H. blued screws.
- Four 2-in. No. 10 R. H. blued screws.

All material in the table is ¾ of an inch thick. The only joint needing special attention is the dado joint allowing the legs to fit into the top crosslap pieces. An adjustable try-square will be needed for this, or a templet cut from wood will serve the same purpose. The top and bottom crosslap pieces are merely half lap joints.



A Roomy Workshop. "We do any old thing in the wood-work line. This is our shop with our woodworker running. It is partly a home-made rig, but it is a dandy. Guess you can tell from the picture." Brown & Sons, General Contractors and Builders, Abena, Kan.



Noon Hour Talks by the Boss Carpenter

Talk No. 54. Factory Design (Continued)

THE BOSS TALKS ABOUT TOP OR WEARING FLOORS, BASEMENT FLOORS, ROOFS, WATERPROOFING AND OTHER DETAILS OF CONSTRUCTION

New Series No. II.

"IN the past few talks," said the Boss, "we have designed all of the framing, doors, roof and carrying members of a small factory building having brick exterior walls and heavy timber interior. In this talk we will take up a few of the details of construction which were not considered in the previous talks, but one of importance in forming the finished building.

"We found the thickness of the plank floors needed to carry the loads placed upon them with an ample degree of safety and without great deflection. These planks were laid across the beams and all extended in the same direction across the building. A lighter top or wearing floor is laid on top of these heavy planks. This top or wearing floor serves two distinct purposes since it takes the wear away from the main or carrying floor and also provides a fairly tight surface to prevent the passage of dirt or water to the floor below.

"This top floor may be made of hardwood, yellow pine, or Douglas fir, tongued and grooved flooring of a thickness depending upon the degree of wear which it is to withstand. A common thickness is 13/16 inch or 7/8 inch, while other thicknesses vary up to 1 11/16 inch. Widths vary from 1 1/2 inch face up to 3 1/4 inch.

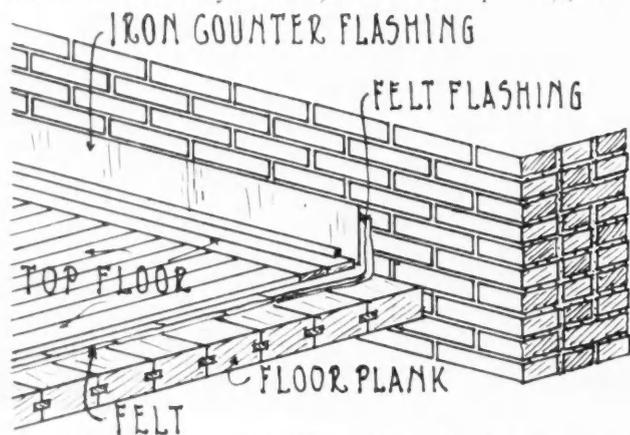


Fig. 11A. Section of Mill Construction Floor Showing Plank, Waterproofing and Wearing Surface.

The 2 1/4 inch face is usually preferred for 13/16-inch stock. While tongued and grooved flooring is used almost entirely in factory floors, square edge material has the advantage of being removed more easily when worn, and with less damage to the floor around the worn parts. This condition is frequently met with in aisles or passages between machines or near doorways where the traffic is heavy or concentrated. Of course such a floor is not as tight as when of matched material. If pine or fir is used, edge-grain flooring is preferable from the standpoint of wearing quality.

"Top floors are laid across the direction of the main plank floor either at right angles or diagonally. It is often specified that this direction of the boards in the wearing floor shall make at least an angle of forty-five degrees with the direction of the planks on which such a floor is laid. It is necessary that proper nails be used in laying flooring in order to prevent splitting the tongue and bruising the face. When 13/16-inch flooring is laid, good results have been obtained by using 8-penny cut flooring brads, placed 16 inches apart. An objection to the use of square edge flooring has been found in the fact that it wears less around the nails, thus making an uneven floor.

Some of the best buildings have a double top floor. A 1-inch softwood floor is laid at right angles or diagonally to the main plank floor and then the wearing floor placed on top. The middle layer tends to stiffen the floors and distribute the loading more evenly. If the middle layer is placed diagonally it allows the top layer to extend in the direction of greatest travel or wear, thus allowing those sections which receive the most wear to be replaced without great effort or cost. Figs. 11A and 11B show the two kinds of floors described above.

"In buildings where leakage of water from an upper floor would cause damage to machinery or goods stored on lower floors, it is common to lay some kind

of a waterproofing material between the plank floor and the wearing floor to serve as an additional safeguard. This waterproofing layer may consist of waterproof paper or felt laid in two or more thicknesses, placed so that the strips in each layer break joints, and with each joint mopped with hot tar or a similar protective compound. A recommendation contained in the Uniform Requirements issued by the National Board of Fire Underwriters is as follows: 'Two thicknesses of waterproof paper or its equivalent, to be laid between the planking and the flooring in such a manner as to make a thoroly waterproof floor to a height of at least 3 inches above floor level. If the paper itself is waterproof, the joints should be swabbed with tar, pitch, or their equivalent, and overlapped at least 2 inches. If this paper is not waterproof, the entire surface of the lower layer to be swabbed with tar, pitch, or their equivalent, and the upper layer placed on the lower while hot. Waterproofing paper to be flashed up at least 3 inches above floor openings and protected with mop board.'

"The top flooring is laid so as to provide a space of not less than 1/2 inch around the walls so as to allow for swelling if the floor is wet. This space is then covered by a moulding or quarter round in such a way that it will not prevent the movement of the floor.

"The Associated Factory Mutual Fire Insurance Companies have made a long study of floors such as we have used in our building, and as a result recommend the use of an elastic felt instead of paper. They recommend a double top floor of the type shown in Fig. 11B, with the felt placed between the two lighter floors. The floor which carries the felt should have a fairly smooth surface, and any irregularity more than 1/8 inch deep should be filled before the felt is laid. The felt is laid in a manner similar to that described above for paper, except that the top surface is laid with the sealing compound and the top floor is laid just following this mopping while the compound is hot. These companies recommend that the felt be turned up 6 inches at walls and around posts, and held in place by a baseboard and quarter-round.

"Basement floors may be either of concrete or wood. Wood floors may be either of the creosoted block or plank type. Block floors, when not subjected to moisture or water soaking, can be laid with close joints, otherwise a 1/8-inch joint filled with pitch is advisable. A good specification for wood block floors is as follows: In wet ground, first spread a thoroly compact layer of cinders or gravel about 6 to 12 inches deep as a foundation. On this place a 4-inch layer of Portland cement concrete to serve as the base for the bedding surface which consists of a 1/2-inch layer of sand and cement grout. This top surface is leveled with a template to secure a smooth bed or cushion for the blocks. Expansion joints should be left at the walls and around piers or posts.

A plank basement floor is constructed as follows:

A base about 4 inches thick and consisting of screened gravel or stone not larger than 2 1/2 inches in size mixed with hot tar is laid on the compact earth or foundation. The tar is heated to about 200 degrees Fahr. and enough used on the heated gravel so that the mixture will be compact when rolled. A layer of tar and sand mixed in the proportion of fifty or sixty gallons of tar to each yard of sand and heated to 225 degrees Fahr. is spread over the base to a depth of 1 1/4 inches and planks 3 inches thick is laid directly over this top coat while it is still warm and before it sets. The plank is then tamped into place, toe-nailed together and a wearing floor laid on the plank. Often a cement concrete base is laid instead of the tar concrete, but when this is done, the cement

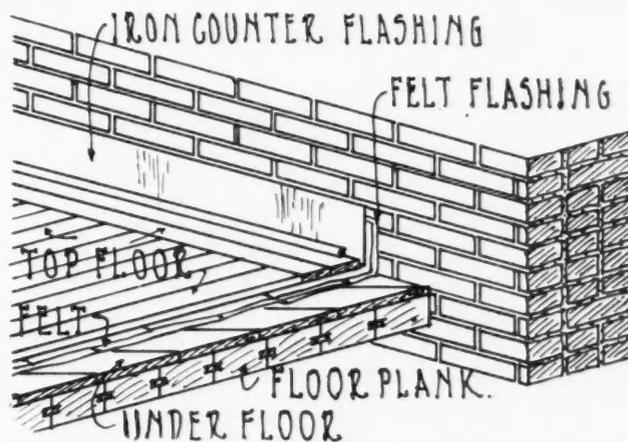


Fig. 11B. Section of Mill Construction Floor Showing Double Top Floor and Waterproofing Layer.

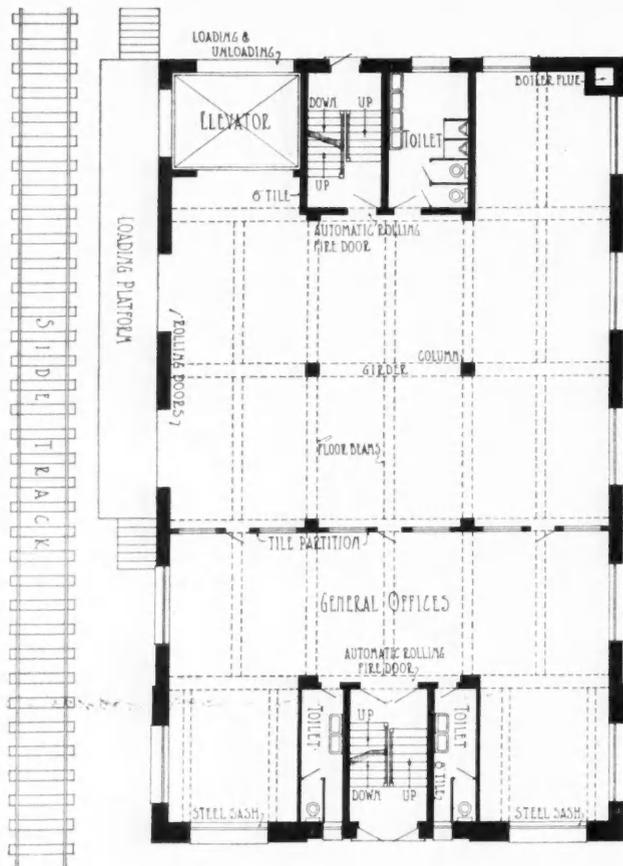
base should be given a coat of tar before the top course is laid.

"If an ordinary Portland cement concrete floor is used, a foundation similar to that described above for the wood block floor will be needed. A layer of cement concrete 4 inches to 6 inches thick and consisting of one part Portland cement, two parts sand, and four parts screened gravel or crushed stone, should be placed on this foundation and covered with a wearing coat from 1 inch to 2 inches thick. This wearing coat is composed of one part cement and two parts sand, and should be kept wet for at least ten days after laying.

"While there are a great many different materials used for roofing purposes, each one having its own particular advantages, the ordinary so-called 'tar-and-gravel' roof seems best fitted for flat roofs on buildings such as we have designed. The following specification for felt, pitch and gravel, or slag roofing, quoted from a report of the American Railway Engineering Association is claimed to provide a roof covering of the flat built-up type which gives excellent results when laid over boards. This specification should be limited to roofs which do not slope more than 2 inches to 1 foot.

Specification

"ROOFING.—First, lay one (1) thickness of sheathing paper



First Floor Plan of Factory, Design No. 6875, Size 48 Feet by 80 Feet. Second and Third Floors Same Without Office Partitions.

or unsaturated felt, weighing not less than five (5) pounds per hundred (100) square feet, lapping the sheets at least one (1) inch."

"Second, lay two (2) plies of tarred felt, weighing fourteen (14) to sixteen (16) pounds per hundred (100) square feet, lapping each sheet seventeen (17) inches over the preceding one, and nail as often as is necessary to hold in place until remaining felt is laid."

"Third, coat the entire surface uniformly with straight run coal-tar pitch."

"Fourth, lay three (3) plies of tarred felt, lapping each sheet twenty-two (22) inches over the preceding one, mopping with pitch the full twenty-two (22) inches on each sheet so that in no place shall felt touch felt. Such nailing as is necessary shall be done so that all nails will be covered by not less than two (2) plies of felt."

"Fifth, spread over the entire surface a uniform coating of pitch, into which, while hot, imbed not less than four hundred (400) pounds of gravel or three hundred (300) pounds of slag to each one hundred (100) square feet. The gravel, or slag, shall be from one-quarter ($\frac{1}{4}$) to five-eighths ($\frac{5}{8}$) inches in size, dry, and free from dirt."

"FLASHING.—Flashings shall be constructed as shown in detailed drawings."

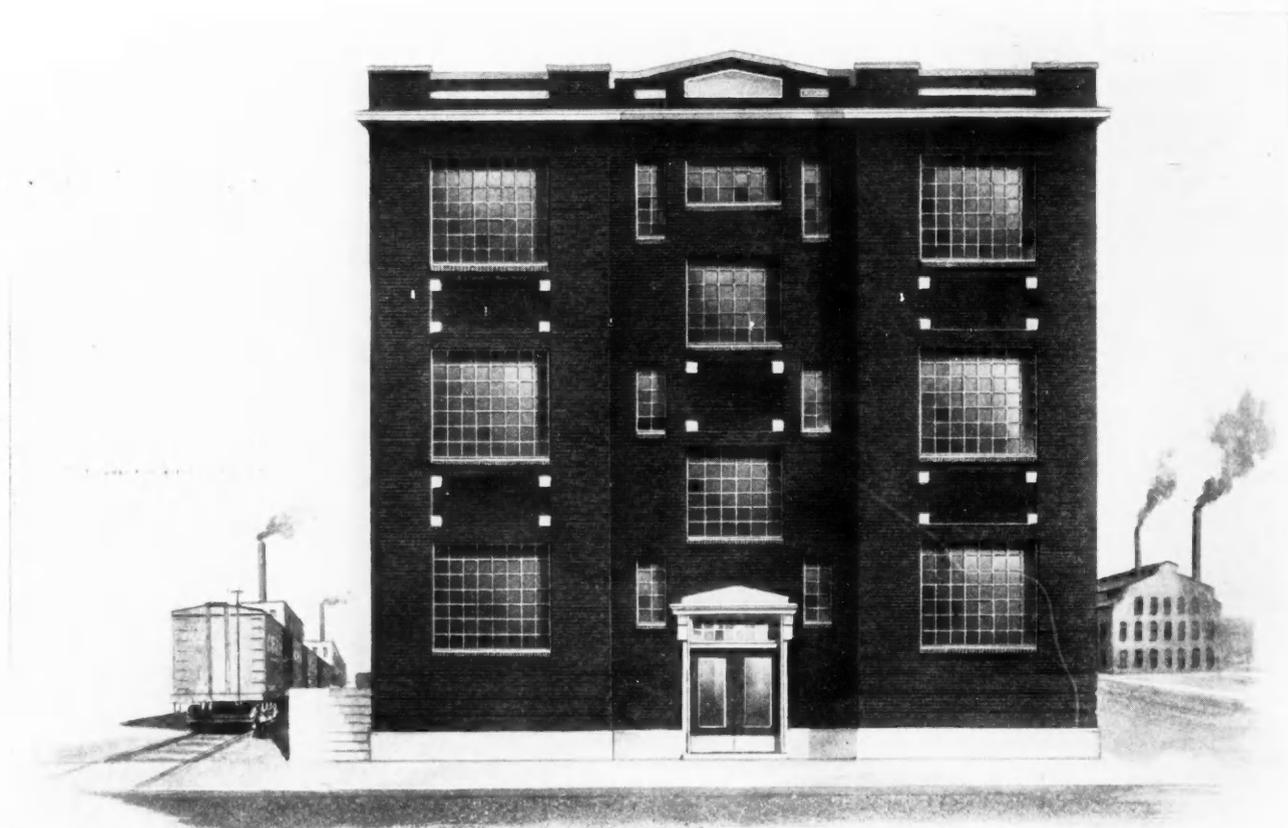
"LABELS.—All felt and pitch shall bear the manufacturer's label."

"INSPECTION.—The roof may be inspected before the gravel or slag is applied by cutting a slit not less than three (3) feet long at right angles to the way the felt is laid."

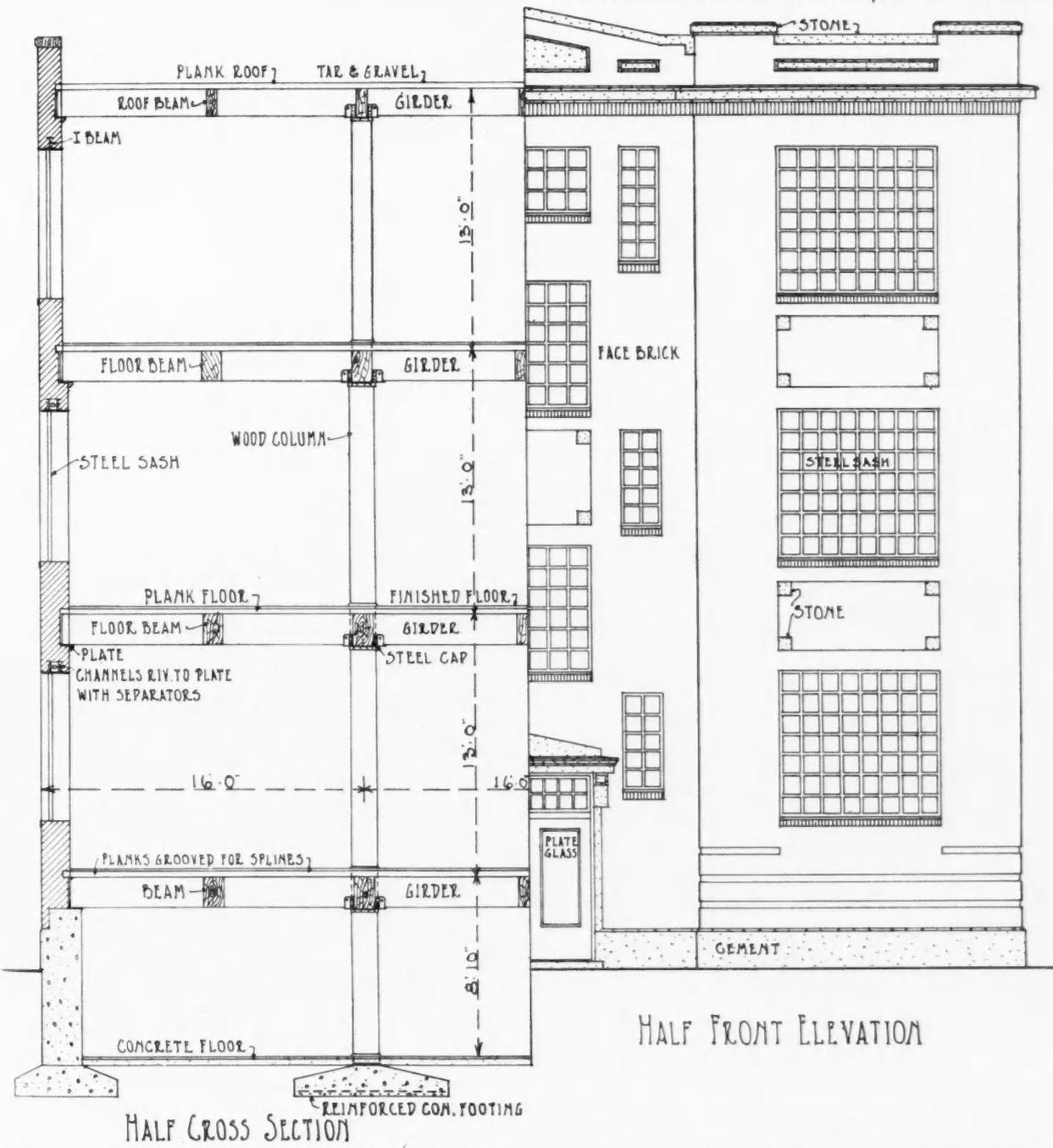
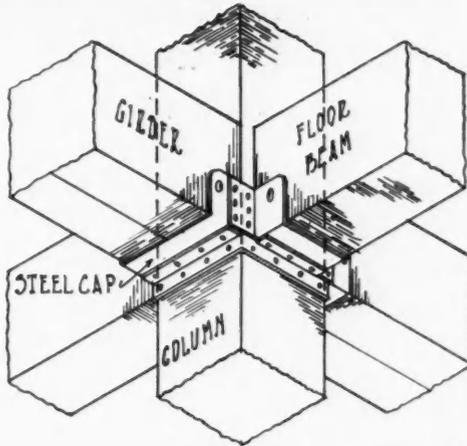
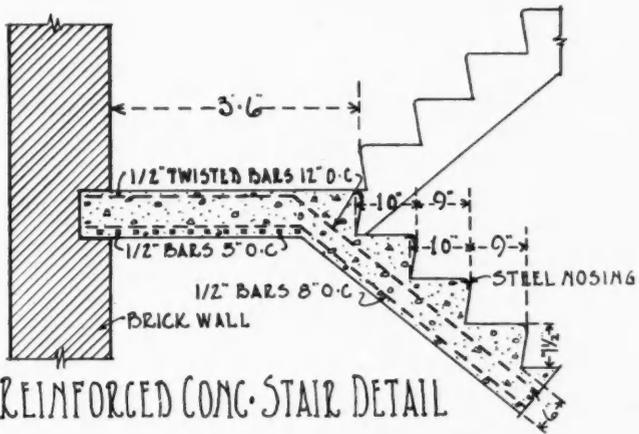
"N. B.—To comply with the above specifications, the material necessary for each one hundred (100) square foot of roof is approximately as follows: 100 square feet sheathing paper, 80 to 90 pounds tarred felt, 120 to 160 pounds straight run coal-tar pitch, 400 pounds gravel, or 300 pounds slag."

"In estimating felt the average weight is practically fifteen

(Continued to page 80.)



Front View of Well Designed Modern Factory Building; Exterior Glass in Steel Sash, Face Brick and Terra Cotta Trim; Interior Standard Mill Timber Construction. Design No. 6875.



***"Fortunate that one who enters the morning of each year,
and each day, with the expectation of finding before its
close, worth while opportunities"***

—THE MAN FROM THE LUMBER YARD

We know that if you do not seek you do not find, and if you do not knock the door does not open. Our ambition for 1917 is to present to our readers, thru our editorial pages, more than ever heretofore, OPPORTUNITIES in new ideas and methods, and thru our advertising pages OPPORTUNITIES in labor saving machines. EDITOR.

THE college man has one asset not enjoyed by the boy who didn't go to school away from home. Friendships are formed which are of great social and financial value in later life.

I had only one year at a so-called fresh-water college. It was called fresh-water to distinguish it from the salt-water schools located in the East. Like all the fresh-water schools in those days, it was young and financially weak. But because of the size there was a closer fraternalism than is found in the Yales and Harvards.

There were three of us that were inseparable—Dobs, Chandler and Freckles.

I was Freckles.

I have kept up a close acquaintanceship with Dobs and Chandler ever since.

Business Rating of Dobs and Chandler

Dobs had some money and bought out a hardware business in a nearby town after he completed his four years at college.

Chandler didn't have much money and went to work for a central west contracting firm after two years at college.

Chandler was an optimist. He was able to laugh when the boat upset in November, and he lost his sweater altho he knew he wouldn't have money to buy another.

Dobs grumbled and knew he would take a bad cold, and sure enough he did.

I visited Dobs several times during the first ten years he was in business. It did seem as if he had a great deal of hard luck. When he bought a car of nails the price was sure to go down. When he didn't buy, the market went up. He was a hard worker, the personification of economy and got more out of his shop men than anyone, but he didn't seem to get anywhere. It was very depressing to be with him. There was an atmosphere about the store that made you take a long breath when you got out in the sunshine.

The transcontinental railroad on which his town was located established car shops there. Everybody seemed prosperous except Dobs.

I looked for his name in the mercantile book when I thought of him this morning; it wasn't there. "Nuf said."

I turned over the pages to see how my friend Chandler was rated.

I know any credit man would instantly ship him any machine or material and never think of attaching sight draft to a bill of lading.

At least every twelve months I have the tonic of spending an hour with Chandler. Chandler was always dependable altho he would not be called a hard worker.

Why Chew the Pill?

He saw things. He expected to find them. He knew that something good was just ahead of him. He had bumps and failures, but he never chewed the pill. If a bitter dose came his way, he swallowed it and came up smiling.

That sort of a fellow can't be kept down. He went up by that oft-traveled route: First, a partnership, and later, when prosperity and old age laid his partner on the shelf, a full ownership.

It was shortly after this that a structural defect in a large public building he was erecting caused its collapse. The loss wiped him out financially, but he got backing and went at it again.

He kept up his courage. His men were loyal to him because he was loyal to them.

It was a joy to go into his well-lighted, cheery office. Even his letterheads begot confidence.

Meeting Sala Magundy

I don't think I have a single reader but would profit by inspection of his warehouse, as I saw it at the time of my last visit.

When I heard his story as to how he had "come back," I attributed his success to his optimism and his equipment.

His machinery warehouse was an old shack that cost him almost nothing a month. He had patched it so that the weather was kept out.

In one well-lighted corner he had fixed up a room out of roofing paper and warmed it by means of a stove.

When I was there he had run his portable power saw rig into this room and had attached an abrasive wheel to the arbor.

His general equipment man was putting every tool, even down to the humble cold chisel, in prime condition. Every polished surface was oiled before being put into place.

I learned that it was the duty of this man to see that every machine was in prime order before it was sent out on a job. He stated that the cost of this man

had been saved a hundred times over by the avoidance of delays.

Chandler always was a sentimental chap. He exhibited a real affection as he pointed out his "dependable boys." They consisted of a concrete mixer, mortar mixer, material hoist and derrick, besides a full complement of grader's outfit, such as scoop shovels, plow, wheel graders and wheelbarrows. He also had a two-wheel cart. He was especially proud of the old girl "Sala Magundy." He so named it because he put everything into it.

Sala Magundy was his two-ton motor truck.

But the story of his comeback is of most interest. When he realized that the collapse of the building he was putting up had flattened him, he also realized that he now had a job worth while.

He at once turned every asset he had over to his bondsmen and they arranged at the bank for a line of credit that enabled him to push the building to completion. After the brokerage fees, interest and all expense items were cleaned up, he was about fifteen hundred dollars in

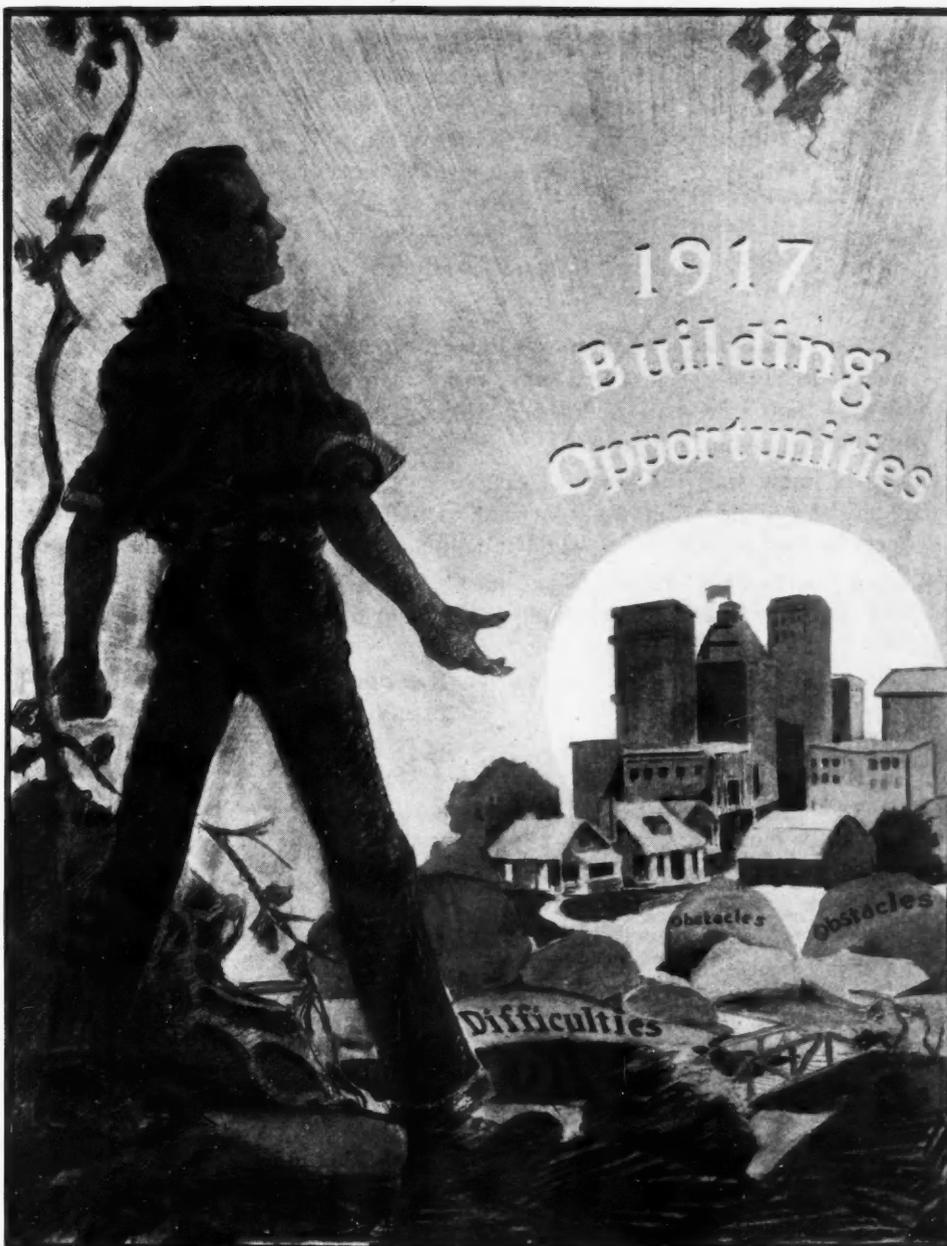
the hole with assets of possibly five hundred dollars of equipment. This was in the spring of 1915.

The Man and the Opportunity

His clean dealings and cheerful way under discouraging conditions won for him the confidence and admiration of the cashier of the bank that had financed the completion of his last job.

The several factories of the town that produced automatic screw and other metal working machines were more than busy and had every man they could secure, working at good wages. There was a scarcity of houses in town.

About the only available building space adjacent to the town was a sixty-acre farm that had been tied up in an estate. One morning early in March the cashier asked him what would be the best way to



"It Isn't Luck or Chance—It Isn't Circumstance—It's You, You, You."

utilize this sixty acres for the benefit of the town and those interested.

Chandler's answer was: "Lay it out as an addition to the town and cover it with attractive popular priced homes to be sold the people moving in."

It seems that the heirs who were now of age had named the price they would take for the 60 acres.

Before the sun went down that day Chandler had arranged with a real estate company to take over this ground and to attend to the sale of the property when the houses were built; the bank was to finance the transaction. He was able to do this because of their confidence in him. To cover the details would be too tedious. The net results for Chandler of that one deal was over \$16,000.

I do want to present an idea that, so far as I know, was in part original with Chandler. He put up a few \$6,000 houses, mostly \$4,000, and a few \$3,000. All

essential features of all houses in each class were the same which enabled him to standardize his material and work. No two houses on the same street look alike. The casual observer would think that each was designed by a different architect. This individuality was secured partially by using different cornice trims and having a variety of porches, but the most pleasing variety was secured by doing some in weather boarding, others in brick veneer and many in stucco of several colors.

It Pays to Cater to Woman's Ideas

A man will buy a hat just like every other man in town wears, but a woman wants her belongings to be different from her neighbor's.

Chandler knew that the woman was the one that would buy the home. The point I want to make in this letter is that it pays to be right and think right.

A man can't think right if he starts the day obsessed with the idea that everything is going to the dogs.

When *Opportunity* sees such a man coming down the street, she will go around a block to miss him. Who wouldn't?

Fortunate is the one who enters the morning of each year, and each day, with the expectation of finding before its close, worth-while opportunities. To such of my readers, I know that 1917 will bring happiness if not prosperity, and they will spread sunshine and not gloom.

I don't know the author of the following or I would give him credit. In any event it is worth while getting into your system:

"IT'S YOU"

Whether the day gets started gray,
Or leaps to a beaming hue,
The tale that it writes as it joins the nights
Depends altogether on you.
You can make it go with a face aglow
Into the dark beyond;
You can make it crawl thru the gathering pall
Like a hopeless vagabond.
Whatever it shows when the shadows close
And it waves its last adieu,
Isn't luck or chance— isn't circumstance—
It's you, you, you.

THE MAN FROM THE LUMBER YARD.



Factory Design

(Continued from page 76.)

(15) pounds per one hundred (100) square feet, and about ten (10) per cent extra is required for laps."

"In estimating pitch the weather conditions and expertness of the workmen will affect the amount necessary for the moppings and to properly bed gravel or slag."

"The sheathing paper or unsaturated felt is placed on the bottom next to the roof boards, mainly to keep any pitch which might penetrate the two-ply felt above it from cementing the roofing to the sheathing. It also is of value in

preventing the drying out of the roof thru the open joints from below. The saturated felts should be nailed where there is any chance of disturbance of the roof from underneath by wind, and also enough to hold it in place while laying. The practice in regard to nailing varies in different parts of the country, but the fewer nails the better, so long as the roof is held in place."

"Next time," said the Boss, "we will start the calculations for this same building, using plank floors, steel beams and cast iron columns."



Wall Board "the Young Hopeful" of the Carpenter

(Continued from page 37.)

but to two sons. And one of these is as bad a boy as the other is good.

Many a carpenter already has had his taste of the bad boy—inferior wall board. He remembers how this wall board fell down on its job and got *him* in bad with his customers; how it played the very deuce when he tried to saw, fit and apply it; perhaps ripped loose from the nails; and then painted badly, buckled, warped, twisted on the walls and behaved so outrageously that the client cursed the carpenter up and down.

Yes sir, that wall board "son" disgraced the carpenter—whereupon he disowned wall board, but not with justice to the good "son."

There are *highest-grade* wall boards, boards that have actually proved their ability to make good consistently; to work easily, finish perfectly and lastingly and to remain flat and permanent on the walls—satisfactory in every way.

It may seem a peculiar fact, but nothing short of the highest-grade wall board can make good. The requirements of wall board are so exacting that it needs every one of a number of sterling qualities in order to fill the bill.

Unfortunately, the bad son in wall board has aped the appearance of the good—tries to trade upon the reputation of the latter and steal his birthright, much as Jacob did from Esau. It sometimes takes an actual test to detect the difference.

Very seriously, such imitations in wall board are to be strictly guarded against. It goes without saying that the only quality these imitations have in common with the original wall board is in some similarity of appearance. And, as "handsome is, that handsome does," such borrowed finery in no way helps the imitation boards to make good in actual service.

A faulty, inferior wall board can blast a carpenter's reputation as surely as the highest-grade board will boost it and give opportunity for as fine-paying, steady a business in wall board installation as any man could want.



Ransome Factory Addition

On account of rapidly increasing business, the Ransome Concrete Machinery Company of Dunellen, N. J., have just opened another factory at Reading, Pa. This will double the output of the company in the line of small mixers and road-paving machinery.

You Want Stucco Business

Stucco construction is growing every year. It's good work, and pays well. There's lots of it all around you. Why not go out after this paying business? Make a name for good stucco work and the jobs will come easy, because stucco offers:

- Beauty—stucco lends itself to almost any design, finish or color.
- Comfort—stucco resists heat and cold, is warm in winter, cool in summer.
- Fire-protection—stucco resists fire—the stucco home and garage may be made absolutely fireproof.
- Low first cost—cheaper than brick or stone—almost as cheap as wood.
- Maintenance—almost none—stucco requires no painting; little repairing.

We'll Help You

Our books on stucco homes and garages contain much valuable information about stucco—also complete stucco specifications. Let us send you these books free—also the Contractors' Atlas, a monthly publication full of live interest and practical business-getting suggestions—Send the coupon below.

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Des Moines

Dayton

*Atlas Stucco Home, Albany, N. Y.
D. Stuart Douglas,
Architect*



The Atlas Portland Cement Company,
30 Broad Street, New York, or Corn Exchange Bank Building, Chicago
Send me your "Guide to Good Stucco," together with Specifications—also the Contractor's Atlas and special sales information on subjects checked:
 New Stucco Homes Remodeling in Stucco Stucco Garages Stucco Bungalows
 NAME..... ADDRESS.....

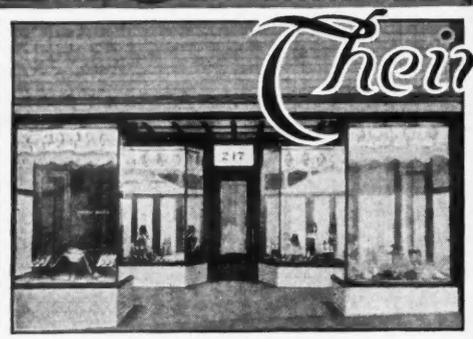
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

MODERN STORE FRONTS

Their Design and Construction

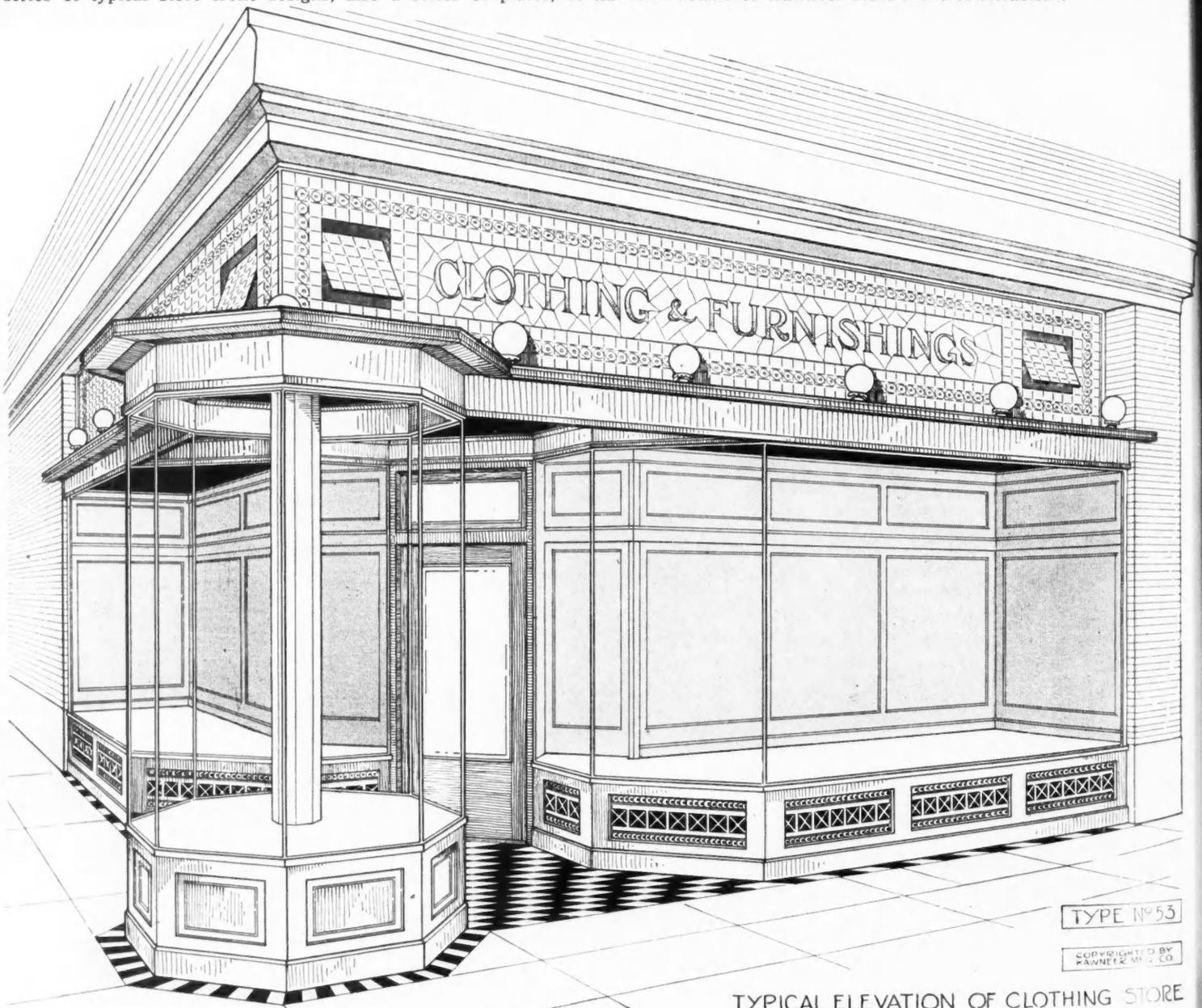
By

Francis J. Plym, President
of KAWNEER MFG. CO., NILES MICH.



PART 12. (SEE FEBRUARY, MARCH, APRIL, MAY, JUNE, JULY, AUGUST SEPTEMBER, OCTOBER, NOVEMBER AND DECEMBER ISSUES FOR OTHER DETAILS.)

NOTE: Mr. Plym desires this Department to be of greatest practical benefit to contractors and builders. He will gladly answer letters of inquiry, giving any special store front information desired. He has also prepared a booklet on modern store front sections which he will mail free of charge to any architect, contractor or builder desiring a copy. Ask for Catalog H. Under this heading is appearing series of typical store front designs, also a series of plates, of half size details of Kawneer store front construction.



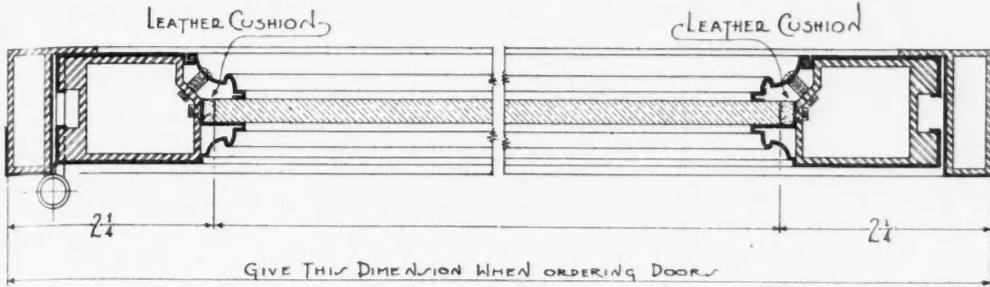
TYPE No 53
COPYRIGHTED BY
KAWNEER MFG. CO.

TYPICAL ELEVATION OF CLOTHING STORE

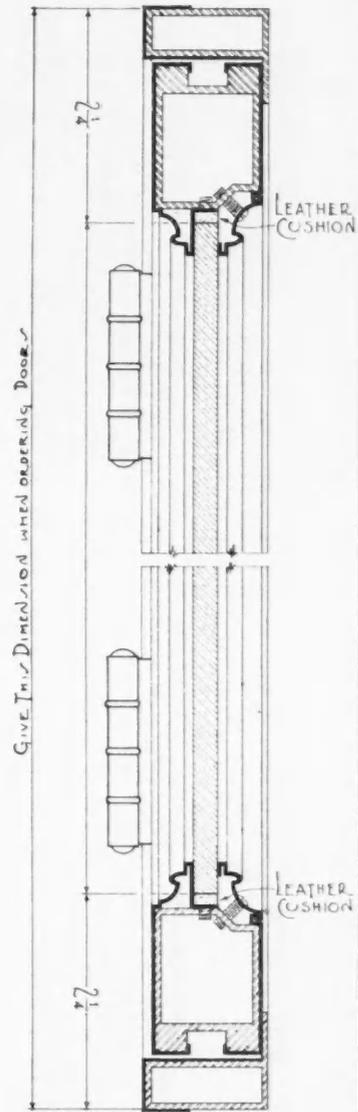
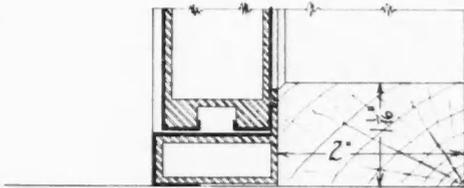
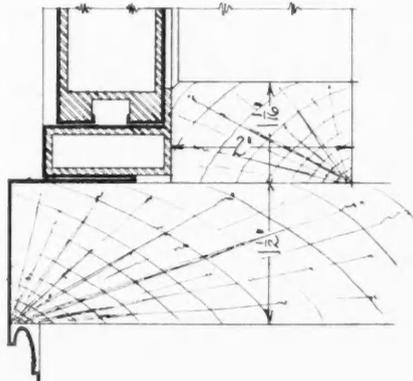
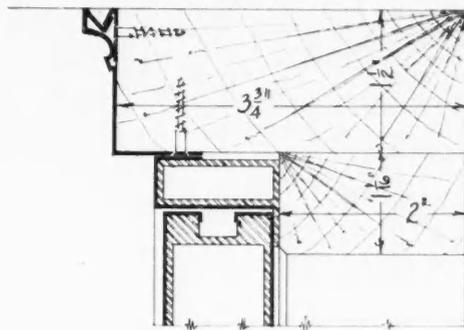
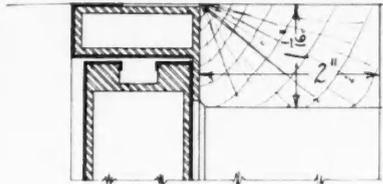
THIS front offers a very satisfactory solution of what is often a vexing problem—how to handle a shallow corner location. Remember, the main reason for the store front is to sell goods. This layout provides the ever-successful corner case, for individual trim, together with generous windows on either side without taking up too much of the selling space in the store. The tile treatment is new and different, and will do much to relieve that effect of sameness so noticeable in most stores. The electrolettes over the

transom bar will also provide a means of making this front stand out from the many others on both sides of the street. The Kawneer Manufacturing Company will show "up-to-date" KAWNEER STORE FRONT designs for various other types of business, such as Grocery, Millinery, Haberdasher, Candy, etc. The details on the opposite page, drawn half full size, show some of the members which constitute KAWNEER STORE FRONTS. Readers are asked to cut these out, as they will prove to be a valuable reference asset to them in the future.

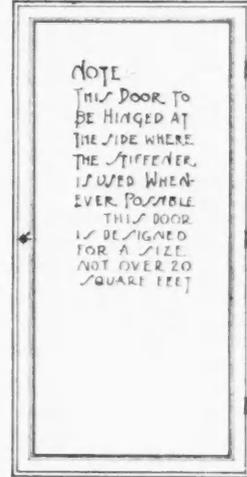
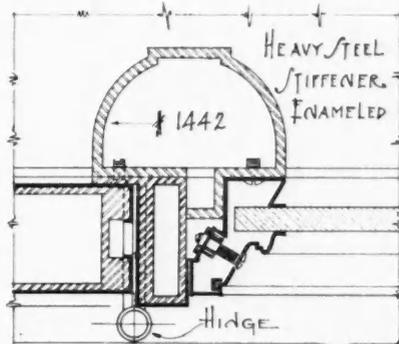
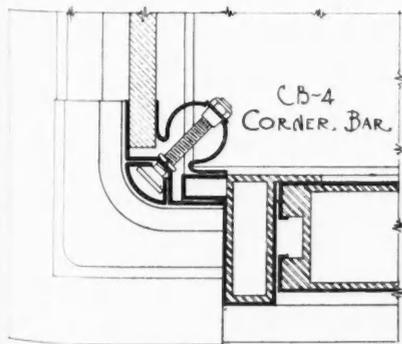
CONTE
AND C
7500
PLATE /



HORIZONTAL SECTION OF H.S. 50C DOOR



VERTICAL SECTION OF H.S. 50C DOOR



NOTE - THIS DOOR TO BE HINGED AT THE SIDE WHERE THE STIFFENER IS USED WHENEVER POSSIBLE. THIS DOOR IS DESIGNED FOR A SIZE NOT OVER 20 SQUARE FEET.

H.S. 50C SHOW CASE DOOR (HEAVY CONSTRUCTION) FOR TIGHT CONSTR. SEE H.S. 55A SHEET 15

PLATE NO. 14



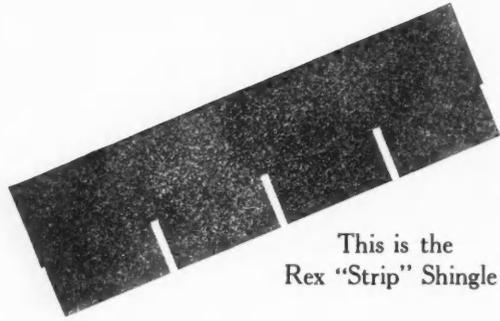
KAWNEER MFG. CO. — NILES, MICH.
MANUFACTURERS OF KAWNEER PATENTED STORE FRONT CONSTRUCTION.



Kawneer
STORE FRONTS

REX PRODUCTS

Protect Your Home from Fire



This is the
Rex "Strip" Shingle

Rex Shingles, slate surfaced, and Rex Roll Roofings, have recently been given the "C" Classification by the Underwriters' Laboratories, Inc., by direction of the National Board of Fire Underwriters. Class "C" is the highest class to which asphalt shingles and prepared roofings in rolls (rag-felt type) are admitted.

Rex Products in Class "C" are:

- Rex Strip Shingles..... slate surfaced
- Rex Wide Space Shingles " "
- Rex Shingles (Individual) " "
- Rex Slate Surfaced Roofing, 32 inch
- Rex-tile Shingles, Styles A, D, G
- Rex Flintkote Roofing, 2 and 3 ply, in rolls
- Zarex Roofing..... 2 and 3 ply, " "
- Mikado Roofing..... 2 and 3 ply, " "
- Rex Valley & Ridge Strip..... " "
- Rex Red Roofing..... " "
- Regular Paradux (Rex Canvas Roofing) " "

Ask your dealer for Rex products. If you do not know about them, send for General Catalog No. 20—a beautiful 112 page book with over 180 illustrations. It contains valuable information about all kinds of roofing materials.

Flintkote Manufacturing Co.
90 Pearl Street, Boston, Mass.

NEW YORK
1102 Equitable Bldg.

CHICAGO
659 Peoples Gas Bldg.

NEW ORLEANS
709 Hennen Bldg.

Why Sell or Use Advertised Building Materials

(Continued from page 65.)

It is perfectly true that some of the inquiries that go to manufacturers and then are referred by them to dealers and contractors are idle. Nobody can undertake an advertising campaign to the general public and do interesting advertising without drawing some idle inquiries. But careful analyses by manufacturers seem to show that most of the inquiries that they receive are from people who sooner or later are likely to buy the things they inquire about. Sometimes they are planning a long time ahead. I happen at this particular moment to be planning a house that will probably not be started for a year. Yet I am writing for information about plumbing, roofing, etc., and if a dealer thinks that my inquiries are idle he is missing his guess.

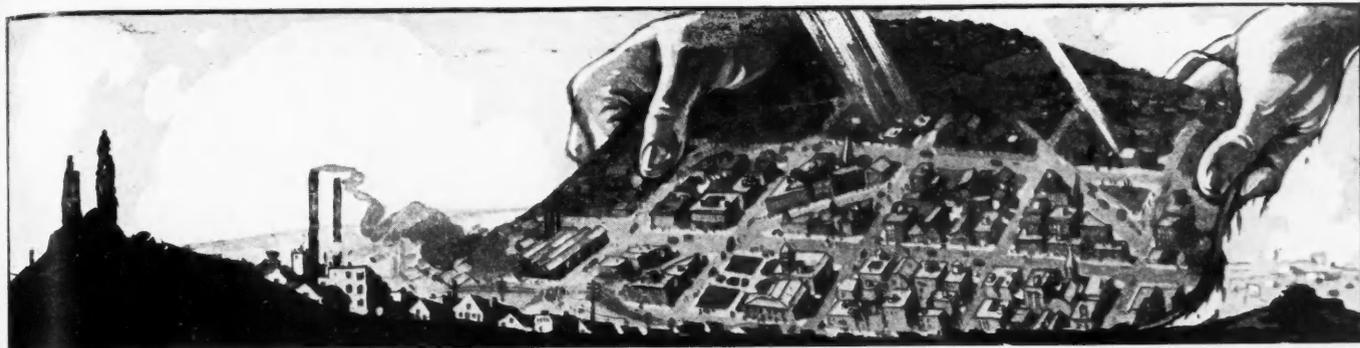
Selling Three Out of Four

I recently had opportunity to see the replies that a building materials manufacturer got when he wrote a special letter to over one hundred people who had previously asked for his advertising literature. This manufacturer wanted to know if these inquirers had received all the information they wanted; if they had gotten into touch with the dealer whose name the manufacturer had suggested or the dealer had gotten into touch with them; if they had made a purchase, and if not when they expected to build and were likely to be in the market. The manufacturer himself was surprised to find that one-fourth of those who answered had purchased the building materials they wrote about, and that considerably more than half of the others had some definite work in mind that they expected to undertake later. In other words, only about one-fourth of the inquiries could be called idle, and even some of those would probably be productive of business in time. If a dealer or a contractor hired a man to go around and solicit business for him, that solicitor would be fortunate indeed if one in every six persons that he approached turned out to be a "live prospect" for business. Yet, following up the inquiries that this manufacturer sent out was giving the dealer an opportunity to secure business in three cases out of every four. Even if only half of the inquiries were from people likely to finally buy the product, dealers and contractors would find these leads for new business more productive than any others that they could probably secure.

Why Contractors Favor Advertised Goods

If I were a contractor, I would use advertised goods whenever possible, for several reasons. One reason is because of the service that the advertising manufacturer gives. The manufacturer of today who starts out to advertise his goods to dealers and builders must get together practical information—designs, building suggestions, etc. The manufacturer who does not

(Continued to page 86.)



IF you tipped up a town and-looked at its roofs, you'd see here and there cosy houses protected from fire, and kept dry and weather-tight in spite of time and the elements by soft tinted shingles of a remarkable material. The factory yonder and the tall office building that graces downtown are topped with roofs that are basically of the same material. The barn at the edge of town is roofed from ridge pole to eaves with it in another form. Here a garage, there a marble bank, a church, a school, a steel mill—all standing under

JOHNS-MANVILLE ASBESTOS ROOFING

It is the response to a growing tendency for more roofing economy, better roofing service and greatest roofing safety. The answer to a just demand for a lasting roof that is as logical an improvement as concrete and steel are over wood—and as inevitable in its general acceptance.

And yet a roofing offered at about the price of ordinary types—a price made possible only by the efficient production resulting from Johns-Manville's 50 years leadership in Asbestos manufacture.



J-M Asbestos Built-up Roofing for factory and industrial buildings of all descriptions, office buildings, hotels and apartment houses, churches, power stations, etc.

J-M Asbestos Ready Roofing for farm buildings, bungalows, car barns and train sheds, office and factory buildings, armories, warehouses, lumber yards, etc.

J-M Corrugated Asbestos Roofing for skeleton frame structures of all descriptions.

Its Remarkable Properties

J-M Asbestos, the base of all J-M Asbestos Roofing, is a mineral, highly resistant to fire. It is not harmed by water, oils, or ordinary acids or alkalis. It is inert to all atmospheric conditions, strong mechanically, light in weight, fibrous in structure. In short, it inherently possesses every property that an ideal roofing should. Johns-Manville Asbestos, in combination with Trinidad Lake Asphalt, a mineral waterproofing, is felted into sheets and prepared in various forms for every roofing purpose.

Johns-Manville Roofing Responsibility

Whereby we assume the entire responsibility for seeing to it that you receive the full service from your J-M Roofing that was promised you. As a further assurance, you may register your roofing with us by means of a special registration blank furnished every purchaser of J-M Roofing. We are the only roofing manufacturers who take this broad method of keeping in close contact with every customer.

Good dealers everywhere are falling in line and are tying up with this roofing that is so easy to sell and so profitable to handle. The nearest J-M branch will tell you more about it and about our dealer proposition, which is worth while.

H. W. JOHNS-MANVILLE COMPANY
NEW YORK CITY
Branches in 54 Large Cities

advertise does not think it is necessary to do this. He does not maintain a service department. Therefore, when a contractor wants special information in connection with a certain project he is likely to have to go to an advertising manufacturer to get it.

For another thing, the advertising manufacturer has a prestige to maintain. He is doing business on reputation and cannot afford to jeopardize that reputation. When a manufacturer who does not believe in any form of advertising sends out a tool or a shipment of building materials these commodities go out unknown and unmarked. If they go wrong, the user cannot kick to headquarters. All he can do is to go back on the dealer who supplied him the materials. Advertised material, on the other hand, goes out branded. There is a label or stamp on it that shows who made it and who stands behind its claims for excellence. It is not ashamed of its parentage, and the manufacturer who thus sends out his product labeled feels a responsibility for it. Should it happen to be imperfect he feels an obligation to "make good."

One of the great national advertisers said at a recent business convention held in Philadelphia something like this:

"We did not get many complaints until we began to advertise, but when we once began advertising and told people about the excellence of our product and of our service, whenever anything went wrong people seemed to take particular pleasure in writing us that

our practice was not as good as our preaching. But we believe it was a good thing for our business to have our ideal a little higher than our practice. It was like the heart of Bruce ahead of the advancing Scots. It compelled us to keep improving. We were grateful to every person who took the trouble to voice his complaint, for when we had the kick we could go after the trouble and correct it. The man who is satisfied to manufacture a mediocre article and to call it mediocre does not run into such criticisms. If you undertake to provide a first-class commodity and a first-class service, then you have your work cut out for you, but we would rather do business that way."

My acquaintance with something like two hundred and fifty national advertisers makes me feel safe in saying that these great concerns recognize the importance of the building materials dealer and the contractor and builder—that they realize that these men have it in their power to turn an enormous amount of business to any product which commands their confidence. Many of these manufacturers are spending tens of thousands of dollars in working out co-operative plans and forms of service for the benefit of dealers and contractors who handle their products. These manufacturers are specialists in educating the public as to the value of their commodities. They are willing to work hand in hand with progressive dealers and builders for more and better business.

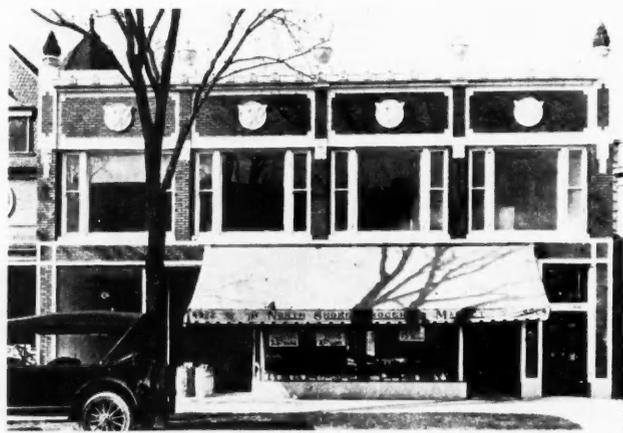
Easton, Pennsylvania.

MIDLAND

Made
TO ORDER

Carried
IN STOCK

Delivered
ON TIME



MIDLAND
TERRA COTTA
COMPANY

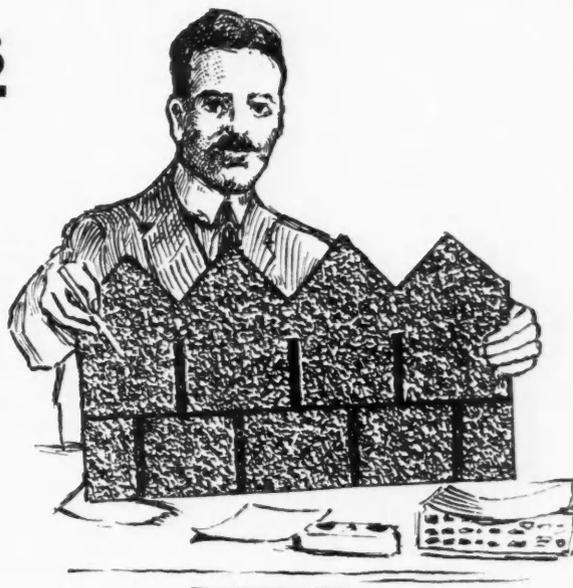


SUITE 1515
LUMBER EXCH.
CHICAGO

TERRA COTTA

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Their Shape Saves You Money



WHEN you bid on a roofing job, remember these big features of FLEX-A-TILE Slab Shingles: Besides giving highest-grade materials and enduring beauty, FLEX-A-TILES in their new Slab form actually save the contractor over **50% in labor, 35% in freight and 38% in nails.** It is as easy to lay a FLEX-A-TILE Slab of **four** shingles as **one** individual shingle. No chalk-lining is necessary. Their saving on material means less freight. And **five** nails do the work of **eight**, with

work of **eight**, with

FLEX-A-TILE Asphalt Slab Shingles

The durability, beauty and economy of an asphalt roof are best shown when FLEX-A-TILES, the standard among asphalt shingles, are used. For the client they mean a better roof, cheaper than wood; for the contractor, time, labor and materials saved, and a job done **right.**

The strength and long life of FLEX-A-TILE Shingles are due to the Heppes method of manufacture. Thick wool felt is saturated in twice its weight of the best grade high-melt-point asphalt, coated with rubbery gilsonite and surfaced with crushed slate or granite under tons of pressure.

FLEX-A-TILE Slabs are made in three styles, in colors deep red or rich green. Many beautiful decorative effects are thus obtainable. The colors come from the natural stone surfacing and **improve** on weathering.

Sample Sent on Request

with prices and complete information on FLEX-A-TILE Slab, Roll or Individual Shingles. Write today.

More Live Agents Wanted

We have an attractive agency proposition for some territories still open. If there is no local FLEX-A-TILE dealer, write for details of our offer.

THE HEPPE'S COMPANY

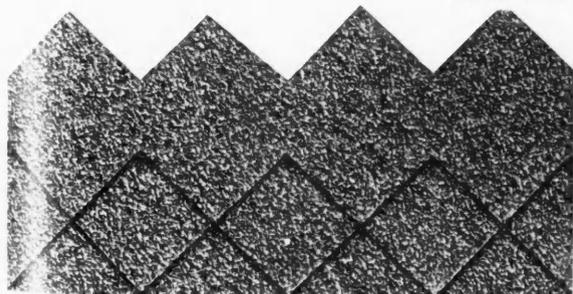
Dept. A, 1010 Kilbourne Ave., Chicago, Ill.

Flex-A-Tile Roll Shingle

Utility Board

No-Tar Asphalt Paint

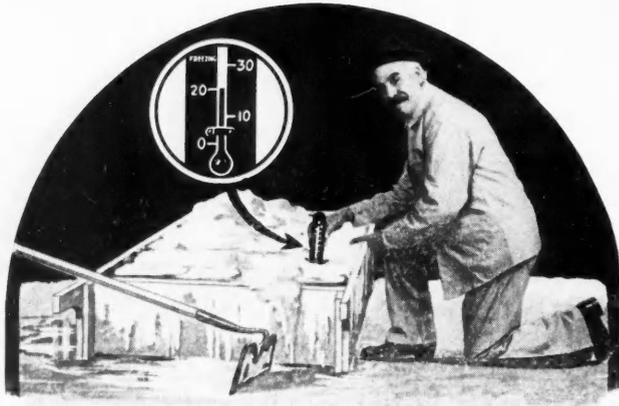
Other Guaranteed Heppes Products



**FLEX-A-TILE Diamond Point Slab,
Laid in American Diamond Style**



**FLEX-A-TILE Style 4 Slab
Laid in American Shingle Style**



"May be applied in zero weather"

Stop!

Think please what this means in your business—
No need to stop building operations in winter weather—

No need for long periods of idleness.

No need to let your building stand unfinished through the winter—

No need for broken promises to your customers.

These are a few of the things that Kellastone (Imperishable Stucco) can and should mean to you right now and for the winter months to come.

KELLASTONE

IMPERISHABLE STUCCO

is not mixed with water, remember. It works freely either at zero or on a mid-summer day. Neither heat nor cold make it expand nor contract. Moisture-proof, fire-proof, everlasting—a non-conductor of heat, cold and dampness, it is also the most elastic stucco material made. It will not crack under settling strains which would ruin other stuccos, and it positively contains no cheap vegetable filler to decay. Practically any finish or color effect desired may be obtained.

Used by the U. S. Government, State Institutions, Railroads, etc. You, too, will find it best either for new jobs or for profitable remodeling of old buildings.

We ask only the opportunity to give you the facts about Kellastone (Imperishable Stucco) and Kellastone Composition Flooring and Kellastone Imperial Plaster. Won't you let us do it now?

The residence shown below was Kellastoned in mid-winter, 1912, with the temperature below freezing. The same Kellastone today still retains all its beauty and perfection.

**THE NATIONAL
KELLASTONE CO.**
504 ASSOCIATION BUILDING
CHICAGO, ILLINOIS



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Contractor-Dealer Friendship Best Protection for Local Building Business Interests

By J. W. Pinnell

of J. W. Pinnell & Co., Wholesalers and Dealers
in Building Material

AS the most effective plan of meeting mail order competition, it has always been our policy to court the favor and good-will of the carpenter and builder, by assisting them in every possible way in obtaining business, both for them and ourselves; and when necessary make such concessions as will enable them to obtain business, even if it was not always entirely satisfactory to us in matters of profit.

Once you have obtained the confidence and good-will of the carpenter and builder, it is an exception that he will not be loyal to you and give you every opportunity to meet outside competition. Our experience has been that nine cases out of ten, the loss of business by the local dealer in his own territory is by reason of not having an opportunity or fair chance to meet this competition. In other words, the business was obtained without any competition, the purchaser assuming that it was a waste of time to figure with anyone else, as they thought the dealer could not and would not meet mail-order competition.

The writer personally managed and operated a lumber business within 200 miles of Chicago for seventeen years without (to our knowledge) a single bill of material being sold or shipped into our territory by mail order houses; and comparatively none by any outside competition. It was always our policy and rule to co-operate with our neighbor dealers and not, under any circumstances, solicit or court business outside of our own territory, which I have always found, with few exceptions, was appreciated and likewise reciprocated by our neighbor dealers.

I do not think that too much stress can be put on the importance and influence of co-operation with the carpenter and builder. The more that you can do to assist the carpenter and builder in furnishing him information and showing him that you are his friend and that your interests are mutual, the less you will have this catalog competition to deal with.

I never found it necessary to, and, in fact, have always discountenanced the plan that is sometimes practiced by a few dealers of influencing a carpenter and builder by paying him a commission, which indirectly, he or his customer would have to pay.

The confidence, friendship and good-will established by co-operation, fair and courteous treatment and frank, honest dealing, in my judgment, are much more effective than a commission consideration.

Indianapolis.

“When I Hung Out My Shingle”



NEPONSET WALL BOARD FOR WALLS AND CEILINGS

Neponset Wall Board is gaining popularity daily. For walls and ceilings, wainscoting, partitions, closets, booths and window displays it is an unbeatable product.

Made in cream white and oak and water-proofed.

Write for particulars on Neponset Wall Board.

“I made a big hit when I let the folks in my town know that I handled Neponset Twin Shingles. Just seemed as if they’d been waiting for the chance to buy them.

“Neponset Twin Shingles are made of the same materials as are used in Paroid Roofing, and I know for a fact that hundreds of roofs of Paroid are giving good service after 18 years of exposure. My trade buys

NEPONSET TWIN SHINGLES

(Pat. Applied For)

because of their richness of color and wonderful durability. Their red, gray or green colors harmonize with any surroundings or architectural plan. And wear—layer upon layer build up Neponset Twin Shingles into a solid inseparable mass, impervious to sparks, flying embers, rain and snow.

“Fill out and mail the coupon below and get started right in an interesting and profitable business. It will cost you but two cents to mail this coupon, but it may mean many a dollar to you. Mail it today.”

BIRD & SON, (Established 1795) Dept. C, East Walpole, Mass.

Canadian Office and Plant: Hamilton, Ont.

Branch Offices: New York, Washington, Chicago

BIRD & SON, Dept. C, East Walpole, Mass.

Please send me information about Neponset Twin Shingles and Neponset Wall Board. Also a copy of your book “Repairing and Building.” This request does not obligate me any way.

Name.....

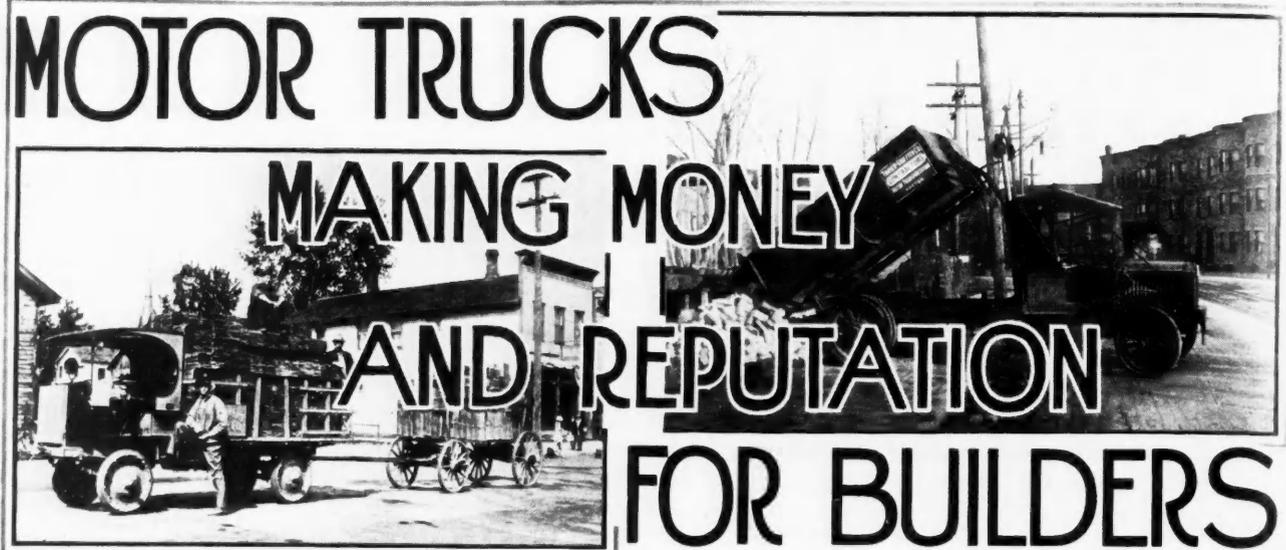
Address.....



COUPON

COUPON

MOTOR TRUCKS MAKING MONEY AND REPUTATION FOR BUILDERS



ONE HUNDRED THOUSAND MEN, AND MORE, will read this article. Many will see the possibilities shown and be indifferent, some will be unable even to see. Many more have adequate equipment, a few others have no ambition. But thousands will be set thinking; and hundreds will act thereon, and by that act will turn their lives into channels of enlarged activities. They will step out of the peanut class into the class of prestige.

The chief said: "Get facts about the use of the **Motor Truck** and tell them in a way to get under the hide of every reader."

If all the facts were told, if the strongest facts were printed about Motor Trucks, you, Mr. Reader, would lose confidence in our Editorials, and that is the last thing we want to have occur.

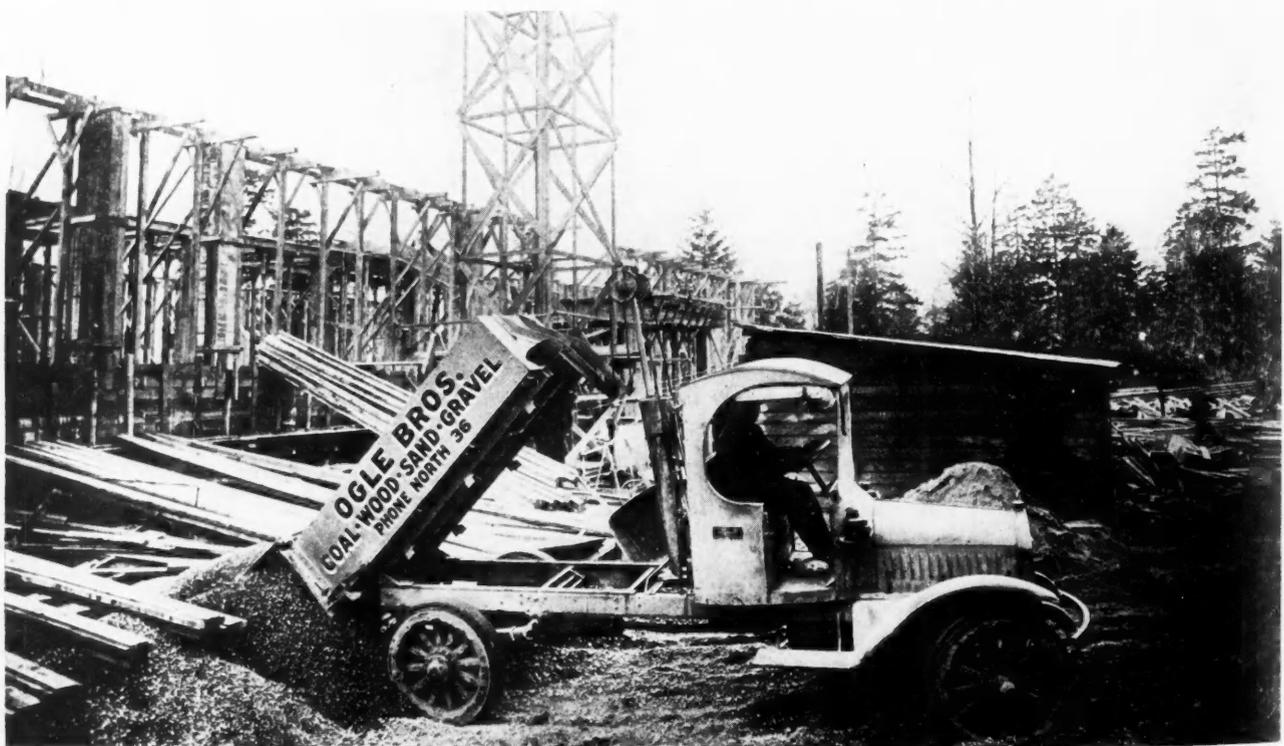
To put it mildly, the contractor who attempts to carry on his work today without a Motor Truck would **attempt to dig the Panama Canal with a teaspoon** if he had that job.

The loss from lack of equipment is not to the contractor alone but to his employer.

People who are letting jobs these days look into the reasonable expectations of their completion in a satisfactory way. Such people take into account personality, backing and equipment. The most important of these is equipment.

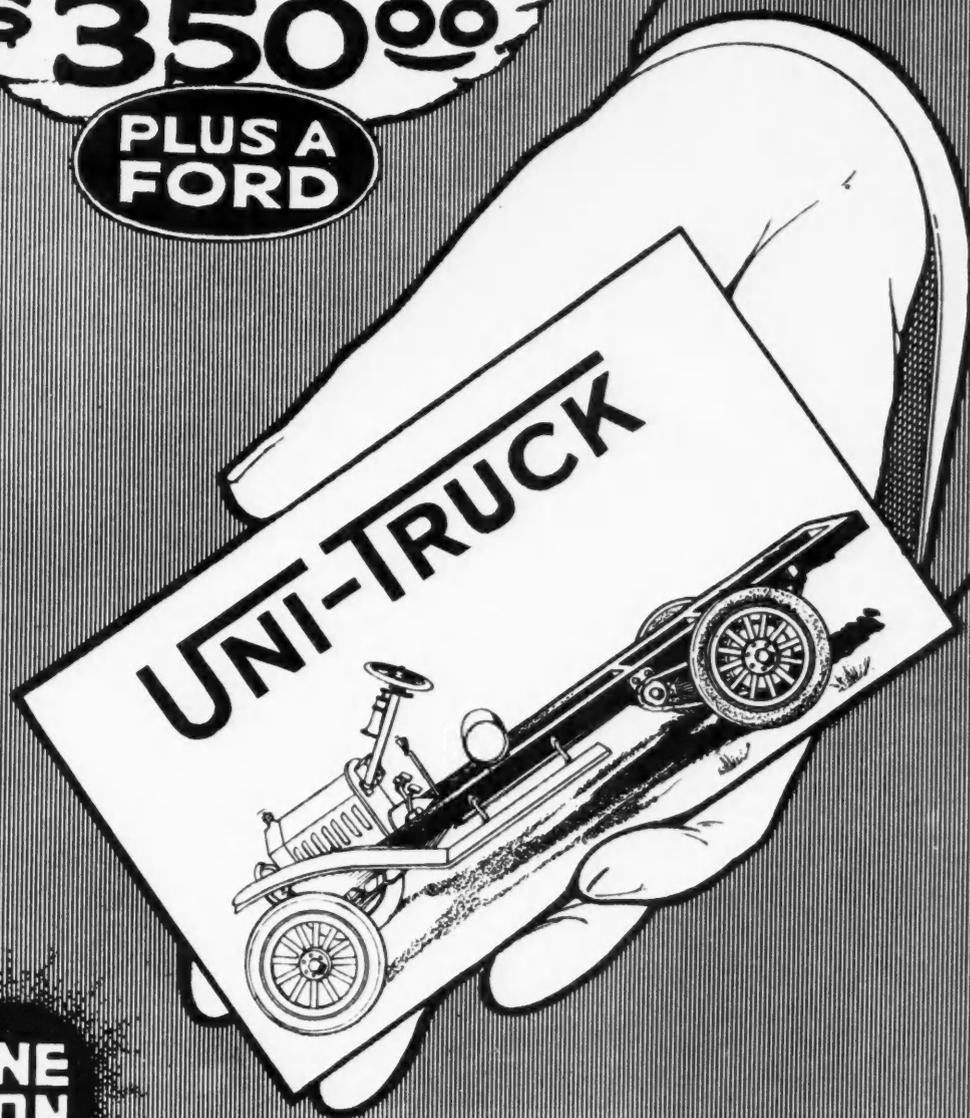
The best tailor in your town can't make that suit of clothes for you unless he is equipped.

The insignificant postage stamp can travel because it has equipment.



"Mack" Worm-Drive Truck with 2-Cubic-Yard Automatic Dump Body, Delivering Crushed Stone Close to the Building Site for Ogle Bros., Seattle, Wash.

\$350.00
PLUS A FORD



**ONE
TON**

The Stewart Uni-Truck Plus a Ford

- will take the place of two teams, two wagons and two drivers.
- will do your hauling better, quicker, and at half the cost.

Write today for special prices and literature telling all about it

STEWART MFG. CO., 132 Rath St., Waterloo, Iowa



Deep Mud Doesn't Stop the "Avery" Truck, Even Tho Loaded to the Guards; 2640 Feet of Lumber in This Load.

When the Appian Way was built it didn't make much difference whether it was finished that year or next. No doubt that job was let to somebody's wife's uncle, or the fellow that controlled the vote of the Southwest Ward.

Nothing like that doing today.

Service is the essence of every twentieth century contract.

Old Rameses was a contented soul; anyway, he didn't have use for the pyramid until after he was dead, otherwise he would have put a fleet of trucks to work.

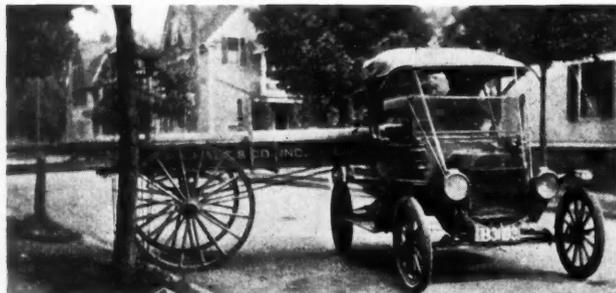
People who put up large structures today want them while they are yet alive.

The Newman Company, Chicago, recently carried away 12,000 cubic yards of dirt and stone on an excavating job in eighteen days by using three trucks.

One thing emphasized by all contractors with whom we have talked is, that when they make a bid based on the use of motor trucks they can depend on results. This is something they could not do where they counted on four-legged motive power.

Without the motor truck many large undertakings of peace or war would be impossible. The motor truck conquers the mountain and the morass.

If one side in the European struggle were not equipped with motor trucks, imagine what would happen to it.



"Martin" Semi-Trailer Can be Backed Square with Curb and Yet Leave Room in Street for Traffic.

If the people who do big things are compelled to utilize the motor truck to the limit, can any-one afford to pass them up?

Yes, there is an occasional trouble to be reckoned with, but it is only about 1 per cent of the trouble you would have with mule power. You find less profanity with motor drivers than mule or horse drivers.

Putting horse flesh against the motor truck is like a wooden legged man running a marathon with an athlete.

It isn't a question as to whether the builder needs a motor truck, it is only a question of how long a contractor can survive without one. The contractor who lacks this equipment is under a killing handicap.

Hart & Page, dealers in lumber, stone, etc., write: "Figuring each ton of rock hauled at a cost as tho hauled by contract with horses, and charging the truck with first cost and interest and all money expended on it, our truck shows a net earning of \$2,000.00."



1½-Ton "Kelly" Truck Transporting Concrete Mixer and Crew from One Job to Another for T. A. Graham, Contractor, Springfield, Ohio.

Thirty years ago some contractors made a living and a little over without a telephone in their equipment.

There never was an age when a minute meant so much as today. There never was a time when man's strength had to be supplemented so much by machinery.

It is as essential that some of our readers have a dozen trucks as for others to have three, or another one. The wise contractor will not take on business beyond his equipment.

We formerly spoke of a two-horse business or one-horse business. The horse is now obsolete as a gage. To give an idea of size of certain enterprises you hear it said:

"He operates three trucks" or "I see he has added another truck, his business is growing."

The contractor properly equipped with motor trucks can tackle jobs that he otherwise wouldn't dare undertake. He can run his truck where he couldn't drive a forty-mule team, and it will take a load out from places where the forty mules couldn't pull it.

The illustrations, shown with this article, talk louder than anything we can say.



You w
from a



If you
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pay y
vestigi

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Box 12

INT
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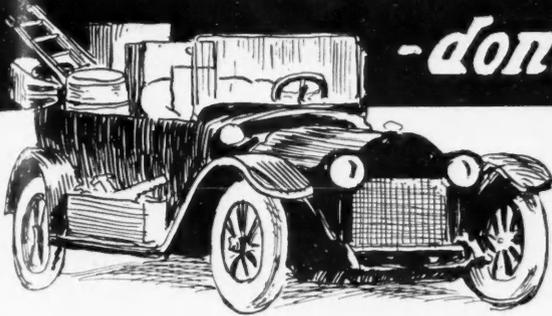
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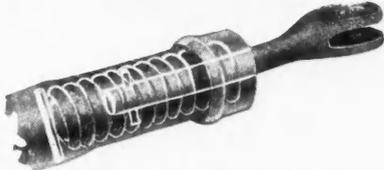
-dont Spoil your Car-

Stop using it as a truck. Keep it working every day, but keep it looking nice by using it with a

Miami Trailer

800-2500 POUNDS CAPACITY

You won't damage your automobile. Our special shock-absorbing drawbar protects your car absolutely from all shocks and vibrations. And as an additional protection, we use a specially designed connection for attaching the trailer to the chassis of the car instead of the axle.



Hanneman Bros. of Detroit have used a Miami for ten months without spending a dollar for repairs. There is nothing complicated about the trailer to get out of order; and yet it sets the pace for trailer-efficiency.

If you are bothered with hauling problems, write today and get full information. It will pay you in actual dollars and cents to investigate the Miami.



Miami Trailer Co.

Box 127 TROY, OHIO

INTERNATIONAL MOTOR TRUCKS

BUILD UP

PROFIT FOR BUILDERS

THESE are the trucks of which there are today more at work over the country than of any other line of motor trucks made—a remarkable record. A surprisingly large share of them are owned by builders and contractors.

International trucks are popular because they have long been saving and making money for men who have hauling to do. To handle **your** material and supplies rapidly and economically, in the right size and style of reliable truck, day-in day-out service, making a good impression on your customers—**there** is better 1917 business for you.



New Low-Priced Internationals

- Model H—1500 lbs. capacity, internal gear drive chassis) **\$1225**
- Model F—2000 lbs. capacity, internal gear drive chassis) **\$1500**

Prices Cash f. o. b. factory.

Eighty-nine company branches and thousands of local distributors cater to the needs of International owners. Up-to-the-minute service is always at your hand. Write to the address below for attractive folders with all the details and full information. You owe it to the prosperity of your future to know more about the International Motor Trucks.

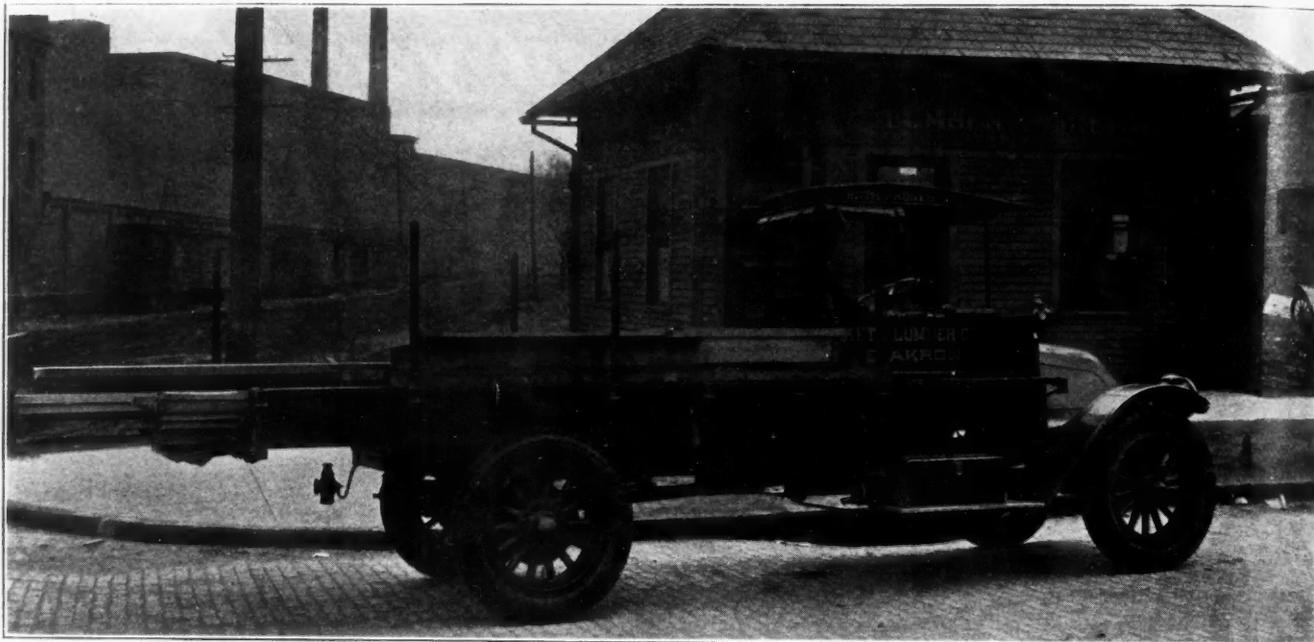
INTERNATIONAL HARVESTER COMPANY OF AMERICA

(INCORPORATED)

70 Harvester Building

::

Chicago U S A



International Harvester Co. Truck in Use by the Dietz Lumber Co., Akron, Ohio, for Hurry-Up Orders.

The rural contractor must not think for a moment that the city man is the only beneficiary. Per man, there is more money in rural sections than any other. There is opening an era of farm improvement never before equaled.

We want every reader in every village to boost for these improvements and to be **EQUIPPED to supply them at a maximum profit.**

Be so prepared as to be on the job when wanted regardless of road conditions.

Parsons Lumber Co., writes: "We are obliged to make deliveries of cement and lumber into vacant lots and on freshly excavated dirt near to the cellars for new houses, and many of our building operations are commenced in early Spring when the frost is just out of the ground. Our truck will go anywhere deliveries are required."

The motor truck makes Uncle Josh's place, ten miles

out, as close as the suburbs formerly were.

The financial end of buying a motor truck is of course easy for that individual or corporation for whom any other investment is easy. The financing of such a purchase by any one is easier than financing almost any other purchase of like amount.

Where there is a will there is a way.

Early in the summer of 1915 we received a letter from a young contractor in a thriving northwest city.

He had not been very thrifty, had recently married, and was buckling down to work with the determination to make good.

He confessed to having bid too low on several large contracts and was being faced by heavy advances in the costs of material on which he was not able to cover because of lack of capital. He came to us for advice. By an exchange of letters we learned that he was depending on a one-horse rig for his transport-



The "Jeffrey Quad" Truck which Drives on All Four Wheels, Making a Country Delivery for the Parsons Lumber Company, Rockford, Ill.

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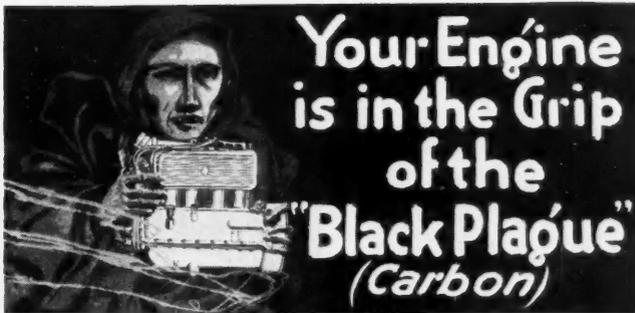
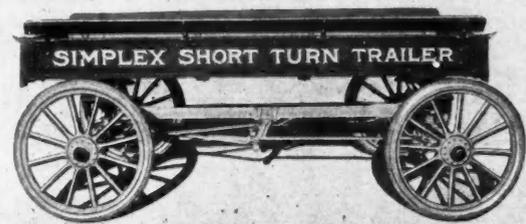


--a trailer that "trails"
Simplex Trailer

It follows the "trail" of the automobile so positively that both vehicles can turn in a twelve-foot circle. It isn't necessary, with a Simplex to take to the middle of the street to avoid bumping into curbs or swinging the trailer into everybody's way.

The Simplex is ideal for the contractor who wants to get the most out of his automobile. He can preserve the appearance of his car for pleasure; and at the same time put it to work. Any automobile that will average 20 miles will carry the Simplex along at the rate of 19 miles. Write for our catalog.

Simplex Short-Turn Trailer Co.
AUBURN, IND.



Your Engine is in the Grip of the "Black Plague" (Carbon)

THAT'S the principal reason your car starts so hard this cold weather. Fully 80% of your starting trouble can be eliminated if you will clean out your cylinders with

JOHNSON'S CARBON REMOVER

This is the latest and most perfect solution of the carbon problem. It is easy to use—inexpensive and absolutely harmless. It will save you ten times its cost every time you use it.

DO IT YOURSELF

Five minutes' time and no labor required. Simply lift your hood and pour an ounce of Johnson's Carbon Remover into each cylinder through the petcocks or spark plug openings. Go to bed—get up in the morning and drive a perfectly clean engine. You can save from \$3.00 to \$5.00 over any other method without loss of time and with very much better results.

USE IT EVERY 1000 MILES

If you will use Johnson's Carbon Remover every 1000 miles you can keep your engine clean and sweet and always at its highest efficiency and your gasoline consumption will drop from 12% to 25%.

OUR GUARANTEE

Johnson's Carbon Remover cannot injure any part of your motor. It contains no acids—does not in any way affect lubrication or injure the oil in the crank case. It has no action on any metal.

If your dealer cannot supply you, we will fill your order direct from Racine. Use attached coupon. With each of these \$1.00 cash orders, we will include gratis a half-pint can of Johnson's Stop-Squeak Oil—our new product. It penetrates between the leaves of springs, thoroughly lubricating them and giving perfect spring action.

S. C. JOHNSON & SON, Dept. ACB1, Racine, Wis.
LONDON SYDNEY

S. C. JOHNSON & SON, Dept. ACB1, Racine, Wis.
I enclose \$1.00 for which please send me by prepaid express enough Johnson's Guaranteed Carbon Remover to thoroughly clean an ordinary four-cylinder motor three times and include a half-pint can Johnson's Stop-Squeak Oil gratis.

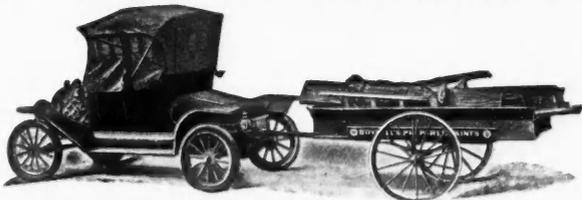
Name

Address

City and State

My Dealer Is

THE "TRAILER WAY" MAKES AUTO'S PAY



The Jackson AUTO TRAILER CUTS CARTAGE COSTS

Has Rubber Tires, Ball Bearings, Adjustable Draw Bar All-Way Coupling. Every contractor needs one.

Write for Catalogue

THE MILES COMPANY
309 Franklin St. Jackson, Mich.

Oats or Oil?

By H. P. Branstetter

THE average well kept horse consumes a quart of oats for each of the eight to twelve miles per day that it is able to travel.

A motor truck big enough—or small enough—to haul the same load consumes a gallon of gasoline to each fifteen or sixteen miles that it travels.

Therein lie the basic facts whereby statisticians may figure the relative expense of h.p. engendered by grain and oil, respectively. The result will emphasize one of the many reasons why nearly all business houses will eventually motorize their delivery departments.



Trojan Coal Co., Troy, Ohio, Doubles the Capacity of One-Ton Truck with "Miami" Trailer.

tation. He had expected to get his excavating done at the usual cubic yard rate, but the teamsters were demanding double rates for one job because of the difficulty of getting teams in and out of the pit.

One of our recommendations was the purchase of a one-ton truck that we knew could climb anything less steep than a telephone pole. We didn't know until

standing in a business way that could not be made thru any other source.

Six (6) per cent interest on a \$3,000.00 purchase is half a dollar per day. Can you imagine how you could secure more publicity as an aggressive successful man at that cost than by having your sign carried about on a motor truck?

We don't recommend a gambling disposition, but we do urge that a man creep rather than sit still, and walk rather than creep.

It never hurts a man to attempt a little more than can be real easily done.

We heard of a lumber dealer in Indiana who gave as a reason for not buying a truck that he "didn't know anything about tires." We assume that he is related



"Denby" Truck and "Fruehoff" Trailer with Big Load of Lumber for City Lumber Co., Detroit, Mich.

later that he had to sell his horse and wagon, also a diamond ring of which he had been the proud owner, in order to make the initial payment. Possibly it was because he was so heavily in debt, and he worked extra hard, that he came out so well on his contracts. In any event he prospered to the extent of buying another truck, a year later. On a recent contract he had to haul the dirt three miles from the excavation to a fill.

He kept his two trucks on the go constantly and his shovelers working by having a portable dump where the dirt was wheeled. The truck would back under it, receive its load in a minute and be on its way. His trucks more than paid their way and gave him a

to the sympathetic lumberman that wanted to pick all the splinters out of his planks.

Don't forget that the make of tire on your truck is of great importance.

Some people figure the cubic yard capacity of only their truck. Where additional capacity is wanted, it can always be had by adding trailers. The number of trailers that can be added are the same as the number of babies that can be taken care of in a three-room cottage.

There is this difference between the truck and the horse; **one driver can wear out two teams of horses, whereas motor trucks can work twenty-four hours a day, and keep three shifts of drivers busy.**

Perhaps the gypsy was the last convert to the motor truck.

One of our clients in Motor Row, Chicago, has sold a number of half-ton covered trucks to gypsies. Only Noah's Ark carried a more varied load than do these trucks. The gypsy knows that the truck is ahead for dependability—that it costs less per mile to travel than a corn fed horse. It doesn't get the colic, is never



"Truckmobile" Unit Attached to Ford Chassis Makes Strong, Simple and Durable One-Ton Truck. Picture Here of Rig Loaded with Building Supplies Shows Extra Long Wheel Base of Truckmobile.

YOU CAN MAKE THE LOWEST BIDS WHEN ACME TRUCKS DO THE HAULING



YOU can positively reduce your expenses with the strong, sturdy Acme. You can move building materials in small or large quantities, **quicker, farther** and at less cost in dollars and cents. Therefore you can **bid lower** every time—and the low bid gets the contract.

Proved units of powerful Acme Trucks mean **sure service** every day and least upkeep expense. Continental motor—Timken axles, bearings and worm drive, etc., plus built-in stand-up-ness under all conditions, prove Acme superiority.

Proved Units Mean Added Profit to You

Take the Acme 2-Ton Truck for example: Sells at \$2100.00—has 40 H. P. brake tested motor—148 inch wheel base—full floating rear axle—easy clutch—16-inch brakes—chassis 217½ inches over

all. All models are over-size in capacity and dimensions.

The one-ton Acme at \$1500.00—the 2-ton at \$2100.00—the 3½-ton at \$2900.00—are all big values. Each meets its full traffic requirements, is built to fit haulage. No adjustment of haulage to fit truck is necessary.

First cost low—after cost lowest. Acmes add new profit to each job.

Know the Big Savings Others Are Making

Men in your own field of business have made big, quick savings with Acme Trucks. Let us send you our experience facts and figures. Let us show you what others have done and are doing—how delivery costs are being cut **35 to 50 per cent.** Tear out coupon below—it will bring you actual experience data of Acme Truck users.



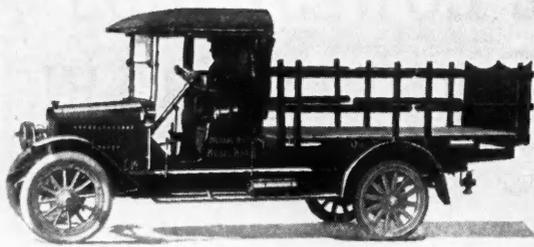
Cadillac Auto Truck Company

150 Mitchell Street
Cadillac, Michigan

Send Coupon Today

C Cadillac Auto Truck Co., 150 Mitchell St., Cadillac, Mich.
O Please send your book illustrating and describing ACME Trucks and their proved units; also, furnish performance facts secured from owners showing gas economy, low upkeep, etc. Interested in..... ton capacity. Now using..... trucks or wagons.
U Name:.....
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KISSELKAR Trucks are rapidly becoming the only choice among carpenters, contractors and builders who demand the **UTMOST in truck performance.**

They recognize the necessity of putting their transportation department on an **efficiency basis and keeping it there.**

These are the concerns whose haulage and delivery department is always **ahead**, not behind. They never disappoint their customers or fall behind their haulage schedule because their Kesselkar Trucks **never disappoint them.**

You cannot afford to experiment with your transportation department. There is a Kesselkar Truck built in the right size that will fit your haulage requirements.

Let us send you truck information and data on how Kesselkar Trucks will do this.

Kissel Motor Car Company

Hartford, Wis., U. S. A.

The matchless Kissel-built motor, and perfect worm drive rear axle are guaranteed with every Kisselkar Truck.

Kisselkar Truck branches, display rooms and service stations in all principal cities and towns.

Six sizes--from 1500 lb. delivery up. Chassis prices \$950 to \$3350.

KISSELKAR TRUCKS

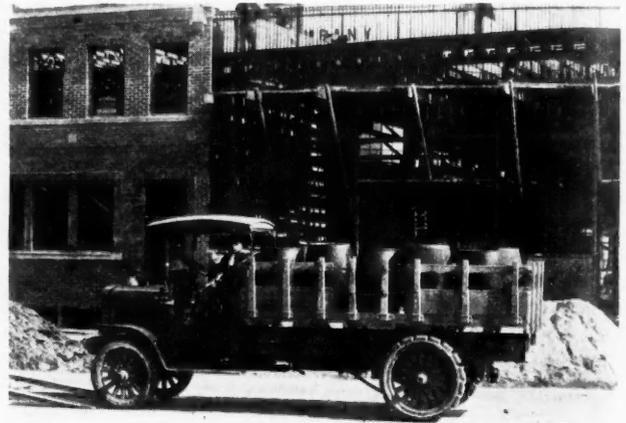
WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

crippled with spavin, and never dies of spinal meningitis.

When it doesn't work it doesn't eat.

Marston-Goss Lumber Co., writes: "Since the weather has been bad and the dirt roads are soft, we are sending our truck where teams cannot pull a load."

We don't want to publish what we would think of a contractor who would use any other means of trans-



"G. M. C." Heavy Truck on the Job for Contractor Arthur L. Waldorf.

portation than a motor truck or wheelbarrow. When he gets beyond the scope of the wheelbarrow, the motor truck comes in for maximum efficiency at minimum cost. This is regardless of whether there is a ***hurry up call for one only scantling, or a dozen barrels of lime.***

The depreciation of a truck is as that of any other machine, dependent on its use and abuse. We have data from one concern whose four (4) machines displaced twenty (20) teams. The record made by their first truck for the first four years showed a constant yearly increase. The fourth year showed almost fifty (50%) per cent increase in mileage and over one hundred (100%) per cent increase in tonnage over the service secured the first year.

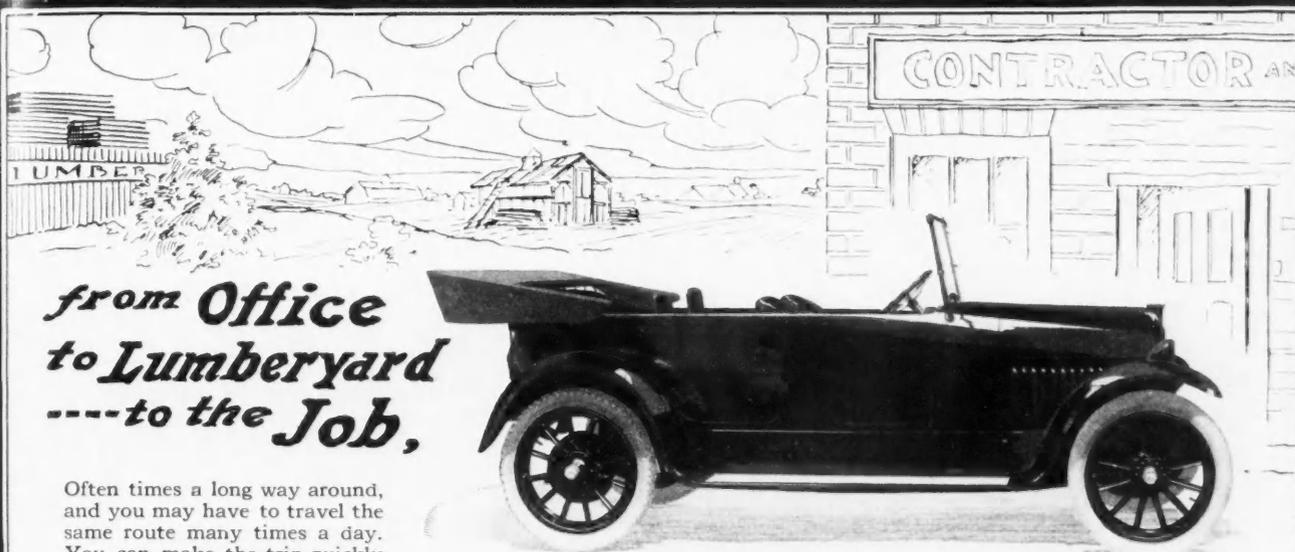
No road is too steep or too slippery. The truck travels the straight and narrow way or the broad road with equal ease. It is equally at home in Death Valley or on Broadway.

It is a social animal. It never goes out alone. It never shies. It occasionally responds to the caress of the feminine hand but prefers to be guided by a man.

Hats off, gentlemen, to the MOTOR TRUCK and the MAN.



3/4-Ton "Republie" Motor Truck Loaded with Ladders, Caber-mine Buckets, and Seven Decorators Employed by Wm. C. Boehm of Chicago.



*from Office
to Lumberyard
----to the Job,*

Often times a long way around,
and you may have to travel the
same route many times a day.
You can make the trip quickly
and cheaply in the

New Case "40"--\$1190

Justly called the "100,000-Mile Car"

One generation after another has found in the name CASE a standard of good workmanship and efficient service. You who particularly need a *faithful* car will find in the CASE a wonder for your use---comfort, power, endurance, speed---in abundance.

When it comes to a long, *hard* pull, or to a *steep* climb, you will realize just how faithful this car is. And then after you have owned it a *long* time, and have driven it 100,000 miles, you will appreciate the CASE standards of construction.

Consider what you want a car for and what you want it to do. Then write in for our illustrated description, and see if the CASE does not fill the bill in every particular. We can tell you of other Contractors' experiences at the same time.



The Sign of
Mechanical
Excellence
the World Over

J. I. Case T. M. Company, Inc.

719 Liberty Street

Racine, Wisconsin



The Sign of
Mechanical
Excellence
the World Over

CORRESPONDENCE



Questions Answered and Ideas Exchanged.

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

Lathers Invited to Come Thru with Inside Dope

To the Editor:

Nevada, Iowa.

I noticed one timely article in your November issue on "Power Floor Sanding"—a write-up for the "American" machine. Would like to see a general discussion of the merits and faults of the different types and makes of power floor surfacers by those who have used them.

The detailed explanation of fast shingling was worth money to anyone willing to overcome years of wrong habits in the shingling line. Now let the lathers come forward. Occasionally a carpenter is called upon to lath a house.

I was also interested in a paragraph telling of pneumatic hammers being used on large jobs. Are these too expensive on small jobs?

Here is for doing a lot of work, but let the power tools help all they can.

FRED DIETEL.

He Says it Helps

To the Editor:

Berkeley, Cal.

Your very liberal offer to me to renew my subscription to the AMERICAN CARPENTER AND BUILDER is at hand. I gratefully accept it and enclose the \$2.00 bill. You do not need to offer me the extra inducement because I am always anxiously looking for the BUILDER'S appearance, but will confess the offer secures my quick action in my renewal.

I prize the addition to my library you have given me before. This is the twenty-seventh year that I have been actively engaged here around San Francisco Bay doing work in all of the cities. I follow general building closely and actively and I find the service you are rendering valuable.

In your last issue you tell us in a good way to read the ads. I consider reading ads one of my best helps and your talk

(Continued to page 102.)



Winter Work for Carpenters

Get your share of the vast amount of Beaver Board remodeling and you can be busy day in and day out these winter months.

Beaver Board, the modern wall and ceiling material, makes new rooms out of old ones by supplying new, trouble-proof walls and ceilings. Goes right on over the old walls without tearing down plaster.

For new work or remodeling Beaver Board has many advantages aside from the greatly improved appearance. More sanitary, more durable, warmer in winter, cooler in summer.

THE BEAVER BOARD COMPANIES
571 Beaver Road Buffalo, N. Y.
Branches in principal cities

BEAVER BOARD

For Better Walls and Ceilings



You can't expect Beaver Board results unless this trade-mark is on the back of the board you buy.

Make Money During Dull Seasons With



THERE are many repair and alteration jobs that you can do more satisfactorily with Compo-Board than with any other material. Besides, it is not affected by cold, dampness or other weather conditions. It is the easiest to work with—does not shrink, bulge, warp or buckle.

Compo-Board, remember, is the only wood core wall board—one-quarter inch thick, straight, stiff, strong and durable. Saws smooth and clean. Light in weight.

Other wall boards are often wrongly called Compo-Board—and sold as such. Be sure you buy and use real Compo-Board—our trade-mark, as shown above, is on every piece. It's sold almost everywhere. Write for free sample and interesting booklet.

The Compo-Board Co.,
5777 Lyndale Ave. N.,
Minneapolis - Minnesota

Sooner or Later, Most Carpenters Turn to "The DEPENDABLE Wall Board"

LISTEN TO WHAT carpenters say about UPSON PROCESSED BOARD once they investigate it and compare it with other boards:

"Will you please send me your free book on Interior Decorating and anything you have on the different ways it might be put on?"

"I have used quite a lot of Upson Board altogether and like it very much. It is far beyond anything else on the market."

"I used 2100 feet last week. Have some people talking now on some ceilings in nice houses."

"I have followed the business of carpentering for 48 years, and have used Board, Board and Board. I regard the sample you sent the best board I ever saw. I fail to understand why it is not made thicker and used as flooring and outside boarding for buildings. I am of the opinion that if it will stand half a dozen persons' weight between bearings 16' apart, it will make a job better and more desirable than any soft wood flooring on the market."

"I have used some Upson Board and expect to do more of this kind of work. I shall certainly recommend Upson Board to my customers, and would like some of your advertising matter to show them."

"What I have seen of the samples convinced me that it is the best wall board on the market. So really it wasn't I but the wall board that placed the order, although I advised Mr. to try some of it, and no doubt if it proves out good it will mean a lot of orders in the future."

"I shall do the best job in putting it on, not only for your benefit but also for my own."

(Names on request.)

THE UPSON CO.
Fibre Board Authorities
2 UPSON POINT
LOCKPORT, N. Y.



MANY a reputable carpenter begins by assuming that "any wall board will do—as well as another." And several unscrupulous or inefficient wall board manufacturers thus have gotten their boards on the market by trading on the carpenters reputation and belief. But the carpenter soon gets wise when he tries to work and handle a soft, punky, crumbly or gummy board and attempts to nail it on the walls. He gets even wiser when his customers come back at him and complain of the expensive, unsatisfactory painting of the board—the way it shrinks and buckles on the walls—how it absorbs moisture and is not properly waterproofed—its lack of durability—or how the vaunted wax and paraffine caused his paint to peel, spot and blister. In time, of course, he finds out about the really "DEPENDABLE Wall Board." But he would have saved himself a lot of worry and time and money—and the loss of several customers' confidence, if he had used UPSON PROCESSED BOARD in the first place. It is the one wall board that looks, feels, and works like lumber. It is the wall board that is SCIENTIFICALLY PROCESSED; kiln cured like interior

trim to reduce expansion or contraction to the minimum; effectively waterproofed but not with greasy paraffine or wax which cannot be satisfactorily painted; surface filled to cut the cost of painting and giving a perfect painting surface. It is the board that enables you to land the big, important jobs of lining walls and ceilings of costly buildings, and profitable remodeling work—instead of confining you to cheap, repair jobs. Only a DEPENDABLE wall board can make good for you and give you the profitable, growing business that is worth while. Watch out for imitations. UPSON PROCESSED BOARD—as the "standardized" board—has been "copied" in every conceivable way except quality. They even try to imitate the original and distinctive construction of Upson Board with its two light colored faces and colored center. Any imitation made to "look like" Upson Board is deceptive and unworthy of your confidence. We suggest that, at the very beginning, you send for samples of all the wall boards you know of and compare them with regular Upson Board samples. Another suggestion—let us give you the names of responsible carpenters in your neighborhood, who can tell you exactly what they think of UPSONIZING and what they have done with UPSON PROCESSED BOARD.



UPSON PROCESSED BOARD

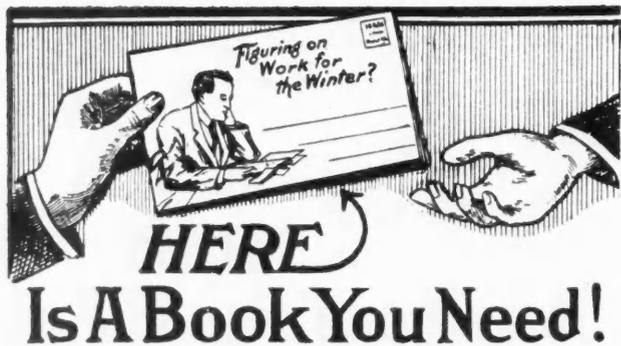
The Most Dependable Wall Board in America

LOOK FOR THE FAMOUS BLUE CENTER

The Upson Co.,
2 Upson Point,
Lockport, N. Y.
Send me Upson Board samples, literature and complete information on how to build up the most profitable trade in wall board installations.

Name

Address



IT IS brimful of suggestions that will actually help you make good money during the lean months when outdoors work is impossible. There is winter work for the contractor who uses

CAREY
Ceil-Board
SUPERSEDES PLASTER FOR WALLS AND CEILINGS

This book tells just where hundreds of other carpenters have found this work, and how they have turned it to profit. Shows how **you** can do the same. There are scores of jobs right in your locality just ripe for the Ceil-Board man. Attics and cellars to finish, summer kitchens, garages, churches and stores to improve.

Write today for your **FREE** copy.
THE PHILIP CAREY COMPANY
General Offices
1021 Wayne Avenue, Lockland, Cin., Ohio
Offices and Warehouses in Principal Cities



WATERPROOF PLASTERGON WALL-BOARD
TREATED WOOD FIBRE

(See how this 10-foot panel stands straight without bending. Send for actual photo.)

Doesn't Shrink

Chemically treated which lumberizes, pre-sizes and absolutely waterproofs—all in one process. Save this \$4 to \$6 per M sq. ft. thus affected. The stiffest board on the market. Waving, warping, buckling or twisting unknown. Be safe. Use Plastergon. Our users say "Plastergon has no equal at any price."

Your Safeguard in buying (No. 7)

"The price is right, the material is just as advertised and we receive courteous treatment and prompt shipment from your factory."
HARRIMAN INDUSTRIAL CORP.,
Harriman, N. Y.

Samples and our "Contractors' Practical Working Guide" sent free. Send the name of your Lumber or Builders' Supply Dealer. Write today.

Plastergon Wall Board Co.
No. 1 Philadelphia Ave., Buffalo, N. Y.



wakes one up to do more of it. The successful manufacturer has to sell his goods in order to produce. He has to tell us what he has as clearly as possible in few words, for it costs to advertise. There is much to be gained from reading ads.

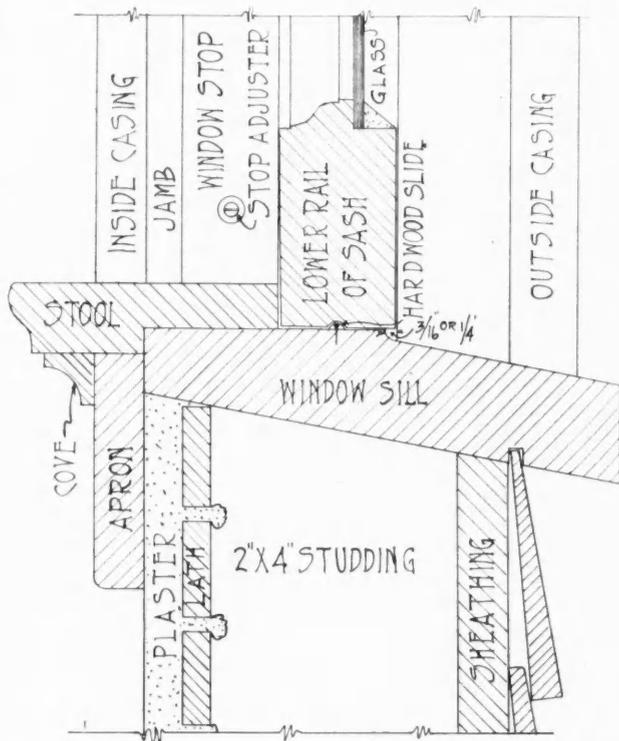
The occupation of general building work I consider the most interesting of any occupation. It tends to health, a varied scene in which to work, an unlimited field to exert one's ingenuity and results that are in physical evidence.

The AMERICAN CARPENTER AND BUILDER hands to me many things that I like and I want you to know that I am an appreciative subscriber.

E. P. STONE,
General Contractor and Builder.

Sliding Sash that Sheds the Rain

To the Editor: Mendota, Wis.
I enclose herewith a sketch of a sliding window frame construction which was wanted by one of the readers in the December issue. I have only shown a cross-section of the



Sash Slides on Half-Round Track Which Does Not Hold Water.

bottom part of same because I took from his question that he desired to overcome the water standing on the sill.

I hope this will be of benefit to him, as I appreciate anything which will better my way of doing a piece of work.

F. G. ROCKWOOD,
Foreman Carpenter, Wisconsin State Hospital.

Dry Sliding Sash Method

To the Editor: Pittsfield, Ill.
I see in the December number of your magazine where A. E. S., of Dublin, Ind., wants detail of a sliding window. The way I make them is to plow a groove in the sill, and place a parting stop into groove, let stop in about half way and bed it in with white lead. The stop should be where center of sash will come, and the sash must have a groove large enough to slide freely, but not too loose. I think A. E. S. will understand this without a drawing, if not, I will send one.

BEN JOHNSON,
Carpenter and Builder.

There's Business in this Bundle It Wins New Jobs for You



Cornell-Wood-Board

for Walls, Ceilings, Partitions

EVERY DAY

building contractors are learning the many advantages of Cornell-Wood-Board over other interior finishing materials and are landing new jobs and greater profits by using it.

People who are interested in better building, specify Cornell-Wood-Board for HOMES, STORES, OFFICES, SCHOOLS, CHURCHES, THEATRES, GARAGES, FARM BUILDINGS, SMALL JOBS, REPAIRS AND ALTERATIONS. Cornell-Wood-Board is superior to ordinary wall-boards—it is guaranteed to give complete satisfaction when properly applied. It is a pure wood-fibre product, thoroughly sized and surfaced—practically impervious to moisture. A non-conductor of heat and cold—makes buildings warmer in winter, cooler in summer. Easily and quickly applied. Decorates perfectly with paint or kalsomine.

Send for Panel Suggestions

The Cornell Department of Design draws up on request complete Panel Suggestions with Cost Estimates, without charge or obligation. 90 per cent of these free plans land the jobs. Simply send accurate dimension sketches or blueprints. Ask also for a large sample with complete information. Mention the American Carpenter and Builder when writing.

Cornell Wood Products Company
C. O. Frisbie, President
173-175 W. Jackson Blvd.
Chicago

Use the
Coupon
for Plans
and
Specifications

Cornell Wood Products Co., Dept. C. B., Chicago

Please send me sample and complete information about Cornell-Wood-Board, or, send me Panel Suggestions (Plan and Specifications) as per dimension sketch. This service does not obligate me in any way.

Name.....

Address.....

That Aeroplane Bedroom an Amusing Mistake

Glenside, Mont. Co., Pa.

To the Editor:

Enclosed please find check to your order for two dollars, for renewal of subscription to AMERICAN CARPENTER AND BUILDER for another year, beginning with the January issue, 1917.

While writing to you, however, would like to ask you a question, and that is relative to page 51 of your December number. You have a plan there of a two-story frame house. I am a builder who has been in business for some 48 years, and while I admit these are days of aeroplanes and pneumatic tubes, I have not as yet heard of anyone who has been able to live in a house of this kind, or could afford to buy one—where they could be shot from the first story thru a hole in the floor to the second floor, or come in thru the bedroom window; as I see no provision on your plan of any way to get into the bedroom on the second story, left-hand side. I have built thousands of houses, but never before saw one of this kind.

If you can explain this, you are certainly one ahead of me. Would be glad to hear from you on the subject.

W. M. T. B. ROBERTS.

Answer—We cheerfully acknowledge a mistake on this house Design No. 6869, and disclaim any intention of springing a new wrinkle of that sort on the long suffering building public.



Corrected Floor Plans of House Design No. 6569, Illustrated on Page 51, Dec. A. C. & B.

The trouble was caused by putting in a floor plan before it was ready. These designs are customarily checked over four different times by four different men, two in our architectural department and two in the editorial. This one got by us all, and scored a touchdown—which we very much regret.

(Continued to page 106.)

Our "Navajo" and "Brocade" Brick Make Practical—

HOMES AND BUNGALOWS



The general home-building public is interested in brick houses and bungalows more than ever before—they're more beautiful, more substantial, practically as cheap in the first cost and cheaper in the end—slight depreciation, no painting or repair bills, lower insurance, cooler in summer and warmer and more economically heated in winter. There's a better profit for you, too, in brick construction.

Have you sent for portfolio of our Brick? All illustrated in natural colors—it's yours for the asking.

THE KANSAS BUFF BRICK & MFG. CO.

Sales Offices in All Principal Cities in Middle West BUFFVILLE, KANSAS We Have Many Dealers Now---We Want More

Alliance Multi-color Ruff Brick are noted for their beautiful colors and texture. On pages 107 and 108 of the December number of the American Carpenter and Builder these brick are shown in colors. Mr. Dealer, these brick are the best in America today. You should sell them in your market.

THE ALLIANCE BRICK CO.,
Alliance, Ohio

Build with Brick



Have You Sent for the
FREE FLOOR PLANS
 AND
BILLS OF MATERIAL
 of This Fireproof Brick Bungalow?

Hundreds of contractors have taken advantage of our invitation.

Contractor Hesse has made complete bills of material of this bungalow in three types of construction—face brick, veneer, face brick on hollow tile, and face brick on common brick. We have duplicates of the bills of material we want to send you without charge, together with the floor plans, so that you can figure the cost in your town. With these for a guide you can "build with brick" as easily as you can with frame, and will understand why the following statement was made possible:

Not Our Statement, But the Owner's

House 38 feet long by 26 feet wide, not including porch. Porch 8 feet by 26 feet.

Five rooms and bath. Hardwood trim in all rooms except kitchen and bathroom. Price includes wiring, gas and water pipes, and hot air furnace.

The house was built by Al Hesse, a contractor, with rough texture face brick, backed up with hollow tile, on hollow tile foundation, for the sum of \$2,475.00 complete. Contract price submitted for frame \$2,600.00.

MR. FRED L. ERTLE, Owner.

The number of replies we are receiving from builders proves that they are highly interested in the saving effected by brick as well as in its other superior advantages. And it doesn't obligate you in any way to drop us a card for your copy of these plans.

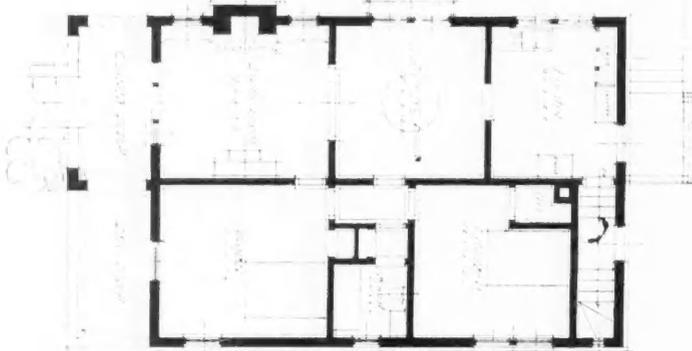
We will send, also, full information on **EVERHARD BRICK**—how it can be obtained in many beautiful textures and colors, and why it presents a pleasing surface not secured with any other medium; as well as how it lowers rates of depreciation and insurance rates; how it eliminates paint bills, and why it makes a house cooler in summer and warmer in winter.

We will also send you samples and quotations on any work you are planning for Spring.

THE EVERHARD COMPANY

MASSILLON, OHIO

Distributing Agencies in all Principal Cities



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

We are glad to be able to publish here in our January issue the corrected and proper floor plans for this design. We presume that the mistake has been amusing to a good many of our watchful readers.

EDITOR.



Wants to Make Reading Lamp

To the Editor:

Lake City, Minn.

Can you inform me as to where I could get details for a table reading lamp to be built of oak?

ALEXIS ANDERSON.



Wants Plans for Hangar

To the Editor:

Bayside, L. I.

As a charter member of your wonderful magazine, I have anxiously looked from time to time for the plan of a hangar. I have had an occasion to build three hangars for the inventors of the Sperry Stabilizer, one in the Brooklyn Navy Yard, one at Amityville and one at Bayside, L. I. These hangars were frame construction, 46 feet across the front, 34 feet deep, having a truss roof. As I contemplate building others I would appreciate some suggestion from the AMERICAN CARPENTER AND BUILDER in some future number. Also as how doors may be constructed, since the whole front must open.

E. S. GRIFFING,
 Carpenter and Builder.



Encourage the Home Craftsman

To the Editor:

Chicago, Ill.

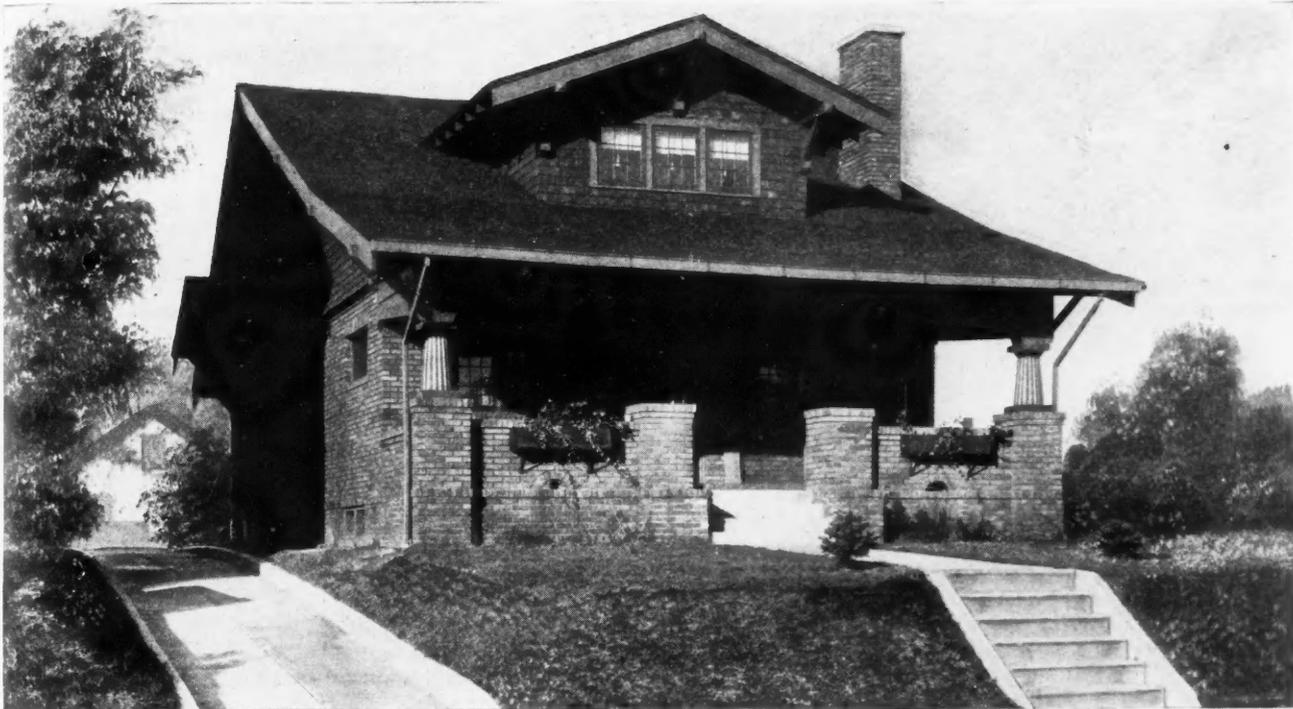
It may not be a new thought to you, but I know from experience and from expressions I have heard from my neighbors at different times that to the average householder who often wants a few pieces of lumber for ordinary repairs around the house or for the purpose of making some article of convenience or decoration in or around his house, very few people know where or how to go about it to secure what they want, and if it does occur to them to call up a local dealer, he finds it difficult to get any one to take any interest in his wants or offer any suggestions that are helpful to him. The average retail dealer treats this kind of business as a waste of his time and of little or no consequence to him, and if he does quote a price it is often so ridiculously high that the prospective purchaser concludes to do without it. A great many men are handy with tools and enjoy making little things for their homes, and this inclination could be encouraged greatly by proper methods on the part of the local dealers.

Some of the department stores in the downtown districts have a rack containing short length boards, and in addition to having this lumber on display they have a booklet with descriptive designs of a number of articles to be made, showing just what to buy to make each of these articles. If every local yard would put a similar rack in their office or some convenient place, and stock these racks with short length clear lumber, all widths, and several kinds of wood—pine, poplar, gum, oak and mahogany—they would be able to obtain a good price for it as well as to encourage the use of wood.

The retail dealers' association in cities like Chicago should publish a pamphlet descriptive of numerous household articles, illustrated, and each yard should make it a practice at least once a year of sending out 1,000 or more to residents living in the vicinity of their yard, letting them know where they could secure the material and put the prices in the list so any one could figure out what it would cost him to make each article—in other words, make it easy for everybody to find what they want.

S. E. BARWICK.

Chicago Office, The Long-Bell Lumber Co.



—where
WESTERN FACE BRICK
—are used

More than a billion of our brick and hollow tile are in every conceivable kind of a building in practically every state in the United States—also in Canada. Our daily shipment is 40 carloads of brick and we turn out 100,000,000 pieces of face brick and hollow tile every year—used in more than 2,000 buildings each year, from the average man's home to the 40-story skyscraper.

We will be glad to send our free booklet, "Where **Western Face Brick** were Used in 1914-15," to any interested contractor or builder. It contains a detail description of our complete line of

Medium Priced Face Brick and Hollow Tile

This covers every need—from chimney and foundation brick to the most beautiful face brick in a full range of colors and textures. Each and every piece is manufactured from shale and fire clay. Our product consists of the following:

Medium Hard Wire Cut **Common**
 Vitrified Hard Wire Cut **Commons**
 Vitrified **Sewer** Brick
 Red **Chimney** Brick
Cloisters, smooth face brick and finish
Rugs, vertical scored texture

Persians, wire cut face, matte texture
Empires, wire cut face, matte texture
Gothic, stippled texture
Doric, stippled texture
Hollow Building Tile, in standard sizes
Partition Tile, in standard sizes

You Can Get Our Product Through Your Nearest Dealer

Lumber and Building Material Dealers carry the "Western" line in stock in thousands of cities and towns throughout the United States. There is a good territory still open and we want exclusive dealers for it—tell your dealer to write us for samples and prices.

**Western
 Brick Co.
 Danville, Ill.**

Please send me your free booklet, "Where **Western Face Brick** were Used in 1914-15," also pamphlet showing practical use of Hollow Tile.

We buy through the following dealer.....

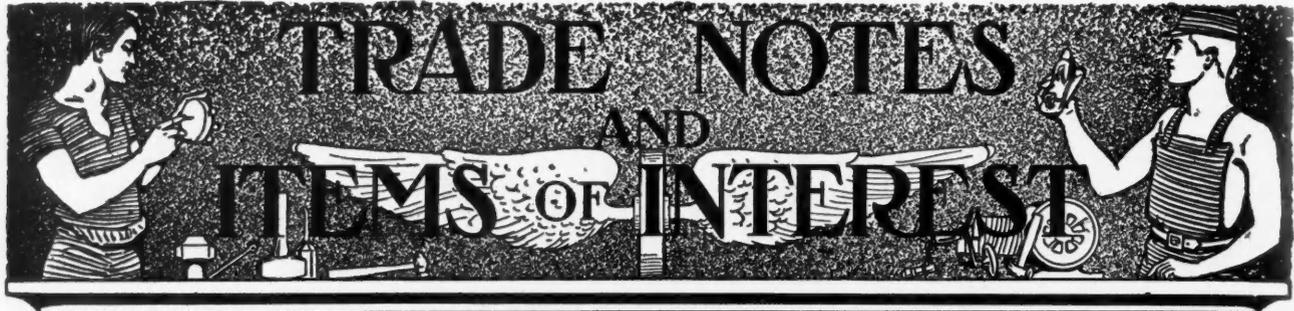
We buy direct.....

Name.....

Town.....

The Western Brick Co.

General Sales Office and Factory - Danville, Illinois



THRU this department the Editors aim to keep builders, contractors, carpenters and architects in touch with what their friends, the manufacturers, are doing for them in new or improved tools and machinery, methods and materials—pertaining to building. These items are offered here as interesting information for our readers; they are not advertising. Take full advantage of the Bargains offered. Write for catalogs and booklets, and become thoroly familiar with these Improvements and New Goods.

The Better Screen Door

A screen door is a necessary adjunct to any building, dwelling or factory. A person relies upon it to keep out insects and to procure an opening so that there is an extra circulation of air during a period of the year when most needed. In fact, a screen door, besides being necessary, is about the first thing a visitor notices on a building before he enters. The door is generally of a different color than the remainder of the house and cannot help but be noticed.

But how many people who buy a screen door consider its being so noticeable? Do they consider anything other than it is only a screen door, something to use for a summer and let it go at that? They do, perhaps, have in mind that the door should look good and they want it to be strong, the wire stretched smooth and the finish or workmanship right.

But as a general thing a buyer doesn't obtain all of these qualifications. He buys a screen door, the appearance of which gives him the many desired features, while in reality they are only surface effects; they last but a short time.

You've noticed this yourself, haven't you? A screen door is hung by a reliable contractor and soon it begins to bother. It sags, the joints spring apart and there's trouble. The buyer blames the contractor and the contractor places the responsibility on the dealer. The dealer swears he bought the doors for good stock. But the entire blame is with the door itself. The dealer is partially justified in his statements and so is the contractor, while in reality they haven't studied the stock they buy.

A screen door is only a frame put together, secured at four corners and sometimes partially braced at the center, then

(Continued to page 110.)

The Thermometer of Production is Rising Steadily—

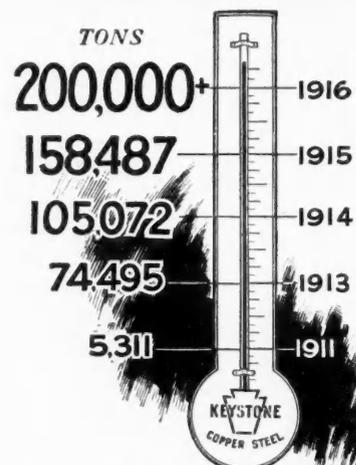


Keystone Copper Steel

Sheets and Terne Plates have received heartiest approval from consumers. The constantly increasing consumption of KEYSTONE Products is in itself sufficient proof of superiority.

TIN ROOFS OF QUALITY

and lasting service are assured when you use Keystone Copper Steel (Open Hearth) Roofing Tin—the highest quality plates now manufactured. APOLLO-KEYSTONE Galvanized Sheets are equally high standard for Spouting, Gutters, Corners, Skylights, and all forms of exposed sheet metal work.



Send for our interesting booklet—"Keystone Copper Steel—A Discussion on Corrosion"

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



A HY-TEX HOUSE BY JOHNSON & MILLER, BRAZIL, INDIANA

The kind of a house people want

MR. CARPENTER and Builder, you have a large opportunity for increasing both your influence and your income, if you care to do so. Some people, it is true, like frame houses, and you are ably prepared to meet the demand. But a good many other people want *brick* houses; to what extent are you meeting this demand? Or have you been trying to persuade them to take something else "just as good"?

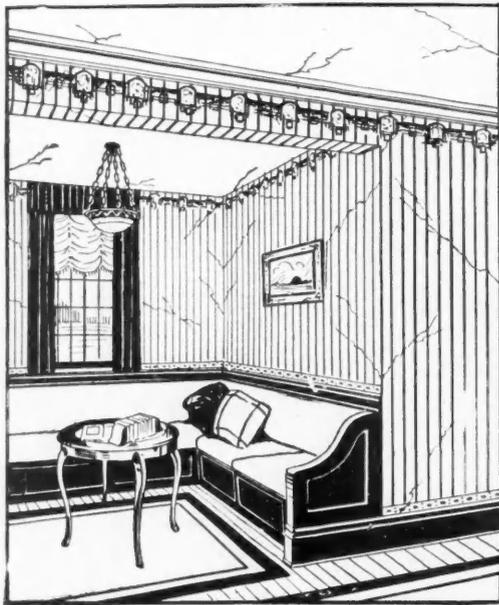
It is poor business policy to oppose the natural demand of your clients, especially when their demand is based on reasons for a brick house which cannot be denied. To them the brick house looks substantial and well-to-do as no other. And they know that it is permanent, weather-

proof, fire-proof, economical in up-keep, fuel, and insurance, and so attractive as to rent or sell readily if circumstances so require. People are proud to live in a Hy-tex house.

Meet this natural and growing demand for the brick house, and you will find not only that you can build as easily with brick as with wood, but that in terms of dollars and cents it is your best business policy. You will be satisfying a new and larger class of people and thus greatly increasing your scope of usefulness and influence as a builder. You at once take a higher standing in the community. Seize the opportunity *now* and get into the front line of advance. Send for packet of booklets.

Hydraulic-Press Brick Company

SAINT LOUIS



Is This Your Business Card?

Your ability as a builder is judged by the way your work stands up.

A cracked, disfigured wall like this will put you out of competition on a dozen jobs that you'd like to get.

That's why it's good, sound, business sense for you to urge that the plaster be laid over



"Kno-Burn" is your protection against an imperfect bond between lath and plaster. It is made with a mesh that completely embeds itself in the plaster, insuring a "key" that will never loosen.

The house owner will gladly pay the slight extra cost of Kno-Burn Expanded Metal Lath when he learns that it carries absolute assurance of permanence and is consequently an economy in the long run.

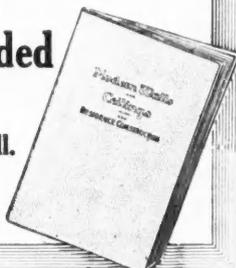
"Modern Walls and Ceilings," our latest book on residence construction, tells the economies for the home-builder who uses "Kno-Burn." Let us send you a free copy.

Ask for Booklet 32

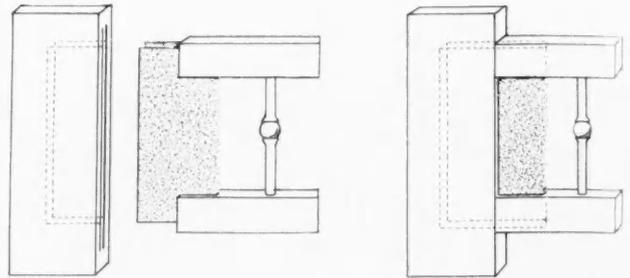
North Western Expanded Metal Co.

903 Old Colony Bldg., Chicago, Ill.

Manufacturers of all Types of Expanded Metal



covered with wire. Has it ever occurred to anyone buying a door that if they tried out the strength or looked the door over for good workmanship that they would find a vast amount of difference. A door is banged, kicked open, and receives hard usage. Consequently some of them last only a short time. There does not seem to be sufficient time spent in selection of a door, whereas if the contractor and dealer,



The Metal Braced Joint of the "No Sag" Screen Door.

who work together generally, would look into the economical side of a screen door, they would demand a stronger, more rigid and longer lasting door than the general run.

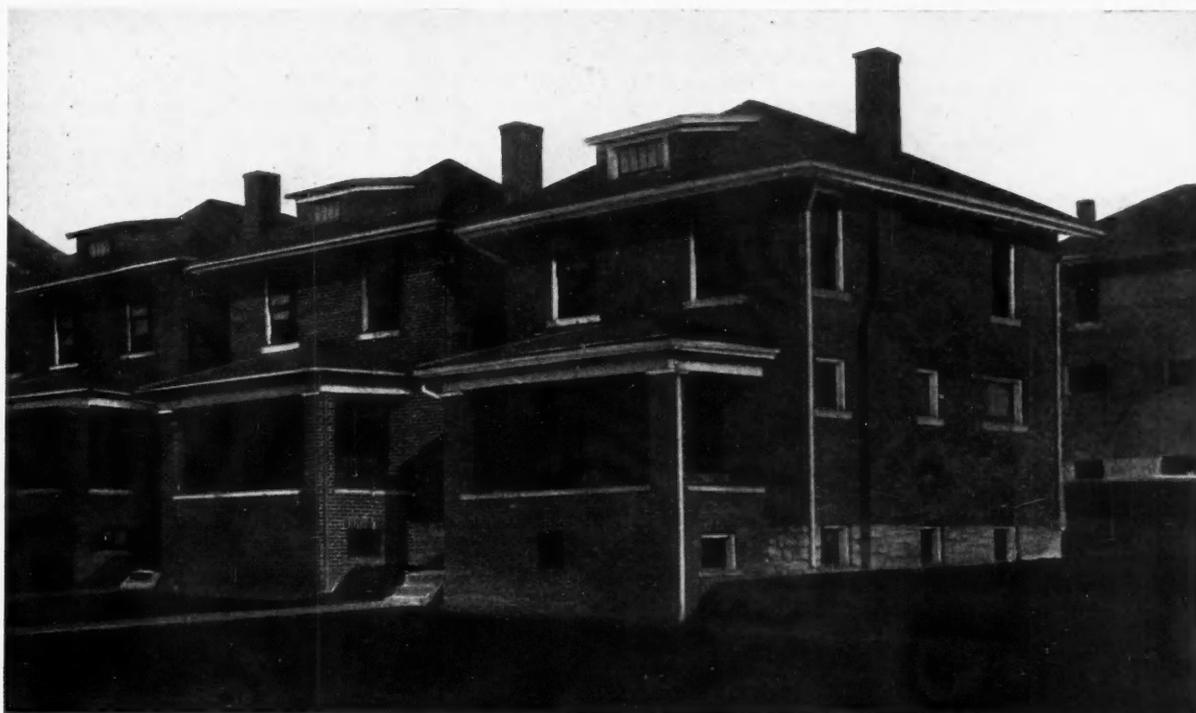
The Cadillac Lumber Company, of Cadillac, Michigan, have the correct answer to the perplexing problem. Their solution is a screen door that has all the points above mentioned in its favor. It is a better screen door and is on the market, trade marked "No Sag." From the name you may readily understand that this door does not sag. To overcome sagging they use a metal brace, of 28 gauge steel, coated with non-rusting gold lacquer, that is fastened in the center brace and side rails of the door. Then this brace is nailed with steel barbed brads. From the accompanying illustrations you may see the construction and how it is put together. This feature eliminates sagging. The stiles and rails are joined at each corner with mortise and tenon and are secured with a steel dowel. This eliminates open joints. They are constructing their doors out of selected Northern Pine and by its use one secures a light, durable door that is finished a desirable tone. The one thing the company pride themselves on is good workmanship besides the reliable, non-sagging product they put on the market.

Their style of door is pleasing, plain or fancy, as one desires; and the one great feature is a door that will not sag and lasts a long time, an economical door.

The Cadillac Lumber Company have complete information of their line at hand and will be pleased to inform anyone who is interested or desires to learn the economical side of the better screen door.



Showing the Strength of the "No Sag" Door Brace.



*"Not by frost, nor fire, nor flood,
—Nor even time itself are well burned clays destroyed."*

Are You Building Fire-Proof Houses Like These for Less than \$2,500.00?

These six-room houses were built in a suburb of Pittsburgh for \$2,365.00 each. They are full two-story houses, have Bath Rooms, Cemented Coal Cellars under porches, Hot and Cold Water, Laundries, Furnaces, China Closets and Kitchen Cabinets. All window sills and porch caps are cut stone. First-class construction throughout.

Brick construction for homes of medium cost now runs about the same as all frame. We know you will agree with us that even at a 5% to 10% advance it is still cheaper in the end—no painting, no decay, no repair bills, lower insurance, cooler in summer, warmer in winter, and always beautiful and better looking with age.

Why not talk to your next prospective builder about a brick house. You can build with brick as easily as you do in frame, and a brick house will establish you in your community as something more than a carpenter—besides you will like to use brick.

Send for Free Blue Prints of Floor Plans and the Itemized Cost of Labor and Materials

We have made floor plans of these houses, drawn to scale, and will send free blue prints of them, together with an itemized list of labor and materials showing costs in detail, to any reader of the American Carpenter and Builder who will write for them. If you know of some one who is going to build a house this spring this information will help you land the job. Every man prefers a brick house instead of frame, but most of them think brick is too expensive. Here is your opportunity to show him that it is not—and get a contract.

GET OUR NEW CATALOGUE—IT'S FREE

Write for our big new catalogue of Brick and Fireplaces, printed in natural colors.

The Beaver Clay Mfg. Company, New Galilee, Pa.
DISTRIBUTING AGENCIES IN ALL PRINCIPAL CITIES

1917 Chicago Cement Show to Set Record

The Cement Show which has been held in Chicago nine successive years will occupy the Coliseum and annex for its tenth exhibition, February 7-15, 1917. The number and character of exhibits for which space has already been reserved insure its success.

It is an interesting fact that beside the Cement Show only two of the other trade shows held at the Coliseum have reached the ten-year mark.

The tenth Cement Show will be housed under one roof, making necessary the use of the balcony as well as the main floor and annex of the Coliseum. Applications have been made by prospective exhibitors for sixty balcony spaces in addition to all the main floor and annex.

The exhibits assigned to the balcony would make a fair-sized cement show in themselves. Because of the impracticability of placing heavy exhibits in the balcony, it was necessary to assign the lighter exhibits there. They will make an interesting and attractive display.

The exhibits as a whole are representative of the cement industry and allied interests to even a greater extent than those in previous shows. Road building machinery and equipment particularly will form interesting and instructive features of the show. These include road crushing machinery, sand and gravel screens and washers, storage bins, car unloading chutes, motor trucks and trailers, dump wagons, excavators, scarifiers, graders and road rollers, which, in addition to equipment for handling and placing concrete will give the road engineer and builder an excellent opportunity to learn methods of use and comparative values of equipment.

The joint exhibit of cement companies at the tenth show will in all probability excel the last exhibit in real educa-

tional value. Cement manufacturers have contributed more money for the exhibit and the plans to show concrete products in the making should make this exhibit worthy of careful study. The following Portland cement companies have already signified their intention of participating. It is probable that several other companies will also be represented:

Aetna Portland Cement Co.	Louisville Portland Cement Co.
Alpha Portland Cement Co.	Michigan Portland Cement Co.
Burt Portland Cement Co.	Newaygo Portland Cement Co.
Chicago Portland Cement Co.	New Egyptian Port. Cem. Co.
Crescent Portland Cement Co.	Northwestern States P. C. Co.
Diamond Portland Cement Co.	Peerless Portland Cement Co.
Dixie Portland Cement Co.	Peninsular Port. Cement Co.
Huron Portland Cement Co.	Union Sand & Material Co.
Wyandotte Port. Cement Co.	Universal Portland Cement Co.
Ironton Portland Cement Co.	Wabash Portland Cement Co.
Kosmos Portland Cement Co.	Wolverine Port. Cement Co.
Lehigh Portland Cement Co.	

The American Concrete Institute will convene in Chicago at the Hotel La Salle, February 8, 9 and 10, 1917.



Look Into This

If you are looking for spare time work that will pay big, you should write today to a concern in Toledo which has developed a great selling proposition for small town and farming community carpenters and builders. It looks like a great opportunity for business. No experience is required, and there is no risk. One good man in each county will be selected for the work. Write today for the illustrated book and full particulars in regard to the proposition, which will be sent free of charge to any of our readers who are interested.

There is no money required to take up this line—free instructions are issued, giving full directions. Write today giving the name of your county, as this is an exclusive proposition to the one in each county who is selected. Write the Shafer Mfg. Co., 441 Colton Bldg., Toledo, Ohio.

For Walls That Last

Use Berger's Expanded Metal Lath

YOUR reputation as a reliable builder depends on the lasting qualities of the buildings you erect. This in turn depends on the material you use. For instance, a bad impression of your ability is left if the walls crack or stain and need frequent repairing.

Plaster your walls on a secure foundation—Berger's Expanded Metal Lath. It reinforces the plaster over the entire area. Impossible for it to crack or fall off. Berger's Expanded Metal Lath does not absorb moisture, hence cannot swell, warp or stain the plaster. It is fire-resisting, sanitary, sound proof, and prevents rats and mice from making holes through the walls.

The small diamond-shaped meshes allow a perfect "key," completely imbedding the lath in the plaster, giving great strength. The large sheets (8 feet long and 18 and 24 inches wide) make application easy and speedy.

Build for durability—use Berger's Expanded Metal Lath for both inside and outside walls.

Berger's Corner Beads

These beads prevent plaster from cracking and chipping at the corners, thereby eliminating patching. They more than offset the cost of their erection by the ease and speed in which the plastered corner can be finished out.

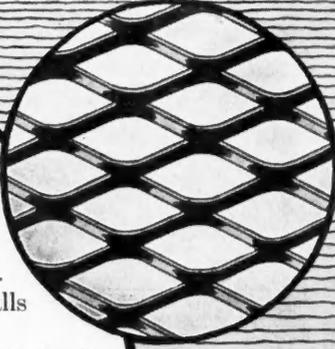
Send for Metal Lath Booklet F. A. B.

The Berger Manufacturing Co.

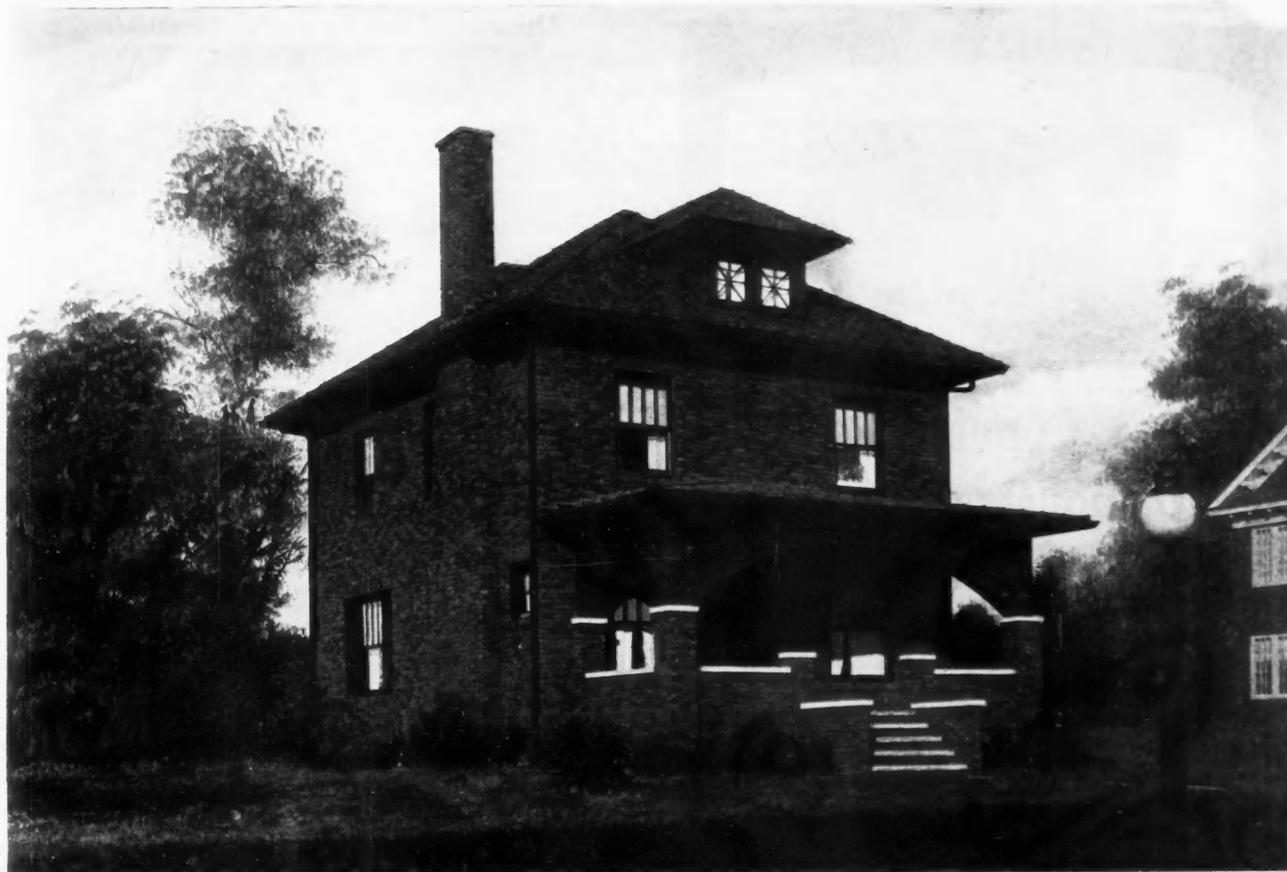
Canton, Ohio

Branches:—Boston, New York, Philadelphia, Chicago, St. Louis, Minneapolis, San Francisco, Los Angeles

Export Dept.:—Berger Building, New York City, U. S. A.





Again we offer "Belden Face Brick"

—The Profitable Material for Both Contractor and Home Builder

If your clients for spring building wish something distinctive get in touch with us at once and let us send you samples and quote you through our nearest dealer. Tell us what you are going to build and give us the size. We will give you valuable building help and show you that the difference in cost of brick and frame construction puts brick easily within the reach of your community.

—On the basis that brick houses make for a higher standard of construction and therefore more good work and more profit to you.

—With the knowledge that once you are familiar with brick construction that you can make more money building brick houses than any other kind.

TRADE MARK
"BELDEN BRICK"
CANTON, OHIO

—With the absolute conviction that "Belden Brick" represent the biggest value you can buy and that we are prepared to give you the kind of service you want.

We appeal to you to investigate carefully brick house construction.

Direct from the Manufacturer

We have dealers in hundreds of cities and towns in the United States and Canada at the present time. We ask you to write for samples and prices and the name of our nearest dealer. Belden Brick are made in five modern factories and come in all colors, shapes and sizes, and in most textures, rough and smooth. We have the very brick you are looking for, be it house, bungalow, garage, theatre, store, bank, church, school, library or office building.

Build with Brick

THE BELDEN BRICK COMPANY ESTABLISHED 1885 **Canton, Ohio**

FIVE PLANTS AT CANTON, SOMERSET, UHRICHSVILLE, PORT WASHINGTON

-----USE THIS COUPON NOW-----

Belden Brick Co., Canton, Ohio.

Gentlemen:—We are favorable to the use of brick for many purposes and would like to know more about your product. We are figuring on building (use this line if anything definite)

Your name

Address

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



A Convincing Demonstration of North Carolina Pine Utility

The above is an excellent illustration of the North Carolina Pine Bungalow, a full size 8-room house, built as an exhibit, at the Country Life Permanent Exposition, Grand Central Terminal, New York City.

It is built throughout from ground to roof of North Carolina Pine, and, as it stands, constitutes a more powerful argument for the rare beauty and sterling quality of this wood than any words could possibly convey.

When you visit New York, we invite you to inspect this delightful example of comfort, refinement and architectural perfection. You will find it of distinct and practical helpfulness. No admission fee is charged and no obligation incurred.

Write for our Free Reference Book A, which tells more about this splendid wood. A postal will bring it.

North Carolina Pine Association
Norfolk, Virginia

NORTH CAROLINA PINE



Illinois Must Remodel Her Rural School Houses

(Continued from page 69.)

The wells must be located at places so the water is free from contamination from toilets. The well must be covered with a concrete platform, resting on a concrete wall and sunk 2 feet into the ground. The waste water must be carried at least 10 feet from the well. Effective filters are to be used in cisterns and they must be cleaned and filtering material renewed at least once a year.

Containers, with a top and faucet, are to be used where water is kept in the school room. Each child must have an individual drinking cup, kept in a dust-proof case. Bubbling fountains are urged. Samples of suspicious water are to be sent to the State Water Survey for analysis.

Special provisions are made to have sanitary toilets for the girls and boys.

Efforts are made to prevent fires. All boilers must be placed in fireproof rooms. No boiler or furnace shall be set under a stairway or corridor in a building more than one story high. Panic bolts shall be provided on doors so they will open outward when pressure from the inside is applied. All air and ventilating ducts are to be of metal or fireproof material.



Novo Engines and Outfits

A catalog, No. 816, showing the gas, gasoline and kerosene engines, air compressor outfits, pumping outfits, hoisting outfits and sawing outfits manufactured by the Novo Engine Company, of Lansing, Michigan, is just off the press.

The contents of this catalog are characterized by the phrase, "reliable power," and it has been published for the purpose of extending to those interested, as definite a knowledge as possible of the power products of the company. It is used in connection with special circulars to aid those confronted with power problems in the selection of the proper equipment for their purpose. The company also extends the services of their engineering department to those who desire expert advice on power problems.

The new catalog takes up, first, a detailed discussion and description of the principles of operation and features of construction of the standardized, vertical type, hopper cooled Novo engine. The second section of the book presents the seven distinct types of Novo hoists, including single and double drum, reversible and non-reversible, single speed and two speed hoists. Pumping outfits, including single and double diaphragm pumps, several types of force pumps, high pressure pumps, triplex pumps, deep well pumps, centrifugal pumps and rotary oil pumps are next described and illustrated. Following this is a section devoted to air compressor outfits followed by the final section on saw rigs.

This catalog covers a very wide range of contractors' power equipment in a way that is at the same time interesting and instructive. Readers desiring information on equipment of this sort should address the Novo Engine Company at 698 Willow St., Lansing, Michigan.

Woods and Their Uses

ALL woods have certain uses for which they are especially adapted by reason of the peculiar qualities and characteristics which nature has given them; and on their proper selection for these uses, hinges the whole problem of economy in wood construction.

Three centuries of experience in this country have demonstrated that no other wood lasts so long or gives such satisfactory service as

WHITE PINE

for outside finish lumber — siding and corner boards; window sash, frames and casings; outside doors, door frames and casings; outside blinds; all exposed porch and balcony lumber; cornice boards, brackets, ornaments and mouldings; and other outside requirements, *not* including shingles.

If the lumber dealers supplying your clients are at any time unable to furnish it, we should appreciate the opportunity of being helpful to you in securing it.

A Free Magazine for Contractors

We are now publishing a bi-monthly architectural magazine, every issue of which is full of valuable and helpful information for contractors and builders. If you would like this magazine, write us and we will be pleased to place your name on our mailing list.

*WHITE PINE BUREAU,
1135 Merchants Bank Building, St. Paul, Minn.*

Representing
The Northern Pine Manufacturers'
Association of Minnesota, Wisconsin
and Michigan, and The Associated
White Pine Manufacturers of Idaho

Association Exhibits Planned for N. Y. Building Show

Better building will be the paramount note struck by the National Complete Building Exposition which is to be held in the Grand Central Palace, New York, March 5-11, 1917. The exhibits will show in every feature of the building and furnishing lines the best available materials and articles to be had. The exposition will be in effect a moving picture demonstration for the prospective builder of just what is best and what may be done with each individual product.

While the home-building interest will be sustained as completely as in the initial show in Cleveland last winter, there will be a radical departure in the addition of special sections for the more general of building operations. These will include special school, theatre, church and factory divisions. For each of these will be shown the latest in improved equipment as well as materials.

Community exhibits by the associations promoting the wider use of metal lath, gypsum products, brick, lumber, cement, tile, terra cotta, and the various roofing materials are altogether likely for each line. Several of these associations are already actively preparing for such an exhibit. In all probability all will be represented.

An important architectural contest is also planned, providing a substantial prize for the best plan of a house actually built within the last year at a cost not exceeding \$5,500. Not only plans but a photograph of the house must be furnished. This will afford the prospective builder definite and convincing information of the kind he is anxious to get. It will be no dream house.

From the interest already being evinced the exposition seems assured of a representation of every class of building material, equipment and furnishing. There will also be in the

house furnishing section an extensive outlay of labor-saving devices for the home and also of those various articles which make for greater home comfort.



Change in Architectural Competition Condition and Closing Date

In the announcement of the architectural competition which is to be conducted in connection with the National Complete Building Exposition, mentioned on page 148 of the December issue of the AMERICAN CARPENTER AND BUILDER, it was stated that drawings not awarded cash prizes would be returned to contestants at the expense of the National Complete Building Show Company.

It has since been decided that the condition regarding the return of drawings will be changed to that which was in force in a similar competition held in connection with the exposition last year. Under the revised wording it will be a condition that drawings not awarded prizes will be returned upon receipt of postage. The closing date for this competition has been extended to Feb. 5, 1917.

All drawings are to be on *stiff* board; NOT "still" board, as specified originally.



Johns-Manville Gives Employes 10% Bonus

Every employe of the H. W. Johns-Manville Company who had been with the company a year or more was gladdened by the receipt of a Christmas greeting signed by President T. F. Manville announcing the board of directors' decision to give a bonus equal to 10 per cent of the year's salary.

This action was prompted by the very satisfactory earnings of the company in 1916 and the splendid service rendered by the J-M employes.

No-Sag The Better Screen Door

How many screen doors have you hung—regardless of workmanship, material or price—that did not loosen at joints, sag and become broken up before their time?

Guaranteed not to Sag



Our exclusive patented feature makes sagging impossible and insures years of satisfactory service. In addition, No-Sag Screen Doors are made in a variety of designs of the best selected dry Northern Pine or Oak, and are unsurpassed in beauty and workmanship.

Ask your dealer to show you "No-Sag"—the better screen door; or write us for full information and prices. It will repay you many times in satisfied customers.

TRADE "NO-SAG" MARK

Look for this trade-mark on edge of each door. We are originators and sole manufacturers of No-Sag Screen Doors.

CADILLAC LUMBER CO.
Cadillac, Mich.

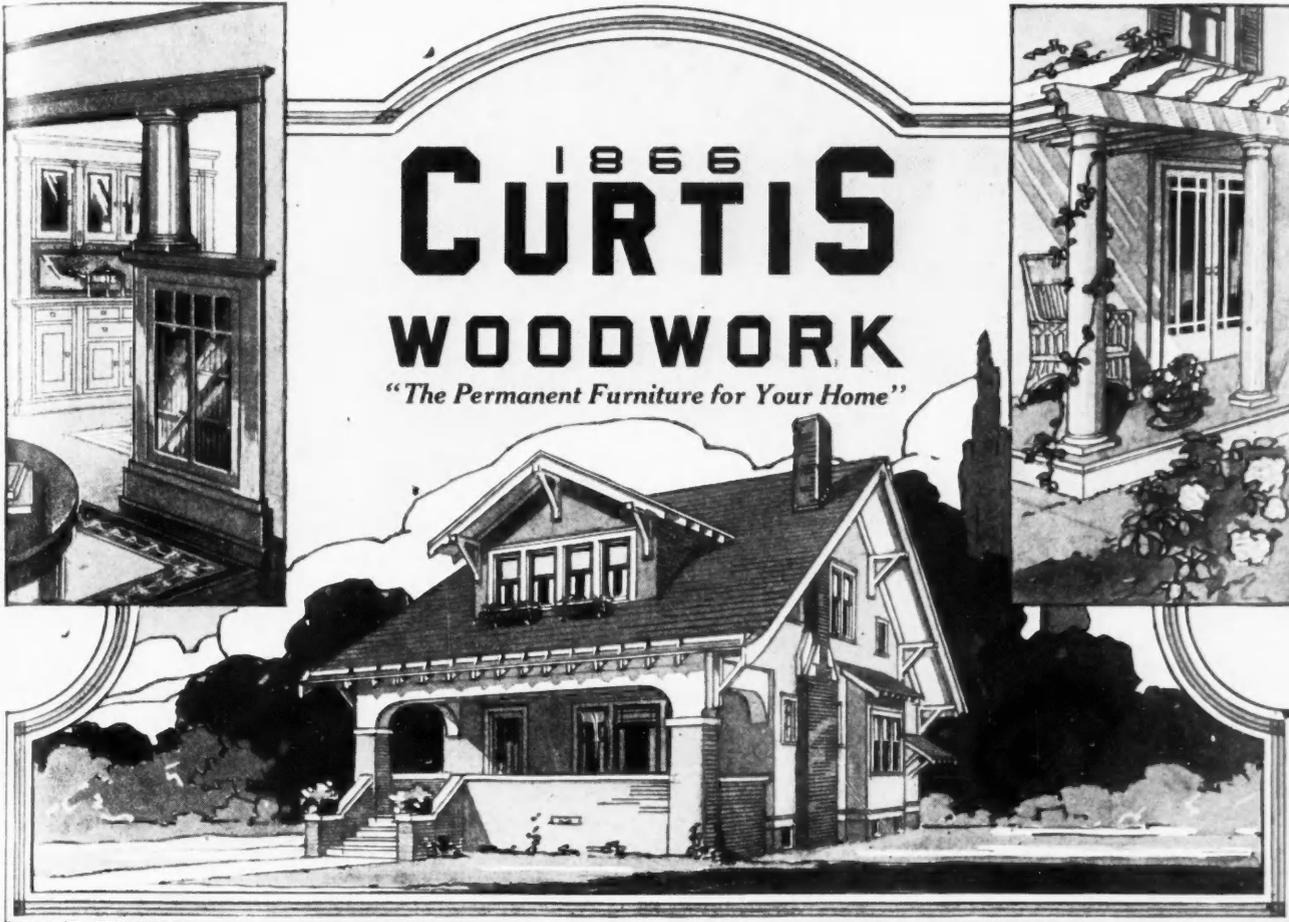


"Beautiful birch for beautiful woodwork"

You can afford "Beautiful birch" for the doors, trim and floors of your home, although you have seen it used in costly hotels and office buildings. It is very reasonable in price, is one of the hardest and best wearing woods known, and one of the most strikingly beautiful. It takes all finishes with perfection and you can trim your whole house with it, getting the effects of several different woods if you like.

FREE Finished Samples and big door and trim book. Drop us a line.

The Northern Hemlock & Hardwood Manufacturers' Association
Offices, 201 F. R. A. Building, Oshkosh, Wis.



Prompt Deliveries Cut Your Building Costs

Curtis Service does away with waits, delays and uncertainties that undermine your profits. No matter where you are located, just arrange delivery dates with your Curtis dealer and you will get materials right when you want them.

And delivery is only one feature of Curtis Service. All millwork is standardized; every piece inspected before it leaves the factory. When it has passed rigid examination our trademark—**CURTIS**—is stamped upon it, your guarantee and protection against defects of

any kind. Materials are sanded for you at the factory and pieces are cut as nearly ready to go into place as is possible.

In every detail, from manufacture to shipment, the makers of **CURTIS** Woodwork labor to help your profits, to insure for you the biggest margin on each job you secure.

An investigation of the advantages of Curtis Service may lead to the discovery of some other *particular* way in which it can benefit you. At any rate you have nothing to lose.

Write us today for complete information. Address

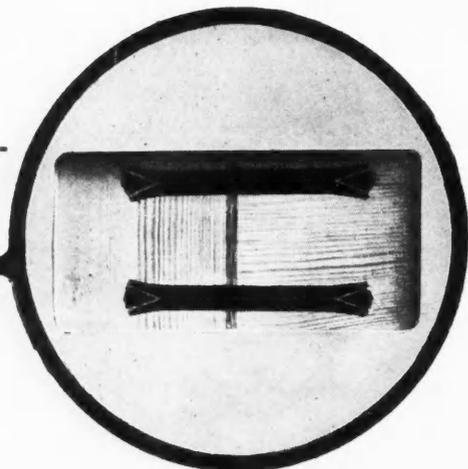
The Curtis Companies, Service Bureau, 1633-1733 S. Second Street, Clinton, Iowa

Manufacturing and Distributing Plants at Clinton, Iowa; Sioux City, Iowa; Oklahoma City; Lincoln, Nebraska; Minneapolis; Wausau, Wis.; Chicago; Topeka, Kansas; Detroit. Eastern Offices at Pittsburgh and Washington.

*The Makers of **CURTIS** Woodwork Guarantee Complete Satisfaction to its Users. "We're Not Satisfied Unless You Are."*

Doors	Storm Doors	Stairways	Bookcases	Ceiling Beams
Windows	and Windows	Newels	Mantels	Mouldings
Window and	Screen Doors	Sideboards	Window Seats	Porch Columns
Door Frames	and Windows	Colonnades	Wall Panels	Porch Rail
	Porch Balusters	Everything in Woodwork		

**Morgan
Wedge
Dowel
Construc-
tion**



These Two Features Win Leadership

No hardwood door is as good as it ought to be unless it has:

- (1) **Wedge Dowel Construction.**
- (2) **All White Pine Core.**



are the only hardwood doors that have them. That is why MORGAN Doors satisfy customers, save you money and assure a profitable job. Don't waste time and energy with ordinary doors. Install only MORGAN Doors. They cost little if any more — much less in the end.

Write for MORGAN Millwork Handbook FREE

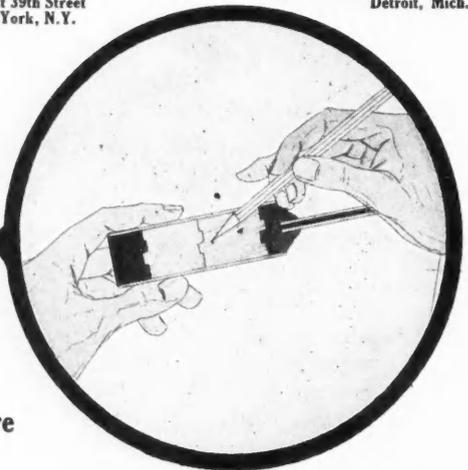
Displays of Finished Morgan Model Doors
in All Principal Cities — Ask Us Where

MORGAN SASH & DOOR CO.
Dept. A-23, Chicago

MORGAN COMPANY
Oshkosh, Wis.
MORGAN COMPANY
6 East 39th Street
New York, N.Y.

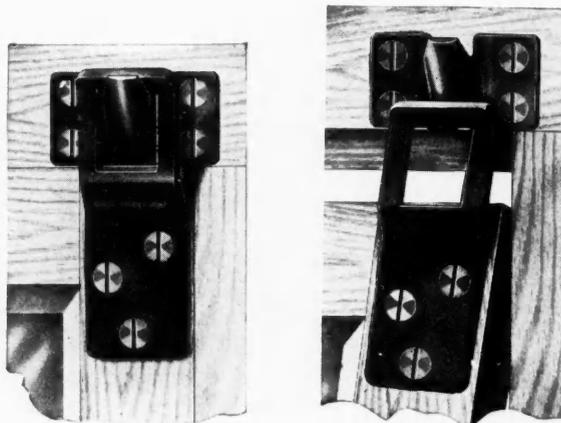
MORGAN MILLWORK CO.
Baltimore, Md.
MORGAN SASH & DOOR CO.
Detroit, Mich.

**Morgan
All
White
Pine Core**



“Peerless” Storm Sash Hanger

This new improved “Peerless” storm sash hanger has recently been added to the large line of storm sash hardware manufactured by The Stanley Works, New Britain, Conn. This No. 1715 hanger is heavy and strong. The angle on the hook and on the head of the eye guides the eye up and over the hook, so that a sash or screen can be hung easily and quickly from the inside of the building. It is necessary only to set the storm sash in its proper groove in the casing and, using this groove as a guide, to push the sash up. The eyes slide right over and onto the hook; the weight of the sash clamps down the eyes into place.



Hanger in Place, Sash Closed.

Storm Sash Open.

Sashes being hung or removed need not be held far from the building, consequently there is no danger in hanging or removing them from the inside of a window equipped with No. 1715.

Packed with 3/4 by 7 screws. One pair of hooks and eyes to a set; one dozen sets in a box. Gross weight, per dozen sets, 3.35 pounds. Five gross sets in a case. Furnished in japanned, 1715-J; and Stanley Sherardized, 1715-Z.

Eyes or hooks may be ordered separately.

For any additional information, write to the Stanley Works, New Britain, Conn., 100 Lafayette St., New York City, and 73 East Lake St., Chicago.

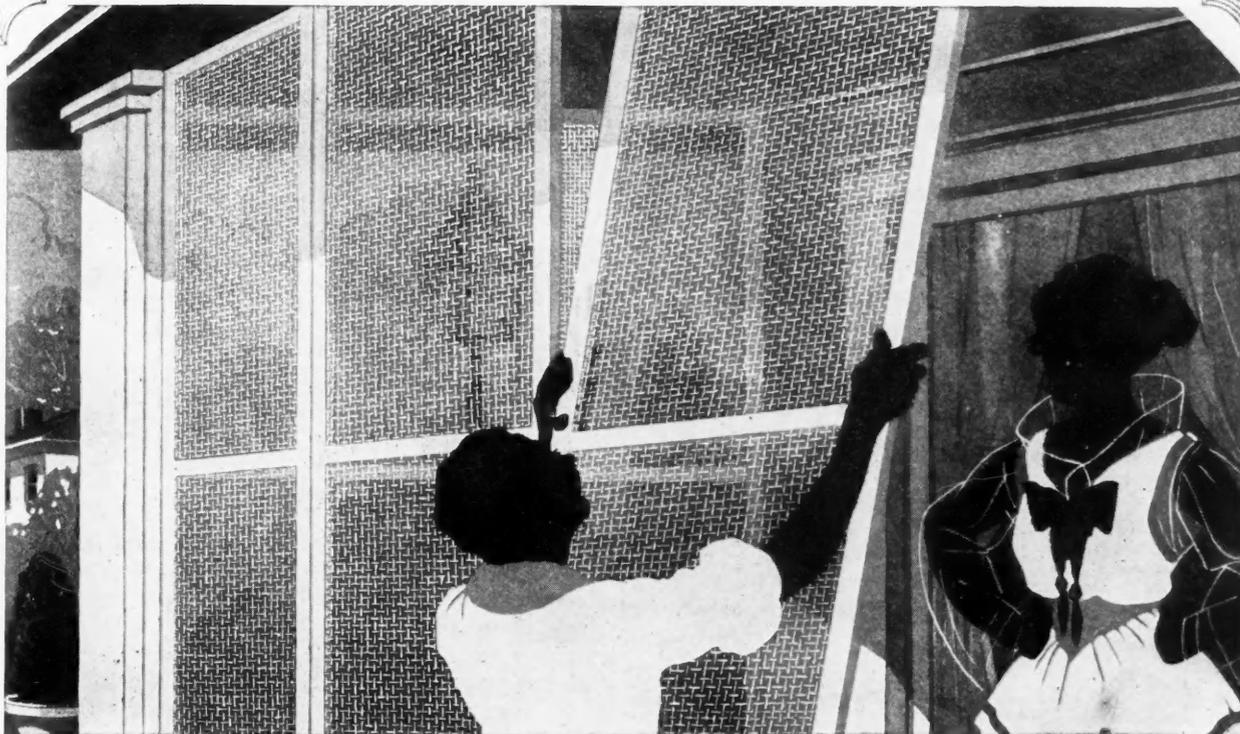


Evans “Almetl” Fire Doors

The growing importance and use of sheet metal fire doors is becoming widely recognized, it is stated by the Merchant & Evans Company, of Philadelphia, and, in addition to the approvals they received from the Underwriters' Laboratories of Chicago and the Factory Mutual Laboratories of Boston, as well as endorsements or approvals from national, state and municipal authorities, this company invites attention to the fact that they have just received an engrossed Certificate of Approval from the Industrial Board of the Pennsylvania Department of Labor and Industry, State of Pennsylvania.

The Merchant & Evans Company has over 160 experienced contracting and erecting licenses established thruout the United States, thru whom the company is receiving a large amount of fire door and fire shutter business. They wish to announce to the trade that in addition to the standard single swinging and single and double sliding types of doors, and the single and double swinging shutters, they are regularly manufacturing the Evans “Almetl” type. They are prepared to meet many unusual requirements, such as supplying their product made of galvanized American ingot iron or painting the inside surface of the panels with specified paint.

(Continued to page 120.)



G & B PEARL—First Choice For Satisfactory Screens—

THE most universally used and biggest seller in branded screen materials is today G & B PEARL Wire Cloth. This special process wire cloth is the best rust resister in its class. That's why it wears so long—for rust is the great screen destroyer.

G & B PEARL is a handsome screen, too. It is easy on the eyes and sanitary because its smooth meshes don't retain or catch dust and dirt.

For over twenty years the Gilbert & Bennett Co. have kept the manufacturing process of PEARL a secret. Consequently, while other makes of wire cloth may imitate PEARL in appearance, they cannot approach it in performance.

Play safe! Look for the 2 Copper Wires in the Selvage and the Round Tag on each roll. These marks identify the genuine article.



There's a retailer near you who sells and recommends G & B PEARL for permanently screening doors, windows and porches. See him or write us direct for samples and literature.

Address Department A

The Gilbert & Bennett Mfg. Co.

New York Georgetown, Conn. Chicago Kansas City, Mo.

PEARL is Made in Two Weights—Regular and Extra Heavy.

The best Hardware Dealer in your city sells "PEARL"

They also supply swinging or sliding doors with well designed panel frame, set into and securely bolted to the door, to hold wire glass. Likewise doors with offsets to protect openings that have a mono-rail trolley track running thru at the top. They likewise furnish swinging flush type doors with a frame at the top made of an arched segment and shaped to properly fit into arched top openings.

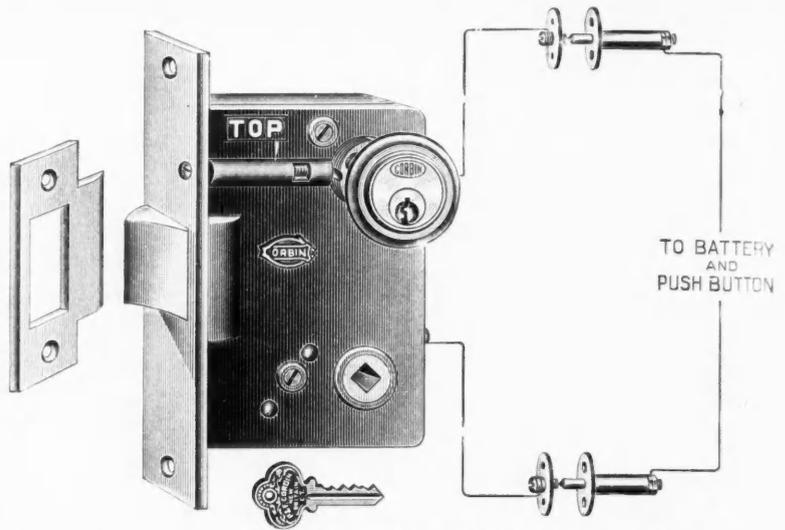
Merchant & Evans Company have plants in Philadelphia, Warwood (a suburb of Wheeling), and Chicago. They also have offices and warehouses in Philadelphia, New York, Baltimore, Atlanta, Cleveland, Wheeling, Chicago, St. Louis and Kansas City.



New Corbin Electric Lock

The lock shown in the accompanying illustration is the new No. 5000 mortise electric lock manufactured by P. and F. Corbin of New Britain, Conn. This lock is for distant control of entrance doors to apartment houses or other places where it is desired to unlock the door without going to it. Its size is 5 5/16 by 3 5/8 by 1 inch, with a cast bronze front 7 1/4 by 1 1/4 inches. The backset is 2 3/4 inches and the space between centers of hub and cylinder is 3 1/4 inches. It has a broad swinging latch bolt with 17/32-inch throw.

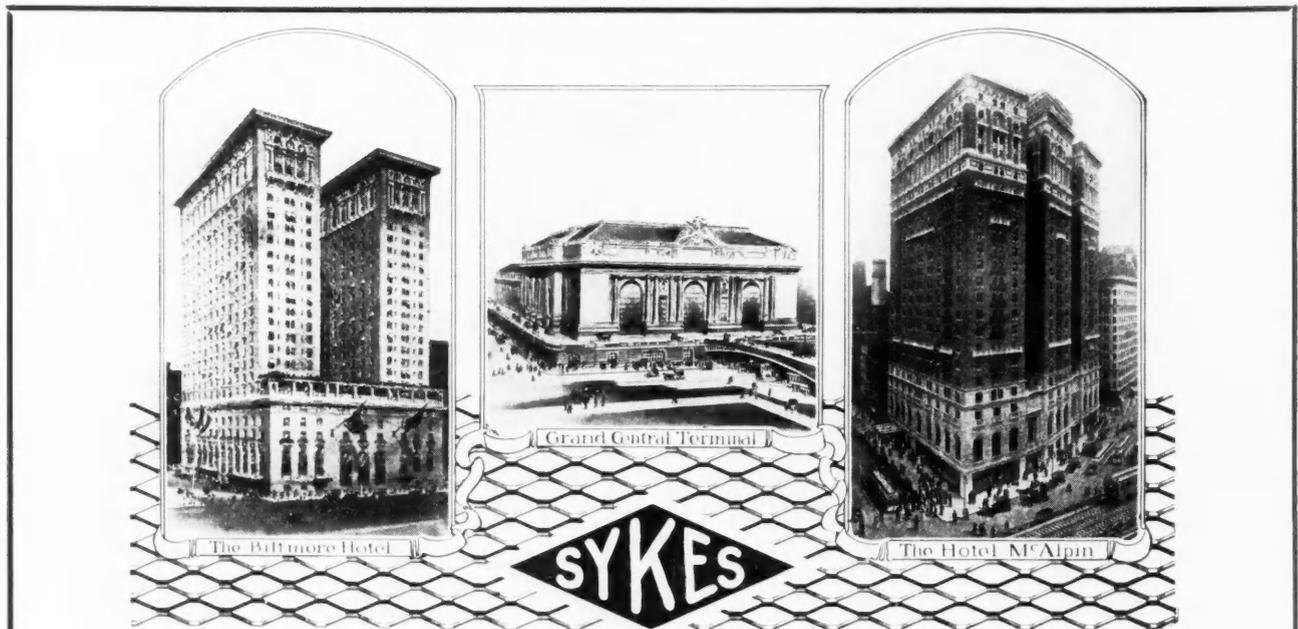
The lock is applied in the usual manner, with channels in the door so that connection can be made with the plates at the back of the door which connect with the contacts set in the frame and form a circuit thru the push button and



New Corbin Lock for Distant Control of Doors, at Apartment House Entrance.

battery. Pressure upon the push button energizes a magnet in the lock which releases the latch bolt so that it can be withdrawn by turning the knob. Its action is different from the ordinary electric opener in that it does not open the door, but simply unlocks it; the act of closing the door again applies the stop to the latch bolt and locks the door from the outside. The inside knob is always free and the door always unlocks from the inside. The door can always be unlocked from the outside by a key.

Further information regarding the electric mortise lock or other articles of hardware may be obtained from P. and F. Corbin, New Britain, Conn.



Sykes Expanded Cup Metal Lath—also known as Cleveland Lath—was chosen for the buildings illustrated above

For Interior and for Exterior (Stucco Work)

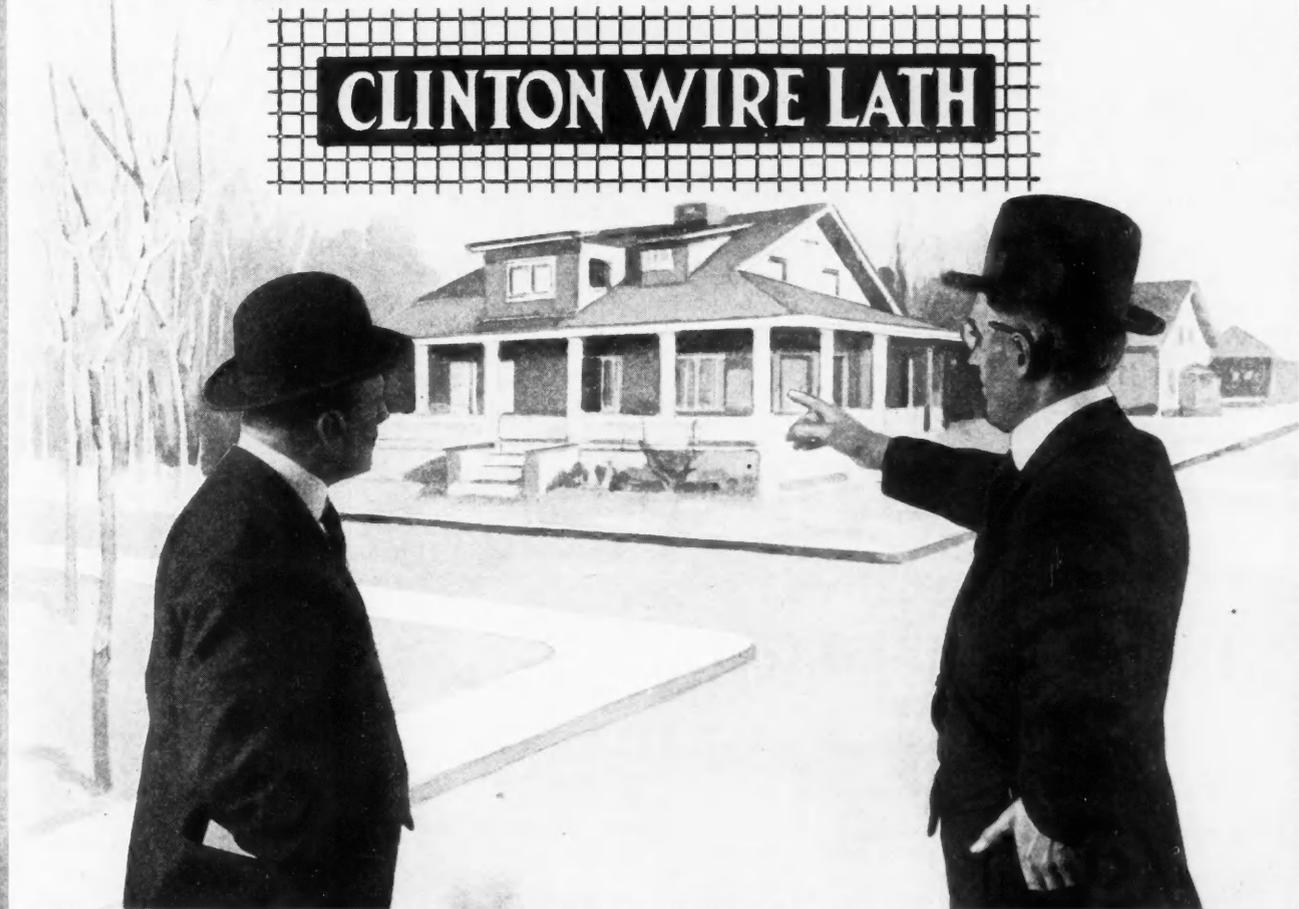
SYKES EXPANDED CUP METAL LATH

Is the one selected by many architects and builders. It gives maximum of efficiency On Exterior work the Self-Furring Feature saves 5 to 10 cents a square yard

SYKES METAL LATH & ROOFING CO., 504 River Road, Warren, Ohio

“TWENTY YEARS AGO”

CLINTON WIRE LATH



“I PLANNED AND BUILT THAT STUCCO HOUSE twenty years ago. Just look at those walls—plastered on *Clinton Wire Lath*. Not a check, crack or stain! That house has brought me an ever increasing amount of business. In fact I am known in this community as a stucco house expert and I lay my success principally to the fact that I always specify *Clinton Wire Lath*.”

“Repair bills are negligible, and if the owner wants to sell, he has one of the quickest sellers known. Everybody wants a stucco house nowadays if it is well planned and the stucco is supported on *Clinton Wire Lath*.”

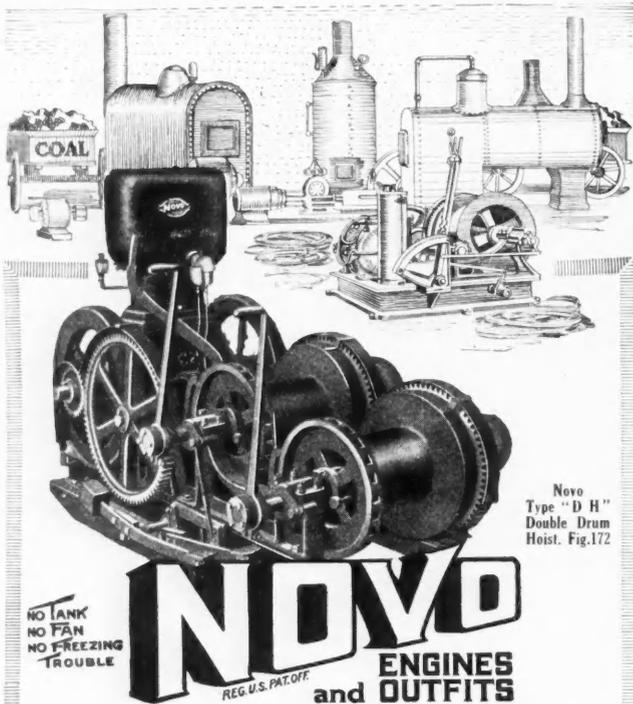
Send for our profusely illustrated book, “Successful Stucco Houses;” also “Clinton Handbook on Lath and Plaster.” Both mailed free.

CLINTON WIRE CLOTH COMPANY

First Power Loom Weavers of Wire Cloth in the World

69 PARKER STREET :: CLINTON, MASSACHUSETTS
NEW YORK :: BOSTON :: CHICAGO

Makers of “Pompeian” and “Golden Bronze” Screen Cloth, “Clinton” Painted Wire Screen Cloth, Clinton “Silver Finish” Screen Cloth, Clinton Poultry Netting. Clinton Electrically welded Fabric for reinforcing Concrete. Hunt Corner Bead, Tree Guards, Fence Gates, Clinton Perforated Steel Rubbish Burners, Perforated Metals, Perforated Grilles for all architectural purposes.



What's the Dollars-and-Cents Difference?

In the background is a fair representation of your power equipment if you stick to steam and electricity. Every boiler means slow and costly moving, piles of fuel around a job, and high priced men to keep your outfits running. There's a different motor needed for each kind of current—with necessary connections and troublesome wires.

Compare first cost and operating cost of such equipment with those of Novo Engines and Outfits. Do that, and if you've figured right you'll decide to Standardize with NOVO Power.

Novo Engines can be used anywhere. State and city rules do not restrict them. Novo Power is handiest, most reliable, most economical.

One man can keep all the outfits on a job running, if those outfits are standardized—if they're Novo Outfits. Moving cost is low; fuel supply, simple, setting for operation, a matter of minutes.

Novo Outfits include over 75 kinds—Hoists, Pumps, Air Compressors, Saw Rigs—all portable. Novo Engines are standard equipment on 80% of the concrete mixers. You'll find standardizing with Novo easy—you'll find it profitable.

Novo will be exhibited at the Tenth Chicago Cement Show, Coliseum, February 7-15.

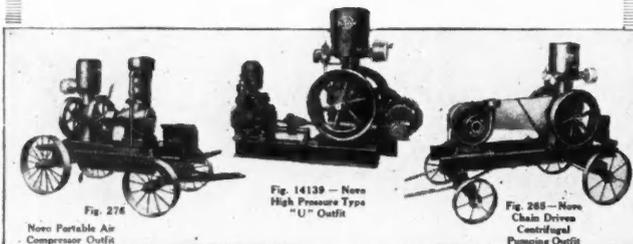
Let us send more detailed proofs. Write on your letterhead for our free book—"Reliable Power."

NOVO ENGINE CO.

Clarence E. Bement, Sec. & Gen. Mgr.

699 Willow Street Lansing, Mich.

Novo Engines can be furnished to operate on gasoline, kerosene, alcohol or distillate



A Word to the Wise

It will pay our readers to look into the proposition the Norwalk Vault Company is offering (see page 132). We have had very convincing proof that there are great possibilities for building up a congenial and very profitable business along the lines they suggest. It is not an untried experiment—thousands of men are today engaged in this work. It is a permanent business. It is a business that carpenters and builders are exactly qualified for. Their experience and training permit them to handle the mechanical end of the business very easily, and their business acquaintance and connections make it easy for them to handle the selling end.

In these days of high prices everyone needs more income, and everyone should be looking around for opportunities. Write to H. C. Cox, Secretary of the Norwalk Vault Company, Norwalk, Ohio, and ask him to send you full particulars of the proposition which they are willing to make to readers of the AMERICAN CARPENTER AND BUILDER.



A New Treatise on Floor Surfacing Machinery

A new circular has just been issued by the American Floor Surfacing Machine Company, 515 South St. Clair Street, Toledo, Ohio, pointing out the many benefits of surfacing floors the "American Universal" way as compared with hand scraping.

The circular calls attention to the scarcity and high price of labor at the present time and the comparison of the costs

WHICH SIDE OF THE COLUMN ARE YOU ON?

<p>TIME: When making Nov 15</p> <p> O. Rogers 11 11 11 11 11 J. Smith 12 12 12 12 12 W. Brown 13 13 13 13 13 T. Green 14 14 14 14 14 E. White 15 15 15 15 15 </p>	<p>TIME: When making Dec 15</p> <p> J. Adams 11 11 11 11 11 B. Baker 12 12 12 12 12 C. Clark 13 13 13 13 13 D. Davis 14 14 14 14 14 E. Evans 15 15 15 15 15 </p>
<p>BIG PAY ROLLS — MADE SMALL</p>	

Showing Interesting Style of Illustrations.

of surfacing floors the old and new way. A description of the "American Universal" floor surfacing machine, which is operated by an electric motor, is given in detail and several letters of contractors who have effected a great saving in their labor are also published.

These circulars are published under the heading, "Which Side of the Column Are You On?" and a copy may be secured free by addressing the American Floor Surfacing Machine Company.

Every Country Home You Build Needs Electricity

HERE is a chance for carpenters and builders to cash in on the big, growing demand for electricity in rural districts. The up-to-date prosperous farmer is thoroughly sold on the idea of having city conveniences.

The Uni-Lectric Lighting Outfit is fulfilling one of the greatest needs in the farm home today. It is furnishing the farmer, his wife and their family with thoroughly efficient electric current—current which can be used for lights as well as for operating electric irons, vacuum cleaners, electric fans and small motors for power purposes.

The Uni-Lectric system is in reality a central service station in home size. It is a compact, complete unit and the first thing of its kind ever devised.

No Belts—No Batteries—No Complications

The Uni-Lectric outfit generates standard 110 volt direct current, exactly the same as city central service stations. The outfit comprises a small high-speed, perfectly governed, four-cycle engine and a very efficient generator, direct connected.

The whole outfit is simple and very easy to understand and operate, requiring the very minimum of care and attention. The wiring is very easily done and, if our directions are carefully followed, it is not even necessary to get the assistance of an electrician.

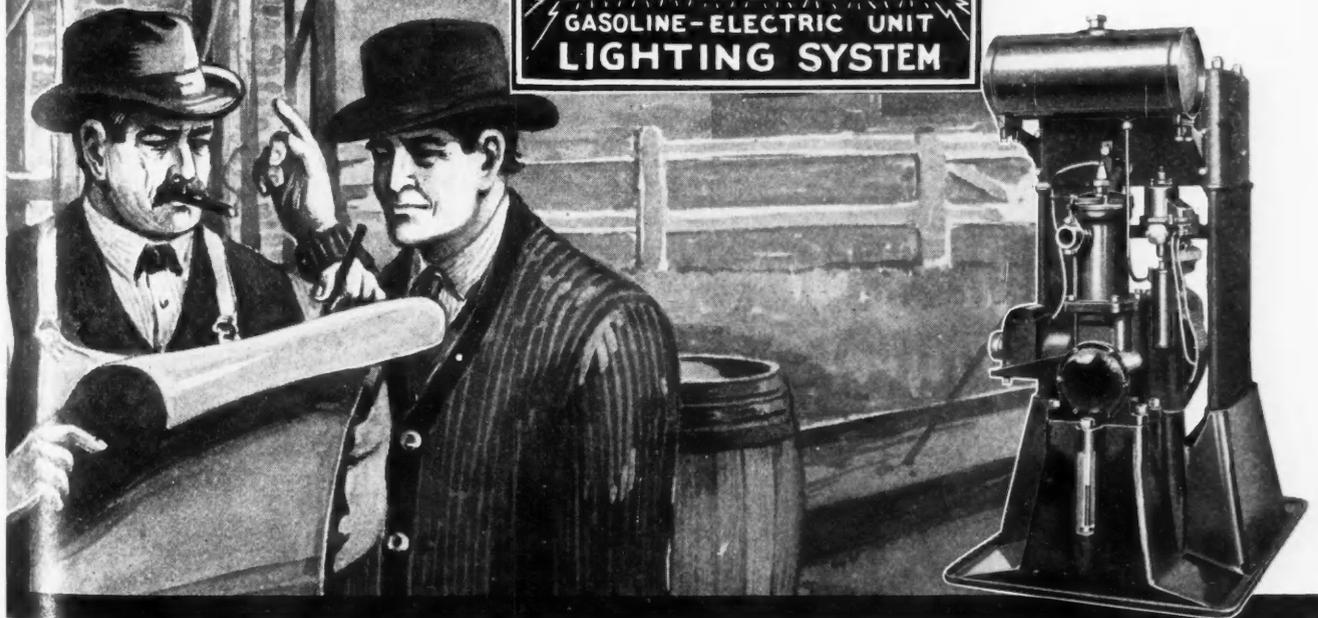
The Uni-Lectric has unusual capacity for a home-size plant. It will operate all the way from one to fifty lights, and as previously stated can be used for other power and heating devices.

There is a splendid opportunity for contractors and builders to introduce Uni-Lectric machines where they are building new country or farm homes. You will not only be pushing a device that is a boon to the farmer, but a device that has thoroughly demonstrated its efficiency and practicability in the hands of users.

*For complete details of our special proposition to
contractors and builders, write us at once, addressing*

THE WATERMAN MOTOR COMPANY
152 Mt. Elliott Ave. Detroit, Michigan

Uni-Lectric
GASOLINE-ELECTRIC UNIT
LIGHTING SYSTEM



An Opportunity for Profitable Co-operation

A campaign is being conducted by the Morgan Sash and Door Company of Chicago, Illinois, for the purpose of stimulating interest in the improvement of homes. It consists of placing a constructive and carefully planned advertising program in the hands of retail lumber dealers to be used in developing their business. The announcement of this campaign was made thru a book entitled, "Sales and Advertising Helps for Morgan Dealers," sent out to twenty-two thousand retail lumber dealers in all parts of the United States.

The Morgan Company proposes to furnish dealers with the following aids: Copies of their booklet, "Adding Distinction to the Home," having the dealers' names imprinted on the cover for distribution among their customers; artistic yet convincing inserts bearing the dealers' names for out-going mail to customers; motion picture slides with dealers' names displayed prominently in colors; newspaper electros ready to run; an outline of the campaign, and co-operation thru the sales and advertising departments of the company.

This campaign comes at an opportune time, from the standpoint of the contractor and builder, since it furnishes an excellent opportunity for the development of a profitable winter season business. The drive is concentrated on the demand for Morgan French front and mirror doors as a means of improving the home. The installation of these doors is excellent winter work.

Contractors and builders will find that co-operation with the Morgan dealer in their vicinity will prove profitable. They stand in line to benefit, not only by this campaign, but also by the broad policy of the Morgan Company as expressed in their extensive advertising in magazines and building papers of national circulation.

The result of a campaign such as the Morgan Company has outlined to retail lumber dealers is largely dependent upon the energy which is expended in carrying out each local program. The plan is, without doubt, based on the "right idea," and it remains for the dealer and builder to bring some energetic team-work into play.



Cheney Company Celebrates Fiftieth Anniversary

The corporation of S. Cheney & Son, manufacturers of the "Zimmerman" iron bases for columns, announces the celebration of its fiftieth successive year in business.

The business was started by Stephen Cheney in 1866, has continuously grown from that time to this and the third generation is low connected with it.

The company celebrates its fiftieth anniversary by starting a branch foundry at Oneida, N. Y., where it has unexcelled shipping facilities on the New York Central and N. Y. O. & W. lines.

The new plant at Oneida has been recently built, is complete with automatic sprinklers, electric cranes, molding machines, exhaust mills and other modern equipment, and is located on a plot covering eight acres, so there is ample room for expansion.



A New Booklet on Porch Screening

Each spring it is becoming more generally known that the advantages derived from correctly equipped porches are of such importance that the demand for screened porches is assuming large proportions.

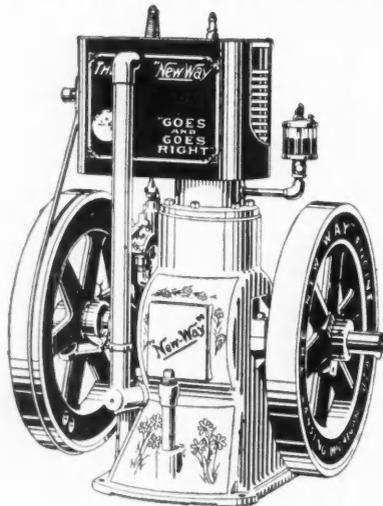
If people only knew that to screen in a porch was so

(Continued to page 126.)

THE "New-Way" ENGINE

A Contractor's "Power-Plant" in Every Sense of the Word

POWER—That's one of the first things the contractor wants—the "NEW WAY" is the most powerful engine made for its size and weight. The direct cooling feature eliminates bulky and heavy water or hopper tanks. No leaky or packed joints. No freeze-ups and no overheating. All the power generated is used—there's none lost, for the reason that the cylinders of the "NEW WAY" are ground to perfect size—that means down to a thousandth of an inch. From two to three more piston rings are used in the "NEW WAY" than in ordinary engines. The valves are made of the finest metal and fit perfectly. Such materials and workmanship mean perfect compression—and compression is power.



"New-Way"

"GOES AND GOES RIGHT"

And here are other exclusive "NEW WAY" quality features: High tension magneto; high efficiency carburetor; drop forged steel connecting rods and crank shaft; enclosed, dust-proof, oil-tight crank case and many other engine refinements. You need never worry about the "NEW WAY" getting out of order. You know what that means in your business. It isn't "cranky" like most gas engines—it's a dependable, reliable, economical machine that "GOES AND GOES RIGHT" before it leaves our shipping room, and, it's Guaranteed for life.

"NEW WAY" Engines built in all sizes and types, for all purposes, from 1 to 12 H. P.

Send for Catalog No. M41

THE "New-Way" MOTOR COMPANY
LANSING, MICHIGAN, U.S.A.
 10 OAK STREET

Fills Every Power Need of Carpenters and Builders

IN this age of speed, keen competition, labor scarcity and constantly increasing cost of building material, carpenters and builders are employing every practical method for reducing cost. • On thousands of building jobs, Ideal engines are *more* than paying their way—they are adding profits to every job by making possible faster building with less cost for labor.

The Ideal engine for 1917 will prove a still bigger profit maker. • Its design will embody a number of refinements that will make the Ideal a still greater assurance of constant power.

Wherever there is material to hoist—water to pump or other work requiring power, the Ideal will deliver dependable dividend paying service.

It is built exclusively for this kind of work. Light weight for its power—therefore easy to move about. Vertical type, requiring small floor space. • The enclosed crank case keeps the cylinder, piston and rings free from dust, dirt and grit.

Frost-proof, dirt-proof and foolproof. Runs with minimum care and attention. Needs no engineer. Very well balanced so that when mounted it runs with practically no vibration. It is equipped with a special carburetor, so arranged as to use warm air, which insures greatest efficiency even in the coldest weather.

For complete details of the Ideal engine, together with all information and special advice for carpenters and builders, address

THE IDEAL ENGINE CO.

630 E. Kalamazoo St., LANSING, MICH.

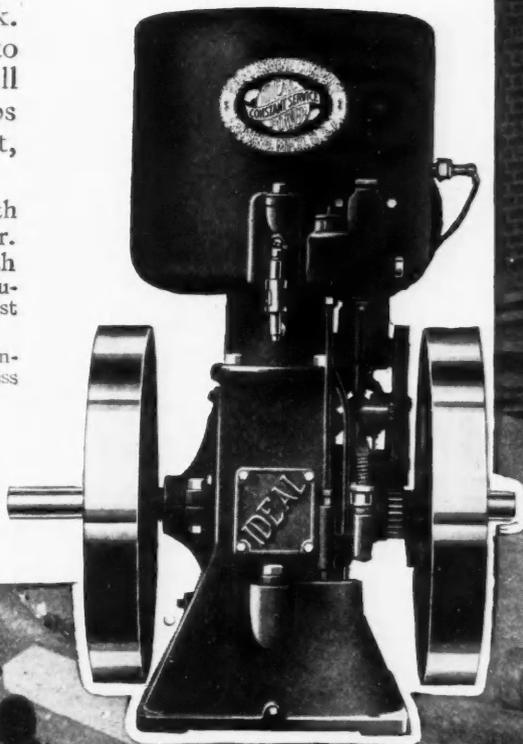
THE IDEAL ENGINE

The Ideal has been on the market for over 15 years

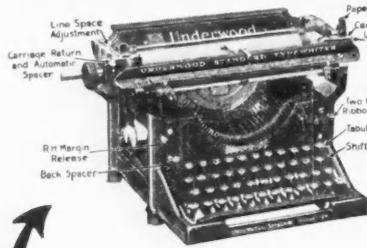
It was the *first* successful upright, hopper cooled engine manufactured.

It was the first engine to be adopted as the standard cement mixer and spray pump engine.

The Ideal is your assurance of constant power and constant service.



TYPEWRITER SENSATION



**Free Trial
Use as
You Pay**

Only \$3.00 a month until the low total price of \$49.15 is paid, and the machine is yours.

This is absolutely the most generous typewriter offer ever made. Do not rent a machine when you can pay \$3.00 a month and own one. Think of it—Buying a \$100.00 machine for \$49.15! Cash price, \$46.45. Never before has anything like this been attempted.

STANDARD VISIBLE UNDERWOOD

Perfect machines, Standard size, Keyboard of Standard Universal arrangement writing 84 characters—universally used in teaching the touch system. The entire line of writing completely visible at all times, has the tabulator, the two color ribbon, with automatic reverse, the back spacer, roller bearing carriage action, in fact every late style feature and modern operating convenience. Comes to you with everything complete; tools, cover, operating book and instructions, ribbon, practice paper—nothing extra to buy. You cannot imagine the perfection of this beautiful reconstructed typewriter until you have seen it. I have sold several thousand of perfect latest style machines at my bargain price, and every one of these thousands of satisfied customers had the beautiful, strictly-up-to-date machine on five days' free trial before deciding to buy it. I will send it to you F. O. B. Chicago for five days' free trial. It will sell itself, but if you are not satisfied that this is the greatest typewriter you ever saw, you can return it at my expense. You won't want to return it after you try it—you cannot equal this wonderful value anywhere.

You Take No Risk—Put In Your Order Now

When the typewriter arrives, deposit with the express agent \$7.15, and take the machine for five days' trial. If you are convinced that it is the best typewriter you ever saw, keep it and send me \$3.00 a month until our bargain price of \$49.15 is paid. If you don't want it, return it to the express agent, receive your \$7.15 and return the machine to me. I will pay the return express charges. This machine is guaranteed just as if you paid \$100.00 for it. It is standard. Over one hundred thousand people own and use these typewriters and think them the best ever manufactured. **The supply at this price is very limited, the price will probably be raised when my next advertisement appears, so don't delay. Fill in the coupon today—mail to me—the typewriter will be shipped promptly.** There is no red tape. I employ no solicitors—no collectors—no chattel mortgage. It is simply understood that I retain title to the machine until the full \$49.15 is paid. You cannot lose. It is the greatest typewriter opportunity you will ever have. **Do not send me one cent. Get the coupon in the mails today—sure.**

HARRY A. SMITH, 300, 231 N. Fifth Ave., Chicago

H. A. SMITH, 300, 231 N. Fifth Ave., Chicago, Ill.

Ship me the Underwood F. O. B. Chicago, as described in this advertisement. I will pay you the \$42.00 balance of the SPECIAL \$49.15 purchase price at the rate of \$3.00 per month. The title to remain in you until fully paid for. It is understood that I have five days in which to examine and try the typewriter. If I choose not to keep it I will carefully repack it and return it to the express agent. It is understood that you give the standard guarantee for one year.

NAME _____

ADDRESS _____

simple and inexpensive, and the advantages of health and protection so great, particularly to the children from disease-carrying flies, mosquitos and insects, the existence of a barren or open porch would never be allowed.

Owners of houses and apartments realize the fact that out-of-door living rooms and sleeping porches in the home are a necessity to quick renting, and porches heretofore "open" are being screened without delay.

To this end, your attention is called to an eight-page booklet containing a plan with full specifications, and showing in detail the construction of a screened porch with portable panels, which automatically lock together and are securely fastened to the porch by a few floor brackets and side hooks. These can be easily set up by anyone in a short time and are as easily taken down.

This pamphlet is excellently illustrated, containing floor plan and elevation of a screened porch, and affords an excellent means of introducing to the house owner a plan adaptable to his particular needs. No part of the porch is cut or disturbed in any way, and its appearance is greatly improved.

This is an ideal time to make porch screens. This plan allows a simpler and easier handling, and allows the taking on of more work. By taking advantage of the work at this time, the loss due to the inability to take on all of the work during the busy season is eliminated, and the consumer is not subjected to the annoyance of a delay.

Those who are interested may obtain these pamphlets and any desired information by addressing The Gilbert & Bennett Mfg. Co., 942 First National Bank Building, Chicago.



Artistic Effects in Shingles

The use of stained shingles in house construction has come to be a favored practice among many architects and builders. These shingles are applied to the walls as well as the roofs of all manner of houses from simple little bungalows to stately mansions, and the architectural and artistic effects have been altogether pleasing.

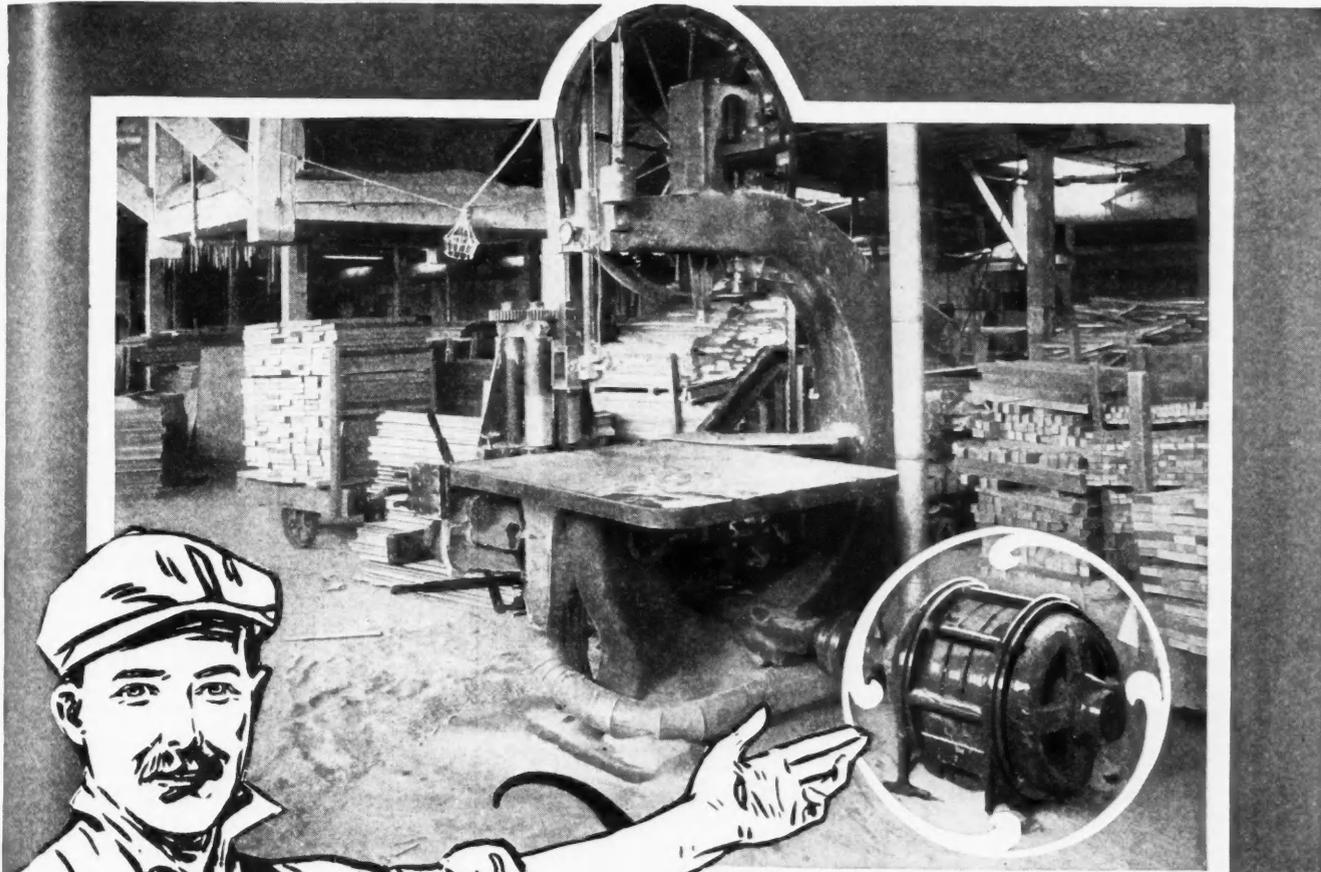
The revival of the Colonial type of architecture may be held partly responsible for the popularity of shingles as a wall finishing material, but shingles are now being used on the walls of houses of many and varied types of architecture. With the combination of several different methods of applying and many pleasing color tones, shingles have a rightful place among the favored finishing materials.

Especially in Colonial type houses it is possible to bring out the distinguishing features of the design by the use of an especially large shingle in the wall finish. The wide exposure which is possible with the larger shingle is very effective. Whether the shingles are used in uniform or random widths is largely a matter which must be settled by the personal preference of the owner. Recognizing the possibilities in this large shingle, the Standard Stained Shingle Company, North Tonawanda, N. Y., is supplying a 24-inch shingle with heavy butts. This shingle is one of the three lengths of "Creo-Dipt" stained shingles which are furnished in seventeen grades and thirty shades.

In addition to the regular stained shingles, this company is marketing a white shingle stain which they call "Creo-Dipt" Dixie white. This stain, when used on shingles specially treated for the purpose in their factory, produces a white-washed appearance that is both pleasing and lasting. This stain used on the large shingles offers the designer of Colonial homes a most adaptable finish for the exterior walls.

The Standard Stained Shingle Company will furnish anyone interested in the design and erection of buildings on which shingles are used the complete particulars in regard to "Creo-Dipt" products.

(Trade Notes Department Continued to page 130)



No Belts *Here*

This band saw is operated by a direct connected G-E motor. This method requires no belts. It shows what you can do to secure compactness, reliability and efficiency in your shop.

Progressive machinery manufacturers are well informed on G-E motors and control. You can also ask our nearest office, G-E motor agency or your power company for information covering the electrical equipment best suited to your machines.

General Electric Company

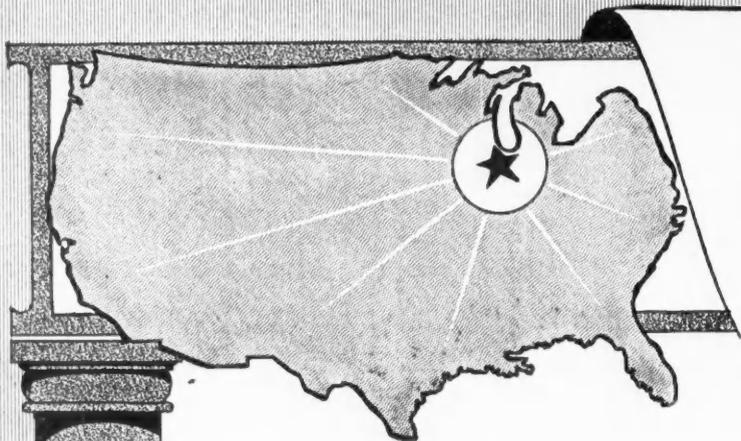
General Office, Schenectady, N. Y.

Sales Offices in All Large Cities

2500 G-E Motor Agencies

6433





Look Before You Build

Get the habit of writing to us in regard- ing to your building wants. This exhibit is a regular clearing-house of building information—the market where you can do your buying to the best advantage.

We Are Saving Builders Thousands of Dollars

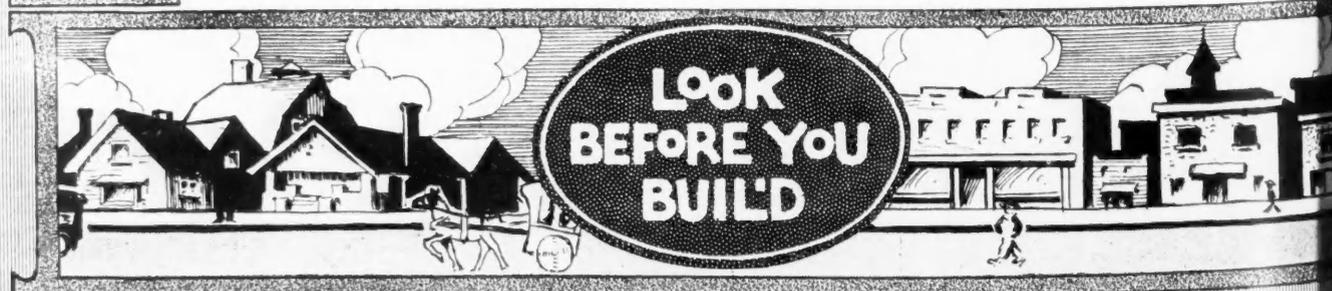
HUNDREDS of builders, architects and contractors are visiting Chicago's great **Building Material Exhibit** every day.

They recognize its unique value—have found by personal experience that they can save not only time but hard cash by coming to the **Exhibit**, where they can see the actual products they need—compare various makes side by side—pick the best for their purpose—secure the lowest figure without loss of valuable time—and be **sure** that it is the lowest.

They do all this at this vast Building Exposition—why not **you?**

Over 200 elaborate and interesting displays by America's leading manufacturers of building material and equipment. This great permanent **Exhibit** is one of the showplaces of Chicago—worth coming far to see. For those who cannot come we have a special market-investigation Service. Send us your plans and we will secure bids on any material or equipment for you without charge. Write us today.

BUILDING MATERIAL EXHIBIT, Entire Second Floor, Insurance Exchange
CHICAGO, ILL.



Look Before You Build

Here is your opportunity. Under one roof and on one floor all your building wants can be supplied. Here you can get in direct touch with the manufacturer and effect big sales.



Let Us Show You Where You Can Save Money on All of Your Building Materials—Send Coupon Today

This huge permanent building material exhibit is established primarily for your benefit. Here 200 manufacturers have come together under one roof—condensed their business into 200 intensely interesting displays, and invite you—for your own profit—to come and see and learn.

As a builder you are invited to make our beautiful display rooms your Chicago headquarters. We are here for that purpose. If you cannot come to Chicago yourself, get acquainted with us by mail, and let us be your Chicago representative. This service will cost you nothing, and will add materially to your financial welfare.

BUILDING MATERIAL EXHIBIT
Insurance Exchange
CHICAGO

Gentlemen:—I am in the market for the following Please put me in touch with manufacturers.

.....
.....

Name.....

Street.....

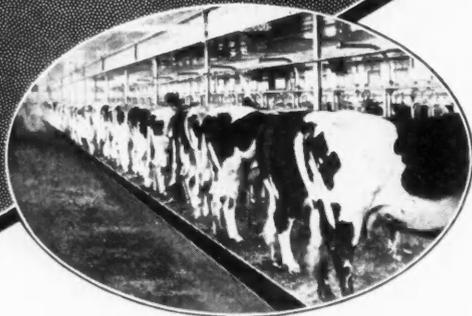
Town..... State.....

BUILDING MATERIAL EXHIBIT, Entire Second Floor, Insurance Exchange CHICAGO, ILL.

**LOOK
BEFORE YOU
BUILD**



The JAMES Reputation Back of Your Work Is the Combination That Builds Profits



Dairy Barn Construction Brings Biggest Profits

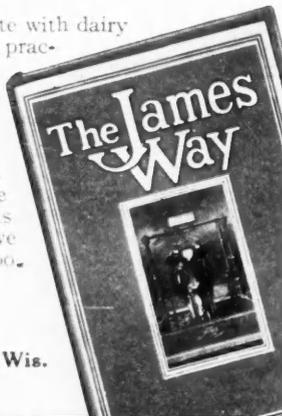
EVERY day throughout the country farmers and dairymen are realizing the value of modern barns. These men are building wonderful big barns or remodeling their old ones.

The builder who is prepared to show them the best producing barns—barns which bring increased health and vitality to the animals, a bigger yield and more profits—is the man who will "cash in" on these profits.

James Equipment means more milk, more profits, better and cleaner herds, and less work.

"The James Way" Book is complete with dairy barn information based on years of practical work and study. The book has proved so valuable to many men, they have insisted on paying for it. But we don't ask you to buy it. All we ask is that you send us the names of farmers you know who intend to build or remodel and the size of their herd and we will send this 312 page "James Way" Book and we will help you land these jobs too. Write us now for complete facts.

James Mfg. Co.
E. A. 75 Kane St., Ft. Atkinson, Wis.
Elmira, N. Y.



A Modern Home Convenience

One invention of late years which has gained much popularity thruout the country is the chemical indoor closet. One particular style known as the Comfort Indoor Closet, manufactured by the Comfort Chemical Closet Company, 312 Factories Building, Toledo, Ohio, has worked its way into several thousand homes and has done this entirely on its own merits. To those who are not familiar with this modern home necessity, the following facts will be found most interesting:

The Comfort Indoor Closet is odorless, sanitary and germ-proof, which means that it can be placed anywhere in the house. Of course, the above statement causes several questions to be asked and here are the answers:

This closet is odorless because of its scientific construction which, with a three-inch vent pipe, allows any odors which might arise to pass on outside of the house.

The closet is sanitary because the odors do not get into the room and because all germ-life which enters is quickly killed by the chemicals contained therein. The closet is germ-proof because of the chemicals used which, as above stated, kill all germ-life which enters. The chemicals used are harmless, they do not have any unpleasant odors, yet they do their work very effectively. These statements are so full of truth that this indoor closet is endorsed by several Boards of Health.

It is in the home where no sewage is obtainable that the indoor closet is fast becoming a home favorite. Just think what it means to the whole family to have an indoor toilet when winter comes with its cold and spring with its rain, making the path to the outdoor closet very unwelcome. Not only that, but think what a breeding place for the flies this old-style outdoor closet is when warm weather comes and remember that these same flies are found in the kitchens of most every home.

To those people who are looking for a modern home convenience which means comfort to all members of the household, the indoor closet, which is sanitary, odorless and germ-proof, is one first and big step.

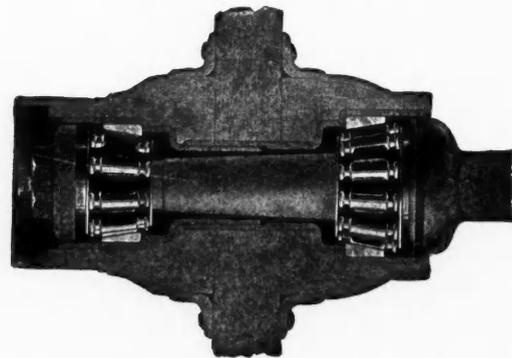


Miami Trailers Popular at Home

The best recommendation anything can have is that of the home folks who are in a position to know all about it. A good many things go big far away from home among strangers that the folks living right alongside the factory won't have much to do with. They probably know it too well.

Now there is this about automobile and truck trailers—in every town where these rigs are made, you will find a lot of them in use among the local carpenters and builders. Trailers have the endorsement of the home folks, those who know them best and who know the men manufacturing them. This fact should be the strongest kind of assurance to other

(Continued to page 132.)



Timken Roller-Bearing Axle as Used on Miami Trailers.



**“Yes, That IS a Beautiful Barn
—and I am Proud of THAT Job”**

THE KING AERATORS on the roof add beauty to any barn. They are the first things you see whether you look at the barn in a photograph or stand before the building itself. They give the barn a finished appearance that makes you proud to say that you built it. Recommend King Aerators in your barn jobs. Please your customers more and save yourself the cost of making cupolas. King Aerators are also the first units in the

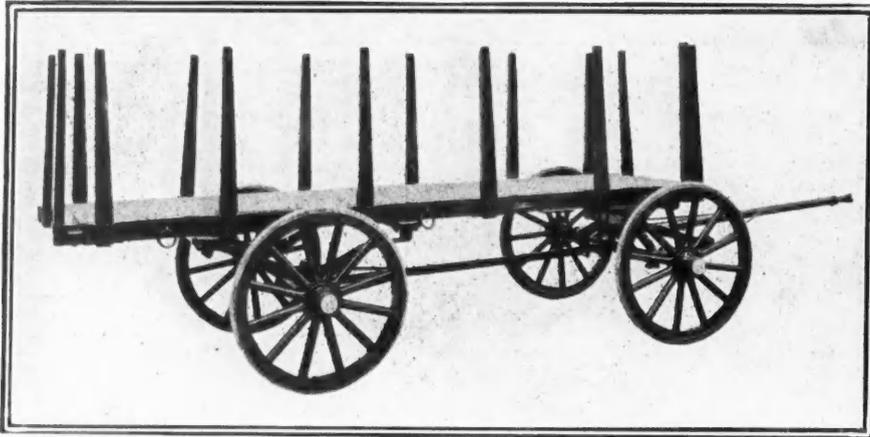
**KING SYSTEM of
Ventilation**

and barn ventilation is the farmer's big problem. We answer this problem for him by drawing plans of ventilation to fit the actual conditions in his building. That's King service. Sooner or later your customers will want a King System. Speak to them about it. Tell them to let you install it while you are building the barn. Make extra profits for yourself and give them better barns. If they are not ready for a King System, save them money when they do get it by having King Aerators on the roof. Write for our book on barn ventilation showing many photographs of barns fitted with King Aerators.



King Ventilating Company,
1120 Cedar Street Owatonna, Minn.

King Aerators
are ready to go in place the minute they arrive. Use them and save yourself the cost of building wooden cupolas.



Miami Trailer No. 12, 3,000 Pounds Capacity, Equipped with Stake Body for Builders' Use.

builders everywhere that trailers are right.

Up and down the Miami Valley in Ohio, carpenters and builders by the hundreds are using Miami Automobile and Truck Trailers. These are made nearby at Troy, Ohio, by the Miami Trailer Company. Mr. Jolley, of the company, says that the local builders have been so much interested in these trailers and have invested in them so readily, that he would like to place full illustrated information concerning the Miami Trailer in the hands of every one of our readers who is at all interested, or who feels in need of economical hauling equipment.

The illustrations herewith will show some of the important features of the Miami Trailers. The Timken Roller Bearing Axle, $1\frac{3}{8}$ inch in diameter, proves at once to every car owner the high-grade construction which the Miami Company are

putting into their trailers. There is nothing better in automobile construction than the Timken Roller Bearing.

Another necessary feature of a trailer is the shock-absorbing drawbar. The Miami drawbar is fitted with heavy steel coil spring, operative both on the push and pull. The connection between car and trailer is a ball and socket joint, which prevents to be exerted. Two sizes and styles of trailers are offered. The Model No. 10 has 2,000 lbs. capacity, wheelbase 76 inches and equipped with box body measuring 114 by 40 inches, or 42 inches, and with 8-inch oak flare boards.

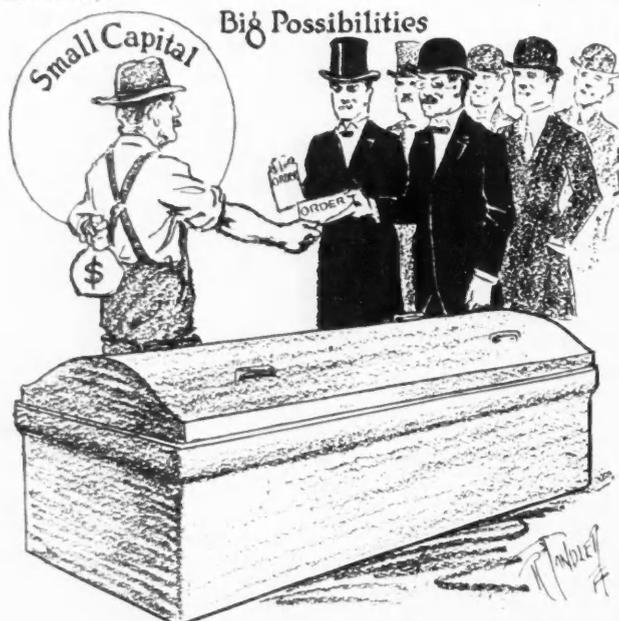
Model No. 12 has capacity of 3,000 lbs., wheelbase is 84 inches, and regular equipment is a stake body; floor measuring 11 feet 6 inches by 42 inches, with six stakes on each side and two on each end, stakes 30 inches high.

The Miami Trailer Company build nothing but trailers. They can furnish special bodies to meet all special requirements. They ask carpenters and builders to write them in regard to hauling equipment. They state that if trailers won't save you money they will frankly tell you so.

In any case, however, write them for their illustrated catalog. Every reader of the AMERICAN CARPENTER AND BUILDER ought to know about the automobile and truck trailer proposition, and they will be overlooking a good one if they don't get acquainted with the Miami. Address the Miami Trailer Company, Troy, Ohio.

"200% Profit in my Second Year"

UP in a little town alongside the Hudson is a live man. Some day he will be a rich man. For, in a little over two years, he has not only created a business of his own, but doubled his equipment and tripled his territory.



THREE years ago this summer, he first heard of the Norwalk Vault. Scraping together \$450 he took over the franchise for his County. He kept his regular business position, working at his vault business at nights and odd times.

WITHIN a year his profits had paid back his original investment, and left him a hundred dollars or so to the good besides. In his second year he cleared more than 200 per cent profit.

ALL this was done, mind you, outside his regular working hours, and in a dark, low cellar. He had no one to help him, and no capital. Now, however, things began to change; he moved into a shop with plenty of light and air, resigned his position to devote all his time to developing his own business. In another year, he was independent with money in the bank.

OF course, the man we would rather hear from is the one a little surer of success—the man with enough capital to go into vault manufacturing for his locality in a way big enough to make it a pleasure rather than a struggle. With the Norwalk Vault it is just as easy—and a good deal more certain—to make 200 per cent on an investment of \$4,500 as on one of \$450.

THE amount of money required varies directly with the size of the territory occupied. Even in the large cities, though, the capital necessary is astonishingly small compared with the possible returns. You won't need an expensive factory—any respectable shed will do; nor high priced labor—any intelligent laborers can do the manufacturing; nor any large sum tied up in machinery or materials—a few dollars at a time will keep the work going.

EVERY day, therefore, the franchise to manufacture the Norwalk Vault in any territory becomes increasingly valuable. Nearly half of the United States has in the last six years already been taken over by local manufacturers. If your territory has not, we will invite you to compare the opportunities of the Norwalk Vault with any other business you can find.

Look through the advertisements in this or any other magazine; see if you can discover any other article, patented and trademarked, with a sale based on as unchanging a thing as the human death rate, that you can develop exclusively in a protected territory, and cash in on as fast as the article becomes known to the public.

IF the idea appeals to you—and you have the energy and capital adequately to take care of your territory—write us for the details. We'll be glad to answer fully and frankly every question in your list, no matter how long. No obligation whatever on your part. Address

**The Norwalk Vault Company, 71 Seminary Avenue
Norwalk, Ohio**

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Willoughby, Ohio, Sept. 23, 1916.
 The Steel Scaffolding Co.,
 Evansville, Ind.

Gentlemen:

Enclosed please find check to cover cost of "Trouble-Saver" brackets you sent me. In regard to your brackets would say that the same are perfectly satisfactory in every respect, and are all that you claim for them, such as time and trouble savers, and that they make the most solid staging that I ever was on. I do not wonder that you put them out on trial, as to use them once is not to part with them, and anybody that wants their men to feel safe upon a scaffold cannot afford to be without them, and I will take pleasure in recommending them to anyone who is interested in safety first.

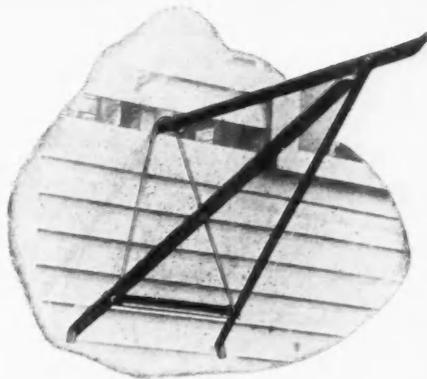
And I further would state that this testimonial is unsolicited and you are free to use the same if you care to.

I am, very truly yours,
 H. E. BARNES.

**What Mr. Barnes
 thinks---**

of his

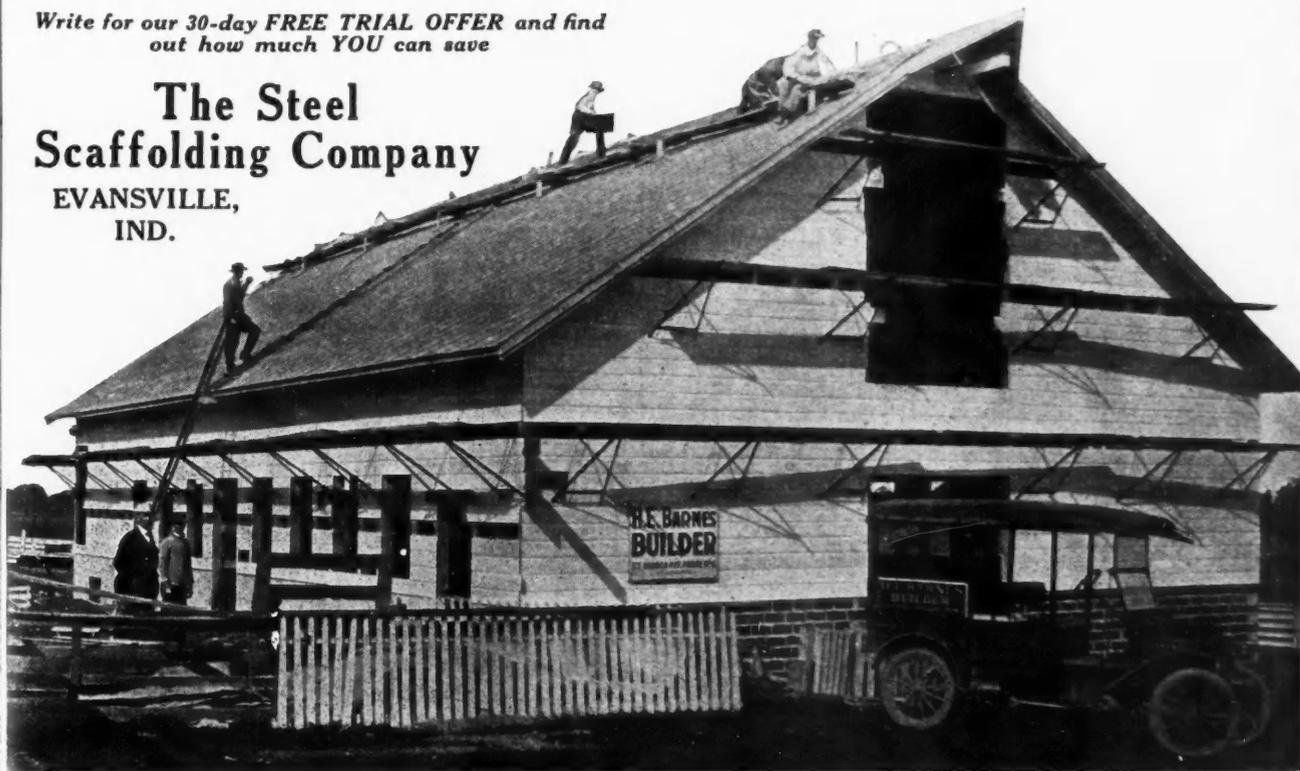
"Trouble-Saver" Scaffolds



This letter is only one of many that we receive from satisfied users. When you consider that a man can work twice as fast on a "Trouble-Saver" because he has no fear of danger; that he can do a half-day's work in ten minutes; and that he can practically eliminate his lumber and nail bills—do you wonder that so many contractors swear by the "Trouble-Saver"?

Write for our 30-day FREE TRIAL OFFER and find out how much YOU can save

**The Steel
 Scaffolding Company**
 EVANSVILLE,
 IND.





The bath as it was —and as it is

In ancient Rome bathing was a luxury—a function attended with magnificent formalities. Today the bath tub is a regular part of the equipment of the home.

More and more, the people of our time are insisting that their bathrooms shall be made attractive as well as hygienic by the installation of

KOHLER WARE

—Always of one quality—
the highest

In the designing and construction of bath tubs, lavatories and sinks, as well as in the art of enameling, we maintain *consistent supremacy*.

The *attractiveness* of KOHLER WARE shows for itself; the *quality* is guaranteed by our permanent trade-mark in the enamel.

Although representing the greatest advancement in bathroom luxury KOHLER WARE, owing to manufacturing economies, is *moderate in price*.

To Builders

The "Viceroy," our latest built-in bath has *exceptional* attractions. It is being specified for the finest homes, apartments and hotels. Owing to manufacturing economies we are able to maintain a moderate price on this *very beautiful* one-piece tub.

Write for free copy of our instructive book "KOHLER OF KOHLER."

"It's in the Kohler Enamel"

KOHLER CO.
Founded 1873
Kohler, Wis. U.S.A.

BRANCHES

Boston New York Philadelphia Atlanta
Pittsburgh Detroit Chicago
Indianapolis St. Paul St. Louis Houston
San Francisco Los Angeles
Seattle London

*The "Viceroy," Plate V-12-A Columbia Lavatory,
[Patent Applied For] Plate K-205-A*



Striking Wall Board Poster for Dealers

The accompanying photo of a wall board hanger illustrates the last word in that form of advertising. This wall hanger was sent by the Cornell Wood Products Company of Chicago and Cornell, Wis., to their 5,000 dealers in building materials all over the country. The design, which is in four colors, will attract especial attention by reason of the ingenious way in which the Cornell Company has contrived to exhibit the exterior and the interior of an attractive house in the same drawing.

There are three beautifully furnished rooms in the picture, each illustrating how admirably Cornell wall board lends itself to color schemes in walls, ceilings and partitions. The policy of the Cornell Company under the inspirational leadership of C. O. Frisbie, its president, has been one of generous use in printer's ink in all directions. The success of this company is one of the best examples of what can be



Photograph (Greatly Reduced) of Large Colored Wall Hanger.

done by square deal for the trade, supplemented by a broad-gauged merchandising and advertising policy, and high quality goods.

The Cornell Wood Products Company entered the wall board business three years ago. It was unknown to the trade and the consuming public. Business was dull in nearly all industries and especially so in the building trades.

And yet in those three short years Cornell wood board has won an international reputation for its wall board and has attained a distribution and standing in the trade that have made it a dominant factor in the wall board industry.

When President Frisbie assumed charge of the Cornell Wood Products Company he saw at once that if the business was to succeed it must turn out a wall board that

(Continued to page 136.)

Make \$1,500 to \$3,000 This Winter

Work Right in Your Own County---All or Spare Time

Profits Start First Day---Success Assured

Wonderful new business—a golden opportunity for one good hustler in every county. **No experience required.** No risk. Samples furnished—just follow easy instructions and work honestly—for yourself. If you want a high class position—if you want to make the winter months count—if you want **\$1,500 to \$3,000 cash** for five months, **write today.**

Amazing New Home Invention

The Shafer Ventilated Chemical Indoor Closet

No plumbing—no waterworks or cesspool. **Banishes the outdoor privy.** Revolutionizes living conditions in country and village homes. Solves the one humiliating and perplexing country home problem. An imperative necessity to health, comfort and convenience. Perfected by heating and ventilating engineer. **Tested in 2,000 homes for three years.** Gives positive satisfaction. **Demanded everywhere.** A sale at every home. **Thirty days' free trial guarantee.** Low priced—warranted for ten years. Illustrated book free, showing pictures of homes and rooms containing this wonderful device, complete description, letters of endorsement from health authorities, doctors, editors, and scores of users with full names and addresses. This book is free—send for it today—**investigate!**

\$112.00 in Eight Hours

That's the record of one man in a single day. **The same man has never sold less than five closets for any half day's work.** Every home a prospect. Every sale makes **dollars**—not pennies—of profit. Biggest money-making opportunity ever offered. Liberal commission. Permanent business. **Exclusive agency contract.** Territory free. Co-operation, advertising, assistance. Business supplies the capital.

Agents Outfit FREE

Send no money. No order required to start. We start you **FREE.** We teach you how to make amazing success. Write now. Secure your county under exclusive contract. **Don't delay.** Write a letter or card giving name of your county and mail it today. Risk a stamp to get complete free information. **Do it right now on your part.**

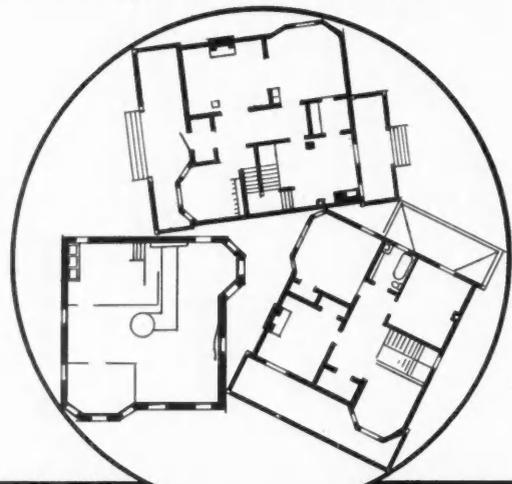
The Shafer Mfg. Co.
441 Colton Bldg., Toledo, Ohio



Chemicals, which are furnished with the closet, and air currents do the work, automatically.

Price Complete Only \$15

Reduced reproduction of plans as prepared by our engineering department for owners of buildings



Plan to Reduce Heating Cost $\frac{1}{2}$ to $\frac{2}{3}$

Guaranteed with the Williamson UNDERFEED

That country home, that insufficiently heated city dwelling, that store—enhance its selling or renting value by seeing that it is comfortably and economically heated.

Do it all with the Williamson UNDERFEED Furnace or Boiler—and reduce coal cost $\frac{1}{2}$ to $\frac{2}{3}$ guaranteed!

Free Heating Plans

Let our heating engineers furnish complete heating plans for every intricate heating problem. No charge for this. As a builder these plans will enable you to do a master job. As an owner they will insure your getting the utmost service and economy from the Williamson UNDERFEED system you install, whether you heat with warm air, hot water, steam, or vapor.

WILLIAMSON UNDERFEED Furnaces and Boilers

Cut Coal Bills $\frac{1}{2}$ to $\frac{2}{3}$ Guaranteed

As an evidence of UNDERFEED efficiency and guaranteed economy, read the following letter—one of thousands telling of more and better heat for less money the UNDERFEED way.

"I like the UNDERFEED fine. It has been as cold as 20 below zero here this winter. I am going to get through the winter with about half the expense for fuel that I did with my base burner, and have kept warmer and quite a bit more space heated. I have been using mixed coal, Iowa with some slack and some Illinois lump coal."

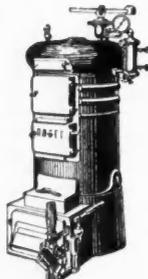
(Signed) D. E. Wilson, Secy. & Mgr. of Milton Independent Telephone Co., Milton, Iowa.

If you are an architect, contractor, builder or owner, write today for interesting book "From Overfed to UNDERFEED" which fully pictures and explains the scientific principle by which the Williamson UNDERFEED reduces coal cost $\frac{1}{2}$ to $\frac{2}{3}$ —guaranteed!



The Williamson Heater Company

117 Fifth Avenue, Cincinnati, Ohio



The Williamson Heater Co., 117 Fifth Ave., Cincinnati, Ohio.
 Tell me how to cut my coal bills from $\frac{1}{2}$ to $\frac{2}{3}$ with a Williamson UNDERFEED.
 Warm Air..... Steam or Hot Water.....
 (Mark X after System Interested In)
 Name.....
 Address.....
 My Heating Contractor's Name is.....
 HEATING CONTRACTORS: Let us tell you about the Williamson UNDERFEED and our proposition. Both are winners.

would stand out in the trade as "something different." He also saw that the company must have its own source of supply for raw material in order to maintain uniform quality and to be able to make prompt deliveries.

So under Mr. Frisbie's direction chemists and other experts were set to work to perfect the process of manufacture. While these experiments were going forward agents of the company went about the forest country of northwestern Wisconsin and picked up desirable timber lands from which to draw suitable supplies of logs for years to come.

The wisdom of this policy was soon made apparent. Mr. Frisbie and his experts devised a process of manufacture that made a new wall board, one that by reason of triple sizing of each fiber and other exclusive features, made the resulting wall board moisture proof and enabled the company to guarantee that it would not warp, buckle, chip, crack or fall if properly applied.

As a result of Mr. Frisbie's foresight in buying up timberlands, the Cornell Wood Products Company has an abundant supply of raw material right at its own doors and has been able to guarantee deliveries in all markets without danger.

The wall hanger pictured here is the first of a series of four-color posters, booklets and other printed matter which the Cornell Wood Products Company will send out during the coming year to help its dealers increase their business.



The Value of Scientific Heating Plans

No matter how well built or how scientifically correct in principle a heating system may be, a goodly portion of the efficiency is lost unless the installation is made along equally scientific and effective lines.

Realizing this, the Williamson Heater Company, of Cincinnati, makers of Williamson Underfeed Furnaces and Boilers, maintains a staff of engineers whose sole duty is to prepare complete heating plans to the last detail of installation for architects, contractors, builders and house owners with difficult heating problems to solve.

The value of this free service is particularly apparent when considered with the guaranteed saving of $\frac{1}{2}$ to $\frac{2}{3}$ coal cost wherever a Williamson Underfeed Furnace or Boiler is installed.

Such a service enables any architect, contractor or builder to recommend the Underfeed with utmost confidence that the installation will be a master job—that there will be generous heat and comfort from the first day the fire is lighted—that it will make the house a real home where the efficiency of the heating system is concerned.

And there is this other advantage—a master job of installation means a satisfied owner, and a heating system that will continue to advertise the sound judgment and efficiency of the party recommending it.

The Williamson Heater Company will send to anyone interested in scientific installation, full particulars of this free and helpful service for builders and owners alike. No further obligation is incurred by writing. Address a postal to 117 Fifth Avenue, Cincinnati, Ohio.



Ideal Engines, Hoists and Pumps

The Ideal Engine Company, of Lansing, Mich., calls particular attention this year to their standard design of engines as adapted to light contractors' work.

Utmost simplicity in design marks the Ideal as specially fitted for the contractor. It can be operated to full advantage even by a novice, and is so perfectly built that it requires no expert care and attention.

The Ideal is exceedingly light in weight for power delivered.

(Continued to page 138.)

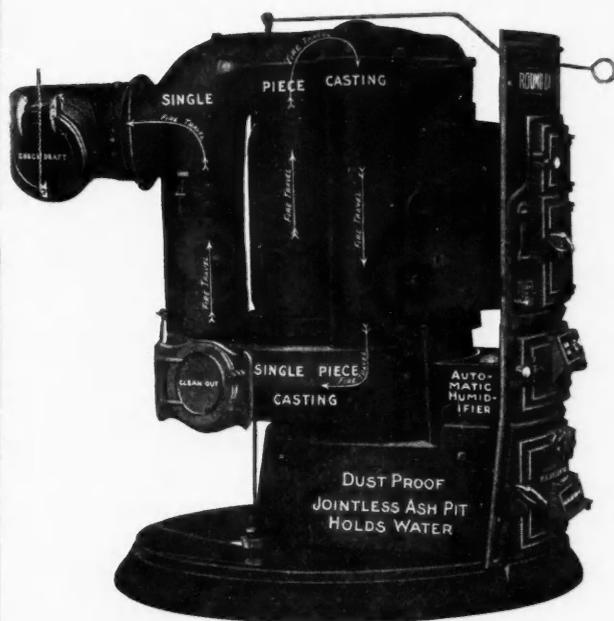
For a More Healthful and Economical Heating Service



Recommend and Specify a

"Makers of Good Goods Only"

Round Oak Moistair Heating System



More *healthful* because it properly HUMIDIFIES as well as thoroughly ventilates all heated areas.

More *economical* because of fuel saving due to the fact that warm, fresh air, *properly humidified* requires 7 degrees less heat to be comfortable, than does DRY air, and because of certain exclusive *mechanical features*.

The Only Heating System That Automatically Ventilates and Humidifies

The Round Oak Moistair System is an achievement of 46 years manufacturing experience and over 60,000 Round Oak Systems are in use. So far as ascertainable, every user *more than satisfied!*

Extra deep Fire Pot with Combustion Chamber full size to top; largest fire travel inside the casing; perfect, air-tight fire control—are three of many "make-good" features found only in this System, which you can recommend anywhere with Credit. Let us explain fully.

Big National Advertising Campaign

is right now being launched to drive home the *savings* effected by the Round Oak Moistair Heating System. Over 20 Million People will be reached! Full and complete information will be wanted *everywhere*. Be prepared.

Get All the Facts! Now!

On request we will gladly send you our new book, fully explaining this System, and showing *how we co-operate with the trade*. Write today.

The Beckwith Company

Round Oak Folks

10 Front Street Dowagiac, Mich.

Five Star Points of Round Oak Supremacy

1. **Health** Only Heating System that automatically ventilates and HUMIDIFIES.
2. **Comfort** Delivers pure, warm, ever-changing moist air, free from dust, gas, smoke—fitted with gas-tight doors and dampers.
3. **Economy** Longest fire travel all inside casing; improved hot blast Ring; extra deep fire pot; extra large combustion chamber affords perfect combustion; most heat on minimum of fuel.
4. **Convenience** Simple regulator controls entire system. Self-cleaning. Ash pit dust-proof—seamless; fitted with sprinkler. Non-leak door frames cast on—not bolted. Easy to operate.
5. **Durability** Materials used stand highest physical tests. All hinge pieces *drilled*, not cast. Never a bolt, where a rivet will do! Tight fittings guaranteed. *Good for generation of service.*

which is a distinctive advantage on any job. The enclosed crank case keeps all grit out of the cylinder, piston and rings—this crank case is also featured by self-oiling bearings, which insure perfect lubrication by the splash system. Both intake and exhaust valves are oversize and entirely surrounded by water in the extra large cooling tank, which is claimed to be absolutely frost proof.

Being a vertical type of engine, an exceptionally small amount of floor space is required. On the other hand, the Ideal engineers have so perfectly balanced their engine that when mounted it runs with very little vibration.

Automobile design has been followed to a certain extent as applied to the carburetor. Air is carried up between the valves before reaching the carburetor, which helps to cool the valves from the bottom and allows the warmed air to mix with the gasoline, thereby providing for a reduction in gasoline consumption. This point is of particular interest to most users, especially since gasoline has so advanced in price.

Every Ideal cylinder, piston ring, crank shaft and piston pin is ground, which insures a perfect fit and guarantees every part to be interchangeable with any other part manufactured for the same size engine.

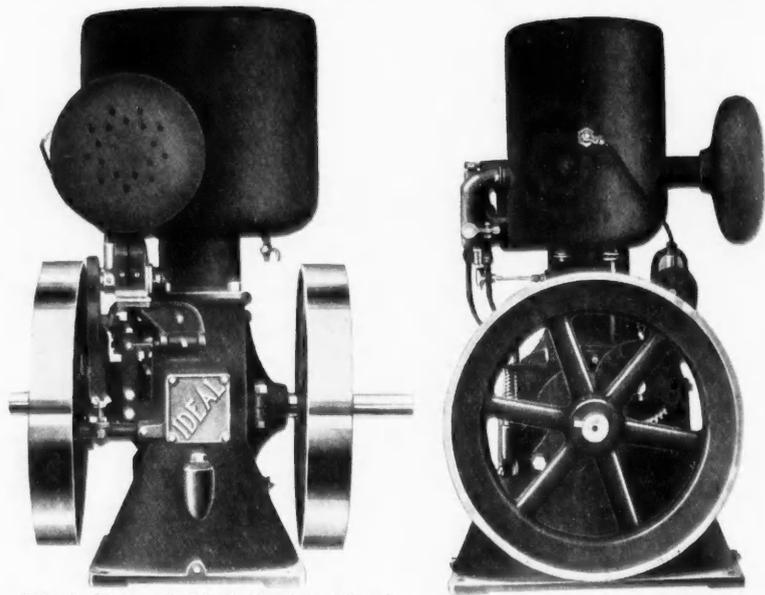
An extra large supply of lubricating oil is kept in reserve next to the cylinder under cooling tank—thus insuring oil at uniform temperature, and as a result perfect lubrication.

In addition to the engines manufactured by the Ideal Engine Company, a full line of contractors' equipment is offered of the same degree in quality. This line includes single drum one way hoists, double drum one way hoists, single drum

reversible hoists, double drum reversible hoists, diaphragm pumps, force pumps, centrifugal pumps, and air compressors, all furnished direct connected to Ideal engines.

On the whole, the Ideal Engine Company believe that the contractor and builder should investigate carefully before buying an engine or piece of equipment. With this in mind, they gladly offer the services of their engineering department in solving any power or equipment problem the contractor may have.

(Trade Notes Department Continued to page 142.)



Wheel View of Ideal Engine, Showing Carburetor, How Magneto Gears are Direct Connected, and Spark Plug Just Above Valves on Inside of Hopper.

Exhaust Side of Ideal, Showing Magneto and Large Bearing Boxes.

This Onepipe Heater is Your Opportunity

Because you not only specify it, but actually *sell it at a profit to you*. Installation is very simple—requires only hammer, saw and screw-driver, and cutting only one hole, in the floor.

INTERNATIONAL Onepipe Heaters

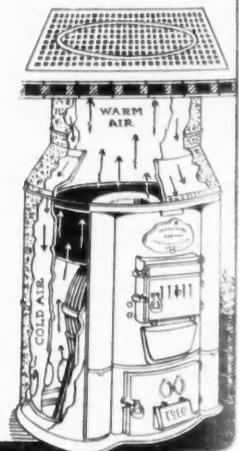
are selling fast, and making good. They are so much better than stoves, so simple and easy to run and cost so comparatively little, that they appeal to almost everybody using stoves for heating. A "Onepipe" heats the whole house but keeps the cellar cool.

The "Onepipe" is Advertised Nationally in Rural Publications, sold on 60-day trial, and is Guaranteed.

Write at once for Booklet and Agency Offer, explaining this new field for profit and how to avail yourself of it. Address Dept. M.

INTERNATIONAL HEATER CO., Utica, N.Y.

Makers of the Largest Line of Heating Apparatus in America
Steam and Hot Water Boilers, Warm Air Furnaces, Water Supply Boilers, Etc.)



IT PAYS TO SELL COMFORT

THE PIPELESS **CALORIC** FURNACE

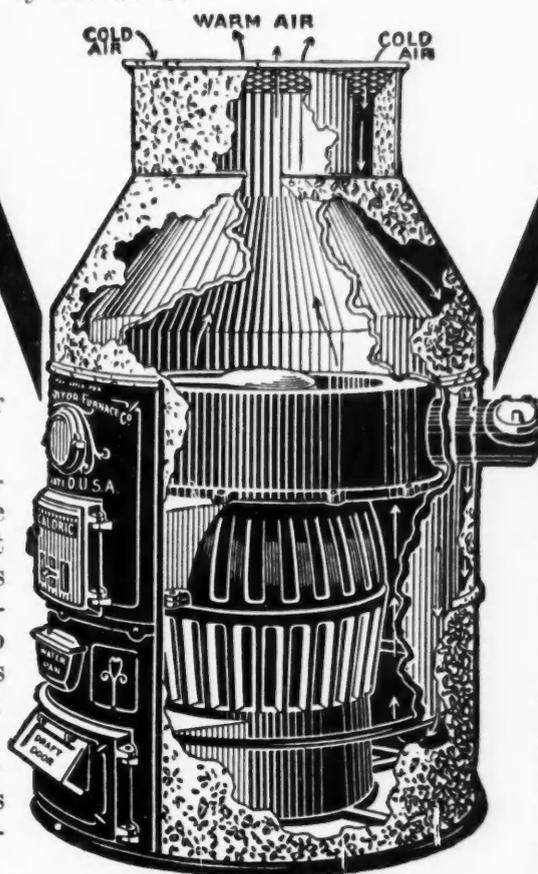
Every time you build a house, see that you get the contract for the Caloric Pipeless Furnace. It means a pleased customer who will gain you another. For the moment a home owner or a home builder understands the remarkable efficiency and the great economy, the cool cellar and the ease of installation in old or new houses, he wants it.

One Caloric Pipeless Furnace sells a neighborhood. You can capitalize this enthusiasm for the pipeless furnace to the extent you choose. Why not do it?

The Caloric is the Original Patented Pipeless Furnace

Installs as easily as a big stove. Heats a house from one register. No pipes to clutter the cellar, no holes to cut in floors and walls. No matter how hard the Caloric is run, it never makes a cellar too warm for vegetables and fruits.

We are advertising the Caloric Pipeless Furnace in the prominent farm papers that cover the country. This is educating prospective builders and furnace buyers to the advantages of pipeless heating and will help you tremendously in pushing sales. Remember, we are interested in your success and will aid with a very complete line of dealer's helps.



Heats An Entire House From One Register

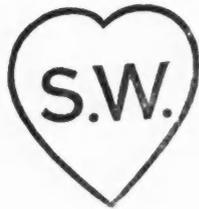
Sends warm air rising *naturally* to every room in the house and draws cold air down through one outer channel to be re-heated and put again in circulation. Contrary to a long-held notion, this gives the most perfect and healthful ventilation possible. The Caloric firepot is extra large and gives great radiation. Burns coal, coke or wood. Guaranteed to save 35% of fuel.

As easily installed in an old house as in a new. Any "handy man" can set up the Caloric and put it in operation.

Our Engineering Department gives complete instructions for installation. Our binding guarantee insures the customer satisfaction and you a suitable profit.

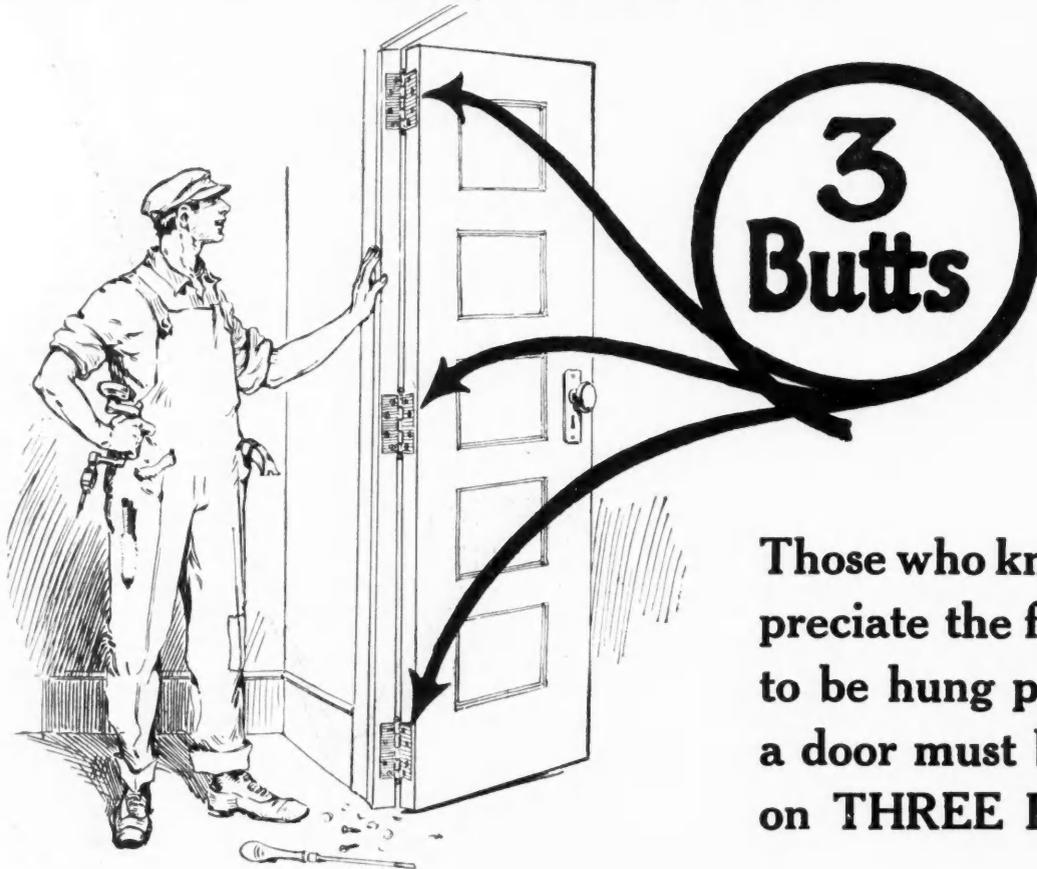
All Particulars by Mail—Write for Them

THE MONITOR STOVE AND RANGE CO.
100 Gest Street Cincinnati, Ohio



Fifty Dollars for for Hanging Every Door

Contest Closes January 31st, 1917



Those who know, appreciate the fact that to be hung properly, a door must be hung on **THREE BUTTS**.

EXAMINE the doors you pass through today. Note how some stick, warp, creak and bind.

What, in your judgment, would three Butts do to remedy this?

Write the **STANLEY WORKS** your reasons. We will give you twenty-five dollars if you submit the best reason, ten dollars for the next best, five dollars for the next, and three dollars for the three next best "Three Butts" reasons.

What we want is a brief article giving one or more reasons for hanging every door on three butts instead of two. Send in as many reasons as you wish. This isn't a competition in English composition, but in reasons for hanging every door on three butts. It is your *ideas*, rather than your

way of expressing them, which will win a prize.

Think over the subject carefully today and write your letter tonight. You may have just the reason that will win the twenty-five dollar prize.

One Best Reasons for on Three Butts



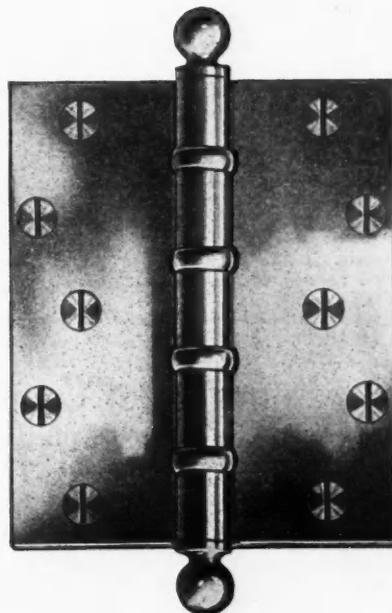
Rules for the 3-Butts Prize Contest:

- 1—This contest is open to anyone.
- 2—Any contestant may submit as many arguments as he wishes, although a contestant can win but one prize.
- 3—All articles submitted become the property of THE STANLEY WORKS.
- 4—Fifty dollars in cash prizes will be offered. A prize of twenty-five dollars for the best article submitted, ten to the next best, five to the next best, and three to each of the three next best.
- 5—Address all articles submitted for this Contest to the Advertising Department of The Stanley Works, New Britain, Conn.
- 6—Write your article on only one side of a sheet of paper. If there is more than one sheet, pin the sheets together carefully.
- 7—Write your name and address on the reverse side of each sheet of paper. Contest closes January 31st, 1917.

IT is the **weight** rather than the **dimensions** of the door that determines the size of the Butts on which it should be swung. Note the following table:

DOORS—

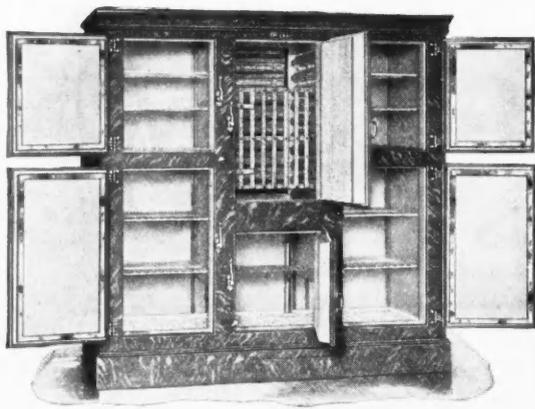
Cupboard	three 2½" Butts
Under 30 lb. weight	three 2½" Butts
30 to 50 lb. weight	three 3½ x 3½" Butts
50 to 60 lb. weight	three 4 x 4" Butts
60 to 75 lb. weight	three 4½ x 4½" Butts
75 to 100 lb. weight	three 5 x 5" Butts



*Stanley Ball-bearing Butts
give perfect service and
indefinite wear.
No oiling necessary.
Non-rising pins.*

Stanley Works
New Britain, Conn., U.S.A.

New York
100 Lafayette Street
Chicago
73 East Lake Street



Architects and Builders Choose the Best

Every architect and builder realize that beautiful buildings and residences are not complete unless they are equipped with scientific refrigeration systems. That is why the great majority of them endorse and specify

McCray Sanitary Refrigerators

For over thirty years the McCray has been used in the finest hotels, clubs, restaurants and residences. It was selected by the U. S. Government as the best for use in the U. S. Pure Food Laboratories, and it is recognized everywhere as the standard of superiority.

The opal glass, white enamel and odorless wood linings of the McCray are sanitary and easy to keep clean. All foods are kept pure, cool and fresh by scientific refrigeration and spoilage is reduced to a minimum.

You can select from a large variety of ready built sizes or we will build special sizes to meet any requirement. In the better buildings and homes McCray Refrigerators are arranged for outside icing and conform to the floor plan and decoration.

Free Plan Service

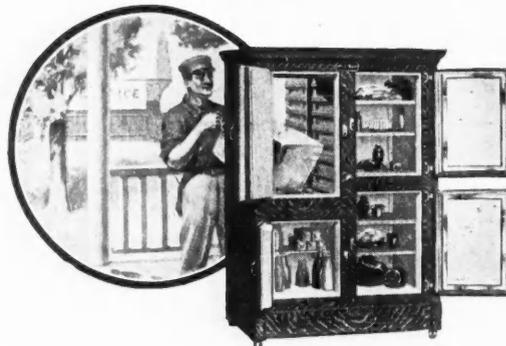
We maintain a special drafting department to co-operate with architects and builders and to furnish ideas and suggestions for any type of refrigeration equipment.

Get these catalogs for your files.

- No. 92 for Residences.
- No. 51 for Hotels, Clubs, Institutions.
- No. 70 for Grocers.
- No. 62 for Meat Markets and General Storage.
- No. 74 for Florists.

McCray Refrigerator Company
760 Lake Street Kendallville, Indiana

Agencies in all principal cities



Land Value Increase Due to Autos

H. P. Branstetter of the KisselKar estimates, from figures recently compiled by the Department of Agriculture, that tillable lands thruout the United States have in the last five years increased in value at least 50 per cent, all of which is directly traceable to the automobile.

The bulletin of the Department of Agriculture, upon which this estimate is based, is entitled "Economic Survey of County Highway Improvement" and gives facts relating to eight counties selected as a test. Four of these are in Virginia and one each in New York, Alabama, Florida and Mississippi. The increase of land values in five years in these counties ranges from 25 to 194 per cent. There are 3,027 counties in the United States.

These figures certainly suggest fascinating mathematics and astounding calculations. Just as an instance: The Department of Agriculture finds that in the eight counties investigated, the saving in haulage costs, in five years reviewed, amounted to \$627,409. Apply the same situation to the whole country and the saving would amount to the tidy sum of \$237,395,502.

"You can trace this marvelous development to the advent of the automobile," concludes Mr. Branstetter, "for good roads have been fathered and fostered by the automobile. All of which goes to show that the investment in cars, great as it is, is nothing in comparison with the benefits and blessings that have flowed from it."



Something New in Disappearing Beds

The United States Patent Office, in a long string of patents, records the Sorlien Ceiling Bed, which is something new in disappearing beds. This bed was originally designed for bungalow use, but since the first model was completed so many radical improvements have been made that it now opens up possibilities in its economic use in home building that were never dreamed of before.

It is generally recognized that plenty of open air sleeping is necessary to good health. Modern houses are designed so that this feature may be taken care of and many old houses have porches which might be used for open air sleeping. The one thing which presents a difficulty in the utilization of porches for this purpose is that the ordinary bed fills the average sized porch completely and robs it of the possibility of further usefulness. Open air sleeping conveniences can easily be realized with the ceiling beds on the open and screened porches of a home, and therefore these beds fill a long felt want in home building.

In the small house where every foot of space is needed in the living rooms during the daytime, and only very limited sleeping accommodations are furnished in the few bedrooms, the ceiling bed is a logical way out of the difficulty. It not only helps to utilize every inch of space, but it is installed without taking anything from the attractiveness of the room.

A complete description of this bed and other desired information may be obtained from the Sorlien Ceiling Bed Company, 410 Sixth Avenue S., Minneapolis, Minn.



Acme Equipped with Dump Body

Announcement is made by the Cadillac Auto Truck Company, Cadillac, Mich., manufacturers of the famous Acme trucks, that their vehicles, specially equipped with utility dump body as shown in the accompanying illustration, are doing valiant service in various parts of the country for

(Continued to page 144.)

CORBIN



JUST A FEW

Out of a large assortment of door handles to be used with high-grade locks for entrance doors. They are right in line with modern ideas, and sure to please. The most popular trim for residence work. Folder K-82 shows the entire assortment. Sold by the best hardware dealers.

P. & F. CORBIN

The American Hardware Corporation Successor

NEW BRITAIN, CONN., U. S. A.

NEW YORK

CHICAGO

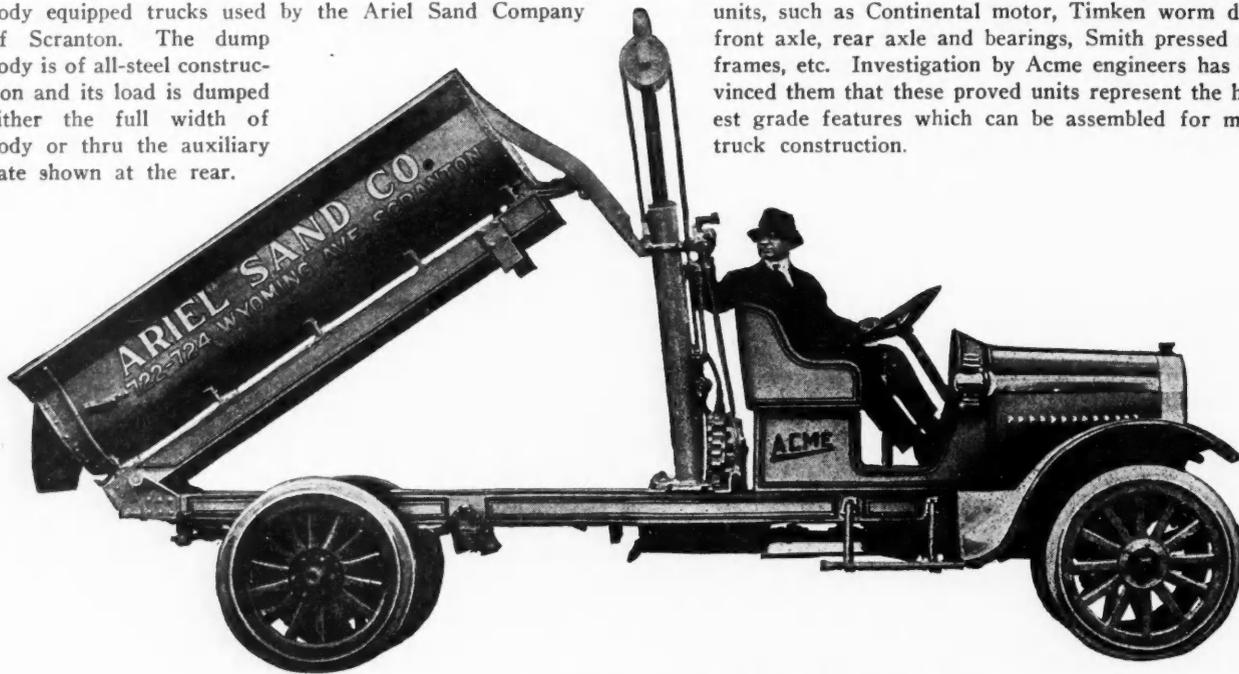
PHILADELPHIA

those engaged in building and kindred activities. The big feature of the Acme dump body equipment is the surprising ease with which one man can raise or lower the body without leaving the driver's seat. This effects a big time-saving in loading and unloading. Acme engineers devoted much effort to the production of a vehicle to meet the specific needs of the building industry.

The illustration shows one of the Acme utility dump body equipped trucks used by the Ariel Sand Company of Scranton. The dump body is of all-steel construction and its load is dumped either the full width of body or thru the auxiliary gate shown at the rear.

The truck unloads with equal facility either into sacks or chutes. An arrangement has been devised which permits the division of the dump body space so that separate deliveries can be made at one time and one load dumped without displacing the other.

The Cadillac Auto Truck Company has provided for a big business on this particular vehicle. Acme construction is standard thruout, the manufacturers using only proved units, such as Continental motor, Timken worm drive, front axle, rear axle and bearings, Smith pressed steel frames, etc. Investigation by Acme engineers has convinced them that these proved units represent the highest grade features which can be assembled for motor truck construction.



The Self-Dumping Rig is a Strong Argument with "Acme" Motor Truck Users.



Barberton, Ohio, Dec. 4th, 1916

The W. A. Ives Mfg. Co.,
Wallingford, Conn.

Dear Sirs:—

I received a letter from you asking me to go to Ashland Hardware Co. and get a "Mephisto" bit. Will say that I went and tried one against a Russell Jennings and came away with a dozen. Would have gotten a full set but they were lacking the $\frac{1\frac{5}{8}}$ " size. Since receiving your letter I have moved to Barberton and my address is,

Merl Jones.

Barberton, Ohio,
Station A, Box No. 24

Users of Auger Bits

Please read what one man has to say about "Mephisto" Auger Bits. If you would like to try a "Mephisto" bit and cannot secure one from your nearby tool dealer, write us today.

The W. A. Ives Mfg. Co., Wallingford, Conn.

STANLEY GARAGE HARDWARE

New Britain, Conn., U. S. A.
New York
Chicago

OUTSIDE ELEVATION AT HEAD OF DOOR

INSIDE ELEVATION AT HEAD OF DOOR

ELEVATION OF HINGE NO 1458
The strongest Garage Door Hinge made 36 in. long, 1 1/8 in. offset gives 2 1/2 in. throw
Scale 1 1/2 in. = 1 Foot

SECTION
ELEVATION OF GARAGE DOOR HOLDER NO 1774
Pivot Plate A attached to door, Slotted plate D to head jamb

PLAN OF DOOR AND FRAME
Showing hinge No. 1458 used at top and bottom of extra heavy doors. Scale 1 1/2 in. = 1 Foot
Short leaf of hinge is applied to jamb which is morticed to receive it. The long leaf is applied to surface of door with carriage bolts lag or wood screws. Hinges made with combination holes

ELEVATION
Showing hinge No. 1457 - 24 in. long, used at top and bottom of medium weight doors. Scale 1 1/2 in. = 1 Foot. Has same offset (1 1/8 in.) and same throw (2 1/2 in.) as No. 1458

OUTSIDE ELEVATION AT INTERMEDIATE RAILS

ELEVATION: Showing hinge No. 1457
used at center of height of door in combination No. 1457 or No. 1458 at top and bottom. Is 10 in. long and has the same offset and throw as No. 1457 or No. 1458. Scale 1 1/2 in. = 1 Foot.

OUTSIDE ELEVATION OF LATCH SET NO. 1264 J

NOTE: In assembling latch the thumb pieces are inverted the longer one entering from the inside and projecting through hole in outside plate. The shorter thumb piece (inverted) enters the groove in the long one and when adjusted to thickness of door both are turned over to correct position. They cannot be removed with out taking off arm which is bolted at pivot.

NOTE: When the door is opened slightly more than 90° Slotted plate D is attached to lower surface of head jamb as shown, with the notch F in arm engaged in the lower flange of slotted plate D. In this position the door is held securely open. A slight pull on the chain releases the notch and door closes.

PLAN OF GARAGE DOOR HOLDER NO. 1774
Solid lines show door opened
Dotted lines show door closed

OUTSIDE ELEVATION AT BOTTOM RAILS
Details of Garage Doors for frame structures showing door swinging out and equipped with Stanley Garage Hardware, using hinges Nos. 1457 or 1458 attached to jambs.

OUTSIDE ELEVATION AT HEAD

ELEVATION OF HINGE NO. 1456 Scale 1 1/2 in. = 1 Foot.
24 in. long. When pad is folded under as shown on plan, two holes are exposed for fastening screws or bolts on the outside in hanging. Three of the fastenings are covered when door is closed and hinge cannot be removed.

PLAN - Showing door closed with hinge No. 1456 attached. When door is opened 90° the full width of opening from jamb to jamb is available. Casing should be flush with face of door. Holes in long leaf are countersunk for screws and are punched square for bolts. Used at top, intermediate and bottom rails in place of hinges shown above and used in combination with the other hardware illustrated for them.

INSIDE ELEVATION AT BOTTOM RAILS

DETAIL OF HEAVY CREMONE BOLT NO. 1052.
Bolt for use on heavy doors, prevents warping. Operated top and bottom by lever handle. Bolt is 3/8 in. wide, 3/16 in. thick, half oval, has 1 1/2 in. throw and is adjustable at 1/4 in. intervals to 6 in. beyond its size. Comes in lengths of 7'-0", 7'-6", 8'-0", 8'-6" and 9'-0". Size next under required height should be used. Furnished in practically any lengths on special order. When used in concrete floors take flat floor staple and long lag bolts with nuts applied.

PLAN OF TOP AND BOTTOM PLATES ON DOORS

DETAILS SHOWING HINGES NO. 1456 ATTACHED TO CASINGS.

NOTES ON APPLICATION
Pivot Plate A is attached to inside face of top
Pivot Plate A is attached to inside face of top
Holes in plate countersunk

LOOKING UP AT SLOTTED PLATE D WITHOUT ARM ATTACHED

USED AT HEAD CASING OR JAMB WHEN THEY ARE FLUSH WITH INSIDE OF DOOR

USED ON HEAD JAMB PROJECTING BEYOND DOOR

1/4" x 1/2" Stanley Sherardized St. Bolts

FORMED STEEL HANDLE

FACE OF DOOR

2 1/2"

FLOOR

FLOOR PLATE SAME AS TOP PLATE WHEN FLOOR IS FLUSH.

FLOOR PLATES USED WITH THRESHOLD

OUTSIDE EDGE OF ROBBET

12"

ARM E

SLOTTED PLATE D

NOTCH F

LOWEST SURFACE OF HEAD JAMB

ARM E

LOOKING UP AT SLOTTED PLATE D WITHOUT ARM ATTACHED

USED AT HEAD CASING OR JAMB WHEN THEY ARE FLUSH WITH INSIDE OF DOOR

USED ON HEAD JAMB PROJECTING BEYOND DOOR

1/4" x 1/2" Stanley Sherardized St. Bolts

FORMED STEEL HANDLE

FACE OF DOOR

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1/4" x 1/2" Stanley Sherardized St. Bolts

FORMED STEEL HANDLE

FACE OF DOOR

2 1/2"

FLOOR

FLOOR PLATE SAME AS TOP PLATE WHEN FLOOR IS FLUSH.

FLOOR PLATES USED WITH THRESHOLD

Tear out this page and place in your file

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

The only machine on the market adjustable to the thousandth part of an inch.

Stern Floor Scraper

Simple, accurate and rapid, the Stern reduces labor, does better work on your floors, and realizes more profit for you.

We have shipped the Stern to all parts of the United States and Canada, and never had one returned with complaint.

In order to interest you, we will send you one on trial and will not accept a dollar until you are convinced that the Stern is the best you can buy regardless of price.

Write now for our proposition.

STERN MFG. CO.
Lancaster, Pa.



"STAR" FIRE RETARDING VENTILATORS

With Patented Gravity Damper

are acknowledged superior to all others in design, material, workmanship and efficiency.

Storm Proof -- Durable -- Attractive

Provide good ventilation, ample light, and prevent spread of flames upward through the roof.

Made of Galvanized Steel, Galvanized Iron or Sheet Copper.

Evans "Almet" Fire Doors and Shutters, "Merchants Old Method" Roofing Tin, Merchants Metal "Gothic" Shingles

MERCHANT & EVANS COMPANY
PHILADELPHIA

New York
Wheeling

Baltimore
Chicago

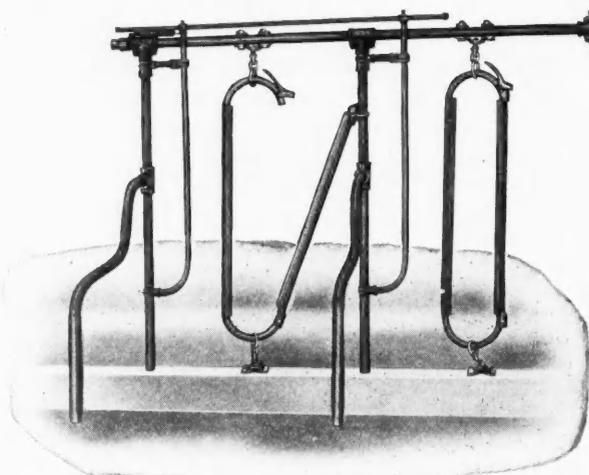
Atlanta
St. Louis

Cleveland
Kansas City

Buckeye Dairy Barn Equipment

In his co-operation with the farmer, the country builder must be well acquainted not only with every detail of farm building construction but he must also be thoroly familiar with the equipment which is to be installed in these buildings. Progressive farmers are constantly on the alert for new ideas in equipment and the country builder is the logical man to keep his clients in touch with progress in this line. His advice is valuable to the farmer if he is always ready to furnish complete information and estimates on high grade labor-saving devices and equipment tending to improve conditions in the farm buildings.

It is clearly evident that the country builder who limits his range of activities to the carpentry work in his community is losing many of the possibilities in the field. His close touch with the farmers and with farming in general, together with his mechanical ability, fit him especially well for handling all of the details of farm improvement, including the installation of all kinds of farm equipment. The increase in earnings resulting from this broader scope will more than pay for the time spent in becoming familiar with the possibilities which have been overlooked.



The Mast, Foss & Co. Sanitary Stanchion.

Mast, Foss & Company, manufacturers of an extensive line of farm equipment at Springfield, Ohio, are offering to help builders get lined up in this field. One of the important features of their line of dairy barn equipment is the Buckeye stall illustrated herewith. This stall is of the single post type to which base stall may be added the various features for the conveniences of the user, such as swinging sure-stop or go-rights, adjustments for long or short cows, manger partitions, watering bowls, etc. One of the principal features of this equipment which will appeal to the builder is the ease of erection. The interlocking connection, shown in the smaller illustration, is the only fitting upon the entire base stall frame and these fittings are interchangeable at any point in the frame, so that there are no other fittings to cause confusion. These fittings have small lugs in either end which fit into holes in the tubing, eliminating slippage and insuring rigidity.

This company considers the single post stall, when fitted with the swinging sure-stop or go-right, much superior to either the individual, double or triple post type, because the cow is given the headroom of the entire stall when the swinging sure-stop is thrown back against the stall partition after the cow has been tied in the stanchion. The swinging sure-stop or go-right referred to is shown in the larger illustration. It is attached to each upright post of a series of

(Continued to page 148.)

A mix a minute



10 seconds—
to load

40 seconds—
to mix

10 seconds—
to dump

60 seconds—
one batch a
minute!

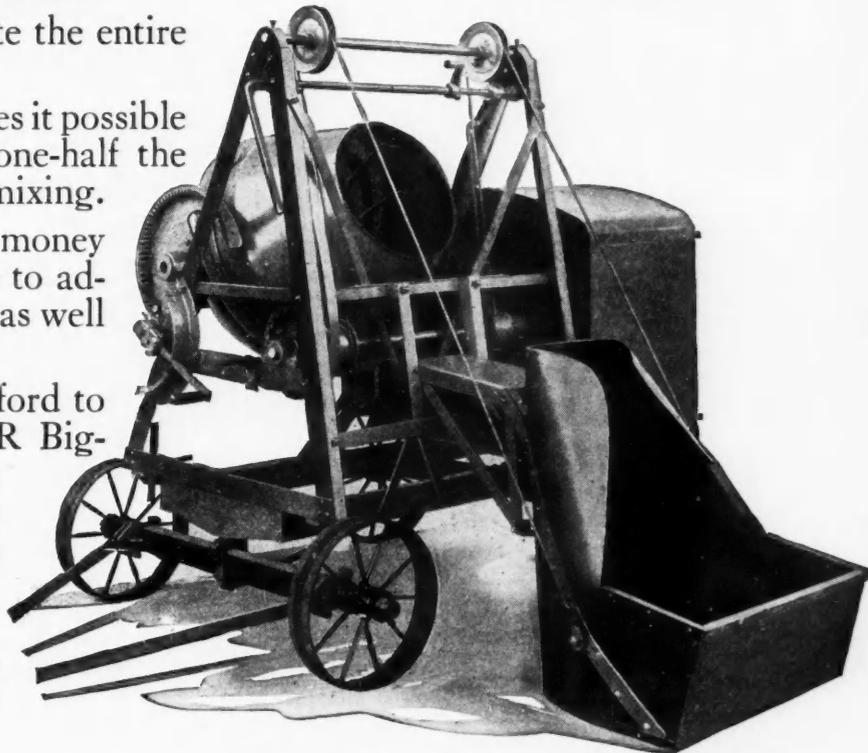
One man can complete the entire operation.

It is the speed that makes it possible to complete a job in one-half the time required by hand mixing.

The Big-an-Little is a money saver and can be used to advantage on larger jobs as well as small.

No contractor can afford to be without a JAEGER Big-an-Little. It costs but 3c an hour to run and can be bought for less than 45c a day.

Write for prices and complete information on the Big-an-Little with Auxiliary Hoist.



The Jaeger Machine Co.

318 W. RICH STREET, COLUMBUS, OHIO

single post stalls and is supported at the top by a collar on the post which gives it a freedom of motion which cannot be obtained by those that are supported from below. The upper end of the swinging frame is hinged to a connecting rod by which any reasonable number of sure-stops may be opened or closed by the same movement. They are held in a fixed position either against the header pipe or stall partitions by a stiff coil spring attached to the horizontal rod or connecting bar from the header pipe of the stall.

Readers may obtain complete information concerning Buckeye equipment by addressing Mast, Foos & Company, Springfield, Ohio.

A Story of Rapid Progress

About two years ago a man by the name of Joseph Hamel had his shingle hung out in Beecher Falls, Vt., to inform the public that he would be glad to figure on any wooden buildings that were to be constructed in that vicinity. Since then the old shingle has been used for kindling wood and a new sign has taken its place. This new sign bears the information that the same Joseph Hamel is a general contractor, and that figures will be furnished on any class of building.

Here is how it happened: Mr. Hamel was a good carpenter

(Continued to page 150.)



Jos. Hamel of Beecher Falls, Va., Getting Out to Job in a Hurry with His Car and Jaeger "Big-an-Little" Mixer.

Profit in Building is a Matter of Equipment

The carpenter without tools is little better off than the common laborer. The contractor without equipment is like the carpenter without tools. Each year serviceable equipment grows more and more essential to profit in modern construction. Have you the equipment which will net the greatest profit in 1917? Is there additional profit for you in the new building devices which have been developed during the past year? Is there any standard building equipment which will net you a larger profit than the equipment you now own?

THE TENTH CHICAGO CEMENT SHOW

COLISEUM and BALCONY, FEBRUARY 7-15, 1917

is a builders' show where exhibits of both new and standard equipment are displayed. Manufacturers of new devices and products have found the Show the proper place for the introduction of their wares. Manufacturers of standard machines and products have found the Cement Show an excellent market place. Whether you are ready to buy or not you cannot afford to miss studying the equipment on display at the show.

Under Management of **CEMENT PRODUCTS EXHIBITION CO.**
210 South La Salle Street - - - Chicago

Chicago Conventions During Show Period:

American Concrete Institute
La Salle Hotel, Chicago
February 8, 9, 10, 1917

Illinois Lumber & Builders' Supply
Dealers Ass'n

Sherman House, Chicago
February 14, 15, 16, 1917

National Builders' Supply Ass'n
Sherman House, Chicago
February 12, 13, 1917

American Ass'n of Engineers
La Salle Hotel, Chicago
February 8, 9, 10, 1917

American Concrete Pipe Ass'n
Auditorium Hotel, Chicago
February 12, 13, 14, 1917

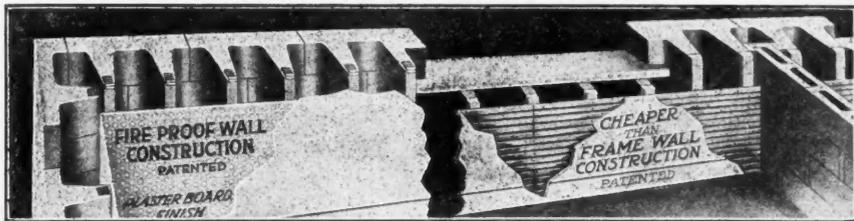
CONCRETE FOR PERMANENCE

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Synstone Products

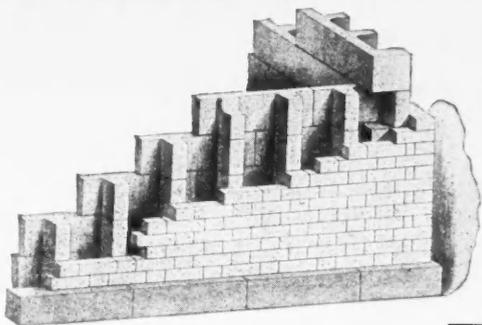
The Last Word in Concrete Construction

Wet Process, making real concrete walls, impervious to heat, cold and moisture, fireproof and everlasting. Hollow Concrete Walls, stronger than brick, faced with beautiful natural materials—crushed granite, marble or sands—with all the sparkle and life of natural stone. Brick or stucco facings may be used if desired. A wet, soggy mixture, 1 cement, 2½ sand and gravel, 4 parts of 1 inch stone or gravel, producing stone withstanding 3,000 lbs. pressure per square inch and 1700 degrees of heat for two hours without injury.



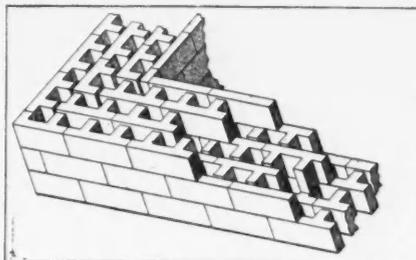
50 blocks, (100 sq. ft. of wall), made per hour. 30 to 75 sq. ft. laid per hour by one mason and two helpers. Average cost per square foot of wall made and laid, unfaced 11.4 cents, faced 12.7 cents.

Synstone single wall for residences and any three-story construction, 9", 10", 12" or 13" thick. **Half as much material and labor used in making, less than half as much time in laying, as any other concrete wall.** Inner wall wood lath and plaster, metal lath or plaster board. 9" wall 50% hollow, stronger than 12" brick wall, costing no more than frame construction in most places.

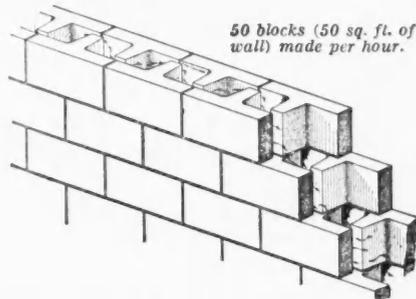


50 blocks, (100 sq. ft. of inner wall), made per hour, and laid in one-third the time required for brick.

Synstone Inner Wall, with pressed or art brick facing, bonded together with header bond. Large saving in cost over solid brick construction; 12½" or 16".

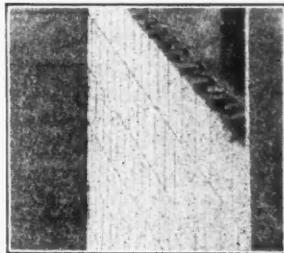


Synstone Wide Wall Construction (multiple air space). 50 blocks (100 sq. ft.) made per hour. Ideal construction for cold storage or packing houses. 19½" to as many feet in thickness as desired. Absolutely impervious to heat, cold and moisture.

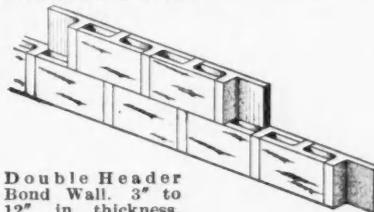


50 blocks (50 sq. ft. of wall) made per hour.

Synstone Double Wall, for heavy construction, 11½" to 18" in thickness, 33½% to 50% hollow. Large saving in cost over brick walls.



Double Sound-proof Partition Wall. One or both sides may be faced, requiring no plaster. 4½" and up in thickness.



Double Header Bond Wall. 3" to 12" in thickness. Strongest masonry wall that can be constructed.

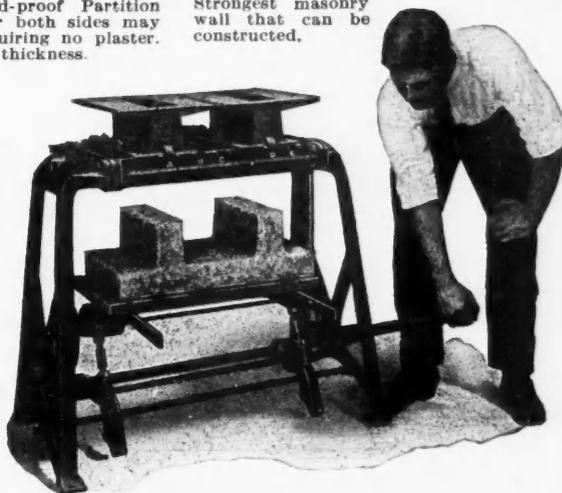
Synstone Machinery is very carefully made and thoroughly complete in every detail, making all these walls and the different shapes and sizes of blocks required for them, by simply changing the cores, which is done in thirty seconds. Operated by common labor, 1, 2 or 3 men. Above estimates (50 blocks, 100 sq. ft. per hour) are based upon 2 men with mixture supplied to them.

PLANT. Just as good and beautiful material can be made in a shed as in an expensive factory. Do not let your material freeze or dry out. Keep moist for two weeks, when it is ready for the wall. Complete machinery F. O. B. Chicago \$287 50, no royalty. Send for catalog.

The Ferguson Synstone Company
811 17th Street Denver, Colorado

Cable Address—"Synstone," Denver

References Dun or Bradstreet Commercial Agencies or The United States National Bank



Foreman

Carpenter

Bricklayer

Plasterer

Contractor

Superintendent

or in any Building Line

IF YOU ARE A

Here's Your Chance

Success comes to the man who is trained right for his chosen work. You can succeed. All YOU need is the training and the CHANCE to show the stuff that's in you. HERE'S YOUR CHANCE. If you've never had the advantage of a technical training, this exceptional offer IS YOUR OPPORTUNITY.

This college offers you the chance to study at home in case you cannot come to Chicago to get the training that hundreds of carpenters, masons, plasterers and other men of the building trades are getting in its day and evening courses. You get the same training, you study under the same experts—Chicago's leading architects, estimators and contractors.

A Practical Course For BUILDERS

Carpenters Foremen
Bricklayers Superintendents
Plasterers Contractors
 and all other men in Building Lines

Read This

Any man in the building lines can save many times the cost of this course on one job alone.

Plan Reading, Estimating, Architectural Drawing, Contracting, etc.

This is a course for practical men. We send you the actual blue-print plans of buildings now being built or recently completed. Practical training, not book knowledge, is what you want—it's what we give. When you think of the opportunities this training offers, you will take time—right now—to mail the coupon for full information.



This complete drawing outfit free with all Drafting courses.

Drawing not a part of the Builders' course unless desired.

Complete blue print plans and specifications free with Builders, Plan Reading and Estimating Courses.

Free Information Coupon—Mark and Mail Today

Mark "X" opposite work in which you are interested. No obligation for full information.

<input type="checkbox"/> Builders' Course (1017)	<input type="checkbox"/> House Planning
<input type="checkbox"/> Plan Reading	<input type="checkbox"/> Structural Steel Drafting
<input type="checkbox"/> Estimating	<input type="checkbox"/> Machine Drafting
<input type="checkbox"/> Architectural Drafting	<input type="checkbox"/> Electrical Drafting
<input type="checkbox"/> General Contracting	<input type="checkbox"/> Sheet Metal Drafting
<input type="checkbox"/> Building Superintendence	<input type="checkbox"/> Surveying

Name _____

Address _____

Town _____ State _____

College or Home-Study Course _____

Chicago Technical College
 1017 Lake View Building, Chicago, Ill.

and builder and he was getting along as well as might be expected under the circumstances, but he wasn't satisfied. He often had to wait for the crew who put in the foundations on the buildings that he constructed and he often noticed that their work was not up to what he would call a good standard. He began to realize that some very substantial profits within his grasp were sliding between his fingers into the other man's pocket. It got on his nerves.

On June 6, 1914, he purchased a "Big-an-Little" concrete mixer made by the Jaeger Machine Company of Columbus, Ohio. Shortly thereafter the shingle found its way into the wood box. Mr. Hamel reasoned the thing out like this: A concrete mixer added to his equipment would enable him to do his own figuring on the complete job, would cause the entire profit to go to him alone and make him independent of all sub-contractors. The result of the investment in a concrete mixer would mean added profit for him and better work at a less cost—on time—for his customers. The indications are that his reasoning was correct.

The fact that Mr. Hamel is progressive has already been demonstrated, but further proof is found in his purchase of an automobile with which to move tools from one job to the other. The photograph shows the automobile enroute with a good load and the mixer tied on behind.



Martin Semi-Trailers Winning for Lumber Dealers and Builders

The drawing power of a motor truck is far in excess of its carrying capacity. This is coming more and more to be realized, and consequently the trailer is coming more and more into use. The trailer is particularly adapted to the building business because so much material is longer than can be easily handled on the truck alone.

There are three methods of using the trailer principle, that are more or less popular, and there is quite a little controversy as to which is the best. The four-wheel type, which is drawn by a pole hitched to some part of the motor vehicle; the two-wheel type which has a body balanced over the axle, and which is also hitched to some part of the motor vehicle; the semi-trailer which is, as the name implies, only half a trailer, and the other half is carried. All have their place.

In a perfectly level country, where little weight is required on the driving wheels for traction, and where there is no congested traffic, and no occasion for backing, a four-wheel trailer is as good as any other—or under these conditions the two-wheel cart, where the load is balanced over the axle, may be used. But for city streets the semi-trailer is much more to be desired; the reasons for this being that the over-all length is only a foot or so more than that of the conventional truck of the same loading space. It can be handled entirely by one man, can be turned in narrow quarters, and backed in the same manner that a wagon is backed by a horse. Further, there is sufficient weight on the driving wheels for traction.

The semi-trailer is fast becoming popular in the cities, on account of the ease with which it can be manipulated.

The advantage to be gained by the use of a trailer is in the main one of economy. With the conventional type of motor truck, as the capacity increases, the price mounts very rapidly—in fact, a two-ton truck costs almost twice as much as a one-ton truck. On the other hand if a concern has a two-ton load of lumber to carry, a three-quarter-ton capacity truck used with a two-ton trailer makes a two-ton motor vehicle at about half the cost of a two-ton conven-

(Continued to page 152.)

If You are figuring a big job, or—
 You are figuring a small one, and—
 You want to get the contract, and—
 You want a profit, then—

You need a **EUREKA BATCH MIXER**. A good mixer sold to everybody at a reasonable price. It will handle all jobs, large or small at a reasonable cost. Eureka Mixers are guaranteed satisfactory and cheap to operate.

Made in 5, 7½ and 10 foot sizes and equipped with either a power loader or a batch hopper.

Write for Description

**Built in Sizes for
 Your needs**

Visit Space 139-40—
 Cement Show Feb. 7-15

**Eureka
 Machine Co.**
 103 Handy St.
 LANSING, MICH.



“It’s easy to sell paint when your customer is convinced of its purity. No doubting DEVOE purity—the guarantee formula is on every can.”
 (Signed) *Every Dealer*

DEVOE

The oldest manufacturing concern in the United States
 Founded in New York in 1754
 E.W. DEVOE & C. T. RAYNOLDS NEW YORK
 DEVOE & RAYNOLDS CO. CHICAGO



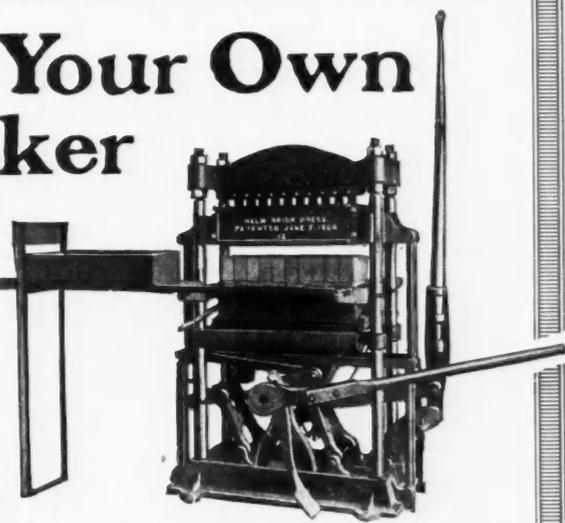
Contractors—Be Your Own Brick Maker

Be independent of the clay brick manufacturer and dealer—don’t be held up by annoying delays—whittling your profits down to nothing. Put yourself in position to take more business and make more money on your contracts. Hold your crews together in your own brick and block plant when not out on contracts.

You can offer your trade better brick and more kinds by operating a

Helm Brick and Block Press

and making **pressed** cement brick and blocks. Each brick is perfectly true and uniform, made in various colors and shades, including the granite effect. Lay rapidly—easily cut—do not require gauging. A comparatively small investment gives you a plant of



10,000 Brick or 1,000 Blocks Daily Capacity and \$10.00 to \$50.00 Daily Profit

To men actually interested we want to send two books. Our book on building by the Helm DRY WALL System, and our book on Helm presses of various sizes and types.

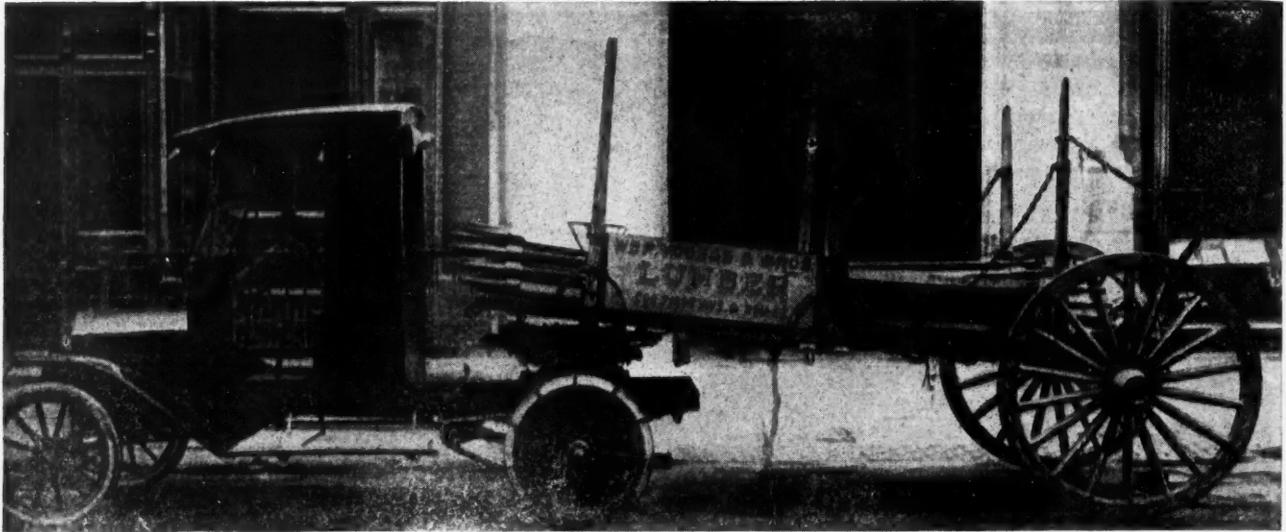
Send the coupon attached to your letterhead

Helm Brick Machine Company
 371 Mitchell Street
 Cadillac, Mich.

Helm Brick Machine Co.,
 371 Mitchell St., Cadillac, Mich.
 Please send your two free books.

Name

Address



The Martin Semi-Trailer Turns This Lumber Company's Ford Runabout Into a Very Low Cost Yet Efficient One-Ton Truck.

tional truck. This three-quarter-ton truck and semi-trailer will do as much work as the two-ton truck and the upkeep cost is in the same proportion as the first cost.

A pleasure car runabout may be used as a tractor and can safely draw a ton. It can thus do duty as a commercial vehicle as well as a pleasure vehicle. This is surely an advantage worth considering. Another great advantage is that idle time of the motor vehicle can be entirely eliminated. One motor vehicle can serve a number of trailers—one trailer loading, another unloading and a third on the way.

A few examples may be cited as a proof that the principle is correct and the advantages from its use are many. The

Estes Lumber Company of Birmingham, Ala., are using a Martin Semi-Trailer in connection with a Ford runabout. They state that with this system they deliver as much in one day as they could with three single teams—that they are not only getting better service, but are saving a great deal of money.

The C. P. Chase & Co., Inc., lumber dealers of Springfield, Mass., have been using semi-trailers for over a year. They claim they have saved 25 per cent in their hauling costs.

The Berkshire Lumber Co., of Pittsfield, Mass., are using four semi-trailers, and are very enthusiastic.

(Continued to page 154.)



Insure Barn-Doors

Are you sure your Barn-Doors will **always** work?

That the birds or the storms won't play havoc with the hangers and track?

You can't afford to take any chances. If you aren't **sure** that your barn-doors will **always** work, investigate the

Red-Rib Hangers

Absolutely bird and storm proof. Won't spread on account of solid, double-grooved wheel. Strongest trolley made. Hinge hanger, with roller-bearing wheel. Noiseless. We shall be very glad to send you literature explaining why we can insure your barn-doors with Red-Rib Hangers.

Safety Door Hanger Co.
Ashland, Ohio

Wooden Boxes are rapidly becoming things of the past.

The Janisch Vaults afford the best substitute and save about 15% in cost over other methods



Our cement caskets may also be manufactured in combination with our vaults

Contractors

—a big Field, a growing Demand, and Little Competition

Here is your chance to build up an extremely profitable business in the making of

Janisch Cement Burial Vaults and Caskets

They are easy to handle, will sell themselves, and assure absolute customer-satisfaction.

This business is growing rapidly. It is *there* in your neighborhood and some one is going to get it. If you are interested, write *now* for our catalog and proposition.

Chicago Cement Burial Vault and Casket Co.
5301 Ravenswood Ave., Chicago, Ill.

—Do a Big Winter Business Making
Automatic Sealing Vaults

Every Contractor can keep busy during the winter months making and selling Automatic Sealing Vaults. Vaults that seal perfectly and are absolutely air, moisture and vermin proof—concrete burial vaults. And they sell readily and at a good profit. Made with our adjustable Bessemer Steel Molds—in your own shop.

Write for further information regarding our proposition.

Automatic Sealing Vault Co.
274 East River St. Peru, Ind.



Mold adjustable to seven sizes

Herrick Refrigerator
"OUTSIDE ICING"



With no appreciable extra cost to him you can make a lasting friend of your customer and thereby gain more jobs by suggesting

The Herrick Outside Icing Refrigerator

Built to keep the iceman out of the kitchen, to cut down the cost of ice and to assure absolutely sanitary refrigeration.

The housewife will appreciate the added floor space gained by the use of the Herrick, and the advantage of keeping the floors clean from the iceman's muddy boots. The iceman prefers Herrick Outside Icing Refrigerators.

The man who pays the bills will appreciate the reduced cost of refrigeration.

You will appreciate the increased good will of your customers and the more jobs you will get.

Write today for our new catalog, and our FREE PLANS

HERRICK REFRIGERATOR CO.
WATERLOO, IOWA



“You Get The Job”

“We’ve been watching you, young man. We know you’re made of the stuff that wins. The man that cares enough about his future to study an I. C. S. course in his spare time is the kind we want in this firm’s responsible positions. You’re getting your promotion on what you know, and I wish we had more like you.”

The boss can't take chances. When he has a responsible job to fill he picks a man *trained to hold it*. He's watching **you** now, hoping you'll be ready when the opportunity comes.

The thing for you to do is to start today and train yourself to do some one thing better than others. You can do it in spare time through the International Correspondence Schools. Over 5000 men reported advancement last year as a result of their I. C. S. training.

The first step these men took was to mark and mail this coupon. Make your start the same way—and make it right now.

I. C. S., Box 8138 Scranton, Pa.

TEAR OUT HERE

INTERNATIONAL CORRESPONDENCE SCHOOLS

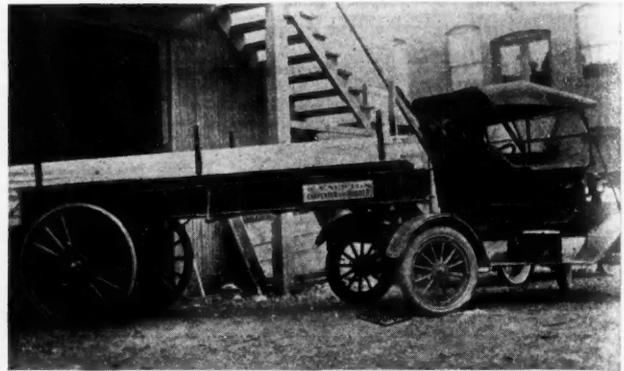
Box 8138 SCRANTON, PA.

Explain, without obligating me, how I can qualify for the position, or in the subject, before which I mark X.

<input type="checkbox"/> ARCHITECT	<input type="checkbox"/> Law for Contractors
<input type="checkbox"/> Architectural Draftsman	<input type="checkbox"/> BUSINESS (Complete)
<input type="checkbox"/> Contractor and Builder	<input type="checkbox"/> BOOKKEEPER
<input type="checkbox"/> Building Foreman	<input type="checkbox"/> Stenographer and Typist
<input type="checkbox"/> Concrete Builder	<input type="checkbox"/> Higher Accounting
<input type="checkbox"/> Plumber and Steam Fitter	<input type="checkbox"/> GOOD ENGLISH
<input type="checkbox"/> Heating and Ventilation	<input type="checkbox"/> Common School Subjects
<input type="checkbox"/> Plumbing Inspector	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Foreman Plumber	<input type="checkbox"/> SALESMANSHIP
<input type="checkbox"/> CIVIL ENGINEER	<input type="checkbox"/> ADVERTISING MAN
<input type="checkbox"/> Surveying and Mapping	<input type="checkbox"/> Window Trimmer
<input type="checkbox"/> Structural Engineer	<input type="checkbox"/> Show Card Writer
<input type="checkbox"/> Structural Draftsman	<input type="checkbox"/> CIVIL SERVICE
<input type="checkbox"/> ELECTRICAL ENGINEER	<input type="checkbox"/> Railway Mail Clerk
<input type="checkbox"/> Electric Lighting	<input type="checkbox"/> AGRICULTURE
<input type="checkbox"/> Electric Wiring	<input type="checkbox"/> Poultry Raising
<input type="checkbox"/> Electric Car Running	<input type="checkbox"/> MINE FOREMAN OR ENGINEER
<input type="checkbox"/> MECHANICAL ENGINEER	<input type="checkbox"/> Metallurgist or Prospector
<input type="checkbox"/> Mechanical Draftsman	<input type="checkbox"/> Chemical Engineer <input type="checkbox"/> Spanish
<input type="checkbox"/> Shop Practice	<input type="checkbox"/> Gas Engineer <input type="checkbox"/> German
<input type="checkbox"/> Sheet Metal Worker	<input type="checkbox"/> AUTOMOBILES <input type="checkbox"/> French
<input type="checkbox"/> STATIONARY ENGINEER	<input type="checkbox"/> Auto Repairing <input type="checkbox"/> Italian

Name _____
 Occupation & Employer _____
 Street and No. _____
 City _____ State _____

If name of Course you want is not in this list, write it below.



The Martin Semi-Trailer Backs Easily.

The Douglas Lumber Co. of Chicago report that they have been using a semi-trailer for six months, and are more than pleased with its performance.

The E. W. McClave Lumber Co., of Newark, N. J., are using fourteen semi-trailers all together. This firm was the first lumber dealer in the United States to adopt the tractor-semi-trailer principle. That they have no other method of hauling at the present time tells its own story.

Hundreds of lumber dealers are having the same experience. We do not know of one who has started using trailers that has discarded them.



Kansas City to Have First Annual Southwest Cement Show

The Southwestern Concrete Association announces the first annual Southwestern Concrete Show, to be held in connection with the association's annual convention, at Kansas City, February 19-24, 1917.

The membership is composed of all of the several interests of the Southwestern cement and concrete industries. The Convention and Concrete Show attendance will be made up of Missouri, Kansas, Oklahoma, Arkansas and Texas architects, engineers, contractors, builders and concrete products manufacturers.

In addition to providing the opportunity for manufacturers to meet their public in this section of the country, the management have provided a program for the evening sessions for interesting and educating the general public to the value of cement and concrete. For this reason the operation of exhibits will be prohibited during the evening sessions. The Saturday morning and afternoon sessions will be devoted entirely to a Good (Concrete) Roads Day program.

The Southwestern Concrete Show will follow the Chicago Cement Show at an interval of four days and will precede the Mid-West (Omaha) Cement Show by one week. Chas. A. Stevenson, 1413 West Tenth Street, Kansas City, is chairman of the show committee.



“The Modern Way Up”

In this age, the word “efficiency” has come to be a very much overworked word. It is a fact not to be regretted, for it indicates the increasing degree to which the gifts of Nature are being utilized. It stands for advancement in science, industry and modes of living.

Materials that were considered waste a generation or even less ago are now being passed thru further cycles of usefulness. In the construction field new methods are being employed to increase the ratio of returns to investment under normal conditions or to maintain this ratio under increasingly trying conditions. With the increase of real

(Continued to page 156.)

Our 12 Sheet Poster Calendar Keeps Your Ad Before the Buyer 12 Months in the Year

O. J. GAUGER & CO. LUMBER

Paints, Oils, Varnishes, Building Hardware
Wire Fence and Cement

SULLIVAN. - - - ILLINOIS

1917		JANUARY					1917	
SUN.	MON.	TUE.	WED.	THU.	FRI.	SAT.	1917	
1	2	3	4	5	6			
7	8	9	10	11	12	13		
14	15	16	17	18	19	20		
21	22	23	24	25	26	27		
28	29	30	31	Jan Quarter	New Moon	Full Moon		

SAVE 25%

On Your 1918 Calendars

THE enormous increase in the cost of paper will increase the cost of 1918 Calendars considerable. This also means added cost in salesmen's commission—jobber's commissions, which are figured on top of manufacturing cost. Result is, you will pay nearly double for your 1918 calendars, UNLESS you buy direct from the printers. Place your orders with us now and save 25% to 35%. At least, write us for samples and prices before you place your order for next season.

Two Attractive Sizes

- 12 sheet Poster Calendar, 20x27³/₄ inches
- 13 sheet Poster Calendar, 13³/₄x20 inches

Both printed in two colors, red and black, with your ad in space at top. The 13 sheet calendar contains a complete 1918 reference on the 13th sheet together with parcels post scale and fourth class mail information. Be sure to write for samples and quotations, stating quantity you wish, and if convenient, mail us a sample of this season's calendar you are using. Do it today before you forget it—it will mean a real big saving for you.

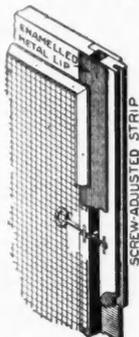
HILLISON & ETTEN CO.

Calendar Department
638 Federal St. Chicago, Ill.

THE WHEELER SCREEN

is truly "Self-Fitting" by its Screw Adjustment.

You find three troubles in every non-adjusting screen: (1) Errors of the Opening (no man can make two openings of same size); (2) Weakness of the Wooden slide-tracks used by all sliding screens, except the "Wheeler"; (3) Swelling and Shrinking of all window frames in wet and dry weather.



Corner showing Screw Adjustment

We End All Troubles.

No matter what trouble—whether error of carpenter—or imperfect window frames—no matter what weather, merely push out Adjustable Strip in the side by means of Thumb Screws located near top and bottom. The Screws push out this Strip—more at top—less at bottom—until Screen exactly fits. With troubles ended, conveniences follow and the "Wheeler" outpoints all others on all features. To the Contractor they afford two profits—the usual margin, and another in the saving over cost of fitting and painting the edges of all others. They fit without touch of tool at one-tenth the cost of other installations.

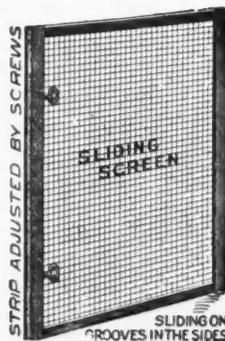
Big Money Selling Our Screens.

You can make more money selling the "Wheeler" Adjustable Screens than by making other screens. Keep your men busy at other work. Let us take care of your Screen orders. You actually make \$5.00 to our \$1.00, because we allow you the big-single profit on each house-order, since that is the only way for us to get the little-many profits on the 100 house-orders.

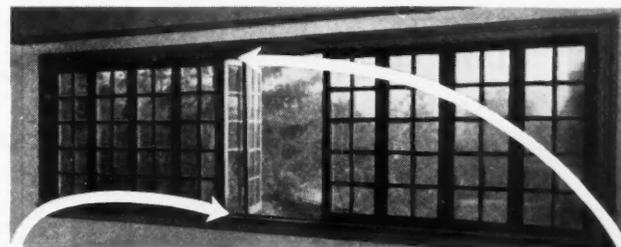
PROMPT SHIPMENTS:—Special machines—floor space of nearly 2 acres—fill orders in days where others require weeks; speed limited only by time for drying the finish specified—3 to 5 days is our average on White-Pine-Printed Screens.

If we have no Agency in your town, write for our proposition; don't delay—Screen time is soon here.

WHEELER SCREEN CO. - Geneva, Illinois



STRIP ADJUSTED BY SCREWS
SLIDING ON GROOVES IN THE SIDES



Better Than Storm Windows!

DOUBLE-GLAZED sash casement windows are absolutely tight and storm-proof when installed with Whitney Casement Window-Hardware and afford much better protection against cold, snow and rain than storm windows. In summer they keep out the oppressive heat. **No bother of putting on and taking off.** Your customers will appreciate them. They open outward, out of the way—are easily cleaned from the inside of the house.

We make and sell only the patented hardware. **Use any style sash you wish.** Our free Whitney Service co-operates with you fully, supplying complete working plans and helping you to make satisfactory installations.

If west of Mississippi, address
Whitney Window Corp'n,
309 Fifth St. So.,
MINNEAPOLIS, MINN.

If east of Mississippi, address
H. E. Holbrook Co.,
446 John Hancock Bldg.,
BOSTON, MASS.



WHITNEY
CASEMENT
WINDOW HARDWARE





The Bessler Movable Stair Takes up no Space, but is Right There on the Job when it is Wanted.

estate values in many communities and the cry for better buildings at moderate cost, the utilization of waste space has come to be an important consideration with architects and builders.

The old attic, filled with cobwebs and trash, is passing into history. The space under the roof may be used to advantage in almost any kind of a building. There is one consideration which must not be lost track of, however, in fitting the space up above for use: Most assuredly the space on the second floor is more valuable than that in the attic. It will gain little if a staircase is built which robs the valuable second floor and incurs a heavy expense. This is where "the modern way up" find its application.

The title above is also that of a little booklet which is being distributed by The Bessler Movable Stairway Company of Akron, Ohio. This booklet illustrates and describes what is being done by this company to solve the problem of utilizing lost space so that the total utility will show an increase from the operation.

The accompanying illustrations, taken from this booklet, hint at the solution which the Bessler Company has worked out. Briefly, it consists of a strong, well built flight of stairs which may be rolled along a panel hinged to the end trimmer of an opening in the ceiling of the room or hall where the stair is to be located. When not in use, the panel is all that can be seen from the lower room and the stair lies nearly flat on the floor of the upper room. The energy required to bring the stair into position is practically negligible.

This type of stair has been used in buildings of all descriptions from garages to skyscrapers.

Architects and builders will find many useful suggestions in "The Modern Way Up" and will benefit by asking The Bessler Movable Stairway Company to explain fully the possibilities of their product.

"Superior" Corner Bead
 Made from galvanized open hearth sheets and furnished in 5, 6, 7, 8, 9, 10 and 12-ft. lengths.

For Outside Corner.

For Inside Corner.

"Milwaukee" Diamond Metal Lath
 Full Weight—Uniform—Easy to handle—Right size sheets saves on labor—Sells on sight.

Milwaukee Corrugating Co., Milwaukee, Wis.
 Branch at Kansas City, Mo.

Herringbone Rigid Metal Lath.

HERRINGBONE FOR PERFECT PLASTERING

Metal Lath does away with the stains and cracks which so often spoil the appearance of plaster or stucco. Lasting beauty and satisfaction, however, depend somewhat on the lath you use.

Herringbone Rigid Metal Lath has lengthwise ribs which make it extra stiff and flattened strands which clinch the plaster so that neither fire nor age will cause it to crack or fall.

The "Herringbone Book" shows the many uses of Herringbone. The "Herringbone Homes" book will also be sent upon request.

The General Fireproofing Company
 6001 Logan Ave.,
 YOUNGSTOWN,
 OHIO

Look for this mark 

This Book FREE upon request



on Maple, Beech and Birch

Flooring

It identifies the products of the Maple Flooring Manufacturers' Association and appears only on Flooring that's *absolutely dependable* in Quality and Grades.

Maple Flooring Manufacturers' Association
Stock Exchange Building, Chicago



This trademark on flooring is a **GUARANTY** of Quality and standard grades



Kitchen 10x12

Makes an Ideal Kitchen Floor



The Floor That's Laid With a Guarantee

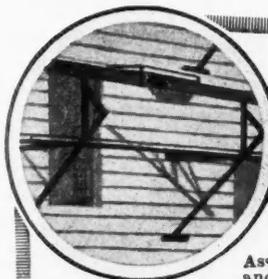
sanitary floor in competition with unsanitary wood floors. Asbestone looks, wears and feels like tile, yet is warm and resilient. May be laid over old or new floors, without experience, by following our instructions. Ask for full information, prices, etc., for exclusive arrangement in your community.

where wood is not satisfactory. Asbestone material cost about \$18.00 and required about one day's labor to lay.

Complete Instructions Free

In the laying of permanent sanitary floors. When Asbestone is installed in Sun Parlor, Sleeping Porch, Kitchen, Pantry, Bath or any other room, it makes the house easy to sell. Also makes it easy to get the job, if you can offer your client a

FRANKLYN R. MULLER & CO., 10 Madison St., Waukegan, Ill.



—The key to Confidence

"Safety First"

SCAFFOLDS

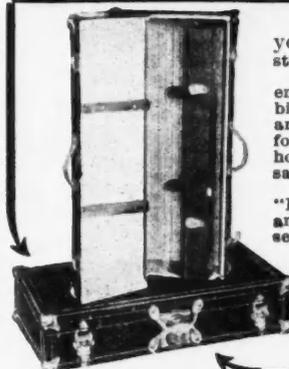
Assure absolute protection to yourself and your workmen. You cannot fall off.

They can be attached as fast as one man can hand them to another man, as there are no holes to bore or nails to drive. It is not even necessary to have your building sheeted. Equipped with tool shelf. Folds up flat for storing.

Write for catalog and trial proposition.

John Faragher, 811 So. Brooks St., Madison, Wis.

Carpenter's Tool Trunk



Just the thing in which to carry your tools. Can be taken on a street car like a suitcase. Last a lifetime.

Made of basswood, covered with enameled steel. Has a bronzed steel binding, and is lined with paper. Locks and bolts are of brass. Contains drawer for small tools and an arrangement for holding steel square, level and three saws. Size, 32 inches. Price, \$7.00.

If your dealer doesn't handle this "Handy Tool Trunk," send us his name and your check for \$6.50 and we will send one chest to you.

F. ENDEBROCK TRUNK CO.

1417 South 14th, ST. JOSEPH, MO.

The Circulation of
AMERICAN CARPENTER AND BUILDER
IS GUARANTEED

We are Members of
The Audit Bureau of Circulations

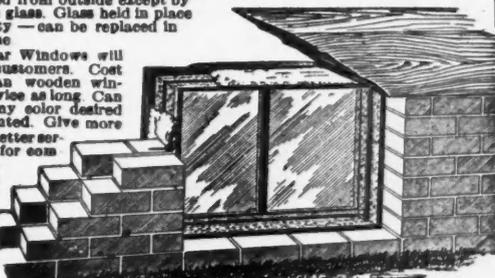
A Sworn statement in detail will be sent to anyone upon request.

Famous Chief Cellar Windows Will Not Stick, Warp or Rot

The solution of the cellar window problem—a modern, 20th Century Cellar Window made right for service. Made of steel-window, casing and all. No rotting, shrinking or swelling. Fits perfectly all the time. Trouble proof, easy to open and close, leak-proof and fire-proof. Will not rust. Nothing about it to wear out. Fitted with special, inside steel lath—cannot be opened from outside except by breaking the glass. Glass held in place without putty—can be replaced in

minutes' time. Chief Cellar Windows will please your customers. Cost no more than wooden windows—last twice as long. Can be painted any color desired or left unpainted. Give more service and better service. Write for complete description, prices and terms.

SHRADER & JOHNSON
430 Walnut St.
Atlantic, Iowa



DRAFTING IS THE KEYSTONE

to the bigger job for wide-awake, ambitious carpenters, bricklayers, foremen, superintendents, contractors and all men in the Building Trades.



\$45 Course FREE

Read the Wonderful Offer Here Made to You

Get the knowledge—the training—that will make you the Boss instead of the workman. Drafting is the foundation of all big engineering and building jobs. You can learn drafting in a short time in your own home by the "Chicago Tech." **New, Quick, Easy, Home-Study Course.** Your spare hours are enough. There is a bigger job (than you now have) waiting for you if you only had the training. Read our great offer, then sign and mail coupon today. Remember, there is only a limited number of these special **FREE COURSES.**

MEN WANTED For Big Jobs At Big Pay



CHARLES W. MOREY
President of the College
and Head of a Large Chicago
Firm of Engineers and
Contractors

On account of the rapidly increasing demand for trained draftsmen, this college has set aside a limited number of free scholarships and will give the regular \$45 course in

Mechanical Drawing Free

with any one of the Home-Study Courses named in the coupon below; this is in addition to the complete \$15 Drawing Outfit which is also furnished to students free. Take advantage of this unusually liberal offer today, as it will be withdrawn when the allotted number of Free Scholarships has been awarded. It costs you nothing to get full information. No obligation on you.

Study at Home. Hundreds of men are in daily attendance at this old-established college. In your own home you can do the

same work these men are doing, and the same experts that teach them will guide you toward the big-pay job. They will prepare your instruction matter. Your work is examined and approved by them. No books to sell. Live, up-to-date blue prints of work in actual construction.

This Complete \$15 Drawing Outfit and full Instructions in Mechanical Drawing FREE



Mark "X" opposite work in which you are interested. Without obligation on you we will send full information.

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| <input type="checkbox"/> Builders' Course | <input type="checkbox"/> Structural Steel Drafting |
| <input type="checkbox"/> Estimating | <input type="checkbox"/> Sheet Metal Drafting |
| <input type="checkbox"/> Plan Reading | <input type="checkbox"/> Reinforced Concrete |
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| <input type="checkbox"/> General Contracting | <input type="checkbox"/> Surveying (1077) |

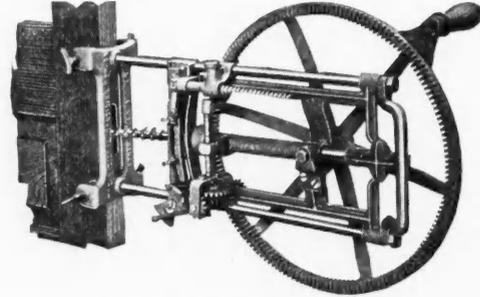
Name _____
 Address _____
 Town _____ State _____
 College or Home-Study Course _____

CHICAGO TECHNICAL COLLEGE
1077 Lake View Building, Chicago, Illinois

National Hand Power Mortising Machine

A hand power mortising machine is being manufactured by the National Mortising Machine Company of Columbus, Ohio, which is designed to make a mortise ready for any size mortise lock or tenon, of any design, from 1½ to 6 inches long and any depth up to 3¾ inches, with any size bit from ¼ to 1-inch. The machine is the result of eight years' experimenting and testing, involving the expenditure of a considerable amount of money, in all kinds of wood under all conditions.

Every movement of the bit in the National mortiser is automatic and accurate. The device automatically locks itself at the finish of each movement for which it is set, thus preventing the excess travel of the bit in any given direction. The bit can neither be drawn into the wood upon encountering a soft spot or hole nor can it be pushed back when it strikes hard vanes in the wood, knots, dowel pins or ends of cross-panels.



National Hand Power Mortiser.

With this machine, it is said, an apprentice can do the work as well if not better than an experienced man using a bit and brace, and furthermore, the apprentice can work much faster. A decided advantage is gained on account of the fact that the bit used in the machine may be very closely the size of the lock to be set, thereby cutting away a minimum amount of the door, leaving it stronger, and securing the lock firmly in place.

As shown in the illustration, the mortise is finished rounded at the ends, which is an advantage in light framing work, such as cabinets, screen frames and sash, because the corners of the tenon are more easily trimmed to fit the mortise when the ends are finished in this way.

The machine is strong and durable and the design is such that there is no unusual wear on any part. It is simple and easy of adjustment in every respect. The adjustment for length of mortise is made by turning one thumb nut at the upper side of machine; when turned to the right, it lengthens the mortise and when turned to the left it shortens the mortise. This adjustment may be made as close as 1/32 of an inch.

The spiral feed is simple, accurate and automatic. When the mortise is the desired depth, a pin at the top of the machine is thrown down and the spiral is released and the machine may be drawn back with ease.

Complete information may be obtained from the National Mortising Machine Company, 362 Lexington Ave., Columbus, Ohio.



Highwood Dumbwaiter Prices Increased

Because of the increase in the price of raw material and wages, the Highwood Dumbwaiter Company, Grand Avenue, Leonia, N. J., has announced the necessity of increasing the selling price of their dumbwaiters nearly 15 per cent. The company has expressed its determination to protect those who have furnished estimates based on the former price if notification is given before February 1, 1917.

**Beauty
Counts
for
Something**



The perfect house is not merely a substantial structure—built for utility alone. It combines with its utility, the quality of beauty. Every line is graceful—true—pleasing to the eye.

This necessary beauty can be obtained, and the utility enhanced by the use of

Bayonne Roof and Deck Cloth

Water-proof, weather-proof and wear-proof, it can be sluiced clean like cement. Unaffected by changing temperature.

Bayonne is easier and more economical to lay than any other material. Offers unusual possibilities of painting and finishing.

Recommended for roofs, sleeping porches, conservatories, piazzas, etc.

Write for Sample Book N, giving prices and instructions for laying

John Boyle & Company, Inc.
112-114 Duane Street New York City
70-72 Reade Street
Branch House: 202-204 Market St. St. Louis, Mo.



This Roof Stands as a Permanent Advertisement for You

More than that—it's the roofing that's most profitable to you. There is a good profit on each individual sale; profit in the ease with which it can be handled and applied. A roof of

**AMBLER
Asbestos Shingles**

is absolutely the best roof you can give a customer. A joy to his eye—and a roof which will never cost him a cent over and above its first cost. Ambler Asbestos Shingles are made of Portland Cement reinforced with Asbestos fibre: they are fire, time and weather proof. Just as suitable for sidings and renewal work as for new roofs.

Let Us Send You Facts and Pictures—
Samples, Too. Write Today

KEASBEY & MATTISON COMPANY
Dept. B-1, Ambler, Pa., U. S. A.

Residence: Robert Damerell, Red Cloud, Neb.
Architects: Way & Company, Hastings, Neb.



**Selection from Thousands of Artistic Homes
Are Pictured in our "CREO-DIPT" Book**

to make clear why you can select, not only for building economy, but also for beauty and artistic variation

**"CREO-DIPT" STAINED
SHINGLES**

17 Grades—16, 18, 24-inch—30 Colors

above any other kind of covering for roof or side walls. Whether you build, remode or reshingle, you should consider the special value of "CREO-DIPT" Stained Shingles. The facts as well as the homes in our Book will interest you—if not, there's no obligation.

Ask for Sample of Colors on Wood, also.
Please give name of lumber dealer.

STANDARD STAINED SHINGLE CO., 1028 Oliver St., N. Tonawanda, N. Y.
Factory in Chicago for West



Architect, H. B. Nurse, Rochester, N. Y., for W. G. Pierce. Saved muss of staining on the job and continued painting and repair work.

BEAUTIFUL OAK FLOORS

Are the source of unlimited satisfaction and pride. Wherever OAK FLOORING is used it means better tenants and better selling and renting values.

OAK FLOORING means satisfaction; the first cost is the last, as repairs are eliminated. With a little care OAK FLOORS will last a lifetime.

3/4" OAK FLOORING offers a very beautiful and durable floor at a very low cost. It is the ideal floor for laying over old floors in old buildings, as well as in new buildings over cheap sub-floors. When laid it has all the appearances of 1 3/16" stock.

Carpenters and contractors find it very profitable, in dull periods, in laying 3/4" OAK FLOORING in old houses.

All reputable lumber dealers sell OAK FLOORING.

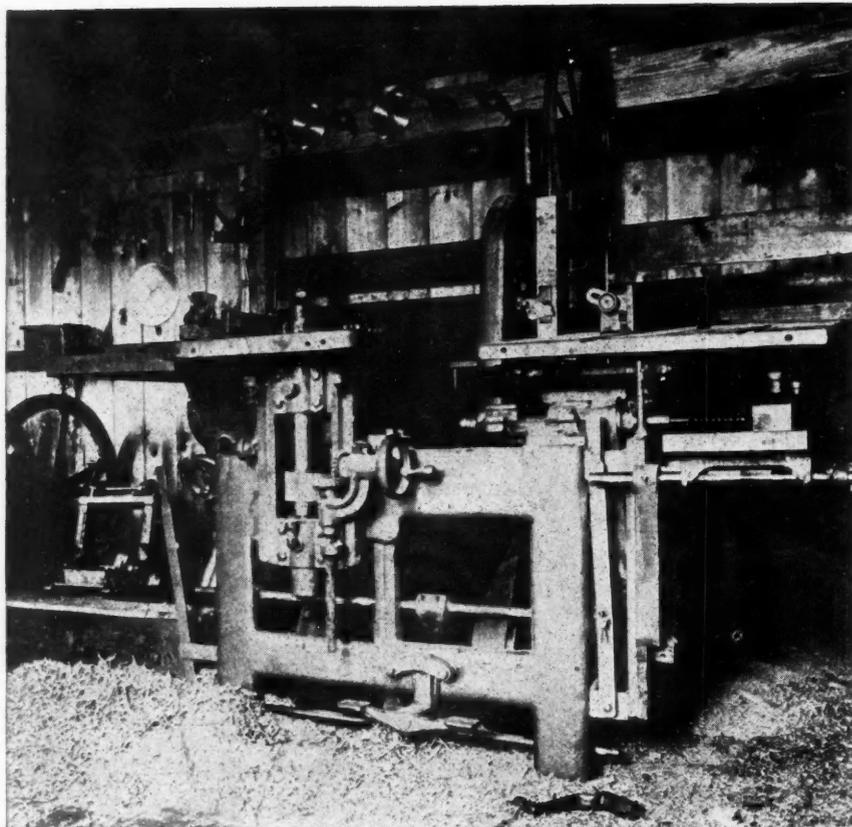
Write for booklet, "America's Best Flooring."

THE OAK FLOORING SERVICE BUREAU

1351 Conway Building

CHICAGO





Sidney Tool Co.'s Combination Woodworker Installed in the Portable Shop of W. M. Walters, Newark, Ohio.

Portable Woodworking Shop

Many contractors and builders have found that the construction of a portable woodworking shop in which a combination woodworking machine, power saws or other power machinery could be installed, is a profitable addition to their equipment. The elimination of hand work in cutting out framing and trim results in a saving in wages and produces better construction. The machinery necessary to accomplish this must be handy to the work, and the portable shop seems to be the best way of solving the problem.

The following letter, written to the Sidney Tool Company, of Sidney, Ohio, manufacturers of the "Famous" line of woodworking machinery, describes the portable shop, an

interior view of which is shown in the accompanying photograph:

Newark, Ohio, Dec. 14, 1916.

Mr. B. A. Getz,
Sidney Tool Co., Sidney, Ohio.

Dear Sir:

I am sending you a picture of my Famous Woodworker No. 31, showing the interior of my portable shop. I also have one 16-inch single arm swinging cut-off saw 6 feet long opposite my 6-horsepower Bull Pup gasoline engine, which swings out. This does all my framing and cuts all my sheathing and rafters.

I have this portable planing mill in a 10 by 16-foot room on wheels, thus enabling me to keep it on the job all the time. One team of horses can pull it anywhere. I have one door 10 feet wide on each side, and 4 feet 3 inches high, which is hinged at the bottom, swinging down, making a floor space of 10 by 18 feet 6 inches. The other part of the door is hinged at the top and swings up, which forms an awning.

I am surely well pleased with this outfit, as it does the work nicely and is a great saver of hard work, valuable time and saves me considerable money each year. I would not take the price I paid for it and do without it, and I think that anyone who has use for such an outfit would say the same thing after using it awhile. I would suggest that anyone who is not able to buy the large size, for him to buy a smaller size, because they are more than worth their price, and if used every day will pay for themselves in a very short time.

(Continued to page 162.)



Best Roof Under the Sun

Montross Metal Shingles for House or Barn or buildings that require durable, economical roofs. Easily applied. Fire, lightning and storm proof. Nine different designs. Write for illustrated catalog and testimonials from satisfied customers who have used Montross Roofing for a "Quarter Century." Liberal commission to good, live agents.

BLUE VALLEY SLATE MFG. CO., Ltd.
Miners and Manufacturers of

Unfading Roofing
Clear Structural
Electrical

SLATE

World's Fair
Premium
Blackboards

SLATE SINK TOPS A SPECIALTY
Write for Prices. Address: Box 472, Slatington, Pa.

ROOFING SLATE SINCE 1869

Miners, Makers and Shippers of all Styles and Colors of Roofing Slate. Write for Prices.

RISING & NELSON SLATE CO.

Main Office: West Pawlet, Vt.

Branch Offices:
1058 Marbridge Bldg., New York City. 4 Post Office Sq., Boston, Mass.
Office and Yard, 2554 W. Harrison St., Chicago, Ill.

SLATE WE HAVE WHAT YOU WANT

*In Roofing Slate, Slate Blackboards
Structural and Plumbers' Slate*

SATISFACTION GUARANTEED in QUALITY and PRICE

Ask for Delivered Prices

J. K. HOWER Station C Danielsville, Pa.

R. J. KICHLINE, Sales Agent

ROOF SLATES

STRUCTURAL SLATE BLACKBOARDS

E. J. JOHNSON

38 Park Row New York

Quarry Operator

BLACK, GREEN, PURPLE, RED

Booklet, Samples and Prices on Application

UNFADING ROOFING SLATE
and Slate Blackboards

Best to be had and made in Slatington — Buy from us

Slatington-Bangor Slate Syndicate, Inc.
Slatington, Penna.



ROOFING SLATE

—“they were represented to be as good as G F T slate but after we used them we know **POSITIVELY** that they were **NOT AS REPRESENTED**. Hereafter we will use G F T slate. We are done with ‘Just as Good’ brands.”

This is the experience of all who buy UNKNOWN brands of roofing. Insist on G F T slate. They are the best and cheapest in the end. Price List and Catalogue on request.

Sole Manufacturers
Slatington Slate Co.
Slatington, Pa.



THE ROCK OF AGES CLEFT FOR YOU

SHELDON'S SLATE

RED GREEN
PURPLE BLACK

THE ROOF FOR AGES ALWAYS NEW

ECONOMICAL — ARTISTIC — FIREPROOF

Outlast the building. First cost, only cost. The only roof you can afford to consider for a permanent investment. Artificial substitutes bring endless expense for upkeep. Post a postal and get posted.

F. C. SHELDON SLATE CO., Granville, N. Y.

Genuine Bangor Roofing Slate

Costs but little more than tin and asphalt shingles, about the same as metal shingles and good wooden shingles, and less than asbestos shingles and tile roofing.

It will wear five times as long as tin or asphalt shingles, three times as long as metal or wooden shingles, and will more than hold its own with tile and asbestos shingles.

Made in three grades at prices averaging \$3.25, \$4.50 and \$5.75 per square at quarry. Can be shipped with nail holes punched, ready for laying.

Give your customers the best value for their money. Write for prices and freight cost to your station.

North Bangor Slate Company
Bangor, Pa.

CON-SER-TEX



The carpenter, builder or owner finds CON-SER-TEX a most satisfactory material to use wherever economy and durability are required, and a neat and attractively finished job is desired. It costs very little, is easy to lay and is almost as permanent as the structure itself.

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

Send a Postal for Our New Interesting Book on “Roofing FACTS and FIGURES”

Wm. L. Barrell Company
8 Thomas Street - New York City

CHICAGO DISTRIBUTOR:
GEO. B. CARPENTER & CO.
430-440 WELLS ST.

CALIFORNIA DISTRIBUTORS:
WATERHOUSE & PRICE CO.
LOS ANGELES

PACIFIC BUILDING MAT. CO.
SAN FRANCISCO



throughout the Winter —

Hudson Asphalt Shingles

can be laid. They come flat and do not have to be unrolled like roll roofing.

Surfaced with Red, Green or Mottled Crushed Slate.

Furnished in individual shingles size 8"x12 1/4" and in strips 10"x40" with 5 shingles to a strip, which greatly reduces the labor cost.

HUDSON Asphalt Ready Roofing Co.
Dept. 453, 9 Church Street, New York

ASPHALT READY ROOFING CO.,
Room 453, 9 Church St.,
New York.

Send particulars regarding Hudson Shingles.

Name.....
Address.....

Bargain for the Contractor

Let me send my offer on this "Contractor's Typewriter"



No. 5 OLIVER

It is a visible writer—just the machine you need—specially designed to meet the exacting requirements of your business.

It is easy to operate, you can learn to operate it in 10 minutes.

It requires no care, it will do your work for a lifetime. We guarantee it. It is the latest Model 5, with inbuilt Tabulator and Back-spacer.

This Contractor's and Material Man's Model has Keyboard arrangement as shown below.



Note carefully not only the fractions and figures, but characters used in Bills of Material, etc., are all on one shift, such combinations as: "400' 3/4 x 4 x 16' @ \$30.00 = \$12.00" reproduced with one operation of the shift key.

The automatic tabulator makes this exacting work as easy as letter writing. Just press the button and the paper automatically glides to the correct spot so that quantities group themselves under quantities, dimensions under dimensions, prices under prices, etc.

Think of the enormous advantage of the typewritten estimate. Think of the enormous saving of tedious labor. Then remember that this special Contractor's Model is also ideal for ordinary correspondence and the many other uses to which a typewriter can be put.

Free Trial—Nothing Down

My offer is to send this typewriter to you, that you may decide by actual trial whether or not you desire it. No advance payment is required and you assume no obligation.

Cut Price—Terms 13c a Day

I will make you an extremely low price on this machine. A price that has never been made on a typewriter of this quality.

No advance payment is required. If you decide to keep the typewriter, you can pay a little each month, about 13 pennies a day.

No interest, no extra charges, no chattel mortgages, no red tape—everything is made easy.

Get This Free Information

It will not cost you anything to learn about this offer. Just send your name and address and I will send you full particulars. No salesman will call on you, you will not be urged to buy.

Do it now. I have but a limited number of these "Contractor's Model" of the Oliver, and if you have any need for a typewriter do not neglect to send for this best of all typewriter offers. A coupon is attached for your convenience. For your own advantage mail it today.

Yours very truly,

Typewriters Distributing Syndicate
Dept. 3131, 1510 Wabash Ave., Chicago

Mail this for All the Facts

Typewriters Distributing Syndicate,
Dept. 3131, 1510 Wabash Ave., Chicago.

Gentlemen: With the understanding that I am not purchasing anything or obligating myself in any way, you may send me your bargain offer on "Contractor's Model Oliver."

Name

Address

The photographer tried to take an outside view with the machine in working order, but the weather was not favorable. I have a room built on one side of my shop large enough to work in, and am going to build one on the other side. I am going to close it all up and put a stove in it this winter so I can work in there when I cannot work outside. I expect to make some furniture, window and door frames, during the winter months.

Yours very truly,
W. M. WALTERS.

It cannot be doubted that a portable shop is a useful and profitable thing, especially when it may be used the year around in the manner which Mr. Walters has outlined. Used in this way, the portable shop is very effective in filling in the periods which are often considered as slack.

The Sidney Tool Company is well fitted to advise contractors and builders as to the proper equipment for portable shops. The "Famous" line comprises a very complete list of machinery including several combination machines which are especially fitted for use where space is not available for the several separate machines included in the combination. The knowledge of woodworking machinery gained by this company in its extensive manufacture and perfection of this type of equipment is available to those who desire it.

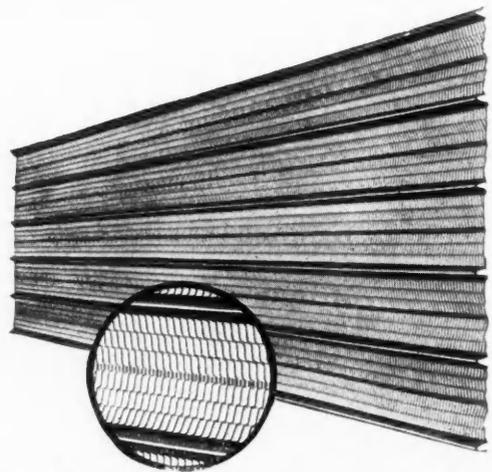


A New Reinforcing Plate

The Berger Manufacturing Company, Canton, Ohio, have brought out a new ribbed reinforcing plate which they have aptly named Ribplex.

The design is a plexus or network of strands forming meshes between V-shaped stiffening or supporting ribs. These ribs have an inverted arch-shaped formation at their base, from which the turned-on-edge mesh strands start.

This combination greatly increases the strength and rigidity



Sheet of "Ribplex" and an Enlarged View of Same.

of the plate, adding very materially to its utility and quality.

The process of manufacture has been brought to a degree of perfection that insures a perfectly uniform product.

Ribplex is a combined centering and reinforcement, especially used for reinforcing floors, roofs, sidewalks, partitions, stucco construction, suspended ceilings and practically all kinds of construction where concrete or plaster is used.

The small meshes formed between the ribs prevent the soft concrete from running thru and make a splendid bond with the concrete so that it is possible to develop the full tensile value of the metal. This is a most desirable feature.

The Berger Manufacturing Company will be pleased to forward, on application, detailed information on Ribplex, and send samples and prices to prospective purchasers.

Our Free Plans Will Help You—

Meadows
TRADE MARK REGISTERED

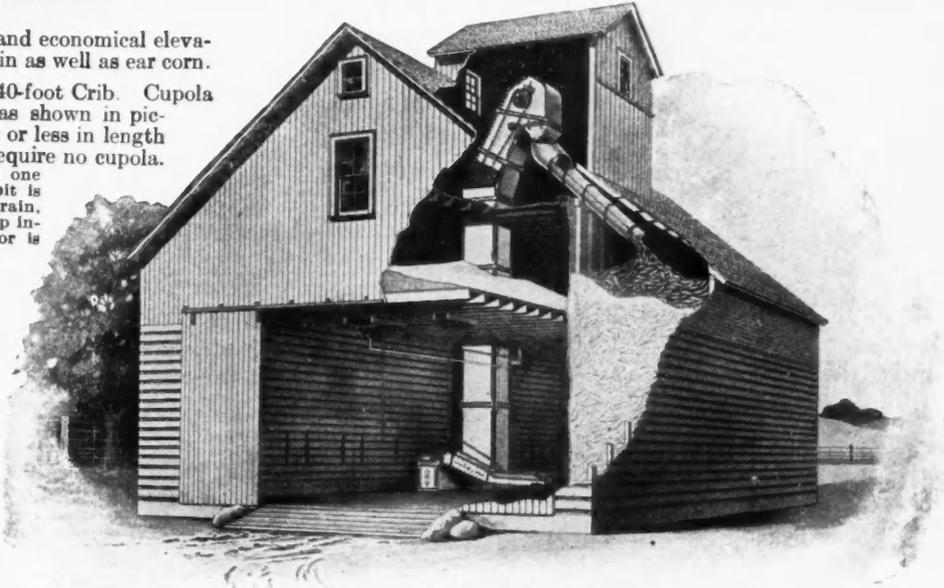
Don't figure on any crib or granary without consulting our Free Plans. They will show you how to get greatest capacity at least expense by installing Meadows Inside Stationary Cup Elevators.

The most convenient and economical elevators, carrying small grain as well as ear corn.

The picture shows a 40-foot Crib. Cupola need not be as large as shown in picture; and cribs 36 feet or less in length with half-pitch roofs require no cupola.

Elevator is confined to one side of driveway. No pit is necessary for dumping grain, just a hole 16 inches deep into which boot of elevator is set. The wagon jack is entirely overhead, fastened to the joists.

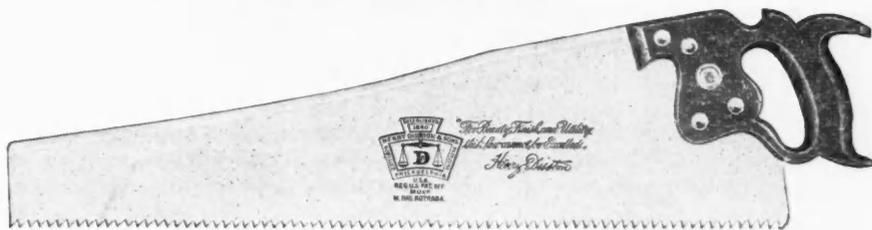
But write in today for our free Crib and Granary plans, catalogs and large posters telling all about our outfits and their application. Valuable information for the builder, and writing for it obligates you in no way.



**Meadows
Mfg. Co.**

Pontiac, Illinois

*The largest plant in the world,
Up-to-the-minute equipment and
76 years of specialized experience
are behind*



DISSTON SAWS

That's why there are probably more of them used than all other makes combined

The carpenters know who make the best tools

HENRY DISSTON & SONS, Inc. PHILADELPHIA, U.S.A.



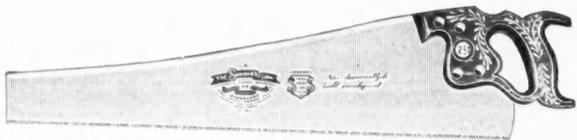
Uncle Si Says:—

"Here's a great **SAW**. My father used it, and I'm **still** using it. Goes through a board fast and true, and doesn't tire me all out trying to force it. Hangs and feels just right, and **stays** sharp.

"It's one of those---

Simonds Saws

"You can't own one and be dissatisfied."



The one shown is our Popular Model Simonds Blue Ribbon Saw, Price, \$3.00.

AFTER all is said and done, the saw you'll buy will be determined by price, reputation and the general "feel" of it.

Simonds are as low in price as is consistent with "saw satisfaction." For years these saws have been in the hands of the best builders. They are known to carpenters all over the country as being good, dependable, durable saws.

And when you get a Simonds in your hands you can appreciate why they are universally used. They fit right into your "scheme of sawing," because they are made so. The next time you are in your dealer's, ask him to show you a Simonds. And **now**, while you think of it, write for our "Carpenter's Guide." It is full of practical, interesting information.

Simonds Mfg. Company

"The Saw Makers"---Established 1832
FITCHBURG, MASS.

Five Factories

Eleven Branches



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Berger's Steel Locker Folder

The Berger Manufacturing Company, Canton, Ohio, who manufacture the well-known line of Berger's steel office equipment have an attractive little bulletin for distribution to interested parties.

It illustrates the many different types and combinations offered in Berger's steel lockers and the reader can readily determine what particular style of arrangement is best adapted to his requirements.

The materials used and the construction details are briefly but thoroly covered, while the standard sizes and code words are also given.

A copy of this bulletin may be obtained by applying to the Berger Manufacturing Company, Canton, Ohio.



Berger's Steel Lockers.



A Heating Plan That Automatically Ventilates and Humidifies

Contractors, architects and builders generally will be interested in the move now being made by the Estate of P. D. Beckwith, Inc., to further popularize the Round Oak Moistair Heating System, concerning which special announcement will be found elsewhere in this issue of the AMERICAN CARPENTER AND BUILDER.

One feature of the Round Oak System differentiating it from other warm air heating systems and upon which special stress is being laid, is the water pan and automatic humidifier. This is a regular part of the heater, the specially designed pan being so situated next to the fire pot as to return an adequate amount of moisture to the heated air as it flows upward and out, and being served by an automatically operating valve and water cock by means of which the pan is kept full, or nearly full, of water at all times. It is pointed out that as a result of this automatic humidifying arrangement, the system is more healthful, combining as it does moisture with fresh air; and it is principally upon this point that the interest centers.

Aside from the health feature, another advantage ascribed to this device is its resultant of fuel. It is an acknowledged fact that properly humidified air at 66 degrees is more comfortable to the average person than is dry air at 75 degrees. By humidifying the air, the Round Oak System can thus be operated at a fuel saving represented by the quantity of coal required to raise the temperature seven degrees under normal conditions.

As the fuel requirements grow proportionately greater as the temperature is driven up, it will at once be apparent that a by no means insignificant saving is thus effected by the humidifying feature alone.

Other interesting features of this system claimed to generously contribute to its more economical maintenance consist of an extra deep fire pot, the combustion chamber extending full size to the top; an exceptionally long fire travel inside the casing, effected by an ingeniously designed U-shaped horseshoe radiator; and air tight construction thruout, including a solid one-piece ash pit, bottom sides and door frame.

(Continued to page 169.)

IVES PATENT
WINDOW STOP ADJUSTER
Prevents Drafts, Dust and Window Rattling



The only stop adjuster made from one piece of metal with solid ribs and heavy bed that will not cup or turn in tightening the screw
Descriptive circular mailed on application

THE H. B. IVES CO.
Manufacturers of Builders' Hardware
NEW HAVEN CONN. U S. A.

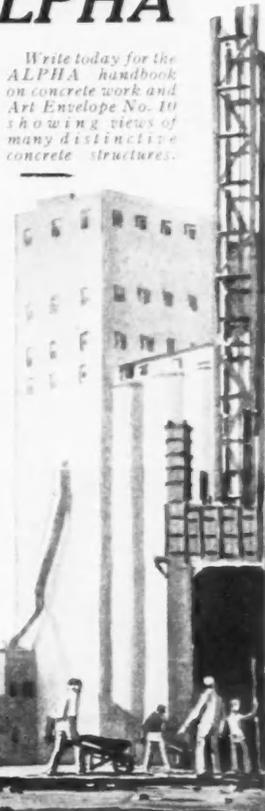
Builders of Big Work
Like to Use ALPHA

because then they know that the cement which is to be the very sinew of the concrete construction will be of full binding power and tensile strength—every pound of it.

ALPHA chemists test ALPHA Cement before it comes to you. The guarantee stamp on every ALPHA sack insures that the cement invariably will meet standard specifications for strength and fineness. A quarter of a century of cement-making experience is back of this guarantee.

The best available shipping facilities are at your service when you specify ALPHA.
ALPHA PORTLAND CEMENT CO.
General Offices: Easton, Pa.
Sales Offices: New York, Boston, Philadelphia, Pittsburgh, Baltimore, Savannah

Write today for the ALPHA handbook on concrete work and Art Envelope No. 10 showing views of many distinctive concrete structures.



ALPHA The Hourly Tested - **CEMENT**
Guaranteed Portland

--Use Better Barn Equipment--
and Barns you build will Show More Profit.
Buckeye Stalls, Stanchions and Litter Carriers, will make your barns more profitable. Cows will give more and better milk when stabled in comfortable quarters.
Our equipment is simple and accurate in construction, easily assembled and gives comfort to the cow.
Different from all others. New Interlocking Connections.
Write today for our catalogs.
MAST, FOOS & COMPANY
Box 110 :: SPRINGFIELD, OHIO

---Leaders in Levels---

We Lead—
Others Follow
Standards of
Accuracy



Established
Since 1895
Easiest
to Read

Sand's Genuine Black Walnut Levels, made in 18, 24, 26, 28 and 30-inch lengths, will wear like iron. Will plumb any end up or level either edge up.

Sand's Aluminum Levels cannot warp, split or crack. Level glasses are covered by plate glass, protecting them, and making these important parts dust, dirt and waterproof.



If your dealer doesn't carry these levels, write to us for full information.



J. SAND & SONS, Detroit, Michigan

being cast integral. The ash pit is equipped with a sprinkling device the use of which upon the removal of the ashes, does away with dirt and dust.

The advantages of the deep fire pot as opposed to the shallow type have been demonstrated by tests made by Professor Oldacre. By these tests it was claimed that 56 pounds of coal in a deep fire pot, such as used in the Round Oak System, has a heating value equivalent to that of 140 pounds in a shallow fire pot in a warm air heater. Users of Round

Oak Moistair Heating Systems are unstinted in their praise, and it is easy to see the reason why.

While now for the first time being widely advertised, this heating system has been on the market for many years, over 60,000 of them being in use, according to the manufacturers.

With reference to the advertising, it is understood that a large number of leading magazines and farm papers will be used, the appeal being based upon the health and economy ideas, the sale to be consummated wherever possible thru the local dealer. No pains will be spared to give the trade every possible assistance in closing sales and securing prospects; and a comprehensive selling campaign for local dealer use is in course of preparation.

Among these sales helps is to be listed the free heating plan which will be supplied local prospects by the dealer, the plan being drawn up with details and cost of installation by Round Oak engineers, and finally handed to the prospect by the dealer himself. One big aid in selling the system is the fact that it is made by the manufacturers of the original Round Oak Stove, which has been on the market for more than two generations, and is probably the most widely known stove made.

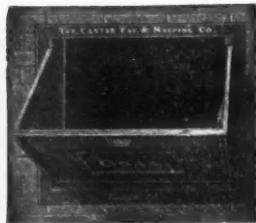
In view of the several advantages offered by this system, contractors and architects have been glad to include it in their specifications, wherever a first class job is wanted; and now that this widespread publicity is being given the system, it will be easier to recommend than ever, as its merits will be more universally known. The Round Oak Moistair Heating System is an outgrowth of 46 years of experience devoted exclusively to the production of heating devices of highest quality and dependability, and the service it renders reflects credit on all who recommend its installation. It goes out backed both by the reputation and the strong guarantee of its originators and manufacturers, the Beckwith Company, Dowagiac, 10 Front Street, from which further information may be secured.



"Baby Grand" Mixer on Sidewalk Work

The photograph on page 168 shows the "Baby Grand," the smallest of the mortar and concrete mixers manufactured by

(Continued to page 168)



Guard Against Coal Men With CANTON COAL CHUTES

Protect the foundations of your buildings; prevent broken windows; and guard against dirty lawns by installing

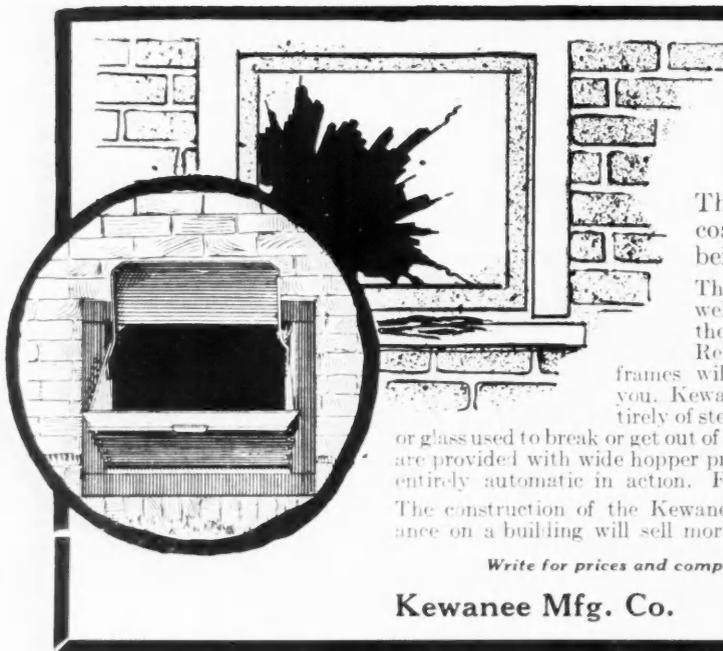
Canton Coal Chutes

Popular with builders, because they are easy to install, make a hit with the owner, and the cost is small.

They come in three handy sizes, and open either on the inside or outside.

Write for our catalog "B-4" of Builders' Iron Work

Canton Foundry & Machine Co.
Canton, Ohio



Better coal chutes and bigger profit for you

The scarred and blackened frames of wooden coal chutes are no longer tolerated. They are being replaced by chutes of metal construction.

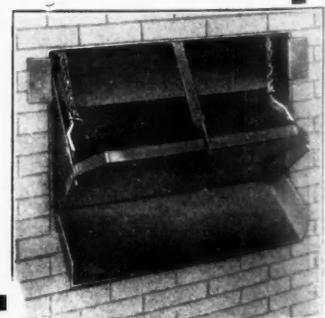
The Kewanee can be easily placed in old buildings, as well as new, by simply substituting its steel frame for the old wooden frame.

Replacing these wooden frames will prove profitable to you. Kewanee chutes are built entirely of steel. There is no cast iron

or glass used to break or get out of order. Kewanee Chutes are provided with wide hopper protecting shield and are entirely automatic in action. Fire- and burglar-proof. The construction of the Kewanee and its neat appearance on a building will sell more chutes for the dealer.

Write for prices and complete information

Kewanee Mfg. Co. Kewanee, Ill.



Majestic Building Specialties

Make every building complete. The residences, apartments and other buildings that you construct will be truly up-to-date if you equip them with these Modern Building Necessities. Designed to protect the good looks of buildings, walks and grounds from the careless coal man—to provide for the most sanitary garbage disposal and for the safest and cleanest delivery of milk and packages—and to make every building complete in every detail.

The Majestic Coal Chute keeps buildings, lawns and walks clean because every piece of coal falls into the bin. **The Garbage Receiver** is sanitary, water tight and safe from flies and dogs. **The Package Receiver** placed in the kitchen wall insures

your milk bottles and packages against theft and keeps them clean and in sanitary condition. Every Majestic Specialty is constructed to fill a real need.

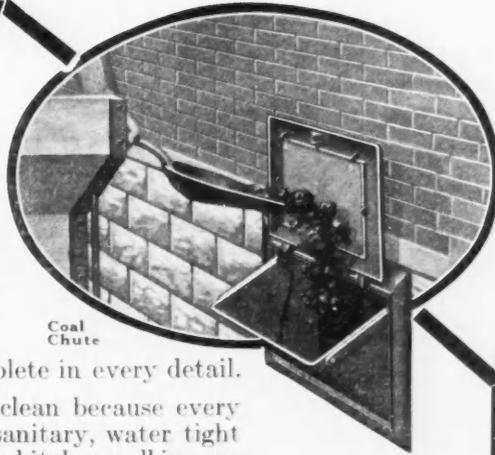
Endorsed and Used by Builders and Architects Everywhere

The Majestic Line is complete—consisting of Coal Chutes, Underground and Built-in Garbage Receivers, Package Receivers, Duplex One Register Store Heating Systems, Rubbish Burners, Steel and Park Refuse Cans, Metal Plant Boxes, Pipe and Pipeless Warm Air Furnaces, etc.

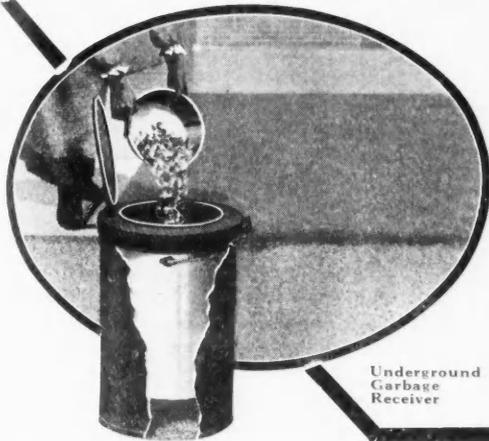
Write today for Free Catalog with complete description and information.

The Majestic Company

702 Erie Street, Huntington, Indiana



Coal Chute



Underground Garbage Receiver

WINTER PROFIT!

Are You Getting Your Share?

A Contractor Says:

"I made \$500.00 last year out of this business."

You can do as well. Sell DAVIS light plants for country homes. Used all over the world for fifteen years. We help you sell.

No Investment Asked The proposition does not ask you to risk your money on our goods. It is our business to help you sell and we do. Ask for full description of plan.

DAVIS ACETYLENE COMPANY

90 PROSPECT STREET - ELKHART, IND.

Carpenters

Make \$50 a week in spare time.

Get the exclusive agency for Akron Lighting Systems, portable and street lamps and lanterns.

Write Today



AKRON Independent Lighting Systems

Supply gasoline under pressure through hollow wire to lamps all over the house, and to gas-oline stove. Our system is absolutely safe.

Sheds a soft, steady, brilliant, white light of light candle power. Makes the home attractive and reading a greater pleasure. Better and cheaper than any other illumination.

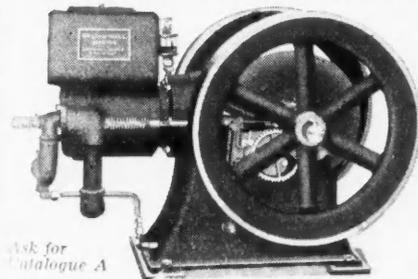
Complete line of "Akron" portable and street lamps and lanterns. Latest types; latest improvements; safe and simple construction; 15 years of success.

Agents Wanted

in unoccupied territory. Handy demonstration outfit. Our proposition to live hustlers cannot be beat. Write for catalog and terms. Akron Gas Lamp Co., 833 So. High St., Akron, O.



Any of your men can run a Brownwall Engine



It is so simple they can't go wrong. It is easy to start and easy to stop. No complicated adjustments to bewilder the operator. The engine has about 50% less parts than nine out of ten other engines which cuts down the cost of operating, the chance for misadjustments and breakdowns, as well as the replacing of worn parts besides the saving in power.

Ask for Catalogue A

See us at the Cement Show, Space 241, Chicago Cement Show
The Brownwall Engine & Pulley Co.
1200-1240 Fourth St. HOLLAND, MICH.



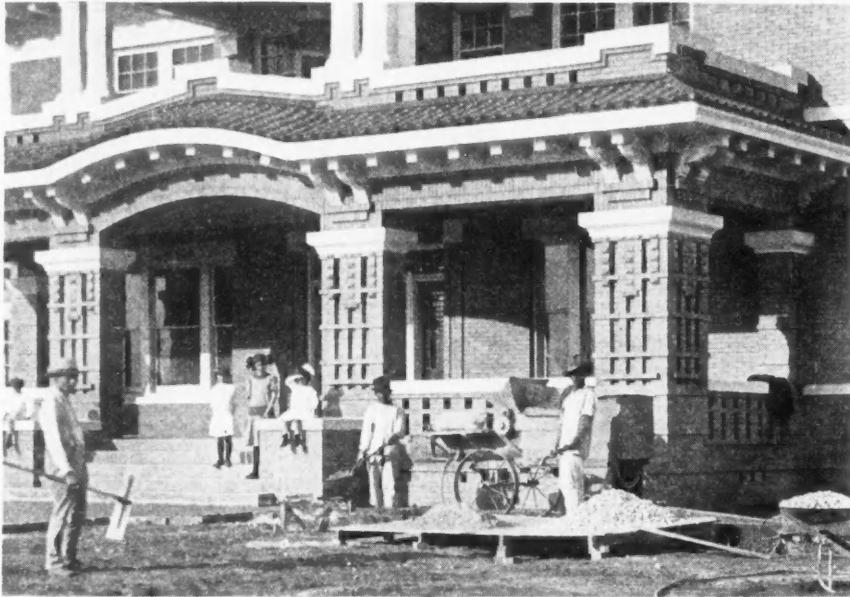
This Marvelous Lighting System is perfectly simple to install; surprisingly inexpensive to maintain, and will flood your home with a per-

fect Clear and Brilliant Light at a nominal cost.

THE TURES LAMPS and LIGHTING SYSTEMS are without a question the Simplest, most complete and efficient on the market. ALWAYS READY and DEPENDABLE—no more smoke, trouble and worry of the uncertain kerosene lamp—make and burns its own gas out of common gasoline, developing from 400 to 1200 candle power per lamp.

AGENTS wanted—everywhere. For prices, territory, etc., write to

THE TURES MFG. CO.
386 Sixth Street Milwaukee, Wisconsin



"Baby Grand," with Two Mexican Laborers, Mixed and Placed 860 Sq. Ft. of Sidewalk in Seven Hours Around Country Home of P. A. Presnall, Near Alice, Texas.

the Hall-Holmes Manufacturing Company of Jackson, Mich., at work on the sidewalks at the country home of Mr. P. A. Presnall, Alice, Texas.

The "Baby Grand" mixer is of the continuous type, having two hoppers, one for cement and the other for sand or gravel, the gravel feeder being reversible so that the same can be fed from either side. It is mounted on 3-inch channel iron frame and is constructed entirely of steel and iron. The

forms, grout and topping for 860 square feet sidewalk in seven hours on May 6, 1915."

The Hall-Holmes Manufacturing Company builds continuous mixers of various sizes equipped in different ways to meet the varied needs of contractors and builders. This company will send complete information regarding these mixers and other articles of contractors' equipment to anyone interested.

engine is mounted on a large casting which assures perfect alignment of parts. The power transmission is by gears only, which, together with the engine, are encased in an all-steel house to protect them from dust and dirt. The friction clutch is arranged on counter shaft which is easily accessible and allows operator to start and stop the machine without any sudden strain.

The machine is particularly designed for the small contractor doing brick, block, sidewalk and other small work, and it is a useful part of the contractor's equipment who does a moderate amount of concrete work in connection with his other building activities. The machine is mounted on large steel trucks and is easily handled.

The "Baby Grand" mixer shown in the photograph is owned by A. E. Hendricksen of Alice, Texas. Mr. Hendricksen said, referring to the work illustrated: "The Baby Grand, with two Mexican laborers, mixed and placed in

"Father of them All"



The
Great Bell

The Original Pipeless Furnace

We have thousands in use. Sizes, styles, and prices to suit all, \$38.00 to \$94.00.

This furnace will heat any one or two-story building in the most efficient manner; with the least effort, and the lowest relative cost. It is made for the building where a furnace is needed, but where the cost has been prohibitive.

Our methods of production and sales have reduced the cost so low that no builder can afford to overlook our proposition.

Write for our catalogs, describing the various styles, prices and specifications of the Great Bell Furnace. We guarantee them to be and do all we claim for them in both catalog and correspondence.

American Bell & Foundry Company, Northville, MICH.

CARPENTERS!

Make Big Money During Dull Months

Here's a winter job for you—a job which will keep you busy and pays big profits. A new invention that's revolutionizing living conditions in the country and small town homes. It's a necessity to health—a preventative of disease and one of the greatest inventions of modern times for comfort and convenience.

The Great United Chemical Closet

No Water--No Sewer--No Odor

ABSOLUTELY SANITARY

Every home, every cottage, every school, every hotel, without running water and sewer conveniences needs the United Ventilated Indoor Closet. Price low—within reach of all—and big profits to Carpenter and Builder Agents. It's absolutely germ-proof and odorless. Needs no attention except to replace fresh chemicals (which we furnish) about twice a year. **Guaranteed unconditionally.**

Easy to Sell---Easy to Install

We furnish selling helps which get orders and profits for you. Circulars with your own name on them, letters, advertising illustrations, testimony of users, etc. To live wires we grant exclusive territory. Simply take orders and install according to simple directions, which we send you.

An Unusual Opportunity---Act Today

Carpenters and builders have never had an opportunity equal to this for quick big profits, right in the season when your work is slack. Reserve your territory by writing today. Ask for special offer to carpenters—now. A postal will do.

Write for Special Offer



THE UNITED ENGINE CO.
Dept. C2 LANSING, MICH.

Comfort Indoor Closet

Odorless Sanitary Germ-Proof

No Sewer, No Waterworks, No Plumbing Needed
This modern home necessity is fast taking the place of the unsightly, unhealthy, inconvenient out-house in the back yard. Thousands now in use and all giving complete satisfaction. Can be put wherever convenient in the house. No odor whatever. Gives city convenience in the country or town.

Cost Less Than Out-House
Anybody can afford one. Saves those cold night trips out-of-doors. Impossible to get same amount of comfort for the money another way. Sold on 30 days' trial and under sworn guarantee to refund all money if not entirely satisfactory. Send for description and prices today. Be fair to your family.

AGENTS MAKE BIG MONEY EASILY

Comfort Indoor Closets sell themselves as fast as people understand about them. Contractors and carpenters are making big money by merely suggesting this closet. Write for details of our exclusive agency offer. Send postal now before somebody else gets your territory.

Comfort Chemical Closet Co., 301 Factories Bldg., Toledo, Ohio



WATCH

Our Editorial Pages in February 1917

for

Important Announcement

AMERICAN CARPENTER and BUILDER

HESS MEDICINE SANITARY LOCKER

The Only Modern, Sanitary
STEEL Medicine Cabinet

or locker, finished in snow-white, baked everlasting enamel, inside and out. Beautiful beveled mirror door. Nickel plate brass trimmings. Steel or glass shelves.

Costs Less Than Wood

Never warps, shrinks nor swells. Dust and vermin proof, easily cleaned. Should be in Every Bath Room. Four styles—four sizes. To recess in wall or to hang outside. Send for illustrated circular.

HESS, 920L Tacoma Bldg., CHICAGO

The Recessed Steel Medicine Cabinet. Makers of Steel Furnaces Free Booklet



Build Your Own Grandfather's Clock

with our help

With the blue prints, instructions, finishing material, etc., we furnish any handy man can build his own Grandfather's Clock. We sell you the works, dial, weights, pendulum, and everything you need at prices so low as to surprise you.

Works complete, \$5.00 each; others with chimes, all prices.

Here's winter work you can turn to good profit. Make duplicates for your friends. Our designs are clear cut, attractive and salable. Write for our free offer on the drawings, etc.

CLOCK COMPANY

1655 Ruffner St. Philadelphia, Pa.



Plumbing, Heating and Pneumatic Waterworks Supplies at Wholesale

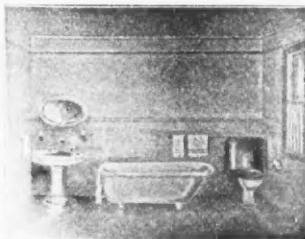
When in the market for Plumbing, Heating and Pneumatic Waterworks Supplies and you wish to

Save 20 to 40%

on every article, write for my free illustrated Catalog. The only house that sells first-class guaranteed goods at wholesale prices direct. Shipments are promptly made from a very complete stock.

Small orders are as carefully handled as large ones.

B. B. KAROL, 800-802 S. Kedzie Ave., Chicago, Ill.



Mr. Builder: Increase Your Income Right Now—This Month

Here's something right in your line—a Chemical Closet that you can sell to a home builder cheaper than a wooden privy and make a bigger profit for yourself. Here's something you can sell at odd times or turn over to your son or your foreman to sell.

RO-SAN Chemical Closet

An absolutely sanitary, odorless indoor closet that may be placed anywhere in the house. Abolishes the germ breeding out-door vault. A comfort and a convenience when there is no sewer connection. Germs killed by chemical. Easily emptied as the ash pit of a stove.

AGENTS WANTED

We want one live carpenter contractor in each town to act as our agent. Hundreds of builders are selling these fixtures. Good profits for little work. We help you sell them. Write today for complete details.

ROWE SANITARY MFG. CO.
101 Sixth Street Detroit, Mich.
Ask about the Ro-San Washstand. Hot and cold running water without plumbing.



Lane's 3 Ton Handle-Control Truck Jack

The handle-control automobile jack brought out last season by Lane Brothers Company, Poughkeepsie, N. Y., has resulted in such a strong additional demand for a similar truck jack that the manufacturers are responding with the 3-ton size here illustrated. It weighs 27 pounds complete, stands 12 inches high, lifts 6 inches and is fitted with 48-inch folding handle.



Extra Long Folding Handle of Lane Jack.

This truck jack will first be exhibited at the forthcoming New York and Chicago Automobile Shows, and is said to be somewhat different from the pleasure car sizes in both design and interior mechanism, though the operating functions are much the same; the distinguishing feature again being the great length of handle and the ability of the operator to manipulate the jack entirely from the outer end of the handle. This at once conduces to safety, convenience and powerful lifting leverage.

As in the smaller sizes of handle-control jacks, the handle is securely held into the pocket by a spring catch, and reversal of the jack is accomplished by a lengthwise twitch on the handle.

Thus in operation the handle is first unfolded and pushed

into the socket as far as it will go—that sets mechanism for raising. The jack is then shoved under the load from the handle (safety—operator doesn't get under the truck at all).

The extremely long handle now extends away back and clear from all parts of the vehicle so that the operator can work to advantage (convenience—no working in cramped position).

The very length of the handle gives the great mechanical

leverage (lifting power).

The usual pumping motion raises the lifting bar.

To set jack, mechanism for lowering the handle is twitched backward (it moves 1/2 inch in socket) after which pumping as before lowers the rack bar notch by notch.

Soon as the load is entirely released the lift bar drops automatically and jack may be pulled out from under the car by the handle, which is still securely attached. Handle is then released by pulling out on the spring catch located on the under side of the socket.

It will be understood that when in use the jack may be reversed as often as desired by a push or twitch of the handle.

A locking device may also be noted in connection with

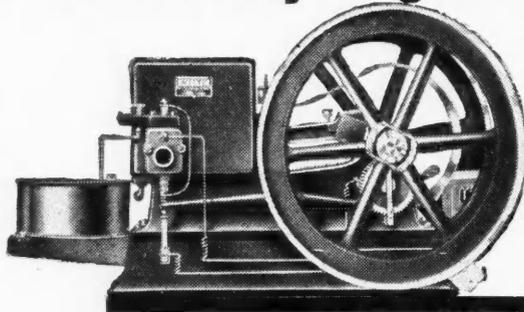
the handle joint. This is for holding it rigidly open when in use, but in the event of an obstruction—such as a stone in the way on the ground—this is slipped between the two parts, resulting in operative end of the handle being several inches higher, due to the lesser opening of the joint.

It is anticipated that this new size will find a considerable field in the general



ED. H. WITTE
Says:

Why Pay Double My Price for any Engine?



Put a WITTE Engine on your floor. It will do your work and do it well—I guarantee it. You can have a WITTE, Easy-to-Start Gasoline or Kerosene Engine—plenty of power, low operating expense and a big saving in first cost by ordering from Witte—who operates the largest exclusive engine factory in the world selling direct to the user. Capacity 12,000 perfect engines yearly, or at the rate of 1,000 a month—about 40 a day. WITTE Engines are built by experts, using the latest improved engine machinery. My prices are based on low cost of manufacture, using high grade materials.

WITTE ENGINES

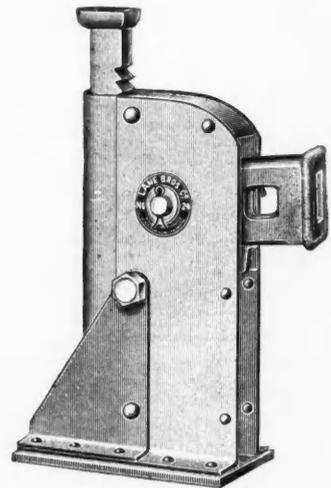
are built in sizes 2, 3, 4, 6, 8, 12, 16 and 22 H-P.—all sold direct to the user at a big saving—no middlemen or jobbers' profits. I have four definite and easy plans of payment:

- | | |
|----------------|--------------------|
| 1st. ALL CASH | 3rd. BANK DEPOSIT |
| 2nd. PART CASH | 4th. NO MONEY DOWN |

I can accommodate any worthy, creditable man as to terms. I allow 90 days trial, and guarantee 5 years. I ship brand new engines, shop tested for power, and crate tested before shipping.

MY FREE BOOK tells all about how WITTE Engines are made, why I sell direct, and why you should own a Witte Engine. Write for Free Book, telling me what size engine you will likely use, or need, if interested in better shop power.—ED. H. WITTE, Pres.

WITTE ENGINE WORKS 1778 Oakland Avenue
Kansas City, Mo.
1778 Empire Building, Pittsburgh, Pa.



The Lane 3-Ton Jack.

service and repair departments of garages thruout the country as well as for general lifting purposes within its capacity, not necessarily connected with the motor vehicle industry.

Further information in regard to the handle-control jacks may be obtained of Lane Brothers Company.