

# AMERICAN CARPENTER AND BUILDER



## THE WORLD'S GREATEST BUILDING PAPER

### August Special Features---

AUG 1911

#### Success in Town Planning

WHAT HOME BUILDING UNDER RESTRICTIONS HAS DONE FOR GARY, IND.

#### Silos and Silo Building

TIMELY ARTICLE FOR COUNTRY CARPENTERS ABOUT SILAGE AND WOOD SILO CONSTRUCTION

#### Ornamental Gates and Fences

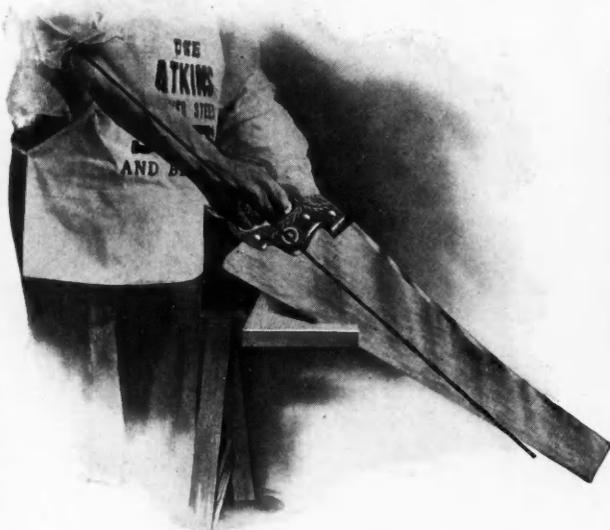
DETAILED DRAWINGS OF SIX ATTRACTIVE DESIGNS

#### Full Set House Plans

STEEL SQUARE FRAMING---AMATEUR SHOP WORK---MACHINE WOOD WORKING  
SMALL HOUSE AND BUNGALOW DESIGNS

# Two Famous Silver Steel Saws

We want to call particular attention to the two Saws shown in the pictures below. Both blades are of SILVER STEEL—both are Taper Ground—both are genuine ATKINS SILVER STEEL SAWS—BUT the handles are constructed on entirely different principles.



No. 53—Genuine Perfection Handle.



No. 51—Old Style Handle.

## “Pay Your Money and Take Your Choice”

### ATKINS NO. 53.

The picture to the left shows ATKINS NO. 53 SILVER STEEL SAW equipped with ATKINS Genuine Perfection Handle and illustrates plainly why this type of handle is easiest on the saw arm. While it may feel strange to the beginner—a few days use will demonstrate that the Perfection Handle is the most scientifically constructed and much easier on the saw arm than any other style.

Note the line running through the saw arm straight through the blade to the cutting edge. See how every ounce of power is directed to the point of contact. Observe the wrist and saw arm, how easy and natural the blade drops into its work without pressure.

If you do not wish to try the Perfection Handle, then try the No. 51. Either of these saws or any of our other popular numbers may be purchased through your regular dealer, who should order for you from his wholesale house in case he does not carry them in stock. If he will not order for you, let us know and we will see that you are taken care of. Be sure to see that our name, E. C. ATKINS & COMPANY, and the words “SILVER STEEL” are on the blade. None other are genuine.

### ATKINS NO. 51.

If you are under the impression that all ATKINS SAWS are made with the Perfection Handle, we wish to particularly call your attention to the saw shown to the right. This handle is similar to the old straight-across handle that you may have been using heretofore. Note the saw arm in this case and see that the pressure back of the saw arm is **not** directed on the cutting teeth, but rather to the back of the saw. Notice this wrist and see how it is necessary to push downward in order to secure proper contact. But even with this old style handle, the No. 51 is superior to any other, because the blade is made of genuine SILVER STEEL (our own exclusive formula) and is Taper Ground, which enables it to run free and easy, even in wet lumber with but little set.

## OUR FREE OFFER

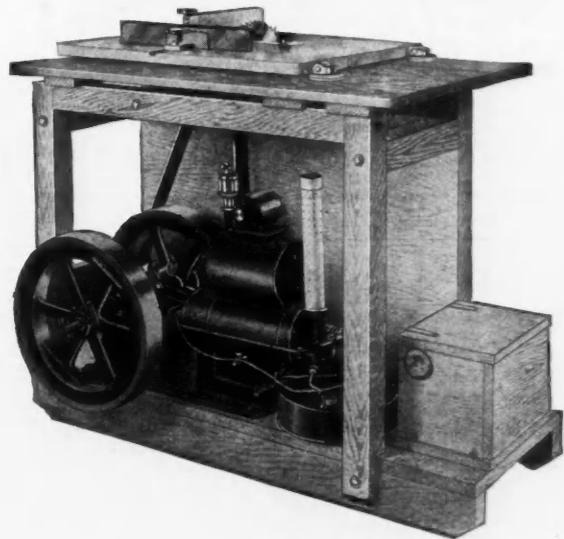
We are securing the names of high class mechanics who appreciate fine tools and if you will send us ten cents in stamps to pay postage, we will mail you one of our fine carpenter's nail aprons, Saw Sense Book, Time Book, and a great deal of useful information on the purchase and care of saws. Write to-day and learn “Who's Who” in the saw world.

**E. C. ATKINS & CO., Inc.**  
INDIANAPOLIS, IND.

# SAW RIG

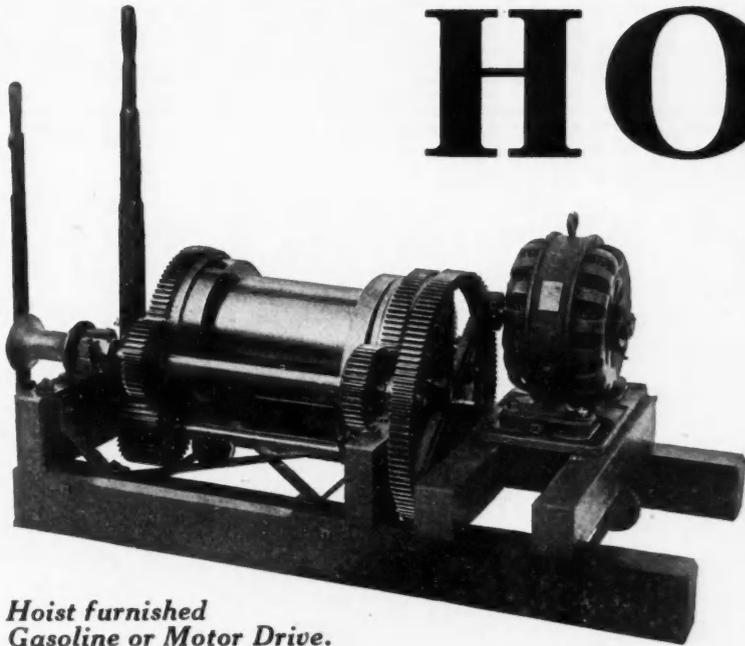
Put this portable saw rig on your job or in your shop. A complete and economical operating mill which requires no line shafts or large amount of floor space.

Will rip 2 inch lumber and cross cut 3 inch lumber.



**GUARANTEED FOR LIFE**

# HOIST



*Hoist furnished  
Gasoline or Motor Drive.*

This Builders' Hoist is the cheapest and best hoist on the market today. All gears are machine cut, which makes it a simple, noiseless and reliable outfit that can be depended upon and pay for itself on one good sized job.

**WRITE FOR OUR ATTRACTIVE FOLDERS**

*Portable Saws and Builders Hoists*

**GEORGE D. SMITH**

**814 FISHER BLDG.,**

**CHICAGO, ILL.**

# The American Floor Surfacing Machine

**IS NO EXPERIMENT.** Its work since 1903 has established a standard for finely surfaced and polished floors. It is the only machine whose work is specified by leading architects and used in the best government buildings and will surface and polish any kind of a floor from common pine to the finest parquetry.

**IT IS THE ORIGINAL** and only two-roll, self propelled, dust collecting machine, that surfaces close to the wall and can be used in small rooms. Anyone can operate it.

**ITS WORK IS RAPID, regular smooth and even** because the power that drives the rolls, also propels the machine at the same ratio of speed. It has surfaced and polished millions of square feet of the finest floors in America and Europe.

**GET A MACHINE** that does first class work and in paying quantities, that is fully guaranteed and sold on its merits.

Write for Our Free Book, "Surfacing Floors as a Business."

Manufactured By **The American Floor Surfacing Machine Co., TOLEDO, O.**



## We Make Panels of any Thickness and Any Kind of Wood — Curved or Flat.

- FOR
- Wainscoting
  - Ceiling
  - Mantels
  - Doors
  - Counter Tops
  - Partitions
  - Cabinets
  - Shelving
  - Drawer Bottoms

Our products excel in Quality and Durability, because we concentrate our best efforts in their manufacture.

We specialize in Panels and have the facilities for producing best results.

Try us with your next order. Send us your specifications and ask for our prices.

### AMERICAN VENEER CO.

Specialists and Manufacturers of Built-up Veneer Panels

We appreciate small orders as well as large ones

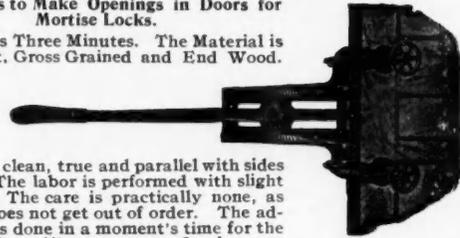
12 Market St., - - - KENILWORTH, N. J.

## Miller's Hand Mortiser

WILL SEND ON APPROVAL

Its Work is to Make Openings in Doors for Mortise Locks.

The time is Three Minutes. The Material is Hard, Soft, Gross Grained and End Wood.



The job is clean, true and parallel with sides of door. The labor is performed with slight exertion. The care is practically none, as the tool does not get out of order. The adjustment is done in a moment's time for the different sizes. The cutters are five in number and cover locks from 1/2 inch to 1 1/2 inches thick. Thin doors are handled as easily as thick doors.

Riverside, Cal. A. W. MILLER MFG. CO. Cincinnati, O.

## Do Your Next Job of Floor Scraping at Our Expense with a

# Little Giant Floor Scraper

Sold only on its merits. A request brings it to your door, freight prepaid. Try it out, if you are convinced it is the best floor scraper on the market, pay for it. If not, return it at our expense.

The **Little Giant** has scraped millions of square feet of floors. Cuts right up to the baseboard and into every corner. Easy to operate. Will scrape floors quicker, cleaner, and cheaper than any other machine on the market.

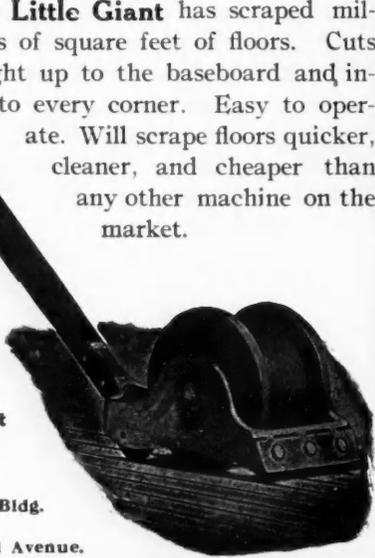
Ask us for our special price on this machine.

**Hurley Machine Company**

31 S. Clinton St  
CHICAGO

NEW YORK:  
1011 Flatiron Bldg.

DETROIT:  
246 Woodward Avenue.



## Woodworking Machinery

H.B. SMITH MACHINE COMPANY SMITHVILLE, N.J.

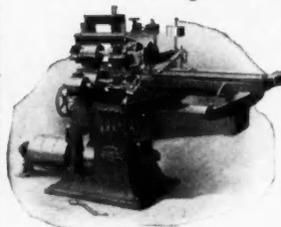
### Single End Tenoner

**Durability and absolute accuracy** are notable qualities of Smith Tenoners.

The frame is cast in one piece insuring rigidity.

The Table is mounted on roller bearings, moves very easily and is perfectly "square" at all times.

The Cutter Spindles are all made of high carbon steel, ground accurately to size and perfectly round. Machines are built in several styles.



We also build double-end tenoners. Correspondence invited.

*Smith of Smithville*  
H.B. SMITH MACHINE COMPANY, SMITHVILLE, N.J.

79-2055

# The WEBER DOUBLE ACTING Floor Scraper

## Try It Five Days FREE

Send for this scraper. Take it right out onto the job. Put it up against any other scraper made—on any kind of flooring. If its work isn't better in every way, return it.

### Write Me Now

I also sell Wax Polishers, Saw Filing Vises, Cabinet Scrapers, Double-Folding Scaffold Brackets, etc.



The knives adjust to any desired slant for perfect work on all conditions of flooring. The



is guaranteed not to chatter nor leave waves. The knife is held to its work—not by a dead weight—but by a flexible joint—similarly to action of human hand.



The scrapes forward and backward. It has two knives, either of which can be brought into instant action. This rests you—saves your time—and enables you to scrape the centers of very small rooms. I guarantee perfect work in either direction. The saving in time and money in a year is a big item.



The scrapes right up to the wall. By adjusting the handle to the right or left (see dotted lines), the extreme edge of the knife comes into direct draft with it. You can scrape right into the very angle of the floor without side draft, or marring the baseboard.

**WEBER MFG. CO.**

JOHN F. WEBER, Pres.

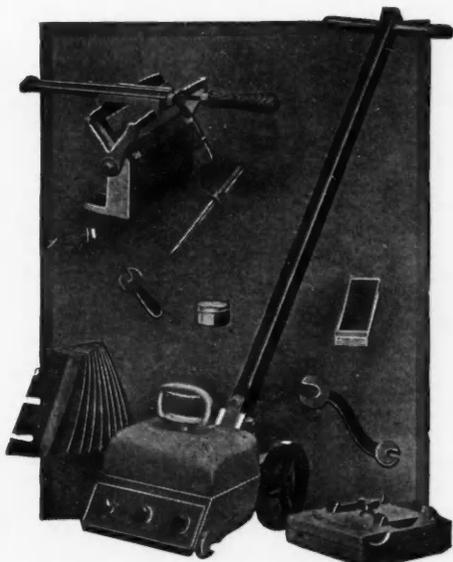
670 71st Ave.

::

WEST ALLIS, WIS.



# It is Yours For The Asking To Try it For One Week



The Acme Floor Scraping Outfit.

No "If's" or "And's" about my offer. It is a straight business proposition and one that I have adopted to make sales. It is impossible for me to send a representative to every contractor interested in a floor scraper, so instead, I send the Acme Floor Scraping Outfit to represent itself.

I allow you to work with the machine for one week and if at the end of that time, you are not satisfied with the results and do not consider the Acme Floor Scraping Outfit the best equipment on the market, simply pack it up and ship it back to me at my expense.

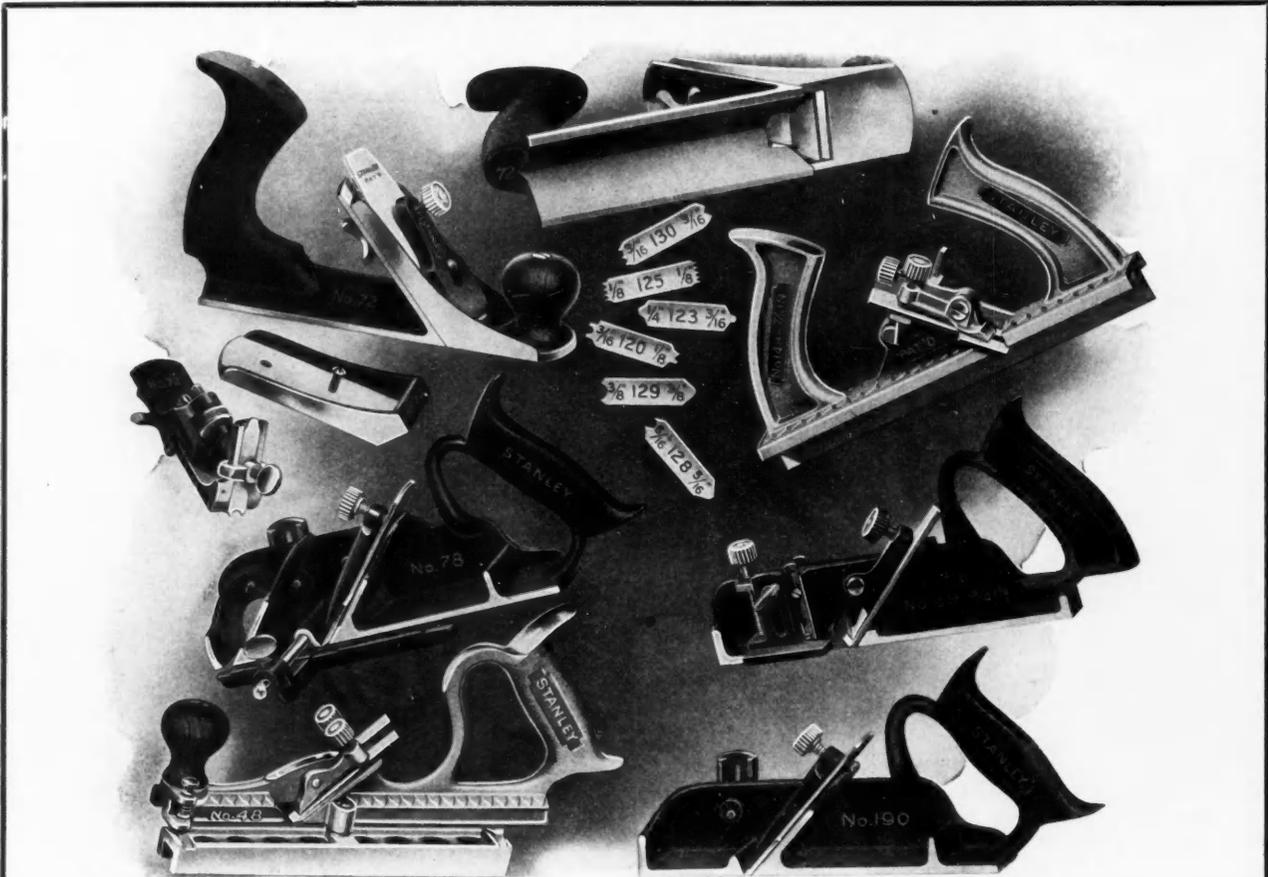
Does this sound like an offer that is worthy of your consideration?

Further particulars and catalog on request.

**JOSEPH MIOTKE**

247 Lake Street

MILWAUKEE, WIS.



Copyrighted 1909 by the Stanley Rule & Level Co.

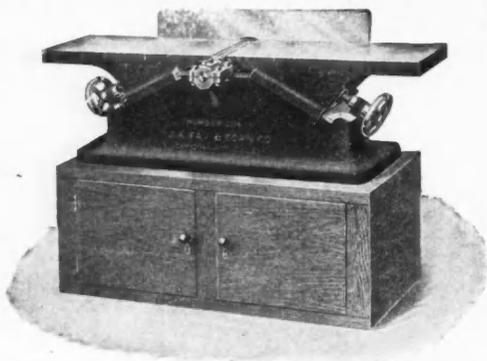
## Stanley Tools

The Planes illustrated above can be used for many kinds of work, such as Rabbeting, Matching Chamfering, Tonguing and Grooving, etc.

Send for Catalogue No. 34 which contains a complete description of these Planes as well as many other tools of interest to Carpenters.



**Stanley Rule & Level Co.**  
NEW BRITAIN, CONN. U.S.A.



No. 254—Bench Hand Planer and Jointer.

### Reasons Why this Machine Appeals to Carpenters, Contractors, Builders and Retail Lumbermen:

- |                                |                           |
|--------------------------------|---------------------------|
| 1st—Occupies small space.      | 3d—Under instant control. |
| 2d—Easy and simple to operate. | 4th—Uses little power.    |

—and—

will do all kinds of planing and jointing to better advantage than a big machine. The price is so reasonable that the ordinary Carpenter or Builder cannot afford to be without it.

Write for full description, price, terms, etc.

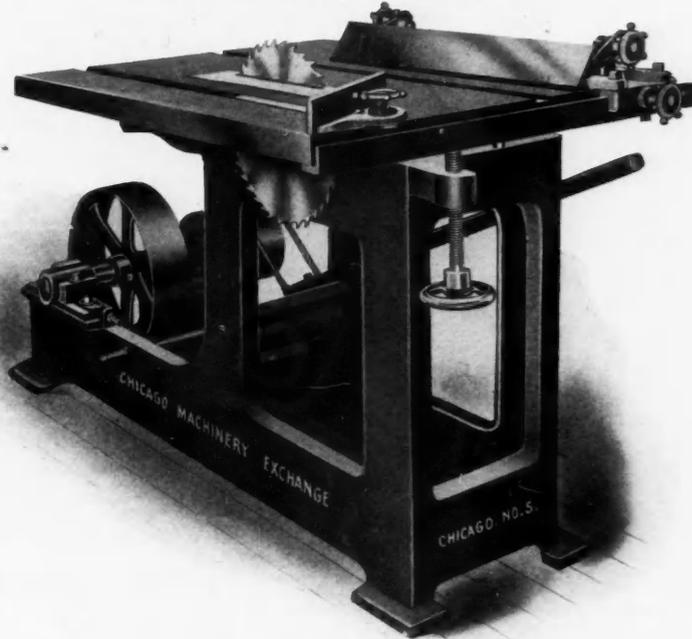
**J. A. FAY & EGAN CO.**  
545-565 W. Front Street, Cincinnati, Ohio

# Start out With Two Real Machines that are Always Ready for Work.

[Save time used in making changes on light inferior machines, known as "Wood Workers."]

## MACHINE No. 1

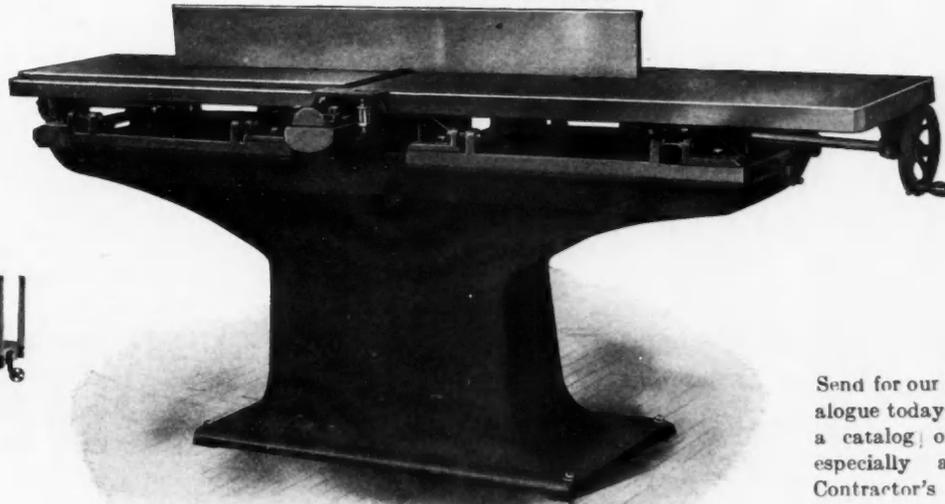
Chicago No. 5 Combination Saw Table



Used for Cutting Off, Rippling, Mitering, Grooving, Boring, Tenoning, Etc.

## MACHINE No. 2

Chicago 12" Jointer and Planer



Send for our Special Catalogue today. We issue a catalogue of machines especially adapted to Contractor's and Builder's use.

Used for Planing, Jointing, Shaping, Matching, Rabbering, Grooving, Chamfering, Beading and Making Mouldings.

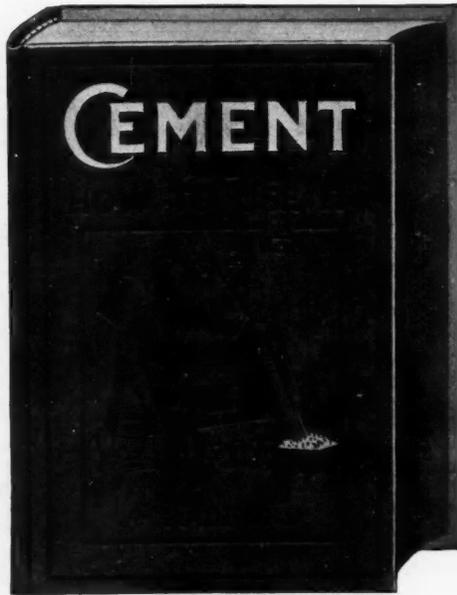
**These Two Machines** for \$170.00, including belt for saw arbor, countershafts, 1 14" rip saw, 1 14" cut off saw, 5 boring bits— $\frac{1}{4}$ ",  $\frac{5}{8}$ ",  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{3}{4}$ " and 1 pair of jointer knives. Ask for price on one if you cannot use both.

**Chicago Machinery Exchange** 1219-1227 Washington Boul.  
CHICAGO, ILL.

# Big, Practical, Up-to-the-Minute Book

## For Contractors, Builders, Cement Men

**"Cement and How to Use It"** is a big, practical, up-to-the-minute book for the cement manufacturer, dealer and user, as well as the architect, draftsman, construction man, contractor, builder, carpenter and prospective home owner. This book contains the boiled-down essence of all the accurate information on the subject of "Cement and How to Use It" possible to obtain. It is indispensable to the man who in any way has anything to do with construction or the use of cement in any one of its multitude of applications.



**"Cement and How to Use It"** is the largest book of its kind ever published. It consists of 370 pages, 6x9 inches, and is printed from large, clear type on a high-grade book paper. It is illustrated with over 250 drawings, diagrams, details, etc., including many pages of full-page plates reproducing architects' original drawings and details of construction. Two thousand topics relating to cement are discussed in this great, new book. No book attempting to treat this important subject has ever before so successfully covered the ground.

### **370 Pages—350 Illustrations—2,000 Topics**

Every phase, part and use of this wonderful twentieth century building and paving material is treated fully and completely, with details showing each step to be taken.

This book contains only practical information. By practical is meant information that can be successfully applied to the every-day work of the average builder, contractor and cement user. The book presents and solves problems as they have been met and worked out by well known architects and the man on the job.

**"Cement and How to Use It"** is written so that any reader can understand every page, every term used and every detail shown. It is entirely free from technicalities and yet its pages are full of instructions for all classes of cement users. It shows the easiest and most common-sense way to do the work. Its methods, formulas and tables can be relied upon to be absolutely correct.

# **FREE** WITH ONE YEAR'S SUBSCRIPTION TO **CEMENT WORLD**

**"THE WORLD'S GREATEST CEMENT PAPER."**

**USE THIS COUPON—PIN \$1.00 TO IT—AND MAIL TODAY.**

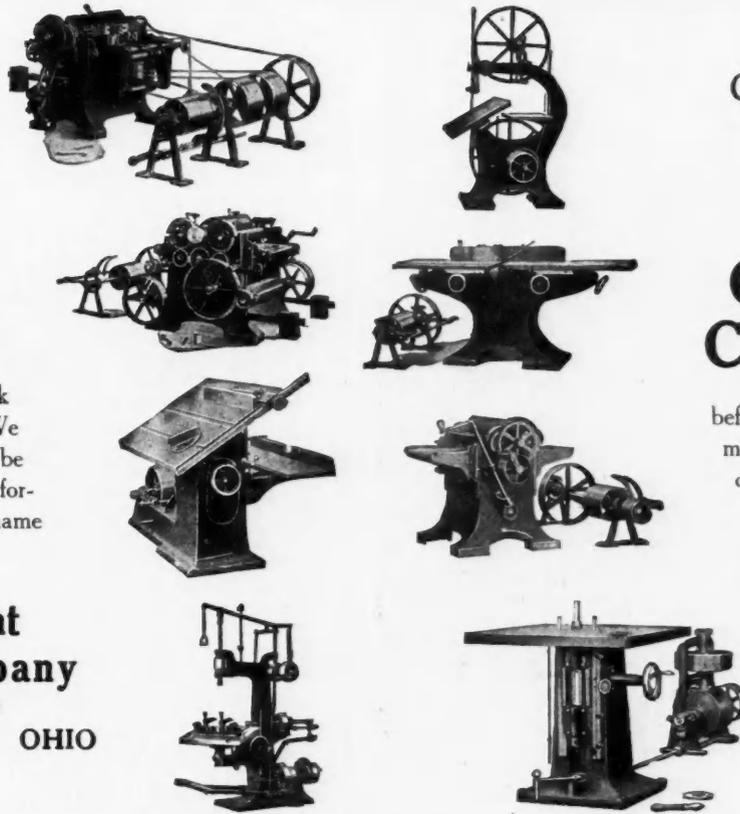
CEMENT WORLD Co., 241 So. 5th Ave., Chicago.

Gentlemen:—Enclosed find \$1.00 for which enter my subscription to the **Cement World** for one year, and send me, absolutely free, postage prepaid, one copy of the big, new 370 page book, "CEMENT AND HOW TO USE IT."

Name.....

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

The information about Horse-power required for driving the different machines should be especially valuable to you. It tells all about our line of Band Saws; Saw Tables, Shapers, Jointers, Variety Wood Workers, Planers, Swing Saws, Disk Grinders, and Bores. We have a copy all ready to be sent to you and it will go forward on receipt of your name and address.



Get a Copy  
of the  
**1912  
Crescent  
Catalogue**

before you buy wood working machinery. The book contains 112 pages of information of interest to every user of wood working machinery.

**The Crescent  
Machine Company**  
224 Main Street  
LEETONIA :: OHIO

**The Cost of Repairs**

Should be given serious consideration by purchasers of Concrete Mixers.

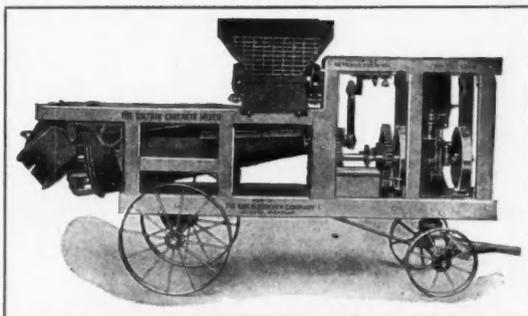
Do a little thinking for yourself.  
Profit by the experience of others.

Save time lost and money spent for upkeep, by buying the best.

— THE —  
**COLTRIN CONCRETE MIXER**

*Manufactured by*

**The Knickerbocker Co.**  
JACKSON, MICHIGAN



Sidewalk crew of F. L. Holt, Limon, Colorado

Limon, Colo., June 20th, 1911

THE CEMENT MACHINERY SUPPLY Co.  
Denver, Colo.

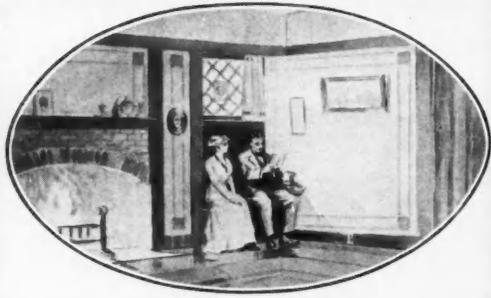
Dear Sirs:—

I have operated the No. 12 Coltrin Mixer for the past year without one cent of expense for repairs.

I consider it has no equal on the market.

Very respectfully,

F. L. HOLT.



**INVESTIGATE**  
**Compo-Board**

**BEST FOR WALLS AND CEILINGS**

Better than lath and plaster. More economical and durable. Can be put on in any weather and will stay up and look well as long as the building lasts.

Compo-Board is made of strips of thoroughly dried lumber well glued. These strips are then covered with a specially prepared moisture proof paper, which is cemented under intense heat and pressure.

This makes a wall lining that will last indefinitely. Cannot crack or crumble off. Cannot chip off or mar by banging furniture into it. It is moisture and cold proof and fire resisting. Warm in winter and cool in hot weather.

Besides being a wall lining, Compo-Board has many other uses around the house and in the yard, in the office and factory. For remodeling the house or finishing off an extra room in the attic or basement, it is ideal. Summer cottages can be made as warm as the city home. Use it for partitions or back plastering.

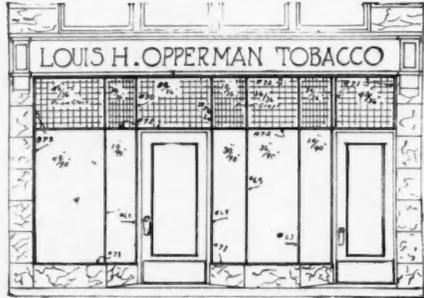
Compo-Board can be had in strips four feet wide and one to 18 feet long, in any length in even feet.

**Send for Sample and Booklet**

Fully describes Compo-Board and its many uses and advantages and the sample will show you what it is

**NORTHWESTERN COMPO BOARD CO.**  
5777 Lyndale Ave. No. Minneapolis, Minn.

The border of this advertisement is a cross section view of Compo-Board.



FRONT ELEVATION.

## This Bar is No Experiment

The Petz Bar for modern store front construction has proved its superiority. You don't have to use it on our "say-so". It has "made good" in thousands of cases, and shown itself to be safe, strong, and sure.

It is easy to install, is stylish and artistic in appearance, will not break the glass, and gives perfect ventilation. It is the bar to use if you want to be sure of satisfactory results.

Write for our new booklet on "Modern Store Front Construction", or explain in detail your requirements, and we will gladly give complete information about the different styles of Petz Bars.

### DETROIT SHOW CASE CO.,

491 West Fort Street :: DETROIT, MICH.

**NOTE**—Our Special brand Clamps, have notches on the bottom of the bar, instead of on the top.

Per piece,	1 foot	.....	\$2 70
"	1 1/2 "	.....	2 85
"	2 "	.....	3 00
"	2 1/2 "	.....	3 75
"	3 "	.....	4 00
"	4 "	.....	4 50
"	5 "	.....	5 00
"	5 " heavy	.....	7 50
"	6 "	.....	8 50
"	7 "	.....	9 50
"	8 "	.....	11 00
"	9 "	.....	12 50
"	10 "	.....	14 00

These clamps have steel bars and screws and malleable iron parts.

The New Adjustable and Perfection Clamps are made in the following lengths and sizes:  
2 1/2, 3, 4 and 5 foot have... 1 1/2 x 1/2 inch bars.  
5, 6, 7, 8, 9 and 10 foot have 1 1/2 x 1/2 "

Joiners' Clamps—1, 1 1/2, and 2 foot have hand-wheels for rapid work, 1 1/2 x 3-16 inch bars.

In ordering parts always make sketch, to avoid delay.

Write for circular Dept. H.

**Hargrave's New Adjustable SPECIAL Clamp.**



**Hargrave's Perfection SPECIAL Clamp.**



**Hargrave's Joiners' SPECIAL Clamp.**



**THE CINCINNATI TOOL CO.,** CINCINNATI, O., U. S. A.



### New Starrett Protractor

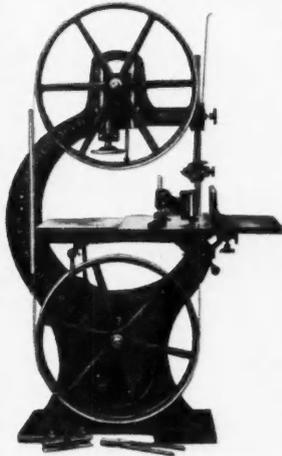
One of the most useful tools a carpenter ever had. See full description in free Catalogue No. 186. With this tool in your chest you can give away half a dozen or more which it will render back numbers

**The L. S. Starrett Co., Athol, Mass., U.S.A.**

Straight-grained cedar that cuts like cheese; smooth, tough leads that make clean-cut, strong marks—that's the way Dixon's Carpenter Pencils are described. Send 16c for generous sample lot 183J.

**JOSEPH DIXON CRUCIBLE CO.**  
JERSEY CITY, N. J.

# A Free Copy



Secrets of Successful  
Band Sawing by

Mr. Charles E. Wright,  
The Acknowledged Exponent on  
Band Saw Talk.

Would be mailed free.  
Send for a copy before  
our supply is exhausted.

We illustrate fifteen  
new model machines.  
**Here is one, \$95 net,**  
complete with all im-  
provements as shown in  
cut. If you want a

machine to show economy in the general wear  
and breakage of saws **here you are.** Our  
catalog will tell you all about it.

**The Chas. E. Wright Co.**  
317 Boulevard, Kenilworth, N. J.

## THE FOLDING DRAW KNIFE

These are handles that are rigid  
On a blade that's always keen.  
They are set at any angle;  
Why, it's sold as soon as seen.



If your hardware dealer does not keep it, we  
will send it to your address postage paid. : :

**A. J. WILKINSON & CO., 180 to 188 Washington St.,  
BOSTON, MASS.**

## The Only Self-Setting Plane

Over 25 years ago we commenced to make the Self-Setting Planes. They  
are shovled in every state and Canada. Thousands of carpenters use them  
doing work easier, better, quicker, saving time, trouble and temper.



Every issue of this paper has had our  
ad. in it. If not sold in your town, we will  
send you a Beech wood plane on trial  
on receipt of one dollar less than list  
price, and if you return it at our expense  
within 30 days of receipt we will refund  
your money. If you want more than  
one we will allow you dealers' discount.

In writing, if you mention this paper  
and send us the addresses of 10 plane  
users—no matter where they live—we will  
send you a carpenters' hard tough  
pencil. If you send us a 2-cent stamp we  
will send you two pencils.

Remember this trial will cost you nothing  
if you return the plane at our expense,  
as per circular. We will not knowingly  
send to consumers where our planes are  
being sold. This offer is good while this ad.  
appears. This paper guarantees that the  
Gage Tool Co. will do as their advertisement  
states.

**GAGE TOOL CO., Vineland, N. J.**

# Write Us Now For Free Samples of Johnson's Artistic Wood Finishes



## Johnson's Wood Dye

is not a mere surface stain—but a deep-  
seated dye, penetrating the wood and  
fixing a deep, rich, permanent color  
entirely different from ordinary stains,  
which are only "skin-deep."

Made in the following fifteen attractive shades.

- |                          |                             |
|--------------------------|-----------------------------|
| No. 126 Light Oak        | No. 131 Brown Weathered     |
| No. 123 Dark Oak         | Oak                         |
| No. 125 Mission Oak      | No. 132 Green Weathered Oak |
| No. 140 Early English or | No. 121 Moss Green          |
| Manila Oak               | No. 122 Forest Green        |
| No. 110 Bog Oak          | No. 172 Flemish Oak         |
| No. 128 Light Mahogany   | No. 178 Brown Flemish Oak   |
| No. 129 Dark Mahogany    | No. 120 Fumed Oak           |
| No. 130 Weathered Oak    | Half Gallons—\$1.50 each    |

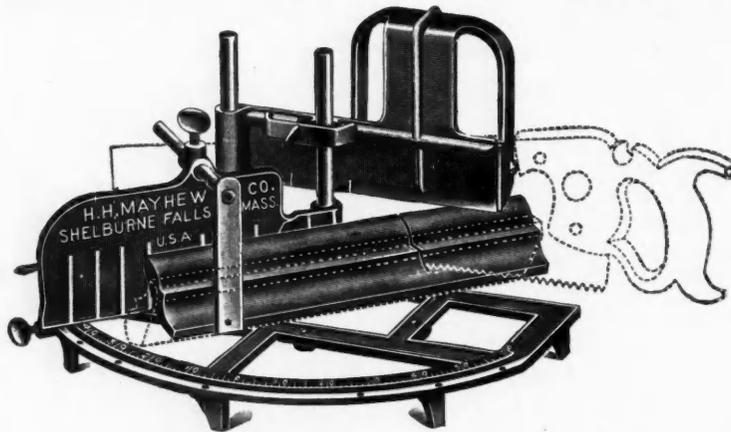
When used with Johnson's Prepared Wax  
or Johnson's Under-Lac, inexpensive soft woods  
such as pine, fir and cypress, may be made as  
beautiful and artistic as costly hard woods.

Ask your dealer for free samples of any  
shade of Johnson's Wood Dye and Test it,  
or write us and we will send them from Racine.  
Free Instruction Book, Edition A. C. B. 8

**S. C. Johnson & Son, Racine, Wis.**

"The Wood Finishing Authorities"

# MAYHEW 60° MITRE BOX



This box embodies more distinctive features than any other made

Designed for Simplicity, Accuracy, and Durability. Strictly a right hand tool for mitering.

Box embodies a new feature in reversing the principle commonly used on other boxes.

Any of three saws may be used — Panel — Hand or Back saw.

Saw guide adjustable for any thickness of saw.

Extreme mitre to 60° without makeshift. May be used as a stationary or pivot box by use of the pin posts.

In mitering duplicate cuts there is no restriction on length.

Will cut compound mitre.

Parts take down into space 10x10x4 inches.

Weight 15 lbs. complete.

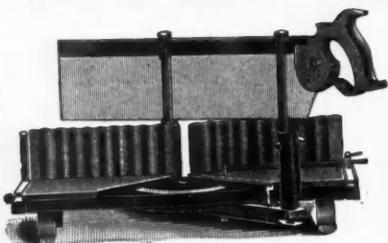
Box contains full directions for use.

PRICE EACH, \$10.00

**H. H. MAYHEW COMPANY, SHELBURNE FALLS, MASS.**

## GOODELL MITRE BOX

Made of STEEL - Cannot Break



First in Quality and Improvements

Automatic Stops for holding up saw.

Corrugated Backs Graduated.

Gauge for duplicate cuts and many other features

Send for Circular "C"

**GOODELL MFG. CO., Greenfield Mass.**

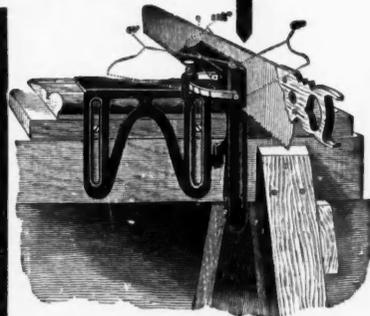
## "SEAVEY" MITRE BOX

Cuts Any Angle

Meets Every Requirement

### Special Offer

On return of this "Ad" and \$2.00 one of these Mitre Boxes will be shipped to any reader of "Carpenter & Builder." Offer good for 30 days from date of issue.



Portable — Can be carried in the Tool Kit

Weights 2

**SMITH & HEMENWAY CO.**  
150-152 Chambers St. New York City

Pounds

## LUFKIN Tapes & Rules

are Standards of Accuracy, Durability and Workmanship.

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**THE LUFKIN RULE CO.**

SAGINAW, MICH.

NEW YORK  
LONDON, ENG.  
WINDSOR, CAN



# DO NOT BE DECEIVED

## As to the Patent Situation on Asbestos Shingles

Some of our competitors have been misrepresenting a decision and injunction obtained from the United States Courts alleged to prevent us from selling Asbestos Shingles.

## Read the Latest Injunction Issued by the Court

THE PRESIDENT OF THE UNITED STATES

to

ASBESTOS SHINGLE, SLATE & SHEATHING COMPANY;

GREETING:

WHEREAS, it has been represented to us in our Circuit Court of the United States for the Southern District of New York that you, the said Asbestos Shingle, Slate & Sheathing Company, have misrepresented to the public the force and effect of a certain interlocutory decree entered by said court on the 16th day of February, 1911, in a certain suit brought by said Asbestos Shingle, Slate & Sheathing Company, and Ludwig Hatschek, against the H. W. Johns-Manville Company, and also the force and effect of our writ of injunction issued thereunder on the 18th day of February, 1911.

NOW, THEREFORE, we do strictly command and enjoin you, the said ASBESTOS SHINGLE, SLATE & SHEATHING COMPANY, from in any way advertising in words or in substance that this court has held that any cement shingles hitherto made and sold by the defendant, H. W. Johns-Manville Company, infringe on any of the claims of the patent in said suit, or from issuing any circulars or in any other way publishing abroad or saying, or writing, that this court has held that no cement shingles can be purchased except from the complainant, or that all the claims of the complainant were upheld by the interlocutory decree herein, or in any other way misstating the effect of the said decree, or of publishing the whole or any part thereof or the substance of the same, so that it shall mislead any reader as to its meaning or effect, and

We do further strictly command and enjoin you, the said ASBESTOS SHINGLE, SLATE & SHEATHING COMPANY, that whenever you shall advertise the interlocutory decree of this court entered in said suit, or any part thereof, or the substance of same, in connection with the words "cement shingles" or "asbestos shingles" or the like, that in every such case the said advertisement or circular or other means of publication shall make equally salient to the eye the fact in substance that the said decree of this court forbade the making, vending or using of cement or asbestos shingles or the like, **made upon a paper-making machine**, and that said advertisement shall nowhere contain any statement that the decree of this court forbade the making, vending or using of any cement or asbestos shingles unless such statement be accompanied as aforesaid with the statement in substance that the said shingles so forbidden are those made upon a paper-making machine.

WITNESS THE HONORABLE EDWARD D. WHITE, Chief Justice of the Supreme Court of the United States, at the City of New York, on the 1st day of June, 1911, and in the hundred and thirty-fifth year of the Independence of the United States.

JOHN A. SHIELDS,

Clerk of the Circuit Court.

We have been and are selling shingles which do not infringe our competitors' patents because they are made by a new and better process, covered by letters patent which we control.

## J-M Transite Asbestos Shingles are not Made Like Paper on a Paper-Making Machine



Residence of Mr. W. Hilt, Ridgewood, N. J.  
Covered with J-M Asbestos Shingles.

The facts are that if you want Asbestos Shingles made on a paper-making machine, you must secure them elsewhere. We do not make that kind. But if you want the latest and best form of Asbestos Shingles made by the most improved methods, you can get them from us and no one can stop your using them.

### Advise Us and We Will Protect You

We shall appreciate any information you can send as to any violation by our competitors of the above injunction.

## H. W. JOHNS-MANVILLE CO.

Manufacturers of Asbestos and Magnesia Products

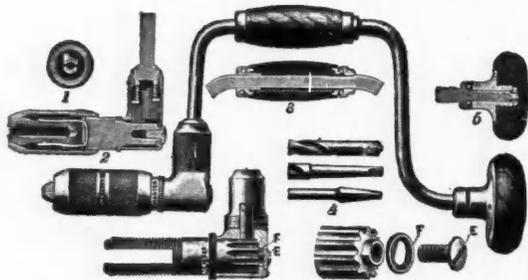
**ASBESTOS**

Asbestos Roofing, Packings, Electrical Supplies, etc.

Baltimore	Cleveland	London	New Orleans	San Francisco
Boston	Dallas	Los Angeles	New York	Seattle
Chicago	Detroit	Milwaukee	Philadelphia	St. Louis
	Kansas City	Minneapolis	Pittsburg	

For Canada—THE CANADIAN H. W. JOHNS-MANVILLE CO., Limited  
Toronto, Ont. Montreal, Que. Winnipeg, Man. Vancouver, B. C. 1430

# MASTER BRACE



The general appearance of this Brace rejoices the lover of fine tools. The metal parts are handsomely nicked and the head and handle are of highly finished cocobolo. Both head and sweep-handle are ball-bearing, reducing all friction to a minimum.

All ratchet parts are covered and in that way protected from dust. The ratchet teeth cut directly upon the base of the tail socket, in a manner least likely to get out of order.

It is impossible for the chuck to work loose, whether the ratchet is worked left or right, because of the manner in which it is attached to the sweep by a flat head machine screw and a patent washer, which is in the shape of a shallow cup.

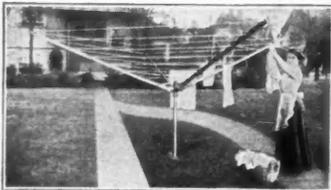
It is in the chuck, the most vital part of any bit brace, that Millers Falls skill in brace-making has culminated. The sleeve is of a new pattern, just fitting the hand, and is reinforced at the lip to meet the strain at that point. The tail socket is made from solid bar steel, unbreakable under the severest usage. The jaws are so hinged upon a spring as to transmit any strain to the stout sleeve.

The jaws open parallel and close to conform to the shape of the bit used. Three grooves cut lengthwise in each jaw, making eight points of contact, insure the tenacity of grip.

The Master Brace is made in 4 sizes, with 8, 10, 12 and 14 inch sweep.

SEND FOR THE FREE BOOK "TOOL PRACTICE"

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## CHICAGO-SUN CLOTHES DRYER

FOR LAWN USE

Eliminates Clothes Posts, is portable and can be removed when not in use. Holds 165 feet line. Each arm operates independently. When opened, arms lock in position and stretch lines. When closed, arms lock in position automatically. Best, most convenient and satisfactory lawn dryer made. Laundress can stand at one spot and hang all the clothes. No need lugging clothes basket or wading through wet grass when using the Chicago-Sun Clothes Dryer. Write for free folder No. 28.

**THE CHICAGO DRYER CO., Dept. 28, 624 So. Wabash Ave., CHICAGO, ILL.**

Don't Ask the Dealer for Sash Cord. Ask for

## "SILVER LAKE"

and see that he gives it to you. It is impossible to



substitute, as our name is stamped on every foot of cord. Silver Lake Sash Cord is the Original Solid Braided Cotton Sash Cord, and has been the standard since 1868. No other is just as good.

**\$95.00** BUYS 3 Machines

A SAW BENCH  
An 8-INCH JOINTER  
A MORTISER AND BORER

This combination machine is the best value ever offered. It is made of solid cast iron and is furnished complete with necessary tools, belt, etc. Each machine is distinct from the others, and can be operated without interference with them. You should send at once for literature. It tells all about this new machine. WE SELL GASOLINE ENGINES.

THE TANNEWITZ WORKS,  
42 S. Front St.,  
Grand Rapids, Mich.

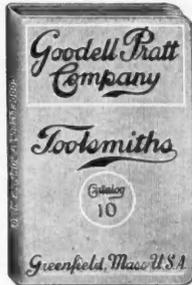


Send us two or more names of persons who are interested in or want to buy Hot Water Heating Plants and we will send you this scale. Back inches are divided into 6, 10, 12, 16, 20 and 40 parts. Also free catalog on request. Mention this paper.

**Andrews Heating Co.,** 1165 Heating Bldg., Minneapolis, Minn.

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There are many tools described in this book which will not be found upon the shelves of the ordinary dealer. You wouldn't know about them if you didn't see our catalog.

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*Toolsmiths*

**304**

Pages of Tools

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**"A Bit Of Utility"**

Guided by its circular rim—instead of its centre—the Forstner Labor-Saving Auger Bit will bore any arc of a circle, and can be guided in any direction.

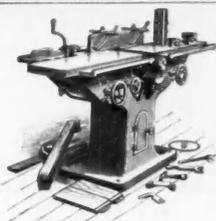
Doesn't matter how hard the wood is, no consequence whether it is full of knots, or the grain awkward to negotiate. The Forstner Bit works with equal smoothness under any condition and leaves a true polished surface on every job.

**Unequaled for Delicate Work**

Supersedes chisels, gauges, scroll-saws, or lath tools combined, for all kinds of delicate work. Cabinet and pattern makers and carpenters are enthusiastic because they do more work than other bits and cost no more.

We can offer something special in the matter of price on sets packed in a sensible box. Send today for particulars and catalog.

**The Progressive Mfg. Co.**  
Torrington, Conn.



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Manufacturers of  
**WOOD WORKING MACHINERY**  
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Write for Catalog Showing Our Line of Machinery for  
Carpenters and Builders.

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

Another New

## "YANKEE"

### "Quick Return" No. 130

Same as the No. 30, but with a Spring in the Handle that drives the Spindle back, ready for the next push. A great advantage for overhead work or where only one hand can be used. Takes all the Attachments used in the No. 30.



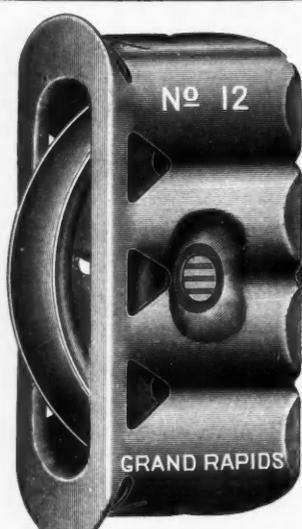
**Have You Seen the "YANKEE" Line?**

There are 35 Styles and 75 Sizes each a Labor Saver. Our New Yankee Tool Book tells about them. A postal brings it.

*Your Hardware Dealer Sells the "Yankee"*

## North Bros. Mfg. Co.

(Department A)  
PHILADELPHIA, PA.



**"GRAND RAPIDS"**  
**ALL STEEL**  
**SASH PULLEYS**

**No Nails No Screws**  
**Just Bore 4 Holes**

The time saved by the "Grand Rapids" will actually pay for the pulleys.

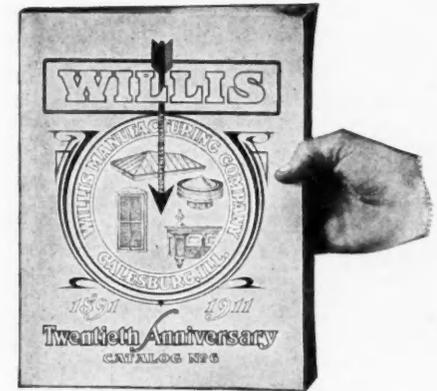
You can't afford to use old style pulleys.

Write for free samples and prices.



**Grand Rapids Hardware Co.**  
Manufacturers  
158 11th Street, GRAND RAPIDS, MICH.

This fastening is more secure than any number of screws or nails could make it. Saves about 15 per cent, too.  
**SCREWS COST MONEY**



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GALESBURG, ILL.  
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**Twentieth Anniversary**  
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We Have An Attractive Proposition For One Carpenter Or Builder In Every Community To Take Orders For Our Widely Advertised

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ARCHITECTS EVERYWHERE SPECIFY THIS ATTRACTIVE ROOFING

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Write us today about your territory. Here's an opportunity you should not miss. Many carpenters and builders have been so successful taking orders and laying out Metal Spanish Tile that they now devote their entire time to this business. Others have made big profits selling and laying our metal tile roofing "between jobs." We show you how to build up an independent, profitable business in your own community. Write for our proposition today. The territory is going fast. Don't be too late. Send a postal right now.

## The Edwards Manufacturing Company

"THE SHEET METAL FOLKS"

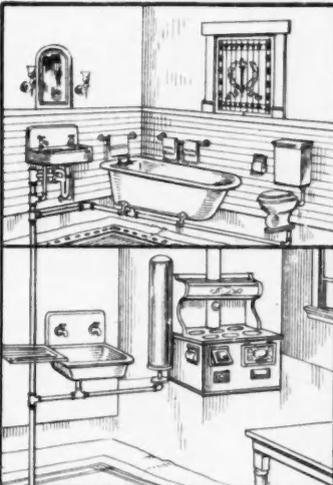
401-417 Eggleston Avenue

Cincinnati, Ohio

THE WORLD'S LARGEST MANUFACTURERS OF METAL ROOFING, METAL SHINGLES AND METAL CEILINGS

## \$42 Will Put Running Water in Your Home

This system will supply running water to your laundry, kitchen, bathroom, garden and barnyard.



Water supply systems of every size operated by hand power, electric motors and gasoline engines.

**\$38.95 Buys this Complete Bathroom Outfit**

The luxuries of modern plumbing at half the ordinary cost.

Gasoline Engines for general utility farm use.

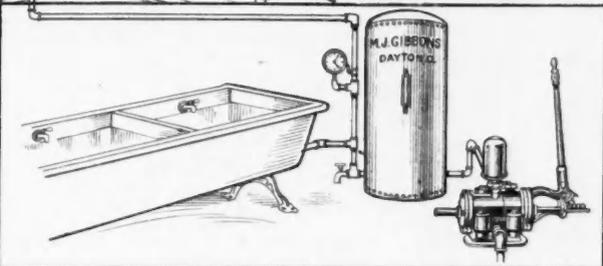
Complete Electric Lighting Plant, **\$300.**

Save **\$100** to **\$250** on your steam and hot water heating plants.

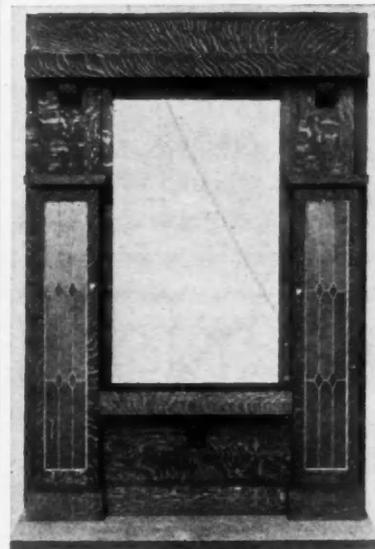
Hydraulic rams, Pumps, Pipe, Valves, Fittings, at lowest prices. Farmers' Tanks, Gas and Electric Fixtures. All high-grade strictly guaranteed goods. Plans free. Get our prices and we will save you money.

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In quality and price our work is not surpassed

You will make no mistake in writing us before ordering elsewhere.

Send for 36-page Catalog  
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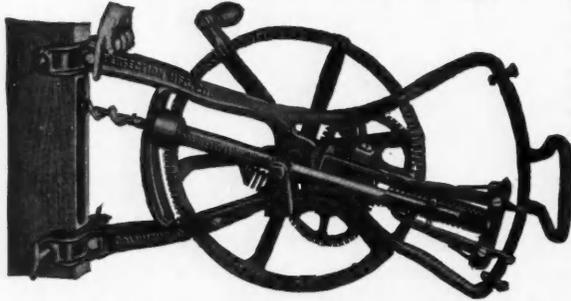
It contains many fine designs of modern Grilles, Columns and Consoles.

## Northwestern Grille Works

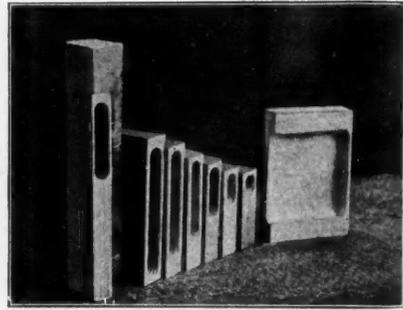
Incorporated  
CHRISTENSEN BROS., Managers. 1820-26 Milwaukee Ave., Chicago

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*This bit moves up and down while boring.*



For Door Locks, Sash, Sash Pulleys, Screen Frames and Cabinet Work. Instantly changed with screw driver, from round hole to ANY size mortise up to 6 1/2". Finished perfect, WITHOUT THE USE OF BRACE OR CHISEL. Made of Malleable. Automatic and ball bearing.



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COLUMBUS, OHIO



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Try a pair on one of your own window screens.

After that you'll always use and recommend them.

Ask on your letter-head and we'll send you a sample set free if you mention your hardware dealer.

**E.D. KEES** MFG. CO. BEATRICE, NEB. BOX 552

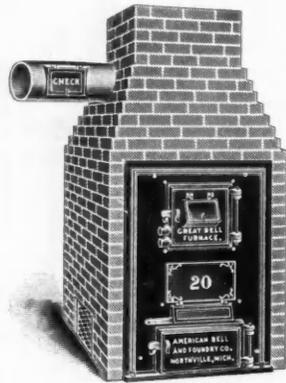
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The Phoenix Sliding Blind Co. Enclosed find my check for blinds. I am pleased with them and sorry I did not have them put throughout the whole house. C. W. BURT.

**Comfort!**  
**Economy!**  
**Convenience!** PHOENIX SLIDING BLIND CO.  
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The lately improved springs and corrugated steel rods put the "PHOENIX" far in lead of less improved styles. Write for Catalogue "C" and free samples, showing construction.



## A HOT AIR FURNACE

For Less than \$50 Complete

For 5 and 8 Room Dwellings

An unheard of Price and a most Remarkable and Indestructible Furnace

No Pipes No Lost Heat

**AMERICAN BELL AND FOUNDRY CO.**

NORTHVILLE - MICH.

## ASHLAND Folding Scaffold Bracket

Best and strongest bracket made. Used on any kind of siding. Adjusts to any space studding or pitch of roof instantly. Just the thing for carpenters, tinners, painters, and brick masons. Folds instantly. No pins or bolts used in adjusting. One bracket easily carries 1000 pounds put up on 4-10d nails. No contractor can afford to be without a set. Every man who uses them orders again. Pay for themselves on first two jobs in time and material. For prices and information, write.



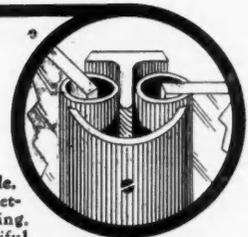
Elite Manufacturing Co. Ashland, Ohio

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Makes any angle. Allows for the setting of building. The most beautiful, practicable and durable Bar in the world.

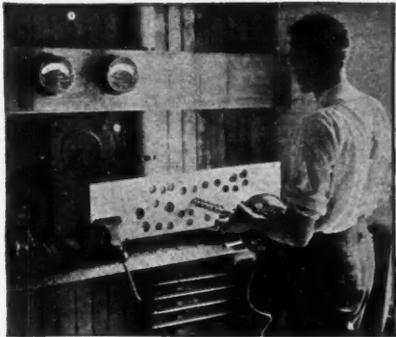
**"Holds with a grip of Iron yet with a touch of Velvet"**

Glass set from the outside. More good features explained in our catalog. Send for a copy before you repair or build. Write today.

**VOLTZ MFR. CO.**

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AUGER BIT ESSENTIALS  
**THE SEVENTH FEATURE**  
 contributing to the high quality of  
**RUSSELL JENNINGS BITS**  
 is the care exercised in  
**INSPECTION and TESTING**



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—Always  
 be sure to  
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 name—The  
 "IRWIN"  
 Bit—here

# Master Hands

know no compromise in results—hence make no compromise in choice of tools. The masters choose




**Auger Bits** for the truer, cleaner work they do. The better the Auger Bit the better the work—master or novice.

Imitations of the Irwin are in name, imprint and general appearance only—not in quality—not in results.

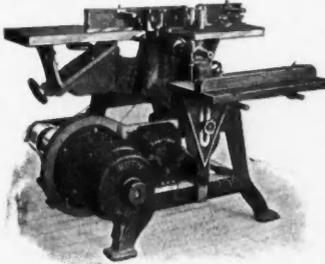
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 Largest in the World  
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Next machine you buy, order a — **Rothmotor**

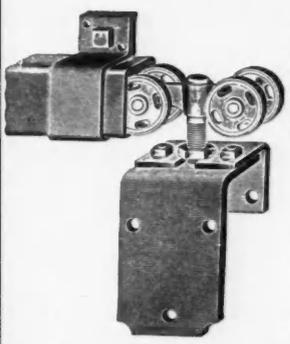


to drive it individually. You will be pleased. You will be gaining some profitable experience in economy.

Ask  
**ROTH BROS. & CO.**  
 1422 West Adams Street,  
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**Richards Ball Bearing Hangers for your garage job.**



Tell us your needs. We can handle any sliding door proposition.

Ask for Catalog No. 10.

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**PERFECTION**  
**ELEVATORS**

The Best Value for the Money in the World  
 —Mechanically Correct—

**Dumb Waiters, Carriage and Store Elevators, Sidewalk Hoists, Etc., Etc.**

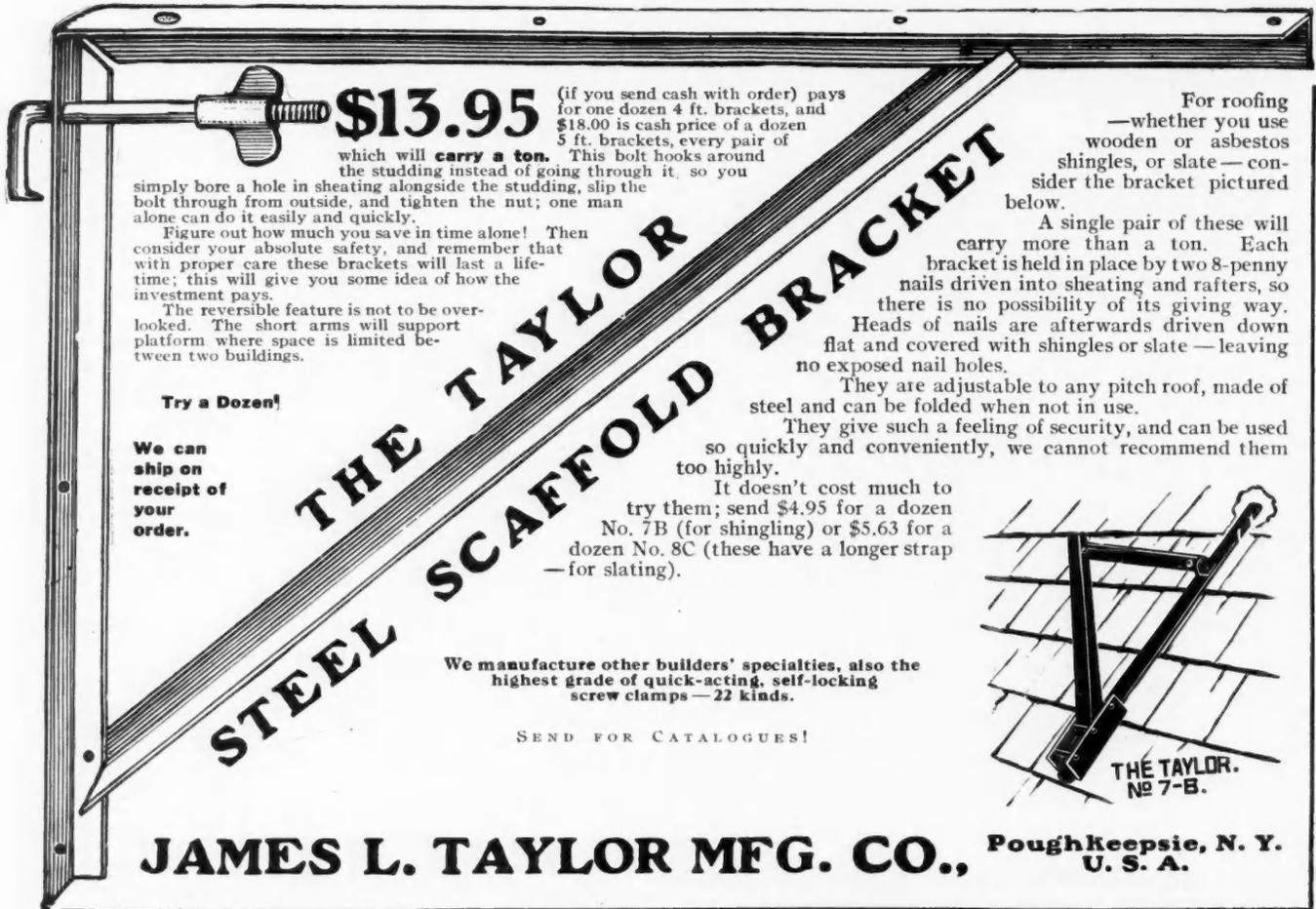
Our Elevators are noted for their **EASY RUNNING** and **SERVICEABLE QUALITIES**. They are practically self-contained, and can be erected by any carpenter in a few hours. We furnish plans for erecting.

**The Low Cost Will Surprise You**

State your requirements, giving capacity, size of platform and number of feet to travel and we will name our lowest money saving estimate.

**SIDNEY ELEVATOR MFG. COMPANY, SIDNEY, OHIO**





**\$13.95** (if you send cash with order) pays for one dozen 4 ft. brackets, and \$18.00 is cash price of a dozen 5 ft. brackets, every pair of which will carry a ton. This bolt hooks around the studding instead of going through it, so you simply bore a hole in sheathing alongside the studding, slip the bolt through from outside, and tighten the nut; one man alone can do it easily and quickly.

Figure out how much you save in time alone! Then consider your absolute safety, and remember that with proper care these brackets will last a lifetime; this will give you some idea of how the investment pays.

The reversible feature is not to be overlooked. The short arms will support platform where space is limited between two buildings.

**Try a Dozen!**

We can ship on receipt of your order.

**THE TAYLOR STEEL SCAFFOLD BRACKET**

For roofing—whether you use wooden or asbestos shingles, or slate—consider the bracket pictured below.

A single pair of these will carry more than a ton. Each bracket is held in place by two 8-penny nails driven into sheathing and rafters, so there is no possibility of its giving way. Heads of nails are afterwards driven down flat and covered with shingles or slate—leaving no exposed nail holes.

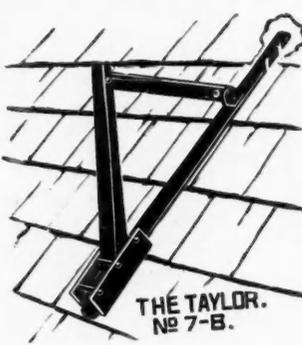
They are adjustable to any pitch roof, made of steel and can be folded when not in use. They give such a feeling of security, and can be used so quickly and conveniently, we cannot recommend them too highly.

It doesn't cost much to try them; send \$4.95 for a dozen No. 7B (for shingling) or \$5.63 for a dozen No. 8C (these have a longer strap—for slating).

We manufacture other builders' specialties, also the highest grade of quick-acting, self-locking screw clamps—22 kinds.

SEND FOR CATALOGUES!

**JAMES L. TAYLOR MFG. CO.,** Poughkeepsie, N. Y. U. S. A.



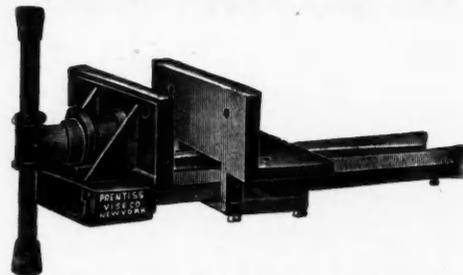
THE TAYLOR. No 7-B.

## Dumb Waiters

Some builders buy a Dumb Waiter Outfit and then build the enclosure to fit it. Others build the enclosure and then build or buy the Dumb Waiter to fit the enclosure.

The Sedgwick Machine Works carry in stock catalogue sizes of Dumb Waiter and Hand Power Elevator Outfits for prompt shipment (within twenty-four hours of receiving order) and make up promptly special sizes when stock sizes cannot be used. They sell complete outfits or any dumb waiter material wanted and every builder should keep their catalogue for ready reference, as it contains much valuable information resulting from their fifty years' experience as specialists in Dumb Waiters and Hand Power Elevators. Catalogue "K" sent free on request to Sedgwick Machine Works, 128 Liberty Street, New York.

## BLAKE QUICK ACTING VISE



For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best

Send for Catalogue of all kinds of Vises

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SEND no money—just mail us your name and address. Your book will reach you by return mail. Keep it 5 days—use it—then either send one dollar or return the book.

**STANDARD HANDBOOK**

### OF **ESTIMATING DATA**

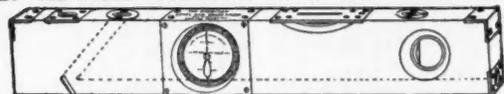
EVERY MAN IN THE BUILDING TRADE NEEDS IT!

Name.....

Address.....

**The Builders' Auxillary Co.**  
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## The American Combined Level and Grade Finder



All progressive and up-to-date Carpenters, Contractors and Mechanics should have one of our levels and grade finders.

An instrument with which at one glance you can get the true slant on any line or grade, either in degrees, inches or percentage, or all at one time, and will at once give the exact distance needed to plumb up to a true level.

The most practicable, durable and convenient instrument of the day. In addition to ordinary mechanical work the American Combined Level and Grade Finder will prove serviceable in cutting off rafters, laying off and leveling buildings, getting height of any object and is useful in dozens of ways.

The longitudinal recess shown in cut is well worth the low price of the instrument.

Write at once for large list of testimonials and special introductory price given only to first applicants with privilege of taking agency.

**American Level & Grade Finder Co., Railroad, Pa.**

# Disston

## SAWS TOOLS FILES

The tool that is "cheapest in the end" is usually the one that is a little more expensive "in the beginning."

The initial cost of Disston Saws, Tools and Files may be slightly higher than that of the ordinary kind, but Disston lasts longer, and is more easily kept in condition, permits faster, more efficient work, and *after all, is more economical.*

Disston crucible steel is exceptionally

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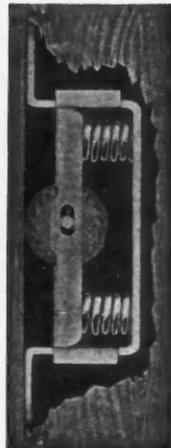
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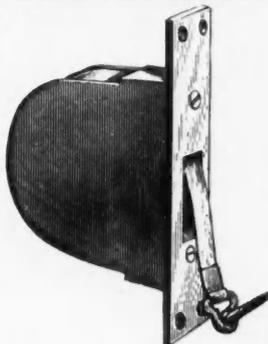
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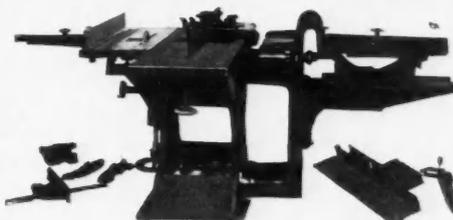
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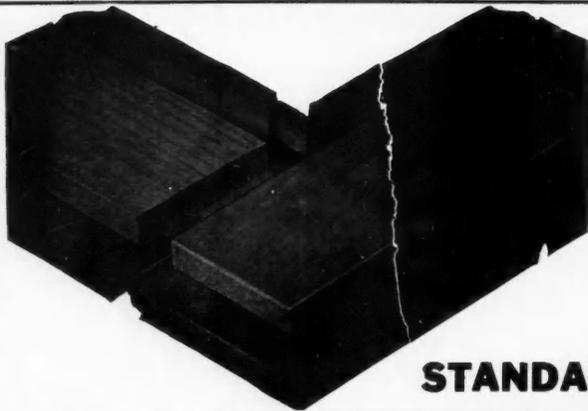


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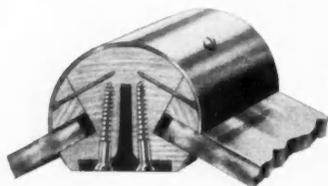
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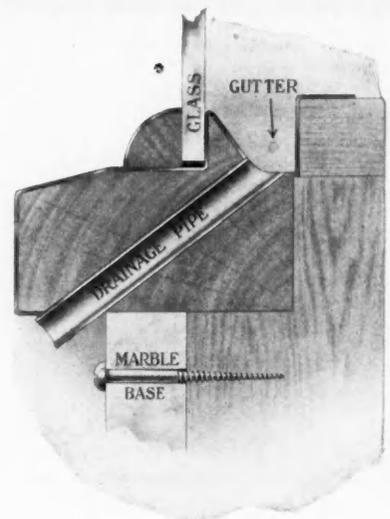
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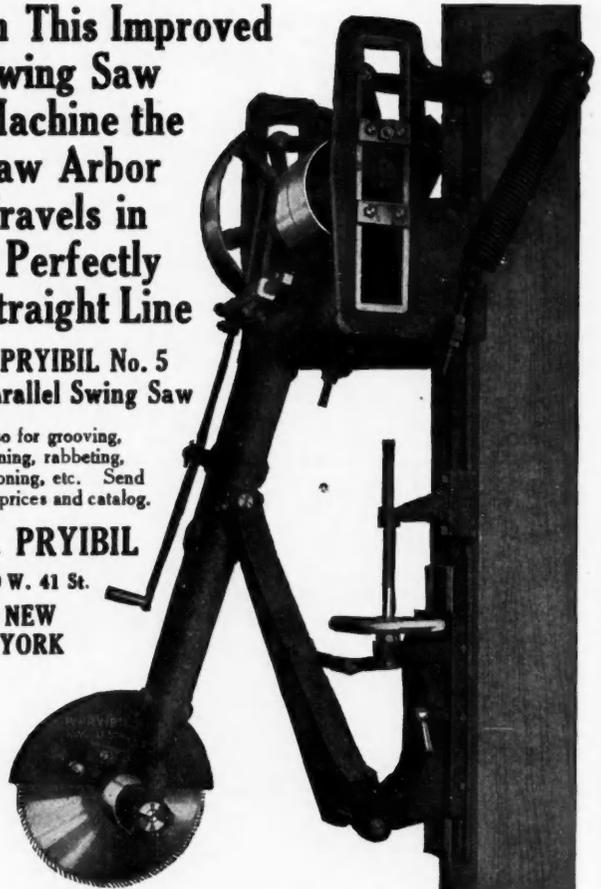
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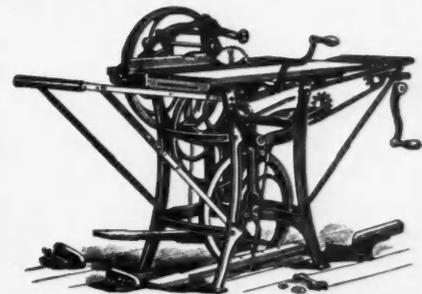
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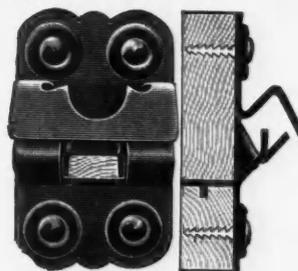
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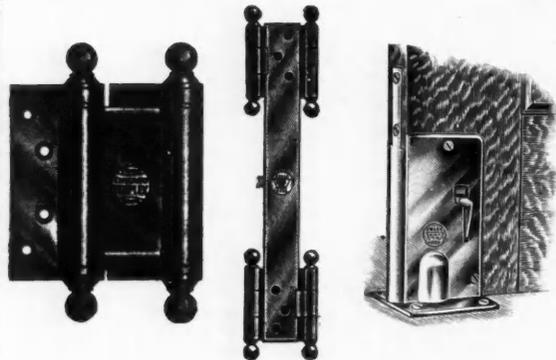
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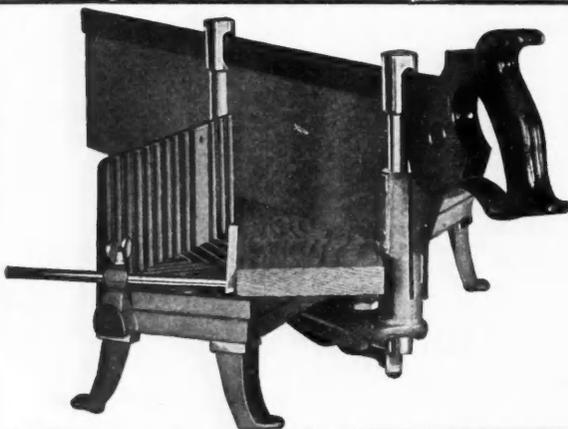
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**H**ONESTY is at the bottom of craftsmanship the same as of salesmanship. Also it is at the bottom of pretty nearly every other good business attribute.

**I**T has come to our notice that in several instances parties representing themselves as our authorized agents have taken subscriptions to the AMERICAN CARPENTER AND BUILDER and have failed to turn over either the order or the money for it to this office. Subscribers can protect themselves by insisting on seeing the credentials of anyone soliciting their subscriptions. All authorized agents of the AMERICAN CARPENTER AND BUILDER are provided with official receipts

from this office; and to protect yourselves you should see to it that agents give you such a receipt for any money turned over to them.

**Stop! Look! Listen!**

**A**FAMOUS attorney, counsel and advisor for an Eastern railroad was asked to get up a form of danger signal to be placed at every country cross-road along the right of way. Death losses and damage suits are expensive. The attorney was instructed that whatever he submitted must be short and to the point, a warning that would command attention. He finally submitted the three words, STOP! LOOK! LISTEN! and since that time those words have greeted the eye of every passerby at every railroad crossing.

The majority of people do not believe in signs, but here is one that it will pay each and all to observe to the letter and then consider well. For unless we Stop! Look! Listen! we will come to the crossing of success or failure and be hit by the express limited known as time. It will not be a case for the coroner or brainy attorney, and the only damages that can be collected will be the regrets of having missed the sign of the times, gather the harvest while you may.

In other words, while one has youth, strength, ambition and perseverance, he should be using every moment, when not actively employed in the pursuit of his daily labor, in studying himself and fitting himself for more productive fields of endeavor. Stop and consider; look for opportunity for improvement of mind and body; listen to advice and counsel from those who have made a success of their own particular vocation.

No man ever reached the acme of perfection by getting just a smattering of what he chooses to make his life work. The mind must be surcharged with the idea of learning some new part of this or that business or profession each and every day. As opportunity is presented for the display of talent, the mind and body must have been prepared to meet the emergency and be equal to the occasion. Would

(Continued to page 35)

## Home Building Under Restrictions

HOW NEW TOWNS OR SUBURBS MAY BE BUILT UP MOST ATTRACTIVELY PROVIDED EVERYTHING IS PLANNED OUT IN ADVANCE AND BUILDING RESTRICTIONS ENFORCED

By Will L. Hammons

**W**E hear a great deal about the "Garden Cities" of England—Hampstead, Letchworth, Port-Sunlight, Earswick, Bourneville and other small suburbs or residence sections built adjacent to manufacturing plants. Picturesque and attractive as these English villages are, they are made up mostly of small cottages; and the main feature is the exceeding beauty which is contributed by extensive gardening, which fills every little space with blooming flowers and climbing vines.

The building up of modern, attractive residence sections and villages is no doubt carried on more extensively in England than in America; but in the building of Gary, Indiana, the United States Steel Corporation has far exceeded in magnitude, cost and modern improvements any other made-to-order city in the world.

Believing that a city, like a house, should have a definite plan, this company first planned its future industrial city with the same care and modern scope that it did its great structures for the manufacture of steel and steel products. Broad paved business streets,

ample for the traffic of a large city, were planned; residence streets, surrounding large open parks, were laid out; all modern municipal improvements were considered, and restrictions for the building of both residence and commercial structures were first provided before actual work on the city was begun. With this definite line of thought, definite plan of operation and careful provision for future development, the great enterprise of building a modern industrial city is being successfully accomplished at Gary.

Less than five years ago the site of the present city was a vast section of sand hills and swamps, considered practically worthless. But the United States Steel Corporation saw in this land an ideal location for its great plant for the Middle West, with excellent transportation facilities both by land and water. Twelve thousand acres were purchased; \$150,000,000.00 appropriated for the building of the plants and city; and an army of men set to work clearing the land, grading high sand hills, filling deep swamps and building miles of sewers, streets, and sidewalks.

All sewers, sidewalks, streets, and gas, water and



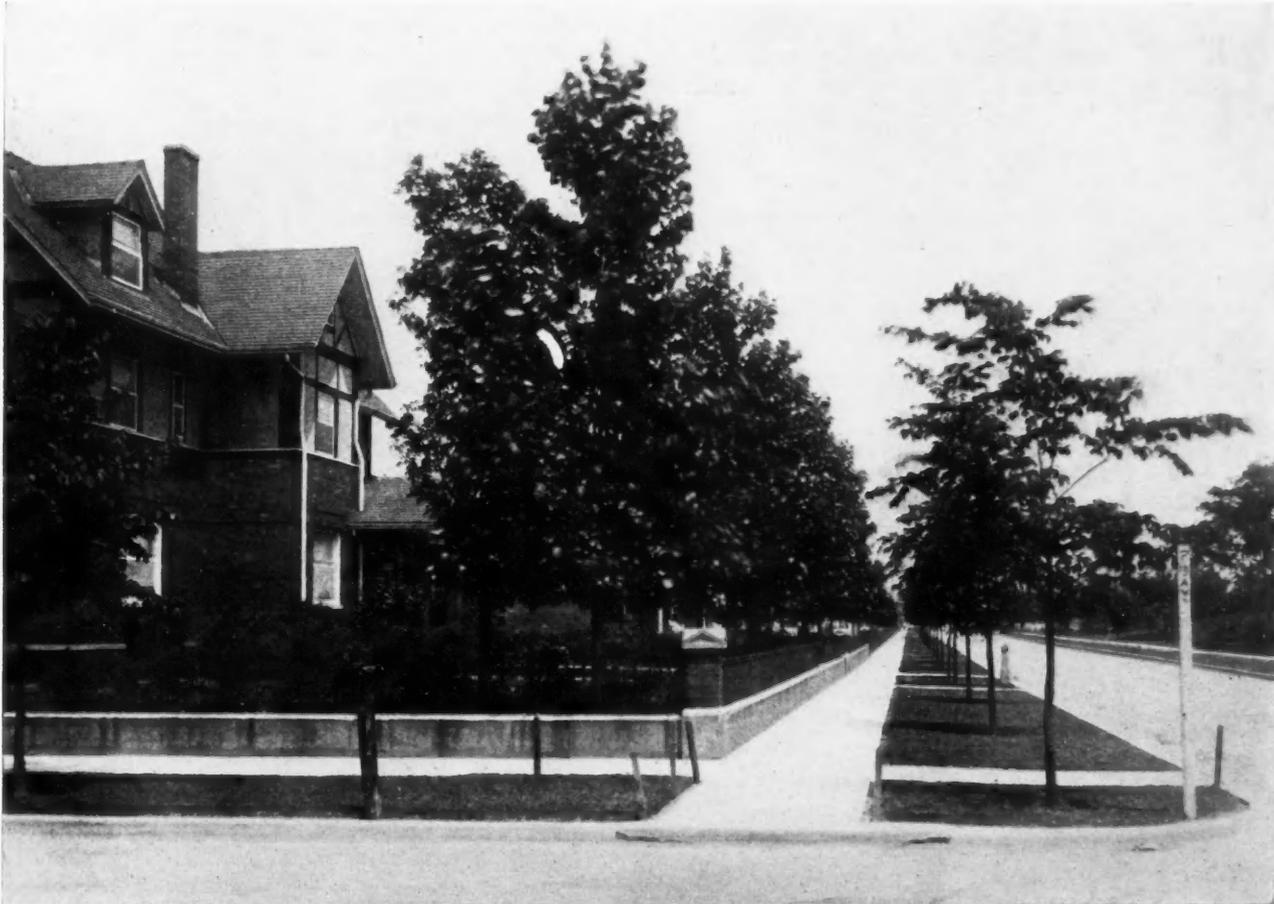
Gary's Residence Section Today—Building Line 25 Feet, Sidewalk and Parkway 16 Feet  
Black Earth and Sod Applied and Trees Planted by City and Paid for Through Taxes

electric systems were built by the Gary Land Company, a subsidiary company of the Steel Corporation. The largest sewers are seven feet in diameter and are of concrete; a concrete tunnel six feet in diameter and three miles long supplies the city with lake water.

The most important feature of the new city from a civic point of view are the restrictions governing the building of homes. The Gary Land Company owned and controlled the main part of the city, known

erect is governed by the location and the cost of the lot. In most cases the cost of the houses erected has been in excess of the price limit made by the land company. Citizens and investors have entered into the spirit to make the city an attractive residence place, and it is this civic pride that is making Gary the most modern and homelike industrial city in the country.

All houses erected must be of at least two stories



Electric Light Poles, Gas and Water Mains, Sewers and Phone Conduits are Run Through Alleys

as the First Subdivision, which is two miles square. In order to carry out its ideas of making the city the most modern and attractive, it was necessary that the company control the selling of residence and business lots, and also the building of the municipal improvements.

In order to prevent purchasers of property from holding the vacant lots as an investment for increased values, every lot is sold with a contract compelling the purchaser to build within eighteen months. Not only must he improve the property, but the structure which he erects must meet the approval of the Gary Land Company. Ever since the city was started the great demand has been for homes, and although hundreds of residences and flats have been erected, each year the demand has always been greater than the supply.

The cost of the building which the purchaser must

and basement, of plans approved by the land company; and deeds are not given to the property until the building is completed or far enough along to show that the requirements will be included in the completed structure. An established building line is provided, which is 25 feet from the sidewalk. From the property line to the curb is sixteen feet for sidewalk and parkway, which must be improved by trees and lawn.

Contracts for the purchase of residence lots provide that no structures shall be erected thereon for business purposes. This insures strictly residence sections, and prevents unsightly commercial structures being erected on choice corners of any residence street. All residence lots are 30 feet wide by 125 ft. deep.

In all of our cities and towns the appearance of otherwise attractive residence streets is spoiled by un-

sightly business buildings occupying corner lots, shutting off the view in the entire block and interrupting at the very beginning any building line that may have been established. With all corners occupied by modern dwellings, surrounded by trees and flowers, the residence streets are more exclusive, homelike and attractive.

Nature offered practically no aid at the start in making Gary an attractive city. The whole aspect of the entire section was of necessity changed by grading down the sand hills and filling the swamps. Most of the trees, small scrub oak, which were originally found, had to be cut down in bringing the land to an established grade. In the matter of soil for lawn and gardening purposes the natural resources offered nothing. Lake sand covered the site of the entire city and extended a hundred feet below the surface.

Unaided as they were by natural resources, the Gary Land Company, property owners and city officials worked together to beautify the landscape. Thousands of trees and shrubs have been planted, trainloads of rich black soil brought in to cover the sand, the lots and the parkways along the sidewalks beautified with lawns; public parks laid out and improved; and civic pride is behind a general public movement that will change this once waste and barren section into a picturesque and beautiful industrial city.

Up to last spring some property owners had not improved the parkways along the sidewalks with trees and lawns. These barren spots not only handicapped the "city beautiful" movement, but also allowed the

sand to blow on adjoining lawns. Accordingly an ordinance was passed by the city council providing for the planting of trees by special assessment. Contracts were let for the planting of trees and lawns in all unimproved parkways, and the cost assessed against the property. This tree planting assessment is the same as made for any other public improvement, and the property owner has ten years to pay for such work. This prevents the selfish interests of any individual from interfering with the plan of making the beautification of the residence streets complete.

Several added inducements are offered property owners to make their surroundings as attractive as possible. Free water is given during the proper season for sprinkling purposes. Prizes are offered each year for the most attractive lawns, both front and rear. Advice and information as to the best kind of trees, flowers and shrubs to plant is given by the landscape department of the land company. For lots that have been covered with black dirt previous to selling the price of this improvement is included at cost.

Both the East and West side residence sections center about large parks of about twenty acres each. At a cost of thousands of dollars these parks have been covered with soil, trees and shrubs set out, winding sidewalks built and everything done that would be an impetus to the general beautification of the city.

Restrictions also govern the sale of lots on the business thoroughfares. The purchaser of business property must erect at least a two-story structure of ap-



Vacant Property Must be Improved with Two-Story House of Approved Design Within Eighteen Months from Date of Purchase—No Holding as a Speculation



Five Years Ago This Was a Waste of Sand. Free Water is Given for Lawn Sprinkling to Encourage Landscape Gardening.

proved architectural style within eighteen months. The contract also provides that no building erected shall ever be occupied by a saloon or business for the sale of intoxicating liquors. At the present time there are only two saloons in the First Subdivision, and at no time will there be more than five.

The alleys through the residence sections are twenty feet wide and contain the electric light poles, gas and water mains and sewers. Telephone wires are placed in underground conduits. The placing of these improvements in the alleys makes the streets more attractive and prevents the tearing up of the pavement for repairs and connections. The alleys in the business sections are brick paved, with three-foot cement sidewalks on both sides.

During the first year in the building of Gary the United States Steel Corporation erected seven hundred houses for its employees. These houses, modern in every respect, were of frame, brick and stucco construction, ranging in cost from \$2,500.00 to \$15,000.00, the average being about \$3,500.00. In style, arrangement and construction they set a good example for the hundreds of other houses erected by private individuals. Variety of architectural styles, keen rivalry for attractiveness in design and home-like surroundings; and the deliberate encouragement of the art of architecture have resulted in the production of new developments in home building.

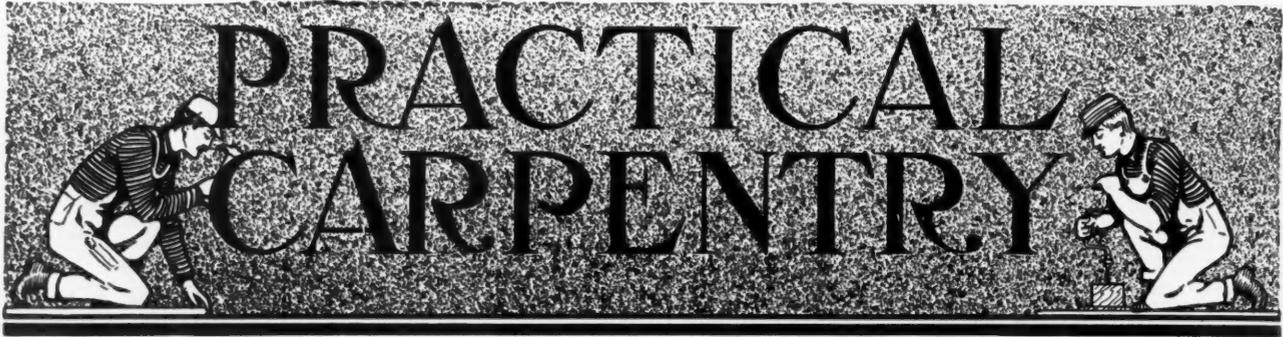
This general building of homes worthy of the name, results in a widespread interest in town improvement, a powerful civic spirit and settled artistic tradition,

giving adequate expression to the greater collective needs of the citizens in their public buildings, public parks and municipal improvements. The "City Beautiful" movement is receiving marked attention in all sections of our country at the present time; but the carrying out of such ideas is much more difficult in old established towns than in newer ones. In a new city like Gary, carefully planned in advance of active building, the attainment of a culmination in town planning and beautification is more easily accomplished.



#### Felling Chimneys with Fire

An interesting method of felling lofty chimneys is practiced in England. The originator of this method, a Manchester man, is credited with having felled, without accident, more than 100 chimneys which for one reason or another had become useless. Some of these were from 200 to 250 feet in height. The method consists in removing the stones or brick near the foot of the chimney and substituting an underpinning of wood, which is afterwards set on fire. About two-thirds of the area of the base is removed up to a height of 5 or 6 feet, so that most of the weight rests upon the underpinning. Experience has shown that when the work is properly done the chimney leans slightly toward the side where the underpinning is inserted, and when a slight crack appears in the masonry on the opposite side the time has come for the fire to be applied. As the chimney falls it partially telescopes in consequence of the shock produced by dropping into the void left by the burned timbers.



## Silos and Silo Building

A PRACTICAL ARTICLE OF TIMELY INTEREST TO ALL COUNTRY CARPENTERS AND BUILDERS—CONSTRUCTION OF "KING" WOODEN SILO IN DETAIL

FOR over a quarter of a century the subject of silos and ensilage has been before the American people. At first, extravagant claims were made by some of its most enthusiastic advocates. As a result, many of the conservative and more practical farmers would not give it serious consideration.

But silos and ensilage have outlived their most zealous friends and advocates; and have come to be regarded as an indispensable adjunct to successful farming.

### Silage as a Feed

The verdict is practically unanimous among all dairymen, who have fed good silage, that it is the best winter feed they ever used as a substitute for hay or corn fodder, and that they would not think of doing without it. It is relatively cheap, deteriorates but little with age after the first unavoidable changes have occurred, is compactly stored, easily fed and so thoroughly relished by the animals that there is no difficulty in inducing them to eat all they are able to assimilate.

### Proper Size of the Silo

The dimensions of the silo should be determined by the number of animals to be fed and by the length of time it is desired to feed silage. The number of animals to be fed should determine the diameter of the silo, and the length of time silage is wanted should determine the height of the silo. The amount of silage to be fed per cow should first be determined. It should be determined whether each cow is to have 20, 30, 40 or 60 pounds per day. Then having decided this point, make the diameter of the silo such that by feeding the cows so much per day the silage can be fed down 1½ to 2 inches per day. This will prevent molding of silage. If a silo is made too large in diameter, and this is the most frequent error, one of two things will happen. *First*, the silage will be moldy all the time owing to the inability to feed it down rapidly enough or, *second*, the cows will be fed more than they should have in an attempt to keep ahead of the molding.

Where large cows are kept and it is expected to feed 40 or 60 pounds per cow daily, it frequently happens that it is desirable to cut down the silage ration. It is well to have the diameter of the silo small enough so

that the ration can be cut down one-third or even one-half and still be able to feed down the silage 1½ inches daily.

In the dairy sections many farmers consider this point so important that they are building two small silos instead of one large one so that they can feed a light ration and still feed down the silage rapidly enough to prevent molding. In the older dairy sections where silos have been longest in use and dairymen have used up their first silo and are building the second time, they build two small ones in place of the one large one. They build smaller in diameter and higher.

Where the cows are getting 40 pounds of silage daily each cow should be allowed 4 to 5 square feet of feeding surface in the silo. Ten cows would require a feeding surface of 50 square feet. A silo 8 feet in diameter would have a cross section, or feeding surface, of 50 square feet. For ten cows therefore a silo should be 8 feet in diameter. Fifteen cows should have a silo 10 feet in diameter; 20 cows should have a silo 12 feet in diameter. The diameter of silos required for different numbers of cows is shown in the following table. It is assumed that each cow eats 40 pounds of silage daily.

Feed for 180 Days

Number of cows in herd	Silo 30 ft. deep, 24 ft. of silage		Silo 36 ft. deep, 30 ft. of silage	
	Fed down at rate of 1½ in. daily		Fed down at rate of 2 in. daily	
	Tons silage	Inside diameter	Tons silage	Inside diameter
14. ....	36	10	36	9
15. ....	54	13	54	11
20. ....	72	15	72	12
25. ....	90	16	90	14
30. ....	108	18	108	15
35. ....	126	19	126	16
40. ....	144	21	144	18
45. ....	162	22	162	19
52. ....	180	23	180	20
60. ....	216	25	216	21
70. ....	252	27	252	23
80. ....	288	29	288	25
90. ....	324	31	324	26
100. ....	360	33	360	28

If the silage is fed down at the rate of 2 inches daily, this will be 60 inches or 5 feet per month. If it is desired to have six months feed then 30 feet of silage is needed, but after filling the silo the silage will settle 4 to 6 feet so that to obtain 30 feet of silage the silo must be 35 or 36 feet deep. A silo should not be less than 30 feet deep. The silage settles much better and keeps better in a silo 30 feet deep than in the shallower silos.

It is doubtful economy to build a silo more than 25 feet in diameter. Men who handle large amounts of silage and have noted carefully the labor involved are of the opinion that where the silo is more than 25 feet in diameter the extra labor of distributing the silage in filling together with the extra labor of taking it out more than offsets the advantage gained in economy of construction. Where larger amounts of silage are wanted it is the practice to put up several silos 20 or 25 feet in diameter.

With the modern machinery for filling the silo, that is, with the feed cutters with blowers, silos 50 feet in height are readily filled. The modern blower will lift the corn 50 feet high without trouble. It requires power, however, to run the blower. A blower which raises the corn 50 feet vertically will require as much, if not more, power than will the cutter. The old style carriers with rakes are run with less power, but these must be set at an incline which necessitates a long carrier for a high silo.

#### **Silo Construction**

In Bulletin No. 83 of the Wisconsin Experiment Station, Prof. F. H. King described in considerable detail methods of constructing round silos in wood, stone, brick and concrete.

The type, however, that has come to be generally known as the King silo is the round wood silo made by bending  $\frac{1}{2}$  or  $\frac{3}{8}$  inch sheeting horizontally, nailing it to 2 by 4 studding set 12 inches apart on the circular foundation.

The details of construction are as follows:

#### **The Foundation**

There should be a good, substantial masonry foundation for all forms of wood silos, and the wood work should everywhere be at least 12 inches above the earth to prevent decay from dampness. There are few conditions where it will not be desirable to have the bottom of the silo 3 feet or more below the feeding floor of the stable, and this will require not less than 4 to 6 feet of stone, brick or concrete wall. For a silo 30 feet deep the foundation wall of stone should be  $1\frac{1}{2}$  to 2 feet thick.

#### **The Superstructure**

The wood superstructure of the King silo has a wall 5 or 6 inches thick, whereas the foundation wall is 18 to 24 inches thick; it is evident, therefore, that there must be a shoulder of the wall 12 to 19 inches wide that must project either into the silo pit or outward beyond

the sill. This shoulder should always project outward beyond the sill; for otherwise if the floor of the silo is 3 feet or more below the top of the wall this shoulder would interfere with the proper settling of the silage, allowing the silage to mold or rot just above the shoulder next to the sill and usually below the shoulder also. This rotting is commonly ascribed to the loosening of the sill or the foundation allowing air to enter. In most cases, however, it is plainly not due to this cause, but is due to the projecting shoulder which interferes with the settling of the silage. Many silos have been abandoned on this account so serious has been the loss from rotting. This shoulder should never project into the silo pit.

#### **The Sill**

The sill may be made by cutting 2 by 4's into two foot lengths and placing them on the wall flat side down. Or the sill may also be made by sawing short sections out of 6 or 8 inch plank, cutting them to the curvature of the circle. The latter is the better method since the outer sheeting is then nailed directly to the sill, insuring a tight joint, while the other way there are considerable spaces between the sill and the outer sheeting. These spaces admit air, so that the space between the studding is not a dead air space.

#### **Setting the Studding**

The studding of the all-wood round silo need not be larger than 2 by 4, but they should be set as close together as one foot from center to center. This number of studs is not required for strength but they are needed in order to bring the two layers of sheeting very close together so as to press the paper closely and prevent air from entering where the paper laps.

To stay the studding during construction a post should be set in the ground in the center of the silo long enough to reach about 5 feet above the sill, and to this stays may be nailed to hold in place the alternate studs until the lower 5 feet of outside sheeting has been put on. The studs should be set first at the angles formed in the sill and carefully stayed and plumbed on the side toward the center. When a number of these have been set they should be tied together by bending a strip of  $\frac{1}{2}$ -inch sheeting around the outside as high up as a man can reach, taking care to plumb each stud on the side before nailing. When the alternate studs have been set in this way the balance may be placed and toe-nailed to the sill and stayed to the rib, first plumbing them sideways and toward the center.

#### **Sheeting and Siding**

The character of the siding and sheeting will vary considerably according to conditions and size of the silo.

When the diameter of the silo is less than 18 feet inside, and not much attention need be paid to frost, a single layer of bevelled siding, rabbeted on the inside of the thick edge deep enough to receive the thin edge of the board below, will be all that is absolutely necessary

on the outside for strength and protection against weather.

In applying the sheeting begin at the bottom, carrying the work upward until staging is needed, following this at once with the siding. Two 8-penny nails should be used in each board in every stud; and to prevent the walls from getting "out of round" the succeeding courses of boards should begin on the next stud, thus making the ends of the boards break joints.

When the stagings are put up new stays should be tacked to the studs above, taking care to plumb each one from side to side; the siding itself will bring them into place and keep them plumb the other way if care is taken to start new courses as described above.

#### Forming the Plate

When the last staging is up the plate should be formed by spiking 2 by 4's, cut in 2-foot lengths in the manner of the sill, onto the tops of the studs, using two courses, making the second break joints with the first. Or still better, the plate may be sawed out of 2 by 6 plank, cutting them to the circle, so that the sheeting inside and outside may be nailed to the plate to make a tight joint.

Where paper is used to make the joints between the boards air tight, it is extremely important that a quality which will not decay and which is both acid and water proof be used. A paper which is not acid and water proof will disintegrate at the joints in a very short time and thus leave the lining very defective.

#### The Roof

The roof of cylindrical silos may be made in several ways, but the simplest type of construction and the one requiring the least amount of material is the cone.

If the silo is not larger than 15 feet inside diameter no rafters need be used, and only a single circle in the center. This is made of 2-inch stuff cut in sections in the form of a circle and two layers spiked together, breaking joints.

The roof boards are put on by nailing them to the inner circle and to the plate, the boards having been sawed diagonally, making the wide and narrow ends the same relative widths as the circumference of the outer edge of the roof and of the inner circle.

If the silo has an inside diameter exceeding 15 feet it will be necessary to use two or three hoops according to diameter. When the diameter is greater than 25 feet it will usually be best to use rafters and headers cut in four circles 4 feet apart to nail the roof boards to.

The conical roof may be covered with ordinary shingles, splitting those wider than 8 inches. By laying the butts of the shingles  $\frac{1}{8}$  to  $\frac{1}{4}$  of an inch apart it is not necessary to taper any of the shingles except a few courses near the peak of the roof.

The ready roofings or prepared gravel roofing are preferred to shingles for a silo roof, since they make a tighter roof which retains the heat in winter.

Every silo which has a roof should be provided with

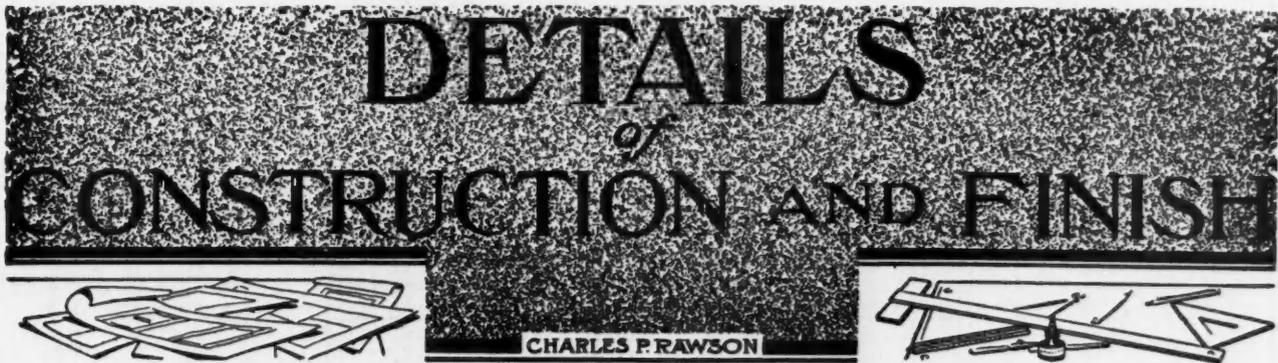
ample ventilation to keep the underside of the roof dry and in the case of wood silos, to prevent the walls and lining from rotting. One of the most serious mistakes in the early construction of wood silos was the making of the walls with dead spaces which, on account of the dampness, lead to rapid "dry rot" of the lining.

In the wood silo and the brick lined silo it is important to provide ample ventilation for the spaces between the studs, as well as for the roof and the inside of the silo. A good method of doing this is, between each pair of studs where needed to have a  $1\frac{1}{4}$  inch auger hole bored just above the sill on the outside to admit air through the siding and sheeting. This should be covered with a piece of wire netting to keep out mice and rats. At the top of the silo on the inside a similar hole is bored under the plate through the inner sheeting. This arrangement permits the air from the outside to enter at the bottom between each pair of studs and to pass up between the studs and into the silo, thus keeping the lining and studding dry and at the same time drying the under side of the roof and inside of the lining as fast as exposed.

Where the winters are severe a word of caution is needed concerning this type of ventilation.

It will be readily understood that if these ventilators between the studs are left open in winter they will act as chimneys; they will maintain a constant draft between the studding, which will cool off and freeze the silage more severely than it would if there were no sheeting at all outside the studding. If the silage is for winter feeding, and 99 per cent of the silage is so fed, then care should be exercised to prevent this severe freezing. In order to do this, provision must be made for closing these ventilators both at the top and at the bottom, so as to convert the hollow wall into a real dead-air space. There is no need of building the wall air tight outside with two thicknesses of sheeting with paper between, unless there is provision for closing the ventilators in winter.

The development of the King silo came in response to an urgent demand for a type of construction that would avoid the corners and other serious and aggravating defects of silos, as previously constructed. It marked an epoch in silo building. Hundreds of silos of this type have been constructed. They have not been confined to Wisconsin, where they originated, but have been widely distributed. They have been in use the past ten years, and have demonstrated their success. They are no longer an experiment. However, the very wide and general use of this type of silo under a great variety of conditions of climate and local environment has brought out some of the demerits of this type of construction which at the outset could not have been foreseen. For instance, the wood lining has been found less satisfactory than cement, and hence it is recommended that these silos be cement lined. Many of the King silos are lathed and plastered and have proven very satisfactory, having done service for ten years.



## Ornamental Fences

ATTRACTIVE DESIGNS FOR SIX DIFFERENT ORNAMENTAL FENCES WITH GATES SUITABLE FOR USE AROUND BUNGALOWS AND OTHER RESIDENCES

SINCE the bungalow has become so popular in this country, there has come a demand for moderate priced but appropriate fences to enclose the gardens and yards adjoining these homes. The illustrations given are all of simple garden fences that are made attractive by the methods of construction and finishing, and by the placing of vines and flowers upon them. It is preferable to build fences marked by numbers 1, 2, 3 and 4, of undressed material, staining them green or brown. The fences shown at 5 and 6 would look better built of planed lumber painted white. These drawings of course, are only suggestive, for in the very nature of things, no two places require or will admit, the same design of fence.

Fence number 1 has 4 by 4 inch posts, spaced from 7 to 8 feet apart, with a 2 by 4 inch rail at the top and 1 by 6 inch board at the bottom. The lattice work is made of 1 by 2 inch strips, and placed about 8 inches on centers and nailed at each intersection. It is best to make this fence in panels before nailing them to the posts.

Fence number 2 has three rails, the two upper being 2 by 4 inches, and the lower one 2 by 6 inches. The pickets are made of 1 by 4 inch and 1 by 10 inch boards, every other picket extending the entire height of fence and the other pickets as shown on the detail.

Fence number 3 is somewhat similar to number 1, except that the upper rail has a 1 by 4 inch apron, and the lattice work is placed diagonally and made of alternate pieces of 1 by 4 inch and 1 by 2 inch stuff.

Design number 4 is made in the ordinary manner, with one 2 by 6 inch and two 2 by 4 inch rails and alternate pickets of 1 by 2 inch and 1 by 10 inch boards. The latter have a 6 by 10 inch hole sawed in each board. A 1 by 10 inch board along the bottom, is provided as shown in the drawing.

Fence number 5 is made of 1½ by 1½ inch dressed pickets, placed 1½ inches apart, and faced with a 1 by 12 inch board at the bottom. Four by 6 inch posts and two 2 by 4 inch rails are used in this design.

Fence number 6 is built up of 1 by 6 inch and 1 by 4 inch boards, arranged as shown in the drawing, with a 2 by 4 inch rail at top and a 2 by 6 inch rail at bottom. The tops of the 4 by 6 inch posts are pointed, as shown. All drawings are made to the scale of three-eighths inch equals one foot.



### Stop! Look! Listen!

(Continued from Page 27.)

you expect to accept the position of chief accountant of some great business house if you did not know a ledger from a sales-slip? Certainly not, for you would look like the small boy who tries to wear his father's clothes. You would be smothered in no time.

Most persons think opportunity is made and one must fit himself into the position. The case is exactly the reverse. Fit yourself for the position and the opportunity will be made for you, if it is not already made. The farmer knows when he plants his field of corn that if he goes no farther than the planting, the harvest will be small. Talents must be treated in the same way. The growing plant must not be choked by the weeds of idleness and frivolity, but must be nourished by persistence, endeavor and determination.

STOP! LOOK! LISTEN! See yourself as you really are; then remedy the defects. Sometime, somehow, from somewhere, will come the opportunity that you have long looked for and you will be ready to meet and conquer the task that is set before you.

H. LYNN STALEY, South Bend, Ind.



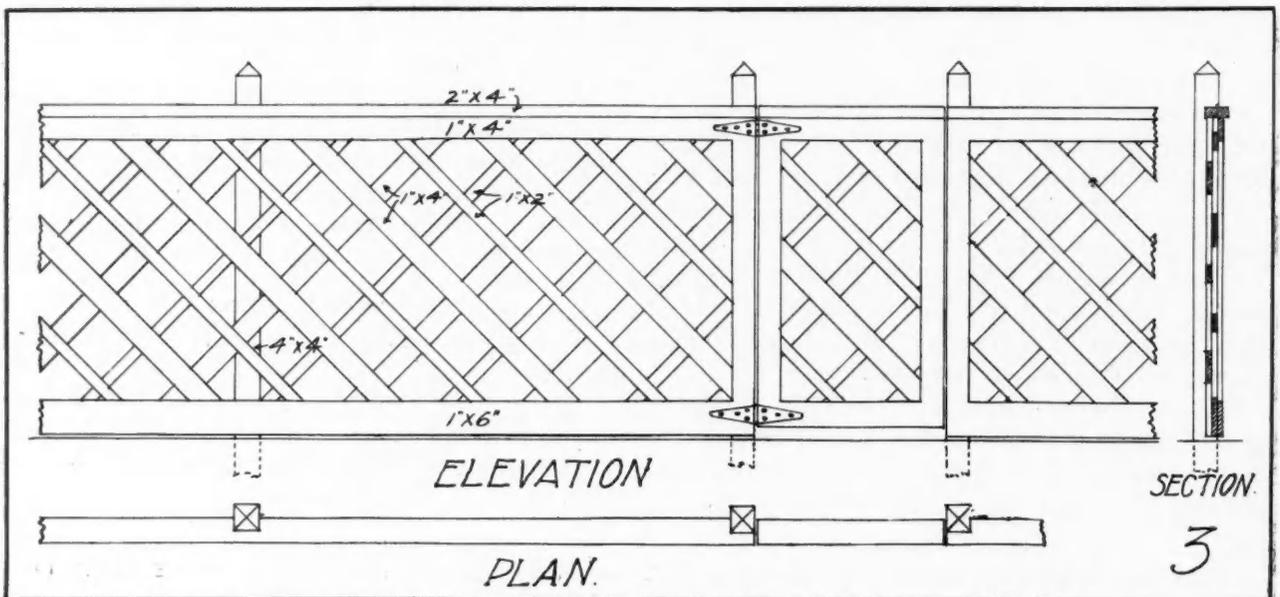
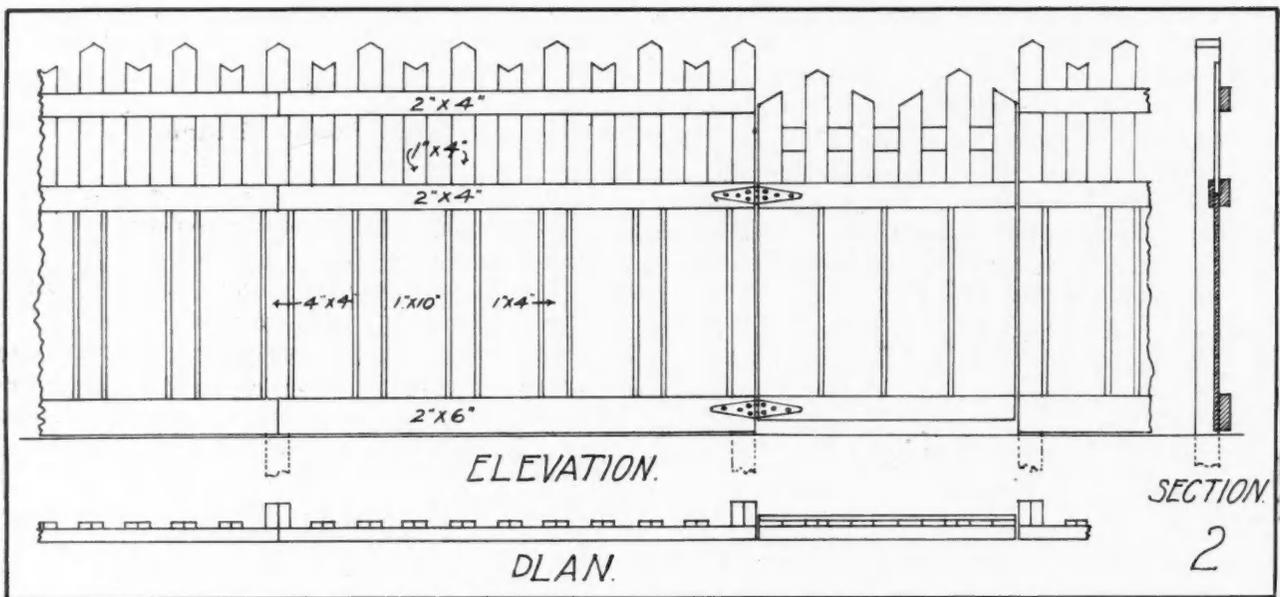
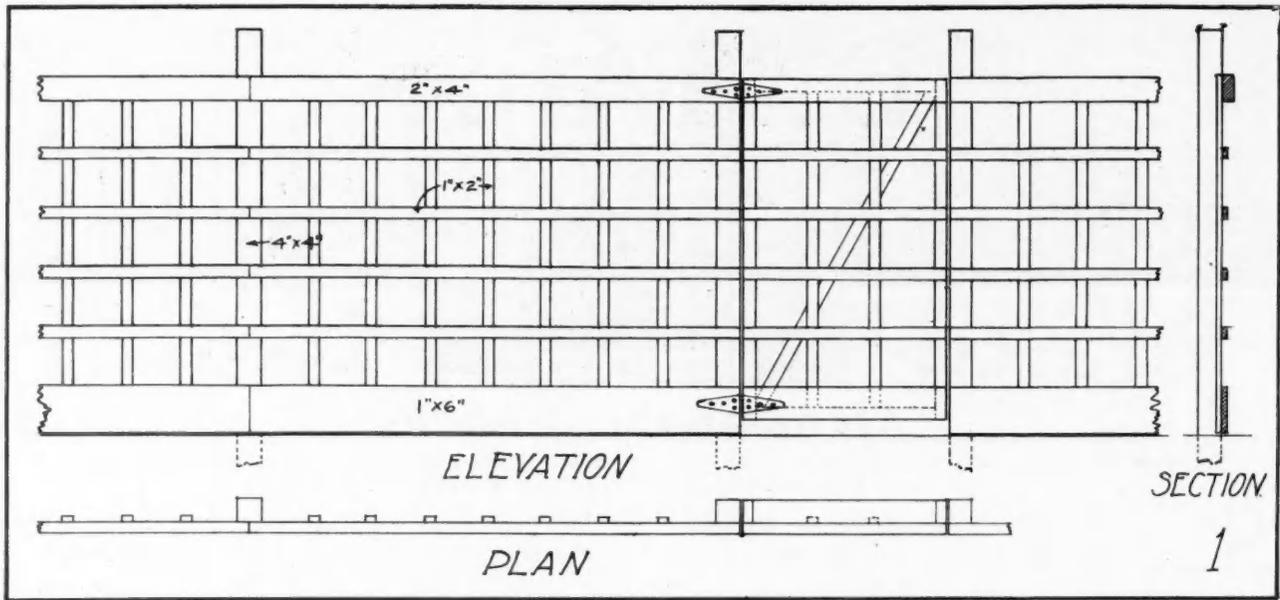
### Science Notes

Airship propellers are carved from wood built up in layers.

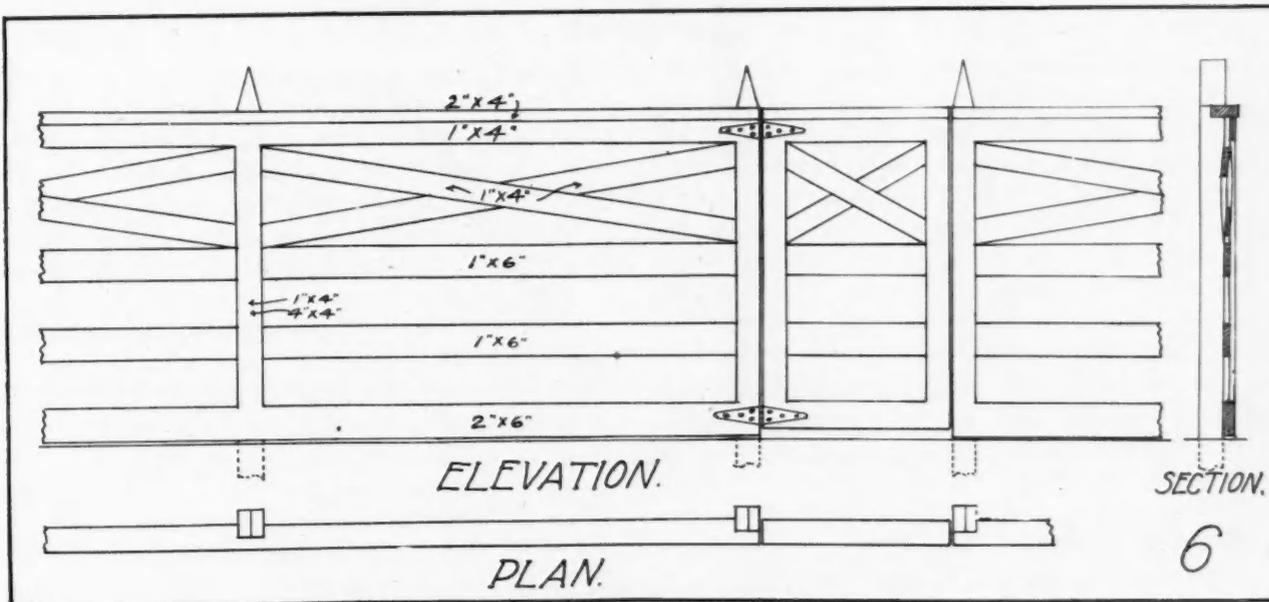
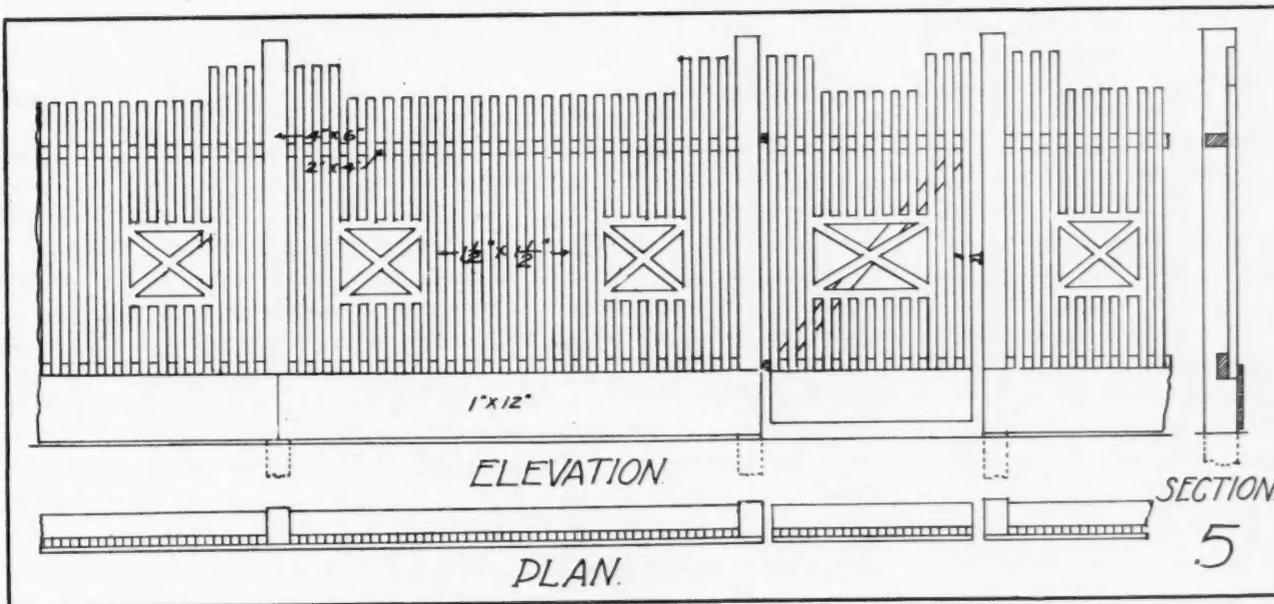
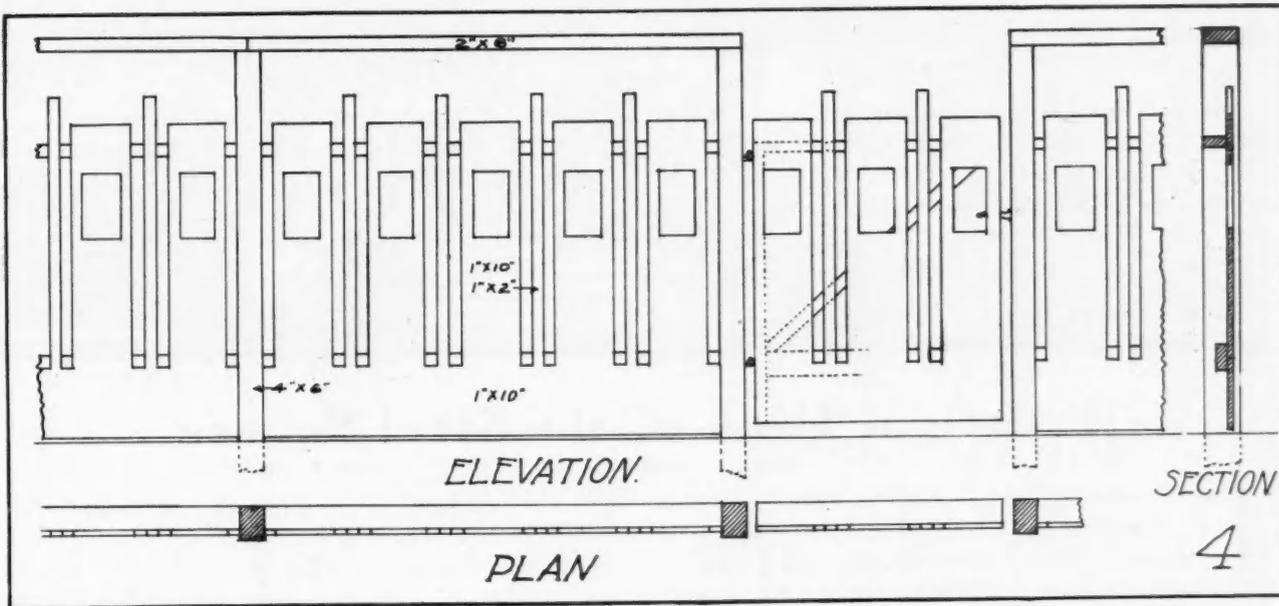
Scrubbing with strong salt water will prevent matting turning yellow.

An average man breathes about twenty-one cubic feet of air into his lungs every hour.

FULL PAGE PLATES SHOWING COMPLETE DETAILS ARE PRESENTED ON THE TWO PAGES FOLLOWING



ORNAMENTAL GATES AND FENCES



ORNAMENTAL GATES AND FENCES



than the other, then the run of the hip must necessarily be closer to the run of the common rafter that has the lower pitch, which in this case is the one on the right side. This rafter has the same run and rise as that shown in last month's illustration, and this side of the roof is therefore unchanged; but the distance from O to C is shortened; while on the other side O to C' remains the same. The run of the common rafter (C' A) is shortened but still retaining the same rise; its length must necessarily be shortened. But with all this, the relative parts to take on the steel square for the cuts remain the same as in the even pitch roof.

Like letters are used for the relative parts, as shown in the former article, in which we gave the parts to take; but as some of the readers may not have the article at hand, or may not have even seen it, we will repeat that part pertaining to the proportions to take on the steel square to obtain the side cuts of the rafters, as follows:

For the side cut of the jack on the right hand side, take O C on one member of the square and C D on the other; the side of the square on which the latter is taken will give the cut.

For the side cut of the jack on the left hand side take O C' on one member and C' D' on the other; and the side of the square on which the latter is taken will give the cut.

In short, it is—take the length of the run of the common rafter on the steeper side and the length of the common rafter on the lower side and the side of the square on which the latter is taken will give the cut; *visa versa* for the steep pitch side.

For the side cut of the hip to fit against the corner of the deck plate, it will require a right and left cut. Take O F on one member of the square and O B (length of the hip) and the cut will be on the latter

for the right hand side. For the left hand side, take O E on one member of the square and O B on the other and the cut will be on the latter.

The illustration shows the run of the hip to rest at 30 degrees from the line of the cornice on the left hand side and 60 degrees from that on the right hand side, but the reader should remember that it could be at any other angle just as well. We choose this angle for illustration purposes, to show the basic principles involved in connection with circular measurement.

The common rafter on the low pitch side in this illustration is identical with the common rafter, as shown in our last article, but in this case the deck plates being lengthened necessarily change the pitch of the common rafter on the adjoining side as also the hip, which must coincide between the two.

A good idea may be had of the difference in the central point to work from, for the even and uneven pitches, which is shown by the centers of the large circles.

Another point we wish to call attention to is the difference in the height of the plates as shown by scale. This may be avoided by extending the ceiling joist over the plate to form the plancher, and nailing a piece on the ends of same on which to rest the foot of the rafters.

The example in itself is an absurd one, as there is nothing to be gained from an architectural point of view and we trust no one will feel called on to use it in that way. Far better results are obtained by adhering to regular lines where the same can be done; in fact it is rarely necessary to do otherwise, but the progressive mechanic should know how to meet such conditions when they do arise, and for that reason we present this article.

## Open Timber Work

HOW THE OLD-TIME OPEN TIMBER OR "ENGLISH HALF-TIMBER" WORK WAS DONE—ITS RELATION TO MODERN CEMENT PLASTER WITH PANEL STRIPS

By C. Bryant Schaefer

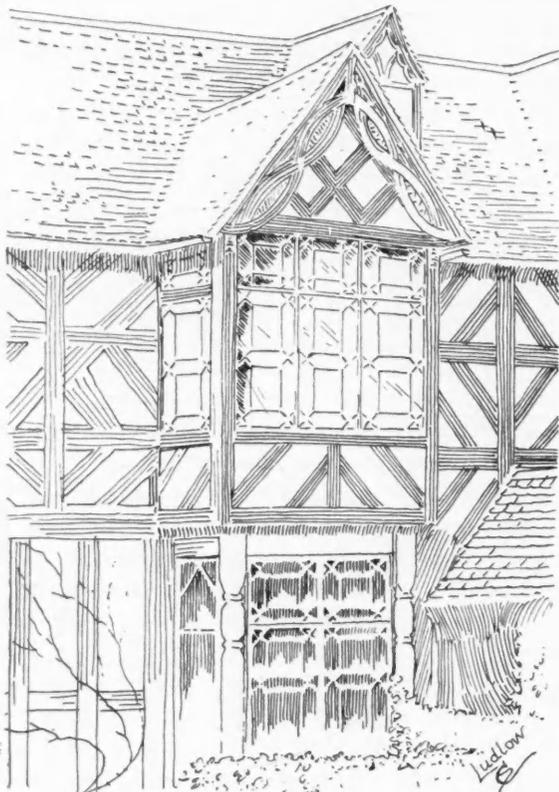
**O** PEN beams characterize the most attractive of our modern cottages. For a long time designers were possessed of a desire to introduce this style of work but the high price of cement made it impractical to do so. Of course, many substitutes were devised, usually small shingles and recessed siding and sometimes brick. But now plaster-cement houses with timber construction in view have become an attractive feature in every village.

It was the picturesque bits in the old country that stirred the desires of the home builders. They should really be called the first skeleton construction; the predecessors of the modern steel framework. Like this form of construction the old fashioned house was built in frame. The openings were then filled with solid clay or plaster. Neither of these materials would stand up without the support of the framing. Where

large panels occurred their size had to be reduced by intermediate members to support the staff-like filling. These intermediate supports had no structural importance hence they were put in in various ways, often with more or less haste, as their unequal and unmatched proportions indicate. The result is a picturesque quality hard to equal.

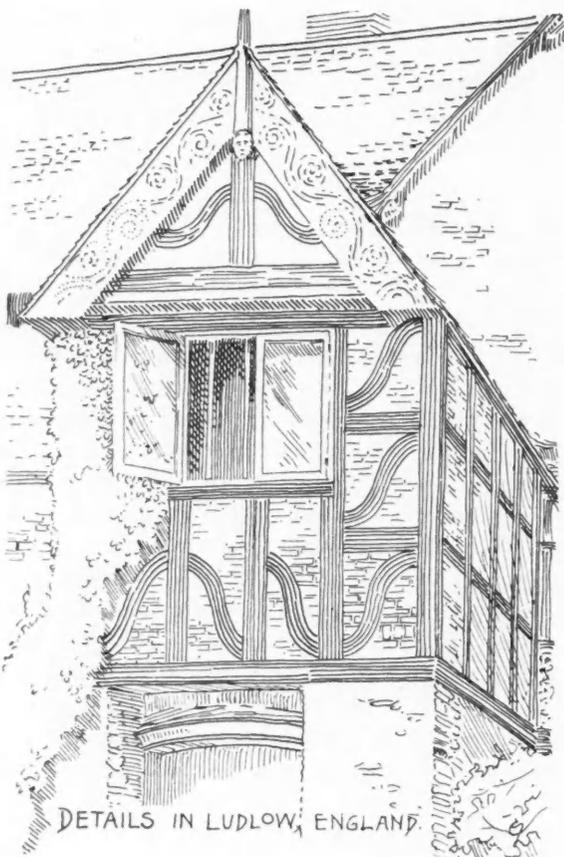
In Fig. 1, showing a bay window with the gable over it, may be seen the odd proportions of the minor timbers. In the first story there are solid turned posts supporting the corners. The small lights in the window sash were necessary as glass was only produced in small panes. The dividing bars were arranged ornamentally to overcome the awkwardness of their presence.

Ludlow, England, has many examples of this style of building, dating from Elizabethan days. The build-



HALF-TIMBER, THE FIRST SKELETON CONSTRUCTION.

Fig. 1.



DETAILS IN LUDLOW, ENGLAND.

Fig. 2.

ers of the work illustrated in Fig. 2, seem to have worked off all their crooked sticks in the gable and story over the massive entrance. It did not matter much if they did not fit the panels as long as they helped out the brick.

These early English designs show no classic mouldings or proportions. Where there is carving it is derived from Northern sources; old time Europeans having evolved quite an extended system of ornamentation which represented their business and affairs.

The balcony design (Fig. 3), beneath which was a shop front, is quite decorative. It is all in this Northern style of detail and is done by hand. The faces in the panels seem to have been suggested by the faces

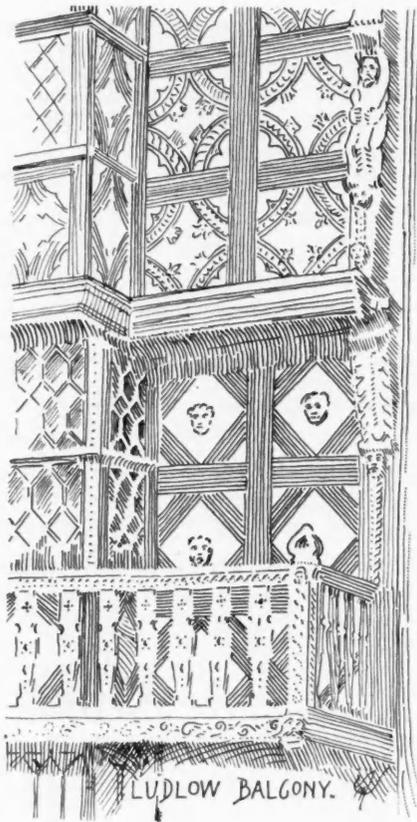


Fig. 3.

that peer out of the windows. The corner post is carved all the way up in pilaster style. The circles show considerable patience. The balcony front is richly carved and perforated. There are many little faces with various expressions of features. One is inclined to believe that all the workmen were remembered!

The French example (Fig. 4), is finished with Gothic carving. The mouldings are cut on the solid. The swan in the door panel, however, is one of the devices with which people identified their business before the art of spelling was introduced.

The general idea in constructing this frame work seems to have been to brace the square form so it would not lean or skew. The slanting brace in the

second story over the entrance is quite independent of any relation with the brick patterns.

The example from Germany is of the tile roof style. It was one of the store houses of the city and

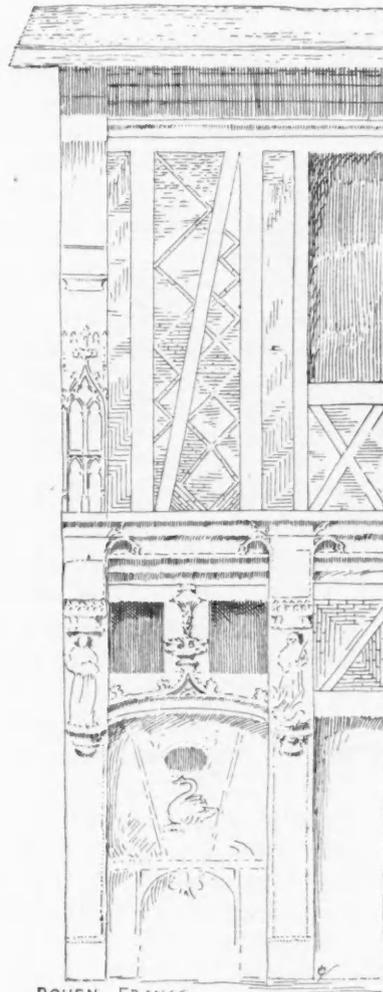


Fig. 4.

each story juts out beyond the lower one to make room for the wares. This kind of work was introduced by the ship carpenters who were naturally in close touch with building needs of this kind.

This facade is elaborately carved. The subjects are all taken from fireside tales with which people used to be familiar. They are from olden times and were considered instructive as well as entertaining. That is how this front came to be so profusely carved. It is the custom nowadays to spread on decoration without regard to its use or sense, which makes it seem foolish labor and in poor taste.

These picturesque houses were all fashioned and put together on the spot. Much of the work was done by rule of thumb. Now is it not strange that the modern workman with all his advantages, his tools and skill in using them, should be going back to these rude old examples for ideas? And securing the ideas is it possible to build as frankly?

#### Modern Open Timber Work

The usual method of showing open timber now is quite independent of any structural use. Grounds are nailed in place against which to plaster and then thin  $\frac{7}{8}$  inch boards are nailed on top to resemble timbers. One method of construction is covered up and thereby made to resemble another method no longer in use. The inconsistency is, however, seen and at least partial efforts are made to overcome it.

In recent cottage building there is a great deal of real timber work, especially in connection with porches and gables. A good solid lintel supporting rafters or lookouts may be easily made to show with good effect.

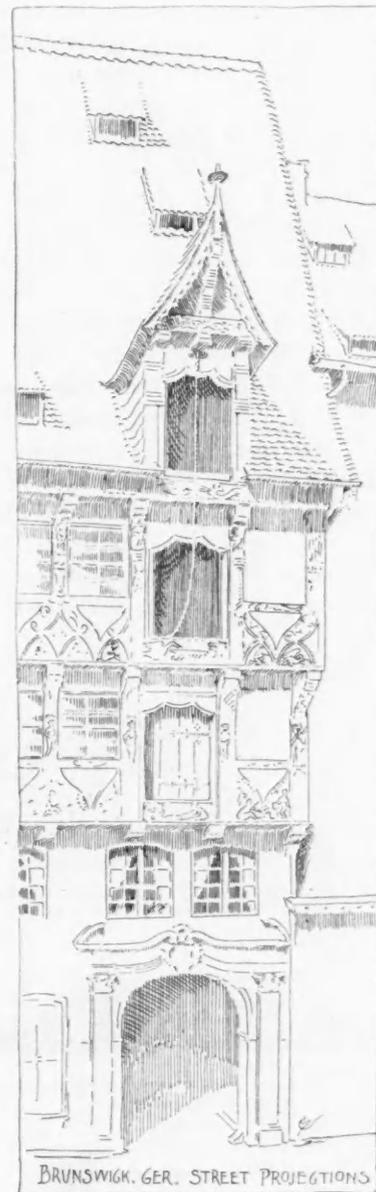


Fig. 5.

Rafter ends may be left open and cut with a scallop. Instead of the huge plaster box posts on porches a solid timber is better because it does not rob the interior of light. It looks more massive in wood than something five times as thick in brick.

### Work of Ornamental Glass Association

It is the contention of the National Ornamental Glass Manufacturers' Association of the United States and Canada that ornamental glass should be restored to its proper place in the decorative arts. This is a strong association made up of manufacturers and craftsmen in the various branches of art glass work, that has for some time been making an active effort to improve conditions in ornamental glass circles and to encourage high class design and workmanship. Mr. H. H. Jacoby, of St. Louis, is President of the Association and Mr. J. E. Flanagan, of Chicago, is Secretary.

In speaking of what the association is working to accomplish Mr. Flanagan recalled the fact that in former times art glass work was of the finest of the fine arts. In the middle ages, in England, France and Germany the craftsmen in art glass wrought with such skill and with so much devotion to their art that we still marvel at the beauty of the masterpieces they produced. The competition of those days was the competition of quality, not of price; and, commercialism with its tendency to beat down the cost at the expense of art, was still unknown.

The members of this association are true lovers of the beautiful and they are using their wide influence to bring art glass back to its proper place among the decorative arts. They ask the assistance of architects and builders in this matter. Since ornamental glass work is really an industrial art rather than merely a mechanical process they maintain that the ornamental glass work on any building should not be handled under the general contract but recommend that it should be specified and let under a separate contract,

or else reserved. It seems that this would lead to a more satisfactory understanding between the architect, the owner and the craftsman and would eliminate the abuses of the present system of placing the ornamental glass work in connection with other contracts.

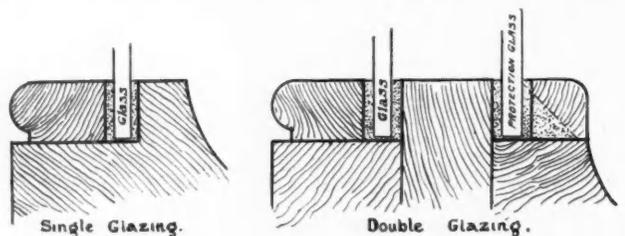
If architects and owners will give their assistance by insisting that all ornamental glass work must be artistic in design—of first-class materials and workmanship—and at prices which will permit artists of real ability to give their time to the study of glass as a medium of artistic expression, much will be accomplished. Work of a low artistic standard does not do justice to the decorative possibilities of glass and so hurts the craft in general.

In addition to this good work of creating a sentiment among architects to specify higher prices in order to permit them to do better work, the Ornamental Glass Manufacturers' Association are working in many other ways to improve conditions in this important industry.

#### Minimum Glazing Details for Art Glass

A recent bulletin issued by the Association shows details of recommended practice for setting art glass and protection glass in wood, stone and metal. These details are reproduced herewith one-half full size. They are minimum details. It is information of this kind that is often needed to insure good work, and important jobs are sometimes disappointing because of lack of attention to those seemingly unimportant matters.

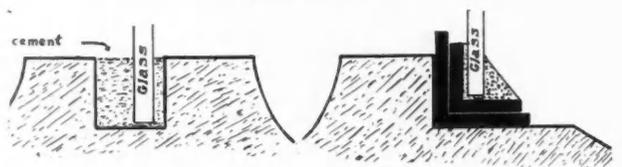
Friends of ornamental glass, those who appreciate its real worth as a material for effective decoration in connection with modern buildings will thoroughly approve of what this association of ornamental glass manufacturers are doing and will assist in the good work wherever possible. We have often heard it remarked that more publicity ought to be given to art glass and the general public educated to a better appreciation of its true worth as a decorative adjunct, not only for churches and public buildings, but also for residence as well.



Rebates for Wood Jambs, Heads and Sills—Same Details for Stone, Omitting Loose Strips



Details Metal Division Bars with Ornamental Glass and Protection Glass



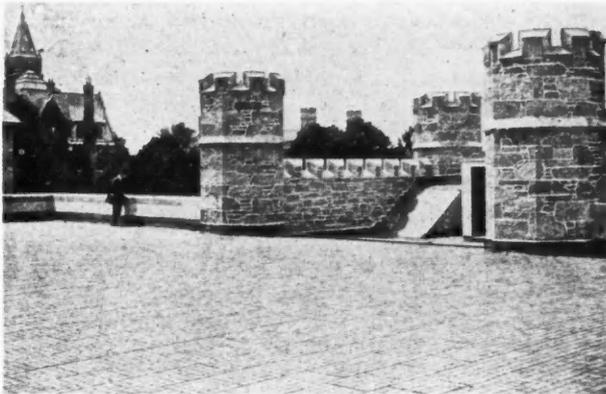
Setting for Stone Heads and Jambs Ventilator Sash—Sill Detail for Ornamental Glass

MINIMUM GLAZING DETAILS, HALF FULL SIZE, APPROVED AND RECOMMENDED BY THE NATIONAL ORNAMENTAL GLASS MANUFACTURERS' ASSOCIATION

#### Slate for Flat Roofs

The main uses of slate at present are for overlapping roofing, suitable for laying only on a sloping roof; and this immediately sets a limit on its use. In many classes of buildings, such as residences, churches, or public structures, sloping roofs are highly desirable, whether for ventilation, increased space under cover, or architectural effect. But in other buildings, such as factories and city structures in general, flat roofs are imperative. The application of slate to flat roofing manifestly opens up great possibilities. This has now been made in what is known as inlaid slate roofing, not by any means an experiment, but a roofing that has been laid on many buildings with a high degree of success.

This is slate sawed at the quarries into three-inch squares, then cemented with a high-melting asphalt to a backing of roofing felt and cut into units, or sections, measuring 12 inches by 15, containing 20 slates. These flexible sheets of small slates are then packed in crates (four crates to the square) all ready to be mopped on to the waterproofing with hot asphalt. It takes 80 units containing 1,600 of these little slates to cover a square of roofing (a space ten feet square). This makes a strong slate roof, that harbors no dirt



Flat Slate Roof on Gymnasium of Bryn Mawr College. Slate is cut three inches square and laid in asphalt.

and is washed clean with every rain, that is virtually an extra floor to the building and can be used for all outdoor purposes for which a roof is adapted. It weighs less than four pounds to the foot, including the waterproofing, and is as well suited to light structures with board roofs as to the heavier concrete or fireproof construction. The slates are made small for three reasons: 1, to obtain flexibility, conforming easily to the uneven surface of the roof deck; 2, to increase the strength of the slate, a three-inch slate having four times the strength of a 6 by 6 slate; 3, to overcome the expansion and contraction troubles.

It is to be understood that the use of the slate does not in any way change the well established method of a built-up waterproofing—single layers of roofing felt with hot pitch mopped in between the sheets. There are no less than eleven different layers in the completed roof: four plies of roofing felt, three layers of pitch in the waterproofing, and two layers of high-melting asphalt, one ply of roofing felt and one layer of slate in the applied units.

One would naturally suppose that the slate trade would extend the keenest welcome to this new method of roofing. It is absolutely removed from any competition with the old methods of slate roofing. Overlapping slate can be applied only to sloping roofs, and inlaid slate is adapted only to flat roofs. Besides this, owing to the small size of the squares, it can be made of slate unsuitable for the manufacture of overlapping slate, and so will tend to reduce the tremendous percentage of waste in slate quarrying.



**Answered**

"You, there, in the overalls," shouted the cross-examining lawyer, "how much are you paid for telling untruths?"

"Less than you are," retorted the witness, "or you'd be in overalls, too."—*The Housekeeper.*

**Gritty**

"There," said the Roofer, "is a man who is full of grit."

"Why do you say that?"

"I saw him in a cheap restaurant just now, eating spinach."

**Rid of Them**

"Thank Heaven, those bills are got rid of," said Bilkins, fervently, as he tore up a bundle of statements of account dated Oct. 1. "All paid, eh?" said Mrs. Bilkins. "Oh no," said Bilkins. "The duplicates dated Nov. 1, have come in, and I don't have to keep these any longer."—*Harper's Weekly.*

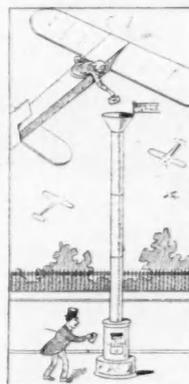
**SOME INVENTIONS WHICH WERE NEVER PATENTED**



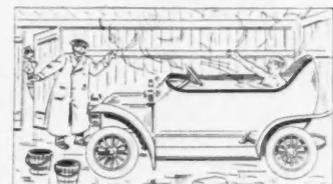
A suggested device, making it possible, by a slight motion of the head, to convey a cigar to the mouth and remove it therefrom, without taking the hands out of the pockets



A scheme for artists overwhelmed with work—two pictures at the same time



Design for a letter box of the future, dedicated to Postoffice Department



What's the use of buying an up-to-date auto if it cannot be turned to such healthful uses as this



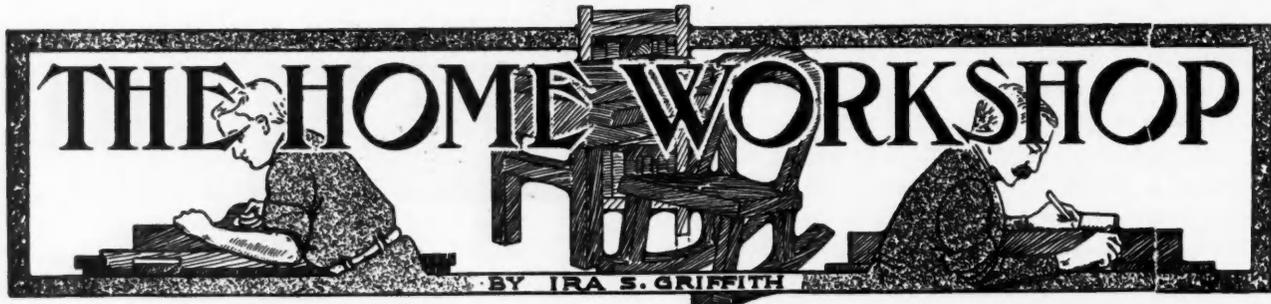
A costume for aviators



Insuring a safe descent



Even in case of turning over  
From Pétit, Paris



## Furniture for the Sewing Room

PHOTOS, WORKING DRAWINGS AND COMPLETE DIRECTIONS FOR MAKING AND FINISHING A SEWING ROOM CABINET AND TABLE AND A ROCKER

**A** VERY convenient piece of furniture for the home is the sewing cabinet and table. The design offered is of ample proportions, yet, when the leaf is folded, it takes up little floor space.

It should be made of hard wood, preferably quarter-sawed white oak, as quarter-sawed stock is less likely to warp.

The front of the cabinet according to the drawing, has the drawer fronts projecting slightly, due to the ends of the fronts being lipped over the facings. If desired, the fronts may be made flush with the facing. The back of the cabinet is paneled in a manner similar to that of the sides.

When the leaf is not needed the bracket underneath is turned and the legs can be folded upward underneath as the leaf drops to a vertical position at the side of the cabinet. The legs which support the leaf are shown square in the working drawing. If the worker has access to a lathe he may turn them as indicated in the photograph.

### STOCK BILL FOR SEWING CABINET AND TABLE

Top of cabinet, 1 piece,  $\frac{3}{4}$  by  $23\frac{1}{2}$  by 24 inches, S-2-S.

#### End frame and panel—

Leaf, 1 piece,  $\frac{3}{4}$  by  $23\frac{1}{2}$  by  $25\frac{1}{2}$  inches, S-2-S.

Rails, 2 pieces,  $\frac{3}{4}$  by  $2\frac{3}{4}$  by  $16\frac{3}{4}$  inches, S-4-S.

Rails, 2 pieces,  $\frac{3}{4}$  by 5 by  $16\frac{3}{4}$  inches, S-4-S.

Panels, 2 pieces,  $\frac{5}{16}$  by  $15\frac{1}{4}$  by 13 inches, S-2-S.

Stiles, 4 pieces,  $\frac{3}{4}$  by  $2\frac{3}{4}$  by  $24\frac{1}{4}$  inches, S-4-S.

Stiles, 2 pieces,  $\frac{3}{4}$  by  $2\frac{3}{4}$  by  $24\frac{1}{4}$  inches, S-4-S.

Rails, 1 piece,  $\frac{3}{4}$  by  $2\frac{3}{4}$  by  $14\frac{1}{2}$  inches, S-4-S.

#### Back frame and panel—

Rails, 1 piece,  $\frac{3}{4}$  by  $2\frac{3}{4}$  by  $14\frac{1}{2}$  inches, S-4-S.

Panel, 1 piece,  $\frac{5}{16}$  by 13 by 13 inches, S-2-S.

Brackets, 1 piece,  $\frac{3}{4}$  by  $4\frac{1}{4}$  by  $4\frac{1}{2}$  inches, S-2-S.

Brackets, 1 piece,  $\frac{3}{4}$  by  $4\frac{1}{4}$  by  $3\frac{1}{2}$  inches, S-2-S.

Cleat, 1 piece,  $\frac{3}{4}$  by  $1\frac{1}{4}$  by  $22\frac{1}{2}$  inches, S-4-S.

Posts, 2 pieces,  $1\frac{1}{4}$  by  $1\frac{1}{4}$  by 23 inches, S-4-S.

Rail, 1 piece,  $1\frac{1}{8}$  by  $2\frac{1}{4}$  by  $21\frac{1}{2}$  inches, S-4-S.

Rail, 1 piece,  $\frac{7}{8}$  by  $2\frac{1}{4}$  by  $17\frac{1}{2}$  inches, S-4-S.

Stretcher, 1 piece,  $\frac{3}{4}$  by  $\frac{3}{4}$  by 17 inches, S-4-S.

Facing, 1 piece,  $\frac{3}{4}$  by  $2\frac{1}{2}$  by 17 inches, S-4-S.

Facing, 1 piece,  $\frac{3}{4}$  by 1 by 17 inches, S-4-S.

#### Drawer support frames—

6 pieces,  $\frac{3}{4}$  by 2 by 17 inches, S-4-S.

6 pieces,  $\frac{3}{4}$  by 2 by 18 inches, S-4-S.

#### Drawers—

Front, 1 piece,  $\frac{3}{4}$  by 8 by 17 inches, S-4-S.

Front, 1 piece,  $\frac{3}{4}$  by 6 by 17 inches, S-4-S.

Front, 1 piece,  $\frac{3}{4}$  by 4 by 17 inches, S-4-S.

Back, 1 piece,  $\frac{3}{8}$  by  $7\frac{1}{2}$  by 16 inches, S-2-S.

Back, 1 piece,  $\frac{3}{8}$  by  $5\frac{1}{2}$  by 16 inches, S-2-S.

Back, 1 piece,  $\frac{3}{8}$  by  $3\frac{1}{2}$  by 16 inches, S-2-S.

Bottoms, 3 pieces,  $\frac{3}{8}$  by 18 by 16 inches, S-2-S.

Sides, 2 pieces,  $\frac{5}{8}$  by 8 by 18 inches, S-4-S.

Sides, 2 pieces,  $\frac{5}{8}$  by 6 by 18 inches, S-4-S.

Sides, 2 pieces,  $\frac{5}{8}$  by 4 by 18 inches, S-4-S.

Begin work by squaring the top and shelf or leaf to size and put on the moulded edge with a moulding plane. Next work the stiles and rails for the back and two sides to size and shape. After this has been done the frames which support the drawers should be made. Note that the lower frame is to project in front farther than the other frames and make due allowance in framing the stock for it.

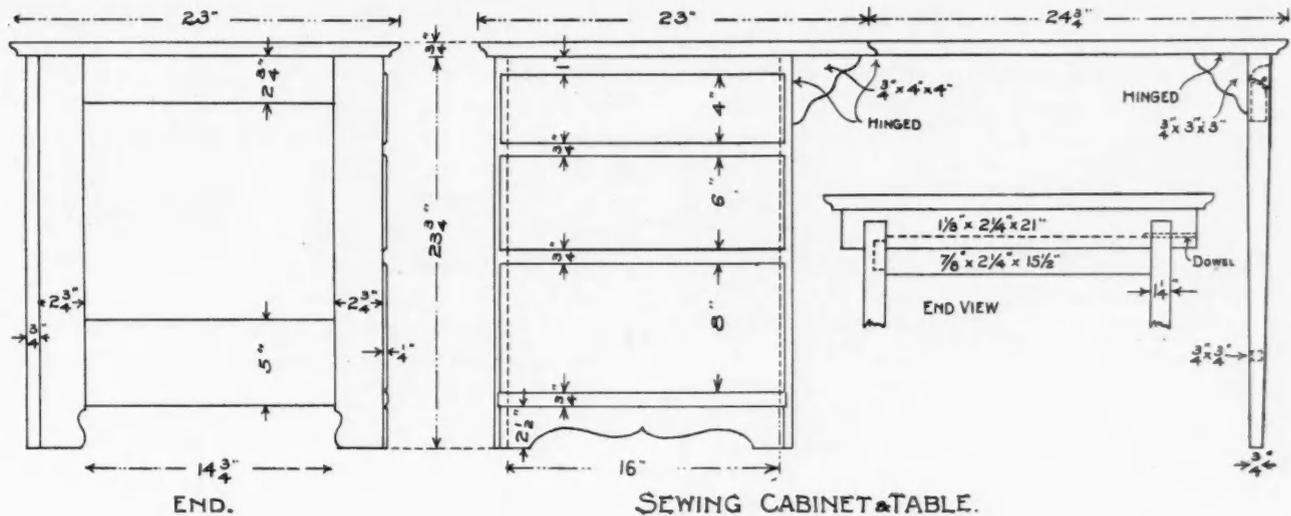
Make the necessary facings and then assemble the cabinet. After this the drawers may be made and fitted.

The leaf is to be cleated as shown in the accompanying drawing and the brackets made.

Shape up the two posts or legs which are to support the leaf, as shown, or turn them on the lathe.



Handy Cabinet and Folding Table



The hinges may be attached before the finish is applied, but the escutcheons and pulls should be left off until afterward.

The following directions will produce a suitable finish and one that will withstand wear: Put on a coat of stain of a color desired, English, golden, etc. Upon this, after it has dried thoroughly, put a coat of thin shellac to keep the highlights from being discolored by the stain in the filler which is to follow. The stain should be sanded lightly before the shellac is applied, to lay any roughness. If water stain has been used a second stain should be applied before filling and after sanding the first coat. It should be diluted, however, by the addition of an equal volume of water. Sand the shellac lightly, then apply a paste filler colored to match the stain but darker in tone. Rub this off in the usual manner with excelsior; then polish it with waste or an old cloth. Sand the filler lightly after it has set and on it apply a coat of orange shellac. If the wood finish is light in color white shellac should be used.

On the shellac coat put two or three coats of some good rubbing varnish. Rub each of the first coats with hair cloth and the last with pulverized pumice stone and crude or raw linseed oil.

If desired, the cabinet might be made of maple and finished natural. In this case, maple being close grained, the paste filler should be omitted as well as the stain.

#### How to Make Sewing Room Rocker

A small rocker suitable for a sewing room is shown in the accompanying illustration and working drawing. It should be made of the same wood and given the same finish as the cabinet, providing they are to be companion pieces.

#### STOCK BILL FOR ROCKER.

Front posts, 2 pieces,  $1\frac{3}{8}$  by  $1\frac{3}{8}$  by 13 inches, S-4-S.  
 Back posts, 1 piece,  $1\frac{1}{4}$  by  $5\frac{1}{2}$  by 31 inches, S-2-S.  
 Seat rails, 1 piece, 1 by  $1\frac{3}{4}$  by  $16\frac{1}{2}$  inches, S-4-S.  
 Seat rails, 1 piece, 1 by  $1\frac{3}{4}$  by  $15\frac{3}{4}$  inches, S-4-S.  
 Seat rails, 2 pieces, 1 by  $1\frac{3}{4}$  by 15 inches, S-4-S.

Front rail, 1 piece,  $\frac{1}{2}$  by  $2\frac{1}{2}$  by  $16\frac{1}{2}$  inches, S-4-S.  
 Back rails, 1 piece,  $\frac{1}{2}$  by  $2\frac{1}{2}$  by  $15\frac{3}{4}$  inches, S-4-S.  
 Back rails, 2 pieces,  $\frac{5}{8}$  by  $2\frac{1}{4}$  by  $15\frac{3}{4}$  inches, S-4-S.  
 Back rails, 1 piece,  $\frac{5}{8}$  by  $3\frac{1}{2}$  by  $15\frac{3}{4}$  inches, S-4-S.  
 Side rails, 2 pieces,  $\frac{1}{2}$  by  $1\frac{3}{4}$  by 15 inches, S-4-S.  
 Rockers, 1 piece,  $1\frac{1}{2}$  by  $4\frac{1}{2}$  by  $24\frac{1}{2}$  inches, S-2-S.  
 Cleats for seat frame, 4 pieces  $\frac{3}{4}$  by  $1\frac{1}{4}$  by  $14\frac{1}{2}$  inches, S-4-S.

From this stock bill it will be seen that the back posts are to be got from one piece of wood, also the rockers. A little forethought will show how the two pieces each are to be got out of the ones specified.

Square up the front posts then shape the back posts. Next, cut the rails to length, making allowance for strong tenons. Those pieces that are specified as S-4-S



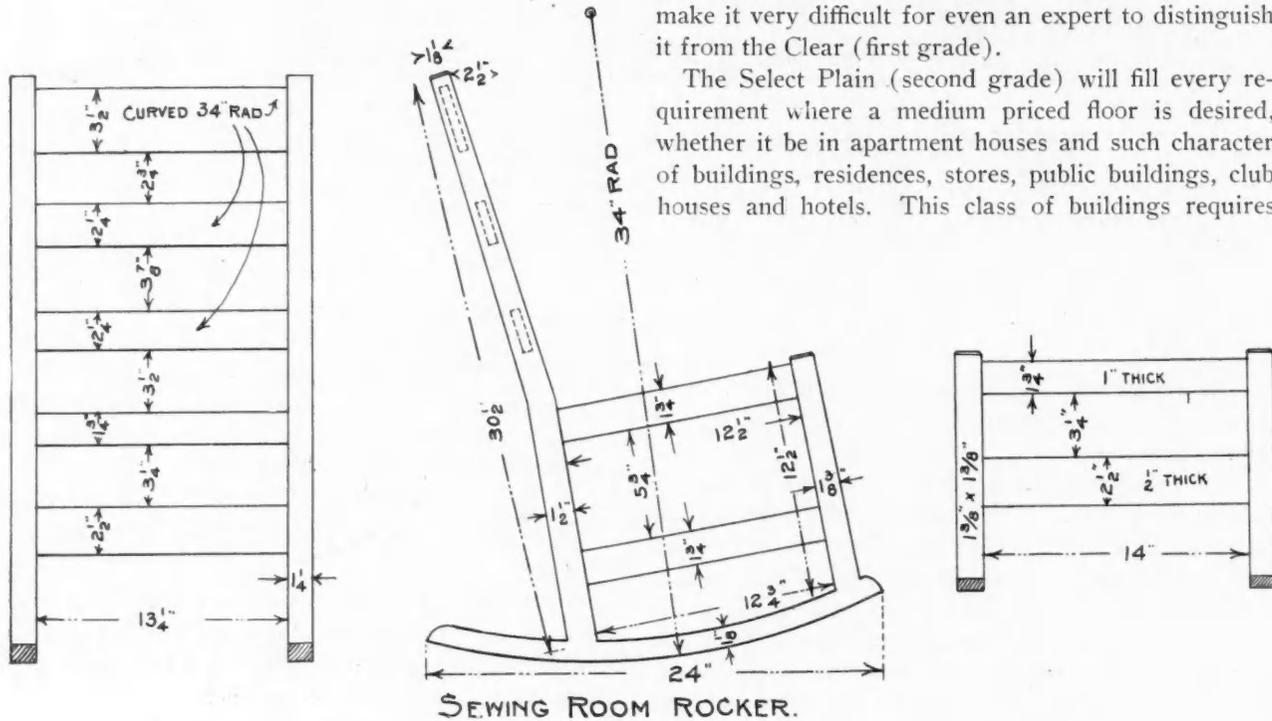
Sewing Room Rocker

need only to have the mill-marks removed by means of the scraper, or smooth plane and scraper.

Forms will need to be constructed over which to shape the back rails. These forms should have a radius somewhat shorter than is called for by the draw-

as durable. The principal defect in this grade being sap, which in oak is not considered as serious a defect as in other woods, on account of the tannic condition. The difference in the shading is easily lost sight of in the finishing, by application of a golden oak filler to blend the light and darker pieces. Such a finish would make it very difficult for even an expert to distinguish it from the Clear (first grade).

The Select Plain (second grade) will fill every requirement where a medium priced floor is desired, whether it be in apartment houses and such character of buildings, residences, stores, public buildings, club houses and hotels. This class of buildings requires



SEWING ROOM ROCKER.

ing. The pieces will tend to spring backward slightly when released, and unless allowance is made the curve will not have the correct radius in the finished piece.

A steam box will be needed for this part of the work. If one is not convenient it can easily be improvised. Nail four boards together so as to form an inclosure large enough to take in the pieces to be steamed. In one end put a board with a hole in it through which a pipe or piece of hose can enter. Attach this hose to the tea kettle and, having put in the pieces clamped to their forms, put the kettle on the fire and stuff rags in the other end of the box so that the steam will not escape. After the pieces have been well steamed they can be removed and set out to dry before the clamps are removed.

The seat may be made detachable if desired, or it may be made as indicated in the picture. In either case there should first be a covering of heavy canvass, then webbing, on this a covering of felt, covered with another canvass, and finally the leather.

#### Adaptability of Oak Flooring

Very often architects and contractors use the Clear Plain (first grade) of oak flooring in many rooms where the Select Plain (second grade) could be utilized equally as well, at a saving of about 25 per cent in the cost. Select Plain (second grade) makes a floor just as serviceable as the Clear Plain and equally

a high class and serviceable floor. Select Plain is highly recommended, as it gives an artistic and durable floor at a very reasonable cost.

Some of the best homes, costing from \$7000.00 and up, are now using the Select Plain in the upper floors and very often the entire residence uses this grade throughout.

A little care on the part of the floor layer, with this Select Plain (second grade) will insure a job almost as good as though the Clear (first grade) was used. Bad discolored pieces should be utilized for places under the rugs, closets, and other out of the way places.

The Select Plain oak flooring is manufactured in the 13/16-inch thickness and 3/8-inch thickness. The 3/8-inch thickness Select Plain, without a doubt makes the most economical floor that can be bought. It is tongued, grooved and end-matched. It can be secret nailed and when laid, has the appearance of heavy flooring. The 3/8-inch thickness should always be laid over a subfloor. In old homes it can be laid over the old floors and in new homes over a cheap subfloor. The 13/16-inch thickness makes the most substantial floor but is 30 per cent more expensive than the 3/8-inch thickness. Oak flooring can be had in two colors, white or red. The preference for either, simply resolves itself into a matter of taste, as both have about the same lasting qualities. The white is often preferred, because it runs more uniform in color.

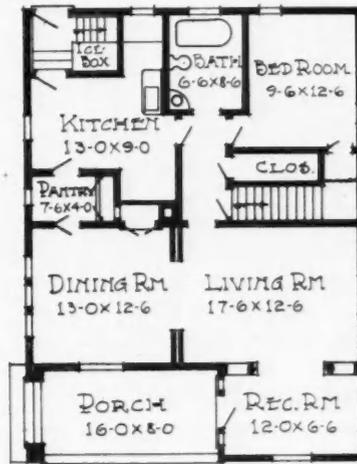
# MODEST AMERICAN HOMES

**C**OZY little cottages and houses still continue to have a strong appeal to the average prospective home builder. We can admire the beauty and grandeur of the fine, large, palatial residences. They are allright for the wealthy and make fine contracts to work on. However, the average man can't enthuse very much over them; they are too far out of reach. It is the little cottage of five or six rooms that is to be built from hard-earned savings, or is a first venture in home-making, that really comes down within the plane of personal interest for most of us.

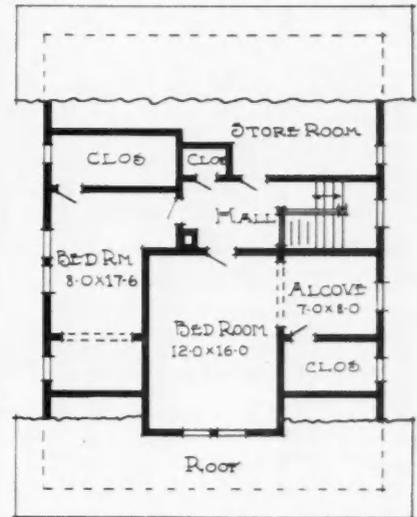
The little houses illustrated on this and the two pages following were built by readers of the AMERICAN CARPENTER AND BUILDER. All of them are located in the west, the first at Billings, Mont. This is a story and a half cottage, 30 by 40 feet in size; has living room, dining room, kitchen, downstairs bedroom and bath on the first floor,

and two nice bedrooms besides a store room and closet space on the second floor. The arrangement of reception room and living room is worthy of special notice.

The second cottage is somewhat similar in general appearance, but giving a different arrangement of



First Floor



Second Floor



Builder O. C. Houchin and His New House at Billings, Mont.

**Up-to-Date Farm House**

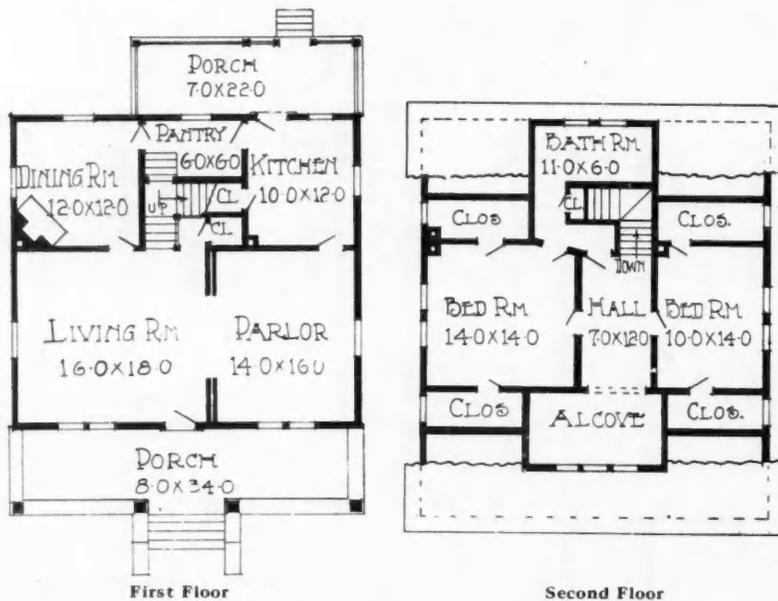
The third design is described by the owner, who signs herself "a farmer's wife and a builder's daughter," as follows:

This is a photograph of what we are pleased to call an up-to-date farm house. There is neither a reception hall nor parlor, but there is ample room for the family of five, with room also for hired help, or the occasional guest. The house faces the public highway on the south, but the entrance is on the east from the private driveway.

Mr. Thomas J. Fowler, Jr., the builder, is an old country workman who understands the art of building almost perfectly, the construction throughout being very substantial. The house is heated with hot air and lighted with acetylene. Water has not yet been piped, but will be soon.

The large living room and the large kitchen are just the same size and are most convenient on a farm where the farmer's wife and daughters do the work. A large entry where the men come in and wash and clean up is so indispensable where the men are out in all weather and in all kinds of work that no farmhouse should be without one.

There is no gingerbread nor fancy millwork on this house to deteriorate or grow out of date



First Floor

Second Floor

rooms inside. This house was built at Thomas, Okla., and cost \$2500. It is 34 feet wide and 38 feet deep; has four rooms on the first floor and three bedrooms with bath on the second floor; that is, counting the large alcove off the hall as a possible bedroom.

In this design the front porch reaches clear across the front, while in the cottage just described half of the porch is walled in and makes the reception room.

The wide extending bungalow cornices are used on both, two different kinds of cornice brackets being used.



Seven Room House Built for Dr. T. A. Jones, Thomas, Okla., by J. F. Gutte for \$2,500

**Sugi Cypress**

**New Process for Treating Cypress by Which Novel Art Effects Are Secured**

Sugi manifestly comes from the Japanese. The Sugi process of treating cypress is an imitation of the driftwood Japanese effect. The process brings

face will cause the wood to slightly warp. However, the wood immediately readjusts itself and entirely straightens out within twenty-four hours, as it will absorb the moisture back from the atmosphere.

The torch flame is passed slowly over the finished surface of the cypress plank. Separate, flat-sawed



A Model Farm House, the Home of Edward F. Hancock, Fairfield, Nebr., Built by Thos. J. Fowler, Jr.

out the beautiful grain of cypress in the shape of shimmering fronds, masses of curly fern, the delicate tracery of sea shell, and many other fantastic and fascinating designs.

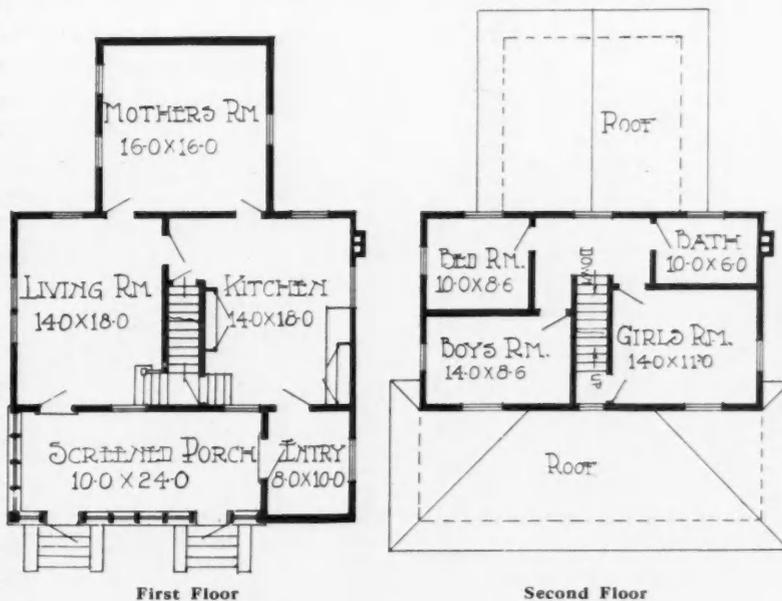
Cypress, being without pitch, is the only wood that will work satisfactorily under the Sugi process. Cypress combines the characteristics of both a summer and winter wood, and in the Sugi process supreme heat scorches out the summer wood, leaving the winter.

Up to quite recently, a certain shop craftsman at Minneapolis, by name of Bradstreet, had been turning out Sugi Cypress and attaching considerable mystery to the process. Secretary Watson, of the Southern Cypress Manufacturers' Asso., who is so imbued with cypress that he dreams of the wood, fell to experimenting during off hours; and now Watson has produced precisely the same effect that Bradstreet created.

And it is no secret. The process is at your hand, provided you have cypress with which to work. An ordinary gasoline torch, such as plumbers use, and a stiff wire brush are the only tools required.

The work must be done on the cypress wood before it is put in place, otherwise the supreme heat on one

stuff will be used rather than the edged grain. With the wire brush the surface is stroked gently to remove all particles and dross, and then is applied a very little floor wax. Care must be taken in applying the wax. Do not use it as a filler, but merely to polish



off the raised surfaces. Then the plank is finished. No paint, varnish, or oil is required. The wood is ready to be worked up into fine paneling for interior decorating of libraries, dining-rooms and halls.



## Use and Care of the Scroll Band-Saw

THE SECOND OF A SERIES OF PRACTICAL ARTICLES ON THE USE AND CARE OF VARIOUS WOODWORKING MACHINERY AND EQUIPMENT

By Chas. Cloukey

WHEN getting ready to braze a broken band saw, it is a good plan to measure the length of the blade before brazing the ends together, for it is a fact that sometimes a small piece of the saw will be broken off and lost when the saw flies off the wheels, it is rather disappointing to go through the routine of brazing only to find that the saw will not go on the wheels when they are clear together.

After the saw has been put in condition as regards straightness, length and kinks, the next thing is to file

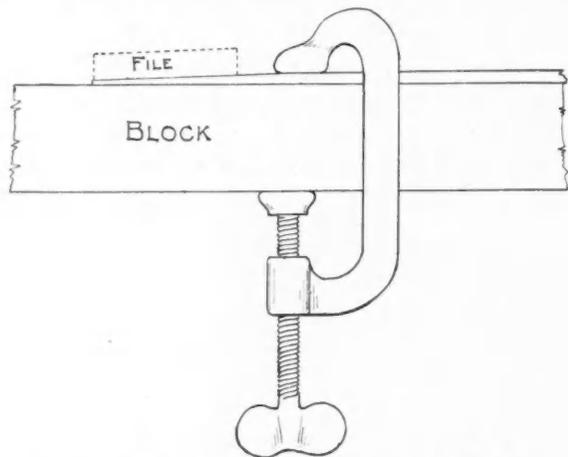


Fig. 3. Block of Wood Clamped to End of Broken Saw

the laps for the braze. Some men grind them on the emery wheel and some others have a regular lap-grinder but as intimated before, this article is mostly for those who have to work out their own problems without the aid of filing room machines. Fig. 3 illustrates a narrow block of wood about an inch or so square, which may be put in a vise and the end of the saw to be filed fastened to it temporarily by means of a little thumb clamp.

Fig. 4 gives two views of the lap which in small saws should be about the length of the space of two teeth. When the teeth are more than  $\frac{5}{8}$  inch pitch the lap should be less, or in other words,  $\frac{3}{4}$  of an inch lap is plenty long for any blade on a scroll machine. In the lower part of the figure is shown the lap filed

and ready for the solder, and the thin ends are not filed clear down to a feather but some little thickness left to dress off after the braze is made.

When the saw to be brazed has a good deal of set it is better to take the set out of the teeth included in the lap as it will be much easier to get a lap that will lie flat and clamp well between the tongs. It is important to have the filed surface of the lap quite level and flat so that the distribution of solder will be even throughout. A small flat file is the best for filing laps as it is easier to carry level than the three cornered tool. In matching teeth for the braze it is just as well to see that the set of the teeth is unbroken in sequence, especially if the saw has been set with a machine, and as shown in Fig. 4, it is best to let the front end of the lap come a little short of the end of the tooth which is thus not divided where the lap is the weakest.

No attempt at brazing should be made without a good clamp to hold the ends of the saw in proper lap, and as these are quite inexpensive it does not pay to try to rig one up at home. The other necessity is some good silver solder. Some men braze with sheet brass but an ounce of sheet solder will braze all the saws in an average mill for a number of years, and one cannot afford to be without it. A little muriatic acid and a little borax will complete the list outside of the tongs and some way to heat them. As nearly every

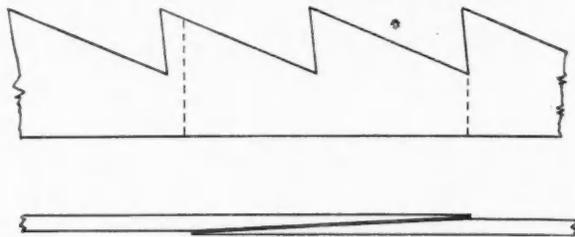


Fig. 4. Two Views of Lap for Brazing

mill has a portable forge the trick may be neatly turned at home, but if such a convenience is not available, one can fit his saws ready for the tongs and take them to some blacksmith shop. The tongs should be rather heavy for their size and about an inch in width.

The jaws should close parallel at about  $1/20$  of an inch or a little less, so that it will grasp the whole lap and pinch down on it all at once. The jaws should be at least half an inch the other way, and at least  $1\frac{1}{2}$  inches long unless there are wider saws to be brazed, in which case the tongs should be long enough to reach across.

When things are ready, the saw should be placed in the clamps with the back in line and the teeth matching. Sift on a little borax and work it into the lap to act as a flux in fusing the two metals. Cut a piece of solder a little larger than necessary to cover the lap and after dabbing a little acid on each side of it, slip it between the ends of the blade, in the lap.

Now turn your attention to heating the tongs and when they are a bright red, quickly and neatly grasp the lap and hold it until the braze becomes as hot as the tongs themselves. When withdrawing the tongs, care should be taken not to pull the lap loose, and indeed it is a good practice to hold the lap until the tongs begin to cool enough to let the metal harden somewhat.

A good braze is the result of a chemical compound composed of the steel and the silver solder and is as strong as any part of the saw as regards breaking through the braze. Sometimes when the tongs have not been heated sufficiently a lap is soldered instead of being brazed, and may look very nice, but will not stand the strain of work. If the tongs are too hot, a burnt saw will be the result and the injured parts will have to be cut off and another lap filed as before.

If the braze looks good and will stand the test of short bending, it should be taken back to the little block mentioned before and the lap filed down to the same thickness as the balance of the saw. This last is of considerable importance for a thick braze will not only pound the guides and make ridges and hollows in the work, but will sooner or later break the saw. Some sawyers file their laps just enough to brighten them before brazing, and then braze and file to thickness afterwards.

Narrow saws may be brazed by heating the laps with a blow-torch, but those of half an inch and more in width are so hard to heat with the torch that unless one has a furnace built to hold the heat, the percentage of misses is too high. When heating with the torch it is necessary to have a pair of flat jawed pliers, wide enough to cover the lap, and when the saw is heated to the brazing point, grasp it with the pliers and hold it until it cools.

After the lap has been filed to an even thickness and tested by a pair of calipers to make sure, the saw should be put in the filing vise and the teeth at the lap fitted. That is, they should be set and filed to shape, after which the saw is to be cared for as though it had never been broken.

One of the frequent causes of scroll saw disaster is lack of set in the teeth. Setting band saws is one

of the chores that few men enjoy doing, and even when the plant has a good machine set it is one of the very particular jobs which no one likes. Some men have a difficulty in making the reciprocating sets do good work on old saws, some of the teeth having much set and others being scarcely bent at all, and are at a loss to know the reason, for all their adjusting and re-adjusting do not help the matter. As this type of set does its work by engaging the side of the points and

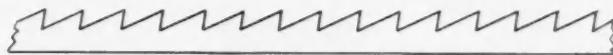


Fig. 5. Teeth Uneven in Length

pushing them so far to each side while the blade is firmly held in a clamp, it naturally follows that the lateral movement right for a long tooth will give less spring to a shorter one, and when a tooth is real short will not bend it at all. Take a saw like the one illustrated in Fig. 5, and it would not be possible to do a satisfactory job of setting with a reciprocating set. In such a case the saw should be put on the wheels and carefully trained to the guides so that the back will run in a true and steady line, and then joint the teeth with a piece of emery wheel until all are even with the shortest. It will now be necessary to file by hand so that all the teeth are brought to points on the

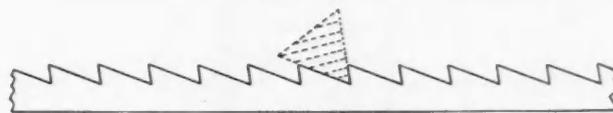


Fig. 6. Long Slanting Teeth for Soft Wood

jointed line so that when done all the teeth will be of the same length from the back of the saw. Now the saw may be put on the automatic setter and afterwards on the machine filer. It is a fact, however, that with a good machine file, the teeth will stay much evenner than when filed by hand.

Fig. 6 shows a blade with an even filing, and the teeth may have more or less slant according to the ideas of the sawyer, or the kind of wood to be sawed, for soft wood will stand a longer tooth than the harder varieties.

Fig. 7 shows the method of changing from a shallow tooth to a deeper one, by a succession of cuts, the



Fig. 7. Changing From Shallow to Deep Tooth

first one at the gullet of the tooth and the second taking off the hump and finishing against the point of the tooth. This change may be made with the machine filer or by hand, but in case of the hand filing, each individual tooth will have to have the care and inspection of the filer.

You often see men filing by hand as fast as the machine will go, even quite a bit faster, but unless the saws are already in fine shape and not very dull, the job is bound to be inferior, and a long succession

of such filings will produce a saw like the one shown in Fig. 5, besides not being so efficient as when all the teeth are of the same length.

When one is learning to file by hand he should be careful to acquire the habit of carrying his file at right angles to the plane of the saw, or in other words, level, so that his file cut will be square across the tooth. Another difficult thing to learn is to carry the



Fig. 8. Making a Scroll Saw into a Resaw by Filing out Teeth

file with the same slant all the time so as to file clear from the gullet to the point at one stroke of the file, for to make speed in filing by hand, the filer should give but one stroke to each tooth. To aid in sensing the slant for each tooth as he comes to it, the filer can bring his file over the next tooth to be filed as he takes his backward stroke, and touch it just hard enough to let the file lie flat upon the surface to be filed with the forward stroke. This backward touch must be light or the injury to the file will be considerable, and this is not necessary. After one has become expert, this precaution is not necessary if the filer keeps his mind and eyes glued to his work.

If the saws are so dull that they cannot be sharp-

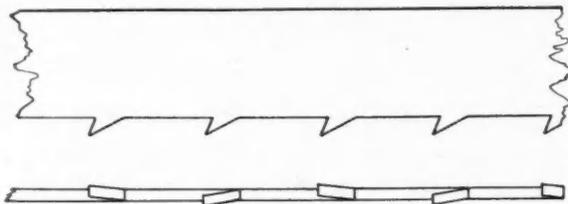


Fig. 9. Good Teeth Spring Set

ened by one stroke of the file, they should be gone over the second time before the file is advanced in the clamp as this will save one half the time of changing the saw which is considerable.

Several instances have come under the observation of the writer where mills have been using scroll machines for resaw work of considerable extent, and for this work have been using saws about an inch wide fitted with  $\frac{3}{8}$ -inch teeth. Now such teeth have little capacity for sawdust and the result was that little cutting was done at the expense of considerable power and a lot of time.

Fig. 8 shows how saws of this kind may be converted into small resaws by grinding out two or three

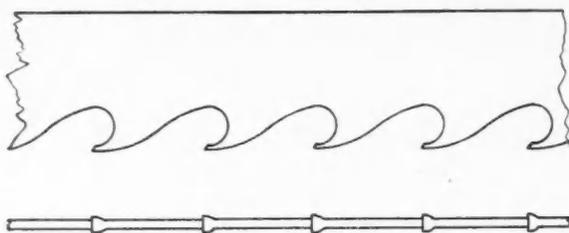


Fig. 10. Swage Set Teeth

teeth in a place and leaving the remainder about 1 or  $1\frac{1}{4}$  inches apart. Two styles of teeth are shown in the converted saw, and as these saws are usually rather thin it is well to make the teeth as shallow as possible and still have a good shape. It is surprising what a difference it makes in the power and capacity of the blade to be altered in this way. I have successfully sawed veneers  $\frac{1}{8}$  thick and 20 inches wide with one of these little fellows, and that without a top guide, as the plank was so wide that the top guide and its shank had to be removed in order to allow the piece to approach the saw.

If spring set is used it is a good plan to keep the teeth pretty close in, and a tooth like that shown in Fig. 9 will stand lots of work.

Fig. 10 shows a gummed tooth and a swage set, and it is a good style where one is prepared to use the swage fitting. I think it is safe to say that most of the mills do not use the swage on such small bands, but it is a mistake to think that because one has a small machine it is an useless expense to equip it properly, for it is frequently much more overworked than the larger resaws.

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### Skyscraper 2,000 Feet High

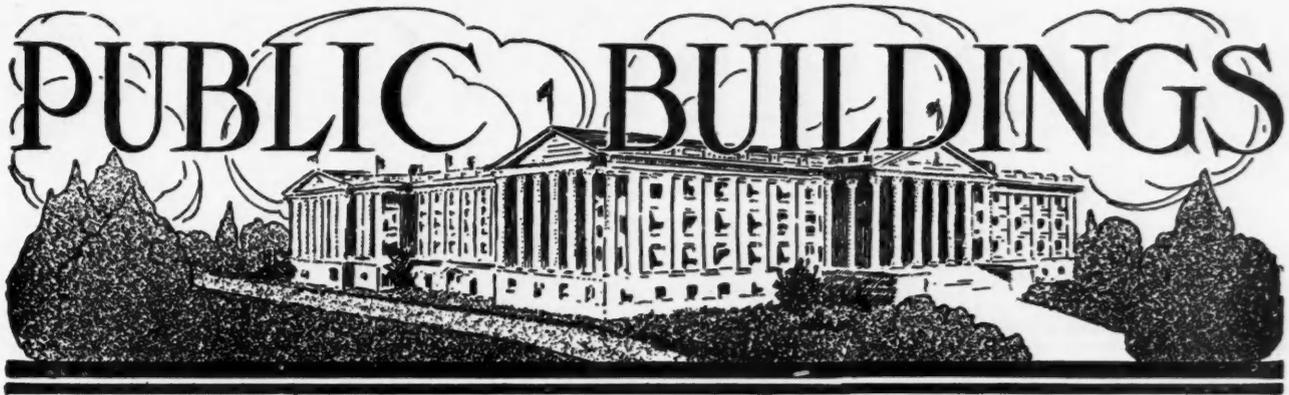
New York, June 10.—An office building 2,000 feet in height may become a reality here in the near future as the result of possibilities revealed by recent investigations. Such a building would be nearly three times the height of what is now the tallest in the world and twice as high as the Eiffel tower, which is merely of skeleton construction.

With the erection of the 700-foot Metropolitan tower it was thought that the limit had been reached under the present building code. But construction has already begun on an office building rising forty-eight feet higher, and the latest investigation shows that the maximum safe height for such buildings at present is 2,000 feet.

Such a building, to conform with the requirements of safety, would only have to have a base 200 feet square to stand on, and now that this fact has been brought to light there is talk of an office structure of 120 stories. While it, of course, would not rise 2,000 feet above the street level, it would double the height of the greatest skyscraper now existing and serve to demonstrate the value of buildings of heights never before attempted.

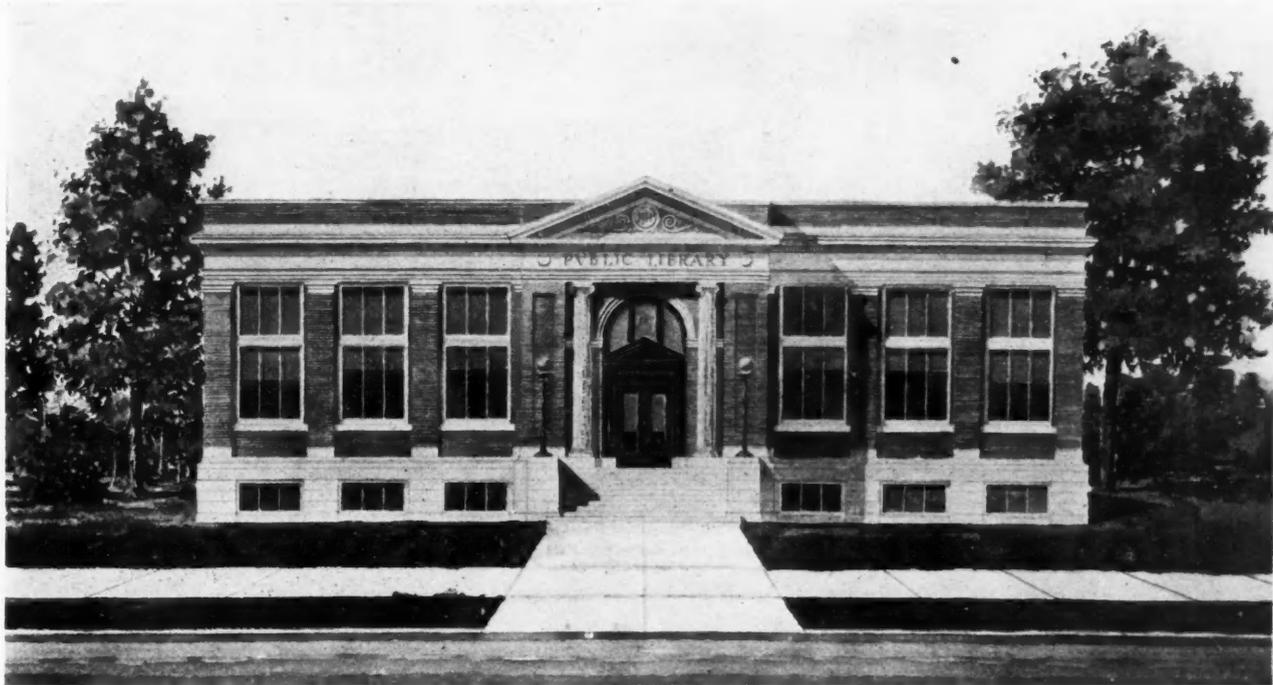
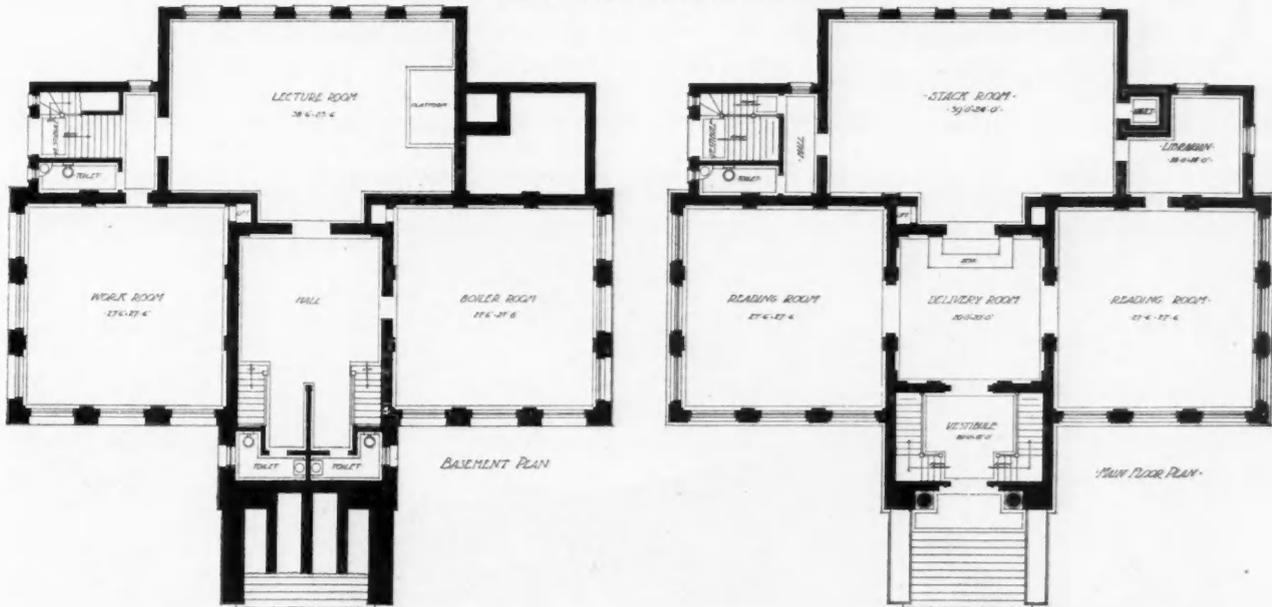
While the increasing value of real estate makes height a prime consideration, the problem of transportation in such a building would be a serious one. The only legal height restriction at present is that no structure shall have a weight of more than fifteen tons to the square foot, and a 2000 foot high, 200 foot square building would come within this limit.

There remains then only the solution of the elevator problem to bring to New York a building nearly half a mile in height and capable of housing 40,000 workers.

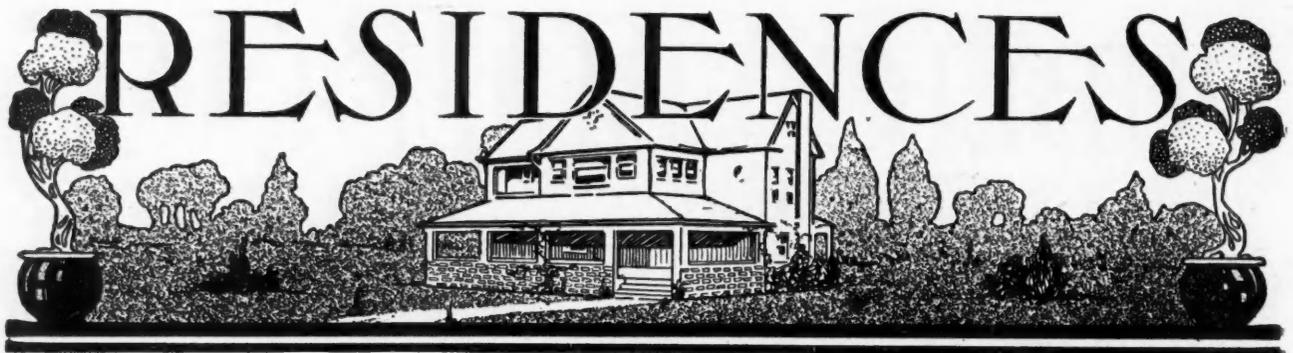


### Design for Public Library

ARCHITECT'S PERSPECTIVE AND FLOOR PLANS OF A CLASSIC ONE STORY LIBRARY BUILDING HAVING LECTURE ROOM IN BASEMENT



Commodious, Well Planned Library Designed by G. W. Ashby, Architect, Chicago



## Plans for Large Modern House

COMPLETE SET OF ARCHITECT'S DRAWINGS FROM WHICH THIS WELL ARRANGED EIGHT ROOM STUCCO AND BRICK VENEER HOUSE CAN BE BUILT

A RESIDENCE a bit unusual in design is shown in perspective on this page. It is in the Elizabethan style, a house of striking appearance. The exterior walls are covered with cement plaster stucco; and heavy exposed timbers support the project-

This use of brick work in connection with cement plaster is very pleasing. The brick is of rough texture face, and is dark reddish brown in color. The brick piers give a substantial appearance to the front of the house that has to support the overhanging



Stucco and Brick Veneer Residence Designed for Walter F. Browning, Glencoe, Ill.

COMPLETE WORKING DRAWINGS FOR THIS HOUSE ARE PRESENTED ON THE 7 PAGES FOLLOWING.

ing gables. At the entrance front the second story projects out over the doorstep and is held up by heavy wood brackets which rest against brick piers. A veneering of brick is used along the front and along the right side of the house from grade up to sills.

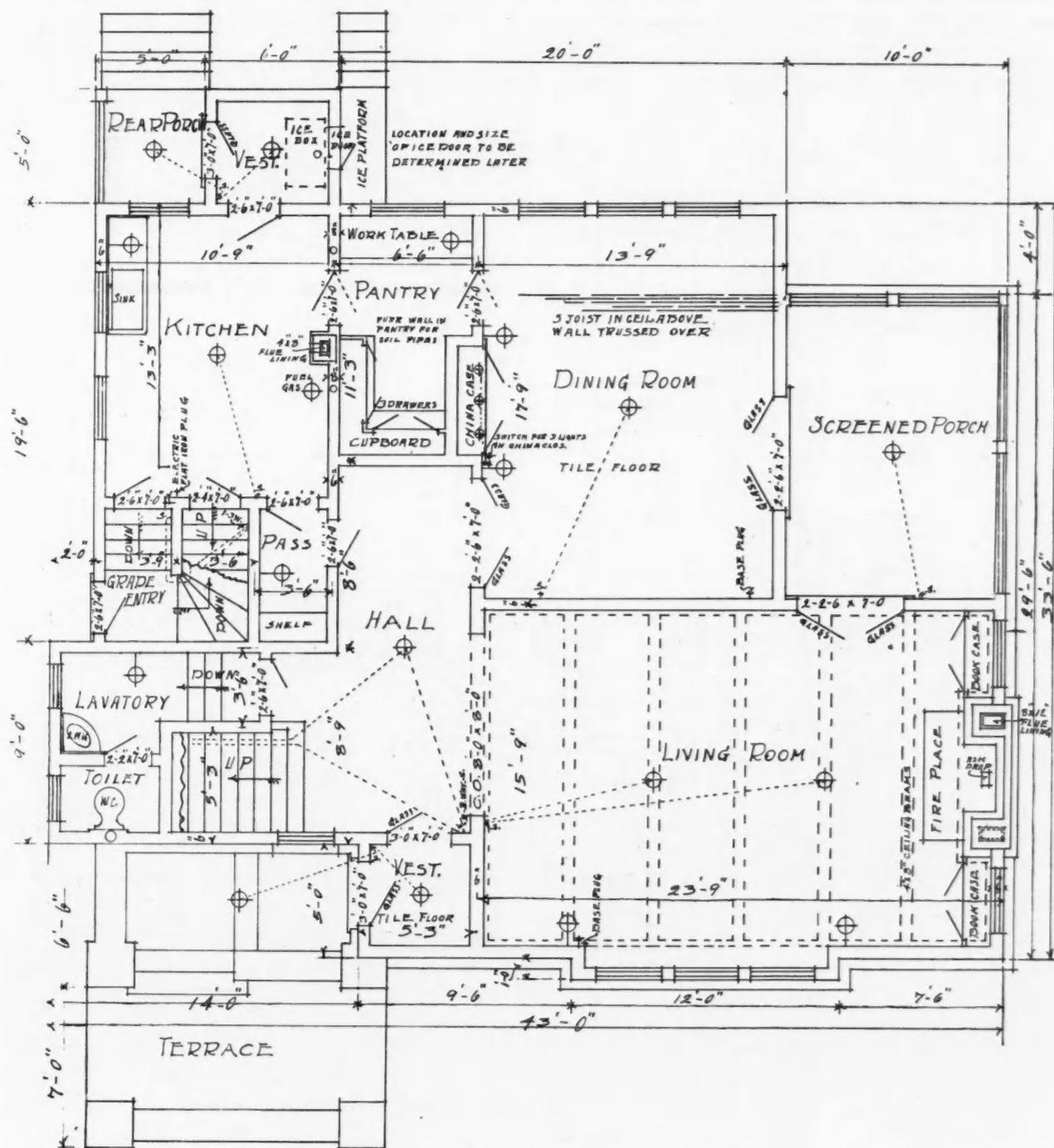
second story. The exposed timber work and the wood paneling in the gable ends and around the windows should be left unplanned and stained to match the brick in color.

The floor plans show this house to contain eight

fine rooms, besides two large outdoor screened rooms. On the first floor are large living room, dining room, kitchen and screened porch beside large reception hall; downstairs lavatory, pantry, ice-box, vestibule, etc. On the second floor are four bedrooms, two of them being very large, sewing room, sleeping porch and

complete for approximately \$7,500, using high grade materials throughout.

The complete set of architect's drawings are reproduced herewith to scale from which this house can be put up. Some good ideas and some decided novelties of arrangement and design are embodied in them.



FIRST FLOOR PLAN  
House Shown on Page 54

two bathrooms. There is provided a very generous supply of clothes closets. On the third floor is a good large space for storage, with the possibility of finishing off some nice rooms there if desired. It is estimated that this house can be built and equipped

**House Conveniences the Women Want**

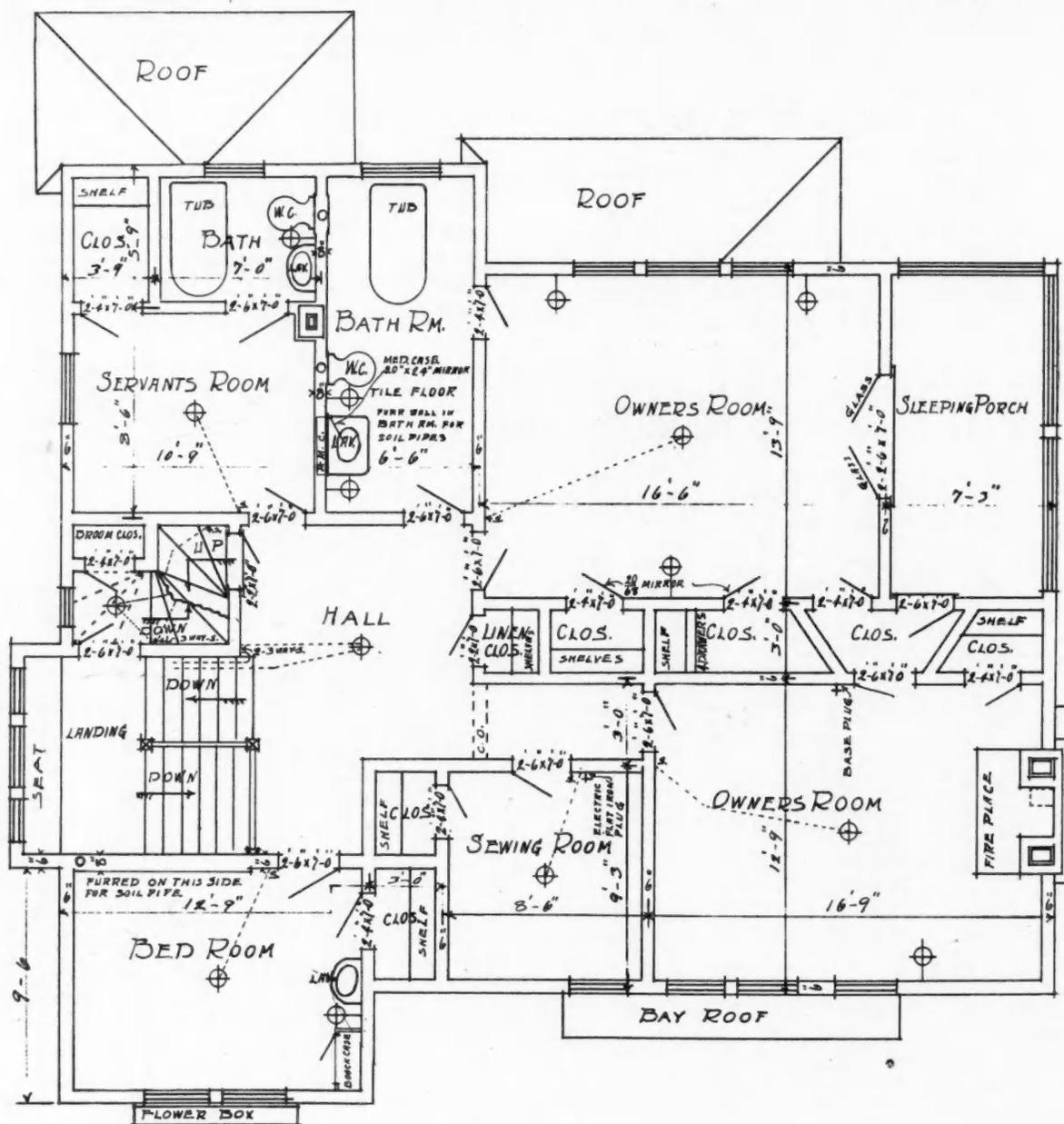
Reference is often made in the press to the number of details in house planning which a woman architect could do better than a man. Among them are the following, which, according to Construction News, are

said to have been suggested by a woman who had been househunting and discerned these objections:

What woman would put in laundry tubs so deep that the luckless worker who is of short or medium stature is in constant danger of pitching forward upon her head, while the tall woman can at least reckon upon a headache or backache as the result of a few hours' work? Or who but a man would make the ledge

stand next to the stove, while the closet is as far away from the self-same stove as it is possible to place it—presumably to give the cook some needed exercise in getting up a meal.

Another idea which would suggest itself to the woman architect is the fact that the toilet room—if there is but one—should be separate from the bathroom as a matter of family convenience. There is no good



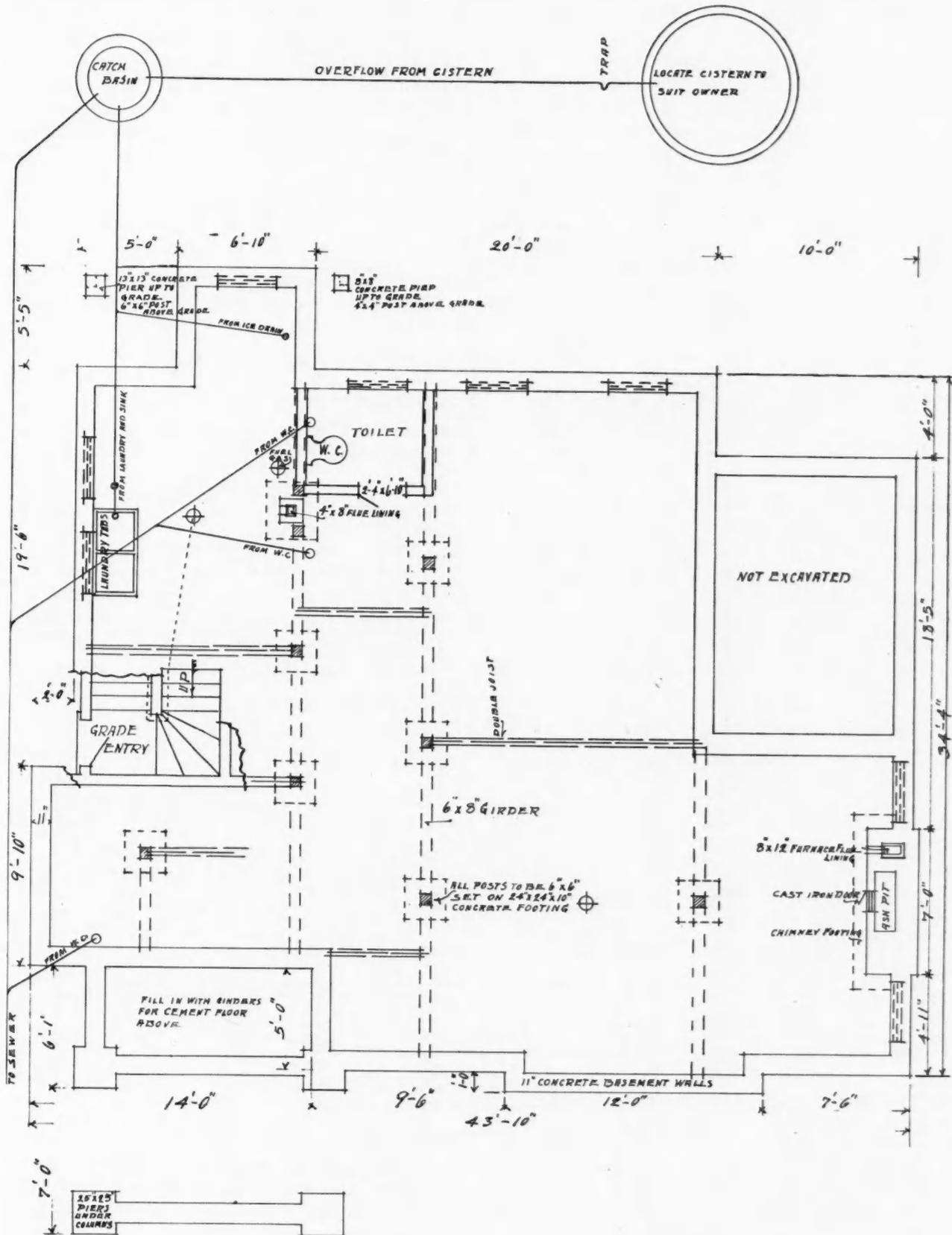
SECOND FLOOR PLAN

House shown on page 54.

between the tubs so wide that no ordinary wringer can be fitted to it? Would any woman dream of jamming a kitchen range so close to the wall on the side where the match has to be applied and the stop cocks regulated that it is only by difficult manoeuvring with the left hand that the range can be managed at all?

Nor is there any plausible reason for so arranging the wall spaces that the refrigerator must perform

reason, either, for setting a bathtub a few inches above the floor, thus leaving a space underneath which is almost inaccessible and yet must be kept clean for sanitary reasons. Then, too, if the demand were insistent enough, manufacturers might see fit to market a wash-stand so made that a woman's hair would not inevitably catch upon the faucets every time she washes her face. An extra toilet or lavatory for the conven-



### BASEMENT AND FOUNDATION PLAN

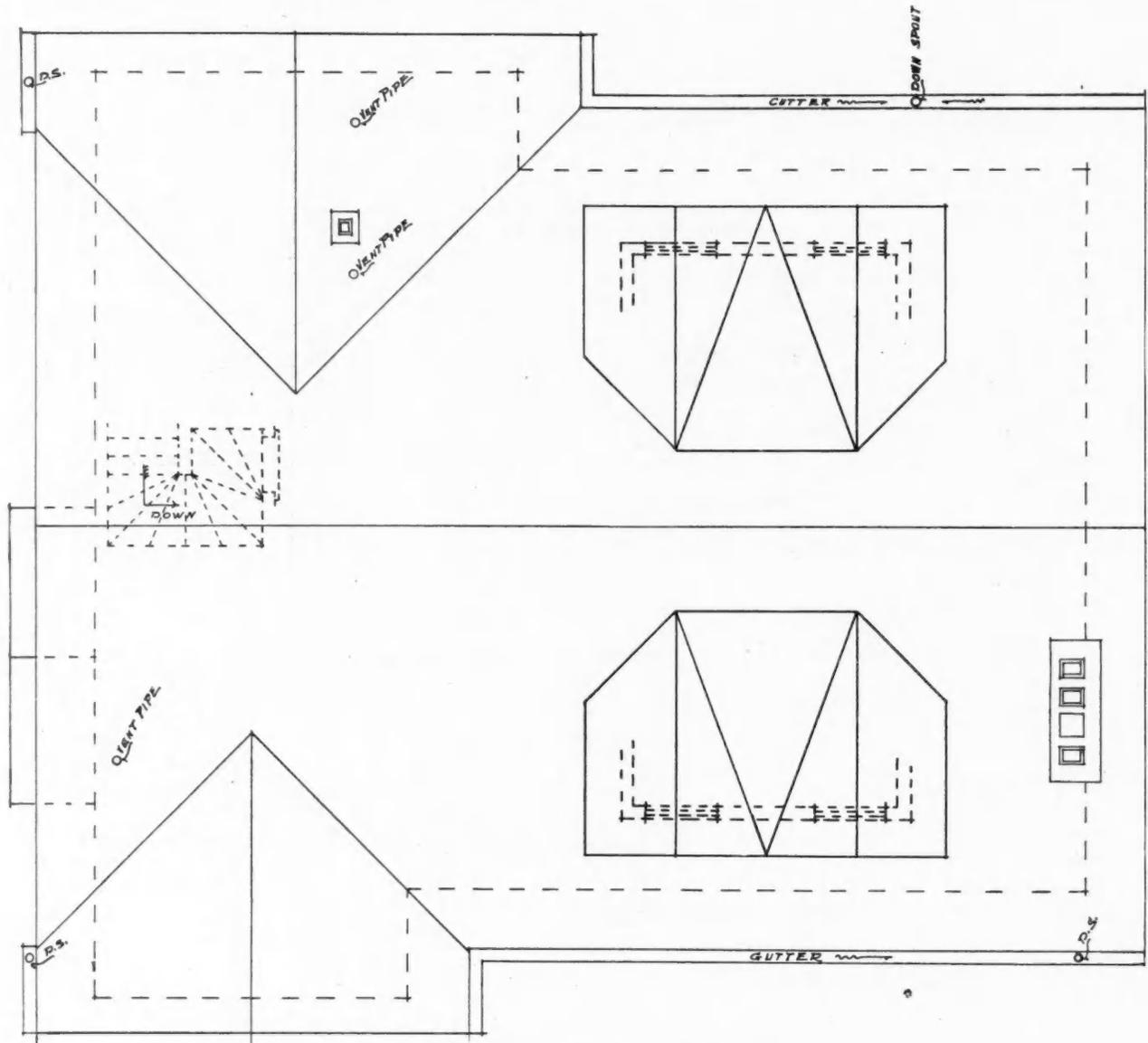
House shown on page 54.

ience of guests and children—built into the first floor where possible—is another comfort the male architect often overlooks even in homes where extra expense is not spared.

A clever woman assisted in planning houses or apartments would see the advantage of plain mouldings and woodwork; oiled kitchen and bathroom floors and walls. Another feature that might be easily introduced in the kitchen, laundry and bathroom floors is a drain, so that they could be flooded with water

these as well as soiled clothes chutes from upper floors, to the laundry, should be installed in every well appointed private house.

Indoor drying rooms for use on snowy or rainy wash days are another convenience that might easily be provided for in the cellar, but are very generally lacking. These are but a few of the things that a woman assistant could keep before the eyes of an architect in the domestic branch of the work. In



### ATTIC AND ROOF PLAN

House Shown on Page 54.

that would run off through connections with pipes.

In the more luxurious homes dish and clothes washers run by electricity would help materially to render the work less disagreeable and so induce the servant problem to settle itself. Fireless cookers, now used by not a few up-to-date housekeepers, might also be built in. Outdoor racks for garbage cans with openings into the kitchen have at last found their way into a few of the better class apartment houses but

buildings that are to be rented it should be made an invariable rule to put in as many permanent features as possible such as towel and soap racks and medicine chests in bathrooms, utensil shelves and hooks in kitchen and pantry etc., as well as curtain hooks and portiere poles, in addition to shades and screens for windows and doors, for where this is not done each succeeding tenant adds his mite to the disfigurement of wall and woodwork.



REAR ELEVATION

**Making Modern Bricks**

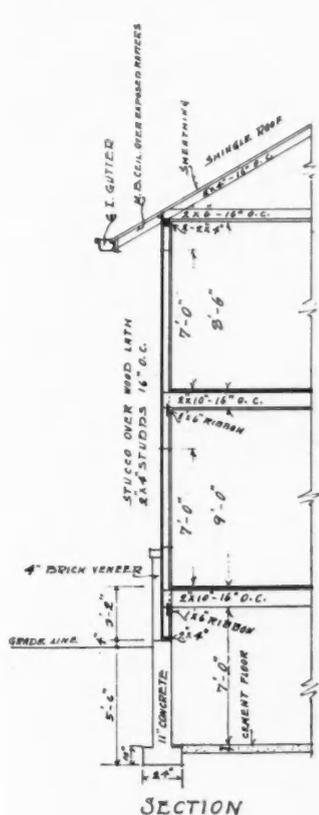
"Bricks are manufactured in an almost endless variety of shapes, sizes and color tints, and are composed of clay, sand-lime, concrete and even glass," remarked a brick manufacturer the other day. "Clay is found in different colors and is treated in various ways to produce the many effects as to color and texture now upon the market.

"The skillful mixture of different clays and various methods of burning produce surprising results.

"The dry pressed brick is made from carefully prepared clay pressed with a minimum amount of water.

"The sand mould brick is pressed in mud form into sanded moulds, hence its name.

"The wire cut brick in either smooth or rough surface is what is commonly known as mud brick, a great-



SECTION



FRONT ELEVATION

House Shown on Page 54.

er amount of water being used in its manufacture and where special roughness is desired the lumps are allowed to persist, thus making more resistance to the wire while in the plastic state, producing the extra rough surface.

“Another surface is made by water dropped upon

ation of burning is entirely completed. Several bricks are allowed to fuse and the resulting fracture or rock-face, as it may be termed, is very pleasing, especially for work close to the eye.

“Rough effects in brick work have a great vogue to-day and the house built of it will have a wealth of



RIGHT SIDE ELEVATION

the brick giving it a beautiful texture. Repressed brick are again placed in the mould and pressure applied after cutting. This is often done to the vitrified paving brick which in skillful hands has found a place in certain positions, even for residence architecture.

“A very effective brick face is produced by a fracture of the face lines by great pressure after the oper-

ation of burning is entirely completed. Several bricks are allowed to fuse and the resulting fracture or rock-face, as it may be termed, is very pleasing, especially for work close to the eye.

“Rough effects in brick work have a great vogue to-day and the house built of it will have a wealth of

✦  
**Bracket Brace for a Sagging Door**

Screen doors sagging on the opening side which causes them to rub on the floor as they are opened and



LEFT SIDE ELEVATION

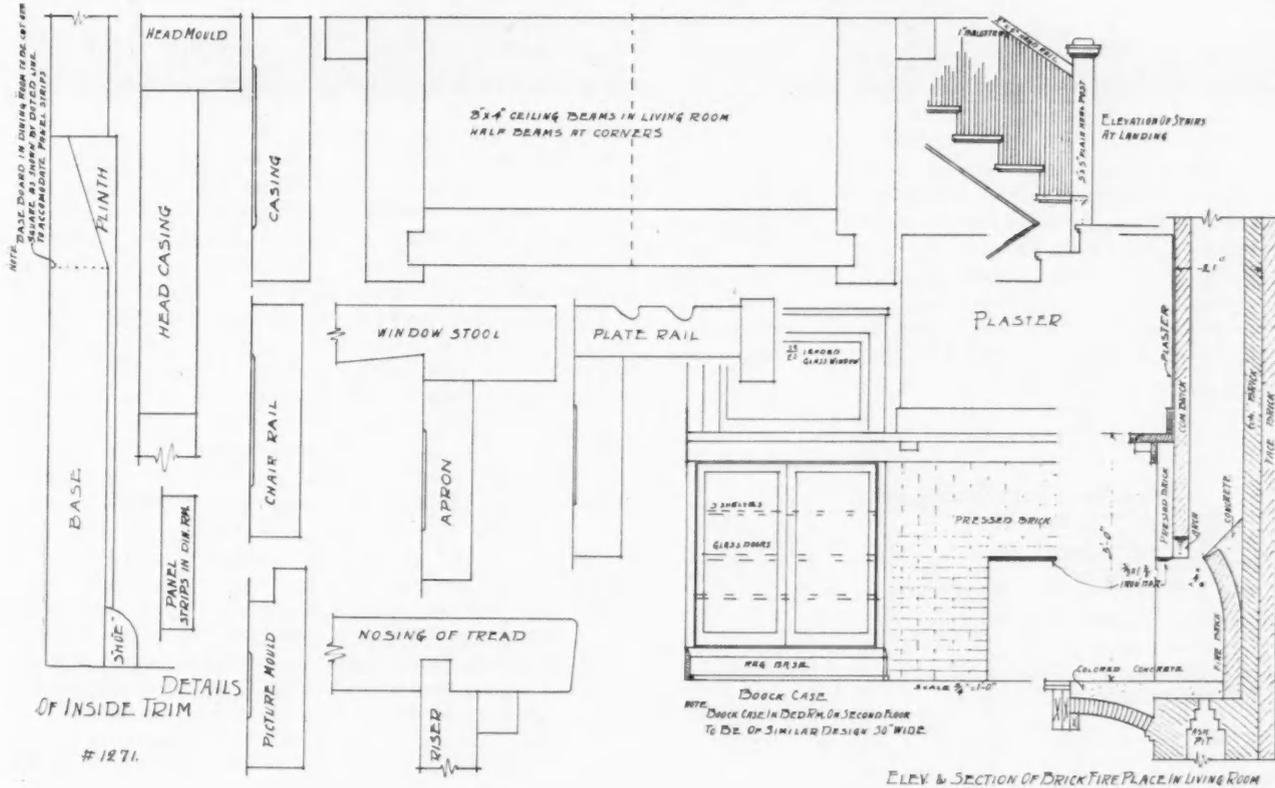
House shown on page 54.

shut may be repaired in the following manner: On the opposite side from the hinge and in the lower corner of the frame, place a small ornamental bracket which will not mar the appearance of the door and yet make it perfectly rigid. Before placing the bracket drive a small wedge under the door to hold it in the correct position.

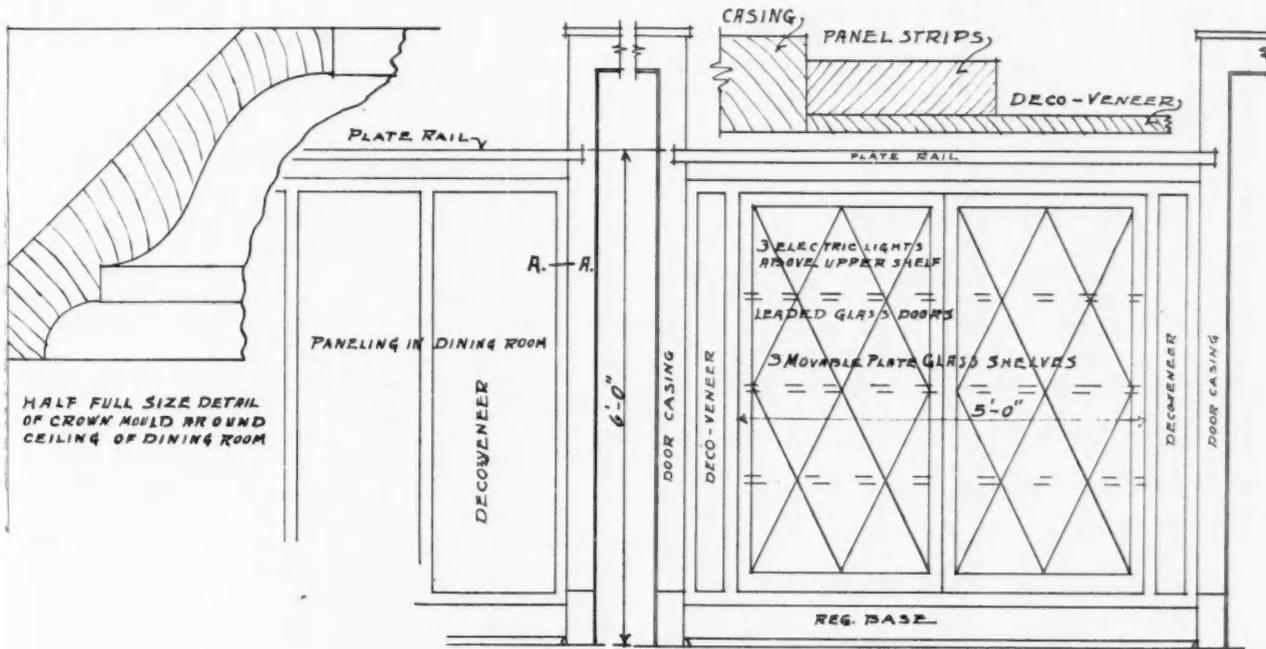
**Not His Fault**

"Oratory is a gift, not an acquirement," said the proud politician, as he sat down after an hour's harangue.

"I understand," said the matter-of-fact chairman. "We're not blamin' you. You done the best you could."—*Detroit Evening Press.*



SECTION AT A-A.



ELEVATION OF CHINA CASE AND WALL PANELING IN DINING RM

**DETAILS OF INTERIOR FINISH**

House Shown on Page 54



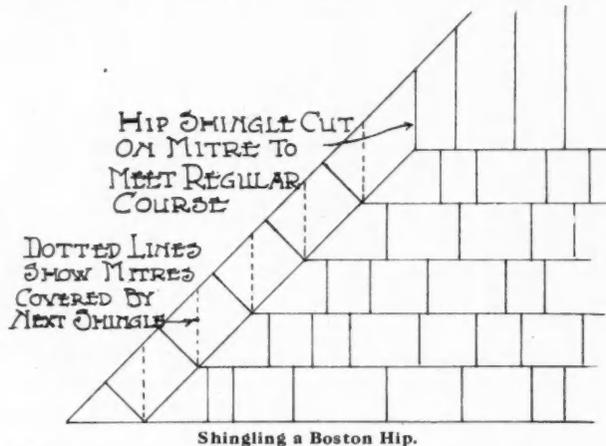
### The Boston Hip

To the Editor: Barre, Vt.

In a recent number of your valuable publication I notice a description of the so called "Boston hip" on shingled roofs to which I take exception.

In New England the "Boston hip" is not shingled *over* the other courses but *into* them and is considered the best looking and most durable way to finish a shingled hip.

The rough drawing I enclose may make the matter clear.



In laying the best practice is to stop regular courses when tip of shingles in each course reaches ridge of hip. Then snap lines each side after rest of roof is completed; and these snap lines will serve to guide straight edge used in marking new shingles laid to complete the courses.

W. H. MESSER.

### He Takes Exception

To the Editor: Donaldsonville, La.

I notice your explanation of the Boston hip in the May number of the AMERICAN CARPENTER AND BUILDER. Pardon me, but it is not correct. To make the real Boston hip the hip shingles have to be put on with the other shingles. The top end of the hip shingle being cut off and fitted against the adjoining shingle. I have been using the method for a good while and find it makes a neater job than the way you explain it.

The AMERICAN CARPENTER & BUILDER has been a school for me.

W. C. HAZLIP.

### Sore on the "Little Fellows"

To the Editor: Ogden, Utah.

Enclosed find P. O. order for your valuable journal and if you see fit you may publish my letter. I would not have been so slow with my subscription but for the reason that I am thoroughly disgusted with trade conditions. No thinking person can deny that a carpenter is, or ought to be, one of the highest skilled mechanics and whose

pay, or earnings, ought to average favorably with that of any other trade or profession, yet he is found to be one of the poorest paid, owing to several conditions, the worst of which is a ruinous and dirty competition brought on partly by himself, partly by the small cheap contractor who often is no mechanic at all, and partly by the dear public who does not know and does not want good work. There are in nearly every issue of the AMERICAN CARPENTER AND BUILDER, questions asked by "contractors" and others, involving arithmetic, the rudiments of geometry, construction, etc., some of which a 10 year old child can answer, others which an apprentice in his second or third year could easily solve.

That class of men lower the standard of work, price and wages, and as a result even good mechanics do not earn as much as a good sheepherder, whose wages are \$50 or \$60 and keep per month. Now are they respected or self-respecting? Just look at the man in one of the recent issues, who with his little boy built fifteen or twenty houses, etc. Does he look as prosperous or self-respecting as he ought to be in proportion to his accomplishments? He is working for the glory of it.

How much above his brother the ox is the person intellectually, who works hard all his life and has then at best a little 2x4 cottage and a lot to show for his and his family's work? Would you not do the trade, the craft and the public a service by refusing to answer such questions as mentioned above, by telling such persons to go learn "the trade" if they wanted to work and wanted to make an honest living by it.

FRANK STRUPPECK.

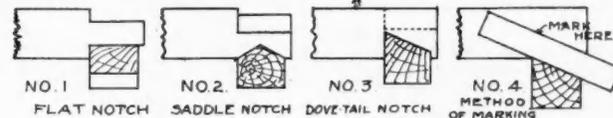
### How to Build a Log House

To the Editor: Erastus, Ohio.

In the copy of your paper for July I see an inquiry by J. M. F. how to build a log cabin.

Here in western Ohio where I was born and have always lived we used to have nothing else but log houses to live in. When a boy I helped to raise some of them.

I remember one built on the adjoining farm to my father's, which I think must have been at least thirty feet wide and fifty feet long. It was the finest log house I ever saw, be-



Joints used in Log House Construction.

ing three stories and an attic in height and having a veranda extending along one side. The logs were hewed on two sides and many of them had a face on the outside two feet wide. The logs were mostly black walnut, gray and blue ash; and the house was covered with blue ash shingles.

This house was built about the year of 1840 by a German named John Kintz. It stood on the east bank of Toti (pronounced Tot-eye) creek, about six miles northeast of the place where the army led by General Arthur St. Clair was destroyed by the Indians under Tecumseh and Little Turtle

November 4th, 1791; now known as Fort Recovery, Ohio.

In building these cabins three kind of corners were used. On some small buildings the one called the flat notch was used as shown in No. 1. On many the saddle notch, as shown in No. 2, was used; but on the better class of buildings what was called the dovetail notch was used, as shown in No. 3. In erecting the log is laid on the building; one man at each end chips a shallow notch in the ends; if the logs are large each corner man has a helper. The log is then placed on the building where it belongs and blocked up so that the outer side or face stands perpendicular. Each man then takes what they called a scribe, a bit of one inch board about eighteen inches long and 2½ or 3 inches wide, which is used to scribe the log on both inside and outside of the log to make the corners fit and to take the wind out of the log as shown in No. 4.

The log is then turned down flat and they each chop the upper side to the scribe mark. Then they roll the log over and chop the other side.

If one corner gets higher than the other or the crack is wider at one end than the other the man at that corner cuts his notch deeper by using his scribe the wide way while his partner uses his scribe the narrow way. The one great object was to keep the corners level and the cracks even and not too wide.

S. J. CARMACK.

would be at 45 degrees with the cornice line; but what would the run of the hip be for the same roof with a ridge 15 feet long and could I find the side cut of the jack as shown, by the diagram in the May number?  
P. MAXWELL.

Answer: Yes, the method illustrated applies to equal and unequal pitches alike. The accompanying diagram illustrates the examples in question.

Figure 1 shows the regular, even pitched roof, while figure 2 shows the irregular, or uneven pitched roof. In the former the length of ridge is governed by the difference in the length and width of the building, which in this case is 10 feet, and since the pitch of the roof is the same on either side of the hip, its run naturally must rest at 45 degrees. On the other hand, if the ridge is lengthened or shortened from what it naturally would be with the even pitch, then the pitch on the end and side of the building must be different, and consequently the run of the hip cannot rest at 45 degrees, as shown in the illustration. It is not essential that the exact angle in degrees be known, because that does not necessarily enter into the framing of the roof. The angle is found as follows:

The building being 30 feet long and the ridge 15 feet, there is a difference of 15 feet, which, divided by 2, leaves 7½ feet at each end. Then the run of the hip must be as the diagonal of 7½ and 10.  
A. W. WOODS.

**Hip Roof with Uneven Pitches**

To the Editor: Mindocino, Cal.

I have read with pleasure the steel square article in the May number and I would like to know if a similar diagram can be drawn, or would it be proper, to frame a hip roof as follows:

Building to be 20 by 30 feet, with a ridge 15 feet in length. According to the size of the building the ridge should properly be 10 feet in length and the run of the hip on the plan

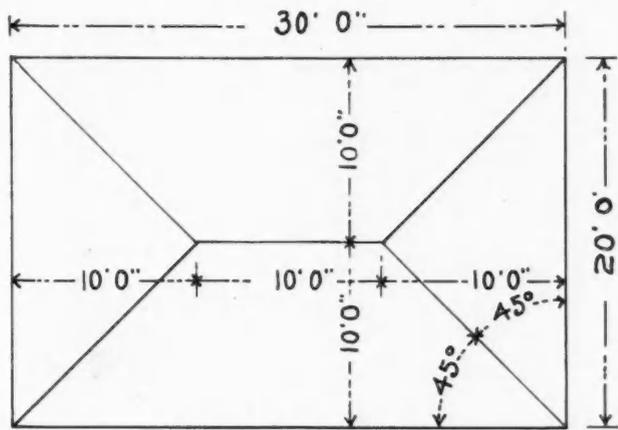


FIG. 1.

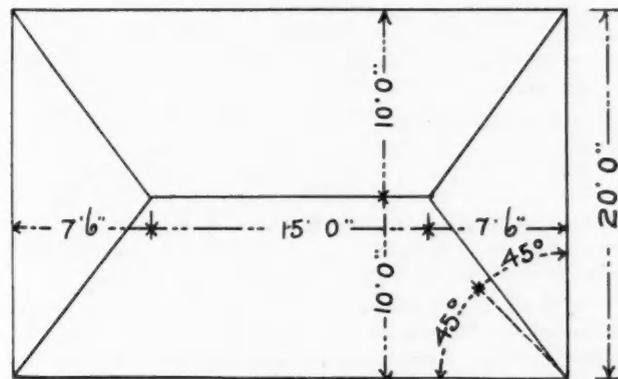


FIG. 2.

**A Cryptic Answer**

To the Editor: Watertown, N. Y.

In the June number of the magazine one correspondent asked which was the proper way to hang a screen door—screen in or out. Also which was the correct way to swing a transom sash—putty side in or out.

I will answer No. 1 by asking him a question. If you had an outside sash door to hang, moulded on one side, which side would you put out? As to No. 2, I will ask him what the putty is put on a sash for? To keep the water in or out?  
J. M. KANE.

**To Care for and True an Emery Wheel**

To the Editor: Buncombe, Ill.

Having had some experience with tool grinding I will offer a suggestion in answer to Bro. James S. Robins' query as "How to true up an emery wheel." Knowing how to keep a wheel true is one of the great essentials.

To do this the operator must see that the stand is mounted firmly, so there isn't the least vibration in the floor, bench or frame work on which the stand is mounted.

Secondly: Keep all bearings in proper shape. There must be tight, snug fits around spindle, or your wheel will play and soon become "untrue."

Thirdly: While using wheel the tool being ground must be held firmly to the wheel and not allowed to jump and bounce. This will ruin a wheel the quickest.

Now as to truing the wheel after it has been abused: First see that your boxings or bearings are in perfect condition and that there is no vibration anywhere.

Having done this provide yourself with some old castings that have straight faces. Now speed your wheel, holding one of the castings firmly on the tool rest so as to touch the high place on the wheel. Do not hold casting too long in one place but shift as often as necessary.

By following this process up, touching only the high places, you will soon be able to see your wheel perfectly true. A common grindstone may be made true in the same way.

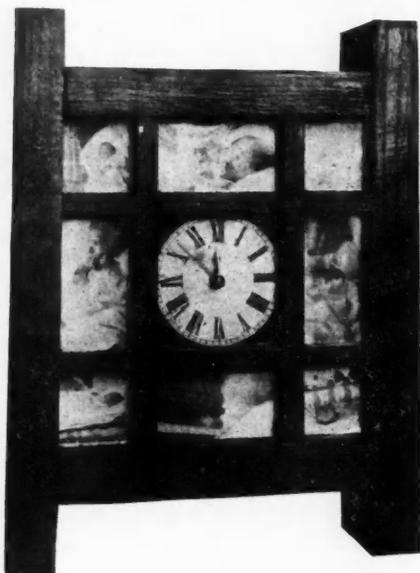
I must say in conclusion that the AMERICAN CARPENTER AND BUILDER is a great journal.  
CHAS. F. MOZLEY.

### Unusual Home-Made Clock

To the Editor:

St. Louis, Mo.

This little home-made mission clock, with photographs of the baby arranged around the dial has caused many exclamations of wonder and envy. There are clocks of a thousand different kinds, but real individuality in clocks is so hard to obtain that it seems worth while to go to a little extra trouble. It is very easy to make a mission clock and it is but a step further



The Clock and the Baby

to add individuality. Here is how this unusual clock was made:

I obtained four pieces of quarter-sawn oak, 1 by 2 inches, two of them  $9\frac{1}{4}$  inches long and the other two  $5\frac{1}{4}$  inches. The two long pieces were used for the sides and the short ones for the cross pieces; and the four were fastened together with ordinary nails. The cross pieces, as shown in the drawing and photograph, were set one inch up from the bottom and down from the top, producing a square space for the dial, but getting away from the square shape in the clock.

To keep out dust and to have a covering for the photos it was necessary to put a sheet of glass in the front. This was accomplished by cutting a channel into the inner edge of the pieces before they were nailed together, into which the glass fitted on its four edges. The channel was started with the saw, held along a straight piece of wood, and then deepened and widened with sharp cornered glass used like a plane. The channel, one-fourth inch from the edge, runs the full length of the two short pieces and to one and one-half inches from the end of the long pieces.

Oak is very hard and nails are apt to split the pieces, so I drilled one-eighth inch holes for the nails in the side pieces. Three of the pieces, one side and the top and bottom, were fastened together before the glass was put in. A hole having been bored through the center of the glass, to fit the stem of the clock (it is easy to bore through glass if a sharp pointed file is used as a drill and is moistened in a mixture of spirits of camphor and turpentine). The glass is fitted into the groove in the three pieces and the fourth piece nailed into position. It was necessary to be careful about the fit of the glass else it would have broken when the piece was nailed on.

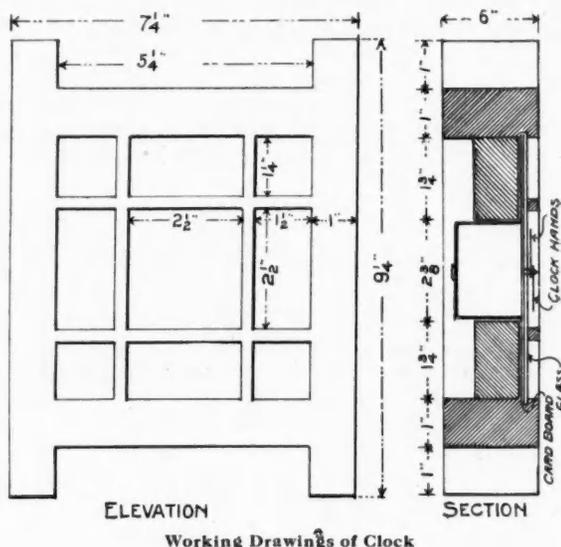
Four small pieces, one-fourth inch square and  $5\frac{1}{4}$  inches long were cut and planed for the inner frame in front of the glass. When placed in position as shown in the photograph and drawing, the inner frame cut up the front into five perfect squares and four oblong spaces. Each corner has a square  $1\frac{1}{4}$  inches, and the center space for the dial is  $2\frac{1}{2}$  inches.

The other spaces could be cut again if desired, making more tiny frames for photos, but I left them  $1\frac{1}{4}$  by  $2\frac{1}{2}$  inches, and used four long and four square photos. The slats were fastened with glue.

The dial was made by pinning a piece of thin, strong, white paper over a dial of the right size ( $2\frac{1}{4}$  inches) in a clock catalogue and tracing the Roman numerals with black ink. The ink should be as black as possible, drawing ink being best. The paper might have been stretched over the original dial, if no catalogue had been available. The paper was trimmed so that the edges would be hidden behind the pieces forming the little frame, and the edges around the dial were blackened to make the white stand out in relief.

Eight kodak views of the baby in different poses and representing different ages, were trimmed to fit the eight spaces around the dial. One edge was pushed into the groove behind the glass and the other edges of each print were hidden behind the frame pieces. A drop of glue on the back of each print and of the dial held all firmly to a thin sheet of paper laid over them after they were put into position. To hold the paper flat and prevent wrinkles in the photos, a heavy piece of cardboard, with the center cut out so as not to thicken the space between the clock and the glass (the stem would not go through the cardboard and glass both) was placed in the frame.

This completed the frame for the clock. A small eight-day bureau, or desk clock, with a 2-inch dial was chosen as the timepiece. It was taken out of the case and the dial and its supports removed to lengthen the hand post. Then the case was cut off at the front with a file so that the works would come against the back of the paper dial. This allowed the stem, or hand post, to extend through the hole in the glass and



Working Drawings of Clock

project about one-eighth of an inch beyond, plenty of room for the hands.

The clock was fastened in position by cutting a "V" shaped notch into two 1 by 2 by  $5\frac{1}{4}$  inch pieces, to fit the case. The blocks were dropped into the back of the frame, and tightened against the case of the clock by driving a few little wedges between the blocks and the outer frame. Care had to be taken not to get the blocks too tight, for the case would then have been crushed and the clock bound so it could not run.

The wood frame and cross pieces were stained a bog, or mission oak. The photograph shows what the finished clock looks like. The minute hand was moving while the photo was being taken and does not show well.

CHARLES CLAUDE CASEY.

**A Tower Problem**

To the Editor: Taylorsville, Cal.

Enclosed you will find a blue print of a frame tower which has more complicated cuts than would appear at a casual glance.

My partner and I have completed a line of twenty-three of these towers and in that time did not get a proper solution of the cut for the top ends of the braces, that is the joint where the two braces come together. Now, if Mr. Woods would kindly give us a steel square solution, we will be much obliged, as we are both interested in the work and in your magazine, which we always read and try to get all the good out of we can.

J. L. PIERCE.

Answer: In order to make a good job in building tapering towers, the corner posts should be backed so that when they are in position the faces of same will be in plane and the cross bracing will fit snugly up to the sides.

Fig 1 shows how the backing may be arrived at by laying off to scale the pitch that the post would have and which is in identically the same position as a hip in a square cornered roof; but instead of the center of the back of the hip intersecting the corner of the base, the post is turned so that one of its corners must intersect the corner of the base. This requires the post to be dressed off so that the foot of the post will coincide with the square corner of the base.

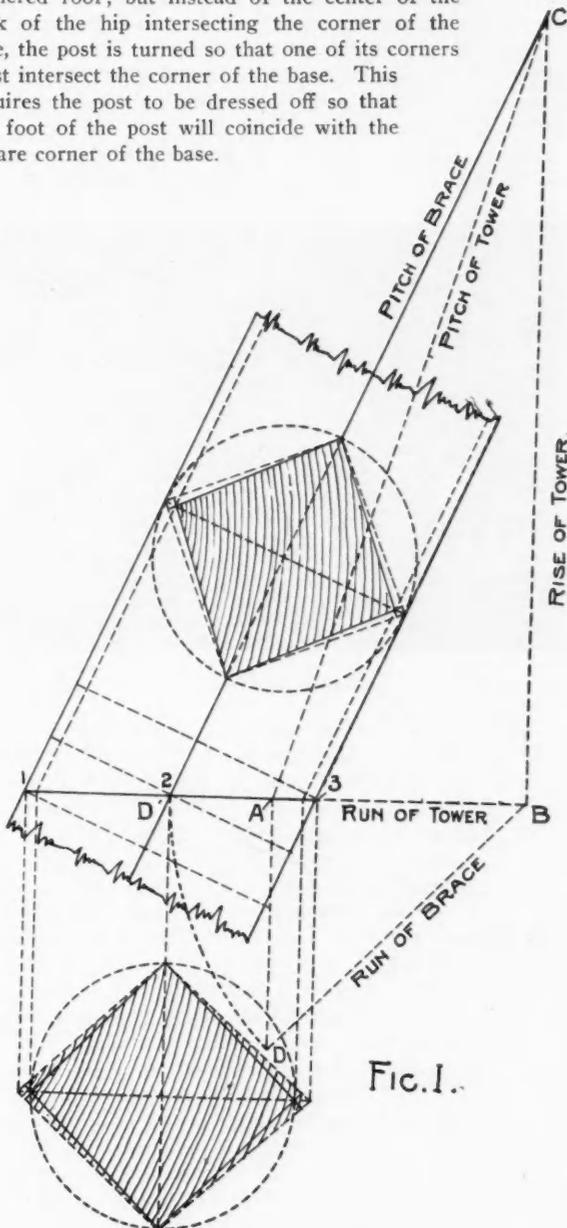


Diagram Showing Relation of Parts in Framing Tower

Lay off the diagram, as shown, letting A-B represent the run of the tower, B C its rise and A C its pitch, A D the run of the corner post or brace, and this transferred to the extended line A B will represent its corresponding run and D C will be its pitch. On this line, lay off the full size post, as shown, and where its lines intersect the run line will represent the seat cut taken diagonally through the post.

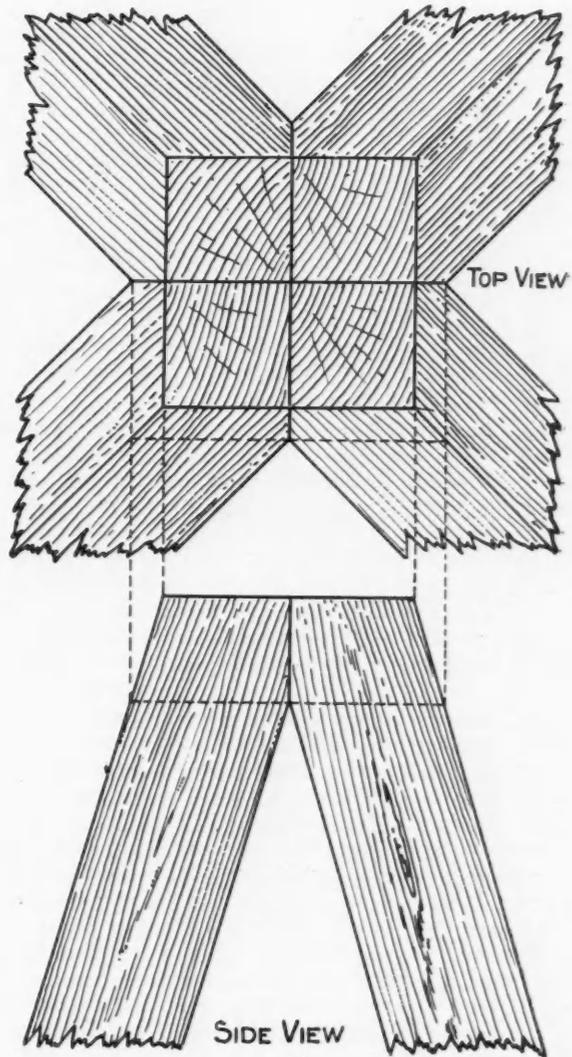


FIG. 2.

Top and Side Views of Tower Peak

Now, lay off the lines 1-2-3 around the post, intersecting the run line, as shown. Then cut from 1 at the outer corner to 2 at the center, which should be at the same point on the other side and to 3 on the inner corner. This being done, apply the square at equal figures at the corners 2 and 2 and mark to the heel on both sides of the square and trim to these lines. The upper shaded section shows the square post after being trimmed, while the lower section shows the foot cut with markings on same for the trimming or backing lines.

After the posts are thus treated, it is an easy matter to arrive at the cut in question, by taking the run A B and the pitch A C on the steel square; and the side of the square on which the run is taken will give the level cut and the other side will give the plumb cut.

Fig. 2 shows the top and side view of the tower.

A. W. WOODS.

## Two Suggestions

To the Editor:

Pleasant Green, Mo.

Being a subscriber and reader of the AMERICAN CARPENTER AND BUILDER from the beginning of its infancy (except the second year), if you consider these lines fit for publication, many thanks to you; if not, all well and good.

I wish to write concerning two important questions. BETTER WORKMANSHIP AND IMPROVEMENTS ON THE STEEL SQUARE. I have been a carpenter and builder for nearly eight years. After having worked in three states, traveled in a dozen others and being a close observer and somewhat a crank, I notice especially in the cities on the cornice and outside baseboards, the butt joint seems to prevail. I, for one, consider the mitre joint the best, because it can be drawn together from both sides and paint looks better on side of lumber than on end; besides the sun does not draw it off as easily. The Scripture says, "He who buildeth a house is greater than the house." I do not wish to add to the Scripture, for in another place it says "Thou shalt not add to or take from." But I wish to add to what I say by saying, he who doeth neat work is still greater than he who doeth not good work. I consider neat workmanship on a building a good monument to the builder's memory. Will say further that all builders can have monuments somewhere on the Almighty's foot stool.

In regard to the steel square, I believe there is one important graduation that should and could be there; the degree or tangent rule is one of the most important rules we have to confront at this day and age of the world. We have our degree protractors, mitre squares, bevel squares and universal squares, and last but not least a "Key to the Steel Square," all of which are useful and difficult to be without. If we know how to use the steel square, it is all there ready for us. If a mechanic's memory could contain all the tangents and rafter diagonals he would be too smart to work at the carpenter trade.

I would like to see graduated on the steel square the tangent rule, say for instance,  $22\frac{1}{2}$  degrees is the octagon degree, 12-4 15-16 giving the proper angle, somewhere on the square at 4 15-16 let there be engraved  $22\frac{1}{2}$  degrees and continue likewise with the rest of the tangents. I think this rule and the rafter or framing rule would make a more complete square. I am willing to admit there would be a great many carpenters buy one of these squares who would not know how to use it, but this kind usually do not make good framers anyway.

I am sorry I did not begin working at my trade earlier in life—like a great many other things I did not begin earlier. I was 24 years old when I began work at my chosen profession and was foreman at 26. Of course I did not know as much then as I do now and do not know any too much yet, but my ambition is to obtain a vast amount of knowledge and I am sincere when I say more learning could be obtained by placing the tangent rule on the steel square.

WALTER C. WEST.

Answer: In reference to placing the degree angles on the steel square while it would be a good thing for some mechanics, to the great majority it would be of little use and the extra markings on the square would to them be a source of annoyance, as they would not know how to use them and would otherwise complicate other markings for measurement purposes.

However, it is not a new idea, as the patent office records show that dozens of patents on the square have been taken out covering all kinds of markings—some being practical, while others were not and even containing errors. Very few of the squares have found their way to any considerable extent in the hands of the building public.

It is not an easy matter to place even a good thing on the market without a large outlay of time and money, and even then it is nothing very sure of success in the end. Then again,

it must be remembered that the markings could not be placed on the square beyond the degree markings with absolute correctness, as each degree is divided into sixty parts, called minutes, and these again into sixty parts called seconds. So that for accuracy from an engineering standpoint such an instrument would not be considered; and to the average man it would require a vast amount of schooling in the way of instructions which necessarily would have to be in pamphlet form, and this is too apt to be not at hand when most needed. The engineer has his handbooks close at hand from which he bases his calculations from standard tables long since established for their correctness, and it is an easy matter for him to apply his calculations to the standard measurements as given on the common steel square.

A. W. WOODS.

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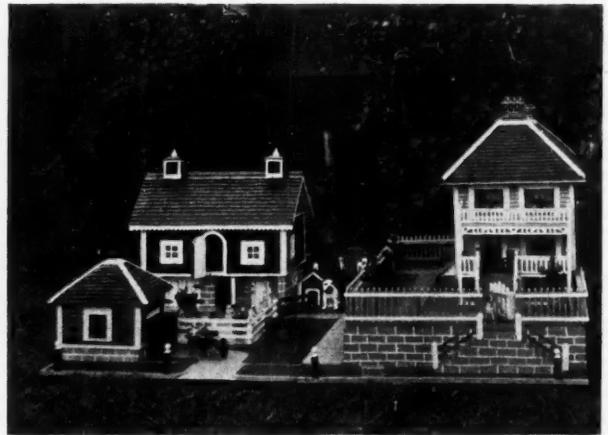
## Lilliputian Building

To the Editor:

Chicago, Ill.

I probably wouldn't qualify as a carpenter and builder in the ordinary sense of the term, but as a carpenter craftsman "in the little" I think you would give me a place. The picture shows one of my creations; house and grounds with barn and garage, all built according to approved carpentry construction, using exactly the same materials that would be needed for a regular sized house of the same kind and all parts being fastened together in the regular way. Tiny nails were used, no glue nor paste.

I am a brakeman on the Rock Island Railroad, most of my runs being at night, and have employed my spare time in de-



Miniature Homestead Built by Mr. A. R. Deisher

signing and making these small buildings. This group was part of the Rock Island exhibit at the National Land Show at the Coliseum, Chicago last year. A gentleman there asked me what I would take for the house and I told him that figuring up the number of hours it had taken me to make it and charging regular carpenter's wages the price would be about \$500; but, nevertheless, I didn't care to part with it.

The sizes of these buildings are as follows: The house is 15 inches wide, 30 inches long and 31 inches high from top of chimney to sidewalk. It is covered with 1,200 shingles, has 21 windows, 18 of them being in working order; that is sliding up and down as ordinary windows. The yard is 28 inches wide and 47 inches long, and is terraced up 5 inches high. The blocks forming the terrace are regular cement blocks laid up in cement mortar. The barn is 22 inches long, 16 inches wide and 23 inches high, with 573 shingles on its roof. The garage is 10 inches square, 12 inches high and has 279 shingles on its roof. The entire weight of the house is 75 pounds and the combined weight of the barn and garage is 77 pounds. The house is furnished complete and is completely equipped, there being even a miniature electric push-button bell on the

front door. The interior of the house is furnished with mission furniture, piano, chairs, tables, etc. A midget woman might sit in the little rocker behind the curtains and look out of the windows unseen by her neighbors.

The tools used in the construction of these little buildings were hammer and saw, plane and jack-knife.

I am now at work on a miniature model of the La Salle street station, Chicago. This is going to be a pretty big job; I expect it will take me over a year to make just the windows, as there are about 1,800 of them.

A. R. DEISHER.

### Mission Reclining Chair

To the Editor: Harrisburg, Pa.

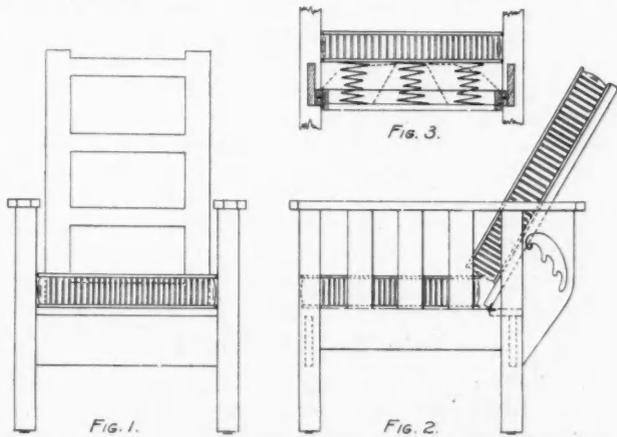
Figs. 1 and 2 show front and side elevation of chair.

Figs. 3 and 4 show detail of spring frame for seat.

Figs. 5, 6 and 7 show detail of chair.

Fig. 8 gives bill of material.

The particular features of this chair are embodied in the pleasing proportions, the simple lines, the adjusting brackets



and the simplicity of construction. The legs are 22 inches apart in each direction, which gives ample room between the handles, and simplifies the work on the end and side rails, as shown in Fig. 5 and rail marked "C" just below the figure. The adjusting brackets F in Fig. 5 are so designed that they occupy the minimum space and permit the cross bar, supporting the back, to be the same distance from the hinges in its different positions. The pocket in the brackets F, Fig. 5 are

easily layed off by directions given below. Mark the upper edge "Top" and the left hand edge "Side." Measure 4½ inches down from top and 1½ inches from side; this locates the center of first pocket.

Measure 6 inches down from top and ¾ inches from side; this locates the center of second pocket. Measure 8¾ inches



Easy Chair Built by Mr. Geo. Mormann

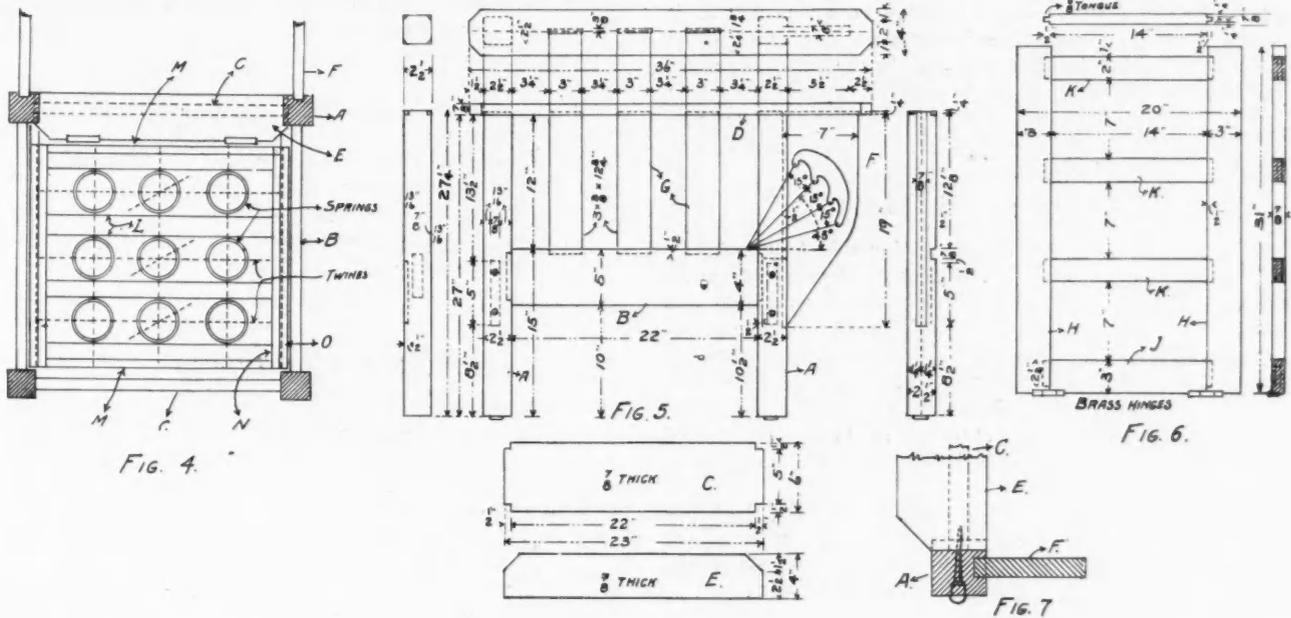
down from top and 4½ inches from side; this locates third pocket. Measure 10¼ inches down from top and 5¼ inches from side; this locates fourth pocket.

At each of these intersections, or centers, scribe a ¾ inch diameter circle, at the top of each circle draw a line square with the side; this will be the top of the projection for keeping the adjusting rod in place.

Then by drawing free hand lines connecting the ¾ inch diameter circles, as indicated in the drawings and truing these by means of the compass, the shape of the opening in the brackets is very easily secured.

A templet made of drawing paper or cardboard of the above will assist materially in marking both sides of each bracket for cutting the openings and shaping the outside of the bracket.

The spring frame should be made separate in order to properly fasten the springs in place by twines, as indicated by



FINISHED SIZES			MILL ORDER
<b>FRAME. QUARTER SAWED OAK.</b>			
4	POSTS A	2 1/2" x 2 1/2" x 27 1/4"	1 Pc 2 1/2" x 2 1/2" x 12' 3"
2	SIDE RAILS B	5" x 7/8" x 23"	1 " 5" x 7/8" x 4' 0"
2	END RAILS C	6" x 7/8" x 23"	1 " 6" x 7/8" x 4' 0"
2	HANDLES D	4" x 7/8" x 36"	1 " 4" x 7/8" x 6' 0"
1	HINGE RAIL E	4" x 7/8" x 23"	
2	BRACKETS F	7" x 7/8" x 19"	1 " 7" x 7/8" x 2' 6"
6	SIDE SLAT G	3" x 3/8" x 12 3/4"	1 " 3 x 3/8 x 6' 9"
<b>BACK. QUARTER SAWED OAK.</b>			
2	SIDES H	3" x 7/8" x 31"	1 " 4" x 7/8" x 6' 9"
1	BOTTOM RL. J	3" x 7/8" x 15"	
3	UPPER RL. K	2" x 7/8" x 15"	1 " 2" x 7/8" x 4' 3"
<b>SPRING FRAME. WHITE PINE.</b>			
3	SLATS L	4" x 3/4" x 20 3/8"	1 " 4" x 3/4" x 12' 6"
2	ENDS M	3" x 3/4" x 20 3/8"	
2	STUDS N	3" x 3/4" x 19 1/2"	
2	STRIPS O	1" x 3/4" x 19 1/2"	
9	# 2 GOUGH SPRINGS 3 3/4" DIAM. AT ENDS 6" FREE HIGHT.		
1	1/2" ROUND IRON ROD 27" LONG. 1/2" THREADS ON EACH END, ON WHICH SCREW ORNAMENTS TURNED FROM OAK.		

FIG. 8.

dotted lines in Figs. 3 and 4. Should the spring frame not be desired, 3 slats of proper length can be fastened to strips placed 1 inch below the top edge of side rails and on inside face of same; this will bring the top side of the cushion 19 inches from the floor.

The cushions are of the following sizes: Seat cushion 21x21x4 inches; back cushion 21x28x4 inches.

Metal sliding cups should be used on the bottom of the legs, which will permit moving the chair from place to place easily.

The screws for fastening the front and rear rails to side frames of chair, shown in Fig. 7, are recommended, as it makes the chair stronger, and eliminates danger of glued joints parting when handling the chair by the handle, or arms, and obviates the necessity of deep mortises.

GEO. MORMANN.

### Historic Log House

To the Editor: Mountain Home, Ark.

If J. M. T. of Milwaukee, will send me details and particulars in regard to the log cabin he expects to build, kind and size of logs available, etc. I will send him all the information I can. I am not a past master in the art of building log cabins but have "officiated" at the construction of several, both good, bad and indifferent.

Have just finished one for myself which in the evolution of things is expected to become the kitchen. It is a summer bedroom now.

There is now standing in this (Baxter) county a log house that was erected in 1810 and is now 101 years old. It stands on a slight eminence near White river and just below the mouth of North Fork, and is known as the old Wolf mansion. It is what was known as a double log house, having an open

hallway between the two log pens. It is two stories high and has kitchen and dining room in the rear.

It is built of hewn pine logs, the cracks were "chinked" with blocks of wood and then "pinted" with lime mortar. The lime was obtained by piling limestone on a log heap and burning it. One log in the west end, up near the top, shows sign of decay. The rest are as sound as when the building was raised in Territorial days before Arkansas was admitted as a State.

Several terms of Circuit Court were held here in the old house, as it occupied a point of vantage on White river. The river traffic began directly after the war of 1812; and both before and after the civil war assumed comparatively large proportions.

The place escaped devastation during the civil war; and is still occupied as a residence. It has had no additions and no repairs except new shingles and floors. The walls have never been protected by paint, whitewash or anything; every log is exposed to the weather.

There is a large stone chimney at each end and the huge fire places filled with roaring pine knots have warmed the shins of many prominent and notable men.

Ten years ago when the railroad was built up White river the track was laid about 150 feet from the house and the depot was located about 300 feet down the track. The thriving village of Norfolk sprang up; and neat cottages and fancy bungalows now surround the old mansion. The present occupant and owner who was born in the house 68 years ago is now the village blacksmith, strong and active in spite of his three score and nearly ten and as well preserved as any log in his old house.

CHARLES CHRISTIAN.

### Into the Limelight

To the Editor: Sacramento, Calif.

In the June issue of the AMERICAN CARPENTER AND BUILDER I notice an inquiry by J. D. Robertson, as to the proper way of hanging a screen door, also noted your answer thereto.

It maybe that I take the matter too seriously, but however, with due respect to the Editor and also Mr. Robertson, it seems to me the question demands a more explicit reply, not for my own delectation, but for the benefit of those in the class of Mr. Robertson.

Primarily, screen doors are intended to keep out flies and other insects, when it is necessary to keep the main door open for air circulation. It is therefore obvious as to the proper side to hang the screen door—not being so much a case of doing as the Romans do, as a case of convenience and necessity.

The same applies to the transom in the matter of appearance and good taste.

I consider it a set rule to hang the screen door outside and the putty side of transom out also.

Hoping I have not butted in wrong, as I am a constant reader, I could hardly resist the temptation of getting into the limelight.

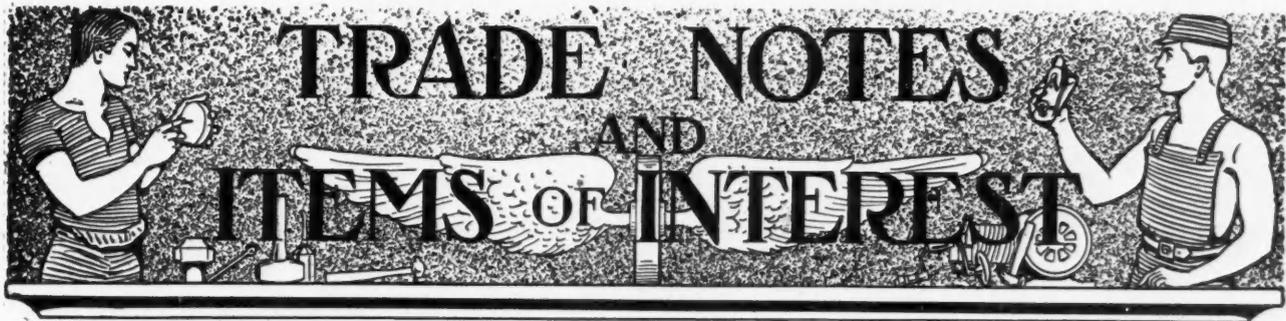
J. F. VAHLE.

### Puts Screen Inside

To the Editor: Redding, Iowa.

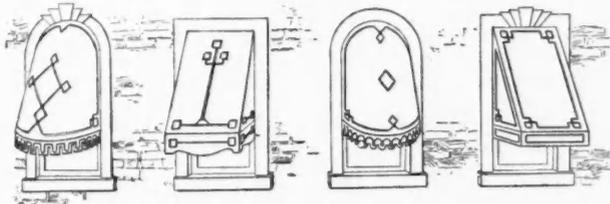
I want to answer the question, Which is the right way, that appeared in your June issue. The Editor says, "Put the screen and the putty outside." I used to say so, too, but now I put the screen inside. It is much better on account of getting flies out. When the door is opened, the flies are easily scared from the screen, with no stiles in the way to hold them. As to the transoms I, too, would hang them with the putty outside.

J. M. BAIRD.



### Stencil Decorations for Awnings

There is a growing demand this year, especially for country and suburban homes, for awnings having an applique or stencil form of decoration, the colors most in



Awnings Decorated with Applique or Stenciled Designs

demand for the design being green, blue, red, brown and maroon, on white, says *Popular Mechanics*. The under side of these awnings are being painted to render them opaque, but considerable difficulty is being encountered in coloring the under side with a fast color, and at the same time preserving the outside whiteness and the pliability of the duck.

### A Self-Illuminating Pencil



Pencil with Electric Light

We read in the *Illustrated London News* that a self-illuminating pencil for writing in the dark has just been gotten out. This appears to be a combination pencil with an electric flash light, and is described as a great boon to dramatic critics writing at a play, doctors making out prescriptions in dark sick rooms, reports at nocturnal functions and all others who find occasion to write where no light is available.

We show herewith an illustration of the pencil.

### Wood Preservation in Ancient Times

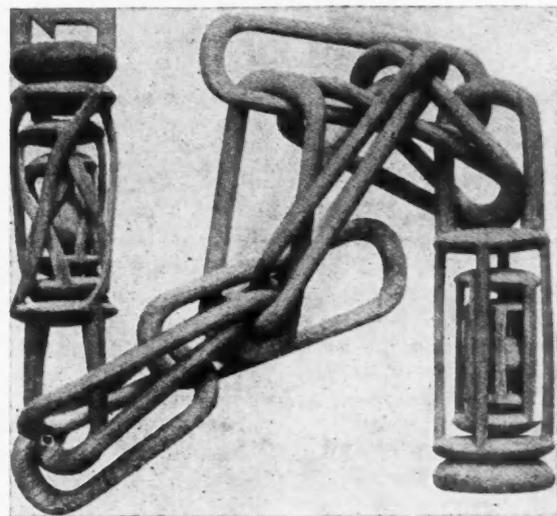
The constantly recurring question of paving material brings to mind a bit of "ancient history" with reference to creosoted wood blocks. Ancient writers make what may be considered frequent allusions to efforts made for the conservation of wood. It is a familiar fact that tar and pitch have always been used as external applications for the purpose of such conservation. They are, in fact, mentioned in Holy Writ in connection with the ark of Noah, and that of Moses. Both Greek and Roman authorities cite the astringent properties of olive oil also, as well as the oil extracted from wood blocks. Ancient writers make what may be considered frequent allusions to efforts made for the conservation of thought not only to arrest decay in wood but also to protect it from the attacks of insects.

When Phidias had completed his magnificent and enormous statue of Zeus, which stood in the grove of Olympia, it was found that the wooden pedestal upon which it stood was constantly exposed to the damp incident upon its situation. The artist probably feared that this dampness might also attack the inner core of the statue, which was wood, and therefore applied oil in large quantities, realizing that through soaking of this kind it would by capillary attraction ascend into the wooden core of the statue, overlaid with ivory.

Pliny says that the famous statue of Diana of Ephesus, which was wood, was thoroughly oil-soaked through special orifices bored into the wood in many places. And in olden days, it was well known that wood well soaked with oil of cedar would resist the wood worm and decay.

There was no advance upon this method until the English fleet was called upon frequently during the sixteenth and seventeenth centuries to meet various pugnacious adversaries. Self-preservation compelled the British authorities to try experiments against the dry rot in the timberwork of their vessels, and these experiments included applications of resinous vapors, salts of copper, zinc, iron and other metals and metalloids.

But no real progress was made until the railroad came. Then the wooden sleeper immediately came into prominence. It had not only to resist decay, but also wear and tear. It was not only used as a base for a quiet statue, or in the structure of a man-of-war, where no heavy strain came on it except in bad weather, but it had to stand the constant heavy pounding of trains. Solid sleepers, of cement, stone or other dense material, were tried as substitutes, but failed. Then those interested naturally turned to the efforts of preservation of wood, and thus far creosote treatment, i.e., the return to most ancient methods, seems to have proven most satisfactory.



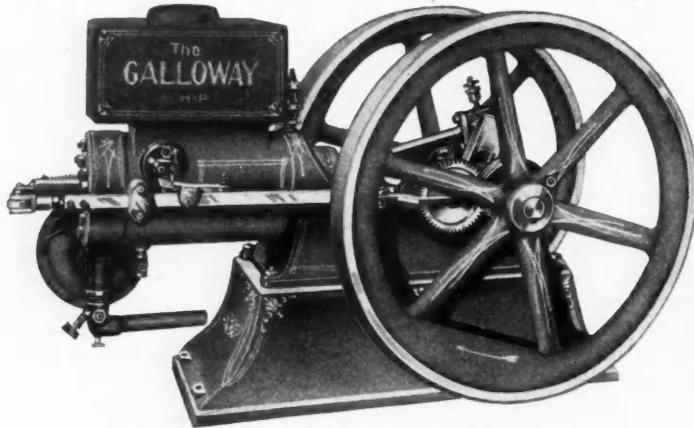
Complicated Wood Chain with Ornaments Carved out with a Jack Knife from a Stick of Round Wood the Diameter of a Broom Stick

### Galloway Quality

Almost anyone can make a gasoline engine even with mediocre equipment, but it takes brains to make a good gasoline engine.

A good gasoline engine must be simply constructed and in buying, simplicity should be one of the first requirements. We are not all engineers with technical knowledge so the simpler the mechanism the better. "Galloway engines" are simplicity itself; after being once started—a very simple operation—they need no further attention. It took brains to evolve an engine of this type.

The Wm. Galloway Co. take an especial pride in the



"Galloway Engine"—A Dependable Power Plant

"Galloway Engine" and the pride is justifiable indeed; for the engine is a good engine.

The Galloway engine is more than satisfying 4000 users in the State of Iowa alone. This is sufficient recommendation alone as to its reliability and dependability.

On this page is a cut of the Wm. Galloway plant at Waterloo, Iowa,—an institution it may well be called; for, besides the huge factory buildings made entirely of concrete, the administration building, where the offices of the Company are located, is a huge, monolithic cement structure, which houses an immense sales and office force.

This building is the result of the great growth of a business that started only a very few years ago. The first Galloway plant was nothing more than one small room, while now it covers acre after acre.

This growth is the natural result of gratified customers

plus the indomitable pluck and energy of Wm. Galloway himself.

It is not the purpose of this article to go into detail regarding the Galloway engine. Their literature does that far better. Write them to-day. Their proposition is interesting whether you want to buy a small or a large engine. They manufacture a large variety and can give you just what you are looking for.

Remember in buying an engine that has the name "Galloway" on it, that "Galloway" is a "buy word" for satisfaction.

### Free Sample Offered

Welt & Sons Paper Company of Detroit are offering to send a free sample of their Amafibre Building Paper to every contractor and builder who will write for it.

Amafibre is really a very superior building paper.

As the name implies it is a fibre paper very strong and tough. It is also very light; and these two qualities, lightness and toughness make it easy to handle, hence recommend it to the man who has the actual work of putting it on to do.

Amafibre is water proof, wind proof and largely sound proof. It is very durable and once in place stays as long as the house lasts.

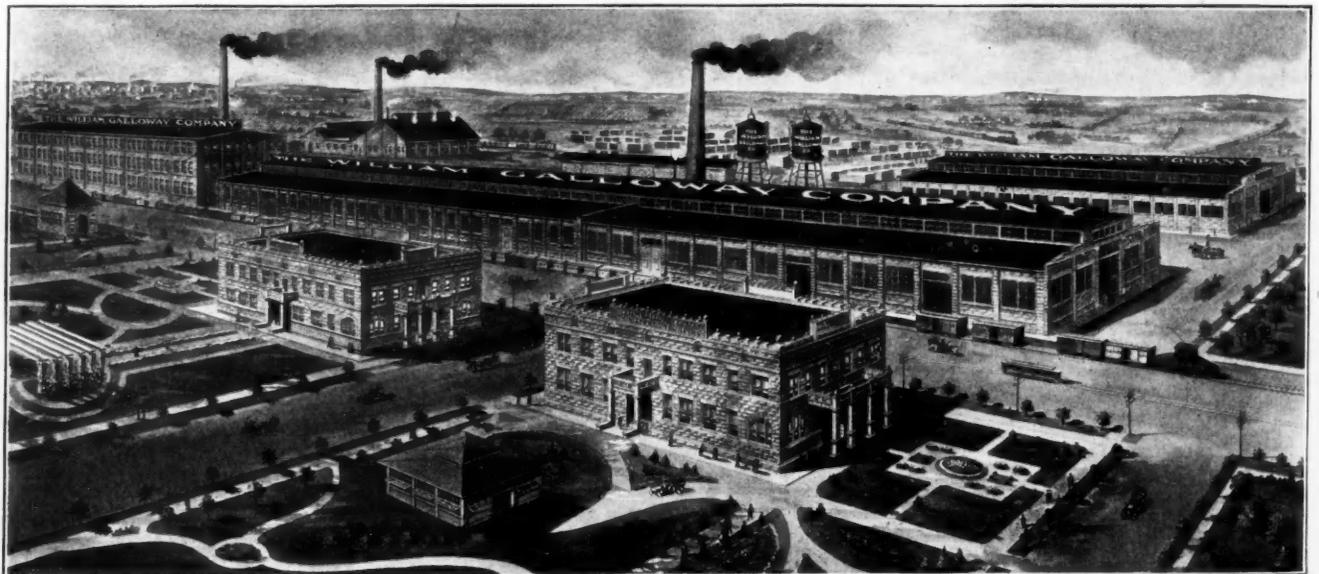
It is a sulphite paper, for use in any place where building paper is usually applied—and enjoys even a wider range of usefulness than ordinary building papers, owing to its toughness and weather proof qualities.

Contractors, builders and others who are interested are invited to write to the makers for a sample showing quality and texture.

### New Willis Catalogue

The Willis Manufacturing Company, Galesburg, Ill., have just issued their new catalogue No. 6, celebrating their twentieth anniversary. This is a book of 180 pages, showing completely their stock of architectural sheet metal work and affiliated lines. All features are nicely illustrated and full description and prices are given, making this a very valuable book for reference, as well as for ordering materials. The book is substantially bound and is fully indexed.

The Willis Manufacturing Company desires to place a copy of this catalogue in the hands of every reader of the AMERICAN CARPENTER AND BUILDER interested in these lines. Will you write at once for your copy?



Plant of the William Galloway Co., Waterloo, Iowa

# Build Artistic Stairways From Gordon-Van Tine Stock!

## Save 50%! Special Millwork Catalog FREE

### Our Stair Department Will Save You Big Money

Through our ceaseless efforts of selling reliable stairwork at cost plus one small profit, we have been able to produce and sell stairwork at prices which leave a handsome profit for the contractor. In our Grand Free Millwork Catalog, we itemize individually, each and every article required for the stairs, and explain fully just how this material comes to you and attach net prices. With this information at your command, an infinite variety of arrangements of stairs can be figured within a few moments, and you know the exact cost without entrusting your interest to any outsider.

The fact that part of this material is already machined ready to go right into the stairs, reduces the erecting cost very materially. We use only thoroughly kiln-dried material in making up the different parts of this stair stock, and only the most skilled and expert mechanics are employed in the production of the finished article. By using kiln-dried lumber you avoid any of the annoying effects of shrinking or coming apart of the stairs after they are put in the building. The itemized list for a flight of stairs which is given on this page, shows you at a glance how reasonable the material for a complete stairs can be purchased.

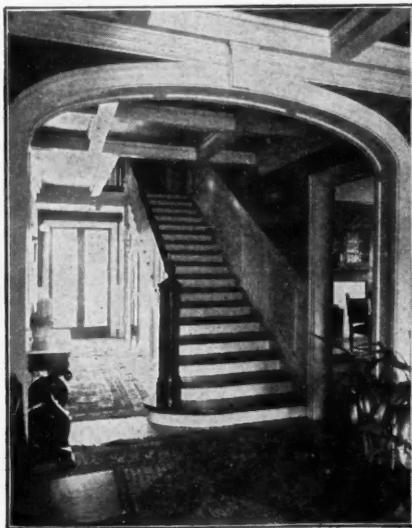
The fact that you have had no previous experience in the stair building line should not deter you one moment from learning its simplicity now. If there are any points which are not practically clear to you regarding the proposed stair for which you are in the market, write us, and we will give you the advice of an expert stairbuilder.

#### Vast Assortment of Oak and Yellow Pine Stair Material

Our stock designs of Stair Newels, Rails, Balusters, Steps, Risers, Face and Wall Stringers and miscellaneous materials in Oak and Yellow Pine is very complete. A line which is at once adapted to the swell and modest cottage or most elaborate home.

#### Correct in Every Detail

We call particular attention to the style of construction, for instance, of our posts; the correct size of all mouldings, in order that the assembled effect may be harmonious and complete. Likewise, the turning of the balusters and shape of rails are especially adaptable for these specific purposes.



A Gordon-Van Tine Stairway



A Flight of Stairs Complete for

**23.93**

#### List of Material Required for Stairs Shown Above

E349	14 feet Face Stringer.. Yellow Pine @ \$0.06½	\$0.91
E731	10 feet Wall Stringer..	.95
E8421	7 feet Base.....	.20
E725	18 ft. Wall Stringer, Ext.	.27
E8420	26 feet Base Moulding.	.21
E347	13 Steps .....	5.20
E961	2 Landing Steps .....	.30
E726	1 Round End Step....	2.90
E727	14 feet Return Nosing.	.28
E348	15 Risers .....	3.00
E8060	75 feet Scotia .....	.23
E336	1 Newel .....	2.57
E341	2 Angle Newels .....	3.20
E343	14 feet Rail .....	1.54
E962	12 feet Fillet.....	.12
E345	11 Balusters, 28-inch...	.94
E345	13 Balusters, 32-inch...	1.11

Total Cost..... \$23.93  
Dealers' Prices..... 90.00

Saving to You..... \$66.07

#### This Saving of \$66.07 Should Appeal to You

You get a high standard of workmanship, superior qualities of lumber, choice designs, prompt shipments and **guaranteed safe delivery**. You get low freight rates and quick delivery. These are facts, and should appeal to you at once. Send us your order for Stairs today.

**YOU WILL BE SATISFIED AND SAVE \$66.00 OR MORE**

With the styles illustrated, an infinite variety of arrangements of stairs is permissible, and it is a very rare exception when special work will be required for any particular purpose. Our designs are modern and up-to-date. All Newels are hand smoothed and made from thoroughly kiln-dried stock. All carvings are handmade and not composition ornaments. Every Newel from one-inch lumber, with glued lock joint. Height of all starting Newels 4 feet, with 8 x 8 base and 6 x 6 shaft, suitable for open or closed stringboard. Base of post, 20 inches long, allowing one or two risers. Every Newel wrapped in paper and carefully packed. The stock is all thoroughly machined, well kiln-dried and can be shipped promptly.

#### Buy Building Material From Us at Wholesale Prices

Write for the Gordon-Van Tine Catalog of Millwork, Sash, Doors, Lumber and Builders' Hardware. We Save our Customers a Million Dollars a Year. Many of the most successful Contractors and Builders in the United States buy from us exclusively. We guarantee quality, satisfaction and safe delivery. Give us a trial order. Get our latest Catalog. The prices speak for themselves.

**GORDON-VAN TINE CO., 587 Federal Street  
DAVENPORT, IOWA**

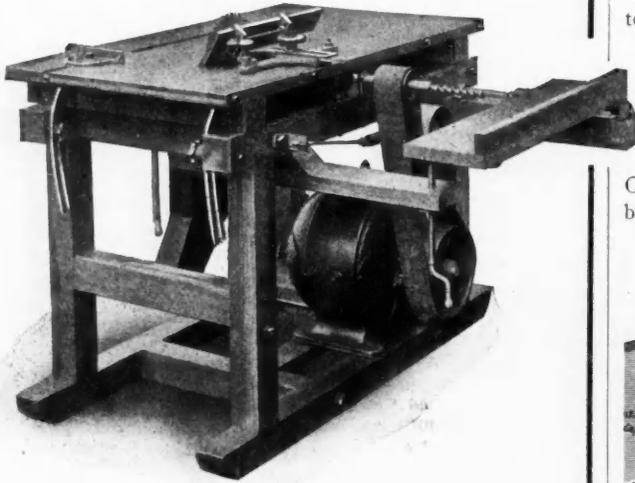
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*We have been in the Building Material Business since 1865*

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

# AN "AMERICAN" SAW BENCH

Means More Profit  
on the Job



The contractors making the most money today are those who are cutting out the little expenses on their jobs.

One of the greatest "expense cutters" ever put on the market is the "American" Portable Saw Bench—a machine for doing what has hitherto been done by costly hand labor—or else done at the mill, involving delay.

When you have an "American" Bench, you have, right on the job, the following:—

Rip Saw	Dado Machine	Boring Machine
Cut-off Saw	Rabbiting Machine	Gaining Machine
Mitre Saw	Jointer	Grooving Machine
	Matcher	Moulder

They're all in the "American" Bench, with self-contained power, either gasoline or electric motor—ready at a moment's notice, always on the job.

Figure for yourself how much you could save on one contract by using "American" methods instead of hand labor.

## AMERICAN SAW MILL MACHINERY CO.

82 Main Street  
HACKETTSTOWN,  
NEW JERSEY

1655 Hudson Terminal  
NEW YORK CITY  
NEW YORK

### A Correction Touching Saw Handles

E. C. Atkins & Co., Inc., used their advertising space on our inside front cover last month to call attention to two Atkins "Silver Steel" saws—one with the regular style handle and the other with their new "Perfection" handle. Through a mistake the two illustrations used were transposed, so that the new "Perfection" handle was labeled "Old Style Handle" and vice versa.

The principle on which this new saw handle works is well shown by the accompanying illustrations. Figure 1 shows Atkins No. 53 "Silver Steel" saw equipped with Atkins genuine "Perfection" handle and illustrates plainly why this type of handle is easiest on the saw arm. While it may feel strange to the beginner—a few days use will demonstrate that the Perfection handle is the most *scientifically* constructed and much easier on the saw arm than any other style.

Note the line running through the saw arm position straight through the blade to the cutting edge. See how every ounce of power is directed to the point of contact. Observe the wrist and saw arm, how easy and natural the blade drops into its work without pressure.



Fig. 1. New Style Handle, Showing Direct Application of Effort to Cutting Edge and Natural Position of Wrist While Using

The handle is so constructed that the wrist and saw arm are permitted to operate on a free and easy line and it is plain that through the use of this handle each ounce of power is brought into full play, making the operation not only more rapid, but much easier than heretofore.

Do not gain the impression, however, that all Atkins saws are made with the Perfection handle. Their regular line of "Silver Steel" saws are also equipped with the old straight-across handle that you may have been using heretofore. Note in Figure 2 the line from the saw arm in this case and see that the pressure back of the saw arm is *not* directed on the

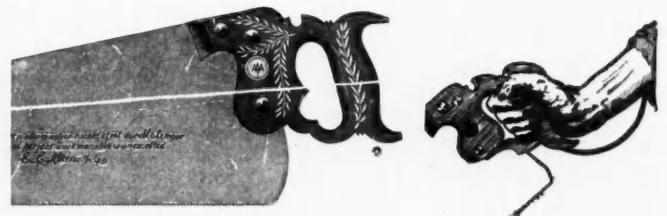


Fig. 2. Old Style Handle, Showing Line of Effort Parallel with Back of Saw

cutting teeth, but rather to the back of the saw. Notice this wrist and see how it is necessary to push downward in order to secure proper contact. But even with this old style handle the No. 51 is claimed to be superior to any other, because the blade is made of genuine "Silver Steel" and is taper ground, which enables it to run free and easy, even in wet lumber with but little set.

All of our readers interested in "Silver Steel" saws should write E. C. Atkins Co., Inc., Indianapolis, Ind.

# Put It At Work In Your Shop



The "Multimotor" Shop Engine increases your profits and keeps down the size of your pay-roll. Does the work of three men at an expense of *less than a cent an hour.*

Stop pedal-pushing and crank-turning! Let the

## Fuller & Johnson "Multimotor" Shop Engine

turn the wheels in *your* shop. This wonderful engine is small in size but a giant in power. Runs all hand-power or foot-power machines—jig saws, lathes, emery wheel, grindstone, drills, etc. Just the thing for carpenters, contractors and owners of small workshops.

### Perfectly Simple Absolutely Safe

Simplest, neatest, strongest, most reliable little engine ever built. Comes to you *complete*—nothing to add but gasoline.

Easily moved anywhere. For *indoor* use has *out-door* fuel tank, insuring perfect safety.

Important working parts protected by dust-proof case. Needs no attention while running. Works steadily all day on a few cents' worth of grocery-store gasoline. It is air-cooled, fool-proof, cannot freeze or overheat.

The "Multimotor" in design, material and construction equals the best automobile engines. Every engine is thoroughly tested before leaving the factory, and is *guaranteed!*

### Fuller & Johnson Farm Pump Engine

Practically the same as "Multimotor," with pumping gears added. Can be hooked up to any pump in 15 minutes. Needs no belts, arms, jacks or special platform. Pumps 400 to 1,500 gallons every hour. Perfectly adapted to farm and suburban use

### Engine Book Sent Free!

Book, giving full information about "Multimotor" and Farm Pump Engine, sent FREE on request. Let us tell you more about these amazing little power-producers. Let us send you the name of the nearest dealer, who will show you the engine and *explain* what it can do. (264)

If interested in larger engines, ask for Catalog of Fuller & Johnson's Famous Double-Efficiency Engines.

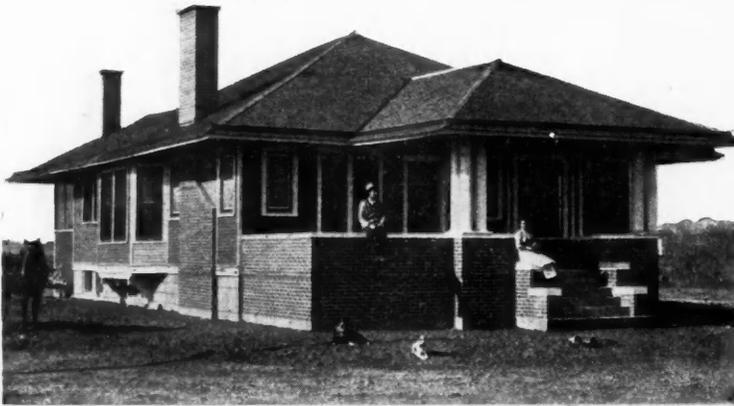
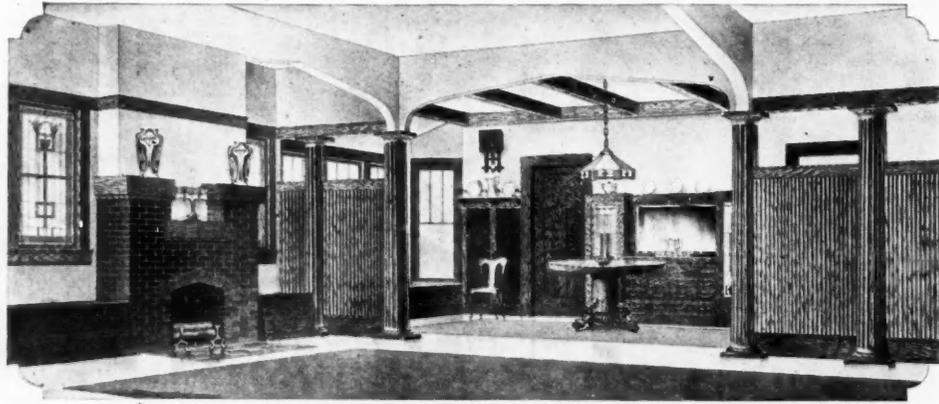
"Handy as a Pocket  
in a Shirt"

Patented in the United States, Canada and other foreign countries. Other patents applied for.



Fuller & Johnson  
**"MULTIMOTOR"**  
Works Like Ten Men

**FULLER & JOHNSON MFG. CO.** 8 Ames Street (Established 1840) **Madison, Wis., U. S. A.**

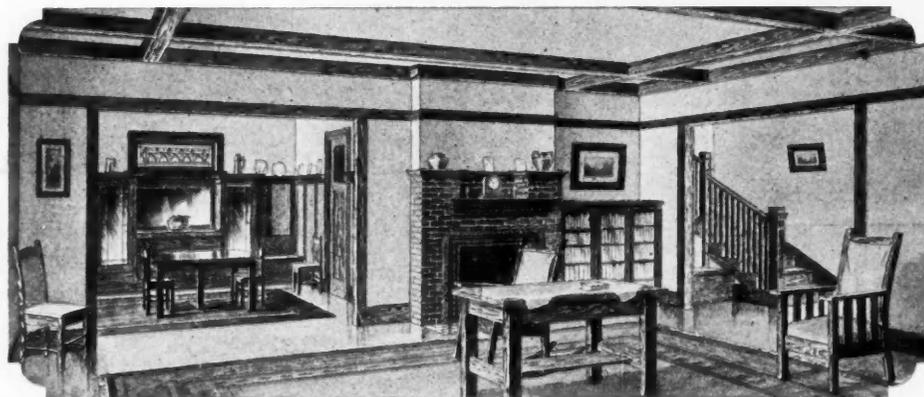


A charming bungalow, just completed at Greeley, Colo., in the Rocky Mountain country, at a total cost of \$2,843.91. The builder, J. P. Berck, estimates that he saved \$500.00 by buying all his materials from one firm at wholesale prices.

A view of the living and dining rooms of the attractive and practical bungalow is presented above. The complete bill of highest quality materials for this bungalow as shown, excepting only the brick, plaster and cement, was purchased from Sears, Roebuck and Co. at a cost of \$1,292.00, a complete set of building plans and specifications, for which the average architect would charge \$150.00 or more, being supplied without cost.

The modern seven-room home shown at the right was built complete at New Rochelle, N. Y., "Forty-five minutes from Broadway," at a total cost of \$3,960.00; an interesting example of the high class houses designed and planned by Sears, Roebuck and Co.

A glimpse of the artistic and handsomely finished interior is given below. The same firm furnished all lumber, lath, cedar shingles, mill work, beam ceiling, clear cypress siding, oak and maple flooring, finishing lumber, Craftsman doors and buffet, leaded glass, glazed windows, medicine case, building paper, pipe, gutter, sash weights, hardware and painting material for \$1,653.00.



Reproduced from *The Book of Modern Homes*, to which the reader is referred for floor plans and detailed descriptions of these and one hundred other residences of the newest designs.

# Let Us Ship YOU a Modern Home Complete

Have you ever discovered, after exerting yourself to the utmost in the interests of a client and actually losing money on his job through delays for which your supply dealers were to blame, that he was going around warning other intending builders not to patronize you because you failed to keep the cost of his house within your estimate? You guessed wrong.

Why guess? Why not quote a flat price on every job you are asked to figure on, a price that your competitors cannot touch? With our wholesale Lumber Price List, our Building Material Catalog and our book of plans on your desk you can file your bid the same day it is asked for and can land the job while your rivals are writing to dealers all over the country to get prices that are sure to be one-third higher than our direct from factory wholesale prices.

There are bigger profits than ever in building modern homes by modern methods if you buy your materials the modern way. Adopt the Sears, Roebuck and Co. plan on your next contract. Avail yourself of the almost unlimited resources of our Modern Home Department. Let your client select one of our 100 bungalows or houses, for which we will furnish you, free of cost, complete building plans and specifications. Then, if you know the capacity of your workmen, you can quote your client a flat price for his house instead of estimating its cost by guess. By this plan you can also know in advance just what your profits will be when the job is finished, and can thus spend your profits as the work progresses.

Some of the best informed builders in the contracting business—men who know practically everything about the technical side of home building—fail to get ahead because they are too careless to buy right when ordering materials and supplies.

## Mill Work

Modern Art in Home Designing Demands Constantly Higher Standards in Mill Work Manufacture.

In selecting from our own enormous lumber yard the materials from which our mill work is manufactured, we exercise the same care and discrimination as is employed by makers of the most expensive furniture.

The sample prices quoted below are for the best quality goods that can be produced. They afford only a suggestion of the big savings you can accomplish by ordering your mill work and building material from us.

Remember, we sell direct from the factory, at one profit price, not only every line of material shown on this page, but everything required to build houses of the type illustrated on the opposite page, complete and ready for occupancy. We quote:

- Yellow Pine Doors, 4-panel \$0.95 up
- White Pine Doors . . . . . 1.40 up
- 24x28-Inch Check Rail Windows, for two sashes . . . 1.00 ea.
- Window Frames . . . . . 1.00 up
- Door Jambs . . . . . .45 up
- Quarter Round Molding, per 100 feet . . . . . .25

Send us your next list. Let us quote you our Wholesale Prices, delivered at your station. Then compare prices. You will find our prices lowest when quality is considered. Write for our Mill Work Catalog.

## Seroco Ready Mixed House Paint

Made in our own modern paint factory, the perfect product of twenty-eight years' practical experience. We buy our own raw materials and are not dependent upon any other paint manufacturers to supply our wants.

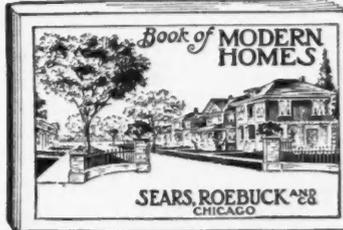
**\$1.10 to \$1.23**

A GALLON, ACCORDING TO QUANTITY. FURNISHED IN ALL SHADES.

We guarantee our SEROCO Paint to be composed of the highest grade ingredients; that it is a perfect preservative and contains nothing injurious; will cover 250 to 300 square feet, two coats to each gallon; will not blister, peel, chalk or rub off, and will wear well on buildings. We agree to furnish new paint free if our Seroco Paint fails to come up to our guarantee.

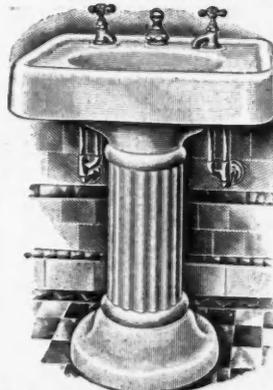
Our Paint and Varnish Catalog quotes our complete line of paints and interior finishes, as well as painters' supplies.

Remember that the big saving we effect for you by selling lumber, mill work and supplies direct from our factories at one



profit, constitutes only half the advantages our plan affords you. Consider the time and the disappointments you can avoid by ordering from one firm ALL the materials you need to build and finish a high class and artistic home. No frantic telegraphing to dealers, who may not be at home to receive your messages, about delayed shipments. Instead, a follow up clerk is working for you in our house, always on the job, following your order through every department to make sure that each shipment of materials reaches you without delay.

## This Pedestal Lavatory



only \$25.00

First Quality Enamel.

If you have been paying \$45.00 to \$65.00 for pedestal lavatories like this one, resolve not to do it any more.

You have only to compare our goods and the prices quoted in our 44-Page Plumbing Catalog with those you are familiar with to realize that we save our customers from one-third to one-half on plumbing goods of all kinds. All fresh, clean goods, direct from the factory, and strictly guaranteed as to quality and durability of enamel and nickel plate finish.

Clip the coupon in the lower right hand corner and be sure to check the Plumbing Catalog.

## Lumber

Buy, for What Your Dealer Has to Pay, a Better Grade of Lumber Than He Supplies.

To know how much the best lumber is actually worth, and how much profit you are paying your local dealer, you have only to compare your bills with our Wholesale Delivered Lumber Price List, showing exactly what any bill will cost you delivered at the freight depot in your city. We save you from \$100.00 to \$150.00 on an average size carload of lumber.

If that last statement be true, can you afford to ignore it? Can you read our guarantee and doubt its truthfulness?

We carry on hand, in our own great lumber yards, adjacent to the finest timber lands in America, a stock of 1,250 carloads (nearly 15,000,000 feet), embracing a full range of sizes of every kind and grade; also a duplicate of this stock at our yards in Southern Illinois. We have exactly what you want in the quantity you want, and it is ready to ship.

Write for our Wholesale Delivered Price List of Lumber. It quotes you prices, including freight charges, DELIVERED AT YOUR STATION.

Let us put your name on our monthly mailing list, which insures your getting our latest prices throughout the year.

## Peerless Wall Board

Made of three plies of heavy sanitary fiber board, with two layers of best asphalt between, and cemented under heavy hydraulic pressure into one solid fabric.

Peerless Wall Board is vermin proof, damp proof and sound proof; retains heat and excludes cold better than any other plaster board made. Will not crack or warp. Can be tinted and frescoed or papered if desired, and can be applied by an unskilled workman in one-third the time required for ordinary plaster. Sized ready for use and finished a rich brown on the exposed side.

Our Prices on Peerless Wall Board Save You One-Half.

Sheets are 3-16 inch thick 32 inches wide, and are furnished in 8, 9, 10, 11 and 12-foot lengths. Price, per square foot, in lots of 2 1/4c 500 square feet or more. Smaller quantities at proportionately low prices.

(PASTE THIS UP ON YOUR DESK)

## OUR GUARANTEE:

Your money, including any freight charges you may have paid, will be cheerfully returned if you are not perfectly satisfied.

SEARS, ROEBUCK AND CO.

DID YOU READ OUR BIG AD LAST MONTH?

- Book of Modern Homes.
- Wholesale Delivered Lumber Price List.
- Building Material and Mill Work Catalog.
- Catalog of Home Heating Systems.
- Plumbing Catalog.
- Paint and Varnish Catalog.
- Wall Paper Catalog.
- Hardware and Carpenters' Tool Catalog.
- Roofing Catalog.

Sears, Roebuck and Co., Chicago, Ill.

Gentlemen:—As per offer in American Carpenter and Builder please send me, without charge, postage prepaid, the booklets and printed matter opposite which I have placed a check mark.

Name .....

Postoffice .....

R. F. D. No. .... State .....

P. O. Box No. .... Street and No. ....

SEND NO MONEY. WE PREPAY POSTAGE.

SEARS, ROEBUCK AND CO., CHICAGO, ILLINOIS

### Glidden's Endurance Wood Stains

Mr. Glidden tells the story of "Glidden's Endurance Wood Stains" as follows:

"He loafed in one day in search of a job.

"We looked up his references and one thing and another and told him to go to work. He did.

"It doesn't matter much what we agreed to pay him—everything was satisfactory to all parties concerned, and, as we said before, he went to work.

"He was very quiet and unobtrusive, as you might say, but he started making stains and experimenting with them on various kinds of wood.

"He called our attention to the results.

"It seems he had been working at that sort of thing for twenty years of his dogged, energetic existence. And he had just perfected a set of formulas for wood stains that, in the vernacular of the caboose, baggage car and other select circles, had it all over any other wood stains, and then some.

"We looked at them coldly, dispassionately, for awhile, then we had to admit just what we thought of them.

"He showed us what he could do with them on all sorts of woods and how easy they were to apply, so easy that it would be hard to apply them any way but the right way.

"He showed us how superior they were to oil stains and how superior they were to spirit stains. He didn't leave us any room to argue about it, he demonstrated each step as he talked.

"He proved to us that they do not raise the grain of wood, and he showed us their remarkable covering capacity. All the time we were looking for a chance to pick flaws but we couldn't find any. He showed us that these stains would not injure the finest varnish and he proved their excellent brushing qualities, their uniformity and permanence.

"We have named them Glidden's Endurance Wood Stains

and have placed them on the market under that name.

"They actually started to sell themselves from the very start, before we ever had a chance to write any advertising about them.

"That sort of thing doesn't happen every day, but, after all, it was not to be wondered at in this case, just a sight of a small sample of Glidden's Endurance Wood Stains is enough to make one anxious—anxious to see the beauty of wood revealed and intensified under one's brush. The Light Golden Oak is suggestive of the woodland itself, and the Dark Golden Oak of old Baronial Halls. The Weathered Oak suggests the dignity of banquet rooms, and the Kress Green, Fumed Oak and Silver Grey, the bright yet aristocratic beauty of Colonial days, those stately days of buckled shoes and courtly minuets, and so down the list of all the fourteen different stains, Cathedral Oak, Early English, Light Mahogany, and Dark Mahogany, each has a rich and unusual beauty of its own.

"They are designed to be used on new wood which has never been finished, though in cases where it is desired to re-finish wood that has been finished, it is only necessary to remove the old finish with Glidden's Paint and Varnish Remover and then apply the stain."

If you are interested drop The Glidden Varnish Co., Cleveland, U. S. A., a postal and they will gladly send you a color card with samples of wood stained with Glidden's Endurance Wood Stains in the fourteen different colors.

### To Devote Entire Effort to Engine Business

The Fuller & Johnson Mfg. Company, whose General Offices and Works are at Madison, Wis., announce that the development of their gasoline engine business has been such that in the mutual interests of their dealers and themselves, they have found it advisable to make arrangements

## Here's a Building Paper that Has Strength and Fibre and Body to it

A Building Paper that is easy to put on—and that stays put—

*Amafibre*  
BUILDING REG. U.S. PAT. OFF. 08. PAPER

is just what its name implies—a fibre paper wonderfully light in weight—and yet the **strongest**, most durable building paper you ever saw.

Amafibre Building Paper is water-proof, wind-proof, insect-proof—and largely sound-proof. Being tough and light, it is extremely easy to put on. It does not stretch nor tear and is readily handled. It is made of pure sulphite and comes in regular size rolls, 36 inches wide.

We want to send a Free Sample of Amafibre to every Builder and Contractor in America—Will you write today for yours? Your name on a postal will do.

**WELT & SONS PAPER COMPANY**  
DETROIT, MICH.



**MIDSUMMER HEATING INVESTMENT THAT WILL INSURE BIG SAVINGS**

**INSTALL AN UNDERFEED NOW**



ARCHITECTS and Builders everywhere know that Underfeed heating plants add to the renting or selling value of any building, because they insure, **clean, even** heat at **least** cost. It is possible for builders themselves to add to the comfort of their own homes and at the same time make a splendid, dividend-earning **summer** investment that will insure **big** returns in money saved **next** winter and **every** winter. Instead of **repairing** an old heater it will be **splendid**

economy to make a complete job of it—take it out and put in an Underfeed. The Underfeed—with all coal fed from below, the **rational** coal-burning way—**reduces** cost of heating so materially that it soon **pays for itself**.

No other heating plant on the market can meet the Underfeed's all-the-year-round slogan—backed up as it is by convincing, corroborative testimony from Saskatchewan and Canada's Northern provinces to the frosted belts of the South. Here it is:

# The Peck-Williamson Underfeed

HEATING SYSTEMS WARM AIR STEAM-HOT WATER  
**FURNACES - BOILERS**

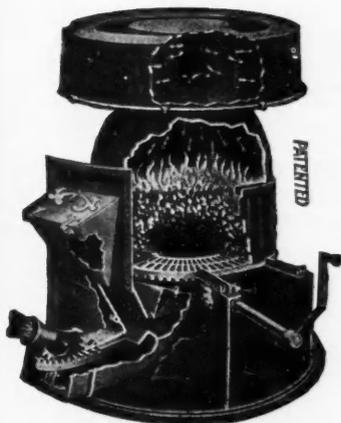
Save  $\frac{1}{2}$  to  $\frac{2}{3}$  of Coal Bills

Canton, Ohio, is one of the most notable of many enthusiastic Underfeed strongholds. Pictured above are two Underfeed heated Canton homes. One owner—A. Castell, of 400 Springfield Ave., writes:

*"I have, at the present time, about one-half*

*dozen furnaces of different makes, located in other buildings I own. From my personal experience with these furnaces, I consider the Underfeed feature superior to any in the market."*

Illustration shows furnace without casing, cut away to show how coal is forced up under fire, which burns on top.



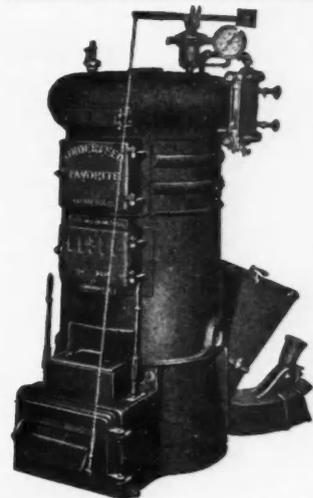
H. A. Schrantz, 521 Dueber Ave., the other house-owner writes, after four years' satisfaction with the Underfeed:

*"It maintains an almost uniform temperature of 75 degrees, regardless of the severity of the weather; never less than 65 degrees over night during zero weather—the real test of a furnace. It is most economical. For firing from Oct. 1 to May 1, my coal bill has never been over \$17, and in a few years the Underfeed will have saved its initial cost."*

Let us tell YOU why it will pay any architect or builder to **specify** the Underfeed. Underfeed heat means **all-time** satisfaction at **least possible** cost.

Write for YOUR copy of Underfeed Furnace Booklet or Special Boiler Catalog.

This illustration shows the Underfeed Boiler.



We'll be glad to send a lot of fac-simile testimonials. Heating Plans of our Engineering Corps are FREE.

**THE PECK-WILLIAMSON CO., 425 West Fifth Street, Cincinnati, Ohio**

whereby their entire time and efforts can be devoted to the designing, manufacturing and selling of gasoline engines, and to this end they have sold out their implement business to the Madison Plow Co., Madison, Wis.

The Fuller & Johnson gasoline engines have, within a comparatively few years, taken a stand in the front ranks, this being due to the fact that they were properly designed, manufactured in the best manner, both as regards material and workmanship, and sold at fair prices, quality considered. The management of the Fuller & Johnson Co. is in the hands of men who are practical mechanics, whose experience has been gained in connection with work of the highest class, and it will always be the aim of this company to supply goods of the highest quality.

### How Steel Bins Aid in Fire Protection

The matter of fire protection is of the utmost importance in every business, but it is a striking fact that thousands of merchants and manufacturers take no cognizance of the necessity of this protection. They are generally disposed to let well enough alone—inasmuch as they "haven't been burned out yet, so let everything take care of itself as it is."

These are the men who, after the disaster that comes unexpectedly upon them and overwhelms them, ruefully look back upon their old time optimistic complacency and condemn themselves for being too narrowminded to fortify and protect themselves against the fiery foe.

Such examples as these have opened many eyes and to the doctrine of forethought is due much of the success of steel. Business men, heeding the necessity of protection against every untoward contingency, are building bulwarks of steel about them. They have discarded wood and others are following their example.

So, as the transition progresses, it reaches out into every

office, store, factory, warehouse, jobbing house and so on down the list. The cry on every hand is "Fireproof—it must be fireproof!" Business men demand fireproof buildings because they want their property, their stock, their business thoroughly protected.

An essential in this all-around fireproofing is the discarding of everything that is a fire contributor. One of the latest and newest products of this kind placed on the market for store, factory and warehouse fixtures is the steel bin, manufactured by the Berger Mfg. Company of Canton, Ohio.

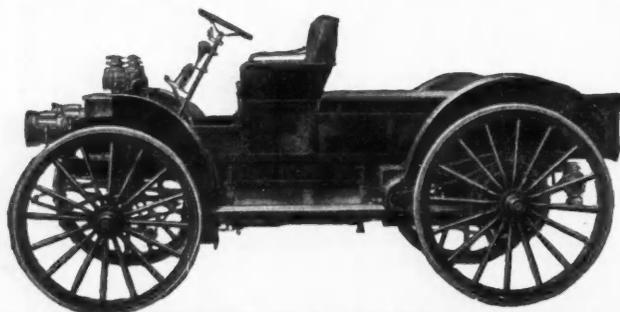
Steel bins are coming into favor for storing small stock of every description in bulk. Hardware dealers and other merchants are using them, while they are being introduced into many factories where it is essential that small parts be kept conveniently at hand. They are constructed of steel and reinforce the other steel construction of the building, for they do not feed flames but do assist in the general plan of protection.

### One Machine Takes Place of Complete Machine-Shop

Among the many devices and machines now on the market, whose purposes are to lighten the labor and increase the profits of carpenters, builders and contractors, a leading place must be awarded to the Famous Universal Woodworker.

To those accustomed to the ordinary types of woodworking machinery—that is, those machines which do only one kind of work—the Famous Universal woodworker comes as a revelation. Even to those who have used other types of woodworkers the principle and operation of the Famous is an eye-opener.

No less than sixteen different kinds of millwork can be done on this machine. In fact it is a complete machine shop in itself comprising, practically, all the machinery that the



## Where Haste Makes Money

The International Commercial Car is a great convenience in its prompt and reliable delivery of the numerous "little things" which are so essential to quick work. Tools, finishings, light materials are often needed at critical times, and their absence means delay and money lost.

## International Commercial Cars

save this vexation and expense. They can be depended on in all weathers, over all roads. The simplicity of the power plant insures its satisfactory handling by the average driver. Its power and capacity are not secured at extra fuel expense as we shall be glad to demonstrate. Solid rubber tires are proof against punctures and blow-outs; the wheels are sufficiently high to give perfect clearance; the air-cooled engine will not freeze, and its all-around economy, reliability, and service have made many friends for this car among progressive and wide-awake merchants.

Let us tell you all about the International Commercial Car.

### International Harvester Company of America

(Incorporated)

70 Harvester Building

CHICAGO U S A

## Give Good Varnish Advice to Your Customers

**T**HE varnishing of the floors, doors and other woodwork that you build is very important.

It's so important you ought to help see that good varnish is used.

By recommending Berry Brothers' Varnishes you will be giving the best possible varnish advice—advice, which if followed, will greatly increase the beauty, and permanent satisfaction of your own handiwork.

### Berry Brothers' Architectural Varnishes

MEET ALL REQUIREMENTS FOR HIGHEST GRADE FINISHING IN BUILDINGS

#### TRADE MARK LIQUID GRANITE MARK

For finishing floors in the most durable manner possible. Its quality has made it the best-known and most widely used of all varnishes. There is no substitute.

#### WOOD FINISH LUXEBERRY FINISH

For the finest rubbed (dull) or polished finish on interior woodwork. It has for years been the standard to which all other varnish makers have worked.

#### ELASTIC INTERIOR FINISH

For interior woodwork exposed to severe wear and finished in full gloss, such as window sills and sash, bathroom and kitchen woodwork, and stands the action of soap and water to an unusual degree.

#### ELASTIC OUTSIDE FINISH

For front doors and all other surfaces exposed to the weather. Dries dust free in a short time and possesses great durability under the most trying weather conditions.

SEND FOR OUR FREE BOOKLET:  
"NATURAL WOODS AND  
HOW TO FINISH THEM."

**BERRY BROTHERS, Limited**  
Established 1858.

Largest Varnish Makers in the World.  
Factories: Detroit, Mich., and Walkerville, Ont.  
Branches: New York, Boston, Philadelphia, Baltimore,  
Chicago, Cincinnati, St. Louis, San Francisco.  
Dealers: Everywhere.



average carpenter and builder has use for. Simple adjustments change the character of the machine from a band-saw to a planer, from a hollow chisel mortiser to a jointer, and so on. When necessary three men can work on the machine at one time, each performing a different class of work.

Over six hundred Famous Universal Woodworkers are in use and not one user has ever had cause to be otherwise than pleased.

The Sidney Tool Co., Sidney, Ohio, who are the builders of the Famous Universal Woodworker, will gladly send full particulars of their machine upon request.

### Old Mahogany and Old Tools

In a little side street in New York, is a tiny cabinet shop that might have been transplanted from London, it is so quaint, inside and out. The owner is a little stoop-shouldered old man who has lived and worked there as long as anyone in the neighborhood can remember—lived and worked in the gray old place in the companionship of old mahogany and his tools.

He repairs antique furniture for some of the best decorators and furnishers in town, and he makes fine pieces to order from their designs. His work is often of such a delicate nature that in fitting and finishing the difference of a hundredth of an inch in the thickness of a shaving might spoil the hang of a door, or the proper adjustment of a moulding. He is as methodical in his work as he is in exercising his conscience in giving his customers the best work that is in him. He sticks to old traditions and to old-fashioned quality.

The one departure from his love of old-fashioned ways is the fixture that dominates the little room, immediately one enters it. Above his work bench, fastened to the wall between two windows, is a modern tool cabinet, completely equipped. If you opened it you would find some tools that

have been dipped in melted paraffin and wrapped in soft paper. They are not in use.

On the work bench in front of him lies a saw that has been worn to about half its original width from filing over and over again. The old man picks up three chisels that have been sharpened and resharpened until they are half their original length. "These," he says, "have been with me twenty years, and I will never use any others of this kind as long as I have them. That saw I bought at the same time, and no other could take its place. The new tools are the same make as the old ones, but I stick to old friends," and he bent the point of the saw to the handle, released it and it flew back with a ring. The tools, new and old, were Keen Kutter tools. If the old man lives for another twenty years, he knows he will get the same service out of the new tools that he has had from the old ones.

His Keen Kutter cabinet helps him in his love of order and in keeping his beloved tools in fine condition. It makes a place for everything, and he can quickly put his hand on even the tiniest bit. The natural tendency is also to replace any tool at once when he is through with it, and no tool ever rubs against another or becomes nicked or damaged. He would not go back to the old chest because in this case the new way is better than the old.

The superiority of Keen Kutter tools has been demonstrated by this old cabinet maker. He will have no other kind because they have proved themselves by the hardest kind of test—the trial of time.

For any man who uses tools, continually or occasionally, Keen Kutter tools are claimed to be best, because they are the final expression of quality of material and workmanship. It is the boast of the manufacturers that the temper of the steel is perfect, the handles are always of straight-grained wood, the best of its kind for a certain purpose, and real

## CONTRACTORS

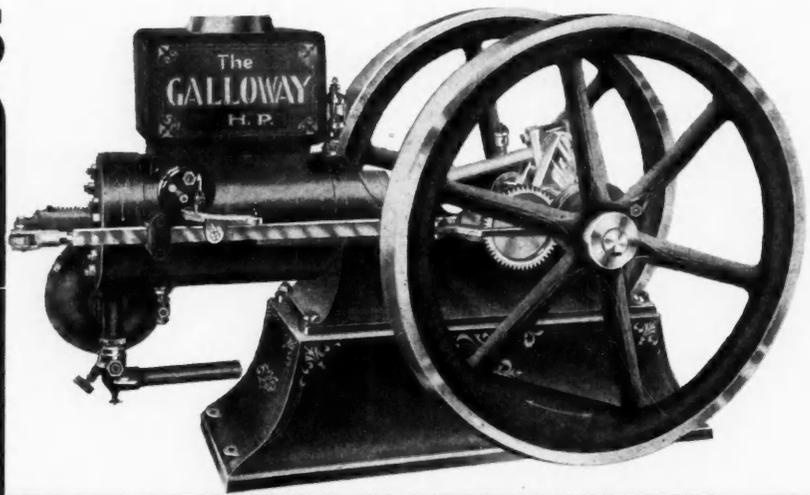
Here's your engine. Run all day with a mighty little attention.

### The Galloway Gasoline Engine

Will carry the big loads and at low cost of upkeep.

#### SIMPLEST ENGINE BUILT

Only four things to do: Turn on switch, turn on oil, turn on gasoline, give fly-wheel a start. That's all. Even the ordinary laborer will have no trouble with it.



## THIRTY DAYS FREE TRIAL

Get it Right Out on the Job and Work it to Your Limit

The "Galloway" engine is not overspeeded and is rated by actual brake tests. They are made in all sizes from 1½ to 28 H. P. They run on gasoline, naphtha, kerosene or distillate.

On the larger sizes, if not convenient to pay all cash, we will take note for balance at regular rate of interest for six months.

Write us for free information on stationary and portable Gasoline Engines from 1½ to 28 H. P. Our prices are RIGHT and the engine is BUILT FOR SERVICE

## WILLIAM GALLOWAY CO.,

1145 GALLOWAY  
WATERLOO, IOWA

The MARK of the MAKER is your guarantee of good quality and progressive excellence.

THAT mark is put only on the very best tools that we make, and in each case stands for definite superiority in the tool and our personal ensurance of your satisfaction. On this P. S. & W. Chisel it means a special quality of tool steel, tempered and hardened by a special process and sharpened before it leaves the factory. It means a longer socket than in other makes, accurately rounded to fit the handle. It means the perfect finish of the most complete line of chisels on the market.



### A Handy Book For Carpenters

Our 165-p "Mechanics' Handy List," shown at the left, contains 35 pages of valuable shop information and a catalog of over 200 tools. Sent free at your request

REG. U. S. PAT. OFF

### P. S. & W. Carpenters' Tools

THESE include the most complete and well finished line of gouges and chisels on the market, also the largest line of braces, including the Samson Brace with Ball-bearing Chuck, the greatest improvement ever made in brace-construction. All our highest grade Braces, Auger Bits, Chisels, Gouges, Drawing Knives, Squares, Calipers, Hammers, Hatchets, and other Carpenters' Tools bear our trade-mark and are fully guaranteed.

Our four large lines of Guaranteed Hand Tools for Electricians Machinists, Tinsmiths and Carpenters are sold by practically all leading dealers in the United States and Canada, or can be ordered by them from any hardware jobber. Insist on The MARK of the MAKER and accept no substitute.

## The Peck, Stow & Wilcox Co.

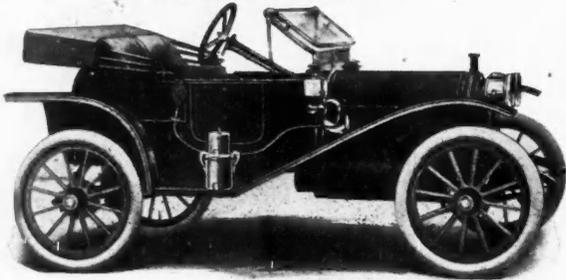
MFRS. of the Largest Line of Mechanics' Hand Tools Offered by Any Maker

Address Correspondence to 22 Murray St., New York City  
Established 1819 Five Large Factories

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER

# Hupmobile

GUARANTEED FOR LIFE



## RUNABOUT Fully Equipped

**Torpedo, \$850** F. O. B. Detroit, with same standard equipment as runabout.

**Touring Car, \$900** F. O. B. Detroit, with same standard equipment as runabout.

Equipment includes top, windshield, gas lamps, and generator, three oil lamps, tools and horn, 20 H. P. 4 cylinder motor sliding gear transmission, Bosch Magneto.

**\$750**

**F. O. B. Detroit**

**Coupe, \$1100** F. O. B. Detroit, with equipment of electric headlights, combination oil and electric dash and tail lamps, folding seat on dash, front shock absorbers, 31x 3 1/2 in. rear tires, tools and horn.

Before you buy your 1912 car let us leave with you a final vital thought.

At the end of your first or your third season the Hupmobile will hold for you a greater cash value in proportion to its price than any other car on the market.

In evidence of this statement, we submit the following, unquestionable testimony of Neils Buck, one of the best known apartment house builders and architects in Chicago.

### NEILS BUCK & CO. Contractors and Builders 9 S. LaSalle St.

Chicago, May 23, 1911.

Hupp Motor Car Co., Detroit, Mich.

Gentlemen:—In answer to yours of the 19th inst., in reference to the Hupmobile, will say that same has been very satisfactory. I use it constantly in visiting my various buildings. In fact, I had driven all makes of cars previous to the time I drove the Hupmobile, and have had three machines of your make. The first one I drove was run one season 12,000 miles and was sold second-hand at that time for \$650, three of the original tires being on the machine at the time it was disposed of. The second car was run one season 12,000 miles and was sold for \$600, still having two of the original tires when sold.

The torpedo body car, which I am now running, has been running 8,000 miles, and is in perfect condition. I intend to run it the balance of the season, as I am a great believer in running a car only one year, although the two cars that I have disposed of are still running and the first one has covered twice the mileage since I disposed of it. I understand the owner of it is asking \$550 for it now. The average man overlooks the weight of a car when he buys it. The Hupmobile is beyond any doubt the best running machine for a runabout that is manufactured, and I would recommend it to contractors and architects as an inexpensive car, splendidly adapted to their needs. Yours very truly, NEILS BUCK.

We have no used car problem for two reasons: First, due to the great demand for the Hupmobile—a demand that our constantly increasing production has been unable to supply—the Hupmobile finds a ready market and is quickly converted into cash.

Second, on account of its light weight, excellent workmanship and high class material, the Hupmobile depreciates less in proportion to its cost than any other car that you can buy.

Finally, the Hupmobile—with its average of 25-27 miles to a gallon of gasoline, and 10,000 miles on a set of tires—costs no more to keep than the average business man's carfare.

It is so simple to run that it appeals to every member of the family.

The Hupmobile is not cheap in any sense of the word—but a car of extraordinary value, in first cost and after cost—which includes every accessory for your comfort and convenience.

**Hupp Motor Car Co.,** 1255 Jefferson Ave.,  
Detroit, Mich.

use always shows them to be all that is claimed for them. Best of all, the Keen Kutter trade mark is stamped on the metal as an agreement, in effect, to replace any tool that will not pass successfully through the most rigid test—or to refund your money through the dealer.

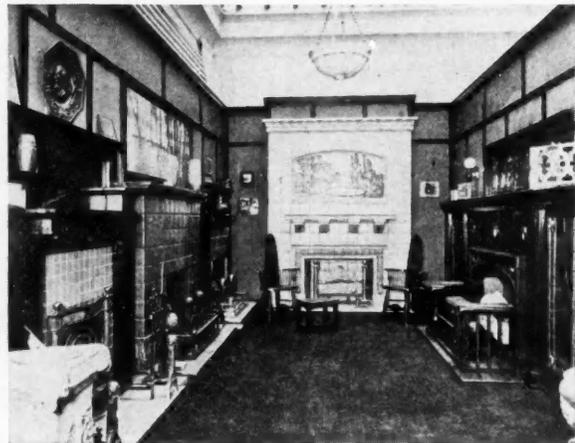
Keen Kutter cabinets are equipped with a set of the tools needed for ordinary household use, or furnished with 115 pieces for the trained carpenter or cabinet maker. Your hardware dealer has them or will get them for you. If not, write the Simmons Hardware Company, St. Louis, Mo., or 173 Duane Street, New York.

### Artistic Tile Exhibit

One of the significant evidences of the steady advancement in the tile industry is the recent opening of the down town office and tile display room, 128 Reaper Block, corner of Clark and Washington Sts., of the prominent firm of Chas. F. Lorenzen & Co., Inc.

In their new, centrally located office Chas. F. Lorenzen & Co. show a large and attractive display of Rookwood Faience and complete lines of other well-known makes of tile. The furnishings and fixtures are handsome and luxurious, and it is a delightful place in which to study the artistic effects obtained in modern interior construction by the use of decorative tile.

In this connection it is timely also to note that Chas. F. Lorenzen & Co., since May 1, have occupied their new main office and show rooms at 701-709 North Sangamon St. near Chicago Avenue, where a cordial welcome is always ex-



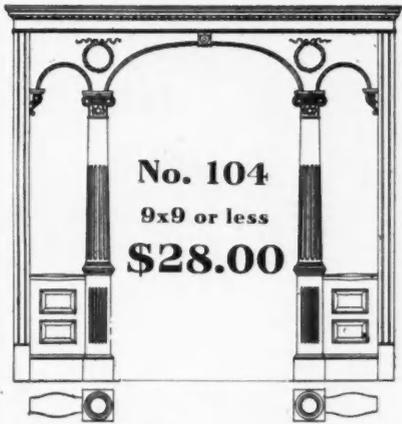
View of New Display Room of Chas. F. Lorenzen & Co.

tended to visitors. The large, modern plant of the firm is located at this point, corner of Sangamon and Pratt Sts. and it is easily accessible from all parts of the city. The removal to new, larger quarters was made imperative by the steady growth of the business, which was established in 1897.

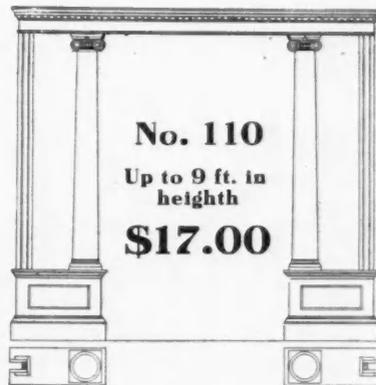
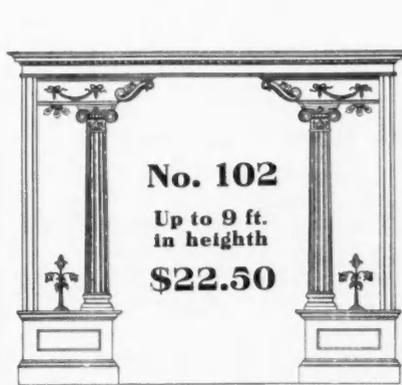
The products of Chas. F. Lorenzen & Co. include mantels, consoles, special interior woodwork, etc., manufactured on the premises, and ceramic mosaic, tile fireplace fixtures, etc., which are carried in stock in large quantities. The firm is now in a better position than ever to execute contracts, large or small, for work of this character on short notice. Its facilities and equipment are unsurpassed.

Among the important tile contracts executed by this company in recent years are the Kesner building, 17 stories, corridors, stores and toilets; Heisen building, 22 stories, corridors, etc.; Blackstone Hotel, refrigerating rooms, first to eleventh floors inclusive; Chicago and Northwestern terminal station, refrigerating rooms; Y. M. C. A. building, northwestern branch; Stoddard-Dayton Automobile Company's

# We Pay the Freight



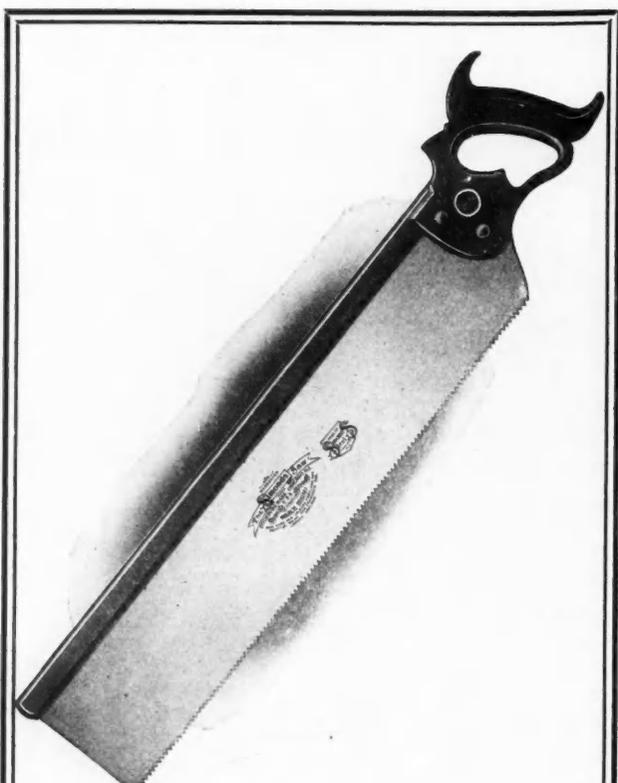
# We Pay the Freight



**Chicago Grille Works, 828-838 Wells St., Chicago, Ill.**

Will ship any of the above openings measurements as given, in the white, for the price quoted, freight paid to your station, if in the United States.

Cash must be sent with your order.



## SIMONDS Saws for Mitre Boxes

When you buy that new Mitre Box just take a look and see that the Simonds Saw is supplied with the box.

A pretty good sign that you are getting a high grade box is to find a Simonds Saw is furnished with it.

Look for the trademark; that's the way to be sure. You get a high quality manufacturer's own brand saw.

Made of Simonds Steel, as are all Simonds Hand Saws. No. 95, illustrated above, has Apple Handle, Polished Edges, Blued Steel Back. Set and Hand Filed, ready for use. Warranted. Toothed edge, 2 inches shorter than the full length of Blade.

Buy from your Hardware Dealer or write us about any kind of a Hand Saw you may want if you are looking for more than ordinary goods.

### Simonds Manufacturing Company

Fitchburg, Mass.  
New York City  
Portland, Ore.  
Vancouver, B. C.  
Chicago, Ill.  
New Orleans, La.



San Francisco, Cal.  
Lockport, N. Y.  
Montreal, Que.  
Seattle, Wash.  
London, Eng.  
St. John, N. B.



View of New Display Room of Chas. F. Lorenzen & Co.

building; Velie Motor Car Company's building; Indiana Steel Company's hospital, Gary, Ind.; Y. M. C. A. building, Gary, Ind.; and Culver Military Academy, Culver, Ind., mess hall, covering over 20,000 square feet. Many other contracts have been executed, including banks, stores, residences and apartment buildings.

It is a matter of local pride to call attention to the prestige of Chas. F. Lorenzen & Co., in their special field of industry. They have achieved a national reputation during the fourteen years of their business history. They have done much to elevate the standards of interior decorations and have earned their commanding position by straightforward methods and high class work.

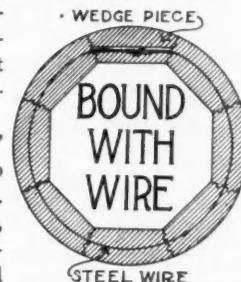
#### Valuable Metal Lath Booklet

Every reader of the AMERICAN CARPENTER AND BUILDER who has not already done so should write at once to the Northwestern Expanded Metal Company, Old Colony Building, Chicago, for copies of their booklet on Metal Lath. This is a very valuable book, containing many useful details, showing the uses of metal lath for various structures and giving various tables and other useful information, concerning metal lath and cement plaster work. They also have very valuable data concerning the building of road culverts of concrete, including the use of reinforcing fabric; which is well worth asking for. These booklets will be sent free on request to our readers.

#### Stave Columns Wire Bound

Carpenters and builders who are looking for the newest and best things in the building world, will surely be interested in the accompanying illustration of the "Cunnius patent" steel bound column, manufactured solely by the Fitzgerald-Speer Co., Pen Argyl, Pa. While this column is comparatively new in the building field, it has already met with great success and the demand for it is constantly increasing.

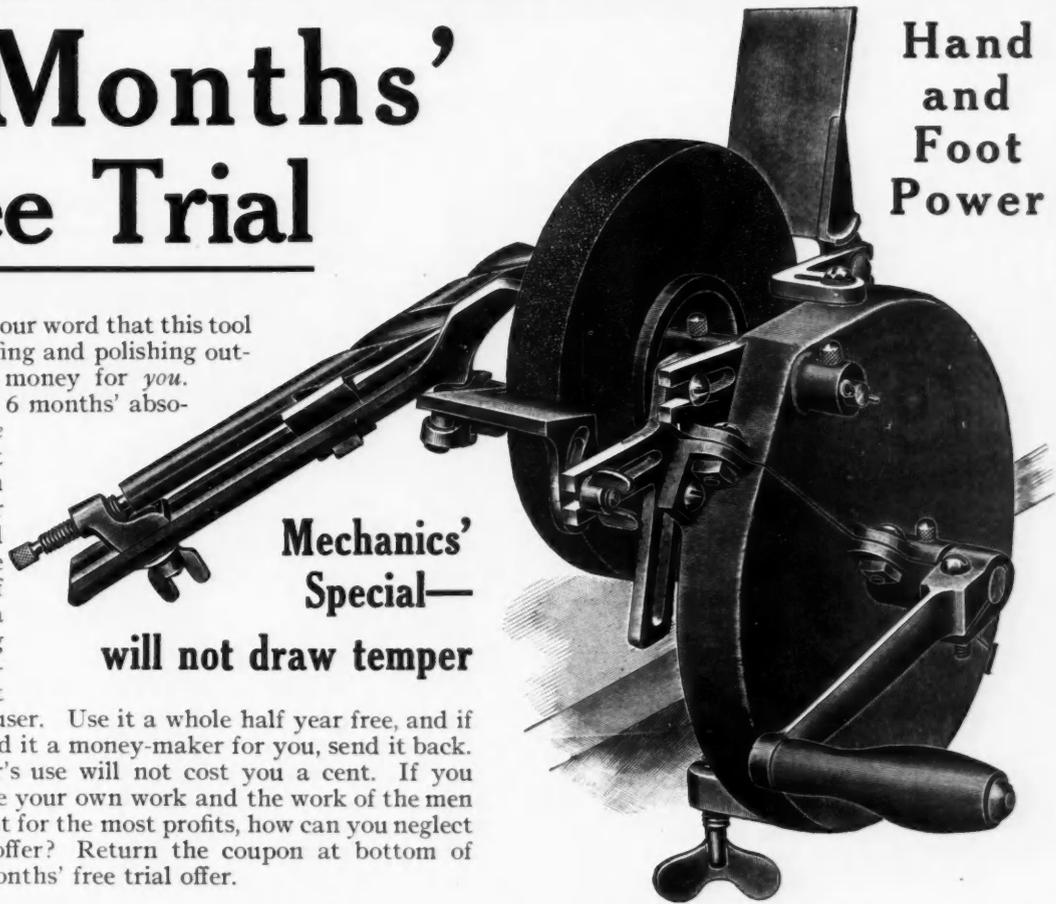
The feature of the "Cunnius patent" column is the heavy steel wire used to bind the column, as is shown in the cut. This wire is placed every fifteen inches, and is of course concealed. The column joints are thus not only mortised and glued, but are further bound with the steel wire. The final stave is securely wedged in, after the wire has been fastened and tied together, and the finished column thus presents a solid, clean appearance, as though there were no



# 6 Months' Free Trial

Hand and Foot Power

Don't take our word that this tool grinding, buffing and polishing outfit will save money for you. We offer you 6 months' absolutely free use of this outfit in your own work on your own tools, and let you prove for yourself that it is a money-saving and money-making outfit for any tool user. Use it a whole half year free, and if you don't find it a money-maker for you, send it back. The half year's use will not cost you a cent. If you want to make your own work and the work of the men you hire count for the most profits, how can you neglect this liberal offer? Return the coupon at bottom of page for 6 months' free trial offer.



**Mechanics' Special—**  
**will not draw temper**

## Luther Tool Grinders

6 times faster than emery wheels  
25 times faster than grindstones  
*Built like a high grade lathe*

Special attachments enable inexperienced persons to sharpen Chisels, Twist Drills, Etc.



The genuine Carborundum wheels will not draw temper from tools; no need of cooling with water—all your tools will last longer, which means that much money saved. The wheels cut hardest steel, as emery does soft copper—it is only a moment's work to do any job of tool sharpening, so easy in fact that tools are always kept razor-keen and that means more work accomplished with less effort, which means more money saved. The wheels outwear any number of emery wheels and that means another money-saving.

### 11 Tools in One

consisting of Mechanic's Special, built like a high-grade lathe, with steel and malleable construction, machine cuts spur gears, bronze bearings in oil bath, etc., and the following accessories: rough Carborundum wheel, fine Carborundum wheel, 1 chisel attachment, and 1 twist drill attachment by which inexperienced persons can sharpen chisels and twist drills, 1 polishing spindle, 1 buffer, 1 polisher, 1 oil stone, 1 Carborundum hone in leather case, 1 Carborundum scythe stone, 1 foot-power attachment.

### Return this Coupon for 6 Months' Free Trial Offer

This perfected sharpening, polishing and buffing Mechanic's Special Outfit is a business and labor economy—can you afford to neglect our liberal offer? Return this coupon for 6 Months' Free Trial Offer, and free booklet reprinting the story of Carborundum as it appeared in McClure's Magazine.

**LUTHER GRINDER MFG. CO.**  
17 Madison St. MILWAUKEE, WIS.

**COUPON**

LUTHER GRINDER MFG. CO.  
17 Madison St., Milwaukee, Wis.

Please send me free and prepaid your free Carborundum booklets and 6 months' free trial offer on Mechanic's Special Outfit.

Name .....

Address .....

Dealer's name .....

Address .....

# Write Us Now For Free Samples of Johnson's Artistic Wood Finishes



## Johnson's Prepared Wax

is a complete finish for all hard and soft wood—equally well adapted for use on floors, woodwork and furniture. May be used on the bare wood or over Dye, Paste Wood Filler or any finish—simply apply with a cloth and bring to a polish with a dry cloth or brush.

Johnson's Prepared Wax gives that beautiful, artistic, dull finish so much in demand. Prepared Wax does not show scratches and heel marks, and work finished with it may be easily kept in perfect condition.

Johnson's Prepared Wax contains a larger percentage of hard, expensive wax than other wax finishes on the market, and for this reason it covers a larger surface and can be brought to a more beautiful and lasting polish. It does not become soft and tacky in warm weather or warm climates—or from the heat of the body.

**Ask your dealer for free Sample**

## Johnson's Crack Filler

is a paste filler for cracks, crevices and nail holes. Should be applied the same as putty, but it is much superior to that article as it does not chip, crack or come out of place. When Johnson's Crack Filler has hardened, it takes Johnson's Wood Dye the same as the wood.

**Ask your dealer for free sample of Johnson's Crack Filler and test it out.**

If your dealer cannot supply you, write us. We will send samples, also Instruction Book Edition A. C. B. 8, all free when requested.



**S. C. Johnson & Son, Racine, Wis.**

*"The Wood Finishing Authorities."*

wire inside at all. The manufacturers guarantee this column not to crack, bulge or split in any way.

The Fitzgerald-Speer Co. can furnish these columns, either plain or fluted, in any length from 8 feet to 26 feet and from 8 to 24 inches in diameter. These columns have a stave thickness of from 1 to 3 inches, and can be furnished in any kind of wood.

The manufacturers are looking for agents and can offer an attractive proposition to up-to-date carpenters and builders. Further particulars and price lists can be obtained by addressing the Fitzgerald-Speer Co., Pen Argyl, Pa.

### Old and New in Grilles

Fashions change in buildings as well as in clothes. The tastes of our fathers and grandfathers were different from those of our own, in the interior decoration of their houses the same as in matters of dress.

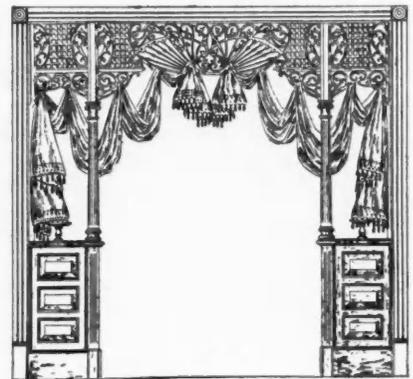
The grille furnishes one of the most striking examples of this. The accompanying illustrations show the contrast between the popular style of today and that of former times.

Twenty or thirty years ago thousands of these delicate and elaborate fret-work grilles were sold. Every residence that made any pretensions at being high class had to have one of them and with their festooning draperies they were thought to be the very acme of elegance.

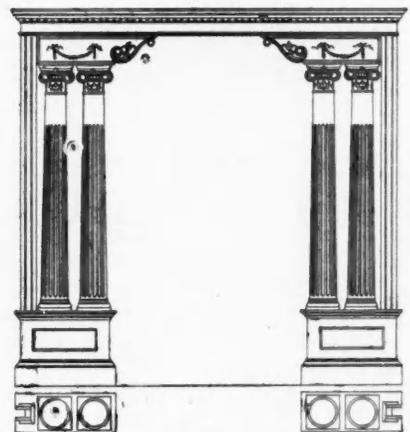
Today, however, the style is changed and where one of the light, fancy spindle grilles is sold, a hundred of the other sort, with the heavy columns are put up.

It has always been something of a mystery how the grille makers were able to turn out the fine delicate work necessary in the old style grilles. Expensive woodworking machinery was required and the work was done with infinite pains. This same care is used, however, today in the manufacture of the newest styles. For high quality work great care is needed.

When high quality is mentioned in connection with grilles, those who know think at once of The Chicago Grille Works, 826 to 838 Wells street, Chicago. This concern operating during the past nineteen years, has built up an enviable reputation for high quality work in the manufacture of colonades, columns, consoles, grilles, etc. In the past their product has been sold through jobbers, but now they have made it possible to buy direct from them, saving the middleman's profit. They will be glad to mail you one of their catalogues upon request. Every reader of the AMERICAN CARPENTER AND BUILDER should have a copy of it.



Popular 30 Years Ago



Popular To-day

*Glidden*

## Endurance Wood Stains

LET us send you a beautiful panel frame showing our Endurance Wood Stains in fourteen different color effects. At your leisure you may then select the particular stain best adapted to your color scheme.

For the greater convenience of the members of the architectural profession, we maintain a special department devoted exclusively to producing any special efforts required, and to the reproduction of any color scheme suggested. The services of this department are offered to architects free of charge, and all are invited to avail themselves of its benefits and privileges.

### The Quality of Endurance Stains

Glidden's Endurance Wood Stains intensify the natural beauty of all woods.

They are penetrating yet *they do not raise the grain.*

This is due to the special process used in their manufacture.

*All the colors are permanent.*

Glidden's Endurance Wood Stains are superior to oil or spirit stains, and their great covering capacity makes them *especially economical.*

Without any exaggeration whatever, Glidden's Endurance Wood Stains are strikingly superior to any other stains that have ever been placed on the market.

*You should see our Light and Dark Mahogany.*

We make a specialty of finishes for Red Gum and California Fir Wood, which woods are now being extensively used.

### Glidden's Green Label Varnishes

are well known and are well established among American architects as the highest grade and standard of quality.

*Specify our varnishes and we will see that they are used.*

Write us for detailed information on Glidden's Endurance Wood Stains and for our Descriptive Catalogue of Glidden's Green Label Varnishes.

We will send demonstrations of our materials on request. See Sweet's Index.

## THE GLIDDEN VARNISH CO.

Factories:

CLEVELAND, U. S. A. TORONTO, CANADA  
Sixth City

Branch Warehouses:

NEW YORK CHICAGO



**King's Elements of Woodwork**

A book of this title by Charles A. King, Director of Manual Training, Eastern High School, Bay City, Mich., has just been issued by the American Book Company, of New York,

It is a book of 156 pages and contains 99 half-tone and line engravings; it deals with the growth, qualities, and uses of the different kinds of wood, and the manufacture and care of lumber, from the first steps in logging to kiln drying. There are chapters upon the selection, care, and use of the important types of woodworking tools, the manufacture and use of glue and sandpaper, and the different materials and methods used in staining and finishing woods. If facility is acquired to care for and use the tools described in this book, little difficulty will be experienced in the use of other and more complex tools of the same type. This book is adapted to the student of manual training, the apprentice and the amateur woodworker, and should find a place in every institution in which elementary woodwork is taught.

**Curing a Hall of "The Echoes"**

The problem of detecting the sources of troublesome echoes in an auditorium, and of doing away with them, was once regarded as insoluble. It may now be added to the list of similar problems that modern science has solved, although the solution requires some delicate and difficult work. In the fine auditorium of the University of Illinois the clever plan was recently adopted of using a noisy arc-light as a source of sound. As light and sound thus originated at precisely the same spot, and as both are subject to the same laws of reflection, it was easy to trace the path of the sound by means of its visible companion. We quote from *The Physical Review* an abstract of a report on the matter made to the Amer-

ican Physical Society by F. R. Watson:

"An investigation of the acoustics of the University of Illinois Auditorium has been carried on for more than two years. The auditorium is shaped nearly like a hemisphere, with several large arches breaking the regularity of the surface. The dimensions of the building are great enough to allow echoes to exist in addition to a reverberation.

"In the dearth of definite information about echoes, several methods were used to trace the path of sound in the auditorium. An attempt to locate echoes by generating a sound and listening with the ear met with only partial success.

"The most satisfactory method involved the use of an alternating arc-light at the focus of a parabolic reflector. In addition to the light, the arc gave two sets of sounds; one sound being a hum due to the alterations of the current, and the second sound a successive 'spitting' of the arc. This latter sound was of short wave-length and therefore experienced little diffraction. It was also of suitable intensity to allow the reflected sound to be heard easily. The bundle of light rays included also a bundle of sound rays, the sources of both being at the same place and subject to the same law of reflection. The path of the rays was easily found. The observer could see where the sound rays struck by noting the position of the spot of light. To trace successive reflections, small mirrors were fastened to the walls and the path of the reflected light followed. This method allowed a complete 'diagnosis' of the acoustic troubles of the auditorium to be made, so that methods of cure may now be applied intelligently and with confidence."

**The Band Saw in the Shop**

The band saw is the most important machine in any wood shop, especially that of the carpenter, contractor or builder.



Group of Metal Slates



Group of Victoria Shingles



Group of Oriental Shingles



Imperial Shingle

# How to Know CORTRIGHT Metal Shingles

Since Cortright Metal Shingles became so successful 26 years ago, a lot of manufacturers have thought that all they had to do was to make a shingle to look something like Cortrights, and it would be equally successful. But they've failed.

After they sell a man a roof with the argument that it's "just as good as Cortrights" it usually proves so troublesome as to discourage him altogether with metal shingles.

Even some carpenters and builders have been fooled by this "just as good" argument, and it's still a worse investment for them than for the property owner, for if you lay a roof that's only going to be a yearly annoyance to your customer you lose many times your original profit.

**That's why it is so important that you should know these four designs,** and look for the words "CORTRIGHT" REG. U.S. PAT. OFF. which are stamped on the top of each genuine Cortright Shingle. (See where the arrows are pointing.)

And to prevent you from taking any kind of risk, why don't you send for our two free roofing books that you can keep on hand for reference?

Write for them right now before you forget, or just simply sign and mail us this attached coupon.

**Cortright Metal Roofing Company**  
PHILADELPHIA and CHICAGO

Cortright  
Metal Roofing  
Company,  
Philadelphia, Pa.

Gentlemen:—Kindly  
send me your two free  
books offered by you in  
American Carpenter and  
Builder August.

Name .....

Street Address .....

City .....

Business .....

*Speedwell*

You should investigate the remarkable qualifications of Series No. Seven

## 4 Ton Motor Trucks



This truck because of the excellence of its design, its abundant power, its unusual strength, marks a new era in heavy duty motor truck service. Its low cost of upkeep, its freedom from repairs, its ability to stand the extreme punishment of continuous service under severest conditions are causing comment in all quarters. An absolute adherence to the highest possible standard of manufacture is and will always be the foundation of Speedwell Truck prestige.

### A few prominent features of this truck are:

A short wheel base (115 inches) without sacrifice of loading space and without overhang. (Loading platform is 12 ft. 6 in. long.) This short wheel base is obtained by placing the motor under the front seats and makes this truck far easier to handle in traffic and around loading stations than other types of equal capacity. An improved detail of construction, the entire seat cage swinging up from the frame, in either direction, makes the motor more accessible than when covered by hood with driver's seat behind. Ample power (a 4-cylinder 50 H. P. motor) and unusual strength in the construction of all members spells continuous service under all conditions.

Power transmission that avoids the use of long shafts in the drive line—avoiding vibration and twisting of shafts. Provision is also made to minimize the strains of starting and stopping.

Unusually large tire equipment lessens the cost of upkeep of this important detail.

Accessibility of all units—any unit being removable, when necessary without tearing down other units.

Most important of all is our sterling principle to build all Speedwell products honestly and well—to exploit nothing that has not been fully proven and to stand back of our output to the limit.

### The Speedwell Four Ton Truck Equipped With Stake Body, \$3500

We build a 2 ton truck at \$2950; a 6 ton at \$4000, to which the above details of design apply; also trucks of specially long wheelbase when necessary for such work as trucking lumber, pipe, etc.

### Write for Speedwell Truck Information

Trucking problems are so diverse in their character that it is desirable to state in requesting truck literature, the exact nature of work you require of a truck—the average weight of loads, distance of hauls, number of stops, road-beds and grades. This will enable our Service Department to give specific information regarding trucks most suitable for your needs.

## SPEEDWELL MOTOR CAR CO.

610 Essex Avenue,

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DAYTON, OHIO

WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



## The Beginning of His Success

Success has dawned for many a man with the marking of the I. C. S. coupon. It was a simple act—an act that placed him under no obligation—but it proved to be the beginning of a career.

Trained men are in demand everywhere. There is not an important labor-employing concern in the world that has not openings for men prepared to make good in positions. "We always need trained men," said a prominent manufacturer recently to a young man applying for a position. "There are not well-trained men enough to meet the smallest part of the demand," declared a leading magazine in a strong editorial. The Help Wanted columns of trade papers teem with advertisements for trained men.

Draftsmen are wanted. Can you trace out a machine or a building? Foremen and Superintendents are wanted. Can you plan and direct work? Chemists are wanted. Can you make an analysis or build up a useful compound? Trained Electricians are wanted. Would it be safe to turn you loose in an electric plant? Civil, Mechanical, and Mining Engineers are wanted. What does that mean to you? Advertising men are wanted. Can you write a business-pulling ad? The Civil Service needs men. Are you prepared to pass a Civil Service examination?

The marking and mailing of an I. C. S. coupon has been the beginning of success for thousands. Why not find out about the I. C. S. plan? It will place you under no obligation whatever, but will bring to you a full explanation of the I. C. S. salary-raising system that has been used by thousands to change poor jobs into good positions and "wages" into salaries.

Mark and Mail the Coupon NOW.

### International Correspondence Schools

Box 910, SCRANTON, PA.

Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position, trade, or profession before which I have marked X.

Architect	Estimating Clerk	Automobile Runn'g
Arch'l Draftsman	Civil Engineer	Foreman Machinist
Contract'g & Build.	Surveying	Sh.-Met. Pat. Drafts.
Building Inspector	Mining Engineering	Textile Manufact'g
Structural Eng.	Mechanical Eng.	Bookkeeper
Structural Draftsman	Mechanical Drafts'n	Stenographer
Plum. & Heat. Con.	Stationary Eng.	Advertising Man
Supt. of Plumbing	Electrical Engineer	Window Trimming
Foreman Steam Fit.	Electric Lighting	Commer' Illustrat'g
Plumbing Inspector	Electric Railways	Civ. Service Exams.
Heat. & Vent. Eng.	Concrete Const'c'n	Chemist

Name \_\_\_\_\_

St. and No. \_\_\_\_\_

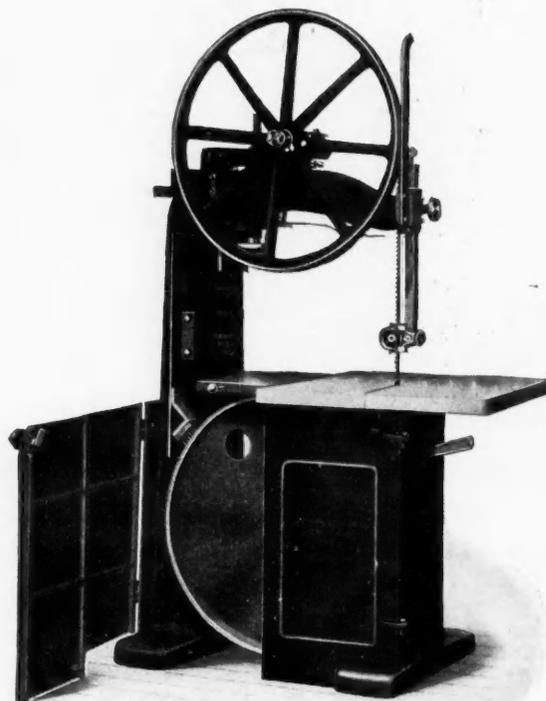
City \_\_\_\_\_ State \_\_\_\_\_

It follows, therefore, that the band saw purchased for use in such a shop should be chosen for its ability to stand up to hard work of all kinds day in and day out. Nothing is more annoying than to have a machine which will break a blade or go to pieces right in the middle of a rush job.

One of the best all round band saws now made is the Fay & Egan Co. No. 50. W. S. Milne, the large chair manufacturer of Cleveland, Tenn., says that after seeing one of these machines in operation in another factory he immediately decided to purchase one of them the next time he needed a machine of this type. He got such excellent results from the first that he has since purchased eight more, now having nine of these tools running in his factory.

The illustration herewith shows one of the latest improvements to this machine, the iron doors over the lower wheels, eliminating any chance of the operator getting caught in the lower wheel.

The success of this machine is attributable primarily to



Fay & Egan No. 50 Special Patent Band Saw

Fay & Egan's patented "knife edge" straining device. This device is so sensitive that it will compensate for even the smallest chip sticking to the blade or rim of the wheel. Broken blades are practically unknown where this strain is used, the sum saved in this respect alone amounting to quite a little in a short while.

This patented strain in connection with the solid lower wheel permits the use of a thinner blade at a higher speed than was ever known before, increasing the quality as well as the quantity of the work.

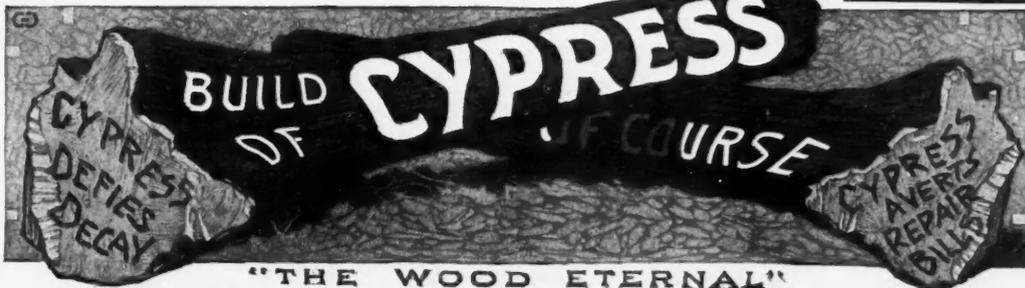
The square form of column, cast in one piece, gives great rigidity to all working parts. For pattern work, the table is arranged to angle to 45 degrees with micrometer adjustment.

Further information regarding this band saw may be obtained by addressing the manufacturers, J. A. Fay & Egan Co., 545-565 W. Front St., Cincinnati, Ohio.

WHEN YOU BUILD (WHATEVER YOU BUILD) BUILD

"FOR KEEPS"!

This is BUYING Time



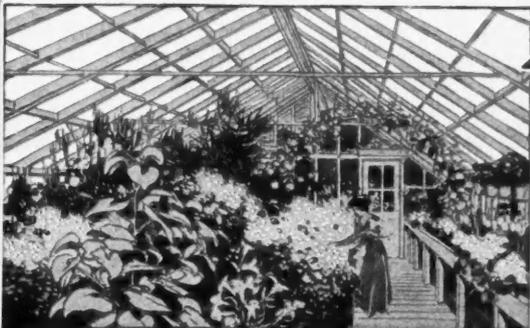
See that you get Cypress and "No Substitutes"



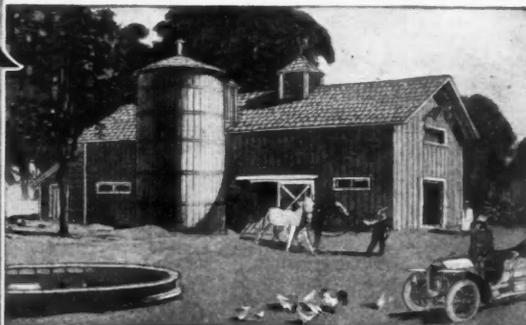
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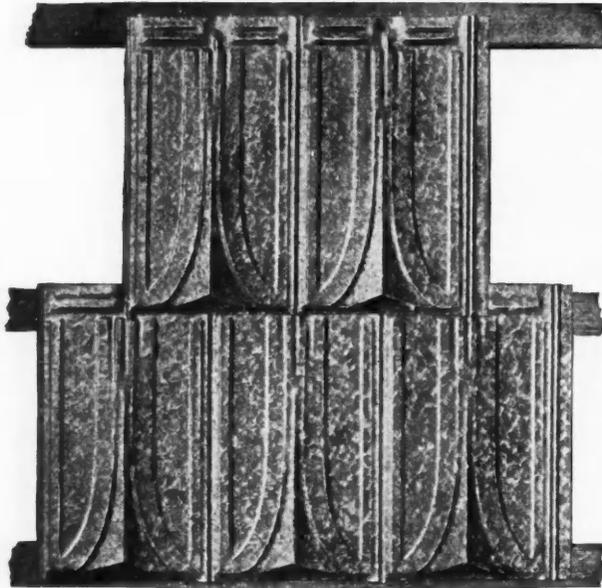
INSIST ON CYPRESS AT YOUR LOCAL DEALER'S. IF HE HASN'T IT, LET US KNOW IMMEDIATELY

**"CYPRESS—AND NO SUBSTITUTES"**

CROSBY CHICAGO

### "X L" Metal Shingles

The latest addition to the immense lines of sheet metal products of the Canton Art Metal Company, Canton, Ohio, is the "XL" metal shingle. This is a heavily embossed shingle



of beautiful design, and is provided with their improved side lock construction, which is doubtless already well known to many of the readers of the AMERICAN CARPENTER AND BUILDER. It makes allowance for the necessary expansion and con-

traction and at the same time makes an absolutely tight fitting side lock. These shingles are made in 10 by 14 inch size and are furnished in both galvanized steel and painted tin.

Another of the leading lines of this company is their metal hip shingles for covering wood shingles on the hips of buildings. These metal hip shingles are nobby in appearance and stamped deep and bold. They are made of Galvanized Steel or Painted Tin, in two sizes: 4x7 inches and 4x9 inches.

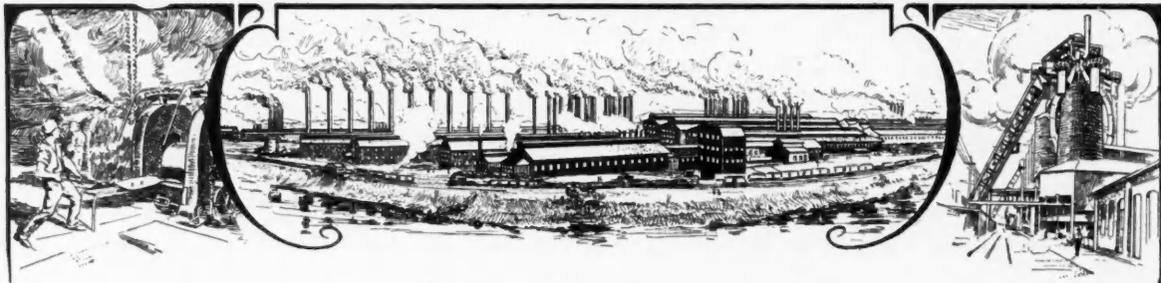
### Roofings That Need no Painting

Times have changed since the good old days when we used to climb up on our roofs every year or two and put a heavy coat of paint over them to keep them from getting wet. Some farmers used to think that roofings were made to get wet and they neglected the paint, and in a little while needed a new roof. The rest of us spent our money and labor painting our roofings with great regularity, since that was the only way to get satisfactory service out of them.

Recently the whole roofing business has been changed by the introduction of roofings which need no paint, of which Amatite Roofing is the most favorably known. These roofings have a surface of crushed mineral matter, and of course this mineral matter does not need any protection from the weather. Accordingly a mineral surfaced roofing never requires any paint whatever.

This invention is a clear benefit to the owner and it does not cost him any more either. Amatite Roofing, for instance, costs considerably less than painted roofings of the same weight.

You can get full information and a free sample from the manufacturers on request. Address Barrett Manufacturing Company, New York, Chicago, Philadelphia, Boston, Cleveland, Pittsburg, Cincinnati, Minneapolis, St. Louis, Kansas City, New Orleans, London, Eng.



## SHEET AND TIN MILL PRODUCTS

Apollo Best Bloom Galvanized Sheets  
Black Sheets of all Descriptions  
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Roofing and Siding Materials, Etc.

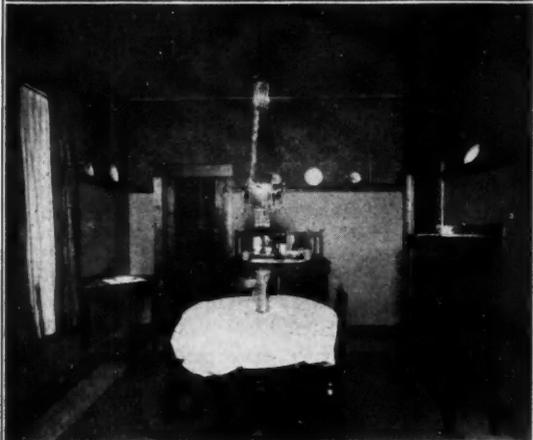
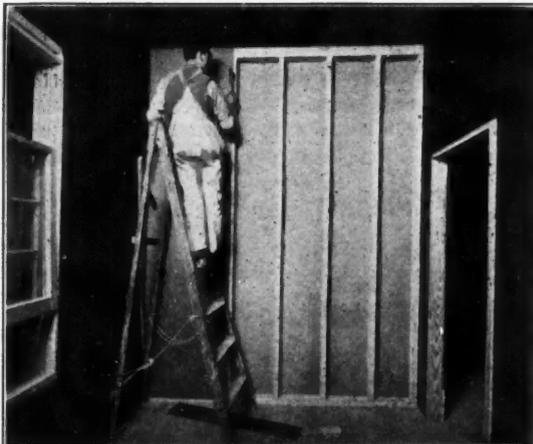
To Contractors, Builders and Sheet Users.—The accelerated acid test as a proof of durability or service, is discredited by leading authorities. This is the position we have always maintained. However, if in the trade there are those who continue to believe that it has any value as a measure of corrosion, we are prepared to furnish them with Black or Galvanized Sheets which will show resistance to such acid test, equal to or better than any iron or steel sheets now manufactured.

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Try Utility Wall Board on just one job—Note how light in weight and how easily handled it is—Yet how stiff and substantial. Try it under the worst possible conditions and note how staunchly it stands up. No other wall board that was ever made is so impervious to weather conditions—so positively water proof—and at the same time so readily adapted to any style of artistic decoration.

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is made of exceedingly tough, durable fibre. It is thoroughly water and weather proof—and is the only wall board ever made that will not shrink nor warp. You can put wall paper over it with perfect safety. A wall or ceiling finished with Utility Board is permanent—there to stay as long as the building stands.

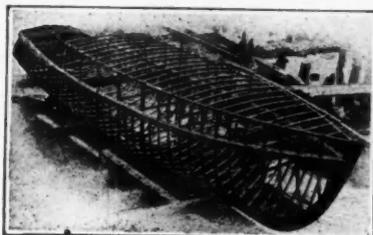
A New beautifully illustrated book of interiors will give you some valuable ideas. Send for it at once. Also for the FREE Sample.

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Send for free catalog which tells the whole story.

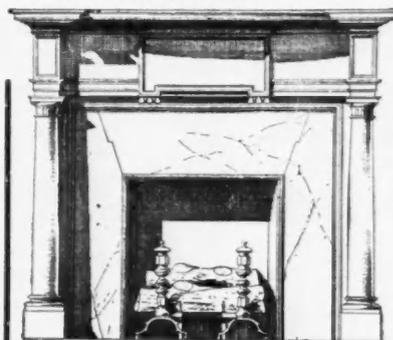
**DEFOE BOAT & MOTOR WORKS**  
3213 State Street. BAY CITY, MICH.

"Any man experience unnecessary, can build a boat by the use of our boat frames and patterns.

This picture shows a 40 ft. Cruiser frame ready to take apart and crate for shipment."

Knock-down frames for boats of all sizes. From the canoe to the 70 ft. motor yacht. People of wealth buy them, have the work finished by local hands, and save at least 1-4. People of limited means purchase them, finish the work themselves, and save at least 3-7.

## NORTHCROSS



## Wood Mantels

Sold Direct from Factory to You

Every contractor should have our Big Catalog

There is Money in selling our Mantels

**W. J. NORTHCROSS MANTEL CO.** 66 So. Sec. Street MEMPHIS, TENN.

### Crescent Machine Co. Issues New Catalogue

Although about five months ahead of the date, the 1912 catalog of the Crescent Machine Co., Leetonia, O., is ready for distribution. As to new features there are several articles not mentioned in former Crescent catalogs, notably a 30-inch planer, a post borer, and band saw guards. All users of the wood working machinery will be interested in this book, and copies will be mailed to all readers of AMERICAN CARPENTER AND BUILDER who will send their name and address.

### Tannewitz Type "C" Woodworker

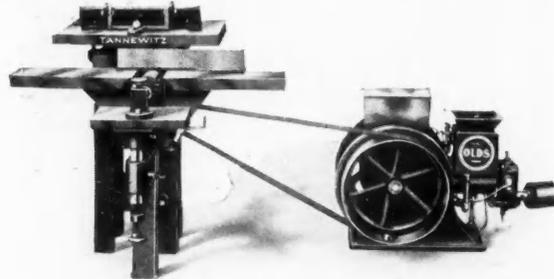
The "Tannewitz" Type "C" Woodworker is their latest machine on the market. It has a number of very good features among which are the following: There are three dis-



tinct machines permitting three men to work at one and the same time. It is strongly built, being made entirely of cast iron (no wood or angle frame work being used). It is com-

plete with all necessary equipment and goes at the lowest price a machine of this kind was ever sold for.

The three machines consist of a full sized saw bench, an 8-inch jointer and a mortising and boring machine. The equipment consists of two 10-inch saw blades, two jointer knives, four gauges, eight bits, belting, countershaft and wrenches. The Tannewitz Works guarantees this machine to be exactly as represented or your money back. This same



equipment can also be supplied with a genuine "Olds" Gasoline Engine. This gives the user a complete mill and reliable power plant. Literature describing this outfit will be sent anyone interested by the Tannewitz Works, Grand Rapids, Mich.

### New Pattern-Making Book

The Manual Arts Press, Peoria, Ill., has just issued a revised and newly illustrated edition of "Wood Pattern-Making," by Horace T. Purfield, instructor in pattern-making and foundry work, High School, Fort Wayne, Ind. The work has been prepared as a text book in pattern-making for use in manual training schools. To suit the needs of many schools the first part of the book is given over to chapters describing

# NOTICE!

This space reserved for the New Oshkosh Portable Saw Rig. If interested don't buy before you write us for particulars on the best and cheapest Saw Rig manufactured. Folders describing this Rig ready at the time this paper reaches you.

## OSKOSH MFG. CO.

316 S. Main St. :: :: OSKOSH, WIS.

## HOW TO READ PLANS

A Valuable New Book

By

Charles G Peker

60 Pages (5 x 7 Inches)

43 Drawings in Text

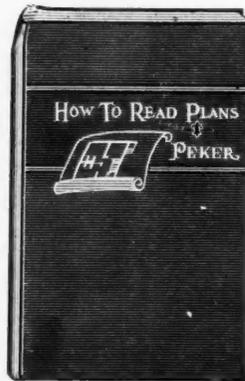
8 Large Folding Plates

Handsomely Bound in Cloth

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Sent post-paid on receipt of price.

Your money back if you are not pleased.



**M**ANY building mechanics are handicapped from getting more pay because they are unable to read plans and work from a drawing.

It is for these men that this book was prepared, as it simply explains the meaning of the various lines; plans, views, elevations, sections, scales, blue prints, devices, symbols, etc., to be found on a set of plans.

The book is finely illustrated by 43 illustrations in the text, and 8 large folding plates giving the full plan of a 6-room frame house. This set of plans alone is worth many times the cost of the book; an architect would charge at least \$25 for their equal.

It is one of the most valuable books ever got out for building mechanics, as its information means increasing a man's salary. It is pretty safe to say that to the man who cannot read a drawing now this book will mean at least \$50 more pay during the first year he has it.

INDUSTRIAL BOOK COMPANY

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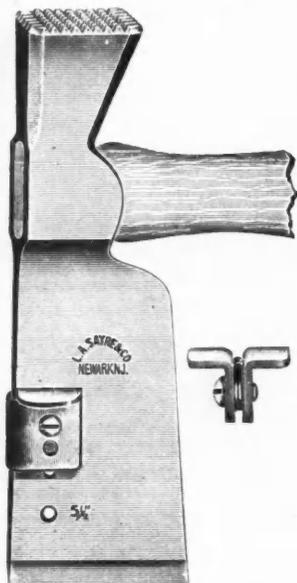
NEW YORK



the common bench tools and their uses, pattern turning, lumber, the reading of drawings, etc. The illustrations are by Mr. Edwin V. Lawrence, whose work is familiar to many of the readers of the AMERICAN CARPENTER AND BUILDER.

### A Gauge Hatchet

The Gauge Hatchet (No. 44), manufactured by L. A. Sayre & Son of Newark, N. J., and illustrated herewith is an outgrowth of the loose gauges that have been in use on the Pacific Coast for a number of years. The loose gauges, however, have never met the requirements in shingling as they would shift on the hatchet, thus changing the lap of the shingle.



This No. 44 is a positive gauge and cannot shift, as it is screwed through the blade of the hatchet; for which purpose three holes are drilled through the blade. It is possible to gauge by  $\frac{1}{4}$ -inch from  $4\frac{1}{4}$ -inches to  $5\frac{1}{2}$  inches. The hatchet is made from extra quality crucible steel and is warranted against all defects.

L. A. Sayre & Son also make a complete line of lath and fruit box hatchets, also variety handled pruning shears. Write to them for further information.

### Severe Test of Utility Wall Board

A test that proves very conclusively the imperviousness of Utility Wall Board against the extremes of heat and cold and dampness, has just been completed by Mr. C. A. Heppes at the factory in Chicago.

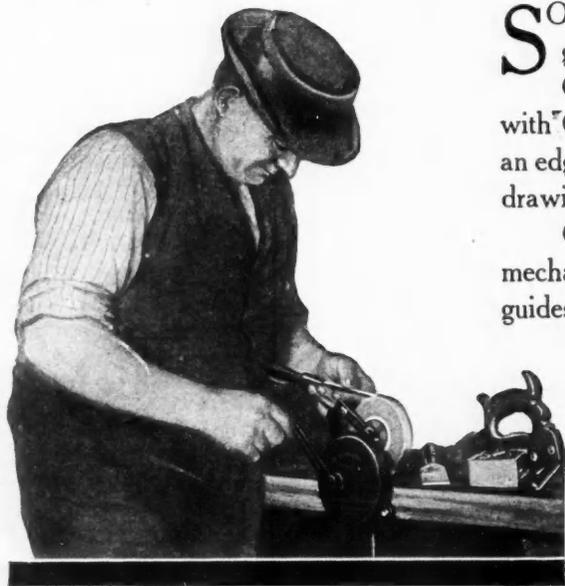
The hardest problem that wall board manufacturers have to solve is the problem of making a board that will not shrink or warp when subjected to extremes of heat and cold, and that will not absorb moisture.

Six months ago, Mr. Heppes felt very confident that he had solved this problem. In order to satisfy himself absolutely, however, he decided upon a test which is probably about the most severe to which wall board was ever subjected.

He selected a thin brick wall in the most exposed portion of his factory building, and attached the wall board to this wall, putting it on in the ordinary way, as close to the bricks as possible. He then covered the wall with wall paper so that the slightest sign of shrinking or warping would show immediately. Next he placed a row of steam pipes about an inch from the wall along its entire length. These pipes were used to heat the room, and, of course, became very hot during the day and cold at night. All this was done in January of this year. The outside of the wall, of course, was subjected to the extreme cold of the winter weather while the inside was hot from the steam pipes. At night both the inside and the outside were subjected to the cold. Later in the spring, the heat in the steam pipes was turned off and the moisture from the inside of the factory combated the cold from the outside.

After six months of this kind of severe treatment, the wall board shows not the slightest sign of shrinkage or warpage. It is almost impossible to tell even by feeling, where the joints have been made and even in the corner, where is the

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Carborundum Niagara Grinder No. 2, complete	\$4.00
Carborundum Round Combination Stone, No. 107	1.00
Carborundum Temperoil, 1½ ounce bottle	.10

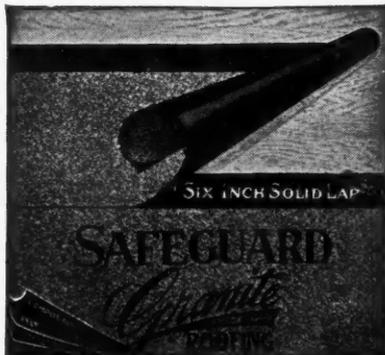
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The average property owner badly needs expert advice in choosing his roof.

He's too apt to assume that every roof is as good as it looks when it is first put on.

It's only when bills for repairs and painting pile up that he realizes his mistake.

Asbestos "Century" Shingles are the only roofing in the market that combine architectural beauty with *absolute and permanent protection to the building.*

Asbestos "Century" Shingles are thin, tough and elastic shingles of *reinforced concrete.* They are the first and only practical lightweight roofing ever made of this indestructible material.

They are proof against fire



Asbestos "Century" Shingle Roofs—Five Model Cottages, Esmond Co. Inc., Enfield, R. I., Architects, Hilton & Jackson, Providence, R. I., Contractor, P. Oscar Nordquist, Providence, R. I. — against weather — against time. They need no painting or repairs.

Asbestos "Century" Shingles are adapted to all architectural styles. They come in many shapes, several sizes and three colors — Newport Gray (silver gray), Slate (blue-black) and Indian Red. It's worth your while to talk with a responsible roofer about Asbestos "Century" Shingles — or write us. Send for Booklet "Everlasting 1911".

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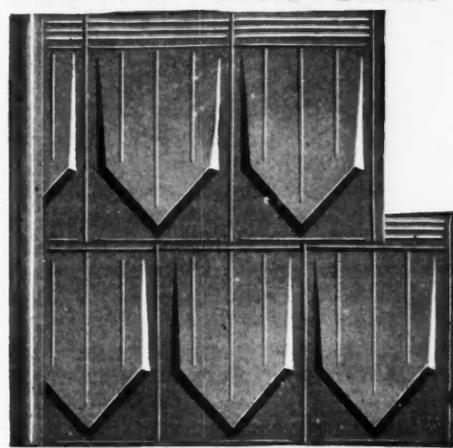


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FIRE PROOF SHINGLES

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Any Roof Covered With

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severest test, the wall paper does not show any sign of pulling or cracking.

It is hardly possible that plaster or any other kind of wall finish could have stood up so perfectly under so severe a test, and the result is certainly one of which the manufacturers of Utility Wall Board may well be proud. Any wall finish that will stand up for six months under such extreme conditions, is as nearly perfect as could well be expected.

### Does Iron Break From Fatigue?

The condition called "fatigue" in metals is very little understood. Its very name is only an analogy. Muscular fatigue is now thought to be a toxic effect caused by poisonous products of muscular work; but metallic fatigue is simply a loss of strength due to some sort of molecular rearrangement, often consequent upon overstrain. A recent French writer asserts that "fatigue" has been rather overworked as an explanation of mysterious failures and breakages, and serious disasters might be avoided by looking more deeply into their real causes. Some interesting notes on this subject have been presented in the *Literary Digest*, translated from the French publication, *Cosmos*.

"For some years it seems to have been the fashion among engineers to adopt the 'fatigue of metals' as an explanation of all sorts of accidents, either in railroads or in metallic structures, public or private. This is evidently convenient, but perhaps a little too easy, as is noted by Prof. Leon Guillet, of the chair of metallurgy in the Conservatoire des Arts et Metiers. The 'fatigue' so often incriminated may evidently take place, and may result in a rupture of the metal, which may bring on the most serious accidents. But, on the other hand, it is highly possible that we may be tempted to blame this for accidents whose exact cause we have been unable

to discover. In any case we may say that this cause is generally difficult to find because we cannot place side by side the piece of incriminated metal and the initial product from which it was formed.

"Prof. Leon Guillet is inclined to think, with considerable probability, that numerous ruptures are due to the fact that the metals have undergone defective thermic and mechanical treatment, and he condemns the imprudence of engineers who use metals fresh from the forge or the mold for making pieces intended to bear a considerable strain. In particular he objects to the custom of subjecting to strain cold-drawn tubes, that is to say, metal twisted and deformed to a fatal extent, without being afterward tempered to correct its fragility. The limit of elasticity is yet very badly determined, and it may happen that it is exceeded in bodies so heterogeneous as metallurgical products, especially iron and steel. The author definitely remarks that this limit is very small in products made homogeneous by reheating. This opinion should not be forgotten, for our present means of investigation hardly permit us to follow the alterations that take place in metals through fatigue; thus it is well to observe the greatest prudence in the interpretation of results whose causes often escape us."

### Award Made in Cement House Competition

The competition for designing a concrete bungalow held by the Cement Products Exhibition Co., 72 West Adams Street, Chicago, closed on Saturday, June 17. A great number of designs were submitted by architects and draftsmen from all over the country. The plans have been on exhibition in the offices of the Cement Products Exhibition Co. for the past few weeks.

The jury of award in the competition, consisting of Messrs. Hugh M. G. Garden, Sam A. Marx and Walter Burley Grif-



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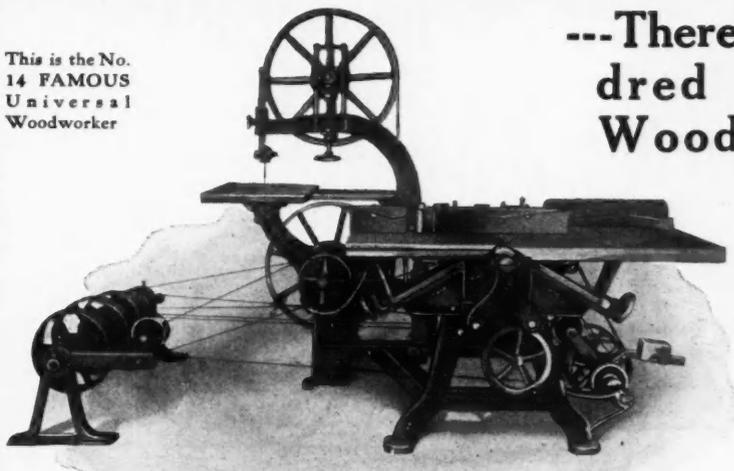
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fin, all of Chicago, made their report on June 21. The jury recommended that the amount of the first three prizes be divided equally among three of the contestants whose designs were given equal rank and were in the opinion of the jury of equal merit. The prize money was distributed accordingly, \$100.00 being given to each of the following:

- Federick J. Meseko, New York City.
- F. W. Korrick, South Bend, Ind.
- Harry F. Robinson, Chicago.

Favorable mention was made of the bungalow designs submitted by the following:

- Mr. Drummond, River Forest, Ill.
- E. S. Sommers, Chicago, Ill.

The competition was considered successful in every way both by the Cement Products Exhibition Co. and the jury.

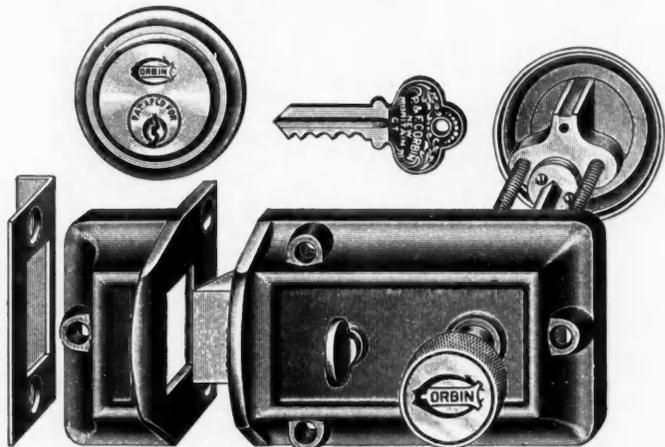
The program of the competition called for designs for a bungalow to cost \$4000.00, not including heating apparatus, plumbing, electric wiring or fixtures. The competition was open to any architect or draftsman desiring to enter. The bungalow was to have at least two bed rooms and a total of not more than five rooms and bath. The program called for foundations of plain or reinforced concrete, hollow cement tile or plain concrete blocks. The exterior walls and interior partitions were to be of monolithic reinforced concrete, hollow cement tile or concrete blocks and cement plaster on metal lath or wire mesh was also permissible on the interior partitions.

The principal object of the competition was to secure a suitable design for a cement bungalow to be built for Mrs. Lucile Bishop, of Chicago, who won the prize bungalow at the Fourth Annual Chicago Cement Show, February last.

Public interest in concrete bungalow construction is such that the competition was particularly opportune. The intention is to publish the plans and drawings in booklet form.

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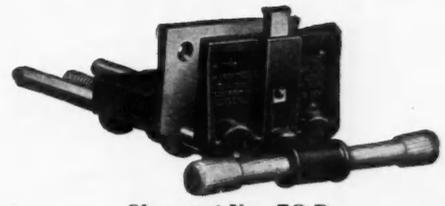
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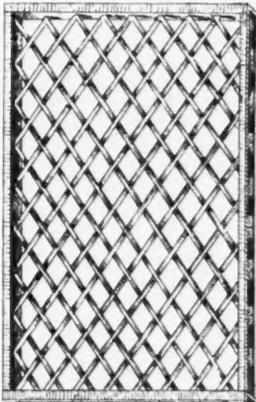
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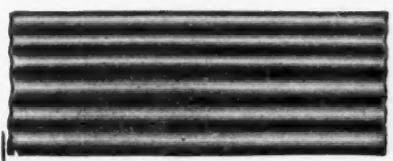


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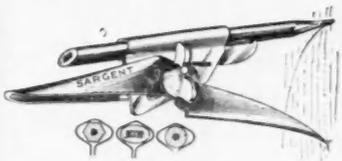
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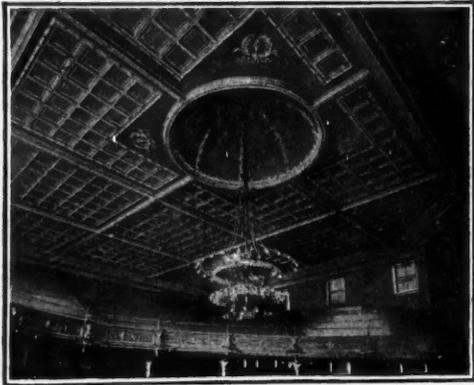
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(Cunnius Patent)

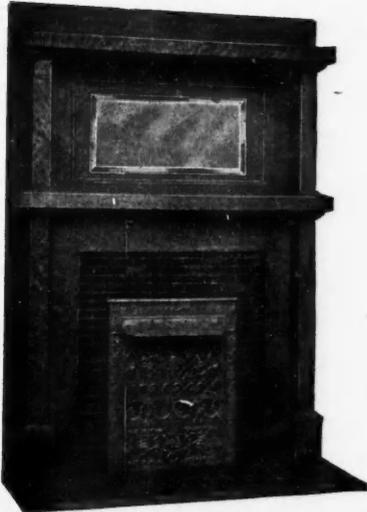
Cannot come apart, bulge, split or crack. A heavy steel wire, placed inside, every 15 inches, solves the problem. Every column guaranteed.

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Pen Argyl - Pa.  
Agents Wanted Everywhere





'Reputation and Quality Count'

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**\$25.85**

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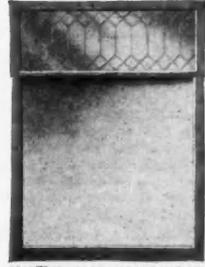
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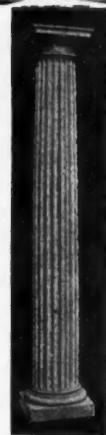
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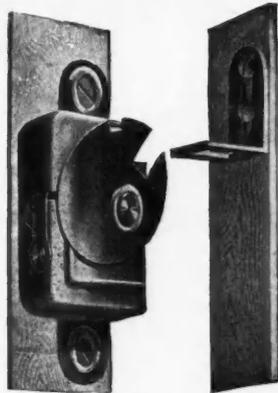
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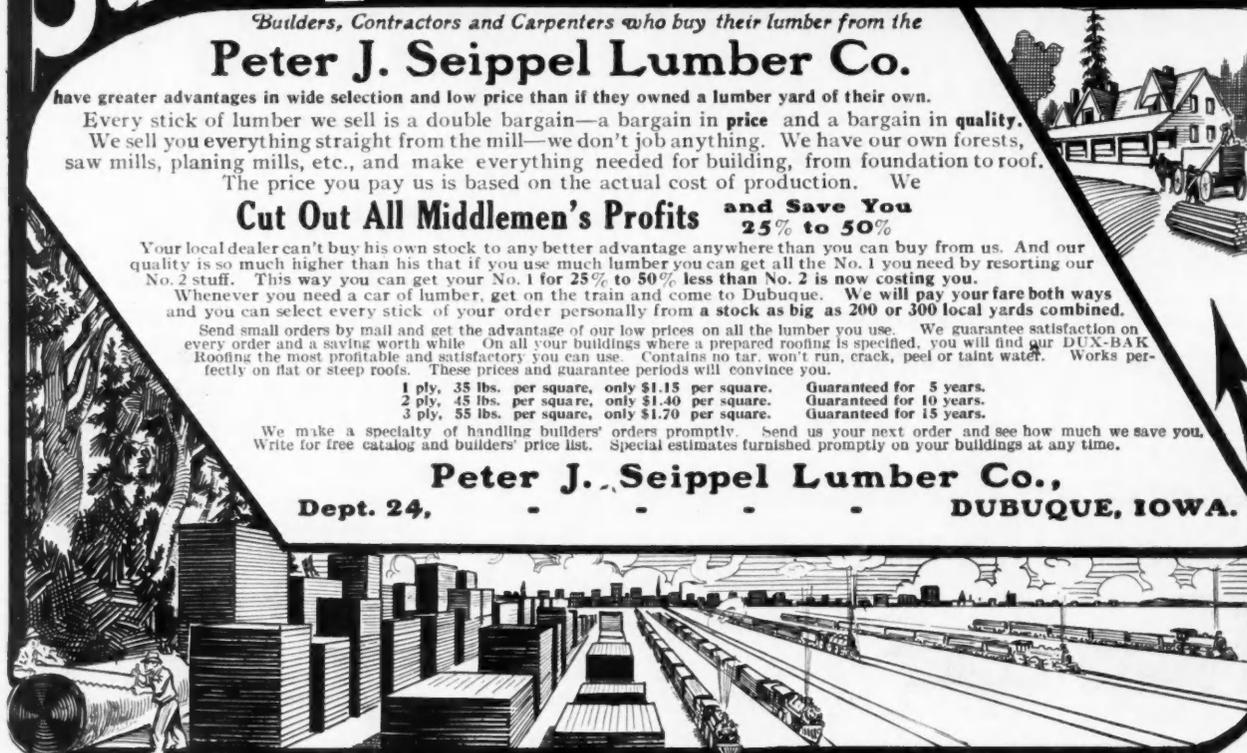
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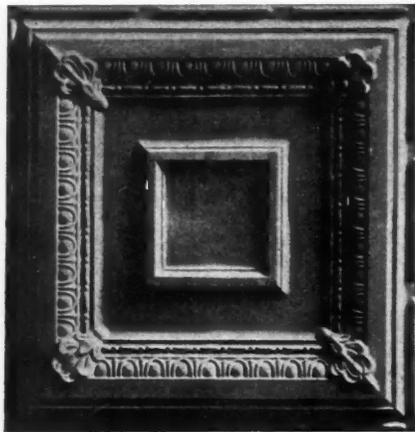


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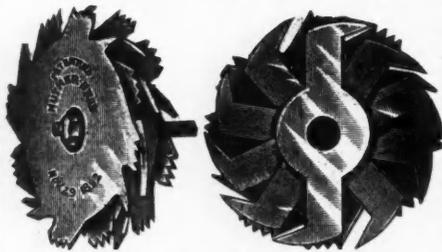
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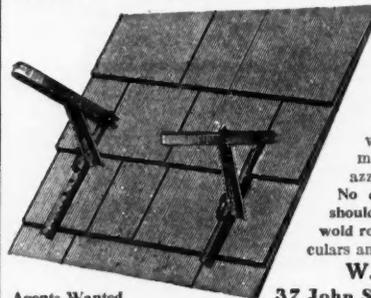
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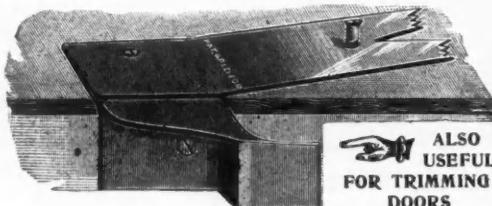
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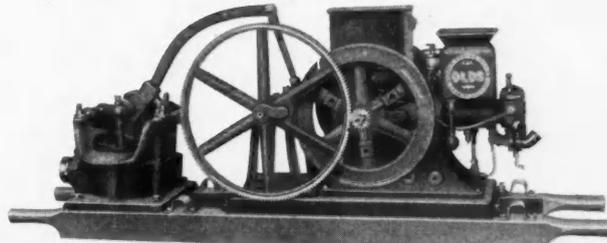
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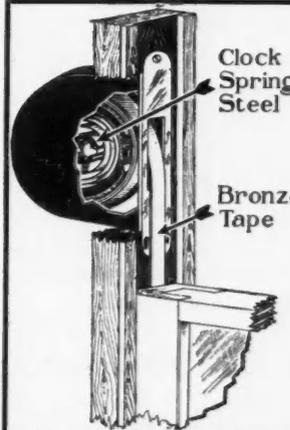
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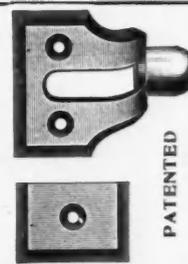
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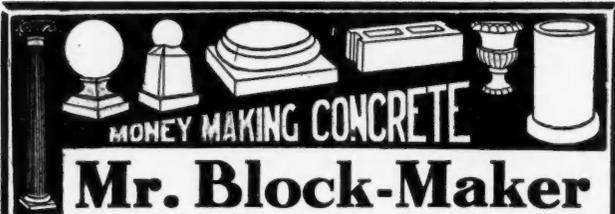
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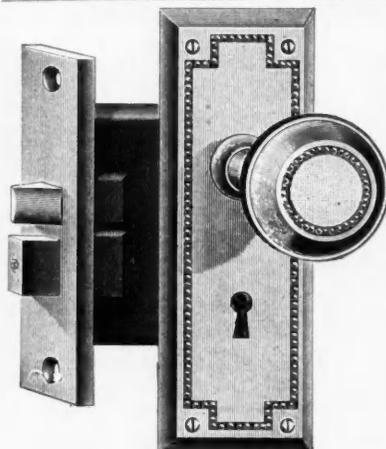
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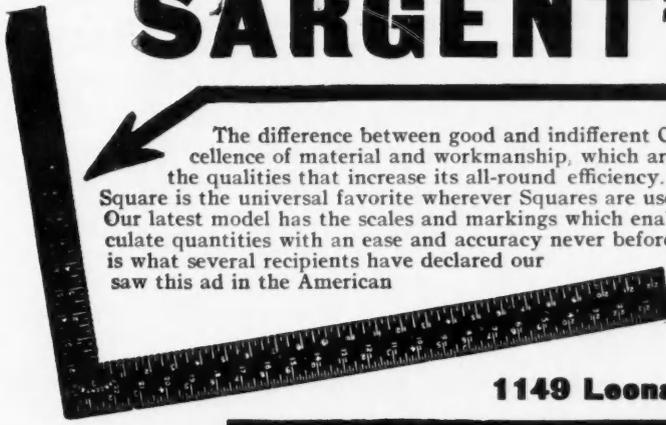
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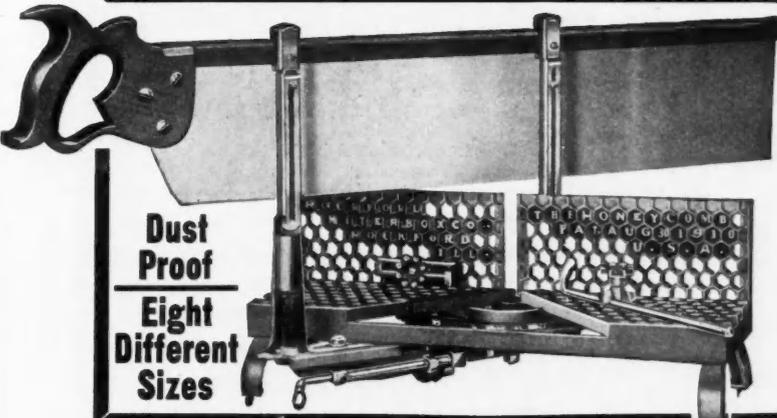
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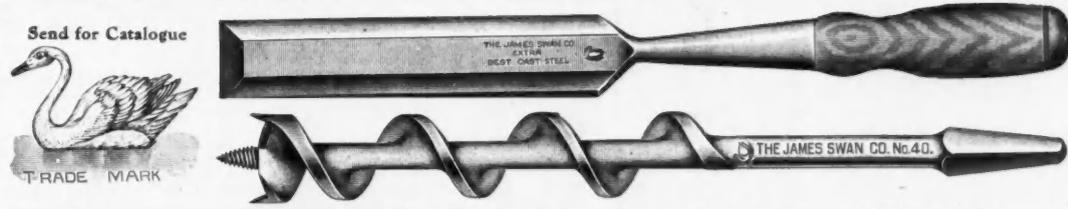
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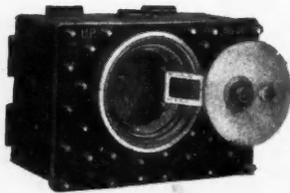
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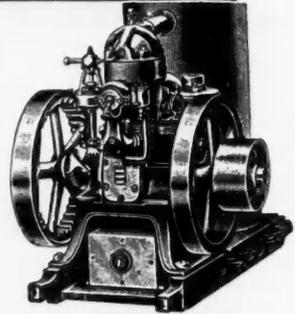
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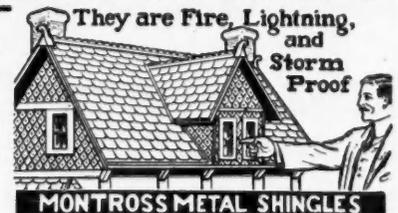
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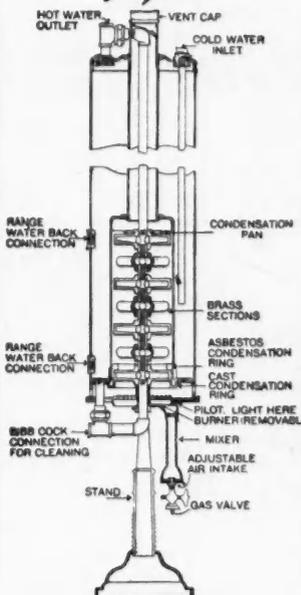
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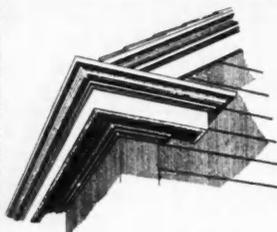
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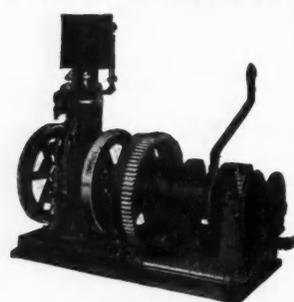
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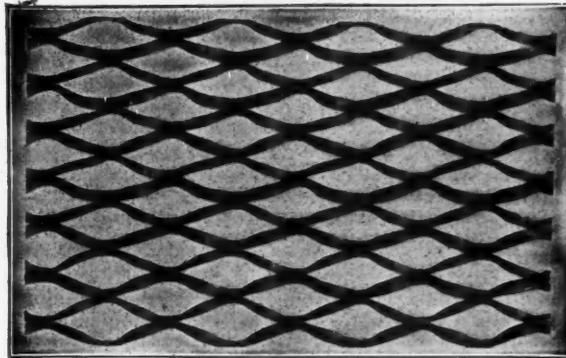
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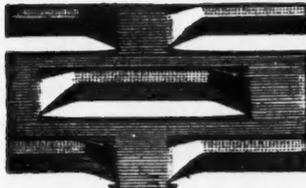
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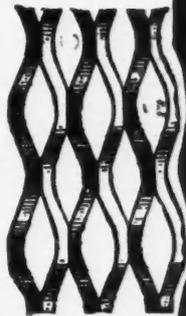
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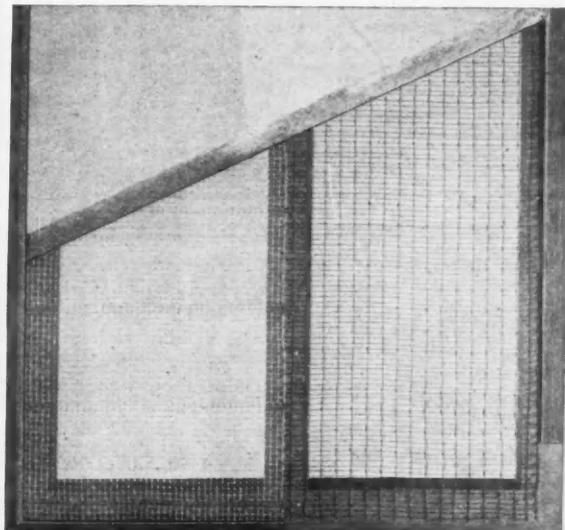


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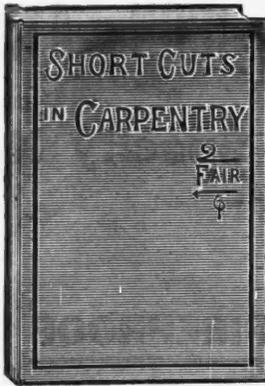
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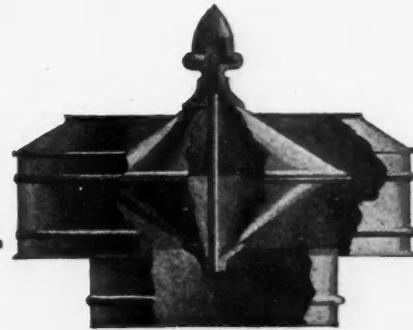
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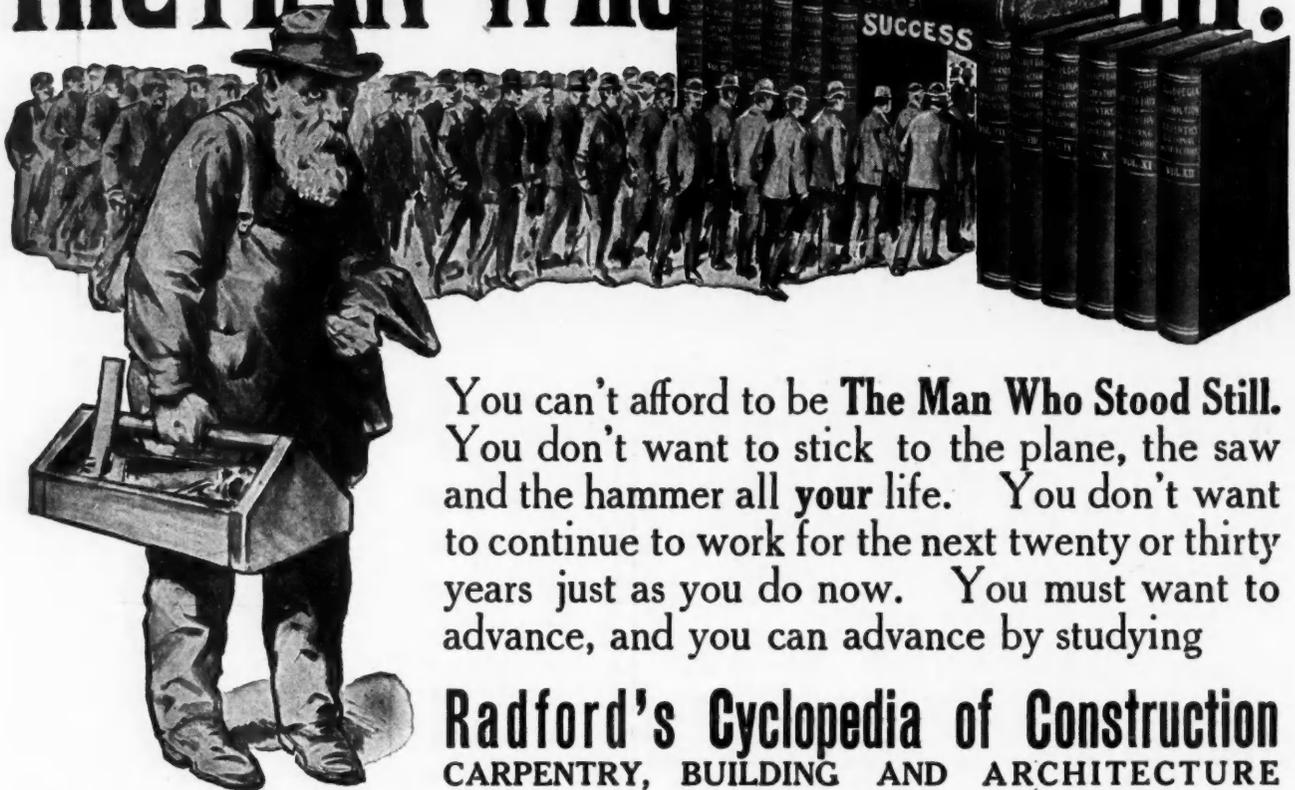
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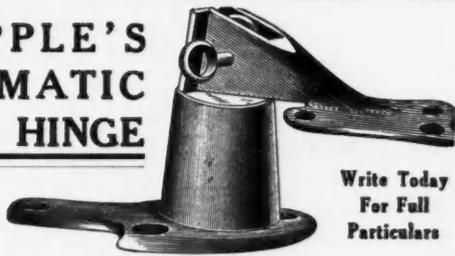


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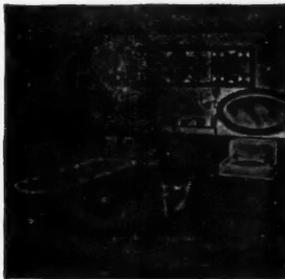
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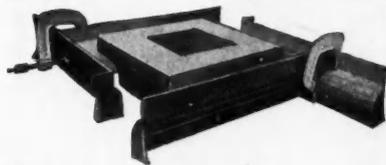
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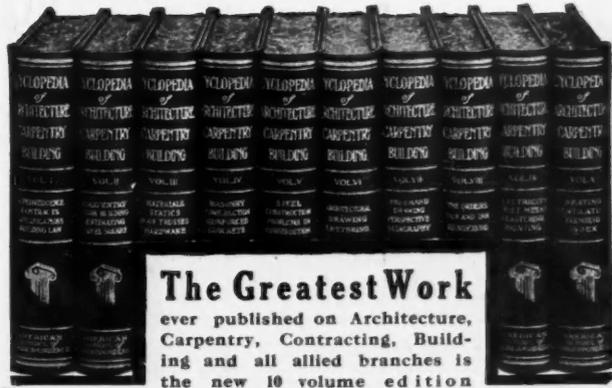
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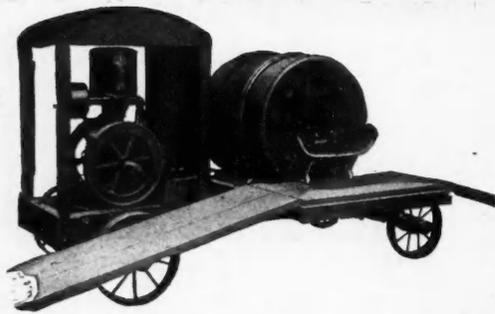
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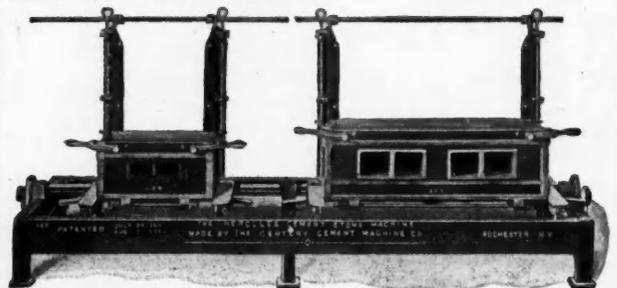
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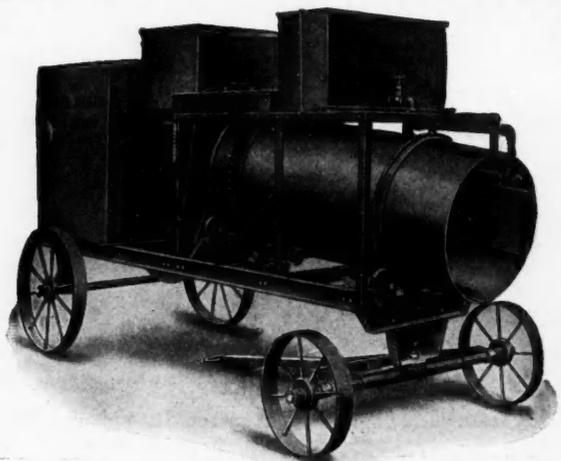
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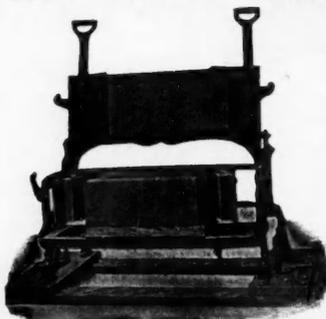
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Forms for the September number of the American Carpenter and Builder will close promptly on August 20. New Copy changes and orders for omissions of advertisements must reach our business office, 178 West Jackson Boulevard, Chicago, not later than the above date to insure attention. AMERICAN CARPENTER & BUILDER CO.

# BISHOPRIC WALL BOARD AND SHEATHING

**ANY WEATHER** is "Good Building Weather" when you use *Bishopric Wall Board* as a substitute for lath and plaster. It is cheaper and better and does away with all delays in building. It is nailed to studding dry, ready for immediate application of paper, paint, burlap, or any other kind of decoration.

## FOR WALLS AND CEILINGS



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This substitute for lath and plaster is made of kiln-dried, dressed lath, imbedded in hot Asphalt Mastic surfaced with sized carboard and cut at the factory into 4x4 feet sheets, which are easily and quickly nailed to studding, ready for immediate application of wall paper, paint, burlap, or other decoration. The laths imbedded in Bishopric Wall Board give it wall strength, a guarantee against warping.

It is applied dry, is guaranteed not to swell, shrink, warp, crack, flake or blister; is clean, sanitary and odorless; is proof against moisture, cold, heat, and vermin; saves fuel in winter and keeps out summer heat; also deadens sound.



*Applied Dry Winter or Summer*

*Shows Construction of Bishopric Wall Board*

It is suitable for dwellings, factories, new partitions in old buildings, finishing attics, porches, laundries, cellar ceilings, garages, etc.

**PRICE OF WALL BOARD AND SHIPMENT**—Crate of 16 sheets, covering 256 sq. ft. of surface, \$6.40 per crate, or \$2.50 per 100 sq. ft., f. o. b. New Orleans, Cincinnati, or Alma, Mich. We ship from nearest point.

*Bishopric Sheathing is Cheaper than Lumber; saves 75% in Labor; does away with Building Paper*

## BISHOPRIC SHEATHING

*Ideal Material for Cement Buildings or Stucco Exteriors. Proof against Dampness, Heat and Cold*

Bishopric Sheathing is made of same materials as Wall Board, but finish is not necessarily so fine, therefore costs less. It is of uniform thickness, insuring a perfectly even surface when applied.

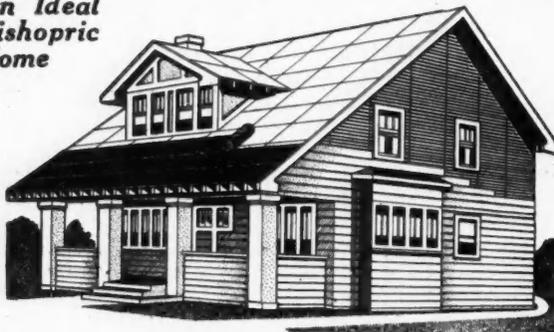
Bishopric Sheathing is nailed to studs, with lath and asphalt side exposed. Over laths weather boards are nailed or cement applied.

Bishopric Sheathing makes a more solid and substantial wall than lumber. There are no gaping joints; no widening cracks due to shrinkage; no knot holes.

The Asphalt Mastic in Bishopric Sheathing is a non-conductor, moisture cannot penetrate it. It is proof against vermin. The pests cannot bore through the tough, gummy Asphalt Mastic. In applying weather-boards over laths, dead air space is left between the laths; forming splendid insulation. Does away with the expense of building paper and cost of its application.

One wagon load of Bishopric Sheathing covers an area from six to ten times as great as one load of lumber—a tremendous saving in hauling. Five thousand feet can be hauled in an ordinary wagon.

*An Ideal Bishopric Home*



*Ideal home showing Weather boards, over Bishopric Sheathing, lath side exposed, also Bishopric Roofing over Bishopric Sheathing. (smooth side of sheathing exposed)*

The cost of applying Bishopric Sheathing is but \$2.50 per 1,000 feet—A SAVING OF ABOUT 75 PER CENT. Furthermore, 1,000 square feet of wood sheathing covers but 750 feet of surface, 20% less being due to tongue and groove. In Bishopric Sheathing 1000 sq. ft. covers 1000 square feet of space.

**Write for Descriptive Booklet and Samples—all Sent FREE. Dealers Write for Proposition.**

**THE MASTIC WALL BOARD AND ROOFING MFG. CO., 24 E. Third St. Cincinnati, O.**

In applying ordinary lumber, heavier scaffolding, more tools and greater scaffold floor space are required. In applying Bishopric Sheathing, one man drives a few nails in each sheet; a common laborer or boy can finish the nailing.

Bishopric Sheathing insures comfort during the construction of the building. As soon as the building is closed in with Bishopric Sheathing, the men may work in comfort on the inside during bad weather, finishing the outside on suitable days. This insures continuous work, without loss of time, enabling the contractor to hold his men and complete the work in the least possible time.

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**ITS MANY USES**—Bishopric Sheathing also is used with excellent results as a lining for dairy barns, ranch houses, poultry houses, driving stables or any out-door building where protection from the elements, Summer or Winter is desired.

Bishopric Sheathing is the ideal material for cement exterior or stucco work. Cement firmly adheres to the laths and Asphalt Mastic and makes a solid, smooth exterior. For factory or residence this form of concrete or stucco construction is the cheapest and best known.

**PRICE OF SHEATHING AND SHIPMENT**—Crate of 16 sheets covering 256 square feet of surface, \$6, or \$2.35 per square of 100 square feet, f. o. b. New Orleans, La., Cincinnati, or Alma, Mich. We ship from nearest point.

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The materials used in Bishopric Roofing are self-protecting. Other roofings require protection in the way of paint or coatings to prevent drying out, cracking or rotting. Bishopric Roofing requires no paint. The Asphalt itself in this patented Roofing is toughened and perpetuated by an exclusive process. Carbonate of Lime is mixed with pure asphalt, making one homogeneous mixture, which stands a pressure of 500 pounds to the square inch. This is a positive guarantee against breaks and cracks. Asphalt Mastic may be exposed direct to the weather in any climate without danger of softening, drying out, cracking or crumbling. Write for free sample and literature.



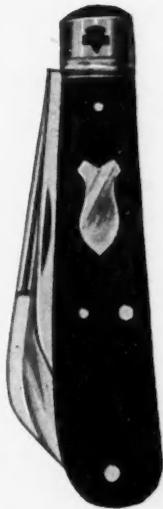


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Keen Kutter pocketknives keep their edges longer than most ordinary knives, because every blade is made from the finest tool steel—made right and tempered right. Cut with the grain or against it, hard wood or soft, and a Keen Kutter stays at its work and does it well. A little strain sometimes snaps the blade of an ordinary knife and the break always comes in a soft or brittle *spot*. Keen Kutter knives are *evenly* tempered—all blades. They don't chip, bend or curl.



K-1201, Size 3 1/4, 85c



K-2943, Size 3 1/4, 50c



K-3878, Size 3 1/2, \$1.00



K-3297, Size 3 1/2, \$1.00

## KEEN KUTTER

knives have *earned* the reputation they have with thousands of skilled artisans who know and insist upon quality cutlery at its *best*. Do not accept any "just as good" knife—it *isn't*. The Keen Kutter trade mark guarantees long life and long wear. If *any* Keen Kutter tool doesn't live up to the guarantee back of it, you can trade it for the price you pay for it—any time.

"The Recollection of Quality Remains Long After the Price is Forgotten."  
Trade Mark Registered. —E. C. SIMMONS.

If not at your dealer's, write us.

**SIMMONS HARDWARE COMPANY (Inc.)**  
St. Louis and New York, U. S. A.

**WE INITIATE - NEVER IMITATE**

# **Time-Savers**

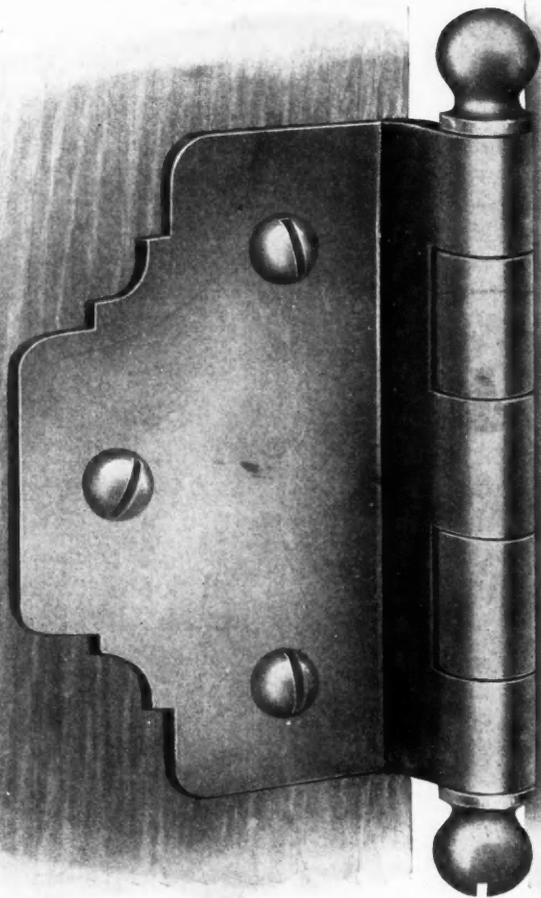
**50%**

of the time required to hang a door can be saved by using "NATIONAL" ornamental Butts. Some contractors say they can save more. Figure up the time spent in a year in hanging doors and you will see how much it is to your advantage to use them.

Another exclusive feature—the new false tip is threaded and screws into the butt. The slot is for a screwdriver, making it easy to remove the pin. Also shows which is the bottom of the butt.

**STYLE No. 400B**

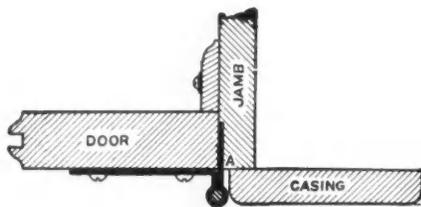
here illustrated can be furnished in any finish and in all sizes from 1½-inch to 4½-inches inclusive



No. 40B

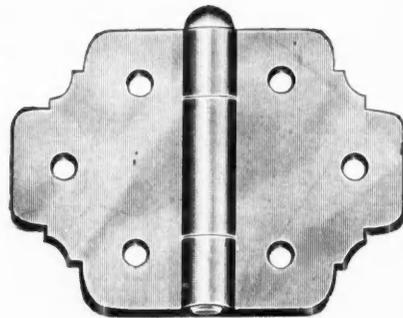
**Ask for Booklet Ornamental Ideas and give us your dealer's name.**

**Directions**—Attach butt part "A" to jamb first, then set and wedge door into position and attach Ornamental Leaf to surface of the door. Simple, isn't it?



Trade-Mark

Be sure to look for the flag—it's stamped on all "National" Butts—It stands for quality.



**National Manufacturing Co. STERLING, ILL.**