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The Canadian Builder and Carpenter

A Bradshaw
183 Davenport Rd
TORONTO, Ont

PUBLISHED ONCE A MONTH BY THE COMMERCIAL PRESS, LIMITED

Vol. 4

TORONTO, MARCH, 1914

No. 3

High Grade Gypsum Products

“CROWN



TRADE MARK

BRANDS”

Cement Plasters

Neat Hair Fibred, For Base Coat

Wood Fibre Plasters

Fibred with wood, Unsanded

Finishing Plaster

Cheaper than Plaster Paris

Crown White Finish

Equal to Keene's Cement

Stucco Finish

Plaster Paris

*Strength, Durability, Plasticity, Fineness, Color
and Uniform Quality*

Crown Gypsum Co., Limited, Lythmore, Ont.

Send for our 1914 Hand Book, Mailed Free

Midland Planing Mill Products

The Leading Stock Lines



*Every Contractor and Builder should have our
New Catalogues for 1914-----Now Ready*

“Midland Doors,” 1914

Pine and Fir Doors
Special Veneered Doors
Slab Doors
Combination Screen and Storm Door

“Midland Stock Designs,” 1914

Interior Trim
Stair and Verandah Materials
Frames, Turnings, Columns, Newels
Hardwood Flooring
Dressed and Matched Lumber

“Midland Sash,” 1913-14

All Kinds

*We want Every Reader of the “Canadian Builder” to
have a copy of each of the above. Write for them to-day*

Georgian Bay Shook Mills, Limited

MANUFACTURERS FROM THE TREE TO THE FINISHED PRODUCT

Midland, Ontario

“Bargain Day at the Shook Mills”

**REMEMBER
THE DATE**

Monday, March 30, 1914

We do not stand still. We progress with the times and keep our Stock and Designs up-to-date. For various reasons and because of changes in designs, we have in hand the following :—

Mouldings, Discontinued Patterns
Mouldings, Architects' Designs, Over-run on Orders
Mouldings, Stock Designs, Over-stocked
Veneered Doors, Stock Designs in Odd Sizes
Veneered Doors, Odd Designs in Regular Sizes

Veneered Doors, Culled, Damaged and Miscellaneous
Pine Doors, Discontinued Stock Designs
Pine Doors, Regular Designs, Over-stocked
Pine Doors, Miscellaneous
Miscellaneous Sash and Millwork

Bargains — Bargains — Bargains — Bargains

Thousands of Feet of Mouldings: Good Designs, Pine, Georgia Pine, Oak, Chestnut, Cypress, Etc., Etc. **Hundreds of Doors,** Pine and Hardwoods: Good Sizes and Designs. **Hundreds of Sash, Miscellaneous Millwork.**

We have got to make room in our Stock Sheds for the New Lines, (see our Latest Catalogues) and must move at once these large stocks of Over-runs, Discarded Patterns, Misfits and Cripples. They will be sold on Monday, March 30, 1914, regardless of cost, first come, first served, telephone and telegraph orders accepted—But, in order that everyone will get the same chance, no Order will be Opened or Booked till Bargain Day.

Send for list to-night—write for the complete list giving complete description and prices—the greatest Bargain Prices ever offered to Contractors and Builders in Canada.

Get the list, pick out just what you want, and order early. Remember that date, Monday, March 30, 1914. No order booked before the date for any of this stock, and we guarantee that the stock won't last three days. This stock is all good, clean, fresh stock, of our regular high-grade—no poor stock worked in.

SAMPLE PRICES

\$1.00 Mouldings	@	25c per 100 R. Ft.	\$8.00 Veneered Doors	@	\$2.50
2.75 No. 1 Pine Doors	@	\$1.50	1.00 Sash	-	-
2.25 B3 Pine Doors	@	1.25	Etc.	Etc.	Etc.
					10 cents each
					Etc. Etc.

All prices will be F.O.B. Midland. Terms for this sale, SPOT CASH

Don't Send Any Money With Your Order

We will draw at sight when we ship the goods

Write to-night for this wonderful BARGAIN LIST, and don't forget the date

Bargain Day at the Shook Mills, Monday, March 30, 1914

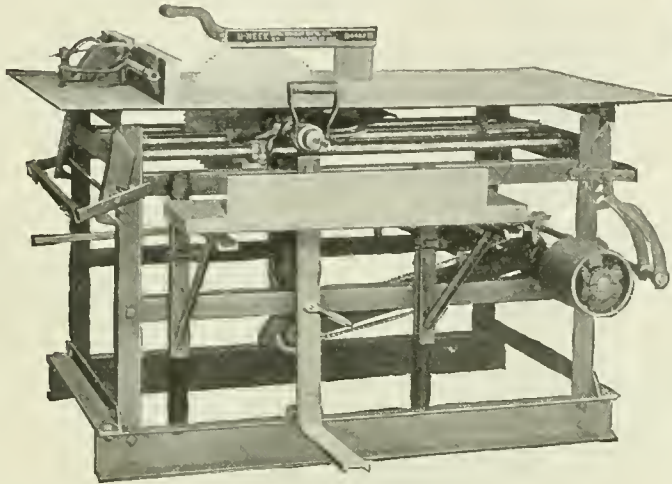
Georgian Bay Shook Mills, Limited

MANUFACTURERS FROM THE TREE TO THE FINISHED PRODUCT

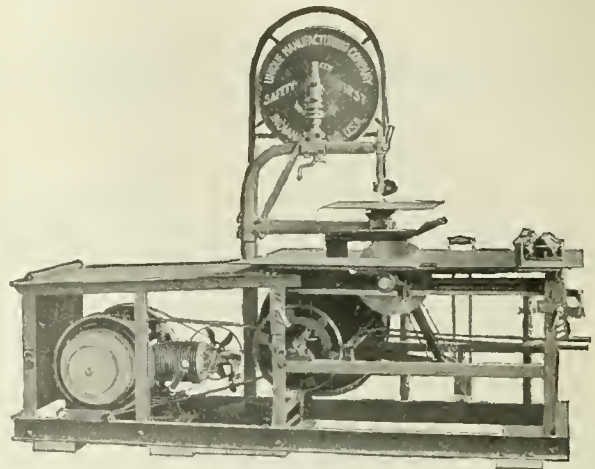
Midland, Ontario

Contractors and Builders are saving from \$50 to \$250

on each job by doing their sawing on a portable machine. The U-NEEK can be put right out on the job, goes through an ordinary door, and excels in capacity and speed. Has three speeds, with the proper speed for each operation. Used in framing, siding, flooring and finishing. Steel construction, easily handled, and can be operated with perfect safety.



Model B—Rip and Cross Cut.



Model A—Shown Without Housing.

Cross-cut capacity, boards 18 inches wide, $4\frac{1}{4}$ inches thick. In cross cutting, the saw is drawn to the work, which is the logical method of cutting angles.

Band Saw, Jointer, 15 inch Sander, together with Auger and Drill chuck, make a complete machine. Equipped with Electric Motor or Gasoline Engine.

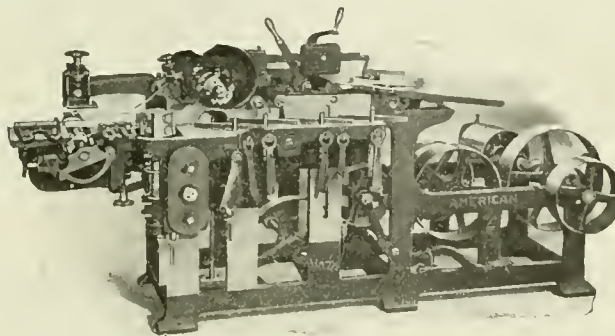
Write Us for Prices TO-DAY

UNIQUE MANUFACTURING CO.
420-422 Murphy Bldg. - Indianapolis, Ind.

AGENTS WANTED.

No. 2 $\frac{1}{2}$ American Sash Sticking Machine

Designed for sticking sash stiles with attachment for making the continuous wide and narrow groove. The stile is placed on the grooving table and pushed forward against a counterbalanced stop, making the wide groove. This stop then drops below the table and the stile is pushed forward against the second stop, then by



pressing the foot on treadle the bit bores the stile at an angle, so that the knot in the cord will draw toward the bottom of the hole when the weight is attached. The stile is then placed against the second gauge and the narrow groove is completed to the hole. The stile is then placed under the feed rolls and run through the machine.

CONSTRUCTION The frame is cast in one piece, making the machine very solid and substantial. The feed consists of two top driven rolls, 2 in. in diameter, and one 4 in. idle roller in the bed. The under cutter head-stock has lateral adjustment and adjustable chip breaker; heads are interchangeable without removing the arbor. The bed drops 16 ins. There are pressure shoes in rear of top head [not shown in cut.]

The Stuart Machinery Co., Ltd.

764 Main Street :: WINNIPEG

What Would This Machine Save for You?

When You Are Buying a Woodworking Machine

Buy the best in the market—one that you are sure will do your heavy, as well as your light work. If you do not possess a Portable Combination Wood Worker, no doubt you are thinking seriously of getting one, as all the up-to-date builders are installing them. They know that they cannot compete with other builders without one. Be sure yours is a Hutchinson, it will do all that is claimed for it.

The Hutchinson Woodworker is not a toy machine. It will do your heavy, as well as your light work, cutting anything from a 1/16 to a 6 x 16 in. timber, pine or oak; and by turning the stick, you can cut a 12 x 16 timber, making a much neater job than by cutting in the old way. It is equally as good when used for Ripping, besides being a big money-saver. To give an idea of the time it will save (and this is a very conservative estimate) it will take two men two minutes each (four in all) to make one cut through 6 x 16 Georgia Pine timber by hand, while with my saw it will take 20 seconds. Thus, this saw will accomplish 12 cuts to 1 by hand.

Does this not mean time and money to you, Mr. Builder, in cutting studs, Rafters, Braces, Boring, for Dowling, Tenoning, Dadoing, Pulley-Stiles, Door Jambs, Routing Stair Strings, and mitering of any kind,

Sand Papering, Ripping, Tool Grinding, etc.? It can be set for any of these operations in one minute, and once set, will do as much work in two hours as a carpenter will do in 10 hours.

Besides your men are let out of the heaviest part of the work, and have more strength and speed to put in on the erecting. A laborer moves the stuff around—the machine is adapted for many kinds of different work. The motor can also be used to run various machines, such as jointer, band-saw, jig-saw, mortice machine or poney planer, and will go right through its work without stopping.

As you are aware, there is no use setting a boy to do a man's work. Well, this is the Man working, and the average cost for power in Toronto is \$3.00 per month for large machine, and \$1.00 for small machine, as per cuts No. 1 and No. 2. The small machine will do the same class of work as the large machine except that it is not so powerful, being operated by a 1 h.p. motor, while the large machine is operated by a 3 h.p. motor. The small machine can be attached to any ordinary light wire, experiences no trouble in cutting a 2 in. plank, and is easily moved from room to room if necessary.

Order Your "Hutchinson" Now

It will soon make its own cost—saving from one hundred to four hundred per cent. I will guarantee it to do all the work mentioned in the Catalogue. We also manufacture No. 1 machine to set stationary, running from a line shaft, or Gas Engine for straight cut off saw, dadoing, etc., a counter shaft being set in place of iron base and motor on the floor.

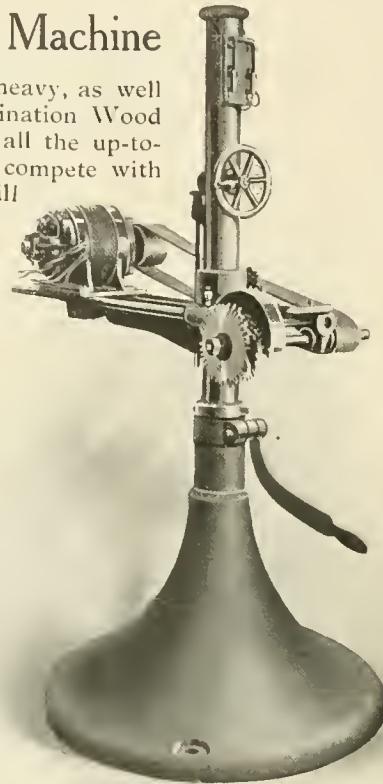


Fig. 2

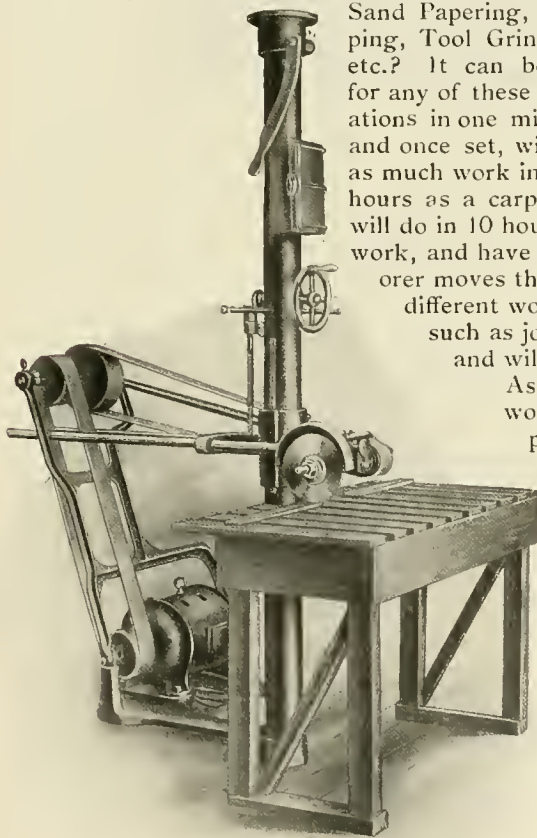


Fig. 1

Write for a catalogue to-day

The Hutchinson Woodworker Co., 5 Duke Street, Toronto

*Manufacturers of High Grade
Planing Mill Products*



This is a Real Photo
of Our Plant



Benson & Bray, Limited
Midland Ontario

*Manufacturers of High Grade
Planing Mill Products*

Sash

Q We carry a large quantity of stock sash in White Pine and Cypress, ready for immediate shipment.

Special attention is given to all orders made to your specifications.

Our sash stock is specially selected, thoroughly dry, and workmanship guaranteed.

Write us for prices.

Interior Trim

Q We have in our warehouses 300 thousand feet of lumber run into stock mouldings in White Pine and Soft Woods; also, in order to take care of your special details, we carry half a million feet of kiln dried Pine and Hardwood in our warehouses, from which we can run any special designs on the shortest notice.

Our guarantee goes with every shipment.

Prices always reasonable.

Benson & Bray, Limited

Midland

Ontario

*Manufacturers of High Grade
Planing Mill Products*



B.B.L. No. 130

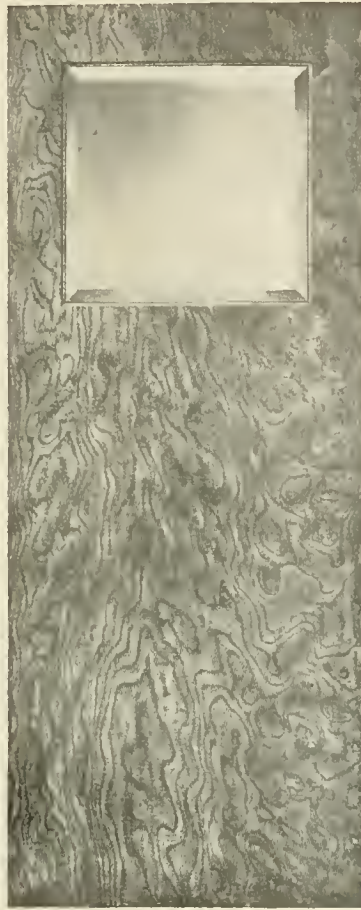
B.B.L. White Pine, Cypress, Yellow Pine or Chestnut doors, combine beauty and style, with good service. Made in any desired pattern in all grades for every purpose. Special designs on short notice. *Send for prices.*

Benson & Bray, Limited

Midland

Ontario

*Manufacturers of High Grade
Planing Mill Products*



B.B.L. No. 310

Q Our veneered doors are second to none for beauty of design and durability.

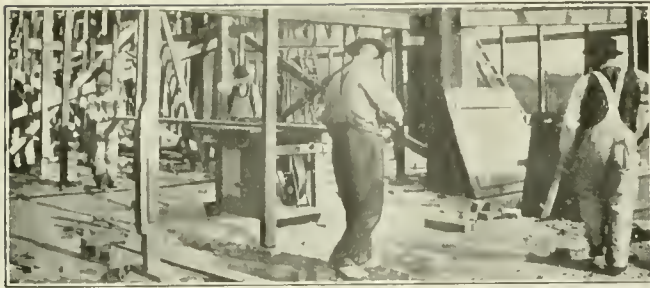
All veneers used in their manufacture are selected for color and figure.

Our guarantee with every door. *Write for prices.*

Benson & Bray, Limited

Midland

Ontario



EVEREADY SAW RIG

Does the work of six men— saves big money on every job! Most efficient machine you ever saw: not only saws, but joints, sands, jig saws, dados, bores, miters and grinds tools. *Guaranteed for life.* Complete set of attachments free. Write for facts.



MIXER

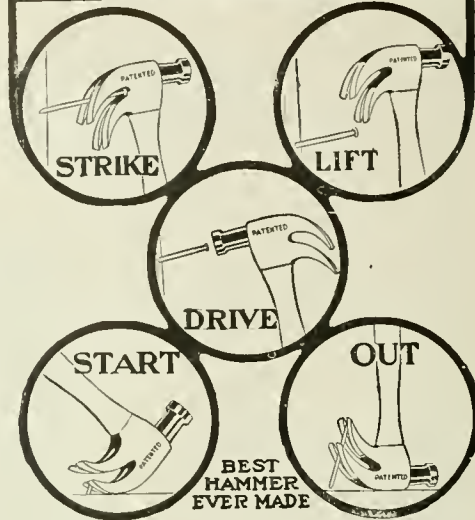
Every Contractor who is looking for the perfect mixer, owes himself a full knowledge of the facts about the 'OSHKOSH.' Write for them to-day. Get our Special Offer.

Live Agents wanted in open Territory

OSHKOSH MANUFACTURING CO.

520 South Main St., Oshkosh, Wis., U.S.A.

DOUBLE CLAW



DO YOU USE A HAMMER ?

How about pulling the Nail? Does it come out *easy* or do you use a **Block** to do it ??? Try the **DOUBLE CLAW HAMMER** which will do the work at once without hard work and *quickly*. It pays for itself the first day. Many carpenters say they have used the D.C.H. and would not sell it for Fifty Dollars.

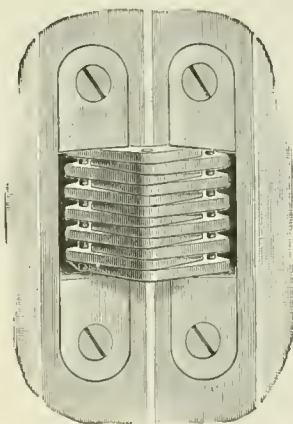
"There is a Reason"

SEEING IS BELIEVING. - ASK TO SEE IT.

Double Claw Hammer Co. 453 Broadway
Brooklyn, N.Y.

Soss Invisible Hinge

For use on Panel Work, Lockers
Closets, Counter Flaps, Partition
Doors, Cabinets, etc.



Soss Invisible Hinges are made in a variety of sizes, the largest being adapted for largest size door.

Send for circular and prices; or buy from leading Hardware Dealers

SOSS INVISIBLE HINGE CO., LIMITED

104 Bathurst St., TORONTO

USE Consolidated Glass

When you're working on a job, don't have your own good work spoiled by using inferior materials.

Get our prices before quoting on any specifications calling for the use of

- Plate Glass*
- Sheet Glass*
- Prism Glass*
- Figured Glass*
- Leaded Glass*
- Mirrors*
- Sidewalk Prism*
- Metal Store Fronts*

We guarantee prompt service. Most orders are shipped from stock the day they are received.

The Consolidated Plate Glass Co.

of Canada, Limited

241 Spadina Ave., TORONTO

Phone Coll. 8000, Private Branch Exchange connecting all departments

**RED
S
BRAND
WINDOW
GLASS**



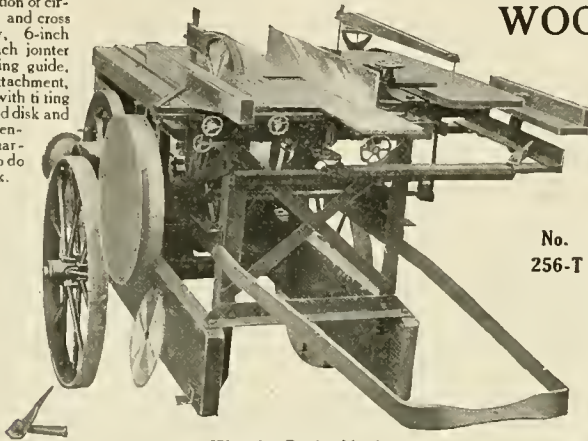
**GLASS
BENDERS
TO
THE
TRADE**

THE TORONTO PLATE GLASS IMPORTING COMPANY, LIMITED
Plate, Window, Figured, Stained, Wired, Bent, Mirror
and Ornamental Glass

DON ROADWAY

TORONTO

No. 256-T is a combination of circular rip and cross cut saw, 6-inch or 12-inch jointer with tilting guide, boring attachment, jig saw with tilting table, sand disk and gasoline engine guaranteed to do the work.



No. 256-T

Write for Catalog No. 7

**Parks Portable Single or Combination
WOODWORKING OUTFITS**

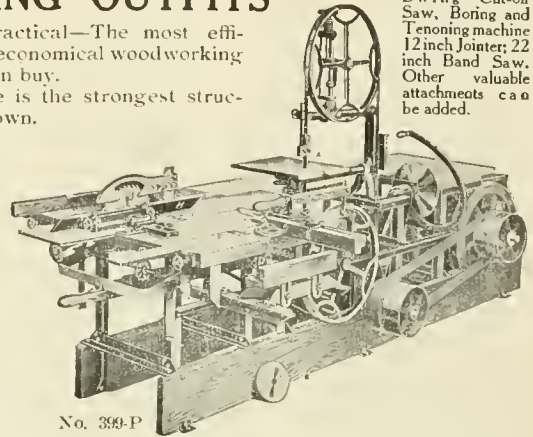
Are the most practical—The most efficient—The most economical woodworking equipment you can buy. Angle steel frame is the strongest structural material known.

Machines made in large quantities which allows us to sell at lowest prices and make prompt shipment.

**THE PARKS
BALL
BEARING
MACHINE CO.**

1501 Knowlton St.
Cincinnati, Ohio

Circular Rip and Cross-Cut Saw, Swing Cut-off Saw, Boring and Tenoning machine, 12 inch Jointer, 22 inch Band Saw. Other valuable attachments can be added.



No. 399-P

**THE
STEEL SQUARE
HANDBOOK AND
INSTRUCTOR**

By R. L. HAMWOOD

Makes it all plain

This is a handy manual for the use of Builders and Journeymen Carpenters, copiously illustrated, and embodying the practice of roof construction by the standard system, also extensive rafter and stair tables of the most universal nature.

R. L. HAMWOOD 442 BROCK AVE.
TORONTO.



Reg. U.S.
Pat. Off.

**You—the Man Who Does
the Work**

You may think that your skill and experience supply much that is lacking in the way of efficiency when you buy a poor tool, but why struggle with an inferior tool when it is possible to get the best by specifying DISSTON to your hardware dealer.

Your father told you of the quality that went with Disston Saws. You have discovered it for yourself. Do you know that this same quality distinguishes a long line of other Disston Tools? Keep your saws sharp with Disston files. These, and all the other DISSTON BRAND GOODS, are obtainable at all hardware stores.

Our book on how to properly file a saw also tells you other things about tools. Send for it—free to you.

HENRY DISSTON & SONS, Inc.
Keystone Saw, Tool, Steel and File Works
PHILADELPHIA, U.S.A.

ROBERTSON SOCKET HEAD

Wood Screws



See That Square Hole

Pat. Feb. 2, 1909

THIS IS A REAL WOOD SCREW

It is driven by a simple square bit, and is the only one of its type on the market.

Driver fits snugly into the square hole and positively cannot slip and cut the fingers, or disfigure costly furniture or woodwork. It is driven with less exertion. No ragged slots after driving. Saves time, labor, money and material. We make the drivers in all suitable styles.

Drivers sent free with first order. Write for catalogue and prices.

P. L. Robertson Mfg. Co., Limited

MILTON :: ONTARIO

Scraping Floors
by hand is expensive

Reduce Your Cost
Improve Your Work

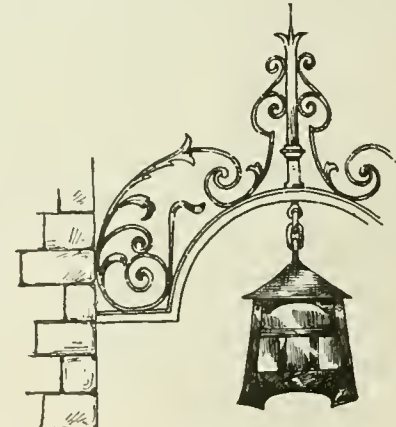
The
Fox Floor Scraper
Does it



Let Us Tell You About The "Fox"

Aikenhead Clark Hardware Co.
Builders' Hardware and Contractors' Supplies

Boyd Bldg., cor. Portage Ave. and Edmonton St.
WINNIPEG, MAN.



Dennis Iron Work
is a
Good Choice

Fence, Gates
Arches
Railing
Grilles, Panels
Fire Escapes

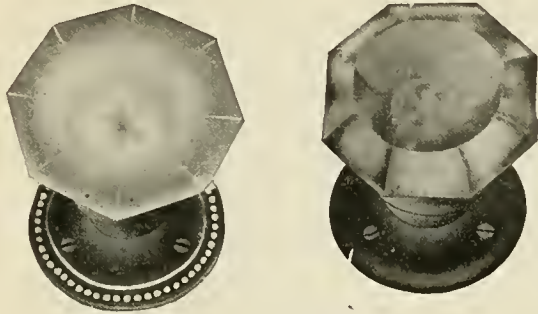
Brass Church
Furnishings
Castings
Galleries
Balconies

Get Our Catalogues

Dennis Wire & Iron Works Co.
London, Ont. Limited

Toronto Branch - 36 LOMBARD STREET

A Few of Our Line of Glass Knobs



We Manufacture an extensive line of Glass Knobs, also all kinds of High-class Builders' Hardware.

Goods Guaranteed — Prices Right.

THE
Belleville Hardware & Lock Mfg.
COMPANY, LIMITED
BELLEVILLE :: CANADA



ATHEY Cloth Lined Metal Weather STRIP

NO weather strip on the market can compare with "ATHEY" for all round excellence. The following are a few of its many outstanding features:

This building is equipped with Athey Weather Strip.

- ☑ Keeps out all draughts and dirt.
- ☑ Absolutely dust proof.
- ☑ Prevents sash from rattling.
- ☑ The only weather strip with a cloth-lined channel in the sash.
- ☑ Effects a considerable saving in coal bills.

Write for particulars, prices, etc.

The Eberhard-Wood Mfg. Co.
Ornamental and General Iron Works
36-38 Lombard St. - - TORONTO



To Make YOU A Better Builder

If you are a carpenter—to make you a foreman.

If you are a foreman—to fit you to take contracts yourself and make the big money a good contractor makes.

If you are a contractor—to show you how to get *more* contracts by figuring *closer* and *more accurately*—or to become an architect and collect the big fees a good architect gets.

This is the purpose of the clear and practical Building and Architectural Courses of the International Correspondence Schools.

Every month over 400 men report advancement or increased earnings that have come as a *direct* result of this practical I.C.S. training. What the I.C.S. have done for these men, they can do for YOU.

Just indicate on the attached coupon the line of work about which you would like to know more. Mail the coupon to the I.C.S. and they will show you how you can get this information right in your *own home* during your *spare time*. **Mail the coupon NOW.**

International Correspondence Schools

Box 1233, 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 Architect-Draftsman Building Foreman Building Contractor Building Inspector Estimating Clerk Structural Engineer Structural Draftsman Plumb. & Heat. Con. Supt. of Plumbing Foreman Steam Fitter	Plumbing Inspector Heating and Ventilation Civil Engineer Surveying Mining Engineering Mechanical Engineering Mechanical Draftsman Stationary Engineer Electrical Engineer Electric Lighting Electric Railways	Concrete Construction Automobile Running Foreman Machinist Sheet-Metal Pat. Drafts. Bookkeeper Stenographer Law for Contractors Advertising Man Window Trimming Civil Service Exams. Chemist
--	--	--

Name _____
 Street and No. _____
 City _____ State _____
 Present Occupation _____



Toronto Housing Co., Spruce St.

Eden Smith & Son,
Architects

Hill & Strathy,
Contractors

1,250,000 Sun Bricks supplied for eight of these buildings.

THERE'S A REASON

Sun Bricks are burned in gas kilns, giving the right range of color, hardness and density.

SUN BRICK COMPANY, Limited Traders Bank Building **Toronto**

Ornamental Iron, Brass & Bronze Work Of Every Description

When planning your work for the Spring and Summer Building Seasons, give us the opportunity to figure on your Ornamental Iron, Brass and Bronze Work.

We can give you entire satisfaction both as to Quality of Work and Price. Following are lines upon which we would be glad to quote :

Stairs in Wrought and
Cast Iron
Fire Escapes
Elevator Enclosures
Marquise and Canopies
Bank Counter Screens

Fences and Gates
Balconies
Window Grilles
Gratings
Light Structural Iron
Work

Lamps and Brackets
Iron Doors
Wire Work
Hammered Leaf Work
Fire Irons, Fenders and
Andirons, Etc.

Dominion Ornamental Iron Company

1195 Queen Street East, Toronto

LIMITED



This New Husbandry Building at Guelph O.A.C. is Roofed with

ASBESTOSLATE

The Ontario Agricultural College is justly proud of this splendid building. It was erected according to the plans of the Provincial Architect, at a cost of between \$65,000 and \$70,000—part of a Federal Grant for the promotion of Agriculture.

The selection of ASBESTOSLATE for the roof of such a building is another official recognition of the superiority of this fireproof, handsome and practically indestructible roofing. Write for particulars, prices and booklet T.B., to

Asbestos Manufacturing Co., Limited Address E. T. Bank Bldg., 263 St. James St., Montreal.
Factory at Lachine, P. Q., (near Montreal).

Readers, Attention!

If you have put up what you consider an attractive, well-designed house or bungalow of moderate cost, send plans, photos and bills of material to us for publication in The Canadian Builder and Carpenter.

The advertising you will get from the appearance of your house in the paper will make it well worth your while.

The Canadian Builder
and Carpenter

32 Colborne St. Toronto



The
**FOX
FLOOR
SCRAPER**
is
easy
to
operate

Any carpenter is able to operate The Fox Scraper and do rapid, perfect work. One man with this scraper can do the work of five men with hand scrapers. To operate the Fox Scraper the workman pulls the machine towards him. As the machine is perfectly balanced the blade scrapes the flooring at the correct angle. When the scraper is pushed forward the weight is automatically lifted from the blade to the third wheel, enabling the operator to easily turn the machine in any direction.

Prices and particulars will be promptly furnished by

The James Walker Hardware Co., Limited
Wholesale and Retail
MONTREAL



Architectural Ironwork.

North Wing, Ontario Parliament Buildings

For
Ornamental Iron
and
Bronze Work

**MEADOWS SETS
THE STANDARD**

Our products are backed by our
reputation and our prices—right

Send for our estimates

The GEO. B. MEADOWS Toronto
Wire, Iron & Brass Works Co.,
Limited

479 Wellington St. W.
Toronto, Ont.

ONTARIO LIME COMPANY LIMITED

BUILDERS' SUPPLIES

Lime
Portland Cement
White Cement
Keenes Cement
Plaster Paris
Hard Wall Plaster
Mortar Colors

Fire Brick
Sewer Pipe
Weeping Tile
Sacketts Plaster Boards
Parkers Corner Bead
Rubble Stone
Crushed Stone, Etc.

With our 9 Branch yards situated as they are we are prepared to guarantee a prompt delivery service of any orders you may favor us with and would ask you to give us a trial in order that we might prove same to you and also prove the excellence of our material.

Head Office: CROWN OFFICE BLDG.

Phones: Main 5472-5473.

Queen and Victoria Sts., Toronto



"Built like a Thermos Bottle"

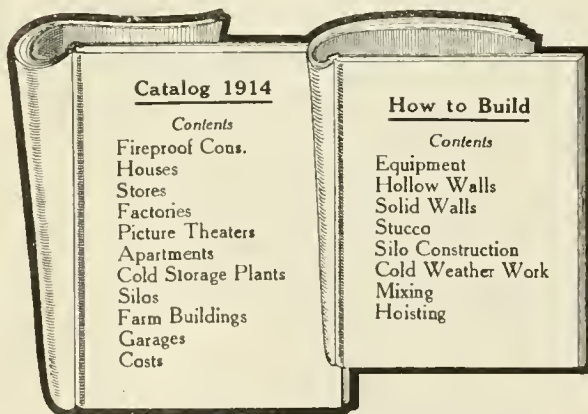
Why Do You Build a Frame House?

BECAUSE wood construction was once cheap, and
BECAUSE you are "used to it."

See if you can think of ANY other reason.

Why should you build a Van Guilder Hollow Wall Concrete House?

BECAUSE it is fireproof.
BECAUSE it needs no repairs.
BECAUSE it is absolutely dry.
BECAUSE it costs less to heat.
BECAUSE it is cooler in summer.
BECAUSE it is sanitary.
BECAUSE insurance rates are less.
BECAUSE larger loans can be obtained.
BECAUSE you can use unskilled labor.
BECAUSE the equipment needed is inexpensive and
the construction easily learned.



Catalog 1914

Contents

Fireproof Cons.
Houses
Stores
Factories
Picture Theaters
Apartments
Cold Storage Plants
Silos
Farm Buildings
Garages
Costs

How to Build

Contents

Equipment
Hollow Walls
Solid Walls
Stucco
Silo Construction
Cold Weather Work
Mixing
Hoisting

A suggestion of the contents of our Catalog and Instruction Book is shown. These books are packed with real business and profit getting information, but we will send both free if you will check the subjects that especially interest you, and mail with your address.

The Van Guilder Hollow Wall Co.

710 Chamber of Commerce Bldg.
ROCHESTER, N.Y.

Asphalt Slate Shingles Make Better Roofs

They have proven it in hundreds of cities in the United States and Canada on every class of house where good roofing is required.



Red Ribbon Asphalt Slate Shingles were used exclusively on this beautiful home. Can you imagine a finer roofing appearance?

Red Ribbon Asphalt Slate Shingles cost no more than good grade cedar shingles stained, yet they are guaranteed to last twice as long. You'll get real roofing service in

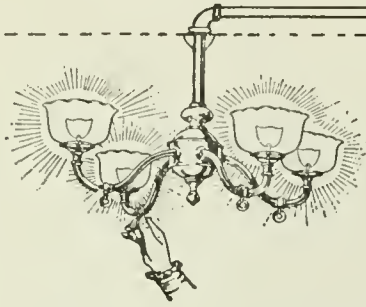
Red Ribbon Asphalt Slate Shingles

Made from the best quality wool felt coated with crushed red or green No. 1 grade slate, rolled in so that it cannot be loosened by wind, sun or rain. Absolutely fireproof. Color is permanent. Better than slate at only half the price.

Write for our literature covering our entire lines of Rubber Roofing, Asphalt Felt, Insulating Papers, etc.

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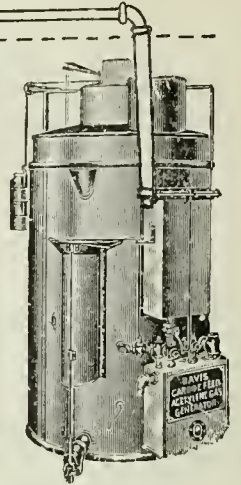
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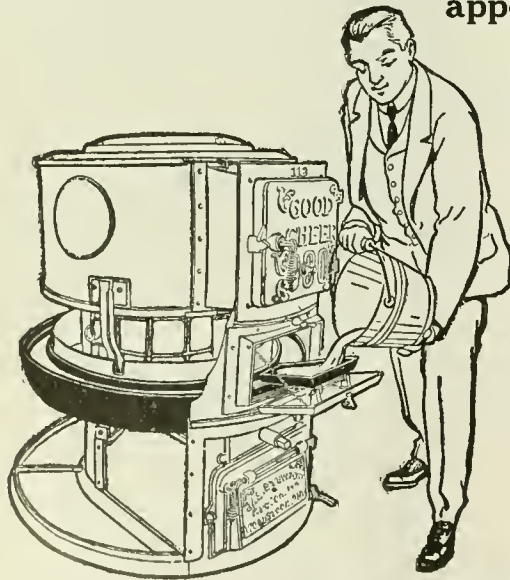
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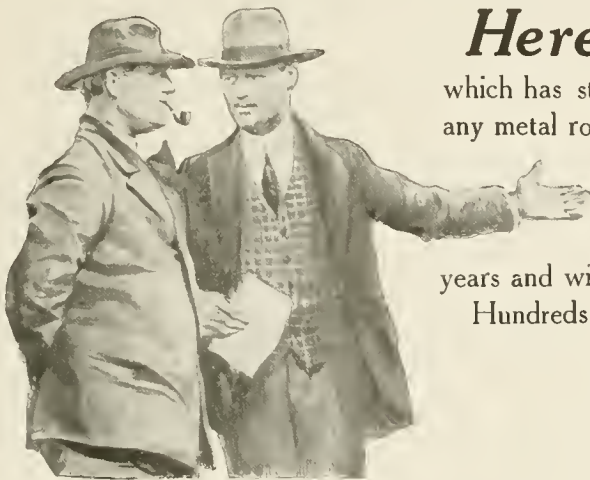
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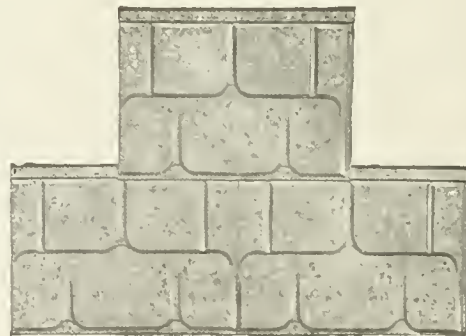
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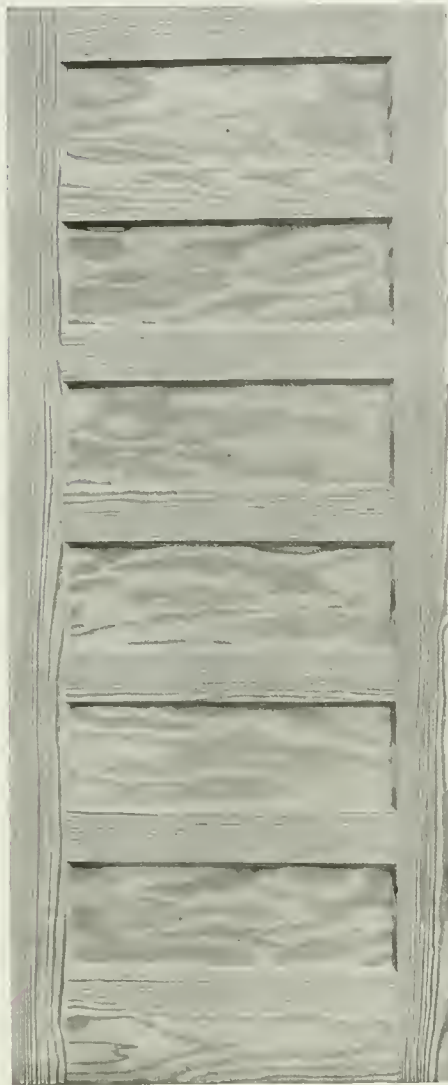
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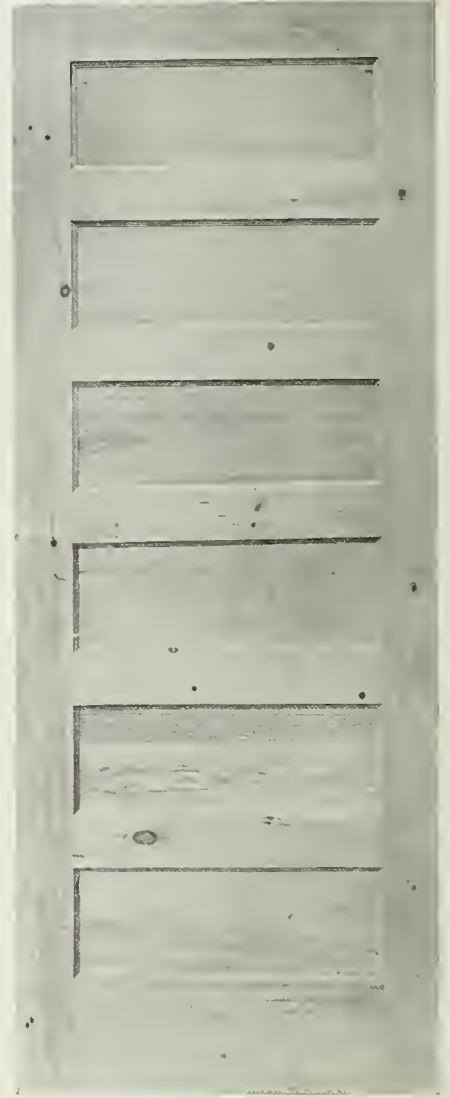
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2 ft. 2 in. x 6 ft. 6 in.	2 ft. 6 in. x 6 ft. 8 in.
2 ft. 4 in. x 6 ft. 6 in.	2 ft. 8 in. x 6 ft. 8 in.
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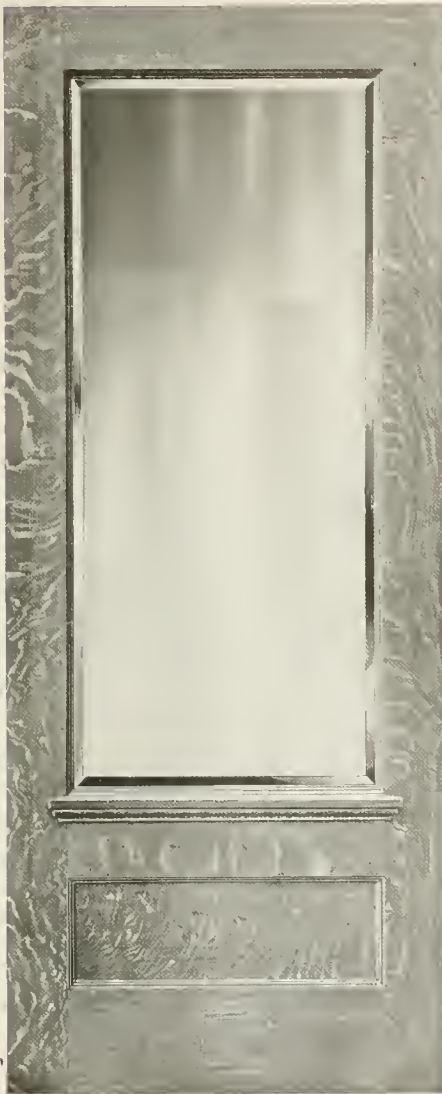
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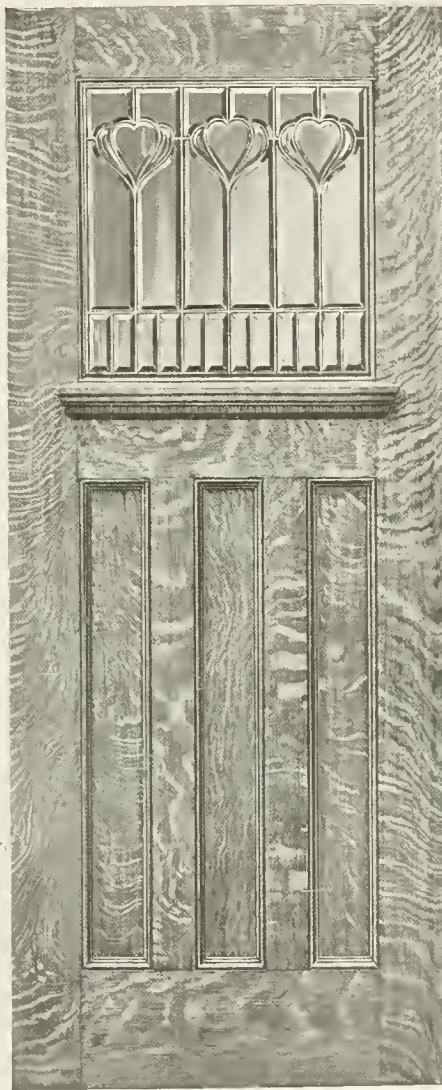
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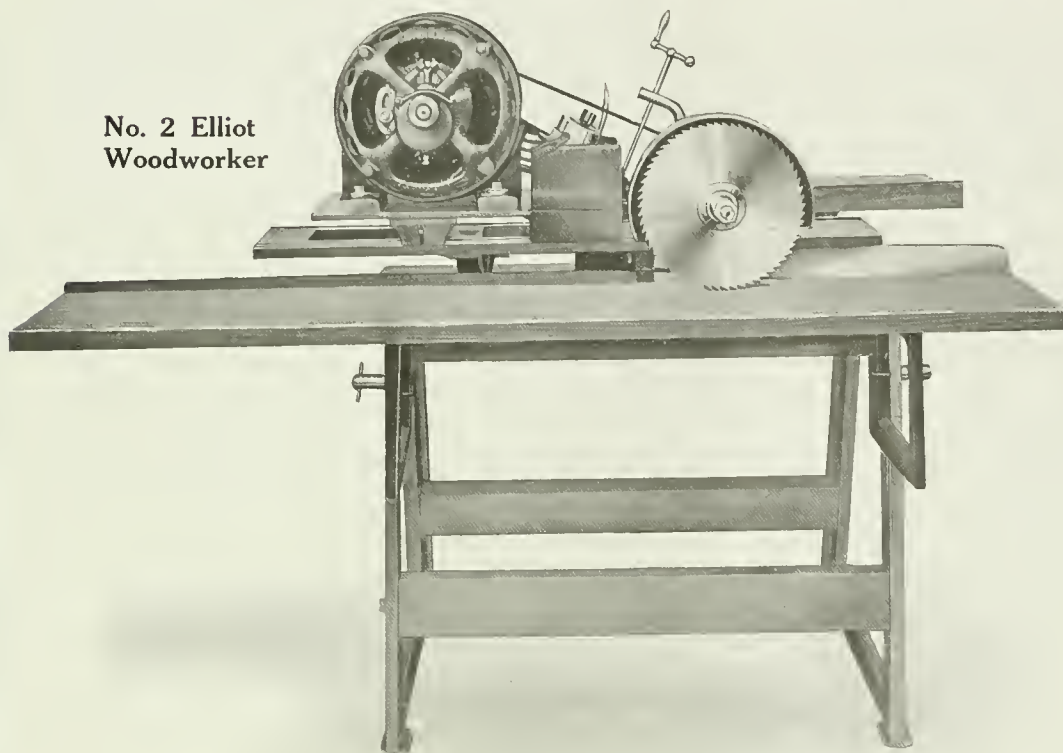
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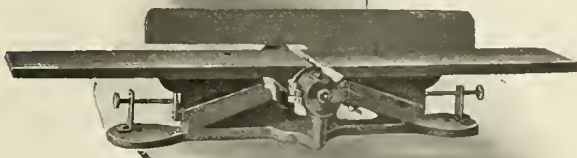
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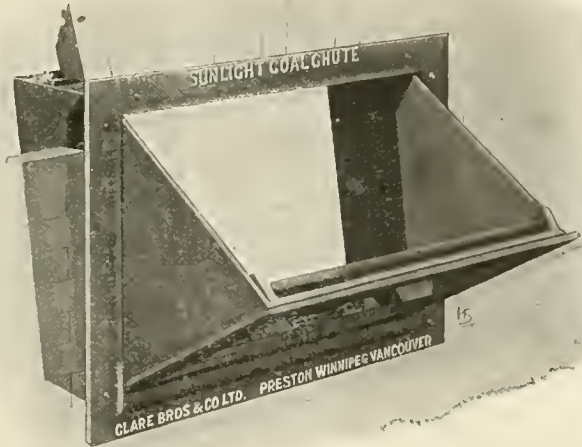
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Until the Directory is extensive enough to give you what you desire, we will be glad to have readers write us for names of Architects, Patent Attorneys, Engineers, etc., whom we can recommend.

¶ For your convenience we are devoting this page to this "Professional Directory;" and in each issue we hope to see an added number of Professional Cards in this department. When you wish plans prepared—when you have an idea you wish to patent—form the habit of looking at this page in The Canadian Builder and Carpenter.

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Front view of the Upper Canada Apartments, at the corner of Lonsdale Road and Lawton Avenue, Toronto

Apartment House That Embodies Many Up-to-Date Ideas

Architect—*J. Hartley Galloway*

BY ERIC A. FORSON

The Upper Canada Apartments, views and floor plans of which are shown herewith, were erected by G. Garfunkel, at the corner of Lonsdale Road and Lawton Ave., Toronto. The building is constructed of Milton pressed brick, of a buff shade, on a stone foundation. Every convenience that the flat-dweller holds dear has been embodied in the construction, and every detail has been studied carefully to make the suites as complete and comfortable as is possible.

The apartment comprises 15 suites, nine of five rooms and bath and six of six rooms and bath. The larger suites have three bedrooms. All are finished and decorated throughout.

There are three separate entrances, each with a vestibule and each one serving several suites. Stairs to the basement lead from each of these entrances. The floors in the entrance halls and on the landings are laid in tile and the walls for half-way up are in panelled oak. The ceilings in the halls are tinted in pink and white roses and lovers' knots. There are two lights to a landing, a large one in the centre of the ceiling and a small one on the wall. The former is turned out by the janitor at a stated hour each night and smaller one left burning. It is controlled by a time switch and goes out automatically at a fixed time.

The general layout of the suites may be seen from the floor plan published herewith. While only the first floor plan is shown, the reason for this is that the second and third storeys are the same, each consisting of two suites of six rooms and bath and three suites of five rooms and bath.

As will be seen from the plan, each suite is entirely separate, and there are not a number of families using a big main hallway, as is the case in many apartment blocks. The following is a description of one of the five-room suites.

Extra Wide Halls

A feature is the extra wide hallway in each suite. In every case, the hall is 4 ft. 8 ins. wide and is well lit by a large fixture placed in the centre of the ceiling. The hall affords entrance to each room, the dining-room and living-room on one side, and the kitchen, bedrooms and bathroom on the other. Just inside the door leading into the apartment is a large coat room with full length bevel mirror door. There are two linen closets in the hall, one outside the kitchen and

the other at the entrance to one of the bedrooms. A telephone on the wall connects either with the entrance door or with the janitor's apartment in the basement. This telephone also serves as a lock for the inside or vestibule door at the street entrance, for it is only by pressing a button on one side of the transmitter that the street door can be unlocked. Every caller, before going into an apartment, must first ring up the tenant, and if that visitor is unwelcome, the tenant, by refusing to press that little button, bars further progress of the said unwelcome caller.

The walls of the hall are finished in stucco effect, of a dark shade, to plate rail, and with a buff frieze above.

The Living and Dining Rooms

The living-room contains oak mantel with a gas fireplace. The hearth is in green tile, and the inside of the fireplace in white. The grate can be removed for cleaning. The walls in this room are decorated in a dark finish to plate rail. The frieze above is hand-painted and shows various scenes appropriate to a den or living-room. There is a large bay window looking on to the street, and the radiator is placed in the bay.

Set in the wall, near the floor, is an electric fuse plug



Fig. 2.—Mantel and gas fireplace in living room. This picture also gives a good idea of the decoration in the living room and dining room. A corner of the latter room may be seen at the left.

to which can be attached a cord for a piano lamp or small reading lamp.

The dining-room is just off the living-room. The walls in this room are of tinted stucco, with hand-painted frieze in Tiffany effect. The lighting fixture is a five-globe one, with Tiffany globes. There is also a fuse plug here, set in a similar position to that in the dining-room, for connecting up with an electric toaster or percolator.

Oak Trim Throughout

The trim throughout these two rooms and the hall is of oak in dark finish and the floors are of hardwood. The doors are also of hardwood and have glass lights at the top. Cut glass door knobs are used on each of the doors that are finished in dark shades, while the knobs on those in the bedrooms are what is known as the white sanitary variety.

The Bedrooms and Bath

The bedrooms are finished in white enamel. Each has a roomy clothes closet and is equipped with two lighting fixtures, placed on different walls. In the clothes closet in one of the bedrooms is an individual fireproof wall safe for the storing of valuable papers, etc.

The bathroom has a terrazo floor, and the walls, half-way up, are laid in white tile. A medicine cabinet, with mirrored door, is built in the wall, and the electric light, operated by a switch just inside the door, is placed high above this. The lavatory and bath are of vitreous chinaware. The closet is of the noiseless variety, equipped with Sloan valves.

The hot and cold water is under individual control, so that the supply in one suite may be shut off without affecting the rest of the tenants. This same condition applies to the electricity, the switches for each suite being placed high up in the wall in the kitchen.

The Kitchen

The kitchen is a model of neatness and ingenuity.

The accompanying photograph gives a good idea of the cupboard that is built against the wall. The upper part, for china, has glass doors. There is a large work-board underneath the china shelves, drawers for linen and cutlery underneath this again, and the bottom part is divided into cupboards for pots and pans, etc.

Behind the door is a dumb-waiter leading to the basement. Beside this is a telephone, also connecting with the basement. The dumb-waiter opening in the basement is labelled with the tenant's name, so that when a tradesman leaves supplies he 'phones to the kitchen and the goods are taken in. This does away with the annoyance of having the butcher, grocer, etc., coming to the door.

A gas range and porcelain-lined refrigerator also are supplied. The former may be seen in Figure 3. There is a fuse plug set in the wall, to which an electric iron may be connected. The floor is of hardwood.

Large Heating Plant in Basement

The whole apartment is heated by steam generated in a large boiler in the basement. The radiators in the different rooms are mounted on blocks about an inch from the floors, so that in case of necessity they can be removed and the pipes got at without serious inconvenience.

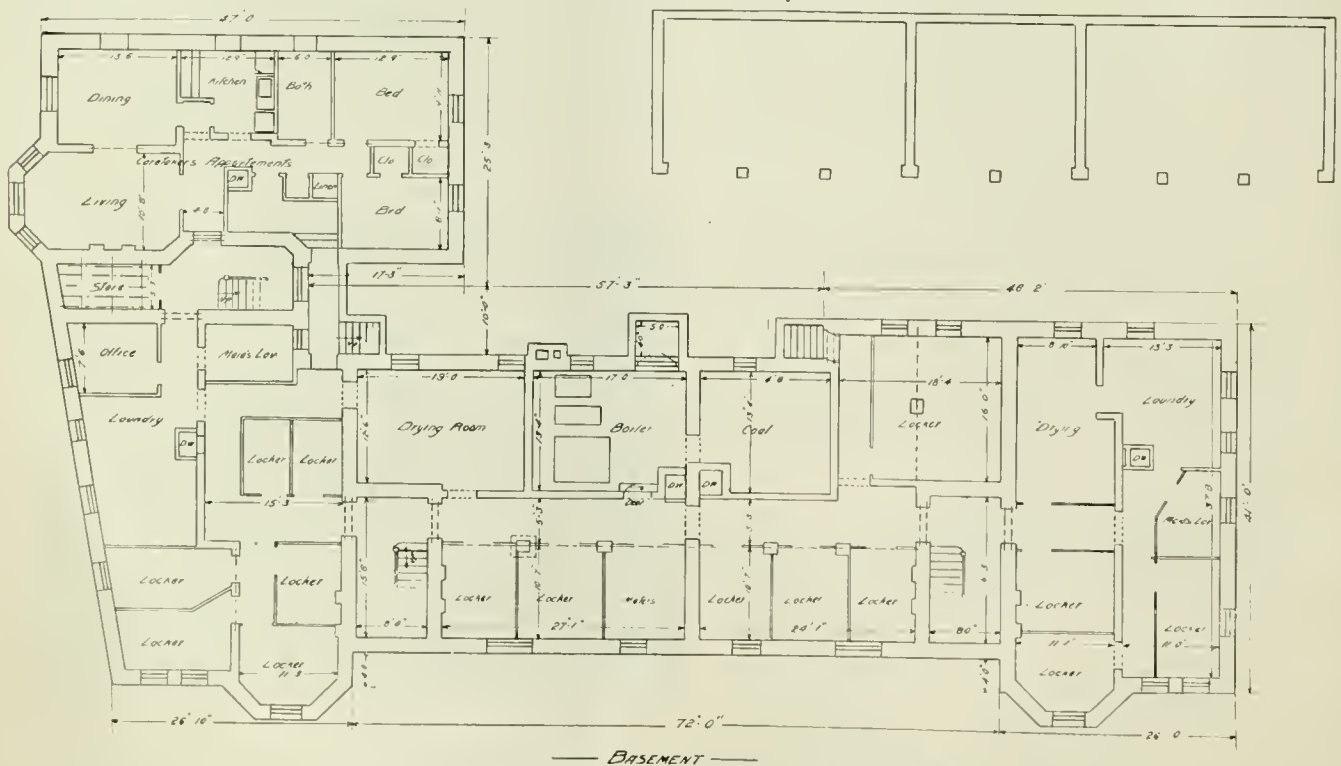
Central Vacuum Cleaner Plant

A central vacuum cleaner plant also is located in the basement. Outside each apartment, in the hall, is an electric plug, to which the cleaner is attached. The current is turned on by means of a key, carried by the janitor. Each apartment is cleaned by the caretaker once a week.

Laundry and Drying Room

A large room in the cellar is given over to a laundry and drying room. Tubs and an electric drying system have been installed, and each tenant is allowed the use of these for so many hours per week.

Each tenant is given space in the basement for the



Floor plan of basement and garage in Upper Canada Apartments.

storing of fruit, vegetables, and other supplies. Everything is under lock and key.

Garage in Rear

As will be seen from plan, there is a large garage at the rear of the building, and space in this is rented at an extra amount per month.

Information on House Heating

I think it would be a good thing to have a little more information along the line of furnace heating. The rule given in the February issue for finding the size of furnace required was not very clear.

Manufacturers of furnaces generally give them numbers, which to a certain extent indicate the size or capacity of the furnace. This arrangement is intelligible to the manufacturers themselves, but not to those who install the furnaces. Owing to keen competition, the manufacturers' lists are usually rated too high. It is therefore advisable to order a furnace at least one size larger than listed by the manufacturers.

The following is a good rule for determining the amount of grate surface a furnace should have.

Divide the number of cubic feet representing the volume of air to be heated per hour by 100, figure on changing the air in the building four times per hour. The quotient will be the required grate surface in square inches. Thus, supposing the building to be heated contains 12,500 cubic feet, apply the rule—
 $12,500 \times 4$

$$\frac{\text{---}}{100} = 500 \text{ square inches.}$$

The corresponding diameter is $\sqrt{\frac{500}{.7854}} = 25.79$, therefore, the diameter of the grate should not be less than 25 inches.

Another very important point in furnace heating is to see that the furnace gets a sufficient supply of cold air. The area of the cold air supply pipe should be not less than three fourths of the combined area of the hot air pipes.

To find the size of leader pipes required to heat a room, the following rule is easy to remember:

Add together the area of the exposed glass surface, in square feet; the area of exposed wall surface in square feet divided by 10, and the volume of the room in cubic feet, divided by 100. The sum will be the area of the pipe required, in square inches, for the first

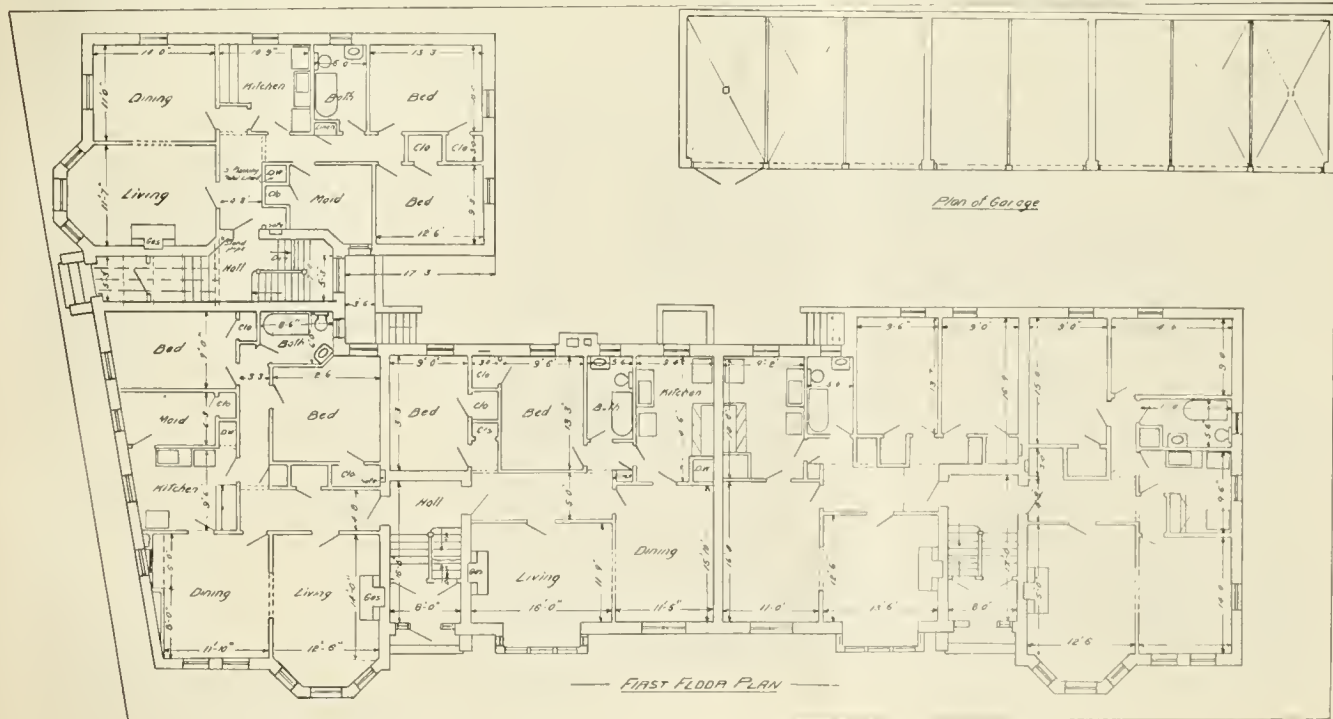


Fig. 3.—View in the kitchen, showing wall cupboard and gas range, with which each suite is furnished. A refrigerator also is supplied.

floor. For the second floor leaders multiply the sum found by this rule by 8, and for the third floor by 6; for north or west exposure increase the leader pipe area by 10 per cent.

Example: A room measures 10 ft. x 14 ft. x 7 ft. It has two windows 2 ft. 8 ins. x 6 ft., and 120 square feet of exposed wall surface.

Solution: 2 ft. 8 ins. = 22.3 ft. The glass surface is



Ground floor plan of Upper Canada Apartments. The second and third floors are laid out in the same manner.

$2.2 \times 6 \times 2 = 32$ sq. ft. The cubic contents are
 $10 \times 14 \times 7 = 980$ cubic feet; therefore, the area of the
 $\frac{120}{10} \frac{980}{100} = 53.8$ square inches.

The diameter is $\sqrt{\frac{53.8}{.7854}} = 8\frac{1}{4}$ inches nearly.

In practice an 8-inch pipe would be considered near enough. Good results can be obtained by following these rules.—Wm. G. Renney.

A Safe Gas Light for Country Homes

Acetylene gas as a material for lighting country homes and barns, summer residences, country churches, etc., is fast gaining favor. Its advantages over the old-fashioned coal oil lamp and lanterns are many. Chief of these is its assurance of safety.

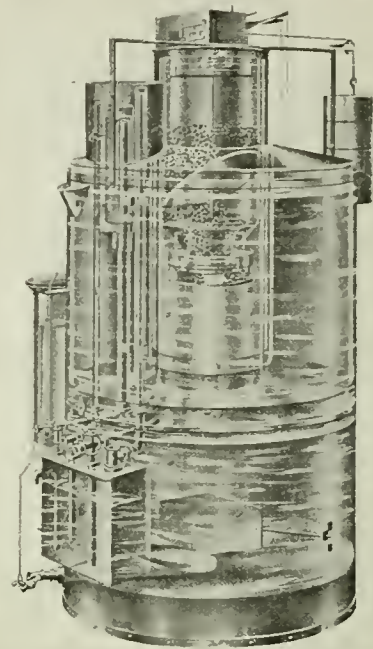
The accompanying illustrations show a generator of acetylene gas manufactured by the Davis Acetylene Co., Niagara Falls, Ont., the method of installing the piping, and floor plans and elevation of the residence of W. A. Briggs, St. Catharines, Ont., in which the Davis system has been installed.

This generator is simply constructed and easy to operate. The carbide is put through a hole in the top, and while the cover is off the mechanism cannot operate and gas cannot form. The water is supplied through another opening, and the residue is removed from an opening at the bottom. The carbide is fed into the water one lump only at a time, by a motor whose power is supplied by a weight which is wound up as is a clock. Until the gas generated from that lump of carbide is nearly consumed the motor is stopped, and no more carbide can possibly be fed into the water. By this means, the supply of gas present at any time is very small. The action of the generator is positive, the control is absolute.

An auxiliary to the modern acetylene system is an electric spark ignitor with a set of dry cells such as is used on a telephone. The system may be arranged so that the simple pressing of a button, or the pulling of a chain is all that is needed to turn on the gas, and at the same time supply a spark, which will at once light

the gas, and, without the use of a match, flood the place with light. Thus the necessity of using matches is done away with and the chance of fire from carelessly-thrown matches, is reduced to a minimum.

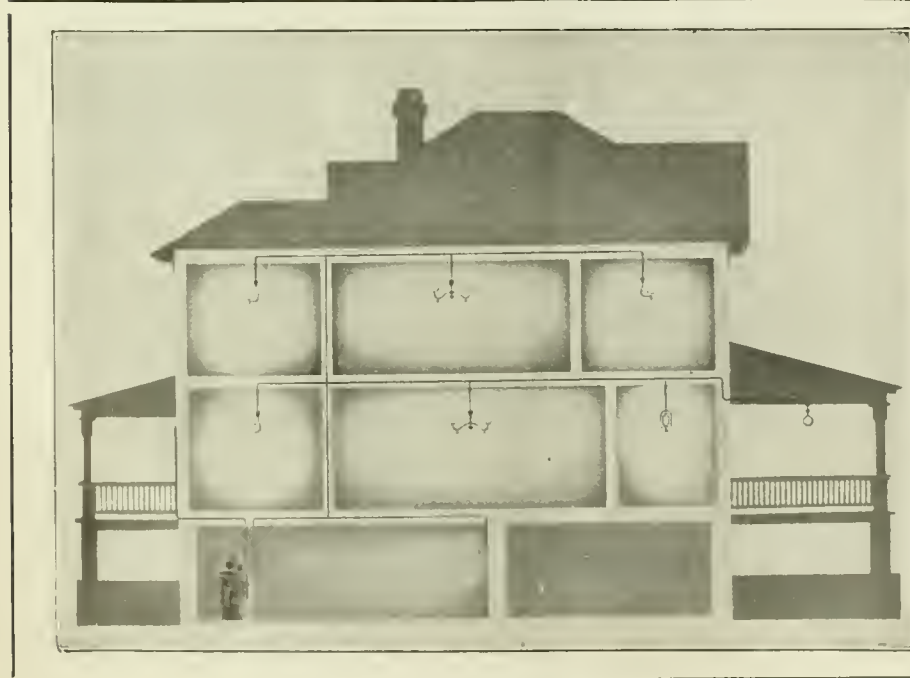
The same generator that is used for lighting the farm home can also be used for barn and stable lighting. The fixtures are placed on the wall or on the ceiling and,



An up-to-date acetylene gas generator.

therefore, unlike where lamps or lanterns are used, there is no danger of the light being kicked over and no chance of a burning match being thrown into loose hay or straw.

The makers of this generator claim it has been tested and is guaranteed safe in every way. It is big enough to handle 25 lights, all that are required in the average farm home. On an average, the reservoirs would require filling about once each month.



Sectional view of a residence showing simple method of concealing piping beneath the floors without disfiguring ceilings or walls. Piping may be put in with ease after building is completed, although it can be more readily placed while in course of construction. In this illustration the generator is shown in the cellar. It may be placed in any other convenient location. If desired, the generator may be placed outside in a frost-proof building and the gas piped in.

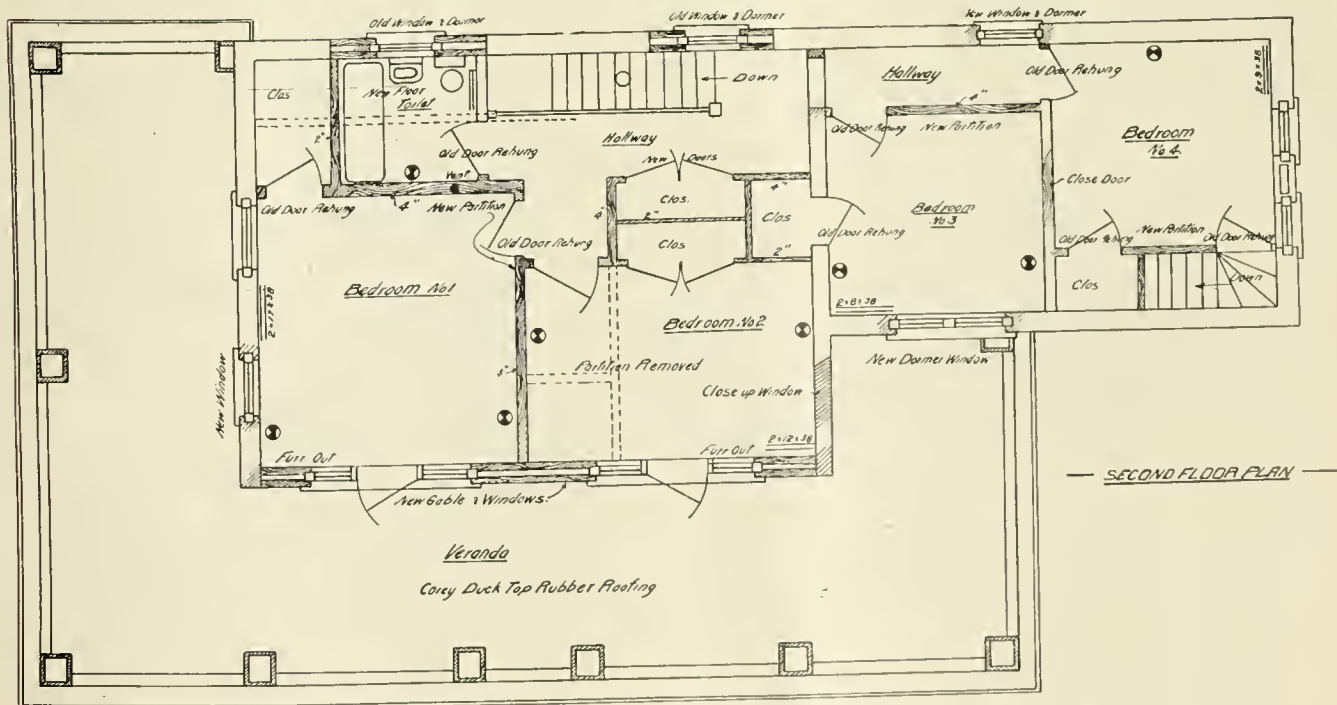
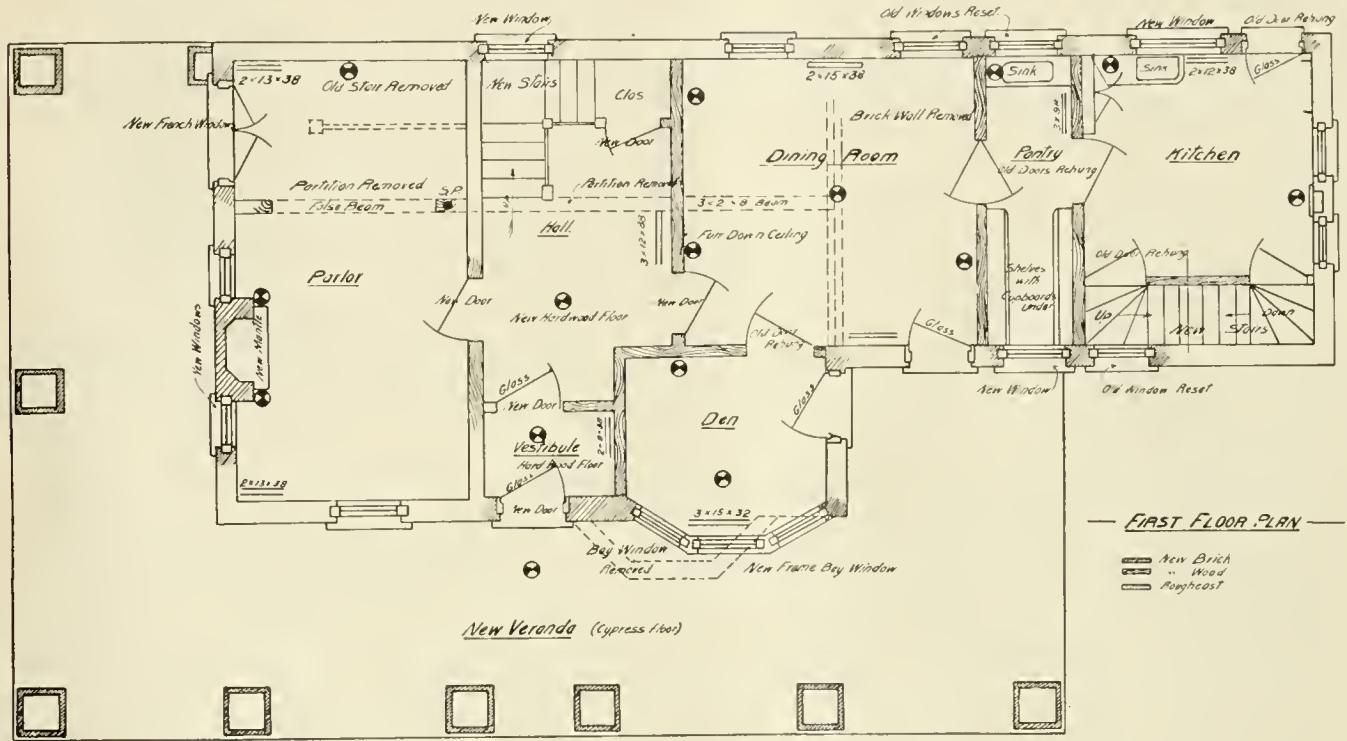
Our Annual Ash Heap

We trust that among the many New Year resolutions which our readers doubtless made was one to assist in lessening the nation's fire loss. Carefully compiled estimates show that during the year which has just closed the United States and Canada burned up almost \$225,000,000 of created wealth or, to be exact, \$224,723,000. Canada alone burned up \$26,346,000 worth of property, or over \$2,000,000 a month, over \$500,000 a week, and about \$170,000 a day. When we stop and think that the entire value of new buildings erected in any given year in Canada is in the neighborhood of \$125,000,000,

it comes somewhat of a shock to know that we burn up 20% of their value each year.

The United States burns up property to the value of its national debt every five years, while we pile up an ash heap equal to our national debt each eleven years. The United States each year wastes one-fifth of its cotton crop, a sum more than twice as great as its entire yearly gold production and four times as great as its entire silver production.

When it is remembered that the per capita fire loss in Canada and the United States is \$2.54, while that of most countries of Europe is in the neighborhood of 30 cents we at once are confronted with the indisputable



Plans of alterations made on first and second floors of W. A. Briggs' residence, showing arrangement of acetylene lights.

fact that there is something radically wrong with our system. Between lax building laws, faulty construction, carelessness with matches and other reasons, we pay an exorbitant toll through the destruction of property.

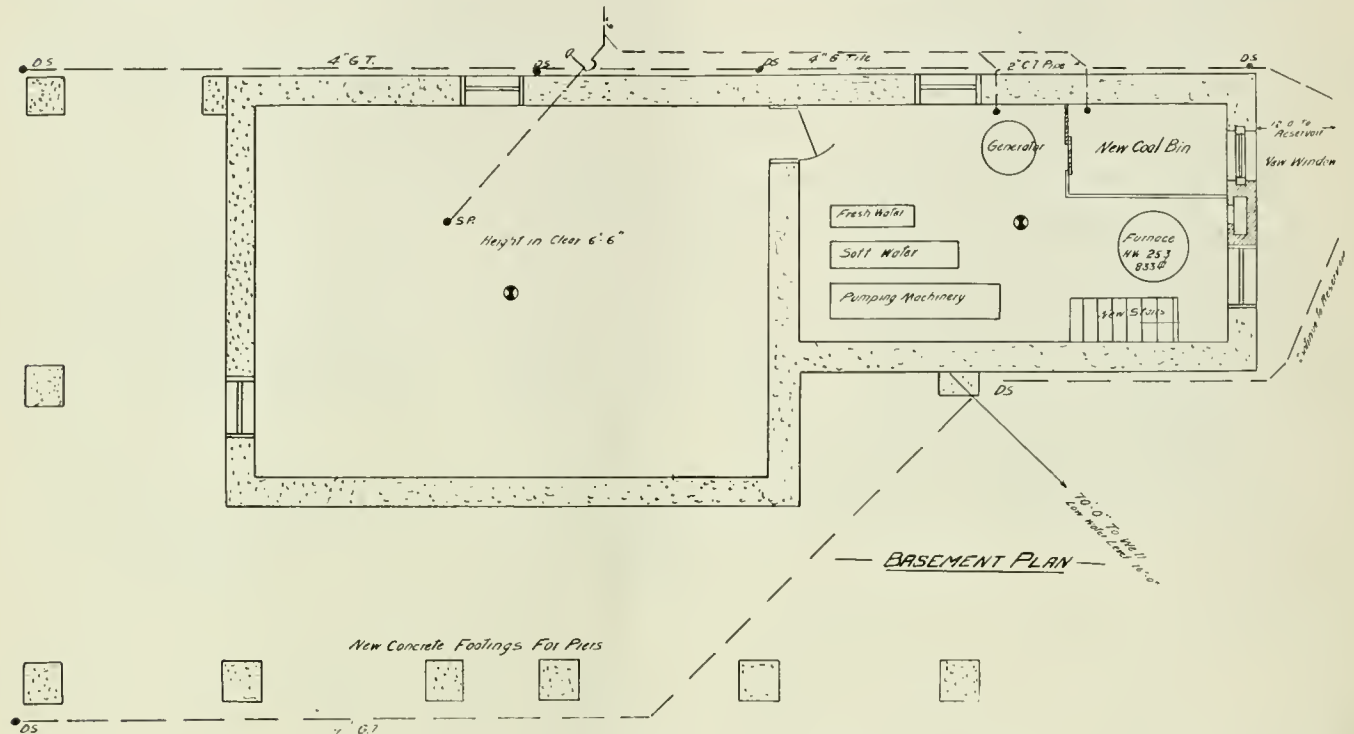
We are a young nation forced to go to Great Britain and the other money markets of the world for all the money we need. It seems the worst kind of extravagance for us to carelessly destroy so much property each year. This wastefulness does not improve our credit, nor does it add to our wealth. The property thus destroyed can never be replaced. The heavy toll, which the insurance companies are forced to make to meet the monetary loss, comes out of the pockets of the

people of the country. Fire insurance companies are not in this business for their health and, as their losses are heavy, so will the premiums be heavy. We know of no business that could last if it permitted the waste and leakages which we permit in connection with fires.

Life Eternal

“The elm lives for 200 years, the linden for 300, the oak for 500 years—”

“And the chestnut,” interrupted the other half of the sketch, “lives forever.”



Basement layout of W. A. Briggs' residence, showing arrangement of acetylene lights.



Front elevation of the home of W. A. Briggs, St. Catharines, Ont.; J. Daw, St. Catharines, architect.

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Vol. 4 TORONTO, MARCH, 1914 No. 3

Editorial Comment

Drumming up Business.

During the winter there was a chance for carpenters to make something "on the side" by constructing special furnishings for home or office. Each month we have published articles from our readers giving ideas where men could pick up odd jobs. In large places he could call on merchants regarding special shelving, window and office fittings.

The carpenter in the small village has an equal chance with those in the larger places. In the February issue, for instance, there was shown an illustration of two double sheds which were erected for a grocer in Havelock, Ont., to accommodate his customers from the country. Havelock is a junction town on the C.P.R., with about 1,500 of a population. There are a large number of farmers who trade in Havelock, and the shed arrangement offers a good reason why farmers should trade at this particular store, and carpenters could use this illustration in drumming up this class of business.

* * * *

Building Prospects Look Good.

The editors have made a canvass of a number of the brick plants in Toronto and neighboring towns, and the reports obtained direct from the plant managers was summed up by the manager of a plant in Milton: "Things are looking up." Plants which have been closed up all winter are being prepared for re-opening, and in a number of cases, the plants are already operating. Of course, some operated all winter, but mostly on short hours or at small capacity. These are now running full time or are taking on men.

Brick machinery manufacturers are receiving inquiries, and this is another evidence that brick manu-

facturers are receiving orders. Many buildings which were held up last year are now being proceeded with, and builders and carpenters will be busier than they were last year.

* * * *

Standard Size Brick and Their Value. In the Brick Department in this issue is an article relating to standard brick and the value of a standard size. We are sure builders will welcome the agitation to standardize brick. The sizes adopted appear to be a happy medium, as some manufacturers were making a larger size and some a smaller size.

The value is well expressed by an Ottawa manufacturer, who referred to the many congratulatory expressions from visitors as to the fine appearing brick buildings in Ottawa. The adoption of a standard-sized brick will not only make the work of the bricklayer easier, but it will result in better looking buildings as well.

* * * *

Courses in Ceramics and Bricklaying at Toronto's New Technical School. The development of technical education has resulted in a great many new courses being planned for Toronto's new technical school. At present the courses

include many of the trades, these being worked in conjunction with manufacturers.

In the new school courses are being planned for the manufacture of brick, and mixing and testing of concrete. Provision has been made for a room to hold two full-sized houses, so that apprentice carpenters and brickmakers may make the products for the house and apprentice carpenters and builders use them in the erection of houses. Thus frame, brick or concrete houses may be erected, or various combinations of these materials, giving an apprentice a good idea of the various materials entering into a building and how to use these materials.

At the present time there are more pupils attending the Toronto Technical School than all the other High Schools in the city. When the new building is completed, and the new courses added, it looks as if every available space will be in constant use. The popularity and efficiency of these courses will doubtless be watched by builders generally with a view to advocating their adoption in the other technical schools in the Dominion.

* * * *

Judicious Use of Coping.

The use of coping can make or mar a building. This is illustrated in a new building recently erected on a corner lot by the Bank of Commerce in an eastern Ontario town. The brick is of a tapestry effect and the appearance would be beautiful from an architectural standpoint were it not for a very heavy coping between the windows of the second and third storeys. It gives a very heavy appearance. A minister who was looking at it at the same time as the writer said: "It looks like a man with his shirt tail hanging out." The wide top of the coping is a resting place for snow in the winter time. In fact it was piled up with snow when the writer saw it.

In this connection we are reminded of the Arts Building at Queen's University, Kingston. There are the merest suggestions of columns, window coping, etc., and yet the general effect is beautiful and impressive. Builders should be careful to use finish and trimming in keeping with the size and general design of a building. Otherwise, the general effect will be spoiled.



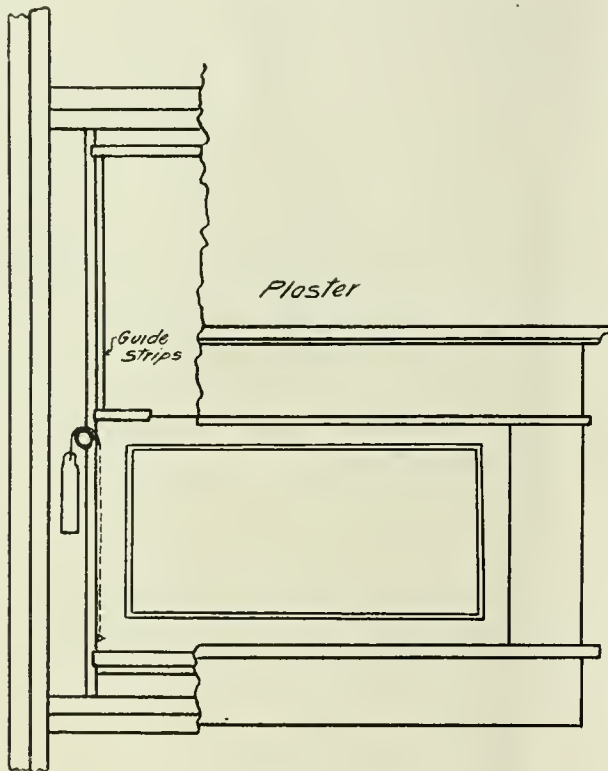
Carpentry and Woodworking



To Hang Single Sash

The following plan gives a method for hanging windows of one sash, such as are used in bungalows or in bathrooms, etc. The usual method is to hinge and open out or in. With this objection it does not keep out the wind or rain.

A glance at the illustration will show this objection eliminated. Also, this method will give satisfaction



Good method for hanging windows of one sash, such as are used in bungalows or bathrooms.

to both owner and contractor. Attention to such details as window sash are often the means of making a sale and of bringing the contractor more work in the future.

In constructing this frame the side jambs should extend up to the height the sash is desired to raise, with pocket and sliding groove complete. Set the sash pulleys near the top of the window opening, in the usual way. Groove out the sash and fasten the cord near the bottom of the sash. We have seen the pulleys set near the top of the jamb, but the objection to this is that after the house is completed, should the pulley get out of order, or the cord break and slip over the pulley, there is no way of getting it on again without removing a section of the plaster. The sill and trim is put on in the usual way, making a good reliable job.—E. H. Busby.

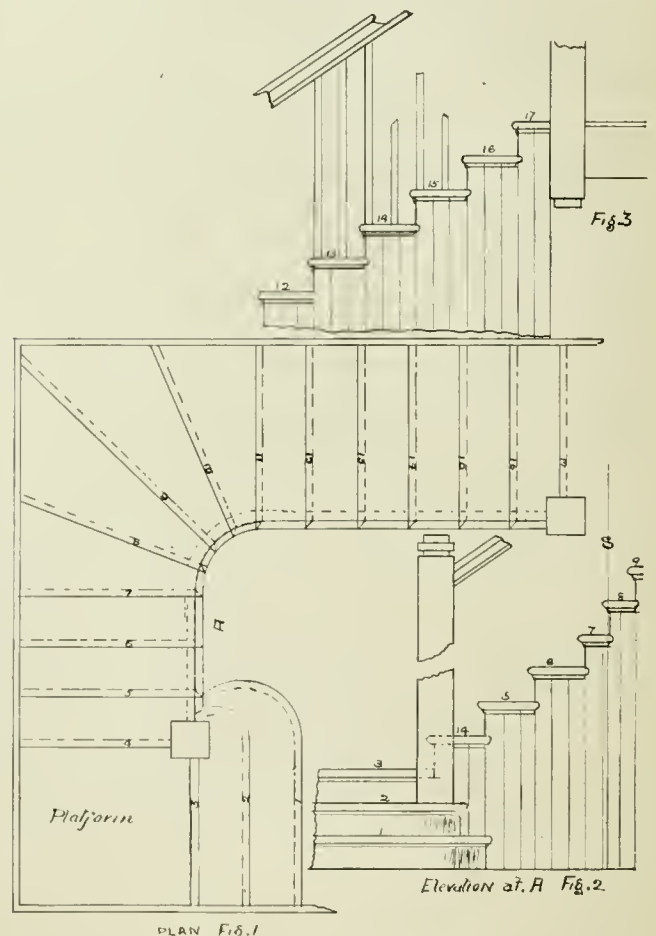
Sixth Article on Stair Building

Fig. 1. shows the plan of a quarter turn stair. The first thing to be done is to get the correct height from floor to floor, that is from top of bottom floor to the top of landing floor. Now divide this height into as many parts as there are to be risers and the distance from one division to another represents the height from the top of one step to the top of the next. The number of risers, and the height of them, must be regulated by circumstance. In this case the height of riser is 6" and the step 9".

The outer ends of step are shown at Fig. 2, with open ends.

The ends of these steps are supported by uprights of 2" x 4", placed as shown on Plan Fig. 1 (in dotted line), kept back to allow for 1/2 grooved and tongued narrow lining to finish flush with risers. This makes a very strong job and looks well.

Fig. 3 is upper part connected with landing.—John MacLachlan.



Illustrating sixth article on stair building by John MacLachlan.

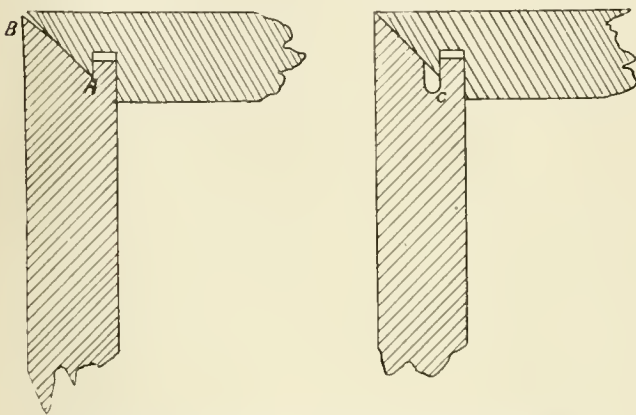
Drawers in a Staircase

A somewhat curious idea is to put drawers in the staircase and so make use of otherwise wasted space. This may prove to be quite useful in some cases, especially in small modern houses, where even the least space needs to be made use of, owing to the lack of cupboards, which are generally absent. Drawers of this kind can be made to hold all kinds of household cleaning material, brushes, dusters and the like, as well as many objects that are not often needed. One point is that the drawers should be kept tight shut, for there is always plenty of dust on the staircase, and again, should one of them be left open, it might trip up a person who is going downstairs.—Scientific American.

Grooves Which Reduce Spoilage

A certain builder found that spoilage ran high in making newel posts. The trouble was all caused at the joints between the pieces forming the sides. It had been customary in this mill to construct these joints as shown at the left in Figure 1. Any excess of glue in the joint near A can only escape by being squeezed outward to B.

If the glue happens to be just under its proper work-



In the joint at the left an excess of poorly heated glue cannot escape so the corners spread (B). Now a groove (C) forms an excess glue pocket and spoilage has decreased.

ing temperature an excess flows with difficulty. As a result the edges which form the corner were forced apart as indicated at B.

By cutting a simple groove, as shown on the right at C, a glue pocket is formed. Any excess of glue can now flow in either direction. The groove cost is negligible and the total spoilage on this product has been reduced ten per cent.

How to Find Cut on Hood Rafters

Enclosed find drawings for a hood rafter to go over hay door. I wish to find the cut at C, as shown in the drawing. Suppose the projection is 6 feet and to run down on the main or common rafter 7 feet. Of course, 7 and 6 will give the edge or top cuts of the hood and the lower face cut is simply a square cut; but what gives the face cut at the top is the question that sticks me.—George M., Woodstock, Ont.

Last month we answered this question by treating it the same as a valley; because from an architectural standpoint this question should be treated the same as a valley; but the question asked by Mr. M. calls for the unbacked hood to rest in the same plane as that of the common rafter on the main building. We will

answer by showing the proportions to take on the steel square by isometrical perspective, as shown in Fig. 1. A B and B C give the edge or top cuts of the hood as described by Mr. M., which clearly explains itself, and

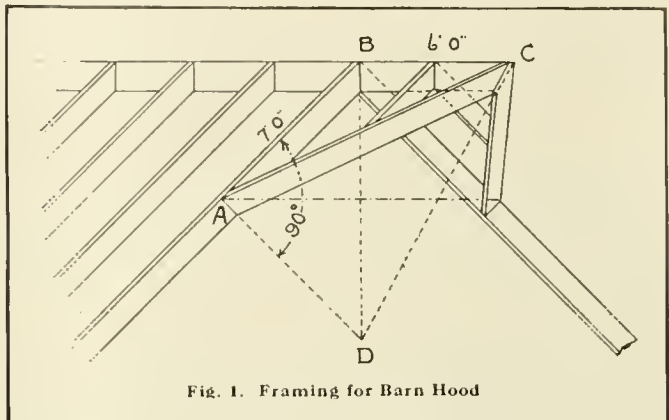


Fig. 1. Framing for Barn Hood

D A and A C give the cut in question; the side of the square on which the latter is taken giving the cut.

Fig. 2 illustrates the parts in the stretchout clearly defining the cuts; and by folding on the line A C so that

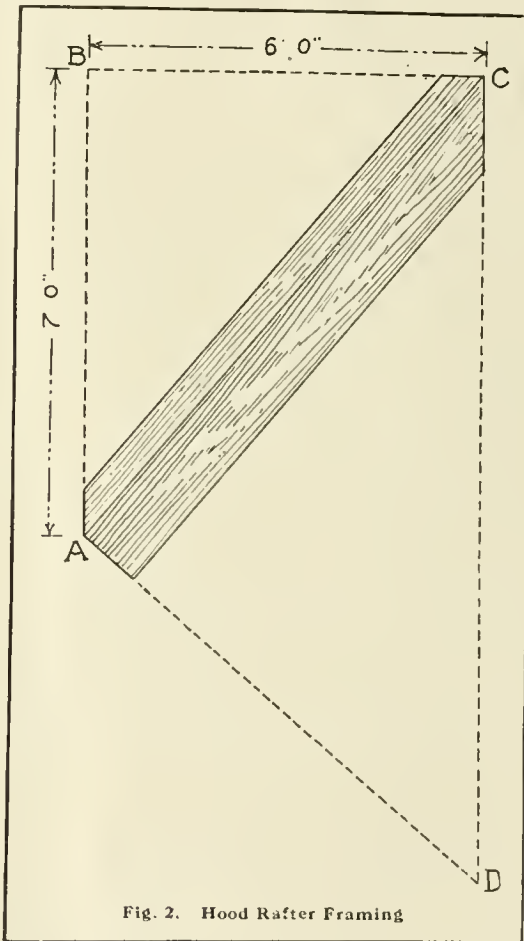


Fig. 2. Hood Rafter Framing

A B and A D will be at right angles to each other, will show the cuts in their true position.—A. W. Woods, in American Carpenter and Builder.

Tool for Removing Tin Roofing

Having a large amount of tin roofing to remove, I made a tool, as shown in the sketch, to cut the metal at the seams, thus allowing the sheets to be taken off in

sections. The tool is shaped like an ordinary can opener, except that it is a little larger and the handle longer. A wire and cross handle are attached so that a boy can draw the tool while a man guides it through the tin.

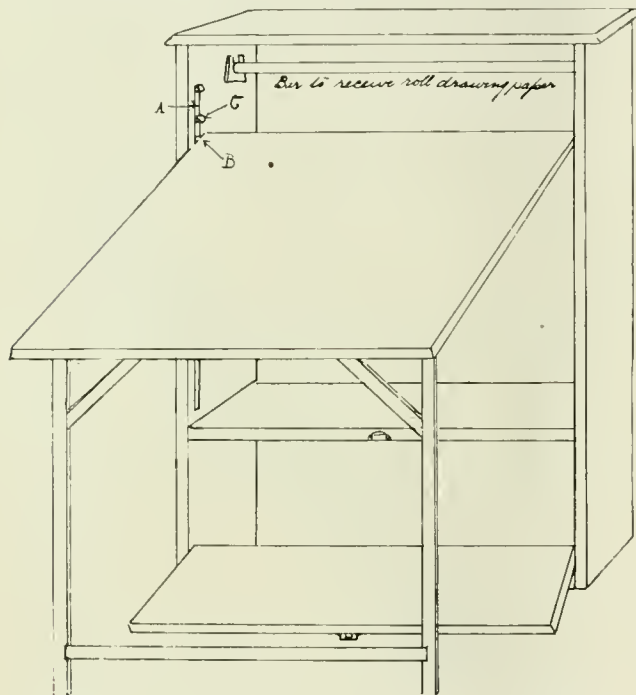


A handy tool for removing a tin roof.

The cutter is made of tool steel, and hardened. The tool can be used for cutting stovepipes, for furnace jobs and on many other kinds of tin-shop work.—E. S. Sites, in Popular Mechanics.

Handy Drawing Board and Cabinet

The accompanying drawings show a handy drawing board and cabinet which I constructed for my own use.



Details of a drawing table which is very complete and useful.
A— $\frac{5}{8}$ " Groove; B— $\frac{1}{2}$ " Dowel; C—Notch to receive dowel and hold back of drawing board.

It takes up very little space and keeps unfinished drawings clean since they are turned inward when the cabinet is closed.—Chas. H. Bailey.

To Preserve the Finish on Tools

The following hints will be appreciated by every mechanic who desires to make his tools last as long as possible, and who always wishes to have them in good condition.

The wooden parts of tools, such as stocks of planes and handles of chisels, are often made to have a nice appearance by polishing, but this adds nothing to their durability. A much better plan is to let them soak in linseed oil for a week and then rub them with a cloth for a few minutes each day, for a week or two. This produces a beautiful surface and exerts a solidifying and preservation action on the wood.

Caoutchouc oil has proved very efficient in prevent-

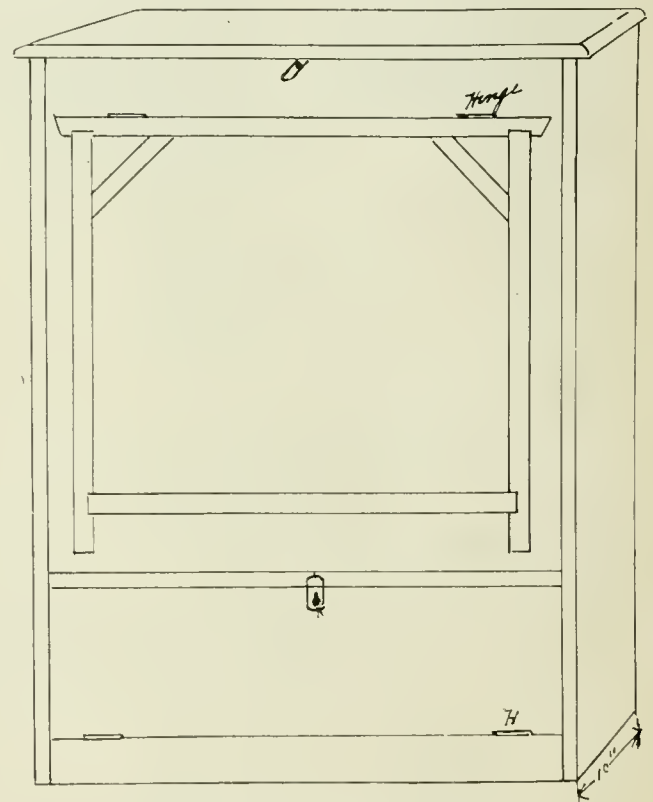
ing rust on iron. It only requires to be spread with a piece of flannel in a very thin layer over the metallic surface and allowed to dry. To remove it, the article has simply to be treated with caoutchouc oil again and washed after twelve or twenty-four hours. A solution of benzine has been used for years as a coating for steel, iron and lead, and has been found a simple means of keeping them from oxidizing.

All steel articles can be perfectly preserved from rust, by putting a lump of freshly-burned lime in the drawer or case in which they are kept. If the things are to be moved, as a gun in its case, put the lime in a muslin bag.

To keep tools from rusting, take one-half ounce of camphor, dissolve in one pound melted lard; take off scum and mix in as much fine black lead (graphite) as will give it an iron color. Clean tools and smear with this mixture. After twenty-four hours rub clean with a soft linen cloth.

To remove dust, cover the metal with sweet oil, well rubbed in, and allow to stand for forty-eight hours; smear with oil applied with a piece of cotton wool after rubbing the steel. Then rub with unslaked lime, reduced to a fine powder.

Immerse the article to be cleaned for a few minutes, until all the dirt and rust are taken off, in a strong solu-



Sketch of drawing cabinet closed up.

tion of potassium cyanide, say about one-half ounce in a wine glass of water; take it out and clean with a tooth brush with a paste compound of potassium cyanide, castile soap, whiting and water.—The Farmer.

Mr. W. J. MacBeth, formerly with the Fesserton Timber Company, Toronto, and who for many years previous to that was sales manager for the Parry Sound Lumber Company, has opened a wholesale lumber business on his own account at Toronto, with office at 60 Broek Avenue.

Questions with Answers Containing Valuable Information of Interest to Builders and Carpenters

Answers are by
Subscribers

IN the February issue appeared a number of questions from subscribers, to which a number of replies were received. These appear herewith. There are still a number of questions for which no replies have been received. We shall be glad to pay for acceptable replies to these inquiries.—Editors.

Question 1—Does Ivy Injure Buildings ?

In putting this question, "Toronto" has brought forth a subject that is open to argument, almost ad infinitum. Persons argue for and against. Personally, I don't think it does injure buildings. There may be buildings that it has been credited with injuring, that may have perhaps crumbled down if the ivy had not held them up, houses Mr. Jerry built, houses in which there was not enough lime in the mortar, on which ivy would have been a protection, and would have kept the lime-less mortar from being washed out of the joints. I remember that when I was a boy an old fellow had his house smothered with ivy. He tended it with the same care as he did his roses, and his dahlias, cutting and pruning any undesirable parts and taking a great pride in it. His house was BUILT, built of brick and good mortar, built to stand for a job. He never said the ivy injured his house, and he ought to know. He lived there the greater part of his life.

I have heard it said that ivy makes houses damp. I doubt it. Watch a brick wall during a rain storm. As fast as the rain strikes the bricks, the bricks absorb it. It is an acknowledged fact that a brick building weighs tons more after a rain storm than it did before, the absorbed water being the cause of the increased weight. Take an ivy-clad wall. What do you see? We see the leaves glistening, dripping with the wet, the wet, mind you, that has been driven into the other wall, but which has stopped on the ivy on the ivy-clad wall, and only a percentage of which has reached the wall.

What happens after the storm has ceased? The sun, air, and wind dry off the moisture from the leaves, excepting a small percentage which the leaves take in themselves, and any moisture that has reached the wall is sucked into the ivy by the attraction of the roots clinging to the wall.

What about the bare wall? The same amount of water struck it. Then where is the water? It is absorbed; some, the greater part, no doubt, is dried out, but quite a quantity sweats through the wall. Remember, the brick wall has no protection and the rain with the full force of the wind behind it is driven into the brickwork. Which is the dampest wall? Not the ivy-clad wall, in my opinion.

Look at the old halls and mansions in England, built in the times of the Tudors and Stuarts, hundreds of years ago. You see them there, covered with ivy, been covered hundreds of years, and possibly will be, for hundreds yet. Has the ivy ruined the stone work and brickwork in them, or did the masons make allowance for the ivy, and put an over-measure of lime into the mortar?

Take the north side of a building. Would it not be better for a covering of ivy? In many cases it would.

One of the principal objections to ivy seems to be that the sparrows live there and become a nuisance. Well,

"Toronto," I'm a chirper myself, and possibly sometimes a nuisance, so the least I say on that point the better.—John Webb.

Question 1—Does Ivy Injure Buildings ?

The opinion that it does is pretty general, but the Rev. William N. G. Eliot, writing in the "Guardian," Eng., adduces evidence pointing to the contrary belief. "Some fifty years ago," he says, "it was my privilege to live in old historic buildings of brick with stone facings, aged some 350 years, covered with ivy, and in the moist valley of the Thames. I have known these same buildings for some fifty years, and have never known any substantial exterior repair needed, and they were the driest rooms I can recall. Under the advice of an experienced land agent, in 1872, I removed some ivy from a rectory in a wet climate, and I had to repair that west wall constantly. I then replaced in time the ivy and for some 18 years that wall needed no repair, and was, and is now, although the thinnest, the driest or as dry, as the north, south or east walls.

"Again, I have occupied in a much drier climate a much better-built viearage, and my west wall is for one-third, perhaps, ivy-clad. That part of my west wall I have, during fifteen years, never repaired. The rest of the same wall, not ivy-clad, I have had to repair, two or three times during my fifteen years occupancy."

The service which the ivy renders, according to Mr. Eliot, is to absorb moisture and thus keep the wall dry.—York.

Question 2—To Make Blue Prints.

In reply to this question, I would say, first, make a fairly heavy drawing on your drawing paper. I do this so as not to have to ink in my drawing before tracing. Then trace on any good tracing cloth or paper and expose in a frame the same as a photo. I have used Dietzgen's No. 215 Union Satin with very good results, generally using "rapid," with an exposure of about 60 to 75 seconds in bright sunlight.—Lester G. Jackson.

Question 2—To Make Blue Prints.

The making of a blue print is a simple matter. After making a sketch, trace it on tracing paper or linen. If linen is used, whittle a little chalk on it and rub it in. This will prevent the ink from spreading. Blue print paper may be purchased at any store carrying draftsmen's supplies and the printing is done similar to a photograph. The paper is then washed in water and hung up to dry.—M.E.D.

Question 2—Blue Prints.

"Zero" should be able to get blue printing paper at any store dealing in architects' and engineers' drafting supplies. It is sold ready sensitized. Do not attempt to sensitize paper yourself, as it is not worth the trouble, and will very likely result in failure. The paper is sensitized with a solution of ammonium ferri-citrate, and a solution of potassium ferri-cyanide, and should be kept in a dark place or safe from light until used.

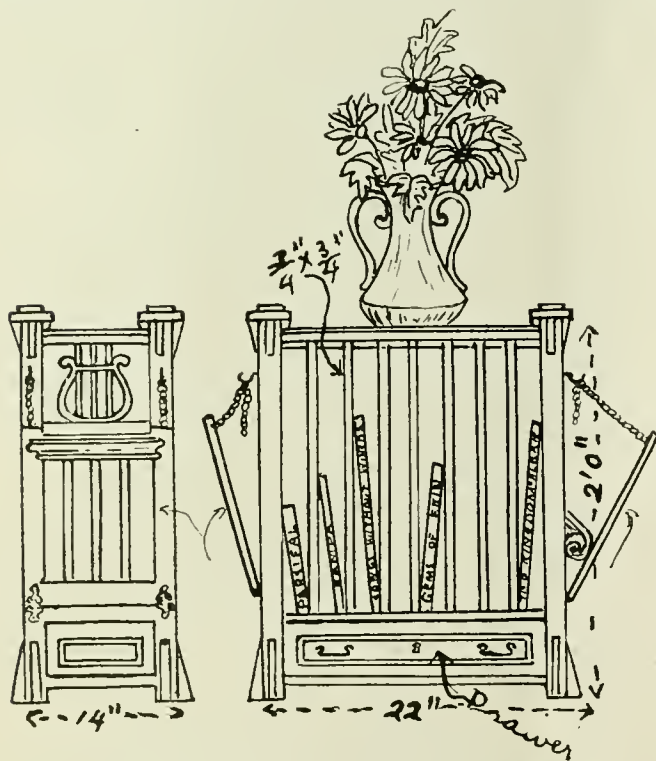
The first essential thing is to have your tracing quite ready. This should be on tracing linen. Having that, cut a piece of the sensitized paper, allowing sufficient over to trim off afterwards. Lay your printing paper

with the sensitized side uppermost. Next lay your tracing right on the paper, quite evenly, and then lay a sheet of clear glass on that. Expose to bright sunlight or electric light. The length of exposure is determined by the strength of the light, a little experimenting with small prints will put you wise on this point. When exposed enough, hang the paper, print outwards, over a round stick, and wash it, with a to and fro movement in a bath of clean water. When rinsed sufficiently, hang up to drain and dry. All handling of the sensitized paper before exposure should be done in a darkened room.

Now, for a few useful tips : A little citric acid in the water sometimes helps to make a better print. Sometimes the water of the district, wherever a person may be, contains sulphates in varying quantities. A little barium nitrate will rectify this. If at any time, you wish to add more white lines to your print use oxalic acid in a pen. If you over-expose a print, and get it too pale, try brushing it over with a weak solution of tannin (I am not quite certain, but I think that is right. Try it). Be sure that your tracing is free from ink-spots, and that your glass is free from specks. If not you will have pin-points showing on your print.—John Webb.

No. 5—Design for a Music Rack.

The music rack here designed is of simple construction and would make a unique and effective piece of furniture. With the exception of the moulds and lyre



End and side views of music rack, designed by Paderewski.

pieces on the ends everything about it is practically square. The racks on the ends can be regulated to hold large or small quantities of sheet music by varying the length of the hanging chain. Sheet music is generally 10 3/8" x 14". At the bottom is a lock-up drawer for music, in case you have any kiddies around.—Paderewski.

Question 6—Advice, re Woodcarving, Tools, Etc.

"Carver," Toronto, can get books on woodcarving from various places. Some are "Easy lessons in the

art of practical woodcarving," by Fred T. Hodgson. Price \$1.50. Published by the Fred J. Drake Co., Chicago; "Woodcarving for Amateurs," with hints on design. Price 2 shillings. Published by Crosby, Lockwood & Sons, 7 Stationers' Hall Court, Ludgate Hill, London, E.C., England; "Woodcarving for Amateurs," price 1/2. Published by Pouteau, 44 Warden Rd., London, N.W., England.

For carving designs, write "Hobbies, Ltd.," 12 Paternoster Square, London, E.C., England, for catalogue. This firm also publishes a weekly paper dealing exclusively with hobbies, including woodcarving. They also sell tools, etc. Harger Bros. (Dept. W), Settle, Yorkshire, Eng., have a catalogue, price 6d, which has a part devoted to woodcarving. F. Coulthard, 38 Milson Street, Bath, Eng., used to sell packets of carving designs, at one shilling per packet, some packets having 100 designs in. Try him. It will only cost you a two cent stamp; that's not a tall speculation.

Regarding tools. You can buy a carving outfit from any tool dealer. I have seen creditable chip-carving done with an ordinary small firmer chisel and ice tool. It greatly depends on what you are working. I have known two men to work a day swinging axes, carving, roughing out to shape, but still it was woodcarving necessary to the finished work and requiring ability and skill.

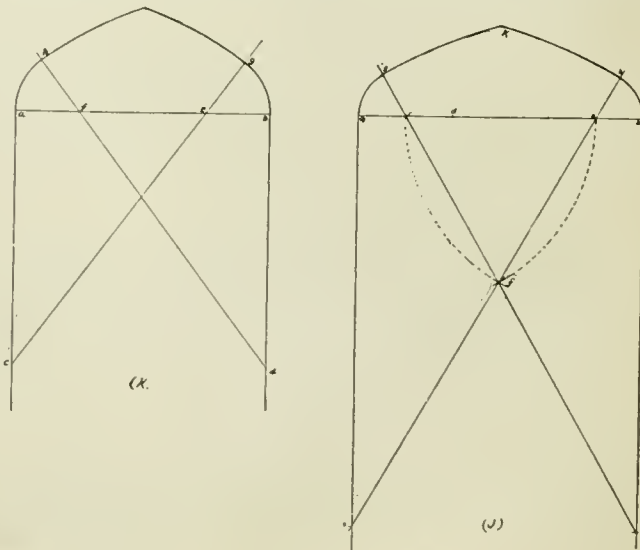
If at any time you require special tools that you may not be able to get here, write Clarke Tool Stores, Exeter, Eng. He specializes largely in that line, as some of the finest cathedral and church carving of the present time is turned out in the shops of that city. I think this reply will about fill the bill for you.—John Webb.

Question 7—Four Centre Arch.

In reply to "Young Spread" for method of striking a four-centred Gothic arch, I beg to submit the following sketches.

At (J) is represented an arch in which the given span a-b is divided into six equal parts, as at a, d, e, etc. To find the centres for the longer radii, with c and e as centres, and a radius c-e, describe arcs intersecting at F. Draw F c and F e and produce these lines to g, h, i, j. The last two points will be the required centres, with e and c as centres and a radius e-a, describe arcs a g and b n. With i and j as centres and a radius i n, describe the arcs n K and g K.

At (K) is shown an arch of similar construction, but the span a b is divided into four equal parts. The dis-



Method adopted by Wm. G. Renney for striking a four-centred Gothic arch.

tance a c and b d, are each made equal to a b. Lines are then drawn from e d through e and F, and produced to g and n, the arcs are then struck in a manner similar to that shown a (J).—Wm. G. Renney.

No. 7—The Best Way to Strike a Four Centre Arch.

The following is the simplest and best way to strike a Tudor or four-centre arch. Divide the width of the arch (A to D in sketch) into four equal parts, then, with your compasses, take the distance from A to B and, with the leg of compass on B, strike an arc (as per sketch). Repeat the operation on the other side of arch, having compass set on C, with C-D as radius. Draw perpendicular lines from B and C and, with compass set same distance as A to D (that is the width of the arch), mark off E on the line from B and mark off F on the line from C. These points E and F are the points from which you strike the flat segments of arch. From E, through C, draw a line till it meets the arcs, struck from B, and from C. Now, with your compass set to the length of

gases that occasionally escape from a sewage tank.—Mount Dennis.

Setting Out Centring for Skew Arch.

11—Please describe the method of setting out a centre and framing for a skew arch crossing a river at the angle of 63 degs.—Carpenter.

Water Supply.

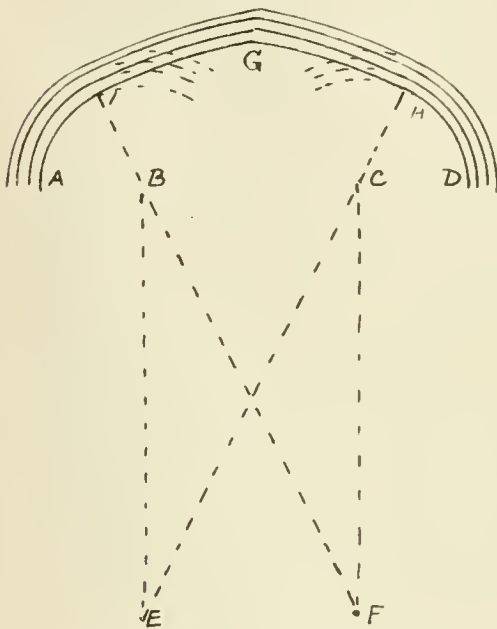
12—Can any reader tell me of any method to obtain a supply of water for domestic purposes other than by sinking a brick well or filtering rain water?—Suburbs.

Sundial.

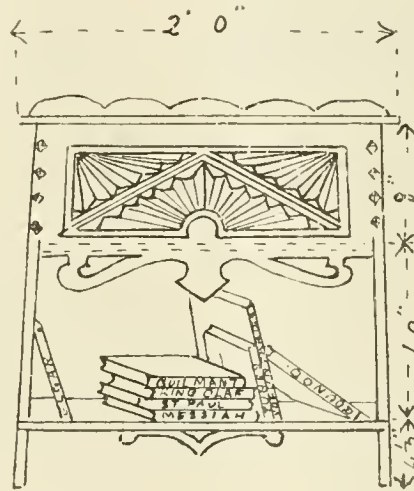
13—No doubt many fellow-readers would like to have a reliable sundial on their lawns, if they only knew the way to make and fix one. I shall, therefore, feel obliged for information on the subject, with full particulars and simple directions on how to make and fix.—Silver Birch.

Plans of a Refrigerator.

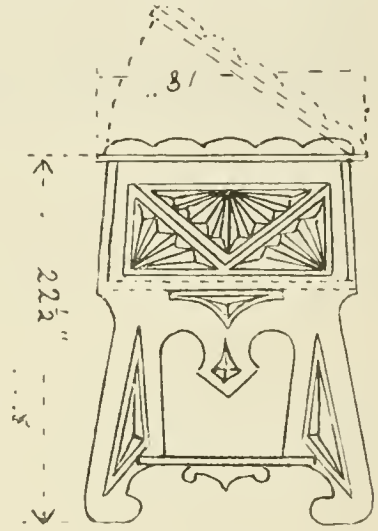
14—Can any reader furnish me with information as to the best way to make a refrigerator? The purpose



Broncho's " way to find an arch.



Side view of organ stool of neat design.



End view of organ stool.

E to H strike an arc to G, and with the same radius, and with the leg of compass on F, strike a corresponding arc on the other to the intersection G (the apex of the arch). This completes the soffit line of the arch. The moulding lines are drawn from the same radius points as the soffit line, namely B and C for the end arcs, and E and F for the flat segments.—Broncho.

No. 9—Re Organ Stool.

Perhaps the accompanying sketch for a box seat organ stool will suit "Thistle." I would suggest 1 1/2" or 2" stuff for the ends and 7/8" stuff for the sides and shelf. This can be done in medium dark oak with French polish finish. The seat may be padded and covered with crimson velvet or plush. The sides should be glued and screwed to ends, the screws countersunk in and covered with pointed oak rosettes.—John Doe.

* * *

More Questions Received

The following questions have been sent in by readers of this paper. Answers to them will be welcome.

Escape of Gas from Septic Tank.

10—Please suggest some method of dealing (by ventilation or otherwise) with the accumulation of foul

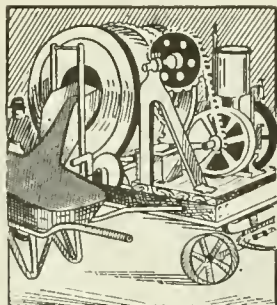
for which it is to be used is to store milk until it is time to take the milk to town. The size, inside, would be 4 ft. x 6 ft. x 6 ft. high. Any information along this line will be appreciated.—Farmer.

10—Concrete Cellar Floors—What are the best methods to adopt in the construction of cellar floors to get best drainage?—Perth.

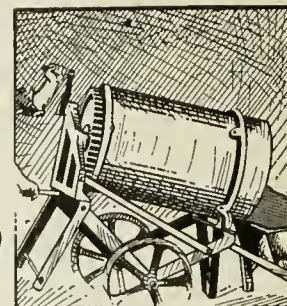
11—Summer Cottages—Will you ask your readers to send in plans and elevations of summer cottages? I have a chance to secure business in this line in Muskoka.

How to Fix Screws in Place

Wood screws used for small hinges often become loosened in the holes so that it becomes difficult to fix the hinge when this occurs, and on the other hand in the case of wood boxes or the like it is not always possible to use a larger sized screw in place of the small one when the hole works large. Screws can be fixed once for all by making a small notch in the metal at the edge of the hole, then screwing down the screw as usual and putting in a small pin through the edge of the screw slot and the small notch at the same time, this keeping the screw from turning.—Scientific American.



Concrete Department



Concrete Fence Constructed in Portable Units

The accompanying sketches give a suggestion for a portable reinforced concrete fence made in two separate units for erection in place.

The posts are of rectangular section, provided with slots extending down to the ground line on two opposite sides; into these slots the rails or planks are placed. The posts are reinforced vertically with $\frac{3}{4}$ -in. bars in each corner and the planks are reinforced with No. 18-ga. expanded metal, 3-in. diamond mesh.

The planks are cast in single lengths with lugs or distance pieces under either end, so as to provide a

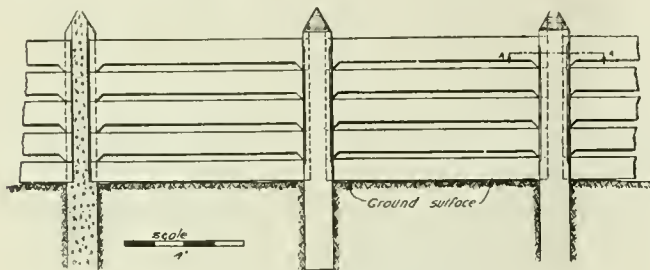


Fig 1—Section through post, at left, and elevation of fence.

space between the rails. Other details will be clear from the drawing.

The main advantages of this type of fence are its simplicity of construction and ease of erection, the posts and planks being cast as separate units in the required quantities and shipped right to the job.

They may be erected very rapidly, as after the post holes have been bored and the posts erected, the planks are simply dropped into place down the slots and no time is lost sawing off and nailing, etc., as with a wooden fence.

Another feature is its portability, as if it is desired to remove the fence elsewhere, it is only necessary to lift the planks out of the slots and pull up the posts, without any damage being done, and the fence is as good as new for being erected again.

Only two sets of molds are required, one for the posts and one for the planks, which considerably reduces the initial cost of the fence.

The sketches merely show a plain post and rail fence, but for factory and estate enclosures, etc., where perhaps a better appearance is desired, the planks may very readily be embellished with a few ornamental features without much alteration in the moulds.—John A. Dickenson, St. Catharines, Ont., in Concrete-Cement Age.

Experiments in Waterproof Concrete

A series of tests to determine the rate and the amount of flow of water through concrete is being made by the College of Engineering of the University of Wisconsin, Madison, Wis., with the object of finding a

simpler means of making concrete watertight. Some interesting results have already been secured in the effect of the length of the time of mixing in a machine mixer of the batch type; the effect of the percentage of water upon the imperviousness of the concrete; the effect of having sand in dry condition before mixing; and the effect of having the sand wet.

It has been found that good results are obtained if the concrete remains in the mixer from two minutes to three minutes when dry materials are employed. For cases in which the sand and gravel or stone are damp a considerably longer time is required. Therefore the use of wet sand should be avoided if possible. The experiments show that 1:1½:3 mixtures consisting of cement, Janesville sand of the torpedo grade, and Janesville gravel, when mixed to a wet consistency, are impervious to water when subjected to a pressure of 40 lbs. per sq. in. Mixtures as lean as 1:6, using a graded gravel, have been made impervious at high pressures by using care in proportioning the amount of water and in mixing the batch.

The specimens used in making these tests are cylindrical in form and so made that the faces of the cylinders, which are 13½ in. in diameter, are exposed to the pre-determined water pressure. The thickness of the concrete through which the water must pass can be

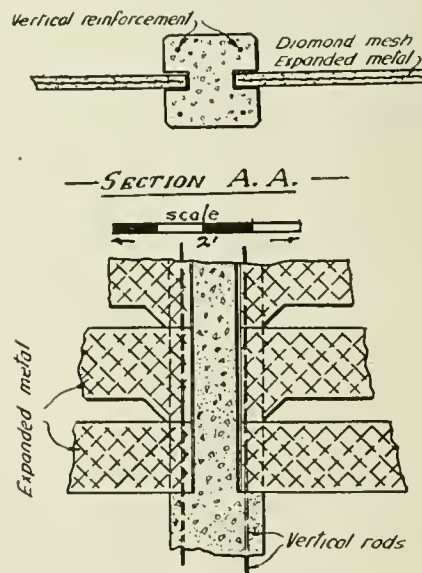


Fig. 2—Section view, showing reinforcement of parts.

varied from 4 in. to 18 in. Ample provision is made for cleaning both faces of the cylinder before placing it upon the testing apparatus. The apparatus itself is so arranged that very accurate tests can be made.

The importance of these experiments will be more sufficiently appreciated when it is understood that a large proportion of the trouble arising from poor concrete is due to the use of defective sand or gravel.

Coal Particles in Concrete

It is known that sand containing coal particles, if used as an aggregate, will give inferior qualities to the concrete. A recent investigation brought forth the following interesting information :

There is quite a little difference in the effect of anthracite and of lignite coal particles. The latter cause serious cracks in the concrete and lower the compressive strength considerably. Anthracite coal particles, if near the surface of the concrete, show similar effects, although not to such a marked extent. It is supposed that the little coal particles lying just back of the concrete surface, soften and form a sort of sludge, which tends to loosen the surface finish, and often causes the cement mortar to crack and peel off in large pieces. Where the finish is waterproof, the damage is considerable, as the exposed concrete is then open to the attack of water. In such cases it is advisable to pick out the coal particles with a sharp instrument, and put on a new finish at the respective spots. The cause of the impurities is laid at the door of the railroads, which use coal cars for hauling sand and thus allow the fine coal dust to mix with the sand.

Chimney Construction in Concrete Houses

The best way to construct concrete chimneys on concrete houses is merely to build ordinary fine linings in the concrete pilaster or column. In other words, the flue linings are inserted in place and the concrete is poured around them in ordinary wall forms of any of the usual types. The construction of chimneys of larger size is, of course, an entirely different matter and much more complicated methods must be employed in this work.

Although concrete will stand a considerable degree of heat, it is not advisable merely to build flues in concrete walls without the fire clay lining, as this would expose the concrete to great and immediate variation in temperature and would be likely to cause more or less cracking or discoloration of the wall. Moreover, the

placing of vitrified clay linings is about as cheap as it would be to place the simplest kind of core and to remove the same.—Concrete-Cement Age.

House with Cement Block Verandah

The accompanying illustrations were supplied by W. A. McLenaghan, contractor and builder, Perth, Ont. They show a house erected for Mr. R. M. Anderson, 4th line, Bathurst, Lanark County. A special feature of

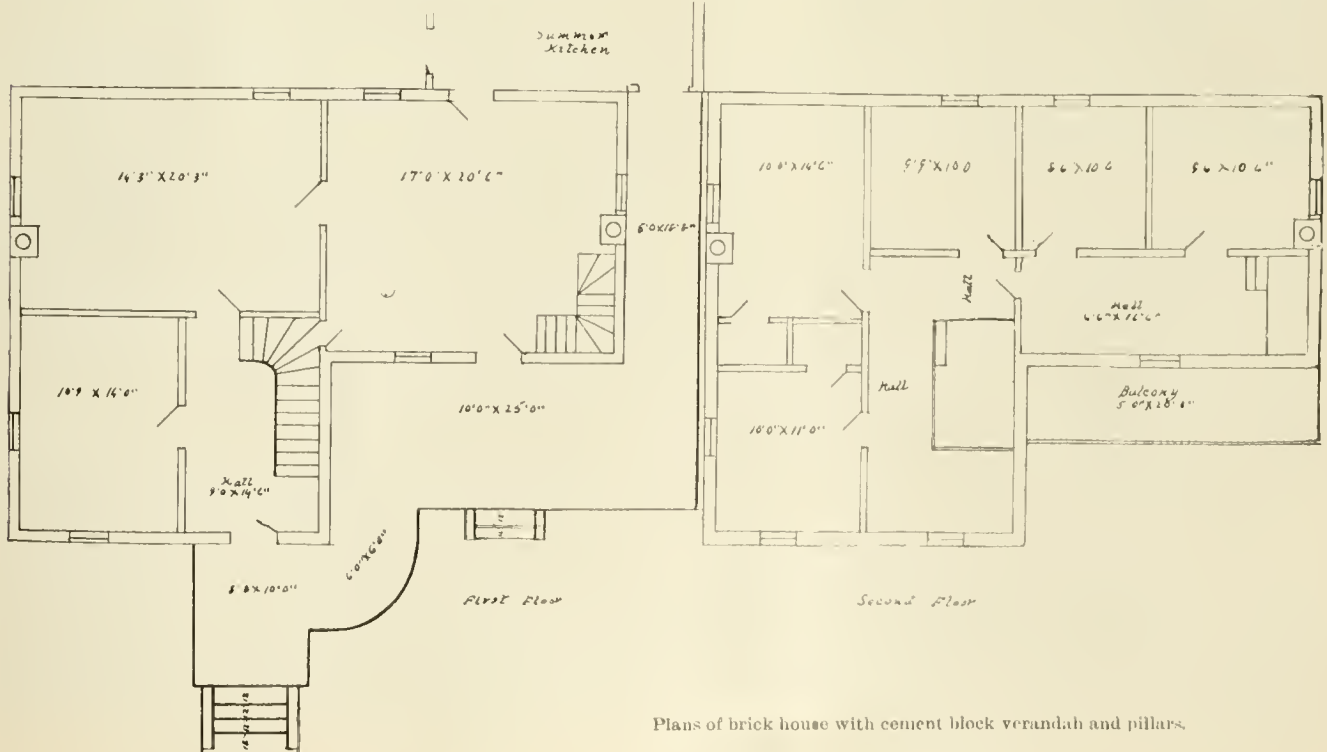


Brick house with cement block verandah erected by W. A. McLenaghan, Builder, Perth, Ont.

the house is the cement block verandah, built by Mr. McLenaghan. As will be seen, both the verandah and porch are of this construction. The layout of the house is shown in the line drawing.

Making Concrete Economically

Mixing concrete economically is certainly a good plan, but, like a good many other things, the point may be carried a little too far, to the detriment of the job



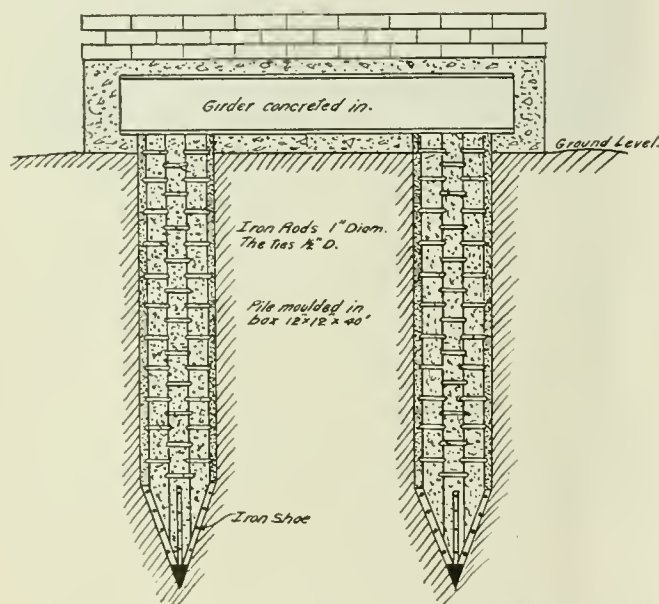
Plans of brick house with cement block verandah and pillars.

being done. Where only a small amount of concrete is to be laid, it perhaps would be cheaper to use "ends" of material and mix them by guess work. Where this is done, however, care should be taken to see that extra cement is added to make sure that the mixture will be of the proper consistency.

On big jobs, however, the contractor will find it will pay him to go carefully into the matter of finding out what mixture is best by conducting tests to determine the different quantities of sand, cement, stone and water to use. Cement is too expensive a product to be used guilelessly, and yet it is the most essential ingredient in concrete and, if not enough is used, the job will suffer. For this reason, the wise contractor conducts tests before he goes at the work, and by so doing he turns out a better job and makes money for himself.

Support for Large Building

The accompanying illustration shows a support which is used under large buildings in England to prevent



A concrete support used on large buildings in England.

sinking. All the details of construction are shown on the drawing.—R. Potter.

Prizes Offered for Plans of Summer Cottages

At a recent meeting of the Board of Trade of Orillia, Ont., a proposal to offer a prize of \$25 for the best plan and specifications for a summer cottage which can be erected at \$500 was endorsed, and a special committee composed of Messrs. C. H. Hale, W. S. Frost, F. G. Evans and E. R. Eaton was appointed to draw up the terms and conditions, and to carry out the scheme. The idea is to encourage owners of lake shore lots to erect cottages upon them for renting purposes, with a view to increasing the accommodation for summer visitors. The board will undertake to advertise the cottages, and give as much assistance as possible in renting them. They will also invite the local contractors to assist, by submitting estimates on the plans received. The name of the lowest tenderer will be given out with the plan in each case.

Messrs. Clark and Thompson, owners of the Victoria Point property, which is to be placed on the market

this spring, yesterday authorized the Board of Trade committee to offer another prize of \$25 for plans and specifications for an \$800 summer cottage, the terms and conditions to be the same as those in the \$500 cottage competition.

The following are the conditions fixed by the special committee of the Board of Trade.

1. The Orillia Board of Trade offers a prize of \$25 for the best set of plans and specifications for a summer cottage which can be erected for \$500, and another prize of \$25 for the best set of plans and specifications for a summer cottage to be erected for \$800.

2. The award will be made by a special committee of the Board.

3. Before the award is made, contractors will be asked to tender on the plans and specifications, and the nearness of the tenders to the sums fixed will be taken into consideration in making the award.

4. Contractors will be asked to include in the price they submit the sum of \$10 in the case of the \$500 plans and the sum of \$15 in the case of the \$800, said sum to be paid to the architect who drew the plans whenever the contractor makes use of them. The Board does not, however, guarantee the payment of this fee.

5. All plans submitted in the competition, together with the lowest tender on each, will be submitted to inquiries. The Board does not guarantee that the contract for building will go to the lowest tenderer in each instance, but only that his name and figure will be associated with the plan.

6. All plans and specifications submitted, whether they win a prize or not, to be left in the custody of the Board, for the purpose of being placed at the service of contractors, or of individuals, on payment of the fees stated. Any contractor taking out the specifications will be required to make a deposit as a guarantee for their return.

7. Plans and specifications to provide for a building complete in every particular, except furnishing. The number of rooms, etc., to be left to the judgment of the architect, but the accommodation provided to be taken into consideration in making the award.

8. A second prize of \$15 will be awarded in each case provided there are more than three competitors.

9. Architects may enter more than one plan in each competition if they desire.

10. Plans and specifications to be in the hands of the Secretary of the Board of Trade, Orillia, by March the 20th. They should be marked "Plans for Cottage Competition." They will not be made public till after the close of the competition. All correspondence intended for immediate reply should be sent in a separate envelope.

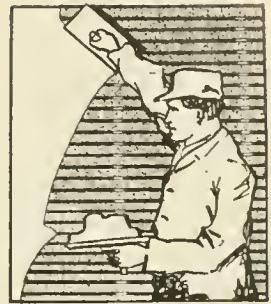
11. Address all communications to H. L. Kearns, Secretary Board of Trade, Orillia.

Berlin Council Endorses Housing Co.'s Scheme

The City Council of Berlin, Ont., has expressed sympathy with the proposals of the Berlin Housing Co., to solve the housing situation. It is proposed to start with the erection of fifty houses, for which the Council will be asked to guarantee the bonds to the extent of \$100,000. It was pointed out by the Housing Company that three years ago there were thirty-five houses erected, costing from \$1,000 to \$1,500 each, but last year there were only eleven.

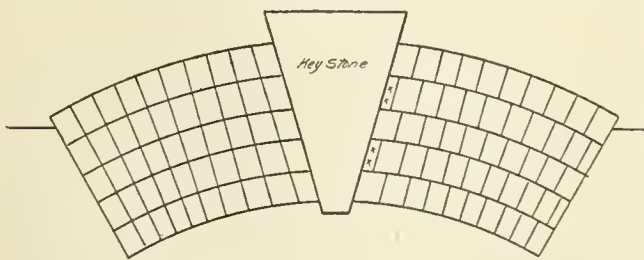


Brick Work and Plastering



How to Construct a Keystone Arch

In the course of putting in some arches on a certain job, a discussion arose as to the proper method. Here-with is a sketch of the arch in question. (Note the small pieces of brick by Keystone.) In practice, it is usual to get in an extra brick or so in every ring, with



Two methods of constructing a keystone arch. Which is correct?

a consequent "breaking" of the joint, but in the case of a Keystone, is it correct to run all "joints" parallel? I would like to hear the opinion of some of your readers on this subject.—"Brickie," Stratford, Ont.

Standard Sized Brick and Their Value

Builders will be glad to know that there is an agitation among brick manufacturers in Canada to produce a standard sized brick. The value of having a standard size will allow builders to use the product of more than one plant on the same job, and there is another value which was clearly set forth by an Ottawa brick manufacturer at the recent convention of the Canadian Clay Products Manufacturers, when he said:

"Some time ago we were told that if all the brick manufacturers of the Builders' Exenange in Ottawa and those who ship into Ottawa would get together and make a standard sized brick everyone would be better satisfied. We got together, and in two months we were all shipping the same sized brick into the city. We make a brick $8 \times 2\frac{3}{8} \times 3\frac{7}{8}$ ins. This, of course, is when it is burned. People visiting Ottawa have congratulated the city of Ottawa on the fine appearing buildings. This can be attributed chiefly to the fact that the bricks are all one size."

In 1893 the National Brick Manufacturers' Association of United States fixed standard sizes of brick and these were re-affirmed in 1899, and are as follows:

- Common brick— $8\frac{1}{4} \times 4 \times 2\frac{1}{4}$ inches.
- Paving block— $8\frac{1}{2} \times 4 \times 2\frac{1}{2}$ inches.
- Pressed brick— $8\frac{3}{8} \times 4 \times 2\frac{3}{8}$ inches.
- Roman brick— $12 \times 4 \times 1\frac{1}{2}$ inches.
- Norman brick— $12 \times 4 \times 2\frac{3}{8}$ inches.

A committee of the brick manufacturers of the Toronto Builders' Exchange, working in conjunction with a committee of the Canadian Clay Products' Association, have been working together to decide on a stan-

dard for brick. The following sizes were recommended and adopted by the brick manufacturers of the Builders' Exchange of Toronto, and by the executive of the Canadian National Clay Products' Association, who were authorized at their recent convention to fix the standard:

Face brick, including stock, dry press, and wire cut face brick, $8\frac{3}{8} \times 4 \times 2\frac{3}{8}$ (same as National pressed brick); common brick, $8\frac{1}{4} \times 4 \times 2\frac{1}{4}$ (same as National).

Last year at the annual convention of the Alberta Clay Products Manufacturers' Association, who met in convention in Calgary, adopted a resolution making the standard size of brick as follows:

Face brick— $8\frac{1}{4} \times 4 \times 2\frac{1}{2}$ inches.

Common brick— $8 \times 3\frac{3}{4} \times 2\frac{1}{2}$ inches.

The agitation to secure a standard size for brick is a laudable one and it is to be hoped that in the near future all Canadian brick manufacturers will adopt one standard. The one adopted by the Canadian National Clay Products Association and by the National Brick Manufacturers' Association appears to be the one most generally adopted. It would be a good thing for builders if all brick manufacturers would adopt this standard.—G. C. K.

Stucco Mixtures to Get Best Results

The February number of The Canadian Builder & Carpenter has come to hand. The article entitled "Some Interesting Facts about Stucco" was read by us with a good deal of interest. We recently had the pleasure of entertaining Prof. White during his visit to Rochester and listened to his illustrated lecture in which he took up the points that are brought out in that article. Facts when presented in this form cannot but help many cement users to guard against troubles that have not seemed easily explainable without this information.

We, ourselves, have found that stucco mixed in the proportions of one cement to three of sand and with ten to twenty-five per cent of hydrated lime give much better results than the mortars richer in cement. The lime seems to waterproof to a certain extent and is entirely satisfactory for application to our concrete walls. At any rate, we find there is very little trouble from checking.—C. D. Gilbert, secretary Van Guilder Hollow Wall Company, 710 Chamber of Commerce Bldg., Rochester, N.Y.

Size and Texture of Mortar Joints

The variety of size of mortar joints in brickwork is infinite, ranging from the smooth bricks with paper-thin joints, to rough-cut flush joints $1\frac{1}{4}$ inches thick used with rough faced brick and tex-tile. Generally speaking, the joint in brickwork for finished surfaces is as important as the bond, and the joint should har-

monize with the bricks or tile in texture, color and size. Each of these qualities is intimately related to the others and to the bond and wall as a whole, and must harmonize with the texture of the bricks, since the surface of the joint forms a considerable part of the surface of the wall.

It would not harmonize at all to use a fine texture, smooth pressed brick and lay it with a rough raked joint or a wide rough-cut flush joint; and conversely it would be just as objectionable to use a rough finished brick to give texture to the wall, then lay the bricks with a hair-line joint or flatten the texture of the wall by using a smoothly finished joint.

Not only the texture of the joint, but the mortar of the joint must be considered. For pressed brick work a smooth, easy-buttering mortar free from gravel or coarse sand must be used, while for rough-texture bricks a coarse mortar is the best, the degree of coarseness depending upon the width of the joint, and becoming correspondingly coarse with the width.

Hardwall Plaster: Some of Its Advantages

The use of mortars for various purposes dates back into very ancient times. Remarkable specimens of well-preserved plaster walls, casts and moulds are found in Europe and Asia, also in Mexico and Peru, which are centuries older than historical records. The workmanship and composition of these gives evidence that they were prepared by men who must have been highly skilled in their art.

Plastering is one of the earliest instances of man's power of inductive reasoning, for when men built, they plastered, at first, like the birds and the beavers, with mud; but they soon found a more lasting and more comfortable method, and the earliest efforts of civilization were directed to plastering. The famous Egyptian Pyramids contain plaster that was applied at least 5,000 years ago, and which is to-day a marvel of excellence and durability. Indeed, it is said the ancients must have been more skilled in their methods of preparing mortars than we are to-day, in spite of our greater knowledge of the sciences of chemistry and mineralogy.

How Hardwall Plaster is Made.

The Egyptians used a gypsum plaster. It is not known just how they calcined the gypsum rock. Very eloquent records of their skill is shown, but no hint do these ancient monuments give as to by what means their builders prepared their materials.

Modern hardwall plaster is made from gypsum. While marketed under numerous trade names, its base is always calcined gypsum or plaster of paris. Plaster of paris is made by burning or calcining gypsum rock. The processes by which this is accomplished need not be explained at this time any further than to say that the calcining results in a part of the water of crystallization being driven off, but the gypsum, or plaster paris, as it is then called, is not changed chemically. At any time the water is returned it will "set" or return to gypsum rock by the process of crystallization. The time required for "setting" varies from 10 to 30 minutes, according to the methods of calcination, nature of rock and purity of water.

Hardwall Plaster Sets Quickly.

This property of setting quickly is the great difference between hardwall plasters and lime plasters. Lime undergoes a chemical change, from calcium oxide to calcium carbonate. To do this it must take up carbon

dioxide from the atmosphere, and as there is only a small percentage of this gas in the atmosphere, it really takes many months, and, indeed, years for a complete change to be made, or for the mortar to acquire its maximum hardness.

No practical method has so far been found to hasten the setting or hardening of lime and sand mortar. It dries and stiffens sufficiently to stay in place after a few days, some times weeks, but must be handled carefully and be protected from jars and vibration, also from frost, until a degree of hardness is obtained that will withstand ordinary usage.

Hardwall or gypsum plaster, made to set in from two to three hours, is, therefore, a very considerable time-saver. Anything which saves time saves money. Since we have seen that gypsum plaster is permanent, there would appear to be little doubt but that its time-economizing features should be better known and utilized. A saving of, say, four weeks, in completing a new building often means hundreds of dollars in penalties, rents, interest, etc.

Sets Solidly and Will Not Crack.

Aside from this, however, the hardness and solidity of hardwall plaster walls is an advantage because it insures against damage by water, ordinary wear and tear and cracking. Gypsum is not readily soluble in water. Hence wet ceilings will not fall off, causing damage to contents of the building and expense for repairs. If the plaster is accidentally punctured the sand cannot run out, thus causing the adjacent plaster to weaken and crumble.

Instances have been cited where hardwall plaster applied over wood lath has developed cracks. From a careful investigation of some of these complaints it has invariably been found to be not the fault of the plaster, but due to the "swelling" of the lath. If the plasterer fails to wet the lath sufficiently to swell them slightly before applying the mortar, when moisture is absorbed from the green mortar it expands the lath after the mortar has begun to set. This sometimes causes cracks in very dry warm weather, or on ceilings of rooms heated to excess before the plaster has set. Experienced workmen will not allow such conditions to arise, hence the fault should be more properly charged to careless or ignorant labor rather than to any inherent fault in hardwall plaster.

Is Easy to Apply.

No exceptional skill seems to be required to apply this plaster. Common sense is an indispensable factor for good results in this matter, as in any other kind of work.

Hardwall Plaster Comes Ready to Use.

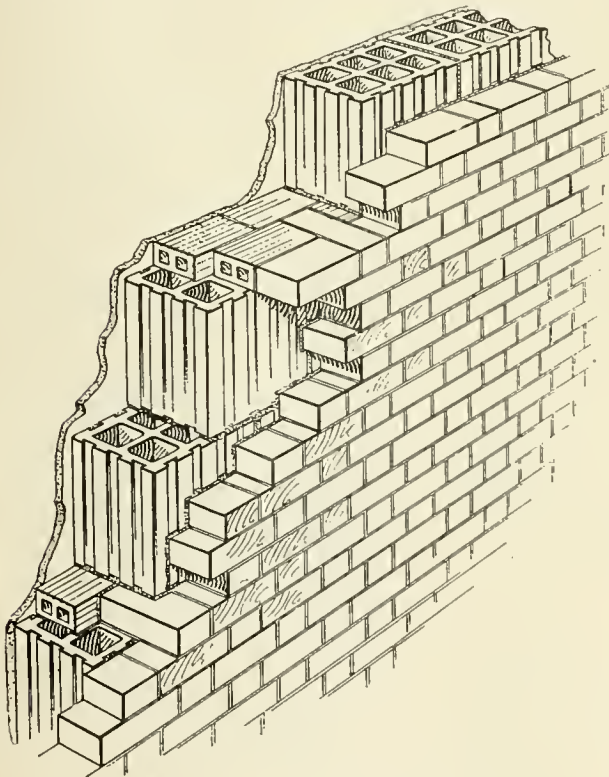
The preparation of hardwall plaster with sand, complete, and ready for use, is a point worthy of more than passing notice. Companies regularly engaged in the manufacture of the various brands of hardwall plaster, patent plaster, and wood fibre plasters, as they are sometimes called, all take great care to make their goods according to well-established and exact formulae. Exact weights of sand, gypsum, hair, retarder and other ingredients, are put into power mixing machinery and thoroughly mixed. There is no guess work. Each manufacturer is anxious to establish and maintain a high degree of excellence for his product. The result is that we have a very regular and uniform working plaster made under careful and skilled labor. Should any defective goods find their way onto the market the mistake is promptly rectified with eagerness by the

manufacturer. Architects and contractors are usually very glad to know where they can get reliable service because many of them have had disastrous experiences where the preparation of lime and sand plaster was intrusted to careless and incompetent laborers. It is practically impossible to get exact quantities and a uniformly-mixed product where guessing with a shovel takes the places of actually weighing ingredients and where the hoe tries to compete with the power mixer.

The manufacturer always selects a sharp, clean sand, free from loam. This class of sand can not always be obtained when purchased from different sources, and hauled to the job. Often it is too soft or possibly heavily laden with loam. The indifferent plasterer may imagine he likes that kind of sand better if there is enough clay in it to make it slip on easily under the trowel. The owner should beware of too easy-working sand. Clay can not serve where gypsum or lime is intended. Trouble and expense are sure to follow sooner or later.—O. A. Cole.

Bonding Brick to Hollow Tile

A wall of hollow tile faced with bricks is shown in the accompanying illustration, and there is more to consider about this construction than merely the bond. The ideal wall construction, of course, is the one which is fireproof, moisture proof, sound-proof, heat retarding, and strong or stronger than is necessary for the con-



Method of bonding brick to hollow tile.

struction where used. A solid wall cannot be moisture-proof, neither can it be heat retarding. To make it such, air cells must be provided to keep moisture or heat from passing readily through. This ideal construction is to be had in the highest degree in the wall shown in the illustration. Brick and hollow tile are here so interwoven and bonded that in effect the brick facing is not merely a veneer, but becomes an integral part of the wall, and is part of the bearing surface, thereby giving the wall all the strength of an ordinary

brick wall. It will be noticed that every tenth course of brick is tied to the hollow tile with a full header, which is backed up with a course of hollow-tile bricks. Now those header courses perform two distinct and important functions. In the first part they bind the parts together into one compact whole, and make a perfectly strong and rigid construction of the wall. In the second place, by cutting off the vertical flues every ten courses, it breaks the inner wall up into a series of small air cells devoid of circulation; and dead air space being the poorest possible conductor of heat, the wall is thereby made at least a 10 per cent. better heat insulator than if the wall were solid.

Suggested Changes in Proposed Workmen's Compensation Law

The Toronto Builders' Exchange is working in conjunction with the other Provincial exchanges in the matter of Sir William Meredith's draft bill for workmen's compensation in Ontario. At the annual meeting of the Exchange, a committee was appointed to represent the building contractors at a meeting before the Parliamentary Committee sitting to hear objections to the bill. This meeting was held at the Parliament Buildings, Toronto, on January 21, with the different members of the Cabinet present. The discussion was keen, but the parties are probably farther apart now than when Sir William Meredith concluded his investigations.

According to building contractors, the scheme, as outlined, does not go far enough for them. It is proposed that all employers of labor in the building trade are given six months in which to register and pay their fees into a fund. The contractors who have built up big businesses and who intend to stay in the game say that this length of time should not be given; that there should be a form of registration whereby all employers in the building trade will have to register as soon as they start in the business, and pay their share into the common fund. They state further that there are many cases where men engage in building for only a few months. A policeman or a factory hand may decide to put up two or three houses. This will take him, say, five months. When he is through with the work, he goes back to his old job.

If the six months' clause in the proposed scheme is made law, this man does not pay anything into the fund, and the chances are that during the time he was building some of his men met with accidents. They will draw compensation, and there is a likelihood that when their employer is gotten after with a request to contribute, he will be unable to be found.

Maissoneuve, Que., to Build Workmen's Homes

Maissoneuve, a suburb of Montreal, Que., is another municipality that is tackling the problem of supplying suitable homes for workmen. At a recent meeting of the Council, instructions were given the city engineers to prepare plans and estimates showing what would be the approximate cost of such undertakings.

Where a mixer is not used, when the day's work is done, carefully clean all the tools, especially the concrete board. Remove with a shovel all the loose cement, sand, and stone. Then scrub the board with a broom and water. If this is not done, small particles of stone are glued to the board by the cement, and render shoveling the next day most difficult.

Review of Recommendations of the Commission on Technical Education

In an address before the Canadian Club, Hamilton, recently Dr. James W. Robertson, C.M.G., Chairman of the Technical Education Commission, showed the practical benefits of the new proposed system of vocational training. The preliminary report appeared in *The Canadian Manufacturer* a few months ago, but the following extracts from Mr. Robertson's address sums up the needs of Canadians, and the practical benefits to be derived from the adoption of the Commission's recommendations.

The Royal Commission on Industrial Training and Technical Education visited 100 places in Canada, held 175 sessions to receive testimony and made transcripts of the evidence of 1,471 men and women. Some of those occupy the foremost positions in industries, agriculture, housekeeping and educational work. The needs of the growing population of Canada as stated by those witnesses may be summarized as :

First—Hand-training and pre-vocational education in the common schools after the age of twelve to reveal the bent of the child's ability to itself, to its parents and to its teacher.

Second—Something in the school classes to make boys and girls want to continue at school as long as they can.

Third—Some provision in the way of secondary industrial and technical education for those who can continue at school from 12 to 16.

Fourth—Continuation classes to be attended while young people are following some occupation to earn their living.

Fifth—Evening classes for workmen and workwomen.

Sixth—Middle technical schools to which men and women can come back for periods of from six months to two years after they have been working for some years.

In addition to these the witnesses presented the claims of the rural population and fishing population for schools specially adapted to their needs. All were agreed upon the necessity for and certain of the benefit from classes and schools for housekeeping occupation. Many witnesses recommended the establishment of correspondence study classes by central institutions in Canada.

Lessons from Abroad.

The commission in its inquiries abroad sought to learn all that would be useful to Canada without expecting to discover schools or systems which could be copied in their entirety in Canada with advantage. After a survey of what is being attempted in other countries, intimate discussions with the leaders of education in those countries and a thorough study of the whole subject, the commission endeavored to combine in the recommendations of its report the best features of each and all into a "Dominion development policy for Canada." These provisions were discussed at some length by the speaker, who intimated that anyone sincerely interested in the work of the commission could obtain a copy of the report for themselves on application to the Minister of Labor at Ottawa, to whom the report had been presented by the commission.

Example From Ireland.

While the increase of attendance at continuation classes in Scotland has been 63 per cent. in eight years,

the development of vocational education for industrial workers has been still more notable in Ireland. In 1899 there were only about 2,000 pupils in industrial continuation schools, chiefly in the north of Ireland; by 1900 there were 63,909 pupils enrolled under the schemes of the technical instruction branch. Besides these, there were many thousands attending classes under the itinerant instructors of the agricultural branch.

The amount of government funds devoted to this work in 1909-10 was \$1,294,000, in addition to the sum of \$422,000 raised by local rates. Funds from Imperial sources pay practically 75 per cent. of the cost of maintenance.

Provisions Recommended.

The report recommends special provisions for industrial training and technical education under three main headings—"for those who are to continue at school in urban communities"; "for those who have gone to work in urban communities," and "for rural communities." Some of the provisions already exist, as for example, in the day and evening technical classes at different places throughout the province. The proposal is that such as these are to be enlarged and extended to meet all the needs of all the occupations.

In all the Provinces there is evidence of progress. The Provincial Governments are not only responding to the demands made on them as far as their revenues merit, but they are leading, encouraging and guiding the local committees. Where most progress has been made in general education there the advancement of vocational education is the most wanted. The needs are chiefly three—money, specific information and enlightened public opinion. Hitherto support has come from local rates, county grants and provisional grants. The Royal Commission recommends that hereafter these should be supplemented by substantial annual grant from the Dominion treasury for the specific purpose of the development of the people of Canada through industrial training and industrial education.

The opinions of those who appeared before the commission were unanimous as to the need of financial assistance in some form from the Dominion Government. The form in which it should be provided was not defined, but the Commission presented an outline of a policy by which co-operation between the Dominion and the Provinces might be effected without the least interference with the control of education by the Provincial Governments as provided for by the British North America Act. The chief principles with the Commission stated as governing their recommendations were as follows :

The Underlying Principles.

The Commission is of the opinion that industrial training and technical education in order to be of the greatest benefit to individuals, to industrial development to localities, to the several Provinces, and to the Dominion as a whole, should be organized and maintained in accordance with the following principles :

1. It should be under Provincial control and regulation.

2. It should receive financial support from individuals, from local authorities, from Provincial Governments and from the Dominion.

3. Provision should be made for active participation in its control, management and direction by individuals in the locality who would represent industries as employers and employees, agriculture, women's occupations, particularly housekeeping business and organized education.

New Equipment

A General Purpose Portable Woodworker

The accompanying illustration shows a machine designed to meet the needs of the contractor, carpenter and builder. It is of steel construction, built of a width that will allow it to pass through an ordinary door. One of the new and desirable features of the "U-Neek" is the hand draw cut, the saw traveling on a straight line, and drawing the saw through timber with the hand, gives operator complete control and is much easier operated than by any other method.

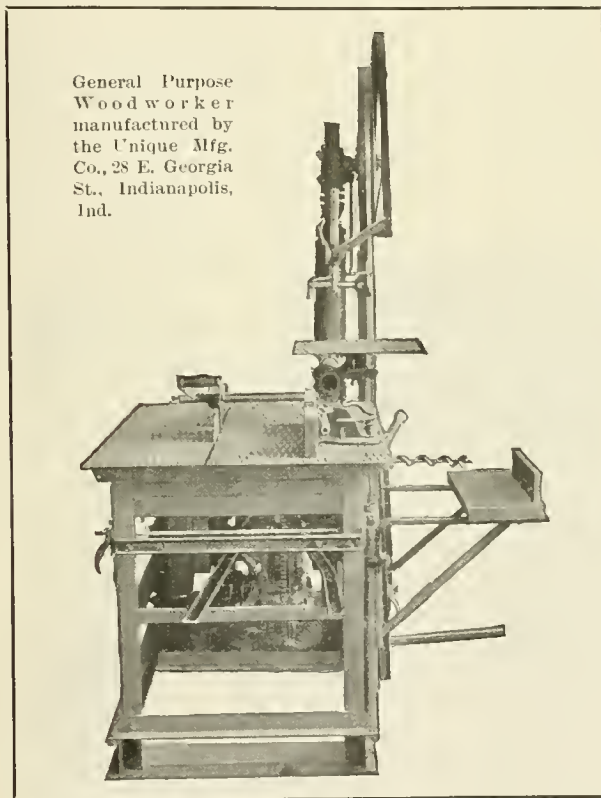
In cutting rafters or other material requiring two different angles, the special guide and guard which is furnished with each machine can be adjusted for any desired angles, and will cut both ends of the rafter without turning the timber, hence great saving in time. With the timber stationary and the saw being drawn through it thus insures the angles to be cut at the

auger and drill being drawn to the timber and having both hand and foot leverage.

The machine has a band saw with pressed steel ball-bearing wheels, will carry a one-inch and under blade, cuts material up to 7½ inches thick, and has a hinged guard.

It is equipped with two three-step cone pulleys, giving three different speeds, which furnishes the proper speed for each operation without the changing of pulleys. It also is furnished with high grade belt, and all necessary saws and tools, and either direct or alternating current motor or gasoline engine. It has cut steel sprockets with steel roller chain from drive shaft to saw mandrel, which gives a very positive drive with great efficiency, all drives being through special friction clutch pulleys.

This machine is manufactured by the Unique Manufacturing Co., 28-36 E. Georgia St., Indianapolis, Ind.



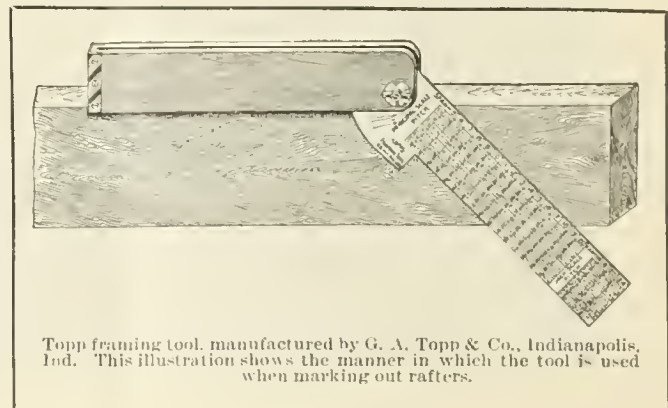
General Purpose Woodworker manufactured by the Unique Mfg. Co., 28 E. Georgia St., Indianapolis, Ind.

proper degree. The guide can also be adjusted for cutting bevels or mitres. A very convenient method for changing circular saws has been provided. The table can be quickly raised, the nut on saw mandrel, which is made in two pieces, loosened, and thus allowing saw to be removed quickly. The left end of the mandrel is arranged for jointer, dado head, special cutters, wobble saws, etc., and by adjusting the opening in table will take an emery wheel for tool dressing. The right half of the mandrel, made of seamless steel tubing, carries sand wheel, auger and drill chuck, the

Topp's Framing Tool

The accompanying illustration shows a framing tool manufactured by C. A. Topp & Co., Indianapolis, Ind. The side of the tool shown contains the pitches and scale used in cutting principal rafters. The reverse side of the tool contains the pitches and scales used in cutting both jack and hip and valley rafters. The claim is made that three to twenty-four hours may be saved in laying out a single roof if this tool is used. A number of illustrations will best show how this tool is used.

In operation, the thumb-screw which secures the handle is loosened, and the handle turned back until its inner edge coincides with the pitch mark on the sector. For instance, suppose it is desired to cut rafters for one-half pitch roof, 16-foot span, turn handle to one-half pitch mark, as it is shown in cut at top of first page, tighten thumb-screw, place in position shown, and mark rafter along top edge of blade. This gives the plumb cut. Then refer to scale and follow the line marked one-half pitch to where it intersects with 16-foot span column, where the length of rafter in feet and inches will be found, which is 11 feet 4 inches. Measure from point on back of rafter the re-



Topp framing tool, manufactured by G. A. Topp & Co., Indianapolis, Ind. This illustration shows the manner in which the tool is used when marking out rafters.

quired distance, and mark the throat of rafter, which is done by placing tool on rafter and marking along the inner edges of the blades. To cut the foot, move the tool along the distance the rafters are to project and mark along the back of scale—blade and inner edge of narrow blade.

As another example, take a one-half pitch roof, 10-foot span. To get the plumb cut at point of rafter, move the handle until its inner edge coincides with the one-half pitch mark on the scale marked "principal" on the sector, then use tool in same manner as common bevel square, marking the plumb cut.

To get the length, refer to table marked "principal" on blade of square, find the 10-foot column, and run down same until it intersects the one-half pitch line in the intersecting square, the length of rafter in feet and inches will be found. Measure required lengths from point on back of rafter, and mark the foot without moving the handle.

To frame hip or valley roof, same pitch and span as above. Frame principal rafters same as before. To get the side cut on hip or valley, move the handle to the one-half pitch mark on the hip or valley side-cut scale, and mark side cut across back of rafter. To get the plumb cut, move the handle to the one-half pitch mark on "hip or valley" plumb cut scale, and mark plumb cut at the point on each side of rafter. To get the length, refer to table marked "Hip or Valley" on blade, and find the length in the same manner as the principal; then measure and mark plumb cut for foot.

To cut jack rafters, move handle to one-half pitch mark on Jack Scale, and mark across back of rafter same as hip or valley. To get the plumb cut, move the handle to one half pitch mark on "principal" scale and mark plumb cut on sides at proper point.

To get length of jack rafter, supposing rafters are spaced 20 inches, O. C., refer to "Jack" on blade,

and taking 20-inch column, run down same to one-half pitch line where the length of first jack is found. Measure from center line on back of rafter, and cut foot same as principal rafter. The second jack will be just twice as long as the first, and to each succeeding jack add the length of the first jack.

In framing rafter, take off one-half the thickness of ridge and hip and valley, square back from face of cut.

To frame roof of any span not marked on table, suppose span is 10 feet 3 inches; find difference between 10 feet and 11 feet span; 3 inches being one-fourth of one foot, we take one-fourth of the difference between 10 and 11 feet span and add to the 10 feet span, which gives the length of rafter for 10 feet 3 inches.

House Covered with Asphalt Slate Shingles

An artistic house covered with asphalt slate shingles is shown in the accompanying illustration. These shingles are smooth, are of uniform size, and form a good water-proofing covering. The slate used is either natural color, red or green as desired. This color does not fade.

The asphalt slate shingles are $8 \times 12\frac{3}{4}$ ins., and should be laid four inches to the weather and nailed five inches from lower end of shingle. Shingles should be laid one-half inch apart to provide for expansion. On tight roof boards, the shingles will lay best but a space of $1\frac{1}{2}$ inches may be left.

Galvanized iron ridge roll should be used for ridges. For valleys cut strips of roll roofing, same surface as shingles, 16 and 20 inches wide, laying the 16 inch strip first then the 20 inch over that.

Nail every shingle at the lower end of bottom row at eaves, and use large head roofing nails. Nail all shingles at lower end at edge when used on sides of



An artistic home covered with asphalt slate shingles, manufactured by Walkerville Roofing Co., Walkerville.

dormer or gables. The proper thickness is attained and the appearance improved by using a double thickness of asphalt shingles at eave or a 16 inch strip of roll roofing, same kind as the shingles.

The following describes how these shingles are made:

Wool saturating felt is saturated in a tank 30 ft. long, the paper going three times the length of this tank, then over a cooling system, through a coating machine, and through another cooling system, and directly to a re-winder, if made into rolls or directly to the shingle machine if made into shingles, requiring no handling from the time they are started until finished and ready for the car. For the slate coating a layer of crushed red or green slate is spread on the fresh coating and rolled in so that it cannot be loosened by wind, sun or rain, and there is no coloring matter whatever used, the color being permanent.

Herringbone Lath and Plaster Ceiling in Motion Picture House

The accompanying illustration shows a ceiling in course of construction in a motion picture house being erected by A. B. Webster at the corner of Beech Ave. and Queen St., Toronto. This ceiling will be composed of herringbone lath and plaster and is being put on at a cost of 50 cents per square yard, complete. The photo shows the herringbone lath before the plaster has been put on.

This class of ceiling in moving picture houses in Toronto is unusual, as the by-law provides that buildings of this nature must have a pressed steel ceiling. However, special permission to use the herringbone lath was secured from the fire chief of the city, and this permission is now being freely granted.

The herringbone lath was put directly on the cross joists, 16 in. span.

Annual Convention of Western Division of C.N.A.B.E.

The eighth annual convention of the western division of the Canadian National Association of Builders' Exchanges was held in Edmonton, February 24-26. The delegates were welcomed to the city by Mr. Miller, president of the Edmonton Exchange, and by Mayor McNamara, of Edmonton. W. J. Davidson, president of the western section, and G. Silvester, first vice-president, responded. In his response, Mr. Davidson referred briefly to the difficult conditions which had prevailed since the last convention, due to financial stringency. "But we, as builders, do not look upon that as a calamity," he said. "We have successfully weathered the storm. We all know that property values have risen too fast, and that it has not benefited the builders. But real estate speculation and gambling in subdivisions will be stifled, and the millions of dollars which have formerly been swallowed up in this way will, we hope, be diverted into channels of legitimate business. Factory sites should be made available at cheaper prices to incoming manufacturers."

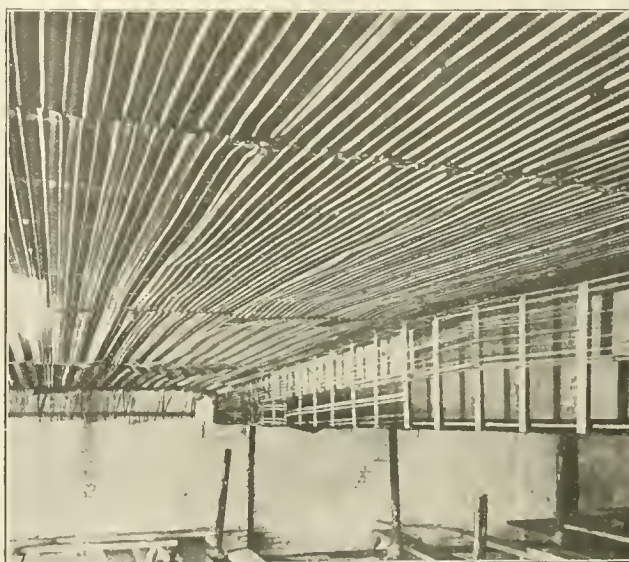
J. P. O'Leary, of Saskatoon, addressed the delegates on the second day on "Reinforced Concrete as Applied to Structures." He gave a brief history of the use of concrete, mentioning its use in the construction of pyramids, the Roman roads, and the pools of King Solomon, and stated that after European engineers had studied the subject from a scientific standpoint, steel concrete buildings had begun to

be recognized about the year 1900 as a structural possibility.

Speaking of the value of concrete construction in schools and institutional buildings, he said: "If the different committees governing the erection of such public structures as schools, hospitals, libraries, convents, universities and municipal buildings would take into consideration the loss of life in semi-fireproof buildings, and would have them erected of concrete, those buildings would stand as monuments of their wisdom and foresight."

No Bar to Architecture

Answering the objection that reinforced concrete is not practicable for architectural design, Mr. O'Leary cited the Hart Memorial Hospital, of Rochester, N.Y., built entirely of that material, and thereby rendered germ-proof, fire-proof and sound-proof. "All the footings, foundations, walls, stairs, columns, beams, floors and roofs," he stated, "are of solid concrete, as are the



Ceiling in course of construction in moving picture house. It is composed of herringbone lath and plaster.

eaves and cornices which are cantilevered out from the roof construction. The great columns of the portico were cast in position of solid concrete, and the carved capitals superimposed. All the decorations are of the same material."

In the afternoon, the visitors were conveyed by special train to the plant of the Aeme Brick Co., and a thorough inspection of the works was made.

On their return, the reports of the various committees were presented, and at night a smoker was held in the Empire auditorium.

T. H. Miller, of Edmonton, as chairman of the legislation committee, recommended the adoption of resolutions favoring more stringent enforcement of existing amendments to the Mechanics' Lien Act, and Workmen's Compensation Act, the establishment of provincial technical schools throughout the West, and urging the Dominion Government to take control of the business of employment agents.

Officers for 1914 were elected as follows: President, C. R. Frost, Edmonton; first vice-president, J. P. O'Leary, Saskatoon; second vice-president, Jas. Bourgeault, Winnipeg; honorary secretary-treasurer, A. M. Frith, Edmonton.

Saskatoon, Sask., was decided on as the meeting place for 1915.

News of Builders' Exchanges

Notes of Toronto Exchange

On February 23, the members of the Exchange held a curling tournament at the Granite Rink, and this was followed by a Dutch lunch. Bulley repeated his previous tankard achievements—by being beaten. John Wickett and Joe Gibson showed they have not forgotten how to play the "roarin' game" and both performed in the manner that won them the tankards in days gone by.

Bill Britnell was a good sweep, and, judging from his ability to handle a broom, some fair lady is missing a good husband. However, Bill's one fault was that he persisted in "sweeping" the wrong rink.

A letter was sent to the local Board of Education, asking that in the new tender forms there be inserted a clause to the effect that once a tender has been received by the Secretary of the Board, it is then the property of the Board, and no contractor shall be allowed to withdraw. If he wants to do so, his deposit cheque shall be forfeited. On receipt of this, the Exchange was invited to send two members to interview the committee who had this matter in hand. This was done, but no decision in the matter was arrived at.

Arrangements have been made with Dominion Government to have plans of all Government buildings throughout the Dominion filed in the office of the Exchange, in order that members may tender on same. At present plans of post offices for Palmerston, Aurora and Walkerville are filed.

The lease has been signed for the new offices in the Goodyear Building. Possession was taken on March 1 and the event will be celebrated by an at-home on Thursday, March 19.

Annual Convention of Provincial Builders' & Supply Association

The Provincial Builders' & Supply Association met in the offices of the Toronto Builders' Exchange on February 24 and 25. G. A. Crane, Ottawa, was in the chair, and members to the number of 35 were present from Hamilton, Peterboro', Sarnia, Windsor, Ottawa and Toronto.

The first morning was taken up with reports on conditions in various cities, and everything showed good progress in Exchange work, in Hamilton and Toronto especially so.

The President, in his address, touched upon the necessity of forming a wage chart for the whole Province, and upon workmen's compensation.

The Secretary-Treasurer's report showed a good financial condition. The membership of the Association at the present time is about 500, and is rapidly increasing.

It was moved and agreed that the Secretary shall compile a wage chart for the Province, to be sent to every Exchange in Ontario. This chart will include every trade in the building line, and will show the scale of wages in the various centres.

A big organization campaign is to be conducted during the coming year. Secretaries of Exchanges in the large centres will visit neighboring places where there are no exchanges, and point out the advantages of the contractors getting together.

The Secretary of the Association has been instructed to send a request to the Architects' Association of the Province, asking that when architects furnish plans they shall also furnish detailed drawings at the time, instead of after the job has been started, as has been the practice.

It was decided at the convention to send a report of the proceedings to all contractors in the Province.

The entertainment features included a theatre party and a visit to Sir Henry Pellatt's castle.

Officers for 1914 were elected as follows: President, J. A. Crane, Ottawa; First Vice-President, Geo. Gander, Toronto; Second Vice-President, T. R. Wright, London; Treasurer, Geo. Oakley, Jr., Toronto; Secretary, A. E. Flower, 2 Berti Street, Toronto; Executive, Mr. Detweiser, Sault Ste. Marie; A. L. Jex, Cobourg; A. Christie, Ottawa; Geo. Metcalfe, Hamilton; W. J. Jenks, Sarnia; Chas. Bulley, Toronto; C. W. Cadwell, Windsor; P. H. Secord, Brantford; J. L. Youngs, Stratford; R. Sander, St. Thomas; Caspar Braun, Berlin.

President Crane extended a kind invitation to hold next year's meeting in Ottawa, and stated his intention was to have the three associations, i.e., the P.B. & S.A., the eastern section of the C.N.A.B.E., and the Executive of the National Association, all meet at the one time.

Saskatchewan Builders' Exchanges Meet in Moose Jaw

The annual convention of the Association of Saskatchewan Builders' Exchanges was held in Moose Jaw February 16-17.

Some of the main points discussed were an act respecting payment of wages, to certain employees, Workmen's Compensation Act, Mechanics' Lien Act, and the scale of wages for the coming year.

It was decided that the interests as far as affected by proposed legislation in the Provincial Legislature of the builders, will be looked after by a committee of Regina contractors.

The convention recommended that the contractors of the Province effect employers' liability insurance as far as possible, with a guarantee and accident company, between which company and the provincial body there has been effected an agreement whereby contractors who are members of the various exchanges can secure insurance at the rate of \$2.19.

The schedule of maximum wages per hour for various trades for the year was adopted as follows: Bricklayers, 70 cents; stone masons, 70 cents; stone cutters, 65 cents; carpenters, 50 cents; electricians, 50 cents; painters and paper hangers, 45 cents; plumbers and steamfitters, 60 cents.

It was decided that any local exchange making agreements with regard to hours of work, wages, etc., with local labor unions, shall have such agreements all expire on April 30, 1915, in order that next year's convention may know that in making new arrangements no city will be tied up longer than another under existing agreements.

The Architects' Association of Saskatchewan will be asked to take steps to have the amended Winnipeg Builders' Exchange form a uniform contract used exclusively on all jobs in future.

The following officers were elected: Honorary President, Andrew Holmes, Prince Albert; President, T. H. Navin, Moose Jaw; Vice-President, R. J. Leckie, Regina; Secretary-Treasurer, W. Powell, Regina; Directors, G. Edgar Knechtel, Saskatoon; T. H. Potts, Moose

(Continued on page 52).

G. M. Millar Joins Elliot Woodworker, Limited

A change in management has been effected in the firm of Elliot Woodworker, Limited, Toronto. Mr. A. A. Miller, president of the company, has retired, and Mr. G. M. Miller, formerly of London, Ont., has been admitted to the firm and will take an active interest in the affairs of the company.

The headquarters of the firm will still remain at the corner of Bathurst and College Sts., Toronto.

Mr. Elliot reports that prospects for spring trade are good. Business has opened up well and orders already received for early season delivery predict a big year in 1914.

Georgian Bay Shook Mills New Catalogues

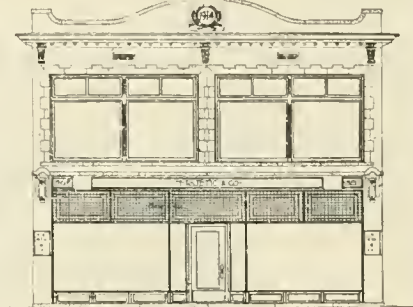
The Georgian Bay Shook Mills, Midland, Ont., have issued a new door catalogue, "Midland Doors," and also their 1914 stock design catalogue, which will be mailed to readers of The Canadian Builder & Carpenter on request. Perhaps the most striking feature in connection with same and of the greatest interest to the contractors and builders of the eastern part of Canada is the announcement that the Georgian Bay Shook Mills are manufacturing B. C. fir doors. It has hitherto been impossible for contractors to purchase these except in the largest cities, on account of dealers not carrying them because of the time required to fill orders.

The fir door is especially popular on account of its handsome finish in oil and because the fir door is not liable to warp and twist. There are other features of especial interest to readers, which may be seen on a perusal of the catalogue.

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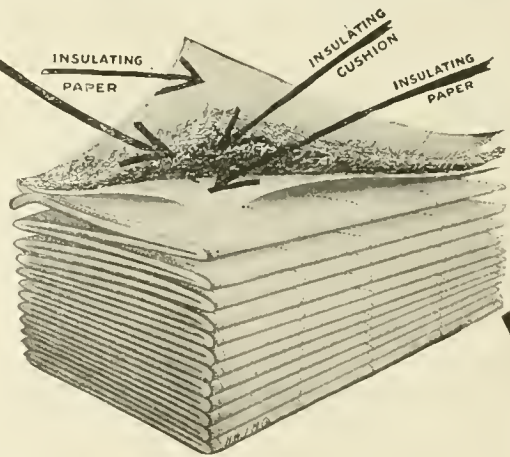
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TORONTO

MONTREAL



WINNIPEG

VANCOUVER

(Continued from page 50.)

Jaw; Alec. Young, Regina; F. W. Davy, Prince Albert; and Walter Fairburn, Swift Current.

The convention will reassemble the first Monday in February, 1915, at Saskatoon.

Ex-Secretary of Hamilton Exchange Presented with Chair

At a meeting of the Hamilton Builders' Exchange, held on February 10, Vice-President George Metcalfe read a paper on painting, painters and materials.

One feature of the evening was the presentation of a handsome leather lounging chair to Mr. Arthur Heatley, the first Secretary of the Exchange. The presentation was made by Mr. Murray in a few well chosen words, and Mr. Heatley acknowledged in a splendid speech.

New Officers of Prince Albert, Sask., Exchange

The officers elected for the Prince Albert Exchange for the coming year are as follows: Alderman William Knox, President; G. A. Myers, Vice-President; J. R. Davidson, Secretary; G. B. Mitchell, Treasurer; R. Stevenson, Auditor; Directors, A. P. Anderson, G. E. Winter, H. W. Davy and Jacob Thompson.

Montreal Exchange to Move to New Offices

At the annual meeting of the Montreal Builders' Exchange, it was decided that as soon as the lease expires on their present quarters in the Eastern Townships Bank Building, the Association will move to new offices in the Victoria Building, 52 Victoria Square. The whole of the third floor has been secured. The spare space will be rented as desk room to members.

Alberta Provincial Builders' Exchanges Meet in Medicine Hat

Some forty delegates were in attendance at the fourth annual session of the Alberta Provincial Builders' Exchange, which opened on the morning of March 2 in Medicine Hat. The delegates were welcomed to the city by the president, G. E. Hotsou, of the Medicine Hat Exchange, and by Mayor Brown, of the city council.

The afternoon session was devoted to a trip to the national schools of the city, when the delegates were the guests of the Board of Trade and the local exchange. At night they were entertained at a banquet. The convention closed on the 3rd, when resolutions were presented and passed on and officers elected.

Saskatchewan Builders' Exchanges Appoint Legislative Committee

The appointment of a legislation committee of the Saskatchewan Association of Builders' Exchanges was one of the chief features of this year's convention held at Moose Jaw.

The general opinion prevails, however, according to R. J. Lecky, Regina, the newly-elected Vice-President, that as far as securing any change in the act regarding the payment of wages to employees passed at the last session of the Provincial legislature, no action can be taken. "This act," states Mr. Lecky, "is now the law of the Province. It is on the statute books. It cannot be eradicated or made inoperative except by the action of the Legislative Assembly, and no matter what

may be the prevailing opinion in regard to the efficiency of this measure, the contractors and employers of the Province will have to abide by it."

The Legislation Committee which is composed of Regina contractors, will endeavor to keep more closely in touch with the Provincial Government, and in the passage of measures which affect their business they will present the employers' side of the question. The Regina members of the Provincial Executive of the Association are R. J. Lecky, Alex. Young and W. Powell, Secretary-Treasurer.

London Building Permits for Two Months

During the first two months of the year, which have been marked by some exceptionally severe weather, the building permits for London, Ont., are almost double those of the same period of 1913, being \$73,270, as compared with \$36,855 for the same period last year.

Active Building in Windsor During February

One of the biggest increases ever recorded for the month of February in the building permits in Windsor, Ont., has just been passed. In February, 1913, 10 permits were issued for a total of \$17,025 and for February of this month 22 permits were taken out totalling \$55,825.

City Engineer Brian states that the permits for March promise to greatly exceed even those of February.

Officers of Canadian National Association of Builders' Exchanges

WESTERN DISTRICT

President—C. R. Frost, Edmonton, Alta.
1st Vice-President—J. P. O'Leary, Saskatoon, Sask.
2nd Vice-President—Jas. Bourgeault, Winnipeg, Man.
Secretary-Treasurer—A. M. Frith, Edmonton, Alta.

City Secretary and Address

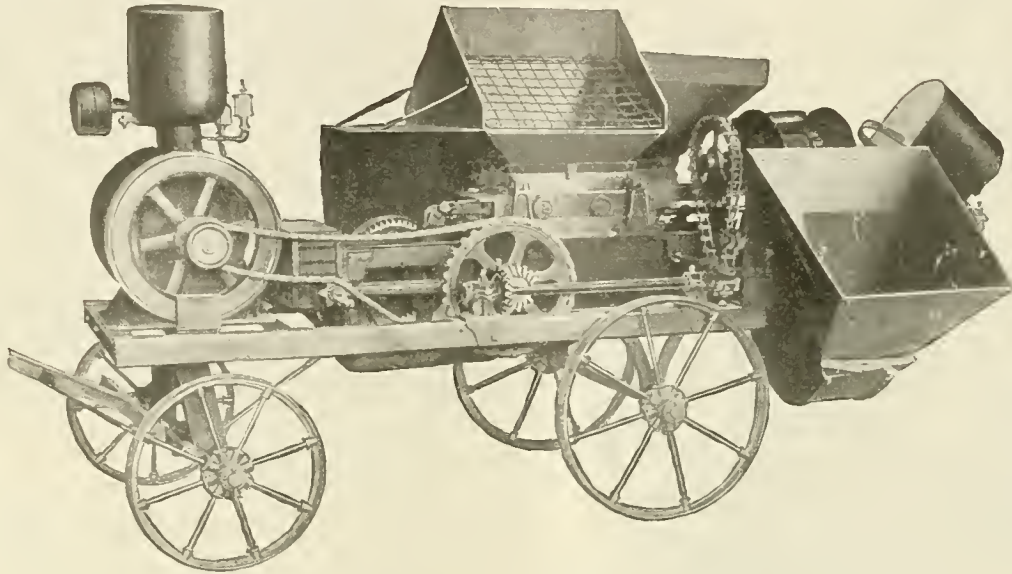
Brandon, Man.—E. P. Fuller, Suite 1, Northern Crown Bank.
Dauphin, Man.—E. N. Hyland, General P. O.
Winnipeg, Man.—A. M. Rose, Builders' Exchange Bldg.
Moose Jaw, Sask.—A. Guest, 16 Ferguson Block.
Prince Albert, Sask.—Jno. R. Davidson, General P. O.
Regina, Sask.—Geo. Powell, 206 Kerr Block.
Saskatoon, Sask.—Maurice R. Prout, Oddfellows' Temple, 21st Street East.
Swift Current, Sask.—Jno. McIntosh, Box 268.
Saskatchewan Assoc. of Builders' Exchanges—W. Powell, Regina
Calgary, Alta.—F. C. Rankine, General P. O.
Edmonton, Alta.—John McPherson, McDougall Court
Lethbridge, Alta.—Wm. Walker, 405 Sherlock Bldg.
Medicine Hat, Alta.—Chas. E. Dyce, General P. O.
Vancouver, B.C.—W. Hamilton-Lindsay, Box 45.
Victoria.—D. B. Plunkett, 503 Union Bank Bldg.

EASTERN DISTRICT

President—Geo. Gander, Toronto.
1st Vice-President—L. H. Martyn, London.
2nd Vice-President—Jas. Ballantyne, Montreal.
Secretary-Treasurer—P. L. Fraser, Toronto.

Brantford.—A. J. Cromar, 103½ Dalhousie St., P.O. Box 212.
58 Granville Street.
Chatham.—S. G. Kinsey, 14 Fifth St.
Guelph.—Mahoney Bros., General P. O.
Hamilton.—A. Heatley, 325 Chancery Chambers, Main Street East.
Kingston.—E. R. Beckwith, C. E., 292 Earl Street.
London, Ont.—Fred. S. Barclay, Builders' Exchange.
Ottawa.—J. S. C. Adamson, 126 Sparks Street.
Sault Ste. Marie.—MacPhail & Wright Cons. Co., P.O. Box 835.
Stratford.—J. L. Young, Box 219.
St. Catharines.—Thomas Mesler, General P. O.
St. Thomas.—E. O. Penwarden, 1 White St.
Toronto.—A. E. Flower, 2 Berti Street.
Windsor.—A. E. Paddon, 163 Louis Ave.
Montreal.—R. L. Werry, 263 St. James Street.
Quebec.—A. Cote, 23 Rue St. Jean.
Halifax, N.S.—H. Roper, care of S. M. Brookfield, Limited,
St. John, N.B.—Charles F. Stevens, Builders' Exchange.

Concrete Mixing and Moulding Machines



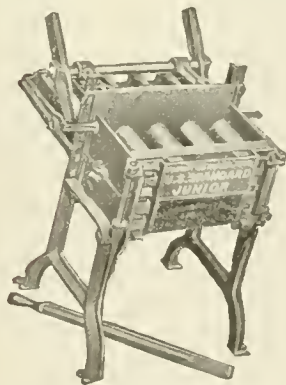
The Senior B. Mixer

Capacity ten yards per hour. Regular equipment 4 h.p. Gasoline Engine, weight 2250 pounds. The Senior B. Mixer is a general Contractor's machine and will handle cement, sand, gravel or crushed stone up to 2½ inches. The attachment for handling gravel or stone is very low and is a great saver of labor. In this machine we have the ideal conditions for good mixing. The cement and sand are mixed dry without the stone, which is added at the same time the water is supplied. The stone is thoroughly coated with cement mortar. We guarantee that no better job of mixing can be done by any other machine or method.

U.S. Standard Concrete Mixers

are made in three sizes. All sizes are made either portable or stationary and are equipped with our patented automatic measuring and proportioning device. The Junior Portable, mounted on steel trucks and equipped with a 3 h.p. Gasoline Engine, is a two hopper mixer for use where only a limited amount of material is required, such as laying sidewalks, basement floors, culverts, etc.

Mounted on standards, it is an ideal mixer for the block plant. The Senior "A," essentially the same as the Junior, being heavier and of greater capacity. Equipped with a 4 h.p. Gasoline Engine. The Senior "B" is a three hopper mixer designed for general contract work. Its low down hopper for stone is a labor-saving feature that appeals to its worker. Equipped with a 4 h.p. Gasoline Engine.



U.S. Standard, Senior 24-inch
Cement Block Machine

U.S. Standard Block Machines

are entirely different from any others. One reason why they are different is because the system of coring permits the use of very wet material which produces a much stronger block; the other, they are two machines in one. First, a machine to make outside or hollow blocks. The change is made in a moment. For speed they cannot be surpassed. The U.S. Standard Block Machines are made in two sizes. The Junior or 16-inch machine and the Senior or 24-inch machine. The Junior is a one man machine, the Senior a two man. The variety and style of blocks are unlimited. For one that is in the market for a wide range machine, it will pay to investigate. Write for information and literature.

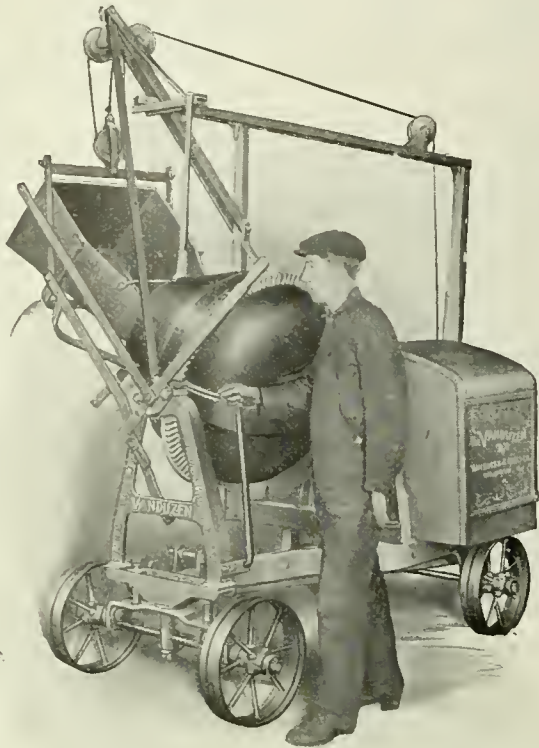
Reliable Canadian Agents Wanted

Good Proposition

U.S. Standard Mfg. Co. - Ashland, Ohio

We Can Help You Save Money in Your

CONCRETE MIXING



It is not our purpose to take up your time with incomplete details. Look at this 5-foot mixer with side loader. Our catalogue is fully illustrated and complete in its description. It is yours for the asking. Send for it and we will show you why we can help you and save you money.

*Canadian Agents Wanted for
Open Territory*

Van Duzen, Roys & Co.

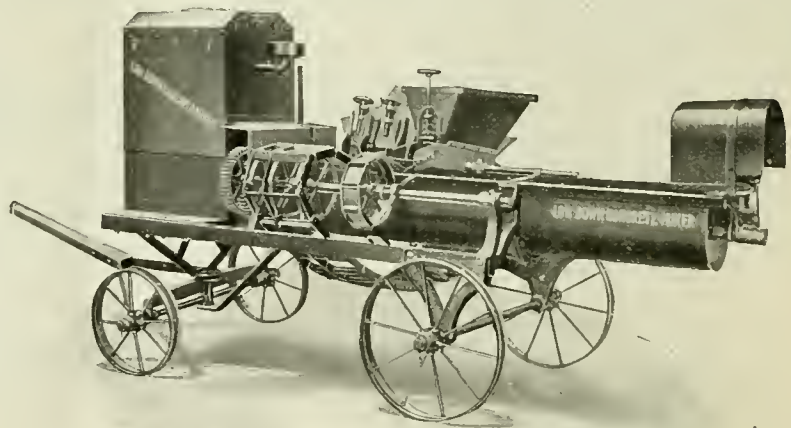
Dublin Ave.

COLUMBUS

OHIO

ABSOLUTE ACCURACY

is built into this machine in such a way that the Low Down Concrete Mixer is bound to save money on your contracts. No principle has been overlooked in making this the most dependable machine in every branch of the concrete industry.



Low Down Concrete Mixers

cut in half the work of feeding. One man does the work of two. The feed is positively different from the principle employed by other continuous mixers. It is not intermittent, depending upon gravity. The materials, regardless of their condition, are fed in definite proportions by a continuous, unvarying force. The proportioning device can be set as you desire and locked. This insures a mix in strict accordance with the specifications.

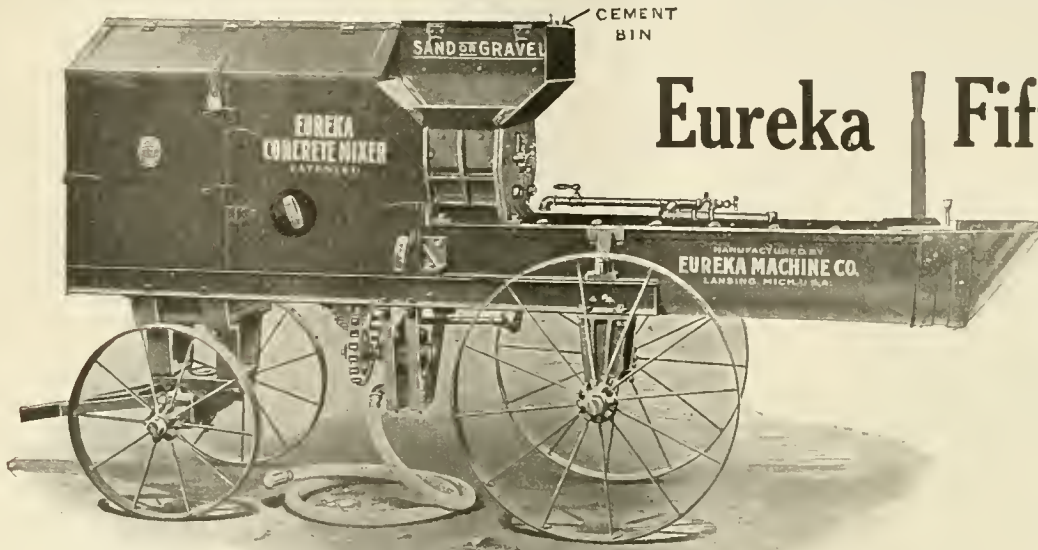
Our FREE CATALOG presents facts that will interest you if you want to invest your money wisely. Send us your name and address. We'll send the Catalog.

Elite Manufacturing Co.

Ashland, Ohio, U.S.A.

Mixer facts that line up with requirements of thoroughly good concrete will be found in our FREE CATALOG. Ask for it and read it before you buy any concrete mixer.

"Costs little to buy--Almost nothing to maintain and operate"



Eureka Fifty

**A Yard
Every
Twelve
Minutes**

Eureka Fifty—Weight 2000 lbs.

Every Advantage You Can Think Of

A MONEY-MAKER

☑ Pays for itself many times over in a year's time, in actual practice.

COSTS LITTLE TO BUY

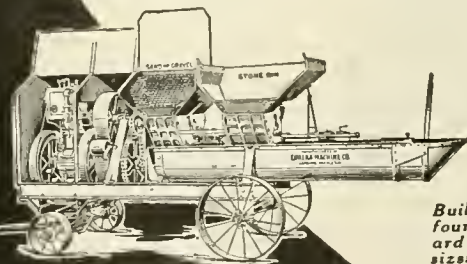
☑ The trifling sum of 80 cents a day pays for it in a year—and after that everything is velvet.

QUANTITY FIXED THE PRICE

☑ A large output makes its low price possible. Manufacturing in small quantities would easily add a third more to the price asked.

ONLY 4 CENTS AN HOUR TO RUN IT

☑ The time is past when you have to buy and operate big, unwieldy, slow-moving, expensive mixing machinery on any sized job—big or little. The cost to run is next to nothing.



Built in four standard power sizes.

**NO WHEELING
NO WAITING
NO GUESSING**

BUILT OF STEEL

☑ No matter how it is used, it's bound to last. It's steel, and correctly distributed. Nothing like steel for long life and strength—costs more but will defy accidents and abuse. This mixer was built for hard, severe service, and won't break or go wrong when you need it most.

SELF-MEASURING

☑ No filling barrows—no wheeling. Shovel from the pile into the mixer. This cheap method will surprise you.

MOVE THE MIXER NOT THE MATERIAL

☑ Easy to move—two or three men can do it. Always handy to the materials.

POWER TO SPARE

☑ A high-grade, guaranteed, 2½ H.P. "NEW-WAY" gasoline engine furnishes surplus power.

WHAT YOU GET

☑ The outfit fully equipped as shown in picture, with two bins, one for cement, the other for sand or gravel, pump for supplying water, suction hose, engine, tools, etc. Shipped set up all ready to run, with complete instructions.

ONE YEAR GUARANTEE

☑ Nine years of "knowing how" are back of every EUREKA. Many thousands in use, and more than measuring up to the requirements. *We make every claim and promise good.* Write at once for price and our "square deal" plan.

Ask for Catalog No. 42

Eureka Machine Co.

19 Case St., Lansing, Mich.

EASTERN AGENTS—W. V. Johnson & Co.,
1 Madison Ave., New York City

Stocks Carried in Principal Cities

Price List of Building Materials—Revised to Date

PRICE AT MONTREAL

Hemlock Lumber

2 x 4 in. to 2 x 12 in., 8 to 14 ft.....	\$24.00
2 x 4 in. to 2 x 12 in., 16 ft.....	26.00
2 x 4 in. to 2 x 12 in., 18 ft.....	28.00 to 30.00
1 in. hemlock No. 1.....	22.00
No. 1 hemlock decking.....	23.00 to 25.00
No. 2 hemlock dimensions and 1 in....	26.00 to 30.00

Pine

1 in. common and better pine 8 to 12 in. wide, rough.....	\$32.00 to 40.00
2 in. white pine, mill stock.....	29.00 to 33.00
7/8 x 8 and 10 in. pine shelving.....	36.00 to 45.00
7/8 x 12 pine shelving.....	42.00 to 50.00
No. 1 white pine flooring.....	40.00
No. 1 spruce flooring.....	30.00
No. 1 pine decking, D2S.....	40.00
No. 1 pine V. or beaded sheeting.....	40.00
No. 2 pine V. or beaded sheeting.....	30.00

Pine Trim for Paint Finish

4 in. casing, per 100 ft.....	\$1.75
5 in. casing, per 100 ft.....	2.10
8 in. pine base, per 100 ft.....	3.25
10 in. pine base, per 100 ft.....	4.20
4 in. pine window stool, per 100 ft....	2.75

Shingles, Lath Roofing, Etc.

No. 1 pine lath.....	5.00
No. 2 pine lath.....	4.50
No. 1 spruce lath.....	4.00

Cedar Posts—Fence

5 in. at small end.....	5c. foot
7 in. at small end.....	7c. foot

Hardware

Nails, wire, common.....	\$2.30 base keg
Nails, cut, common.....	2.50 " "
Sash weights, cast iron.....	1.50 per 100 lbs.
Tarred felt paper.....	.43 roll
Building paper.....	.35 roll

Brick, Tile, Terra Cotta, Sewer Pipe

No. 1 dry pressed red bricks.....	18.00
No. 1 dry pressed buff bricks.....	20.50
Red stock bricks.....	11.50
Grey stock bricks.....	12.00
Wire cut brick for foundation work..	10.00
Fire brick.....	25.00
Sewer pipe, 4-inch.....	10c. foot
Sewer pipe, 6-inch.....	15c. foot

Cement, Plaster, Stone, Etc.

Cement (bags extra).....	1.85 bbl.
Sand, for cement or brick work.....	1.15 ton
Lime.....	.30 per 100 lbs
Hydrated lime.....	10.00
Mortar color.....	5.00 bbl.
Plaster of paris.....	3.00
Crushed stone, 2 in.....	1.50
Crushed stone, 1 in.....	1.60
Crushed stone, 3/8 in.....	1.75
Hardwall plaster.....	\$9.50 to 12.00 neat
	6.50 sanded ton
Gravel.....	1.85 yard
Hair (plaster).....	.03 per lb.

PRICE AT TORONTO

Hemlock Lumber

2 x 4 in. to 2 x 12 in., 8 to 14 ft.....	\$24.00 to 29.00
2 x 4 in. to 2 x 12 in., 16 ft.....	24.00 to 29.00
2 x 4 in. to 2 x 12 in., 18 ft.....	26.00 to 30.00
1 in. hemlock No. 1.....	24.00 to 28.00
No. 1 hemlock decking.....	26.00 to 29.00
No. 2 hemlock dimensions and 1 in....	20.00 to 24.00

Pine

1 in. common and better pine 8 to 12 in. wide, rough.....	\$28.00 to 35.00
2 in. white pine, mill stock.....	29.00 to 34.00
7/8 x 8 and 10 in. pine shelving.....	36.00 to 40.00
7/8 x 12 pine shelving.....	45.00 to 48.00
No. 1 white pine flooring.....	35.00 to 37.00
No. 1 spruce flooring.....	27.00 to 32.00
No. 1 pine decking, D2S.....	28.00 to 33.00
Spruce decking.....	27.00 to 32.00
No. 1 pine V. or beaded sheeting.....	35.00 to 39.00
No. 2 pine V. or beaded sheeting.....	30.00 to 33.00

No. 1 Common Yellow Pine

2 x 4 in. to 2 x 14 in., 10 to 16 ft.....	\$25.00 to 33.00
2 x 4 in. to 2 x 14 in., 18 to 20 ft.....	29.00 to 35.00
2 x 4 in. to 2 x 14 in., 22 to 24 ft.....	37.00

Yellow Pine Finish

4/4 x 6, 8, 10 and 12 B. & B. smoke finish	\$41.00
5/4 x " " " " " "	45.00
6/4 x " " " " " "	45.00
8/4 x " " " " " "	45.00
4/4 x " " " " steam finish	48.00 to 50.00
5/4 x " " " " " "	48.00 to 50.00
6/4 x " " " " " "	48.00 to 50.00
8/4 x " " " " " "	50.00 to 55.00

Pine Trim for Paint Finish

4 in. casing, per 100 ft.....	\$1.80 to 2.00
5 in. casing, per 100 ft.....	2.00 to 2.50
8 in. pine base, per 100 ft.....	2.75 to 3.25
10 in. pine base, per 100 ft.....	4.00 to 4.50
4 in. pine window stool, per 100 ft....	3.00

Shingles, Lath Roofing Etc.

XXX B. C. cedar shingles.....	\$3.80 per M
N. B. extras.....	4.25
No. 1 pine lath.....	5.00 to 5.50 per M
No. 2 pine lath.....	4.75 to 5.00
No. 1 spruce lath.....	4.75
Roofing felt (2 ply).....	1 ply—\$1.60 per sq.
	2 ply— 2.00 " "
	3 ply— 2.40 " "

Cedar Posts—Fence

5 in. at small end.....	.25 each
7 in. at small end.....	.50 each

Hardware

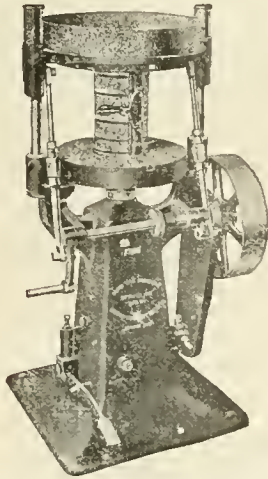
Nails, wire, common.....	\$2.35 cwt.
Nails, cut, common.....	2.95
Sash weights, cast iron.....	1.75
Tarred felt paper.....	.65 roll
Building paper.....	.45

Glass

United inches.....	Star	D.D.
Up 25.....	\$4.25	6.25
26-40.....	4.65	6.75
41-50.....	5.10	7.50
51-60.....	5.35	8.50
61-70.....	5.75	9.75

NOTE TO READERS. We would be glad to have suggestions from readers as to the extension or modification of this list.

Drain Tile Machines — Drum Batch Mixers



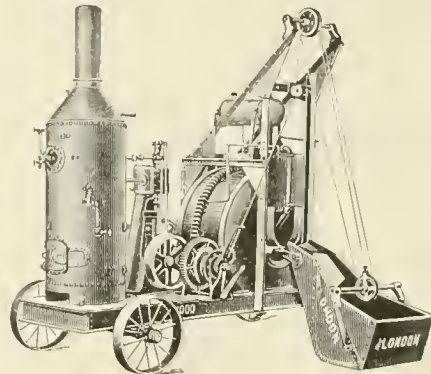
Dunn Cement Drain Tile Machines

We manufacture a complete line of high grade improved

Concrete Machinery

THE making of Drain Tile is exceedingly profitable — contractors can handle this work to advantage. Write for our literature on the Dunn Drain Tile Machine. Concrete Mixers in several styles, and all sizes, for every class of work.

We can meet your requirements in price and quality on any equipment of concrete and cement working tools. *All Made in Canada.*



London Standard Drum Batch Mixer

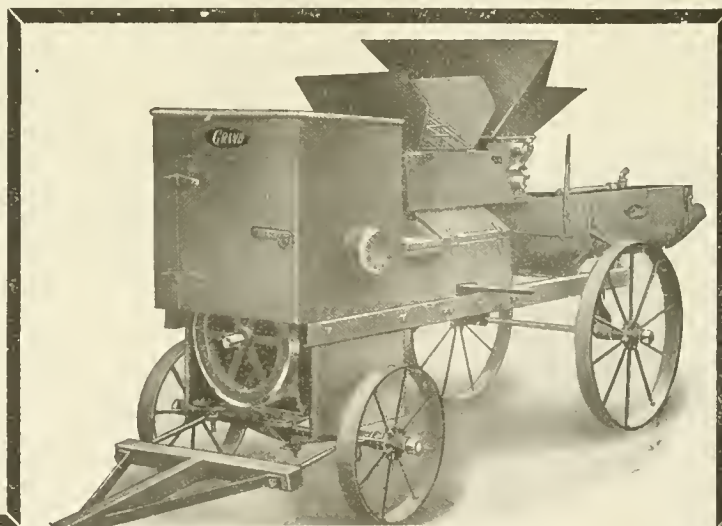
London Concrete Machinery Co., Limited

Cabell St. and Kitchener Ave., LONDON, Ont.

Branches { WINNIPEG, (445 Main St.) W. H. Rosevear, Mgr. CALGARY, (622 9th Ave. W.) P. D. McLaren, Mgr. TORONTO, (112 York St.) G. B. Oland, Mgr. HALIFAX (68 Up. Water St.) R. R. Power, Mgr.

Agencies { VANCOUVER, B. C. Equipment Co. MOOSE JAW, Sask. Bridge and Iron Co., Ltd. REGINA, H. A. Knight FORT WILLIAM, Northern Eng. and Supply Co. MONTREAL, Foss & Hill Mach. Co. QUEBEC, A. D. Masson OTTAWA, Ont., General Supply Co. of Canada.

RIGHT
PRINCIPLE



BUILT
RIGHT

“MECHANICALLY FED”

The GRAND line of concrete mixers is the last word in mixer construction. We believe we are building—right now—as good a mixer as the mind of man can ever develop. We use the best crucible steel on all wearing parts, and build the whole machine to stand rough usage. We want you to know what “MECHANICALLY FED” means to a contractor—Send for our book—it was written for you.

HALL & HOLMS MFG. CO.

600 OAK STREET :: JACKSON, MICH.

Price List of Building Materials—Continued.

Price at Toronto—Continued

71-80	\$6.25	\$11.00
81-85	7.00	12.50
86-90	7.75	15.00
91-95		17.50
96-100		20.50
101-105		24.00
106-110		27.50
Less 15 per cent. f.o.b. Toronto.		
Wired glass	18c. to 20c. per sq.ft.	

Brick, Tile, Terra Cotta, Sewer Pipe

No. 1 dry pressed red bricks	\$14.00 to 17.00 per M	
No. 1 dry pressed buff bricks	18.00	
Red stock bricks	10.00 to 12.00	
Sand Lime Brick	9.00 to 9.50	
Grey stock bricks	10.50 to 12.50	
Sewer Brick	11.50	
Wire cut brick for foundation work ..	10.00	
Porous terra cotta bricks	12.00 to 15.00	
No. 1 enamelled bricks, all colors, from	80.00 to 150.00	
Fire brick	26.00 to 30.00	
Tapestry brick	23.00 to 32.00	
Sewer pipe, 4-inch	10c. foot	
Sewer pipe, 6-inch	16c. foot	
Verandah post caps, 16 in.	1.45 each	
20 in.	1.75 "	
Chimney Caps, 1 flue in 1 piece	2.00 "	
2 flues in 2 pieces	3.50 "	
3 flues in 3 pieces	5.00 "	

Cement, Plaster, Stone, Etc.

Cement (bags extra)	\$1.80 bbl.	
	(1.55 in car lots)	
Sand, for cement or brick work	1.75 a yard	
Lime .....	.35 cwt.	
Hydrated Lime	10.00 ton	
Mortar color	black, 3; red, 1½	
Plaster of paris	\$1.50 to 2.50	
Crushed stone, 2 in.	1.40	
Crushed stone, 1 in.	1.45	
Crushed stone, ¾ in.	1.50	
Hardwall plaster	\$9.50 to 12.00 neat	
	4.50 sanded	
Gravel	1.80	
Hair (plaster) .....	.05 lb.	

PRICE AT WINNIPEG

Hemlock Lumber

2 x 4 in. to 2 x 12 in., 8 to 14 ft.....	\$29.00
2 x 4 in. to 2 x 12 in., 16 ft.....	29.00
2 x 4 in. to 2 x 12 in., 18 ft.....	29.00

Shingles, Lath Roofing, Etc.

XXX B. C. cedar shingles	\$4.00 & 3.50 per M
No. 1 pine lath	5.75 per M
Metal lath .....	.16 to .20
Roofing felt (2 ply)	2.50 per roll

Hardware

Nails, wire, common	\$3.00 per keg
Nails, cut, common	3.35
Sash weights, cast iron	2.75 cwt.
Tarred felt paper	1.00 per roll
Building paper .....	.90
Insulating paper	1.25

United Glass

Up 25	Single	Double
	\$4.75	6.50

Price at Winnipeg—Continued

	Single	Double
26-40	\$5.10	\$7.00
41-50	5.65	8.00
51-60	6.15	8.75
61-70	6.65	9.50
71-80	7.25	10.50
81-85		11.50
86-90		12.50
91-95		14.50
96-100		17.00
101-105		19.50
106-110		22.50

Brick, Tile, Terra Cotta, Sewer Pipe

No. 1 dry pressed red bricks	\$25.00 to 50.00
No. 1 dry pressed buff bricks	25.00 to 50.00
Red stock bricks	13.00
Sand Lime Brick	12.00
Porous terra cotta bricks	18.00 per M
No. 1 enamelled bricks, all colors, from	100.00
Fire brick	45.00
Oriental brick	35.00
Sewer pipe, 4-inch .....	.10½ per ft.
Sewer pipe, 6-inch .....	.16½ per ft.

Cement, Plaster, Stone, Etc.

Cement (bags extra)	\$2.50 per bbl.
Sand, for cement or brick work	1.75 a yard
Lime .....	.32 per bu.
Hydrated Lime	12.00 per ton
Mortar color .....	.05 per lb.
Plaster of paris	0.75 per bag
Crushed stone, 2 in.	2.50 per yard
Crushed stone, 1 in.	2.75
Crushed stone, ¾ in.	2.75
Hardwall plaster	12.00 per ton
Gravel	1.85 per yard
Hair (plaster)	1.25 per bale

PRICE AT VANCOUVER

Shingles, Lath Roofing, Etc.

XXX B. C. cedar shingles	\$2.20 & 2.10 per M
No. 1 pine lath	2.25 per M

Hardware

Nails, wire, common	\$3.25 per keg
Nails, cut, common	4.25
Tarred felt paper .....	.90 per roll
Building paper .....	.70

Brick, Tile, Terra Cotta, Sewer Pipe

No. 1 dry pressed red bricks	\$45.00 per M
No. 1 dry pressed buff bricks	45.00
Red stock bricks	13.00
Fire Brick	45.00
Sewer pipe, 4-inch .....	.14 per ft.

Cement, Plaster, Stone, Etc.

Cement (bags extra)	\$3.00 per bbl.
Lime	1.25 per bbl.
Hydrated Lime	4.25 per bbl.
Plaster of paris	4.50 per bbl.
Hardwall plaster	14.50 per ton
Hair (plaster)	14.50 per ton

NOTE TO READERS. We would be glad to have suggestions from readers as to the extension or modification of this list.

"Ideal" Concrete Machinery



"IDEAL" Hand Black Machine

Are You an "Ideal" Customer?

If not, climb on the band wagon. Thousands of satisfied users testify to the merits of IDEAL Machinery

*If you buy for RESULTS
buy WHERE THE QUALITY IS RIGHT*

The name "Ideal" on Concrete Machinery stands for years of experience, best materials, best workmanship, and guarantees you service and satisfaction.

The "Ideal" Line

- Block Machines, Brick Machines
- Automatic Tampers
- Power Drain Tile Machines
- Dimension Stone, Curb Stone, and Roofing Tile Machines
- Ornamental Moulds, Sewer Pipe Fence Post, Sill and Cap, and Burial Vault Moulds
- Batch and Continuous Mixers
- Rotary Gravel Screens
- Hoisting Machines
- Gasoline Engines, Derricks
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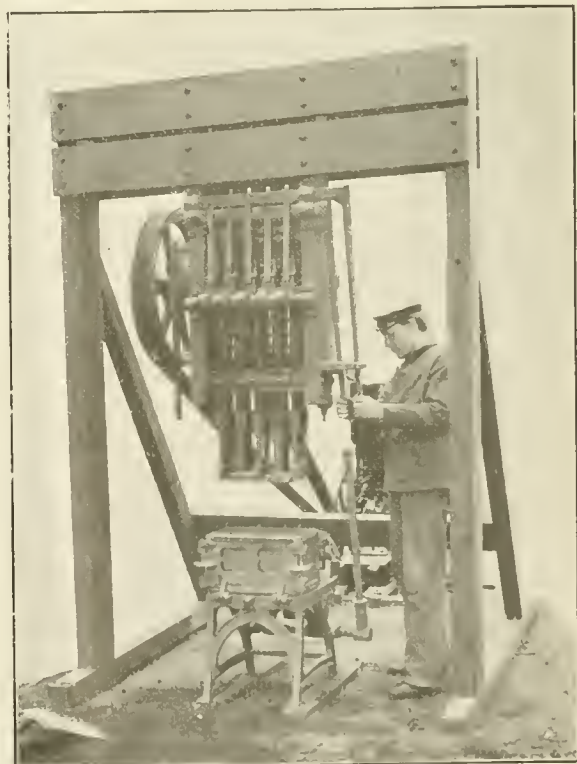
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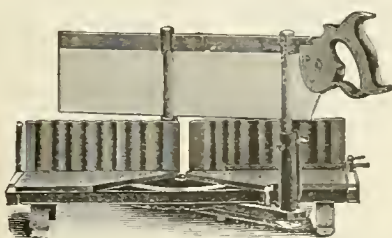


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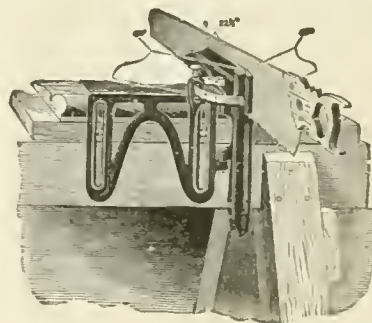
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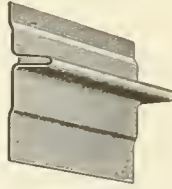
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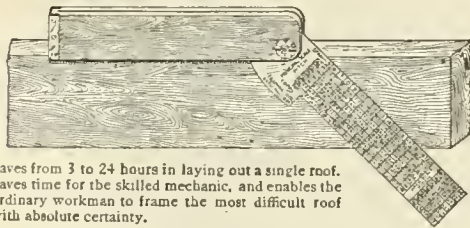
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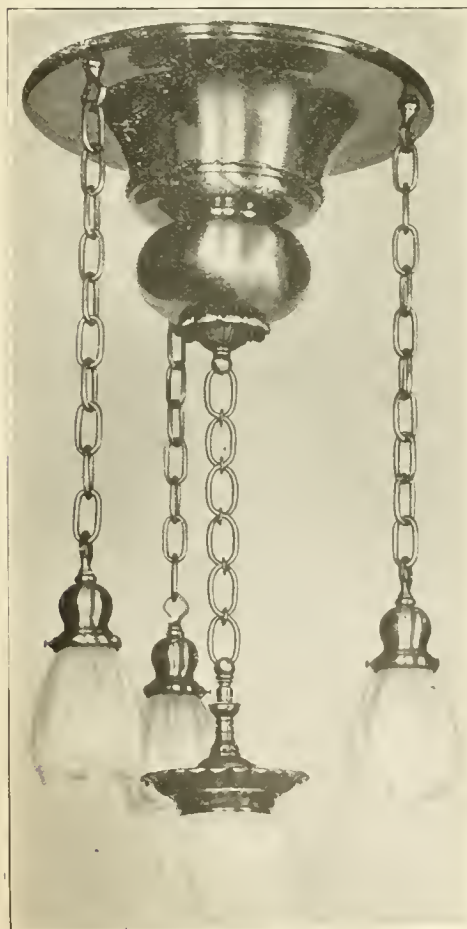
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Stuart Machinery Co., Ltd., Winnipeg.
- Roofing**
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Patterson Mfg. Co., Limited, Toronto.
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Ideal Concrete Machinery Co., London.
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Walkerville Roofing Mfg. Co., Walkerville, Ont.
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Braid & McCurdy, Winnipeg, Man.
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Braid & McCurdy, Winnipeg, Man.
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Georgian Bay Shook Mills, Midland.
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- Sidewalk Prisms**
Consolidated Plate Glass Co., Toronto.
- Sidewalk Tools**
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 Ideal Concrete Machinery Co., London.
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 London Concrete Machinery Co., London, Ont.
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 Standard Ideal Co., Port Hope, Ont.
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 Duncan Electrical Co., Montreal.
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 Consumers' Gas Co., Toronto.
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 Braid & McCurdy, Winnipeg, Man.
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 Metal Shingle & Siding Co., Preston.
Slate Cutting Machinery
 U. S. Standard Mfg. Co., Ashland, O.
Spanish Roofing Tile Machines
 Ideal Concrete Machinery Co., London.
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 Batts, Limited, Toronto.
 Georgian Bay Shook Mills, Midland.
 The R. Laidlaw Co., Limited, Toronto.
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 Dennis Wire & Iron Work Co., London.
 Dominion Ornamental Iron Co., Ltd., Toronto.
 George B. Meadows, Toronto.
Stairways
 Batts, Limited, Toronto.
 Georgian Bay Shook Mills, Midland.
 The Bryan Mfg. Co., Collingwood, Ont.
Staples
 Cowan & Britton, Limited, Gananoque, Ontario.
Stanchions
 Metal Shingle & Siding Co., Preston.
Steel Buildings and Garages
 Metal Shingle & Siding Co., Preston.
Steam Room Brick and Block Cars
 C. S. Wert, Kendallville, Ind.
Steam Engines
 The Stuart Machinery Co., Winnipeg.
 Wettlaufer Bros., Toronto, Ont.
Steam Shovels
 Stuart Machinery Co., Ltd., Winnipeg.
Stone (Crushed)
 Ontario Lime Association, Toronto.
 Sand & Supplies, Toronto.
Stone Crushers
 Stuart Machinery Co., Ltd., Winnipeg.
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 Consolidated Plate Glass Co., Toronto.
Store Fronts
 Braid & McCurdy, Winnipeg, Man.

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 Cowan & Britton, Limited, Gananoque, Ontario.
Storm Sash
 Batts, Limited, Toronto.
 Georgian Bay Shook Mills, Midland.
 The R. Laidlaw Co., Limited, Toronto.
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 Batts, Limited, Toronto.
 Metal Shingle & Siding Co., Preston.
 The R. Laidlaw Co., Limited, Toronto.
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 Metal Shingle & Siding Co., Preston.
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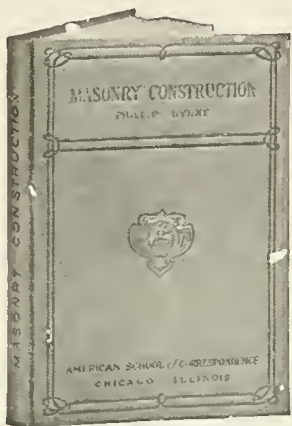
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Index to Advertisements

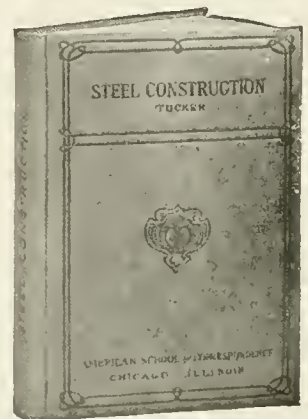
A	
Aikenhead Hardware Co.	12
Alabastine Hard Mortar Co.	15
Asbestos Manufacturing Co., Ltd., Montreal ..	15
B	
Batts, Limited	20-21
Belleville Hardware	13
Benson & Bray	6, 7, 8, 9
C	
Canada Cement Co.	26
Canadian H. W. Johns-Manville Co.	51
Clare Bros.	25
Clarence W. Noble Co.	66
Crown Gypsum Co.	<i>o.f.c.</i>
Consolidated Plate Glass Co.	10
Consumers' Gas Company	63
D	
Davis Acetylene Company	18
Dennis Wire & Iron Works Co.	12
Detroit Showcase Co.	51
Dietzgen, Eugene & Co.	61
Disston & Sons, Henry	11
Dominion Ornamental Iron Co.	11
Double Claw Hammer Co.	10
E	
Eberhard Wood Mfg., Company	13
Elite Mfg. Co.	54
Elliot Woodworker Co., W. A.	22-23
Eureka Machine Co.	55
F	
Fox Supply Co.	12, 15, 25
G	
Georgian Bay Shook Mills Ltd.	<i>i.f.c.</i> 3
Goodell Mfg. Co.	61
H	
Hall & Holmes	57
Hanwood, P. L.	11
Hutchinson Woodworker Co.	5
Huther Bros.	61
I	
Ideal Concrete Machinery Co.	59
International Correspondence School	13
K	
Kepplinger, G. J., Dwight, Ill.	63
L	
London Concrete Machinery Co.	57
Laidlaw, R., Lumber Co.	61
M	
MacKenzie, Milne & Co.	25
Meadows, Geo. B.	16
N	
National Securities	63
O	
Ontario Lime Company	16
Ormsby Co., A. B.	19
Oshkosh Manufacturing Co.	10
P	
Parks Ball Bearing Mach. Co.	11
Patent Selling & Mfg. Agency	21
Peace Co., William, Limited.	63
Powderpaint Co.	65
Powell Lumber & Door Co.	61
Q	
Queen City Glass Co.	61
R	
Richardson, J. E.	61
Robertson, P. L. Mfg. Co.	12
Russill Hardware Co.	65
S	
Sheet Metal & Siding Co.	19
Smith Hardware Co.	61
Soss Invisible Hinge Co., Limited	10
Stanley Lightfoot	24
Stewart Mfg. Co., James	18
Stuart Machinery Co.	4
Sun Brick Co.	14
T	
Thornhill Co., W. H.	25
Topp G. A. & Co.	63
Toronto Plate Glass Importing Co.	11
U	
Unique Mfg. Co.	4
U.S. Standard Manufacturing Co.	53
V	
Van Duzen & Roys Co.	54
Van Guilder Hollow Wall Co., The	17
W	
Walker Hardware Co., James	15
Walkerville Roofing Co.	17
Wettlanfer Bros.	<i>o.b.c.</i>

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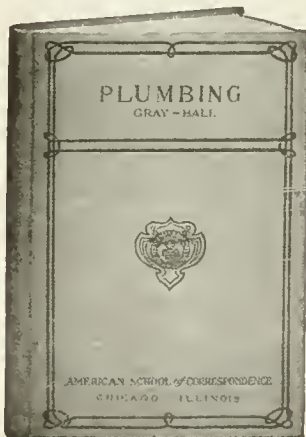
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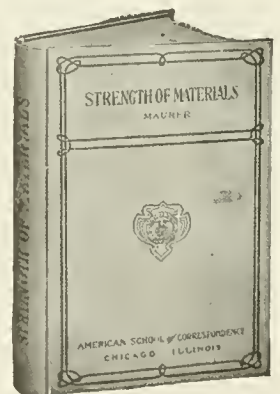
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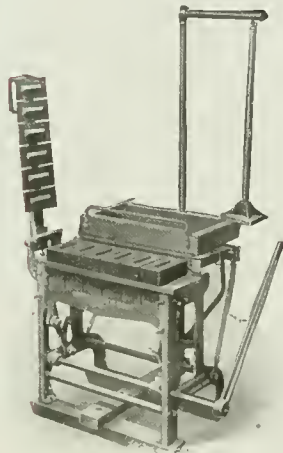
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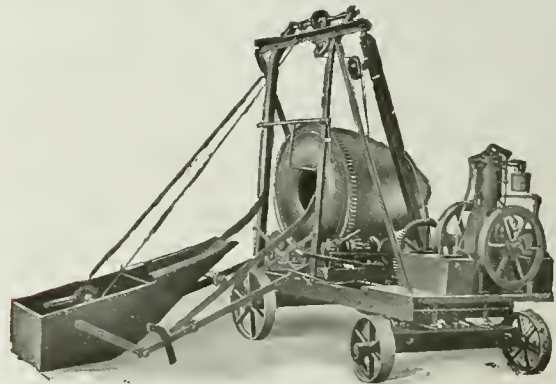
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