

The Canadian Builder and Carpenter

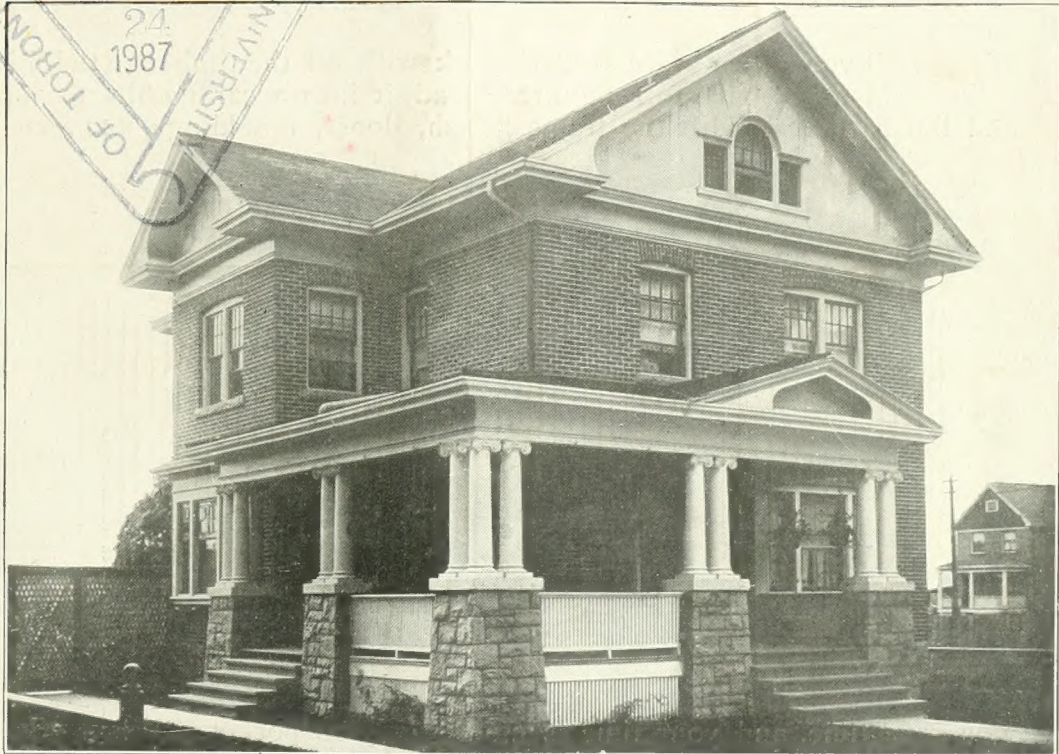
PUBLISHED ONCE A MONTH BY THE COMMERCIAL PUBLISHING COMPANY, LIMITED, TORONTO

W. Brayton
183 Davenport Rd.
Toronto Ont.

v.4 #10

LIBRARY
AUG
24
1987
UNIVERSITY OF TORONTO

A St. Catharines Residence. Plans and description of this house will appear in an early issue of The Canadian Builder and Carpenter.



PLANS In this issue appear a large number of plans of houses from different parts of Canada as follows:

- Peterborough—Detached Brick House, two storeys and attic.
- Regina—New Police Station.
- Toronto—Semi-detached Brick House, two storeys and attic.
- Oshawa—Semi-detached Brick Veneer House.

- St. Catharines—Detached Frame House 24 x 28 feet.
- Farm House—Cost if Wood \$3000, if Brick \$3500.
- Montreal West—Brick House with fireproof shingles.

Plans of several Vancouver and Calgary houses will appear in early issues.

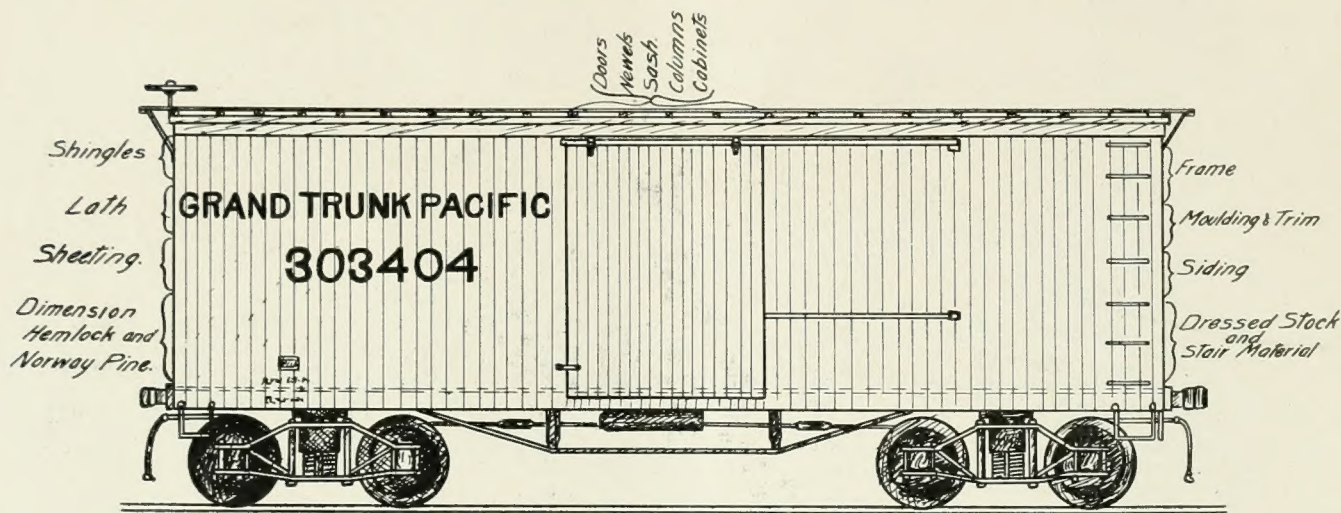
Midland Planing Mill Products

The Leading Stock Lines

Mixed Cars

We handle all the different kinds of wood materials used in building houses and manufacture the most of the raw materials right from the tree at our sawmill at Thunder Bay.

We can fill your order right out of stock with all the timbers, studding, sheeting, siding and other bill stuff required, load it into a car within a couple of days, and finish the car with the frames, sash, doors, mouldings, etc., etc.



You save time, and your time is money in your pocket. When you get the car, you are ready to rush the job, and a quick job always makes money.

Send your lists for quotations, f.o.b. your station.

N.B.—War Discounts are now in effect

Georgian Bay Shook Mills, Limited

MANUFACTURERS FROM THE TREE TO THE FINISHED PRODUCT

Midland, Ontario

Midland Planing Mill Products

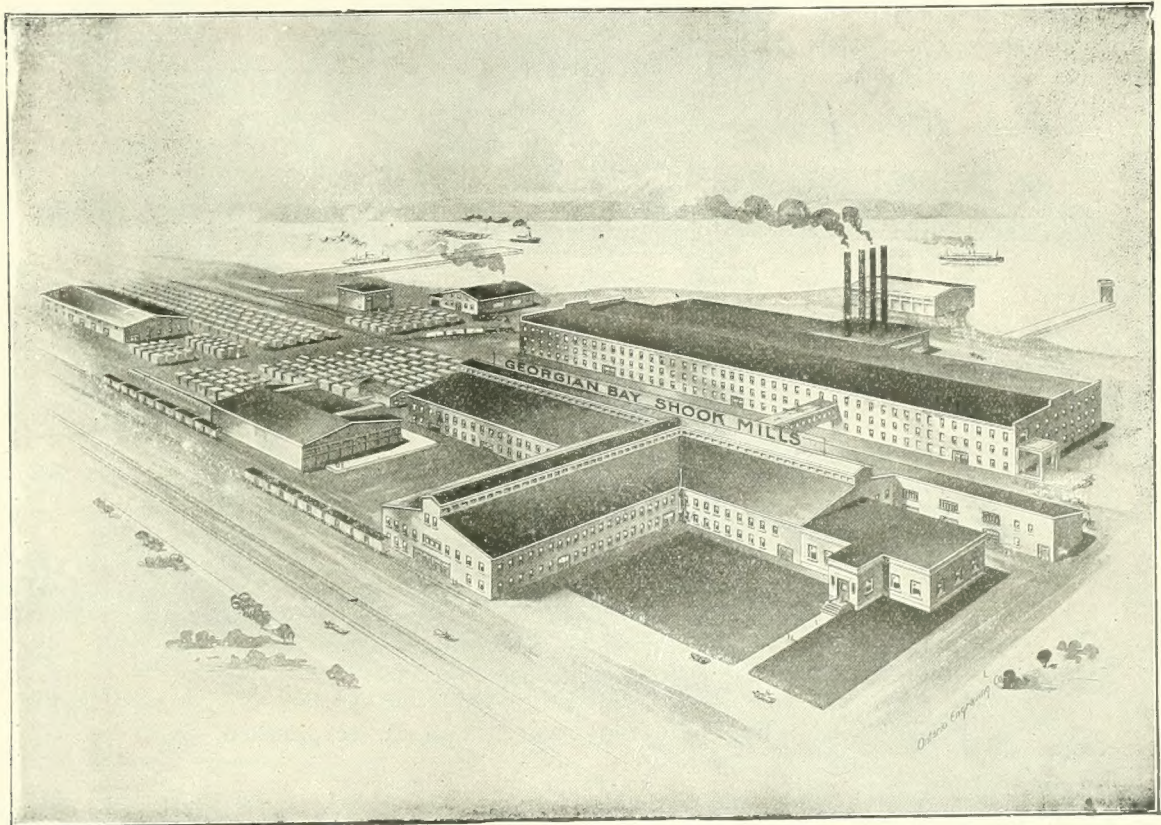
The Leading Stock Lines

War Announcement

The Field covered by this firm extends over the whole of Canada, and especially the provinces north and east of the Great Lakes.

On account of the War, building operations are being restricted, and many Planing Mills, supplying only Local Trade will find it hard to obtain sufficient orders to warrant running their plant.

To enable such as these to retain their trade during the War Times, the Georgian Bay Shook Mills, Limited, offers special facilities and inducements.



The Largest Plant in Canada, Manufacturing Planing Mill Products (Located in the Heart of Canadian Lumbering District)

Carrying at all times large stocks of lumber of all kinds, and manufacturing every kind of Millwork, we are able to supply all wants, and make prompt shipments. There is no job too large or too small for us to handle.

Send for our Catalog with Special War Discounts

Georgian Bay Shook Mills, Limited

MANUFACTURERS FROM THE TREE TO THE FINISHED PRODUCT

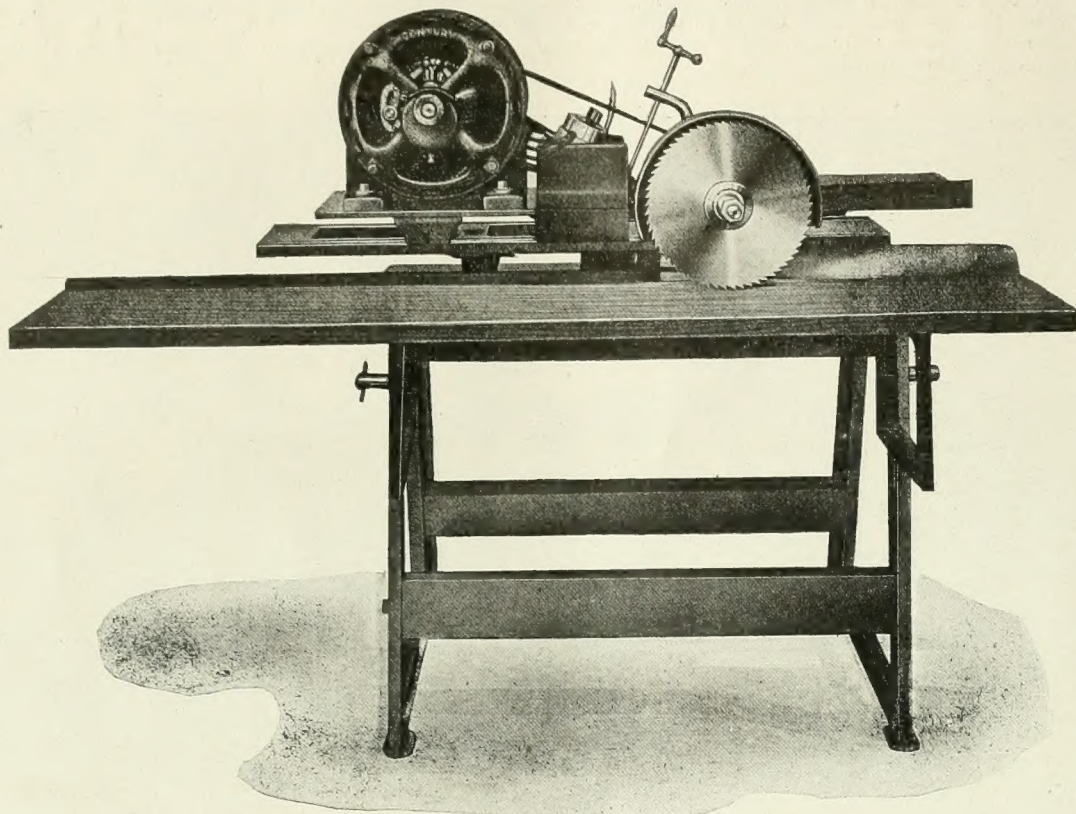
Midland, Ontario

500 CANADIAN CONTRACTORS AND BUILDERS USE AND RECOMMEND THE "ELLIOT"

How Long Will YOU Do Without This Labor-Saving Machine

EVERY BUILDER knows that price is one of the greatest influences in awarding Contracts. You cannot get your price down and keep up the standard of your work unless you have the best machinery to work with.

The Elliott Woodworker will prove a money maker for you just the same as it has done for hundreds of others.



The Elliott Woodworker. Patented 1910. Other patents applied for.

An outstanding feature of the Elliot is the overhanging slide, which can be set to any mitre. In housing out stair strings the slide is set to the top tread line instantly—no trying required.

Note that this machine runs on slides with no lateral play, making a precision tool with which the finest mitering can be done. The Elliot Woodworker is just as suitable for heavy as for light work and a great many are in use cutting 3 and 4 inches thick, for all kinds of heavy work on buildings such as 3 in. Georgia Pine flooring, concrete form work, wedges, etc.

Where necessary and heavy work is required, we can equip with a 2½ H. P. 3 phase Motor so that work up to 6 inches thick can be handled.

There are fifty Elliot Woodworkers to one of any other make sold to Carpenters and Builders. There is a reason for it.

Beware of cheap imitations.

Send for free Catalogue, Prices and Terms

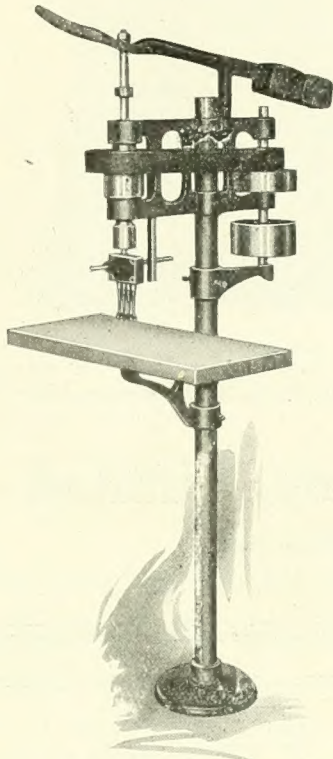
The Elliot Woodworker, Limited

College and Bathurst Streets

Toronto, Can.

YOU CAN SAVE MONEY ON EVERY JOB BY
USING ELLIOT WOODWORKING MACHINES

The New Elliot Boring Machine



Elliot Boring Machine

is meeting with great success and many orders are coming in for them.

Its lightness, compactness and portability coupled with its low price make it very popular.

It bores all the holes for Grand Rapids or Common sense Bit with one operation.

Used in the shop it is especially valuable for high speed boring, takes up little space, and will do the work of much more expensive machines.

It can be run as a high speed iron drill and will drill up to $\frac{5}{8}$ " holes.

The illustration shows hand lever machine but we equip with foot lever allowing both hands to be used in its operation.

It can be run from Elliot Woodworker motor, or any line shaft, or we will supply special shafting for underneath drive, etc.

Carpenters, Builders and Factory Superintendents investigate this.

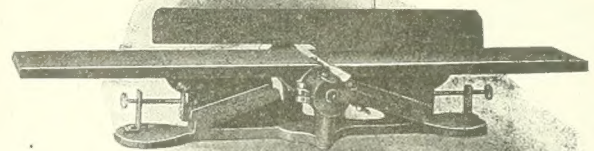
"Elliot" 6in. Jointer

This 6" Jointer can be run from the Elliot Woodworker on the job, and will be found very useful for edging up stock, mitering bay windows hang style and casing, water table or any other work required.

It is also a splendid machine for the bench room for carpenters, builders and cabinet makers.

All jointing and fitting can be done without running to the other machines.

It can be run from Elliot Woodworker motor or independent motor and attached to ordinary light circuit.



Write for free Catalogue, Prices and Terms

The Elliot Woodworker, Limited

College and Bathurst Streets

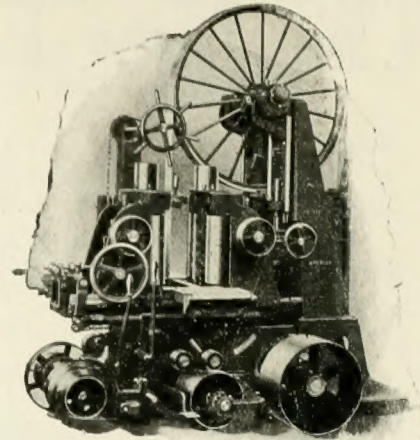
Toronto, Can.

American No. 111-54" Band Re-Saw

THIS new **Ball-Bearing Band Re-Saw** is built of first grade materials and the workmanship is guaranteed. Especially adapted for Planing Mills, Furniture and Box Factories, working in either hard or soft wood. All adjustments are within easy reach of the operator. No gears, levers, bearings or shifters inside of the frame.

Capacity. Works material 30" vertically using extended rolls, and from 1/8" to 20" horizontally, will centre split a 16" timber if properly supported, and cut a veneer from 12" stock. The Machine without extended rolls will take thin stock 22" wide.

Send For Folder With Full Details



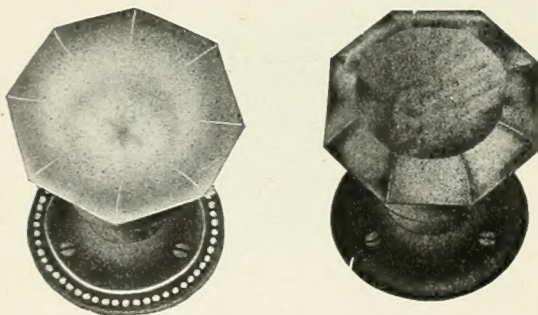
See article in this issue for additional details of this machine

The Stuart Machinery Company, Limited

764 Main Street

Winnipeg

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

Hardwood Flooring and Hardwood Interior Finish

"WILSON BROS. LIMITED" on flooring means a carefully kiln-dried and well manufactured article. Our flooring is straightened, hollow-backed, bored, end-matched, steel polished and bundled.

We specialize in Veneered Doors to detail, also all kinds of Hardwood Interior Finish.

Write and send list and details for Quotations

Wilson Bros. Limited

Collingwood, Ontario

The York Lumber Co., Limited

Head Office: 1000 Gerrard Street East, Toronto

Bargains Doors Bargains

Broken lines and discontinued styles of Doors

Six Cross Flat Panels

| | |
|-------------------------------------|--------|
| 1 1/8" Thick, Mill Run Grade | |
| 70 Doors 2'4" x 6'6" | \$1.35 |
| 38 Doors 2'6" x 6'6" | 1.35 |
| 13 Doors 2'2" x 6'6" | 1.35 |
| 28 Doors 2'8" x 6'8" | 1.35 |
| 1 3/4" Thick, No. 3 Grade | |
| 40 Doors 2'8" x 6'8" | \$2.25 |
| 12 Doors 2'6" x 6'6" | 2.05 |
| 17 Doors 2'10" x 6'10" | 2.40 |
| 1 3/4" Thick, No. 2 Grade | |
| 10 Doors 2'10" x 6'10" | \$3.05 |
| 1 Door 2'6" x 6'6" | 2.40 |

Six Cross Panels Bead and Butt

| | |
|----------------------------------|--------|
| 1 3/4" Thick, No. 3 Grade | |
| 33 Doors 2'10" x 6'10" | \$2.93 |
| 1 Door 2'8" x 6'10" | 2.93 |
| 1 3/4" Thick, No. 2 Grade | |
| 3 Doors 2'6" x 6'6" | \$3.00 |
| 8 Doors 2'10" x 6'10" | 3.49 |
| 1 3/8" Thick, No. 3 Grade | |
| 27 Doors 2'10" x 6'10" | \$2.30 |
| 1 3/8" Thick, No. 2 Grade | |
| 45 Doors 2'10" x 6'10" | \$2.50 |
| 7 Doors 2'6" x 6'6" | 2.17 |

Doors Prepared for Glass

| | |
|---|--------|
| BEAD AND BUTT | |
| 1 3/8" Thick, No. 2 Grade | |
| 15 Doors 2'8" x 6'8" Gl. Size 23 3/4 x 31 1/2 | \$2.25 |
| 2 Doors 2'6" x 6'6" Gl. Size 21 3/4 x 31 3/4 | 2.00 |
| 1 3/4" Thick, No. 3 Grade | |
| 10 Doors 2'10" x 6'10" Gl. Size 25 3/4 x 32 3/4 | \$3.23 |
| 16 Doors 2'6" x 6'6" Gl. Size 21 3/4 x 30 3/4 | 2.68 |
| 17 Doors 2'8" x 6'8" Gl. Size 23 3/4 x 31 3/4 | 2.98 |
| 1 3/4" Thick, No. 2 Grade | |
| 6 Doors 2'8" x 6'8" Gl. Size 23 3/4 x 31 3/4 | \$3.43 |
| 9 Doors 2'10" x 6'10" 9 small lights | 4.00 |
| 2 Doors 2'8" x 6'8" 9 small lights | 3.75 |
| 12 Doors 2'10" x 6'10" Gl. Size 25 3/4 x 32 3/4 | 3.60 |

Vestibule Doors, Flat Panels

| | |
|--|--------|
| 1 3/8" Thick, No. 2 Grade | |
| 22 Doors 2'6" x 6'6" Gl. Size 21 3/4 x 30 3/4 | \$1.87 |
| 4 Doors 2'6" x 6'8" Gl. Size 21 3/4 x 31 3/4 | 1.91 |
| 22 Doors 2'8" x 6'10" Gl. Size 23 3/4 x 32 3/4 | 1.90 |
| 120 Doors 2'10" x 6'10" Gl. Size 25 3/4 x 32 3/4 | 2.19 |
| 1 3/8" Thick, No. 3 Grade | |
| 1 Door 2'4" x 6'10" Gl. Size 19 3/4 x 32 3/4 | \$1.65 |
| 18 Doors 2'6" x 6'6" Gl. Size 21 3/4 x 30 3/4 | 1.77 |
| 29 Doors 2'8" x 6'8" Gl. Size 23 3/4 x 31 3/4 | 1.87 |
| 1 3/4" Thick, No. 2 Grade | |
| 1 Door 2'10" x 6'8" Gl. Size 25 3/4 x 31 3/4 | \$2.25 |
| 1 3/4" Thick, No. 3 Grade | |
| 21 Doors 2'6" x 6'6" Gl. Size 21 3/4 x 30 3/4 | \$2.20 |

Front Doors

| | |
|---|--------|
| 18 Doors 2'10" x 6'10"-1 3/4, 1 xp. No. 1 grade, raised mould 1 S, oval glass, 21 5/8 x 51 | \$4.00 |
| 4 Doors 2'10" x 6'10"-1 3/4, 3 Vert. raised panels, No. 2 grade, 9 lights, 8 1/4 x 6 5/8 | 5.25 |
| 22 Doors 2'10" x 6'10"-1 3/4, 3 Vert. raised panels, No. 2 grade, 1 light, 25 3/4 x 24 | 4.50 |
| 2 Doors 2'8" x 6'8"-1 3/4, 2 xp., raised mould 1 S, No. 1 grade, 1 light, 22 3/4 x 42 1/2 | 4.00 |
| 6 Doors 2'10" x 6'10"-1 3/4, 3 Vert. panels, raised mould 1 S, No. 1 grade, 9 lights, 8 1/4 x 6 5/8 | 5.50 |
| 3 Doors 2'8" x 6'8"-1 3/4, 3 cross raised panels, No. 3 grade, 1 light, 23 3/4 x 31 3/4 | 2.75 |
| 1 Door 2'8" x 6'8"-1 3/4, 2 cross panels, raised mould 1 S, No. 1 grade, oval glass, 1 light, 20 3/8 x 40 | 4.40 |
| 2 Doors 2'10" x 6'10"-1 3/4, 3 cross raised panels, No. 3 grade, 1 light, 25 3/4 x 33 3/8 | 2.90 |
| 2 Doors 3'0" x 7'0"-1 3/4, 3 Vert. raised panels, No. 2 grade, 1 light, 27 5/8 x 24 | 4.50 |
| 9 Doors 2'10" x 6'10"-1 3/4, 1 cross panel, raised mould 1 S, No. 1 grade, 1 light, 25 5/8 x 55 | 4.00 |

What Our No. 2 Grade is:

Our No. 2 grade is the highest grade of Interior Pine doors we carry in stock. All our No. 1 Pine door lumber goes into the manufacture of these doors.

Our semi-hardwood Fir doors (No. 1 quality) are made with clear vertical grain rails and stiles with Georgia Pine panels, which harmonizes perfectly in natural or stain finish with Georgia Pine, cypress and other coarse or fine grain woods, and is equally good for paint. The Georgia Pine panels show the most beautiful figure and contrast with the vertical grain stiles and rails like a picture in a frame.

Get Our Latest Illustrated Catalogue



Residence of J. R. Reid, Winnipeg, Man.
Keystone Hair Insulator used.

KEYSTONE Hair Insulator

**Contributes to Your Clients'
Comfort, Health and Quiet**

Keystone is nature's own insulator against heat and cold. Keeps buildings cooler in summer, warmer in winter.

Cuts down coal bills; keeps out dampness and deadens sound; is odorless and vermin-proof; prevents condensation in metal roofs; does not settle, pack down, or decay; and lasts as long as the building.

Consists of a thick felt of chemically-treated cattle hair stitched between layers of heavy, non-porous building paper. This construction gives greatest insulating efficiency, as it confines many times the amount of "dead air" contained in ordinary sheathing paper.

Write our nearest Branch for Sample and Booklet

**The Canadian
H. W. Johns-Manville Co., Ltd.**

Toronto Montreal Winnipeg Vancouver



2487 A



This building is equipped
with Athey Weather
Strip.

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:

- ☐ 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

The Easiest Way to Cut Through a Floor

Disston D 19 Flooring Saw



The old method of boring holes and chiseling when it was necessary to cut out sections in floors, partitions or ceilings was time-consuming and troublesome.

This work can now be done quicker and easier by the use of our new D 19 Flooring Saw, especially designed for the purpose. Not only is the work done rapidly and with less trouble, but sections cut out with it can be replaced in the original position if desired.

This saw has an adjustable cherry handle, carved and polished, which permits blade to be set in various positions. The blade itself is reversible and interchangeable. It is held firmly in place by patent bolt and ratchet.

Special attention is called to the reversible feature of the blade. In this way either the straight or curved edge of the blade, both of which are toothed, can be used to the best advantage. Size 16, 18 and 20 inches.

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

Notice to Readers

Have you put up what you consider an attractive house recently?

You will have drawings or blue prints, bills of materials and specifications.

Why not send them to us for publication in The Canadian Builder. The advertising you would get as a result would make it well worth your while.

The Commercial Press, Limited
Toronto

B.B.L. High Grade Planing Mill Products

We will shortly have ready our new and up-to-date

Moulding and Sash Catalog

It will contain full size illustrations of all our mouldings. A great variety of new and desirable effects are included, many of which are shown for the first time.

OUR PLANT IS ESPECIALLY
EQUIPPED TO MANUFACTURE

HIGHEST GRADE GOODS AT THE
LOWEST COST

Send in your bills of **Mouldings**
and **Trim** and we will give you
figures consistent with the grade you
require. Our delivery of this class of
goods is immediate.

BENSON & BRAY, Limited
Midland, Ontario

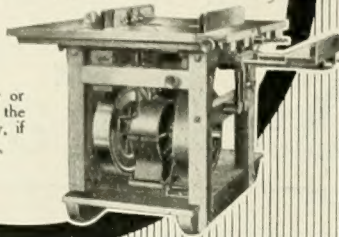
Some Facts You Should Know



We should like to send you a number of interesting—and exceedingly stubborn—facts about the Quality, Performance and Popularity of

OSHKOSH EVEREADY Portable Saw Rigs

These facts are valuable to Contractors who want to save—and make—more money. We have put them in book form and will be glad to send them to you—Free—for your name and address. It will pay you to send for the Oshkosh Book. A letter or postal will do; or use the Coupon below, if you prefer.



This Coupon Brings the Facts

OSHKOSH MFG. CO., 520 S. Main St., Oshkosh, Wis.
Please send free—without obligation to me—The Oshkosh Book of Facts.

Name

Address

New Ventilation System

THIS ventilator will provide a perfect ventilation in any room where it is installed, no matter how large it is, without by any means affecting the temperature. Its operation is so simple that a child can operate it.

The invention has already been submitted to experts in hygiene, and has been approved and highly recommended for public institutions, schools, hospitals and private houses.

*A letter or postal will
bring you full particulars*

Joseph P. Marois

921 St. Andre St. - Montreal

GLASS

*All Kinds of Glass
for Building Purposes*

Plate, Window, Figured
Ornamental
Bent and Mirror Glass

**The Consolidated Plate Glass Co.
of Canada, Limited**

TORONTO MONTREAL WINNIPEG

Are Your Friends

Getting

**The Canadian Builder
and Carpenter**

You can do them a good turn by introducing the paper to them, and at the same time make 50 cents on each subscription you secure for us.

Collect a dollar from each one who subscribes, and send name and address together with 50 cents, keeping the other 50 cents for your trouble.

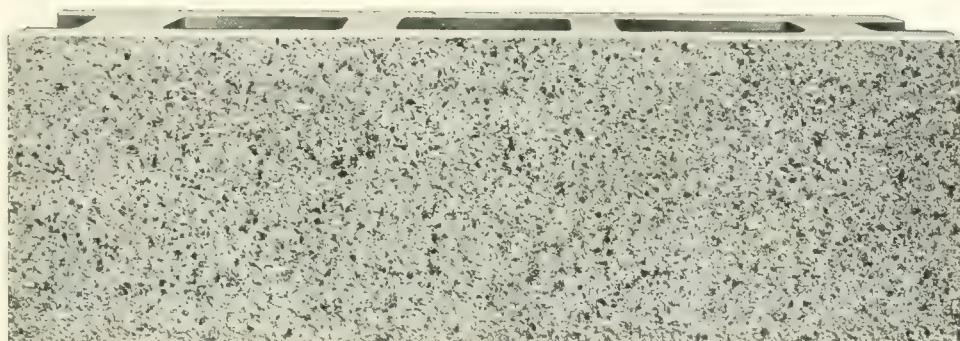
The Commercial Press Limited

32 Colborne St. Toronto

MOLDS FOR CASTING

Water Proof Hollow Cement Building Blocks

With Granite Faces



8 x 8 x 24 inch Granite Smooth Faced Block

They cost less

They sell for more

You sell more of them

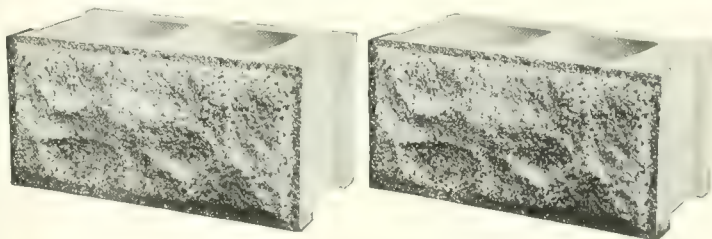
By a new process, which protects the facing, while the block is being cast, we eliminate all traces of cement from the face of block, and nothing but the GENUINE GRANITE SHOWS IN ALL ITS SPARKLING BEAUTY.



Enlarged View of Granite Smooth Facing

These cuts show blocks just as they came from the molds; they are not treated with acid or scrubbed with brush, or sprayed.

We challenge the whole world to show us a cement block made by any other system, at any cost, that equals these blocks for beauty, strength, quality or imperviousness to heat, cold, or moisture.



8 x 8 x 16 inch Granite Rock Faced Block

Send us fifty cents and we will send, freight prepaid, to any point in Canada, one of our granite-faced blocks. **YOU WILL SAY WHEN YOU GET IT THAT YOU NEVER SAW A CEMENT BLOCK BEFORE.**

They are positively cheaper to make than the ordinary dry-tamp, sand-faced block.

MR. BLOCK MAKER:—

What show will you have if your competitor secures the exclusive right for this system in your city?

MR. CONTRACTOR:—

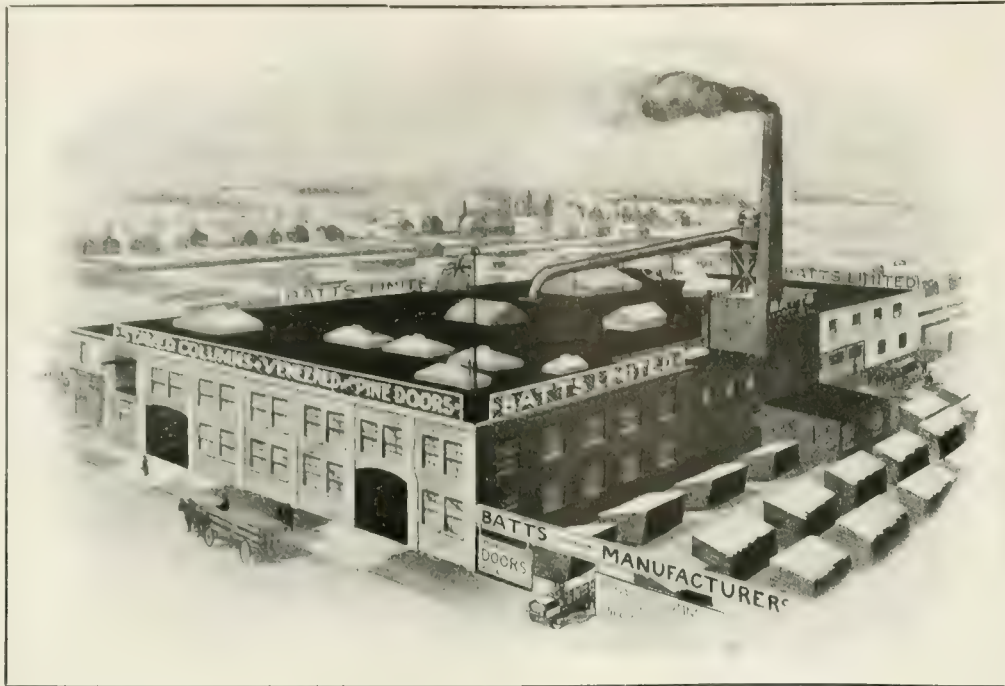
Get into a business that is protected. Then you will make money.

Send for catalog fully describing our system and showing our multiple molds mounted on trucks, for casting hollow cement building blocks.

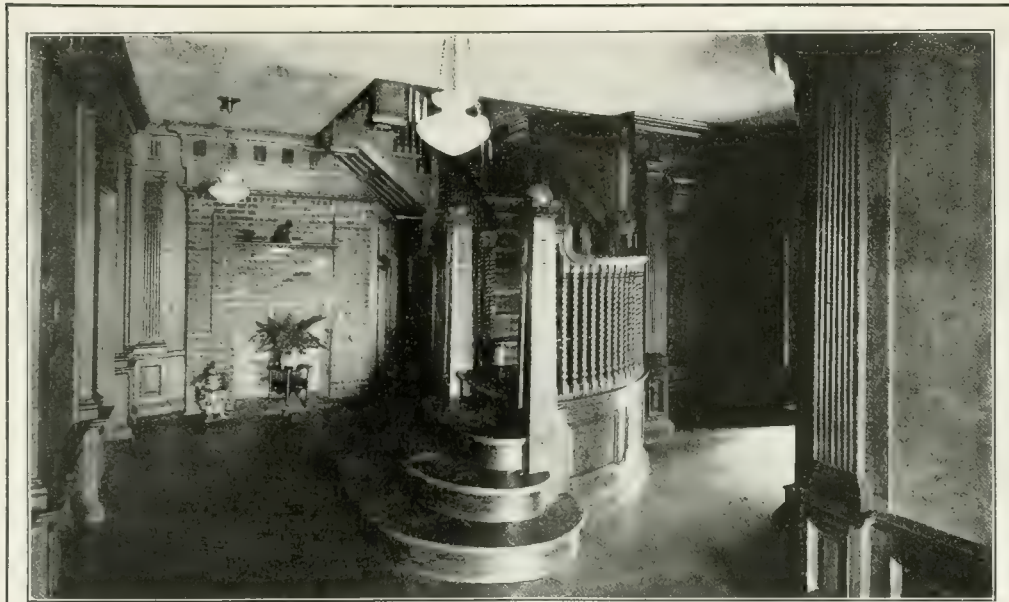
Canadian Zagelmeyer Co., Limited

302 Howard Ave., Windsor, Ontario

W. B. BATT
BATTS LIMITED
 TORONTO



We carry in stock a large assortment of Pine and Veneered Doors, Columns, Newels and Turned Balusters.
 Let us figure with you on your Sash, Trim, Stair Material and Panelling.



Hall of Dr Risk's Residence, Alexander Boulevard, for which we supplied all the interior woodwork.

Write for Catalogue, showing cuts of varied assortment of goods that we carry in stock, all of which are manufactured at our own factory.

Detail Work a Specialty

**385-387
 Pacific Ave**

BATTS LIMITED

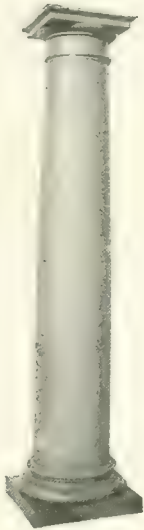
**West
 Toronto**



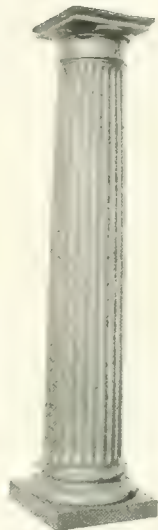
BATTS' STAVED COLUMNS



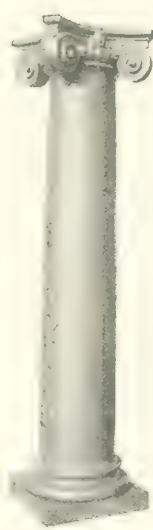
Design B.L. No. 1



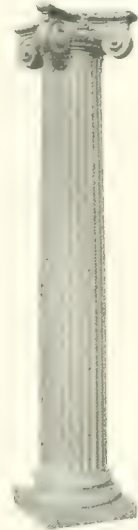
Design B.L. No. 2



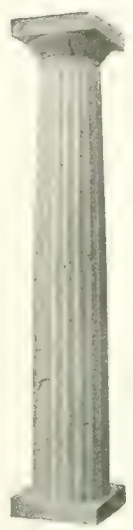
Design B.L. No. 3



Design B.L. No. 4

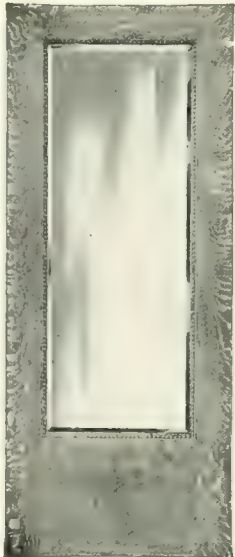


Design B.L. No. 5

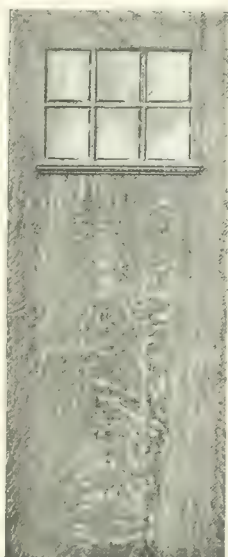


Design B.L. No. 6

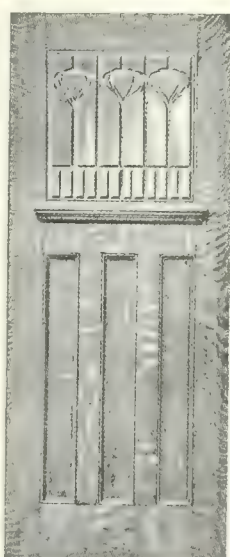
OUR FACILITIES FOR THE EXECUTION OF ORDERS FOR DOORS AND COLUMNS TO SPECIAL DESIGN ARE SUCH THAT WE CAN SATISFACTORILY MEET ANY REQUIREMENT



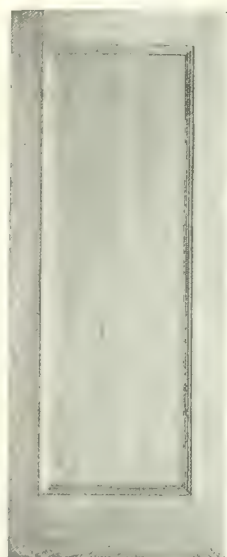
B.L. No. 306, 1/2-Cut Oak



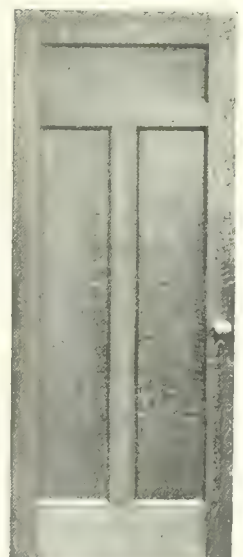
B.L. No. 312, 1/2-Cut Oak



B.L. No. 314, 1/2-Cut Oak



B.L. No. 316, 1/2-Cut Oak



B.L. No. 319, 1/2-Cut Oak

We Specialize on Work from Architect's Plans and Details

385-387
Pacific Ave

BATTS LIMITED

West
Toronto

Get
this
book

Ornamental
Iron and
Bronze



THE DENNIS WIRE AND
IRON WORKS CO. LIMITED
LONDON, ONTARIO, CANADA

THIS book contains much information with illustrations regarding many kinds of ornamental iron and bronze.

Gladly sent to those interested
FREE OF CHARGE.

THE DENNIS WIRE AND IRON
WORKS CO. LIMITED

LONDON
CANADA



THE
"Leader"
Floor-Scraper

With all the modern features that appeal to the up-to-date Carpenter and Builder. A practical and efficient tool, designed to get the best results with least labor. Extra heavy and properly balanced.

Points to Consider

The "Leader" Floor Scraper was designed to meet the requirements under all conditions, and is known as the efficient, economical and practical floor scraper.

The points to consider are the weight of machine, how it is balanced, how easy it is to adjust, how simple the construction, and the grade of steel used in the knife.

The "Leader" Floor Scraper weighs 135 lbs. It is balanced so as to throw the entire weight onto the blade by raising the handle slightly. The adjustable handle can be placed in the different positions by loosening one bolt.

The wheels are flush with the body of the machine. Nothing to prevent working close to the wall and into the corners.

The heavy rubber tire makes it easy running and noiseless.

The blades are made by the Disston Saw Co. Steel selected for this purpose. Two blades with the machine.

Made by

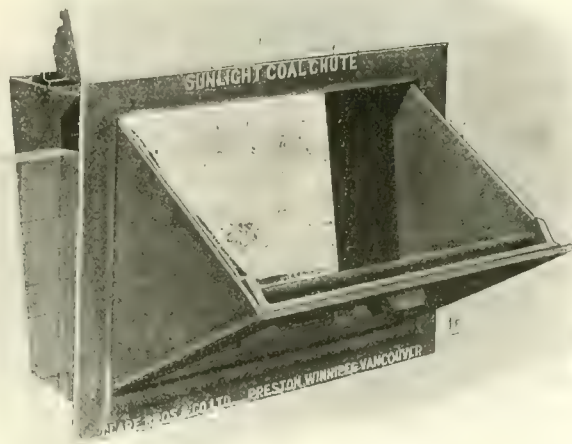
The Exeter Manufacturing
Company, Limited

Exeter - Ontario

Our Builder's Line

Floor Scrapers, Floor Brushes, Soot Doors, Ventilator Crates, School and Church Bells, Screw Jacks, Sash Weights, Cement-Block and Brick Machines, Ornamental Cresting.

You should have our prices



The Window Chute

is no longer a luxury but a recognized necessity in every up-to-date building.

Open—It's a chute through which fuel can be put into the basement with ease and convenience.

Closed—It's a window that locks automatically and can be opened only from the inside.

A Basement Window used for taking in fuel must be continually repainted, repaired and reg'azed.

A Window Chute needs no repairs and is always neat and clean.

Prices sent on request.

Clare Bros. & Co., Limited :: PRESTON ONTARIO

Manufacturers of HECLA FURNACES, PENINSULAR RANGES

CLARE & BROCKEST, Limited, Winnipeg
REYNOLDS & JACKSON, Calgary

RACE, HUNT & GIDDY, Edmonton
J. M. KAINS & CO., Vancouver

The Canadian Builder

¶ If you sell equipment or supplies to Builders, Carpenters or Contractors (not engineering), you will find The Canadian Builder an exceptionally efficient advertising medium.

Send for Complete Information and Rates

The Commercial Press, Limited Toronto, Ont.

Herringbone and Acorn Galvanized Wall Ties

THE form of these two ties gives them the largest bonding surface possible as they grip the mortar on both sides—over the entire surface. Any strain on the wall has a tendency to draw the mortar from each edge toward the middle of the tie, thereby increasing the bonding qualities in proportion with the strain. These ties are not weakened by having holes cut in them, or part of the metal cut away—neither are there any sharp points or angles to shear the mortar under strain.

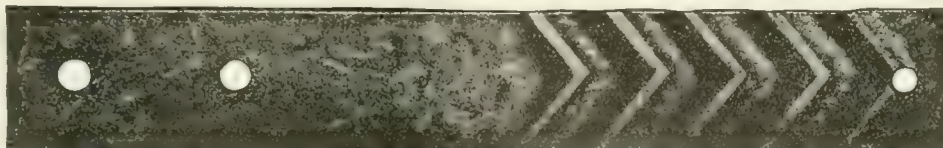
Herringbone and Acorn Wall Ties Packed 1000 in a Box

SAVE LABOR—These Wall Ties permit bricklayers to work faster—no small item to the builder or contractor.

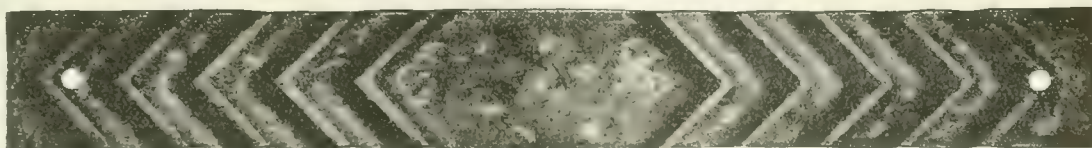
SAVES BRICKLAYERS' TIME clipping bricks for bonds.

SAVES BRICK—The waste in clipping being much more than the cost of our ties.

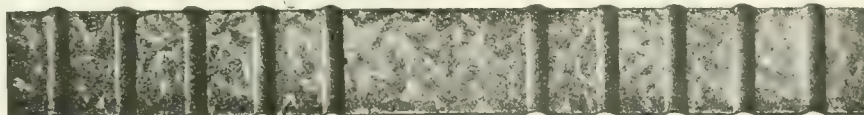
Tie No. 1 Herringbone—for brick and wood. Note nail holes for attaching to wood.



Tie No. 2 Herringbone—for brick.



Tie No. 3 Acorn—slightly different pattern, but just as effectual.



Write for prices on these ties. Agents Wanted.

The Metal Shingle & Siding Co., Ltd.

Head Office

PRESTON, ONT.

Associated with
THE A. B. ORMSBY COMPANY
Limited

Montreal
Saskatoon

Factories at:
Toronto
Edmonton
Preston
Regina

Winnipeg
Calgary

A PRACTICAL
MONTHLY
PAPER

The Canadian Builder and Carpenter

PUBLISHED END
OF
FIRST WEEK

D. O. MCKINNON
PRESIDENT

J. C. ARMER
VICE PRESIDENT AND
MANAGER OF TECHNICAL
PAPERS

The Commercial Press, Limited
32 Colborne Street, Toronto
Montreal Office: 704 Unity Building

W. L. EDMONDS
VICE-PRESIDENT

WESTON WRIGLEY
VICE PRESIDENT AND
MANAGER OF TRADE PAPERS

EDITORIAL
GORDON C. KEITH, M.Sc., EDITOR
ERIC A. FORSON, ASSOCIATE EDITOR
EDWARD ARMER, B.A. SC., ASSOCIATE EDITOR

ADVERTISING
GEORGE G. COLVIN, ADVERTISING MANAGER
F. C. D. WILKES, MANAGER MONTREAL OFFICE
E. J. MACINTYRE, ROOM 659, 122 S. MICHIGAN AVE. CHICAGO
C. G. BRANDT, CIRCULATION MANAGER

Subscription Rate, \$1.00 per year in Canada and Great Britain; \$1.50 to the United States; \$2.00 to Foreign Countries. Subscribers would do us a favor by notifying us if they do not receive

the paper regularly, so that the matter may be rectified. In notifying us of change in address, please send old as well as new address. Advertising rates on application.

Editorial Contents

| | | | |
|--|----|--|----|
| Low Cost Dwelling Embodying all Features of Comfortable and Up-to-Date Home (6 cols., illustrated) | 19 | Carpentry and Woodworking | 33 |
| New Police Station for Regina, Sask. (4 cols., illustrated) | 22 | How to Make an Oval (1 col., illustrated). | |
| Eight Room Solid Brick House with Many Good Features (3 cols., illustrated) | 24 | Nails and Screws. | |
| Conveniences Ladies Would Like in a Home (3 cols.) | 25 | Economical Use of Oak Flooring. | |
| Pair of Brick Veneer Dwellings Erected in Oshawa, Ont. (1 col., illustrated) | 26 | Setting a Bevel on a Hopper so the Joints will Mitre. | |
| Frame House of Attractive Design for Towns and Smaller Cities (4 cols., illustrated) | 27 | A Carpenter's Kit Bag. | |
| Modern and Compact House for the Farm (3 cols., illustrated) | 29 | Using the Square and Compass (2 cols., illus.) | |
| Amount of Heating Surface Required (1 col.) | 30 | Graining Metal Work. | |
| A House in Montreal West (2 cols.) | 31 | Cold Storage Box for the Window Sill. | |
| New Ball-Bearing Band Re-Saw (1 col., illustrated) | 32 | Concrete Department | 37 |
| Information Wanted re Canvasser. | | Methods of Patching and Repairing Concrete (3 cols.) | |
| Notes of Montreal Builders' Exchange. | | Concrete Boxes for Various Uses (2 cols.) | |
| | | Mixture of Mortar for Laying up Block Walls. | |
| | | Suitable Paint for Cement or Concrete Surfaces. To Prevent Concrete from Sticking to Moulds. | |
| | | Brick Work and Plastering | 41 |
| | | Dimensions of Fireplace Flues and Openings. (2 cols.) | |
| | | Specifications for Applying Metal Lath to Stud Direct. | |
| | | Terra Cotta Tile Walls. | |
| | | The Possibilities of Interior Brick Work. (3 cols., illustrated). | |
| | | Plastering Estimating. | |
| | | Catalogue Review Patents, Designs and Trade Marks | 44 |
| | | Saws and Builders' Tools | 44 |
| | | Rules Covering Patents | 44 |

THE HUTCHINSON
COMBINATION
WOOD WORKER
5 DUKE ST.
TORONTO ONT.
WRITE FOR CATALOGUE



The saw raises and lowers 8 inches. This operation makes no difference to the belt, as is the case with other makes of machines.

The Improved Hutchinson Combination Woodworker

A Proven Money-Maker

Our No. 2 Machine we particularly recommend for heavy work. It has a 3 h.p. motor and quickly cross cuts 6 in. x 16 in. timber and rips 4 in. timber. It is equally as good for fine work as our No. 2 Machine.

We recommend our No. 1 Machine for general use. It is fitted with a 1½ h.p. motor, cross cuts 4 in. x 16 in. and rips 2 in. timber. Portable and easily moved about.

There is no slide overhanging the table. The table is left clear of all obstructions.

No. 1—Operated by 1½ H. P. motor. Average cost for power in Toronto, \$1 per month. Same construction as the No. 1 machine, except that the motor is attached to the two steel rods and slides with the saw.

There is no machine on the market to equal the "Hutchinson" Combination Woodworker for the following work:

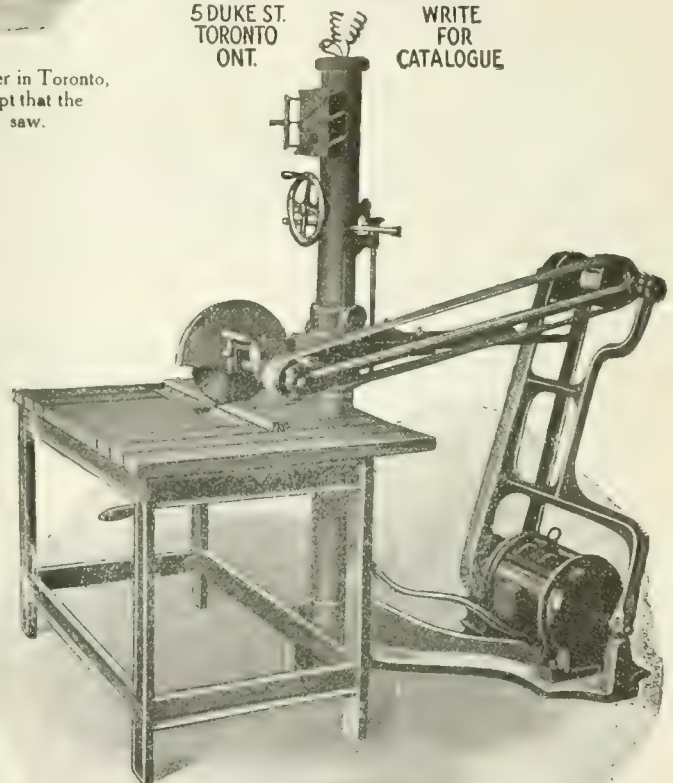
Cutting Studs, Rafters, Braces; Boring for Dowelling, Tenoning, Dadoing, Pulley Stiles, Window Sills, and Door Jambs, Routing, Stair Stringers; Mitering of all kinds; Sandpapering, Ripping, Tool Grinding, etc. It can be set to suit any of these purposes in one minute, and when once set will do as much work in two hours as a carpenter will do in a day.

Write for our Free Trial Offer and guarantee. Catalog on request.

The Hutchinson Woodworker Co.

5 Duke Street, Toronto

THE HUTCHINSON
COMBINATION WOODWORKER
5 DUKE ST.
TORONTO
ONT. WRITE FOR
CATALOGUE



No. 2—Operated by 3 H.P. motor. Average cost for power in Toronto, \$3 per month. The saw will cut 6" x 16" lumber, and 12" x 12" timber can be cut by turning the stick.

Low Cost Dwelling Embodying all Features of Comfortable and Up-to-Date Home

Architect: A. E. BLACKWELL
 Builder: J. S. HETHERINGTON

In this article is described an up-to-date home which was erected at a cost of \$5,500. While the size of the house is small, the layout is such that every available bit of space has been used without giving that crowded appearance. Much built-in furniture adds to the attractiveness of this house.

BY ERIC A. FORSON

FOR compactness, neatness of design, and general "homeiness," the house shown in the accompanying illustration stands out by itself. It has many features that go to make it one of the best in the district in which it is located, in spite of the fact that it is smaller than many in the neighborhood.

Built of Red Brick.

The house is built of red brick of a rough texture and a light shade that blends well with the wide mortar joints. The contrast is further brought out by the stone caps on the verandah piers and the stone sills and heads for the windows.

The foundation is of stone.

Built-in Furniture a Feature.

One of the big features of this dwelling is the amount of built-in furniture and the arrangement of same. In the lobby a large clothes press has been built alongside the stairway, there is a linen cupboard, through which a clothes chute runs, immediately in front of the kitchen, cupboards and drawers have been placed in the dressing room, there is the usual cabinet in the kitchen, and the bedrooms all have built-in wardrobes. The dining room contains a built-in buffet.

Three Entrances.

There are three entrances, one at the rear and one at each side. The usual order has been reversed in the construction of this house; the kitchen and pantry front on the street, and the drawing room and main verandah face the south. This was done for the reason that the owner's wife is an invalid, and must, of necessity, spend much of her time inside and in one

room. This also explains the reason for the bedroom, with lavatory off same, on the first floor.

The outlook from the verandah, drawing room, and bedroom is pleasing indeed. Between this house and the back of the one on the next street there is a space of about 200 feet, on which no building will ever be

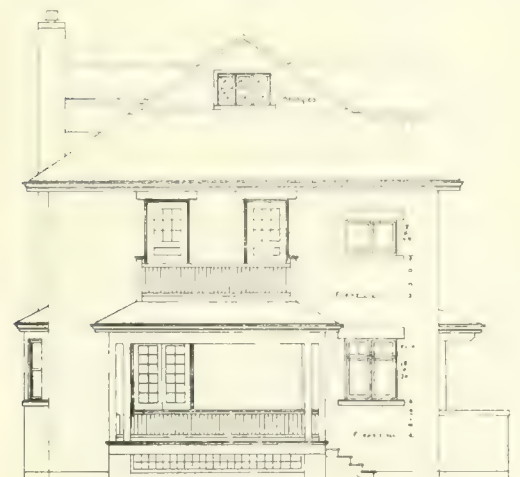


Mr. Crane's house, in course of construction.

erected. This gives an excellent view of well-kept lawns and flower gardens.

The Interior Finish.

Inside the house is finished in keeping with the whole. The entire trim is in Georgia pine, with hardwood floors in every room on the ground floor with



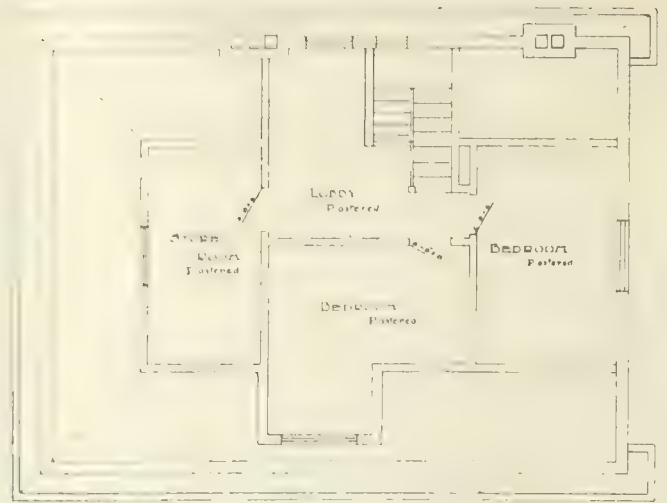
South view of Mr. Crane's house



West view of Mr. Crane's house.

Low Cost Dwelling Embodying all the Features of Comfortable and Up-to-Date Home

Architect **A. E. BLACKWELL**
Builder **J. S. HETHERINGTON**



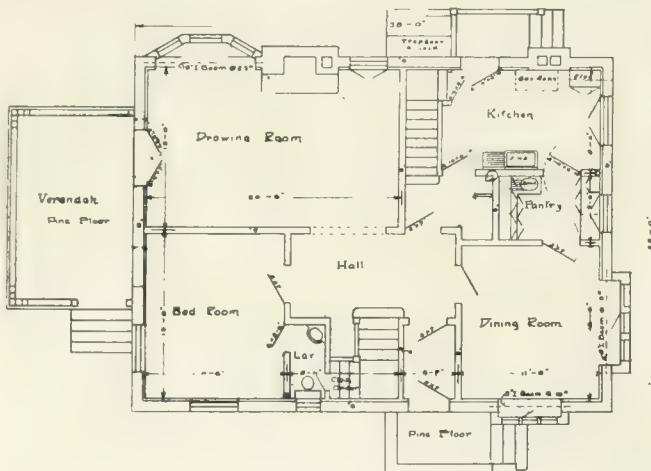
Attic floor plan.



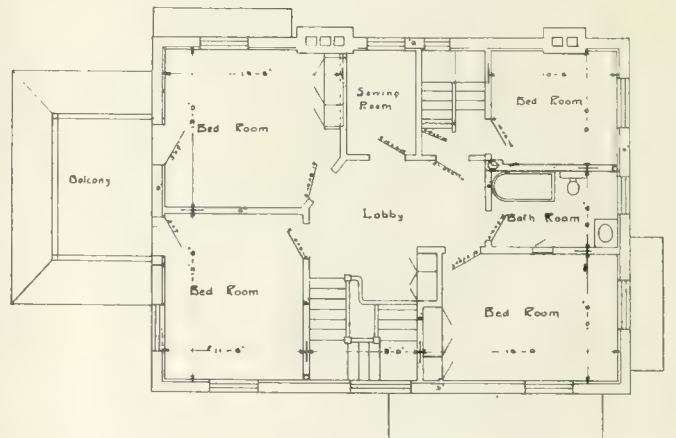
East elevation.



North elevation.



Ground floor plan.



First floor plan.

the exception of the kitchen and pantry. In these latter rooms basswood floors have been laid, but it is all 3/8 in. material, giving the same appearance as the hardwood on the rest of the floors. The floor in the lobby upstairs also is laid in hardwood.

The dining room has a beam ceiling, and the walls are paneled for six feet from the floor line.

There are cove ceilings in the hall and living room.

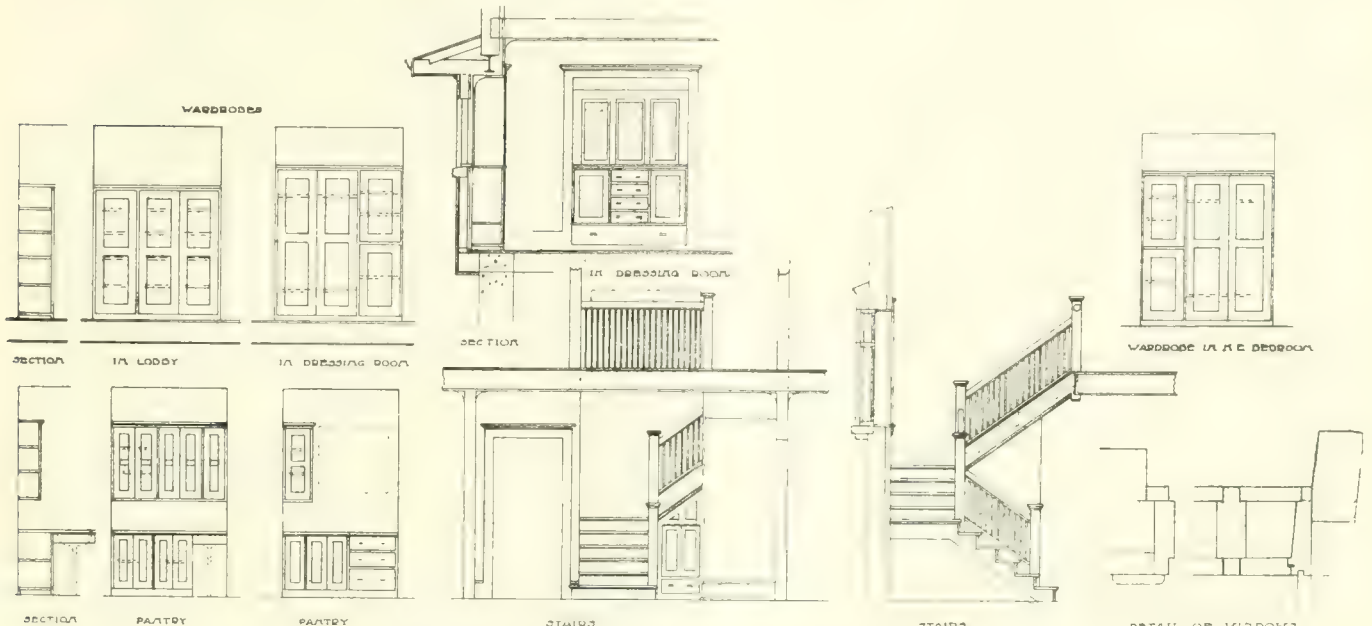
An immense coal fireplace is located in the parlor,

Sinks in Kitchen and Pantry.

The butler's pantry is located midway between the dining room and kitchen, and contains sink and drip-board, refrigerator, built-in cupboards, etc. There is also a sink and dripboard in the kitchen.

The First Floor.

The first floor is laid out almost identically the same



Detailed views of the built-in furniture and cupboards in Mr. Crane's house.

and there is another one in one of the rooms on the first floor.

First Floor Layout.

As the plans show, the house is laid out on the square plan, and all the rooms are compactly arranged. The main entrance is at the side, and leads into a large square hall, from which all the rooms on this floor may be reached.

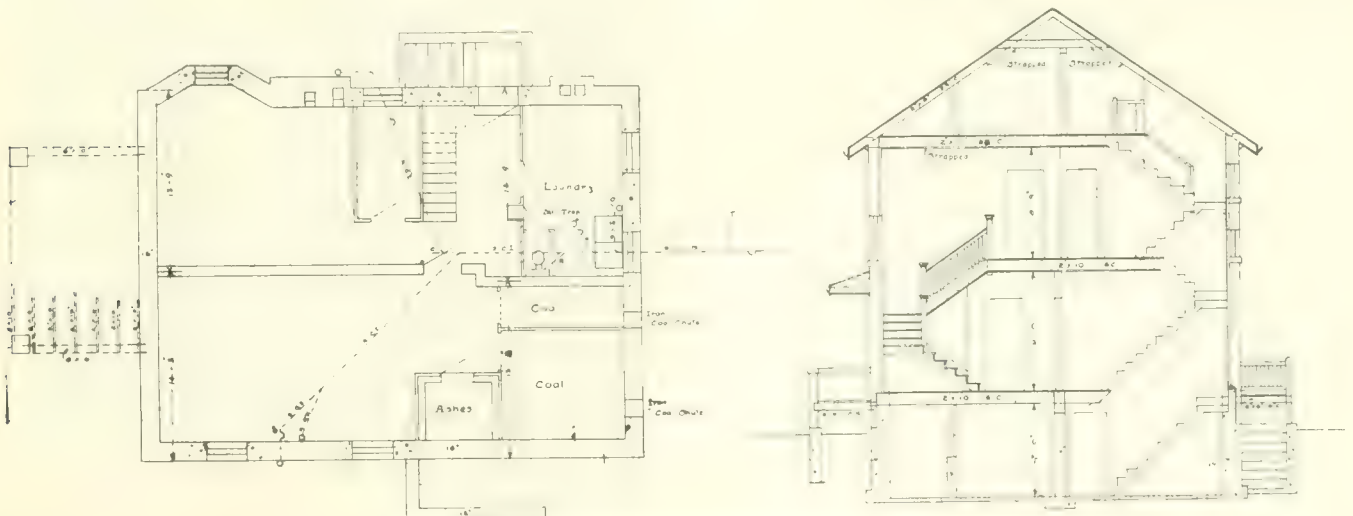
The principal stairway leading to the first floor is located to the left just inside the entrance, but there is another one situated directly opposite that runs to the attic.

as the ground floor, except that a serving room is located between two of the bedrooms on the one side and the bathroom between two bedrooms at the end. All the rooms are of good size, and each has a roomy clothes closet.

A linen closet is located just at the head of the main stairway.

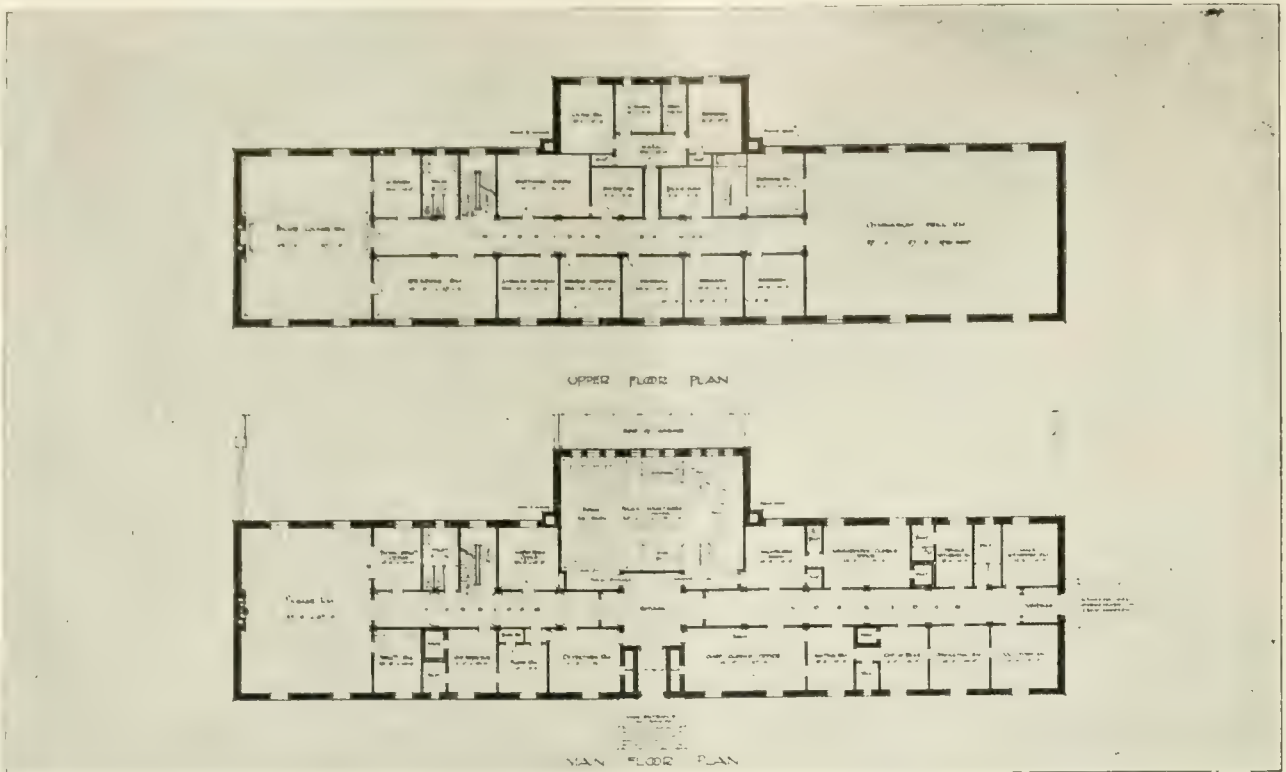
The Cellar.

The stairway to the cellar is at the side entrance on the west side of the house, and underneath that one that runs to the attic. The basement is divided into laundry room, coal room, a room for ashes, and general

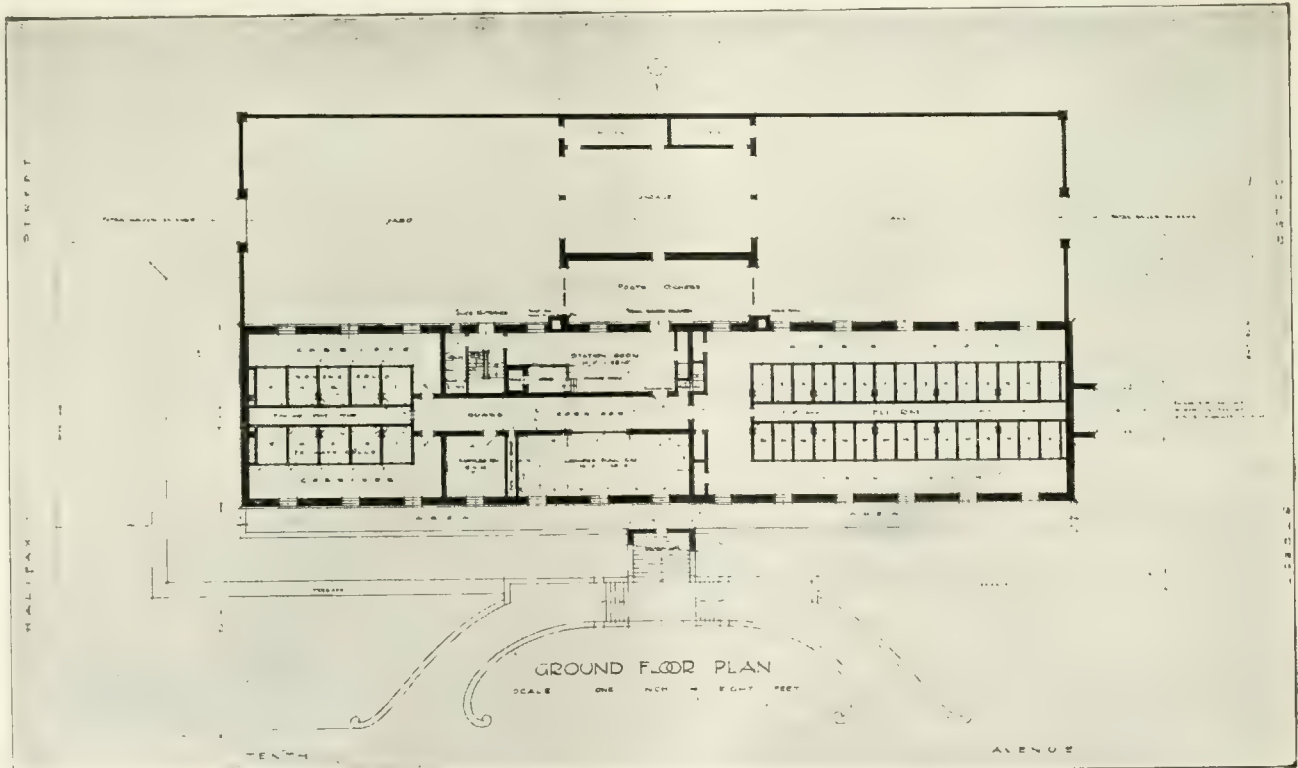


Cellar floor plan and sectional view of low cost brick dwelling.

New Police Station for Regina, Saskatchewan



Floor plans of the new Regina Police station, Sask.



Ground floor plan of the new Regina Police station, Regina, Sask.

store rooms. There is a lavatory off the laundry room. The floor is of concrete, and the ground is tile-drained.

Three Rooms in Attic.

The attic is finished throughout, and contains three bedrooms and a large hall. All the doorways are 2 ft. 8 in. x 6 ft.

Some Construction Details.

All joists are 2 x 10 in., placed 16 in. on centres, except on the top floor, where they are 2 ft. on centres and strapped. Rafters are 2 x 6 in., 2 ft. on centres and strapped.

Studs are all 2 x 4 in., 16 in. centres, except in bathroom. In this room they are 12 in. centres, and covered with metal lath.

House Owned by Bank Manager.

This house was built for Mr. Crane, manager of the Dominion Bank, Peterborough, Ont. The architect was Mr. A. E. Blackwell, and the construction was carried out by Mr. J. S. Hetherington.

The cost of the home was \$5,500.

New Police Station for Regina, Sask.

Clemensha & Pernal, the Regina architects, who were awarded first prize in the competition to supply the plans for the \$3,000,000 Winnipeg City Hall, have also secured first prize in a similar competition to supply plans for Regina's proposed city police station, to cost \$180,000.

The building has been designed in the Georgian style of architecture. It will be constructed of reinforced concrete and finished with red brick and stone

trimmings. A terra cotta cornice will run along the entire top of the building

The main building will have a length of 198 ft. and a width of 42 ft. At the rear will be a garage, stable, and coach building, which will be 51 ft by 63 ft. The main entrance will face on Tenth avenue, and will be in the centre of the building. It will be constructed entirely of cut stone ramps and steps. A similar entrance will face on Osler street, which will be used as a private entrance for the magistrate, barristers, and other officials.

On the Main Floor.

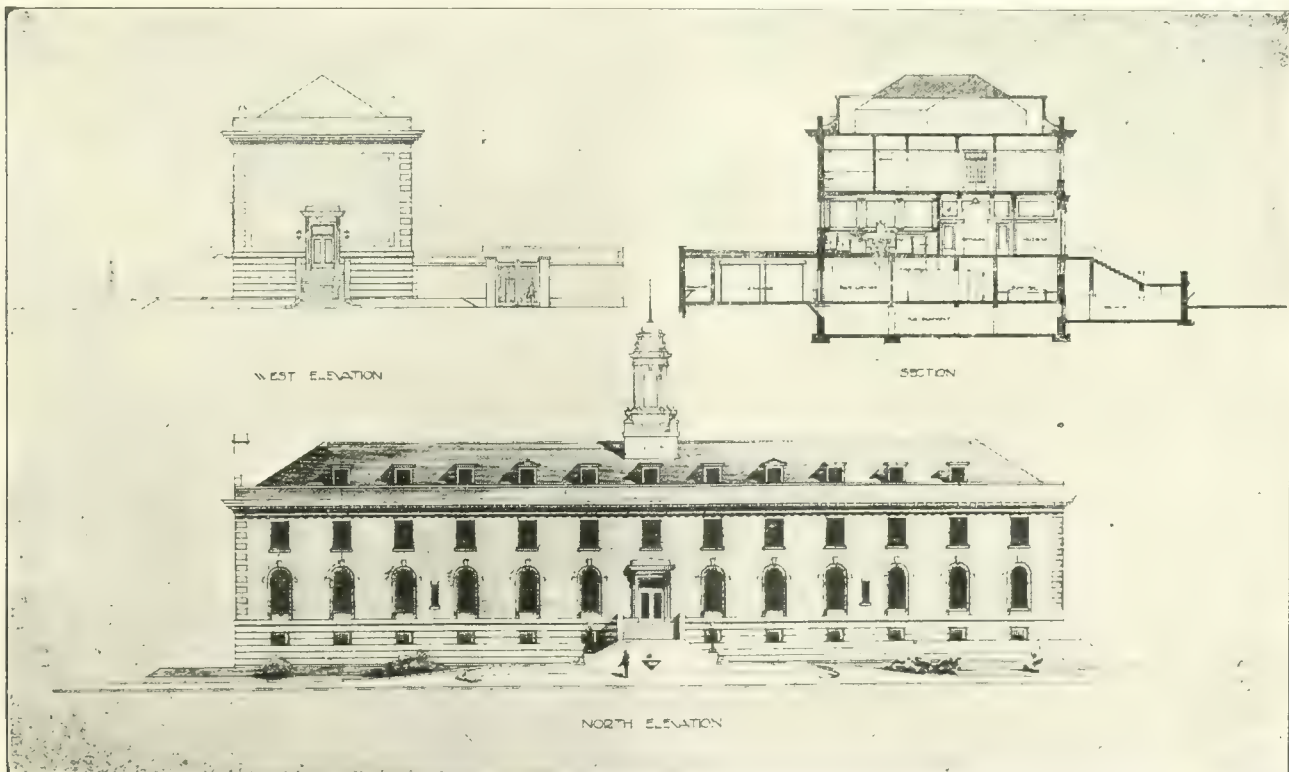
On the main floor will be located the court room, magistrate's office, with waiting room and clerk's office, office for the chief of police, barristers' and witnesses' rooms. In the east wing on this floor will be the detectives' and inspectors' rooms, photographer's room, with a dark room and a large lounge for the constables, which will be 37 ft. by 29 ft. The feature of this floor and, in fact, of the entire building, will be the court room, which will be 48 ft. by 28 ft. It has been designed with specially high paneled ceiling, measuring 26 ft. from the floor to the ceiling. Oak paneling 9 ft. 6 in. high, will cover the inside walls. All the furniture will be in oak, and the public seats will be stepped.

The main cell room will be 85 ft. by 37 ft., and will contain 30 cells, all of which will be provided with lavatory accommodation. On this floor will also be the parade room, which will be 30 ft. by 37 ft.

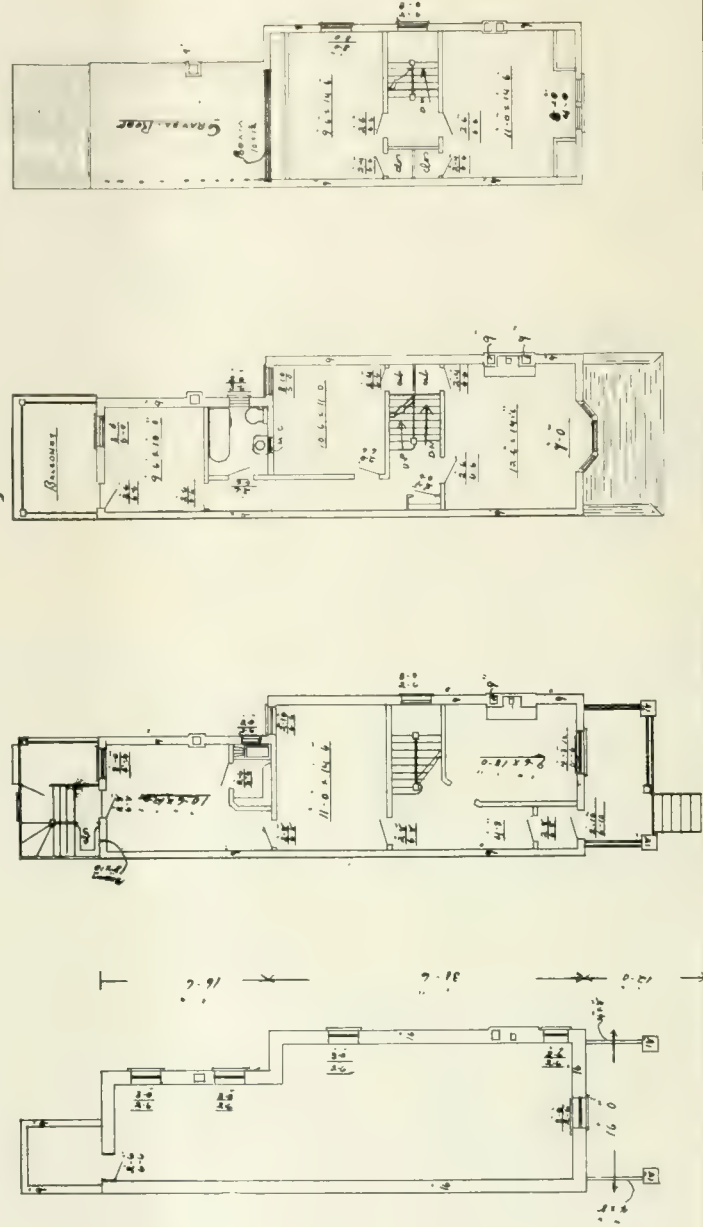
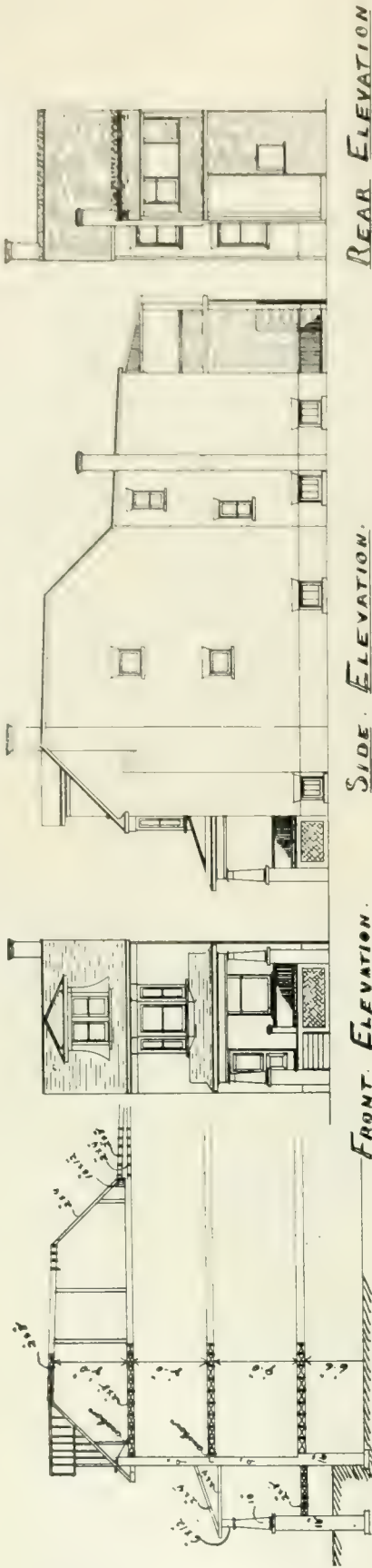
In the basement will be located the boiler room and the bunk room, with lavatory accommodation, for the use of persons requiring shelter. The rest of the space will be given over to storage room.

Gymnasium on Upper Floor.

On the upper floor will be located the men's gymnasium, which will be 58 ft. by 57 ft., and will have

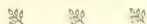


Elevation of the new Regina Police station, Regina, Sask.



Floor plans and elevations of a solid brick house on Crawford Street, Toronto.

an open roof. It will also be provided with shower baths and lockers. There will also be on this floor two detention rooms—one for women and one for juveniles—two bedrooms for detectives, who will live on the premises, and a suite of rooms for the janitor.



Eight Room Solid Brick House, with Many Good Features

The house erected from the plan shown on the opposite page is located on Crawford Street, Toronto, and is typical of the class of houses being erected in that neighborhood, where property is dear and assessments are high. It is of solid red brick construction on stone foundations. The verandah, window frames, and all exterior woodwork are painted in white and green, colors that go well with the red brick and the grey stone caps on the verandah pillars.

The verandah and main roofs are shingled, as are the dormer windows in the attic. The latter are stained a dark green.

Eight Rooms and Bath.

As the plan shows, the house contains eight rooms and bath. The cellar is full size, with the floor finished in concrete.

All the rooms are of good size and well arranged. A side hall leads into the main square hall, and the kitchen is reached through the dining room.

The pantry is shown just off the kitchen, and contains sink and dripboard. A window is shown, constructed over the sink.

Summer Kitchen in Rear.

In the rear of the main kitchen has been built a good sized frame summer kitchen, and the entrance to the cellar is from here.

A closet for pots and pans, etc., has been built on the wall of the summer kitchen, just outside the main kitchen door and at a convenient height from the floor.

The First Floor.

On the first floor are two bedrooms, a living room, and bathroom.

The living room at the front contains a fireplace.

Off the rear bedroom and over the summer kitchen a large balcony has been constructed in such a manner that it can readily be enclosed in glass and made into a comfortable sunroom.

Two Bedrooms in Attic.

The attic is divided into two bedrooms, each containing a large clothes closet.

This dwelling was built for Mr. T. A. Greenaway by Mr. J. B. Forward. The latter also drew up the plans.



Conveniences Ladies Would Like in a Home

The following statements show what ladies would like to see in a home. Builders erecting houses for sale will find a number of features among these suggestions, which, if adopted, will make good selling arguments.

Mrs. A.—Every closet in the house is to have a small window and an electric light.

Mrs. B.—A trash chute from all the floors down to the cellar will be built into our house.

Mrs. C.—I want a back opening to my refrigerator so that it can be filled from the back porch.

Mrs. D.—Built in under the shelves in my linen closet there will be a cedar chest for storing clothes.

Mrs. E.—The switch for the electric light in our cellar will be set at the head of the cellar stairs.

Mrs. F.—One end of our cellar will be shut off as a cold room for meat and vegetables in winter.

Mrs. G.—We expect to build a clothes chute opening from the bathroom and leading into the cellar laundry bin.

Mrs. H.—Our plans call for several upstairs sleeping porches, roofed, screened and curtained, with high railings.

Mrs. I.—My kitchen sink is going in a place where



A neat design for solid brick houses popular in cities.

there can be two draining boards instead of the inconvenient one.

Mrs. J.—As a practical help in an inelegant problem—bury the garbage can underground, with a top lifted by foot pressure.

Mrs. K.—I shall have window-slides put in the walls between pantry and kitchen and pantry and dining-room, to save carrying.

Mrs. L.—There will be a small closet in our bathroom for soap, towels and such things, its upper part made into a locked medicine cabinet.

Mrs. M.—In my kitchen you will see a thousand hooks—more or less—so that everything may be hung up out of the way and yet be within easy reach.

Mrs. N.—I hope to dispense with a coal range in my kitchen, using gas or electricity for fuel, and heating the kitchen by a pipe from the basement heater.

Mrs. O.—When our new range is put in, there is to be a dump under the firebox, so that accumulated ashes may be dropped directly into a can in the cellar.

Mrs. P.—The lower sash of our bathroom will reach several inches higher than usual, thus doing away with the sash curtains.

Mrs. Q.—Practically all my kitchen windows will be set high in the wall—a generous row of them—leaving

room for furniture of all shapes and giving plenty of light.

Mrs. R.—We are putting a small lavatory and children's coat closet in the back hall—they are to enter from school or play by the back hall door and "clean up" before appearing.

Mrs. S.—In my linen room I shall have some cubby-holes like long, shallow drawers, their fronts dropping outward, from catch fastenings, so that I can see their contents quickly.

Mrs. T.—I am going to have my kitchen table and sink built at least 35 inches high, instead of the usual height which for most women necessitates constant bending over the work.

Mrs. U.—We are planning sleeping porches, too, and we are warned that we must build the doors wide enough to allow a cot to be pulled through easily, and to have double doors, opening inward.

Mrs. V.—The swinging doors between kitchen, pantry and dining-room in our new house to swing open down the middle instead of at the side so that two persons can go through at the same time from opposite directions.

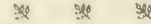
Mrs. W.—I dream of a broad, shady porch set at some back corner of the house, vine-covered, and not too far from the kitchen, where we may have meals occasionally in hot weather.

Mrs. X.—The ironing board in our laundry will be hinged to the wall, where it may be hooked up out of the way when not needed, and quickly let down on its swinging stand when put into use.

Mrs. Y.—My kitchen table will have no waste space to shame me. Every cubic inch, save what is needed for foot room, will be utilized for drawers, bins, and cupboards—and the top will be of zinc.

Mrs. Z.—The flour barrel in my kitchen will be set on the inside of the door to the lower part of the cupboard, on a frame of wooden strips, screwed securely, so that it swings into usefulness and out of sight.

Mrs. Etc.—My new house will be equipped with a Handy Husband, a Tool Chest, and a Perfect Willingness to spend odd moments putting in the conveniences that the builders—and I—forgot.—Elizabeth C. Moore, in *The House Beautiful*.



Pair of Brick Veneer Dwellings Erected in Oshawa, Ont., at Moderate Cost.

Herewith are reproduced floor plans of a pair of brick-veneer dwellings erected in Oshawa, Ont. These houses were erected for W. J. Trick from plans drawn up by H. T. Jackson. Both the general design and layout are of that class that has proven popular everywhere. The plan shows three rooms on both the ground and first floor, and while the attics have not been finished up, two good-sized rooms could be laid out in each.

These houses are typical of those being built for workmen in Oshawa, and the cost is well within that amount that permits of them being sold or rented to the average workman at a reasonable figure.

Some Construction Details.

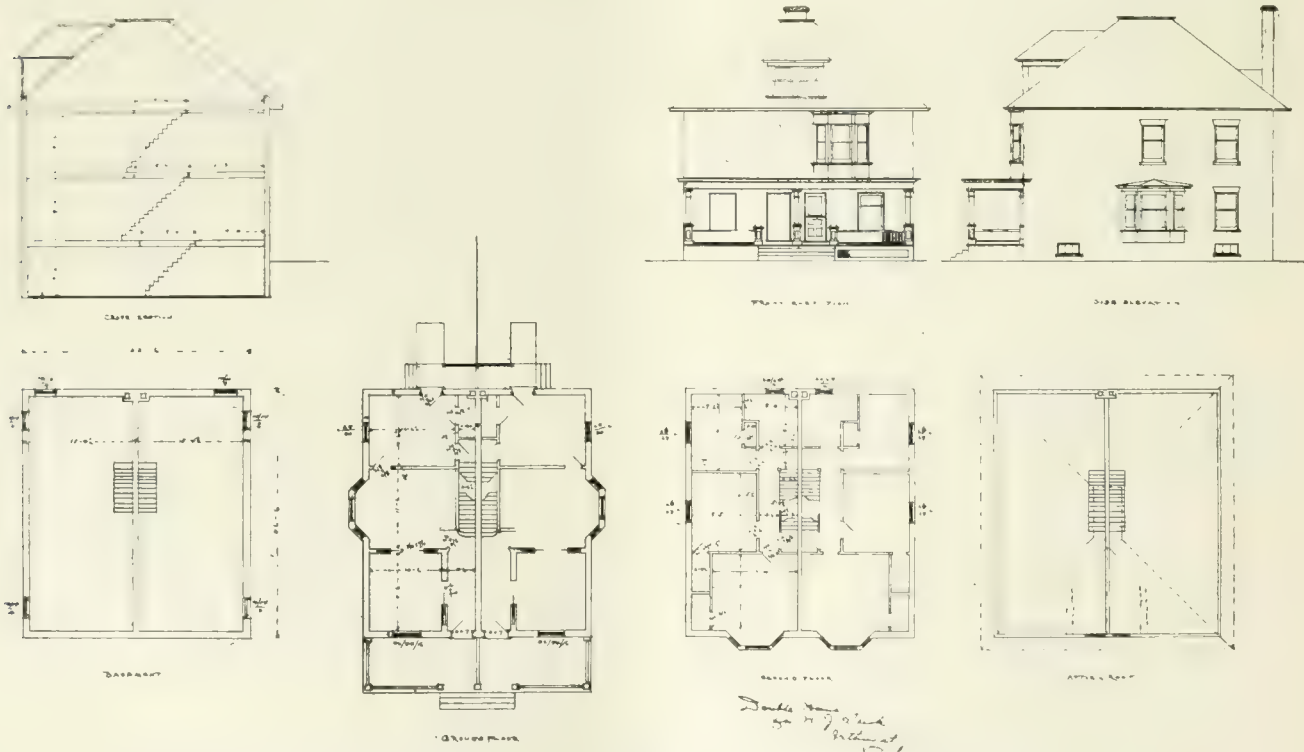
As stated above, these houses are of frame construction, brick-veneered, and built on a concrete foundation that extends up to the ground floor. Hot air heating and electric lighting systems have been installed.

The roofs are shingled.

Between the houses the partition is solid brick to the attic floor, and wood above this to the roof.

The Framework.

The framework is constructed on 2 x 4 in. studs, the joists on the ground and first floors are 2 x 8 in., and in the attic 2 x 6 in., all placed 16 in. on centres.



Elevations, floor plans and construction details of a pair of brick veneer dwellings erected for W. J. Trick, Oshawa, Ont.

Attractive Frame House for Towns and the Smaller Cities

This article contains the floor plans, elevations and descriptions of a frame house erected in St. Catharines, Ont. The layout is a particularly good one and one that might be followed by builders in other places. The house is surrounded by trees, and has a very homelike appearance.

WITH frame houses in demand as they are in the towns and smaller cities to-day, the floor plans shown on the adjoining page are of interest. These plans are of a house built by Mr. Jack Wood for Mr. G. Schaeffer in St. Catharines, Ont.

The house is 24 x 28 ft., and is built on a lot 45 x 125 ft. It is of balloon frame construction, with concrete chimneys. The exterior is painted in a yellow or buff color, with the window frames in white and the siding a dark green. The verandah, roof, and gables are shingled and painted a dark green. This gives a pleasing effect, and as heavy trees grow on the lawn at the front and on one side, the house presents a comfortable and homelike appearance.

A verandah runs the full width of the house, and, on account of the trees, the sun does not enter at any time during the day.



Built on Square Plan.

As may be seen, the house is built on the square plan, and is laid out in a manner that permits of every available bit of space being used, without giving the appearance of overcrowding.

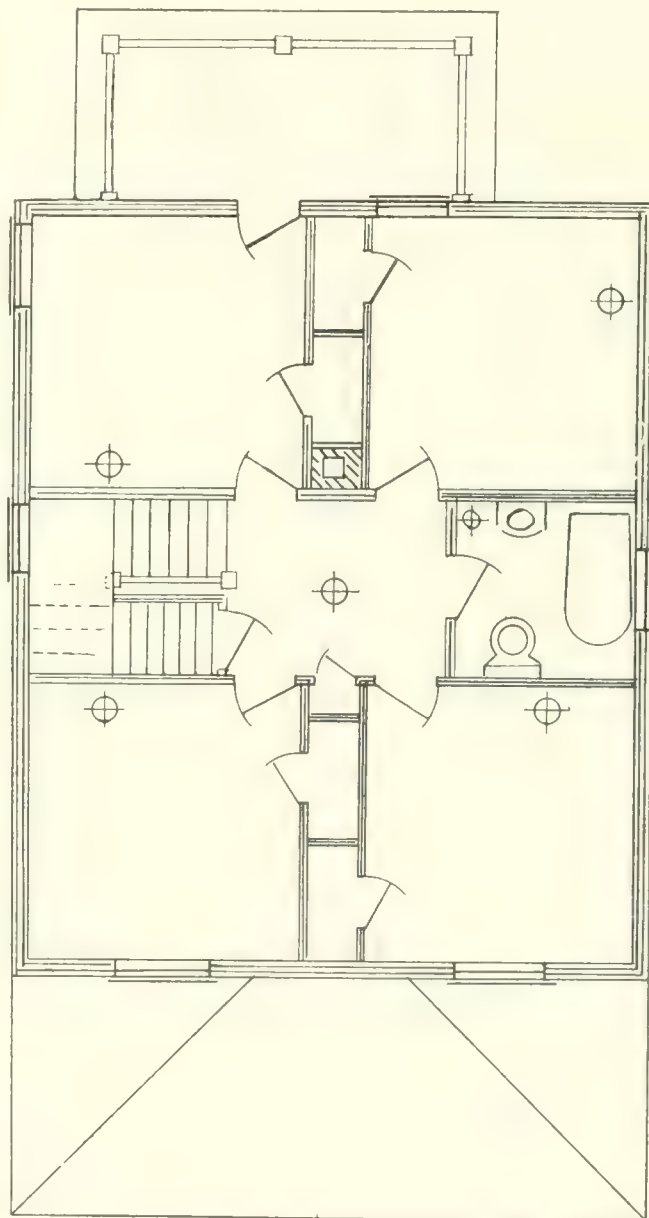
The Ground Floor.

On entering the vestibule, which, by the way, contains a built-in seat, one enters the hall. Although this is called the hall, it is in reality a living room, for it is as large as any of the others on that floor, and is fitted up as such.

The plan shows the lay-out of the parlor, dining room, kitchen, and pantry.

Sliding Doors Between Hall and Parlor.

It is the usual custom to have a colonnade between the hall and parlor, and sliding doors if there are any between the parlor and dining room. While the plan of this house shows such an arrangement, this method was not carried out, the order being reversed—sliding doors between parlor and hall, and colonnade between parlor and dining room. This was done on the owner's instructions, but for what reason the writer does not know; probably it was to permit more light to enter the parlor, for, on account of the verandah at the front and the dense foliage on the trees, very little sun or light can enter. However, the arrangement has a certain disadvantage in that when meals are being



First floor plan of attractive frame house.

brought to the table the odors are permitted to enter the parlor, a condition that would not occur with sliding doors.

Abundant Light in Pantry.

The pantry is built immediately in the rear of the kitchen and dining room, and may be reached from either of these rooms; in fact, unless one goes through the parlor, the dining room can only be reached via the pantry. There are the kitchen cabinet, drawers, and flour bins found in the up-to-date pantry.

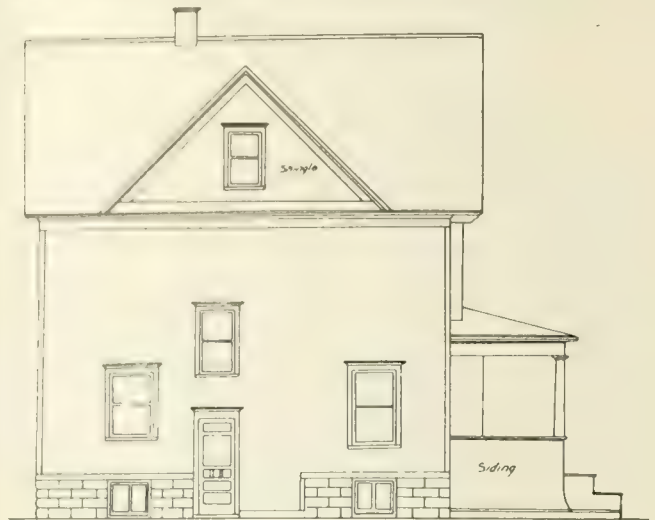
The Kitchen.

The kitchen is a large, roomy one, and contains sink, dripboard, and gas stove. The sink and dripboard are placed alongside the chimney.

Entrance at Side.

Besides the front and rear entrances, there is one at the side that leads into the kitchen. Opposite this entrance and built in between the chimney and partition that divides the hall and the kitchen, is a clothes

cupboard. This makes use of some space that otherwise would probably go to waste.



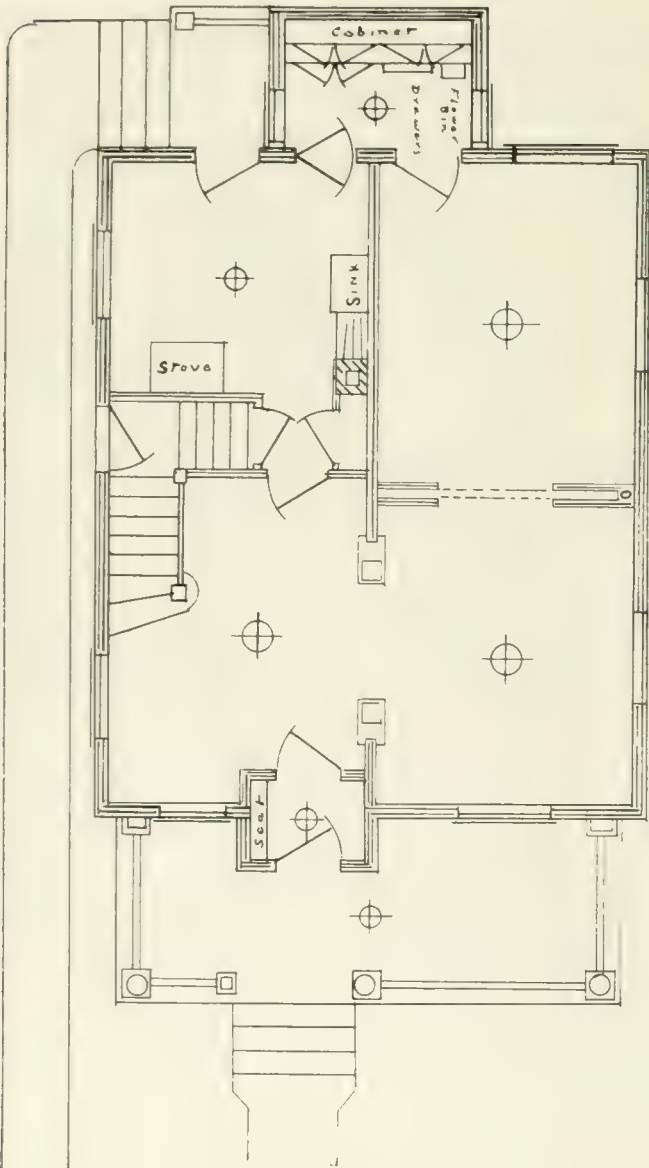
Side elevation

A milk cupboard has been cut in the wall to one side of the side entrance.

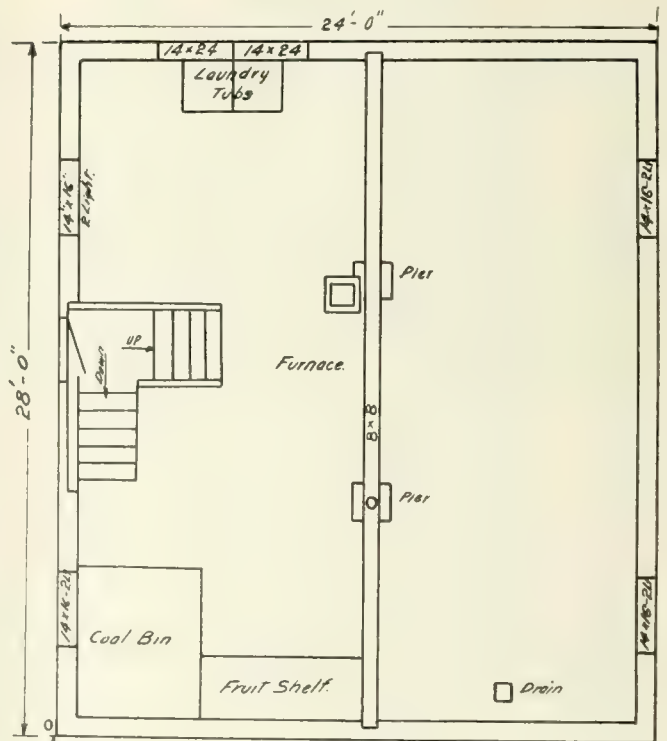
Four Rooms and Bath on First Floor.

The stairway to the first floor faces the front entrance, and is well lighted by a window set high in the wall at the landing.

On this floor there are four bedrooms and bath, the



Ground floor plan of St. Catharines House



Foundation Plan.

Foundation plan

former all of equal size. Each contains a roomy clothes closet.

Built in the wall between the two front bedrooms is a good-sized linen closet. This is shown on the plan.

Attic Not Finished.

As yet the attic has not been finished, and is used as a store room. It could be made into two big rooms.

Concrete in Cellar.

The cellar is the full size of the house, and has concrete floor. The hot water furnace is located to one side and the laundry tubs are at the far end under the windows.



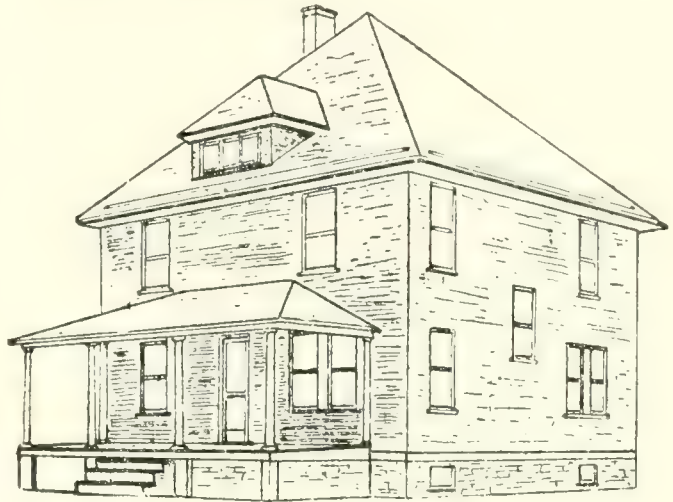
Modern and Compact House for the Farm

The planning of a farm house is different from a city dwelling, as they are nearly always entered from the rear. Herewith are published floor plans of a farm house, which has been arranged with a view to having it compact and convenient.

Entering the house from the rear porch, one comes into a fairly good-sized kitchen, with a pantry off one side, and an entrance to a wash room, built outside the main part, and from which one can go directly into the dining-room. Entrance is also had to the wash-room from the porch. A stairway leading up from the kit-

chen near the wash-room door gives access to the upstairs from the rear, and under this is the entrance to the basement.

The dining-room has an entrance from the rear, and

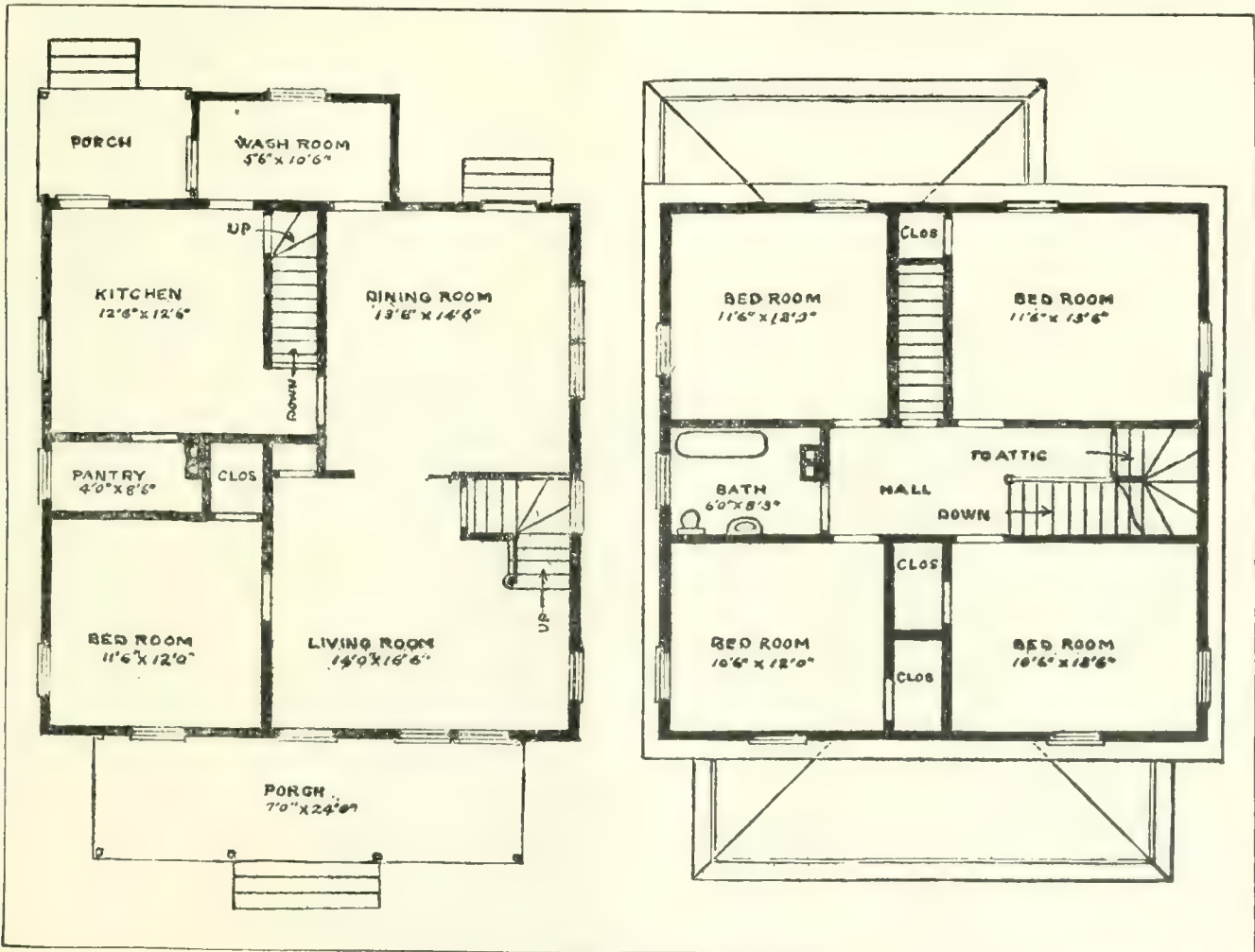


Elevation of a modern farmhouse

is well lighted by two windows placed side by side, as well as by a glass in the upper half of the door.

The dining-room, while not large, will be found plenty large enough for most farms, and is connected with a living-room.

The main stairs go up from the living-room and are



Ground and first floor plans of up-to-date farmhouse.

open, which greatly adds to the appearance of the room. There is a closet under the stairs, as well as a small built-in bookcase. The place for books could be used for table linen, cutlery, etc., by putting the door so as to open from the kitchen.

There is a bedroom off the living room, with a good sized closet. A bedroom downstairs is convenient, in case of sickness, and for old people.

The second story is well arranged. All the rooms are well-lighted, and have two windows in each.

The bathroom is placed at the head of the stairs, and has easy access from all rooms. The hall is lighted by a window placed above the lower landing of the main stairs.

The attic is reached by a stairway built over the main stairs, and can be finished and used for one or two sleeping rooms, by putting a dormer window on the back, if more than one room is needed.

The basement is the full size of the house, and can be partitioned off to contain laundry, fruit and vegetable room, as well as furnace room. The house is planned to be heated with a furnace, steam or hot water.

The dimensions of the house are 30' x 30' outside, with wash room 6' x 11' built at the back. Ceilings are 9' for the first, and 8' for the second storey.

The approximate cost, if built of wood, is in the neighborhood of \$3,000, and if built of brick, \$3,500. It could be built for a great deal less, if a good deal of the rough work was done by the farm help, supervised by an experienced man.

The rooms would be a little smaller if built of brick, owing to the greater thickness of the walls.—W. D. A., in Family Herald and Weekly Star.

✻ ✻ ✻

Amount of Heating Surface Required

The problem of arriving at the amount of heating surface necessary to deal with a specific case is difficult. Prof. Carpenter gives the following formula for rooms, which the author has found to work out fairly correctly in some cases: Area of glass + $\frac{1}{4}$ area of

exposed wall surface + $\frac{1}{55}$ cubic feet required for ventilation. The last term is governed by the number of changes of air required per hour. He suggests three changes per hour for halls, two changes for rooms on the first floor, and one for rooms on upper floors. The writer would, however, suggest three or four changes for ordinary dwelling rooms.

Prof. Carpenter refers to Mr. W. W. Lackie's paper, recently read before the Glasgow section, which points out that the lower strata of air in an ordinary dwelling room, heated by gas or coal fires, is changed about 60 times per hour, the air 3 ft. up 20 times, and the air 6 ft. up only twice per hour. Prof. Carpenter gives the results of some experiments he had made on the question of the spreading of heat in a greenhouse. On one occasion an electric tube-heater capable of taking 800 watts was used, and on another occasion a 1,000-watt convector. It was found that, whereas the tube-heater maintained an even temperature throughout the greenhouse, the heat from the convector mostly filtered through the roof. The rise in temperature was actually greater, although the wattage of the heater was less. The usual objection is that electric heating is too expensive; so it may be for constant use, but it is submitted that there are a large number of cases in which it may be applied economically, where only intermittent heating is required.—Domestic Engineering of England.

✻ ✻ ✻

Information on Cement Moulds Wanted

The following request for information has been received, and any information from readers will be greatly appreciated:

"We take the liberty of asking if you know of any method whereby concrete which has been poured into moulds, can be taken therefrom without any little pits or air bubbles appearing on the surface?"

"In other words, having poured the wet mix into moulds which have a design on the bottom plate, we wish to be able to have this design stand out sharp, smooth and free from little holes."



Front of the store of Burrows & Greene, Dundas St., Toronto. The arrangement of this store front offers useful suggestions to builders who have this class of work in view.

House in Montreal West with Special Roof Feature

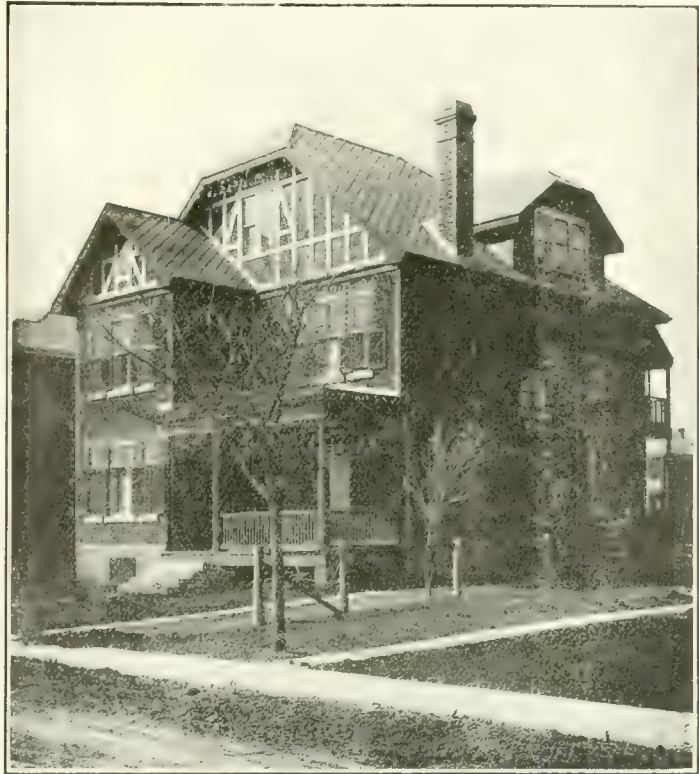
Architects : Bennet & Gerard

Builders : Montreal West Realty & Contracting Co.

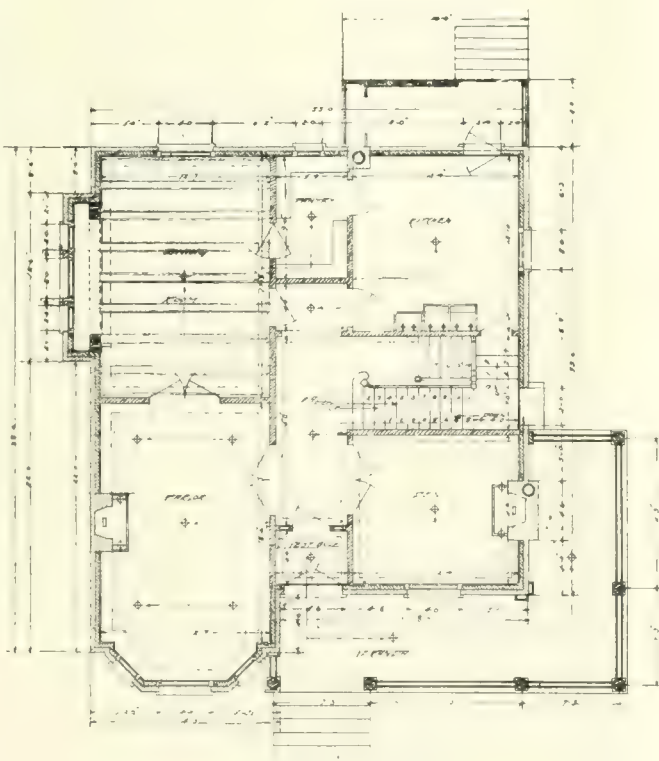
THIS house, as the photo shows, is of solid brick construction on stone foundation. Probably the main feature is the roof, composed of "Asbestoslate" shingles.

Other things worthy of special note are the linen closet in the upstairs hall; besides the usual three-piece bathroom, there is lavatory and water closet off one of the front bedrooms, large fireplace in den and parlor, and the wide verandah that runs half-way across the front of the house and down one side.

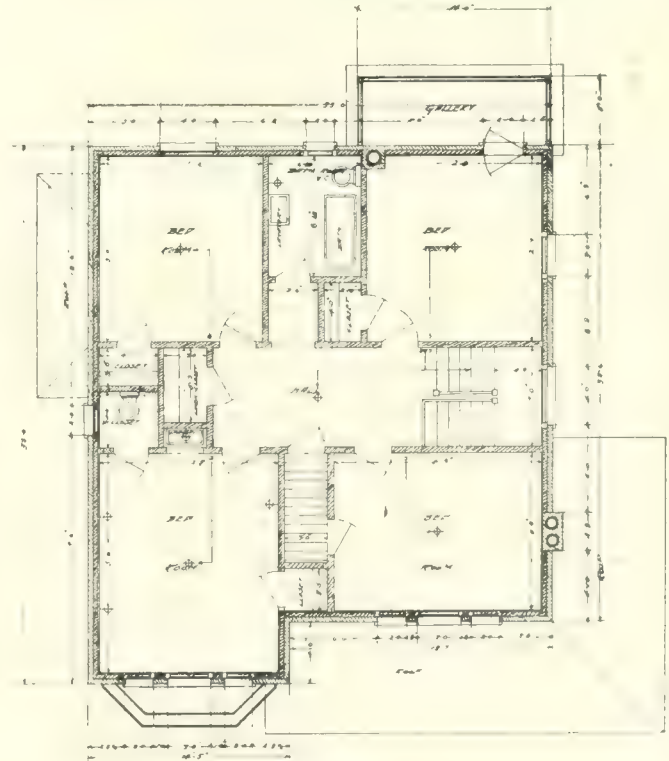
The rooms are all of good size, as the following dimensions will show: Parlor, 12 ft. 7 in. x 18 ft.; dining room, 12 ft. 7 in. x 17 ft. 9 in.; pantry, 5 ft. 4 in. x 9 ft.; kitchen, 12 ft. 4 in. x 12 ft. 10 in.; den, 12 ft. 4 in. x 11 ft.; hall, 14 ft. to entrance to kitchen; right front bedroom, 11 ft. x 14 ft. 9 in.; left front bedroom, 15 ft. 6 in. x 12 ft. 7 in.; closet in bedroom, 3 ft. wide; rear left bedroom, 13 ft. x 11 ft. 6 in.; right rear bedroom, 12 ft. x 12 ft. 10 in.; bathroom, 6 ft. 10 in. x 8 ft. 10 in.; gallery at back, 13 ft. x 5 ft.; closet in left rear bedroom, 2 ft. 6 in. x 4 ft. 1 in.; room off front bedroom, containing water closet, 4 ft. x 4 ft. 1 in.



Detached brick residence erected in Montreal West, by the Montreal West Realty Co. Published by courtesy of the Asbestos Mfg. Co., Montreal.



Ground floor plan.



First floor plan.

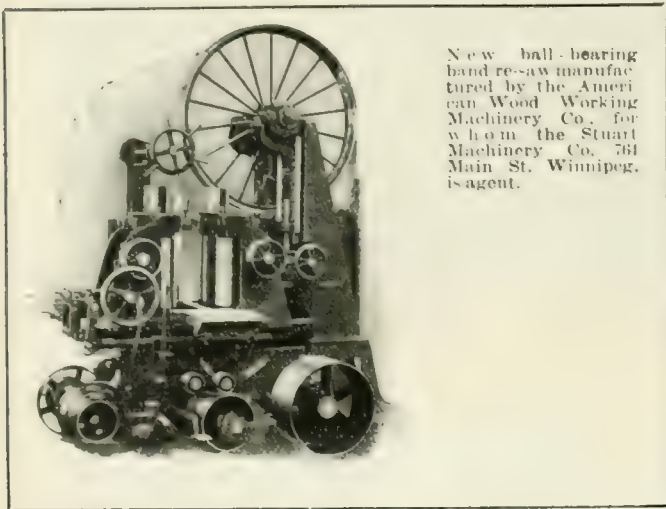
New Ball-Bearing Band re-Saw

A new 54 inch ball bearing band resaw is being introduced to the Canadian trade by the Stuart Machinery Co., 764 Main St., Winnipeg. This machine has a number of new features, one of the most important being ball bearings for both upper and lower wheels. Underneath is a lock lever and hand wheel, for tilting the feed rolls. There are six feed rolls and six changes of feed. The gears on the rolls are steel cut.

All adjustments of wheels, rolls and feed are made at front of machine within easy reach of the operator.

This machine is of a capacity to work material 30 inches vertically using extended rolls, and from $\frac{1}{8}$ in. to 20 ins. horizontally, will centre split a 16 in. timber if properly supported, and cut a veneer from 12 in. stock. The machine without extended rolls will take thin stock 22 ins. wide.

Both wheels are taper fitted to steel shafts and run between ball bearings. Shafts are $2\frac{7}{8}$ ins. in the bearing, $2\frac{3}{8}$ ins. in the body. The bearings are 12 ins. long.



New ball-bearing band re-saw manufactured by the American Wood Working Machinery Co., for whom the Stuart Machinery Co., 764 Main St., Winnipeg, is agent.

The upper wheel has steel spokes set staggering. Lower wheel is solid.

On the upper wheels the bearings are set very close to the hub and rest on the pivotal ends of two steel rods, the lower ends of which form the fulcrum of the straight-line-knife-edge straining device, an apparatus which reduces to a minimum the friction and weight required to counterbalance and strain the blade.

The saw guides are the wood-block type and are hinged to swing out of the way for change of saws. The upper one is raised and lowered by hand wheel and sprocket chain, facilitated by a counterweight. The lower guide forms a part of the outfeeding table.

Feed Rolls and Rates of Feed

There are four feed rolls 6 ins. diameter and two smaller rolls mounted in self-contained housings. The housings adjust horizontally on roller bearings mounted on a table bar that can be tilted fifteen degrees to the left and five to the right by hand wheel and screw for bevel sawing. The right hand set of rolls is fixed in the housings, but is adjustable therein and movable with the housings. The left hand rolls are elastic so as to grasp the stock and hold it firmly against the rigid rolls, thereby insuring a powerful feed on unevenly sawed material. The right hand rolls can be securely locked in any position for cutting stock to a

positive thickness. The left hand rolls have an expansion of two inches, and can be set in any position without disturbing the right hand rolls. The right hand rolls expand $1\frac{1}{4}$ ins. when self-centring.

Both sets of rolls can be adjusted simultaneously or independently by a crank at the end of the table bar. Both the rolls and the table are provided with indexes for accurately setting or tilting to any position. The pair of small rolls is provided for sawing very short and crooked stock, which brings the centre line of the rolls within one inch of the blade. The rates of feed, 32, 47, 65, 109, 152 and 192 feet per minute, or less if wanted.

✻ ✻ ✻

Information Wanted Re Canvasser

This paper has had many complaints from persons in Brantford and Ingersoll, to the effect that an agent, J. L. McKinnon, has been receiving money for subscriptions to this paper.

We would like information regarding the whereabouts of this man as we have not received payment of monies collected by him.

If any subscriber has a friend who has paid this man money, but has not heard from us, we will acknowledge his subscription if he will send us a copy of his receipt, even though we have not received the money.

The Canadian Builder & Carpenter, 32 Colborne street, Toronto.

✻ ✻ ✻

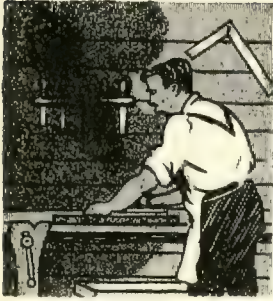
Notes of Montreal Builders' Exchange

At a recent meeting of the Montreal Builders' Exchange, it was decided to appoint committees to approach the Bankers' Association or the Minister of Finance with a view of securing more money for building purposes; to interview the Government and the wholesale people in Montreal on the subject of the price of foodstuffs; and to consider the question of wages scale for all classes affected by the contracting business. The chief topic of discussion was on the latter question, and there was considerable difference of opinion as to the wisdom of attempting to cut wages with the object of inducing capitalists to restart building operations. It was pointed out that many contractors have agreements with the Unions, and the former ought to stand by these agreements. On the other hand, it was said that it is certain people with money will not build unless some inducement in the way of lower costs is held out, and that it is better for workmen to accept say 30 cents an hour than to practically starve. It was made clear that the Builders' Exchange has no desire to reduce the scale of wages, and that the suggestion of a lower scale is with a view to keeping the trade from utter stagnation.

The question of the cost of builders' supplies was also raised, and it was said that the prices of materials are excessive. Other speakers made strong complaints of the action of banks in restricting loans to firms, thus preventing work being carried out.

✻ ✻ ✻

Whenever we come across the expression that only skilled operators should be permitted to handle certain machines, we wonder how a new man is to learn or acquire skill without handling machines before he is rated as skilled.



Carpentry and Woodworking



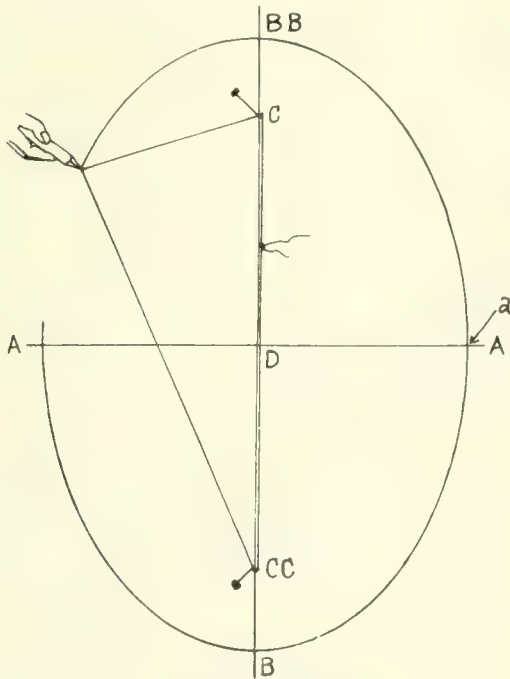
How to Make an Oval

The rule for making an oval is very simple, and one of any dimensions can be made accurately without any guesswork. Suppose you want an oval three inches wide and four inches long.

Draw two diameters at right angles. See lines BB, B, and AA in the illustration. Mark a point on AA one and a half inches from the centre, where line BB, B intersects AA.

Next mark a point on line B two inches from the centre. This makes the diameter of line B four inches and the diameter of line A three inches. The rule is as follows:

Set your compasses or dividers the radius of your greater diameter, in this case two inches. Next, place



Method of Making an oval

one point of your compasses at point "a" and "sweep" line B, BB. At the points of intersection on line B, BB drive in two tacks or pins at C, CC.

Next, make a loop or band with a piece of string by looping it around one of the tacks at C and tying it at B. This loop should reach from C to B or from CC to BB. Insert a pencil in this band and mark on the board or paper, pulling the band out taut. Run the pencil around the band, and you will make the oval the desired size. The string must be left over the two tacks at C and CC. This rule will apply to ovals of any dimensions.

Nails and Screws

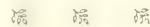
Many things in the way of interesting technical experiments and tests are carried on these days, and one reported on recently has to do with nails and screws. Maybe you think you know all about nails and screws, and certainly you know that a screw will hold better than a nail. The committee doing the testing knew that, too, but by a series of experiments some interesting points were brought out, just the same.

One of these points was that a nail will hold better if a small hole is bored to receive it. With a small hole and a taper-pointed nail there is a compression in driving that begets a firm grip, whereas a blunt-pointed or rough nail breaks and tears the wood so that it will not grip firmly. The fact that hole boring is essential to get the highest order of efficiency out of nails would suggest that more screws are the proper thing, for after the holes are bored it is nearly as easy to use screws as nails, especially since we now have screw-driving machines as well as nailing machines.



Economical Use of Oak Flooring

As rugs are used almost universally in homes and offices, an economical plan is to have the centre section of the room laid with oak flooring of a cheaper grade, and to employ the better grade in the border. After the rug is laid, all parts of the room will have the same appearance.—From Lumber and Its Uses.



Setting a Bevel on a Hopper so the Joints Will Mitre

Rule: Suppose you have a board $\frac{7}{8}$ of an inch thick and beveled on $\frac{3}{8}$ of an inch, and to a feather-edge at the back, the bevel for the mitre will be obtained as follows:

Lay down the square (the same as in laying out a rafter) with the figures 3 and 7 even with the edge of a straight board, and draw a line from 7 to the corner of a square; slide the square along this line to 12, and the other side will be at $5\frac{1}{8}$; measure across the corner of a square from 12 to $5\frac{1}{8}$, and it gives about 13 in.; then lay down the square to 12 and 13 and set a bevel to the short line. This gives the mitre across the beveled edge. For any other bevel than the one above given, proceed according to the following:

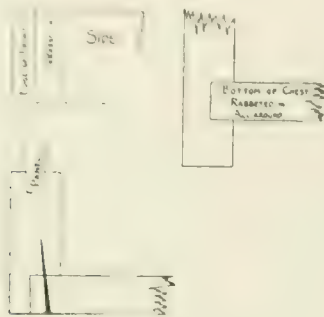
General Rule.

Rule: Take as many inches each way on the square as will correspond to the number of 8ths, 12ths, or

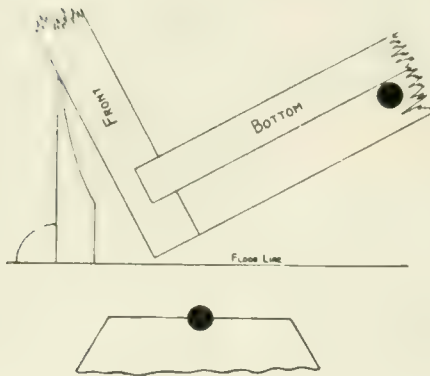
16ths that the piece is beveled each way, or one-half the number, or double the number, so that the ratio of the numbers will not be changed; draw a line along either the tongue or blade and slide the square along this line until either side reaches 12 in.; measure the diagonal from 12 to where the other side will be, and use this diagonal distance with 12 to get the mitre, using the short bevel.

To Mitre Two Pieces Together When Both Stand Out of Plumb, Such as Splayed or Flaring Boxes, Hoppers, Etc.

Rule. First find the pitch that the sides and ends will stand on, viz. 3 in. per foot, 6 in. per foot, or whatever it may be. Suppose the sides and ends of a



Various Details of Construction



Details of lower corner of flour bin

box stand 6 in. out of plumb for each foot of perpendicular height, then the diagonal of 6 and 12 ($13\frac{1}{2}$) will be the figures to use with 12 to get the mitre, laying the square across the square edge of the pieces to 12 and $13\frac{1}{2}$, using the short bevel. Where the edges of the pieces are to be beveled, so as to be parallel with the base, a square mitre will do; and also by applying a try-square across this beveled edge and then marking the pitch on both sides of the piece, a butt joint will be obtained, where the sides form a different angle from the ends.

To Get a Mitre.

Rule: First get the mitres for each pitch separately by the preceding methods and draw them both across the edge of one of the pieces, the joints of intersection forming an acute angle; bisect the angle thus formed, which will be the required mitre.—National Builder.



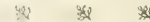
A man should plan out his work before doing it, of course, but it is fairly easy to get into the habit of wasting unnecessary time in planning.

Details of a Flour Bin

The flour bin, details of which are shown in the accompanying sketches, is made to balance on a $\frac{1}{2}$ in. iron rod and will hold over 100 lbs. In doing the work, the carpenter should make the front the same as a panel door, with mortise and tenon, using 1 1-16 in. boards for the purpose. The panel should be 13-16 in. For the sides, use 13-16 x 14 in. boards. The back should be $16\frac{3}{8}$ in. wide. The front is rabbetted to receive the sides, which are nailed on. The bottom is rabbetted in all around. The sides are also nailed to the back.

The $\frac{1}{2}$ in. rod is placed, as shown in the details, 6 in. from the front and $3\frac{3}{8}$ in. from the floor line. Its position is clearly indicated in the detail, which represents the lower corner of the chest.

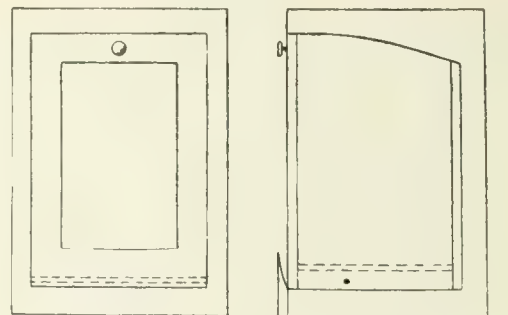
If I have room, I let the iron rod rest on 2 x 4 in. blocks placed on the floor, as indicated just below the detail representing the corner of the chest.—J. S., in Building Age.



A Carpenter's Kit Bag

A writer in one of the English building papers comments as follows upon the subject indicated by the above title:

"The carpenter without his tools is a lost man. In this respect he is at a disadvantage compared with other tradesmen, who, as a rule, can borrow what they require from fellow-workmen, or, in some cases,



Front and side elevations of flour bin

can obtain a loan of them from their employers. But the carpenter carries his 'calling in his bag' when he goes to a job, and if through any unforeseen cause or misfortune this bag or its normal contents are absent he is in a very bad way indeed. The pawnbroker's assistant, who is well posted upon all that concerns his fellow-man, is well aware of this fact, and is always prepared to advance a reasonable amount on a carpenter's kit, as it is certain to be redeemed again, and not left on his hands, and the man who lives by his wits, who is also pretty well informed, turns this trait of the above pawnbroker to account by stealing carpenters' kit bags, and 'hypothecating' them.

"England, by the way, is the only country where a workman's tools are a legal pledge, and are accepted by pawnbrokers. Elsewhere it is an offence, punishable by fine or imprisonment, for a pawnbroker to advance money on the tools by which a man earns his living. But there is, of course, another side to the picture, and this is when a man is compelled to part, at any rate, temporarily, with his kit to keep himself alive. 'I lived for two days on my saw,' said a man

who had been through the mill of misfortune, 'and one day on the hammer and chisels; the bag and the smaller tools stood me off for two days more.'

"A carpenter's kit is an open sesame to hospitality up country in Australia, and the bearer is always welcomed at any station he arrives at, for there is always work for him to do which the 'station carpenter' is not capable of doing in a satisfactory manner."



Using the Square and Compass

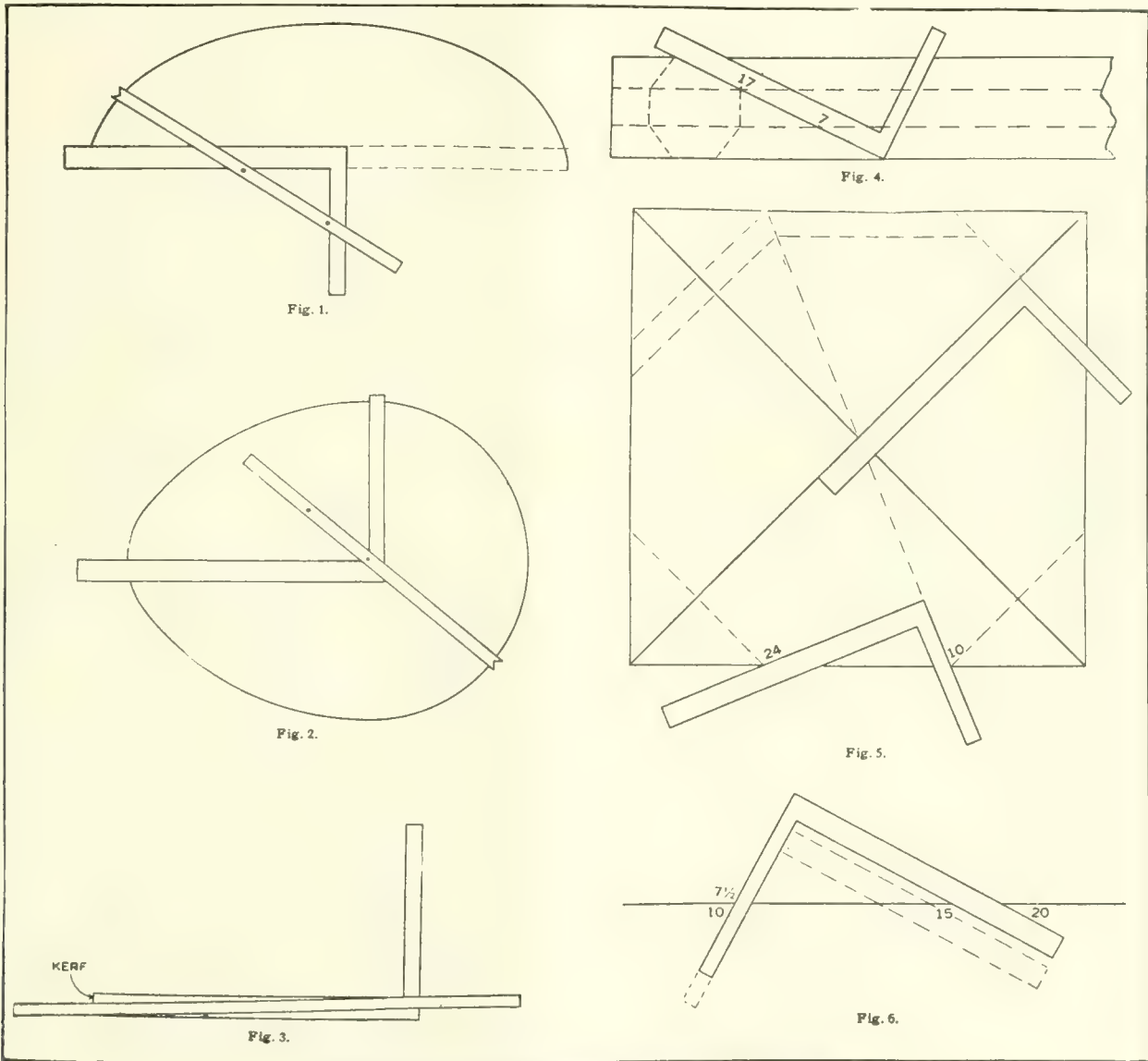
The easily understood rules for using the square and compass, are valuable to thousands of wood-workers who have not had the advantages of instruction in

had in same manner. Fig. 2 shows how an oval may be laid off on this same principle. The only difference is, instead of reversing square, as for the ellipse, swing the lath around on one brad for the round half, or end.

In Fig. 3 is shown how a board may be kerfed to fit a circle. For explanation we will say the circle is 2-ft. around. Saw in, then raise board as shown to close the joint. If this allows the board to raise 2-in. in 2-ft., then saw in 2-in. apart; if raised 1-in. in 2-ft., then kerf 1-in. apart. Other sizes or any part of a circle can be obtained in the same way.

Fig. 4 shows how to lay off an octagon on a square timber. Lay the square full length (24-in.) diagonally across the timber, as shown, and mark on 7 and 17, or, to be exact, 6 15/16 and 17.

Fig. 5 shows how to lay off an octagon on end of timber. Draw two lines from corners of timber, lay the



Illustrating easily understood rules for using square and compass

higher mathematics, as well as many that have. Here-with are offered a few that may be of interest to some.

Fig. 1 shows a quick, simple and accurate way of laying out an ellipse or opening for a mirror, etc. Say an ellipse 2x3-ft., or a half-ellipse opening 1-ft. high by 3-ft. long, is desired. Take a plastering lath or similar strip, drive a brad 1-ft. from end and another 18-in. from the same end. Lay a carpenter's square on the board and use the lath as shown. Other sizes can be

square on one of these lines, as shown, and measure one-half the width of timber from the centre, and square over. Repeat all the way around. The octagon miter cut is 10 and 24, cut on 10, as shown by the square at the bottom of Fig. 5. The lap joint is square miter, or 45 degs.

In Fig. 6 is shown how the carpenter's square may be used to figure proportion. If 1,000-ft. of lumber costs \$20, 750-ft. at the same price will cost \$15. For example,

take a straight-edge board or mark, lay the square on at 10-in. on the tongue and 20 in. on the blade; mark by the tongue, then slide square along the mark to 7 $\frac{1}{2}$ on tongue, which represents 750-ft., and the blade will show 15, which represents \$15. Cost of other quantities at different prices may be quickly found in the same manner.—J. J. S., in *The Wood Worker*.

* * *

Graining Metal Work

Now that fireproof sheet metal work is in many cases replacing wood, a description of the methods of finishing such work so that it resembles wood may not be out of place.

The illustrations herewith show the necessary apparatus, which is not at all expensive. The piece shown at A is a solid cylinder of wood 2 $\frac{1}{2}$ in. diameter and 9 in. long. Strips are nailed to the outside of it, as shown. Their purpose is to hold the composition. Through the cylinder is a central hole, so that it can rotate on the spindle B. At C is shown the mould for casting the composition roller. It is a seamless zinc

thinned with equal parts of boiled linseed oil and turps, to about the consistency of milk.

This color enters the pores of the wood, which have been cleared of all sap by the application of the lye. The scraper E is now used to remove the surplus of color on the surface of the board.

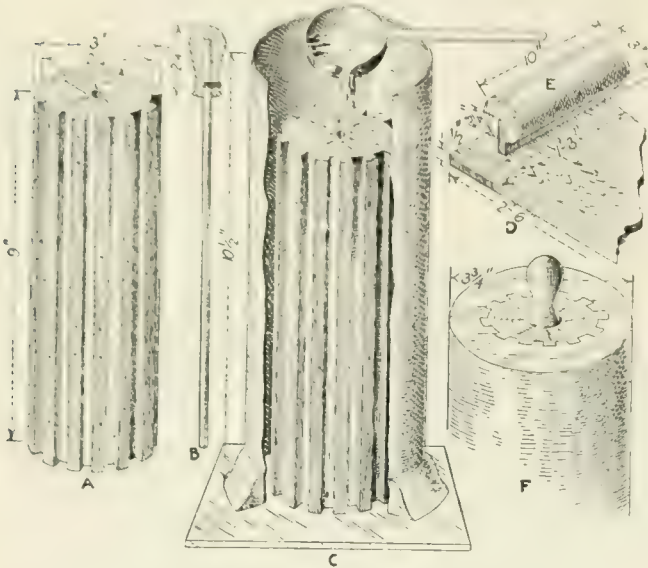
The roller F is passed over the board and picks up the color from the pores of the wood. It now remains to run the roller over the now dry, painted sheet iron. When the transfer is dry and varnished in the usual way, it is difficult to distinguish from the natural wood.—H. H. Johns, in *American Machinist*.

* * *

Cold Storage Box for the Window Sill

It is possible that some of our interested readers may obtain a suggestion from the accompanying sketches which portray a domestic cold storage plant. This is nothing more nor less than the extension or an enclosing of a window in the pantry, and besides four old shutters which the local carpenter supplied second-hand had nothing more than one board at the bottom for a platform, one at the top for the roof, and two braces at either end to act as supports, all as shown.

The object of the extended window sill is to supply a cold storage space for the winter time. Since the lower sash can be raised and lowered it is possible to store fruits, vegetables, milk, etc., during the fall, winter, and spring months without the purchase of ice. This scheme might also be utilized during the summer months for similar purposes, although by most people



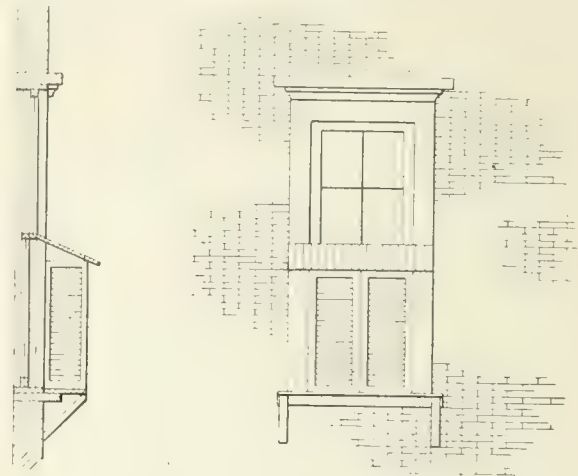
Tools for graining metal work

tube set on a piece of glass and made water-tight by means of putty.

A piece of wood, the grain of which it is desired to reproduce, is shown at D. This is soaked in a 10 per cent. cold solution of lye, commercial potassium carbonate, for 30 minutes, well washed, and gradually dried.

The scraper shown at E is made of leather held in a wooden handle. At F is shown the roller ready for use. The roller is made of a mixture by weight of three parts best fish glue, two parts balsam of fir, two parts glycerine, specific gravity 1.260, and one part of water. When thoroughly mixed and heated till liquid, it is poured slowly into the zinc mould and allowed to pour to facilitate removal of the roller when set. Setting takes about 24 hours.

A piece of sheet iron is coated with yellow ochre and set away to dry. The board D, say of nicely grained walnut, is coated with the following mixture: Equal parts of drop black in turps, and vandyke brown in oil,



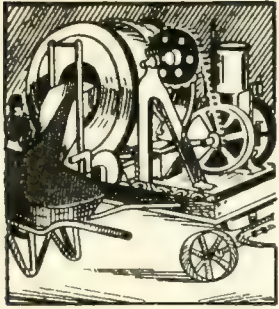
Details of cold storage box for window sill

an ice box would be considered essential.

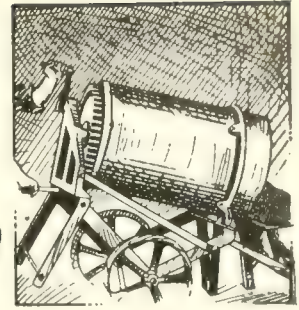
When the lady of the house does her own work and thriftily avoids the purchase of ice during the greater portion of the year, and being at the same time desirous of keeping things cool, she is generally obliged to go out of doors, down two or more steps, and into a separate vault or box outside of the house. The simple scheme shown herewith, however, prevents climbing up and down slippery steps, and has been found eminently satisfactory.

Fly screen is tacked on the inside of the shutters so that the lower sash can be kept open during hot weather if so desired.

The advantages, in brief, are a saving of ice; many steps are likewise rendered unnecessary; the carpenter obtains a job at a fair price in which he can use second-hand materials, and life is made easier for the housewife.—*Building Age*.



Concrete Department



Methods of Patching and Repairing Concrete

The following summary of practice in patching and repairing concrete is the conclusions reached from a special enquiry made by the committee on masonry of the American Railway Engineering Association. About 100 answers were received to the enquiry. The various methods may be described as follows:

1—Wet Method.

The surface of the old concrete is thoroughly roughened, cleaned, and drenched with water, and covered with a cement grout. Then the new concrete is mixed to a sloppy consistency and applied, being held in place till set by forms, as required.

From the reports received, it appears that many successes and many failures have followed this method. Where it has been successful, that result probably has been due to painstaking care and expense being employed in the preliminary cleaning and thorough wetting of the old concrete surfaces before the new concrete is applied.

2—Moderately Dry Method.

The surface of the old concrete is thoroughly roughened, cleaned, and drenched with water, and powdered with cement or painted with cement grout, after which the new concrete is applied and thoroughly tamped against the old surface. Generally, such patches are kept moist by sprinkling them with water for several days.

The same comment applies here as to the wet method.

3—Dowel Method.

This is a modification of the two preceding methods and is generally used for other than horizontal surfaces, although it may be applied to the latter. The new concrete may have any consistency to meet the particular conditions or the ideas of the engineer in charge, but usually a fairly wet concrete is used. This method includes drilling holes and setting dowels into the old concrete with projecting ends to engage into the new concrete. Sometimes steel bars or metal fabric are connected to these dowels to further ensure permanency of the patch.

This method can be made uniformly successful, but cannot always be applied. Where any considerable mass of new concrete is to be connected to old concrete this is the only safe method to pursue.

4—Wedge Method.

This method includes the cutting out of defective concrete in such a manner as to undercut the surrounding good concrete so that the new concrete will be

held in place, when set, by the shape of the binding edges of the old concrete.

The difficulty of undercutting concrete so as to secure such edges is too great to make this method applicable in ordinary cases, and, except where a considerable depth of new concrete is to be put in, such undercutting could not be successfully done, as concrete cannot be cut so as to leave sharp, clean edges.

5—Cleaning With Steam.

This is a method of cleaning surfaces of old concrete preparatory to putting on a patch of new, or of cleaning the top of a rough concrete floor before applying the "finish coat." The surface of the old concrete is brushed as clean as possible with stiff brushes and then gone over at least twice with a steam jet—an ordinary piece of $\frac{1}{2}$ in. gas pipe makes a very satisfactory jet nozzle. This short length of pipe is connected to a steam hose so that it can be readily moved about. The steam is supplied by the boilers of the mixer or hoisting engines. The steam will clean and heat the concrete surface, leaving it perfectly dry, so it is important to thoroughly drench the surface with water after cleaning with steam. In cold weather, it is found advantageous to use hot water. Immediately after the surface is thoroughly cleaned and drenched, the new concrete is applied.

Excellent results have followed the use of this method of cleaning, but it is essential that the surface of the old concrete be thoroughly drenched with water after using the steam jet, otherwise the new concrete will not adhere to the old.

6—Cleaning With Acid.

This method includes washing of the surface of the old concrete with a solution of hydrochloric (muriatic) acid (one part acid to two parts water), after which the surface must be carefully and thoroughly washed to remove any free acid.

This is a very commonly applied method of cleaning old concrete surfaces preparatory to placing new concrete against them, and, by many, is considered the only safe one to use, especially where a "finish coat" is to be put on after the concrete base is set.

Conclusions.

The following conclusions as to the methods of repairing defective or worn surfaces of concrete are presented:

1. In all cases the surface to be repaired must first be thoroughly cleaned of all loose material, laitance, and dust, and the clean, rough, sound concrete exposed to receive the patch. Probably the best method of cleaning is by means of a steam jet.

2. After cleaning, the surface to be repaired must be

thoroughly saturated with water, not simply moistened, but so thoroughly drenched that the old concrete will not absorb water from the new mortar or concrete used in patching. If possible, the surface should be kept covered with water for several hours.

3. If the repair or patch is to be made on a vertical or sloping surface and is not to be more than $1\frac{1}{2}$ in. thick, the surface of the old concrete, while it is still wet, should be spattered or splashed with a cement grout, following this immediately with a fairly stiff plaster coat of mortar made of the same proportions of cement and sand as was used in the original concrete, but never richer than 1 cement to $2\frac{1}{2}$ sand. This plaster coat should not be thicker than $\frac{1}{2}$ in., and each coat should be forced into the surface, but not dragged with a trowel. The surface of each coat, except the final coat, should be "scratched" to give a bond for the next coat. This plastering should preferably begin at the top and progress downward, and only enough time be allowed to permit each coat to receive its initial set before the next coat is applied. The final coat should be finished with a wooden float, and only enough water used to properly finish the surface. This patch

the ease of extensive patching, as an additional safeguard. The patching may then be done with mortar without forms, or with wet concrete supported by forms, depending upon the thickness and the extent of the patch.

6. If the repair or patch is to be made on a horizontal or nearly horizontal face and of considerable thickness, dowels may be used or the concrete may simply be reinforced by fabric or bars without using dowels—treating the patch as a block of masonry.

7. Care must be taken not to have thin edges on patches. To avoid this, it may be necessary to cut out sound concrete around a place to be patched, so as to give deep edges to the patch. If possible, the edges should be undercut.

✱ ✱ ✱

Concrete Boxes for Various Uses

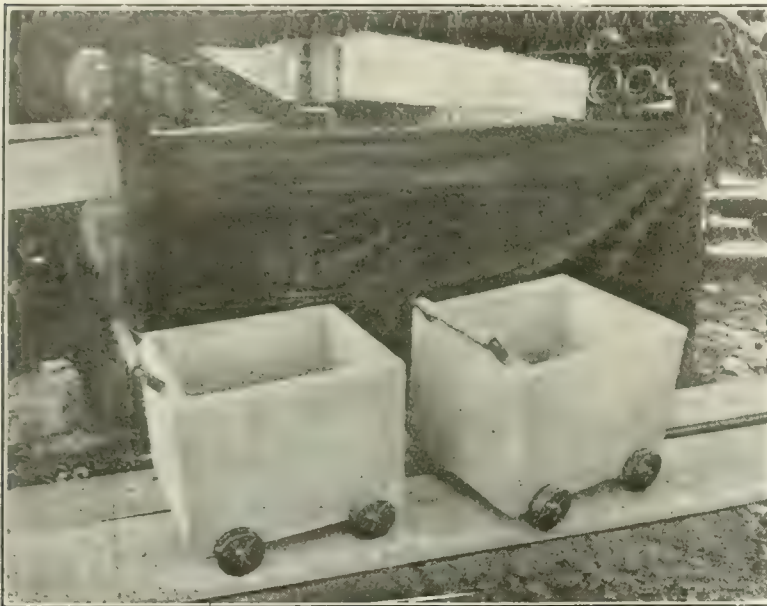
The accompanying drawing is designed to represent two store boxes, one smaller than the other. The wooden strips nailed across the top of the inside or smaller box keep it suspended a few inches above the bottom of the larger box. These two boxes are forms for certain simple things to be made in concrete. The smaller box is suspended in the manner described in order that it may not sink into the fresh concrete when the bottom layer is put into the larger box. After this first or bottom layer of concrete is placed, the space between the sides and ends of the two boxes is filled with concrete, and the result will be a box of concrete of the dimensions represented by this space. If great strength is required, wire or small steel rods may be imbedded in the concrete as it is built up, which will reinforce it to the degree that it will be very much stronger than the plain concrete. On the other hand, if a porous concrete is required, that is to say, one which will admit moisture, it may be made of cinders with the quantity of cement and sand somewhat reduced. This is known as a lean mixture.

Keeping in mind that the size and shape of the boxes will be governed by the size and shape of the thing required, the following are some of the conveniences that may be turned out for sale:

Making Flower Boxes

With these simple forms it is possible to make flower boxes of practically any size. It is also feasible to decorate them by imbedding tiles in the concrete. Having selected the tiles, fasten to the inside of the outer form or box, blocks of wood a little larger than the size of the tiles, attaching these to the forms by driving nails from the outside, penetrating the wood just sufficiently to keep the blocks in place so that the nails may be easily withdrawn. After the concrete has set and the forms are removed the wooden blocks representing the tiles can be withdrawn from the concrete and the tiles placed in the depression and made secure by pointing them with cement mortar.

By the use of a dense and impervious concrete, reinforced as described above, but especially at the corners, the forms will answer for a small tank or watering trough. Where tanks are to be placed in exposed situations, subject to freezing, it would be well to slope the inside form by making it a little smaller at the bottom than at the top, thus providing an inclined interior sur-



SMALL BOXES MADE OF INDESTRUCTIBLE CONCRETE.

The maker of the boxes shown has enlarged upon the original idea by adding wheels and handles, thus making them portable. These are feed boxes.

should be kept damp and protected from sun or frost till fully set up.

4. If the repair or patch or "finish coat" is to be made on a horizontal or nearly horizontal surface, the surface of the old concrete should be slushed and broomed with a thin cement grout, following this immediately with a wet mortar made of 1 part cement and $2\frac{1}{2}$ parts sand or granite screenings, and of the full thickness required (not less than $\frac{1}{2}$ in. thick, however). When this mortar begins to take its initial set, it should be floated or troweled to such a finish as may be desired.

5. If the repair or patch is to be made on a vertical or sloping face and is to be more than $1\frac{1}{2}$ in. thick, it will be advisable to embed dowels into the old concrete, as deeply as the thickness of the proposed patch, and spaced sufficiently close together to firmly anchor the patch to the old concrete. The dowels must be wedged into the old concrete, and it will be advisable to fasten wires, metal fabric, or bars to the dowels, in

face upon which the ice will tend to slide upward, thereby preventing the destruction of the tank. It is said, however, that the placing of a stick in an upright position in a receptacle of this character will prevent it from bursting in cold weather.

With pipe openings established, these box forms are available for the construction of a kitchen sink or slop drain, as well as a drain for an outside pump or faucet.

Boxes for Garden Work

Made in narrow sizes they could be used for making receptacles in which to sprout seeds, merely placing a pane of glass over the top.

They would be convenient to use around the poultry house, for example, for hen's nests, for they could be easily disinfected by subjecting them to fire. If the boxes were of fairly good size and nails were inserted in the concrete along the upper edge before the material set, the box could be turned on its side and wire netting attached to the nails, thus making it serve as a small coop. Concrete boxes could also be used for sprouting oats, thus giving green food for chickens in the winter season. It would merely be necessary to put the boxes in a warm cellar, spread over the bottom two or three inches of oats and sprout the latter by adding a sufficient quantity of water, as is done with wooden boxes.

Such receptacles would make excellent refuse boxes and if quite large would be very convenient for small storage purposes, indoors or out.

These boxes would prove to be convenient for the mixing of feed, especially where water is used, as concrete improves in strength when subjected to moisture.

It would not be a difficult matter to establish them in the horse or cow stalls for mangers or small watering troughs.

In using old boxes in the manner described it must be understood that the chief object in view is to do the work as cheaply as possible. In a majority of cases, unless the boxes were perfectly smooth and oiled or soaped before the concrete is put in, it would be necessary to destroy them in removing them from the concrete.

If the builder cares to go into more expensive forms, such as can be used over and over again, the same structural methods would be used in the case of well-made forms provided with hinges and locking devices to facilitate their removal and repeated use.

Concrete Mixture to Use

A satisfactory mixture for work of this kind would be a concrete composed of 1 part Portland cement, 2 parts sand, and 4 parts stone or gravel. When placed in the forms it should be thoroughly tamped and worked from side to side with a flat paddle. This will bring the richer mortar to the sides of the form, making a smoother surface than would otherwise result. The concrete should be of "sloppy wet" consistency. It should be protected from the hot sun and wind and kept in the forms several days, after which it should be sprinkled twice a day, or, if the object is small, immersed in water for the period of a week.

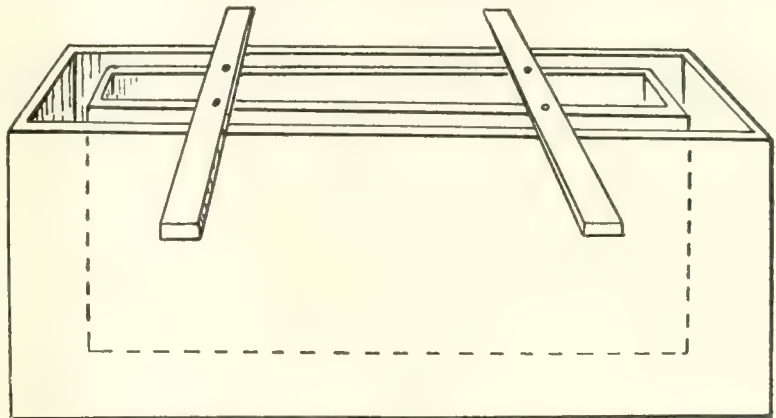
The purpose in using concrete is to have an everlasting and decay-proof material which may be employed for indefinite purposes.

Mixture of Mortar for Laying up Block Walls

Occasional cracking in concrete block walls, chiefly at the mortar joints, is something which I should like very much to avoid in the construction of a rather large house which I am about to erect. It has been suggested to me that instead of a Portland cement mortar, I use a mixture of one barrel of lime to one sack of cement with twice the bulk of good sharp sand. What do you think of such a suggestion? If the suggestion isn't a good one, what mixture do you suggest, and what other things should be considered in laying up a block wall to avoid cracks, besides, of course, the stability of the foundations?

The following answers to these questions were given by W. M. Kinney, in *Concrete-Cement Age*:

Cracking of concrete block walls at mortar joints indicates a structural defect in either the foundation or the wall, which develops a crack in the weakest place; namely, the mortar joint. The mixture suggested, that is, one barrel of lime, one sack of cement, and sand equal to twice the bulk of lime and cement, will produce a mortar so weak that there would be little adhe-



This drawing shows how the store boxes should be assembled after a layer of concrete is placed in the larger box.

sion, hence but little stability in the wall, and mortar joints would open under very slight stresses.

In constructing a concrete block building, the bearing strength of the soil must first be ascertained and concrete footings of sufficient width must be designed to distribute the load over a proper bearing area. The foundation must then be accurately and firmly placed upon the footings so that there will be no possibility of the foundation failing in any part.

Assuming that the foundation has been substantially constructed, the most common causes of cracks developing in concrete block walls are expansion and contraction due to temperature changes in walls built without reinforcement, piers, pilasters or cross-partition bonding. Where such a wall exceeds 30 feet in length, it is desirable to guard against cracks by occasionally filling one or more of the hollow spaces (preferably beside a window or door opening) with 1:2½:4 concrete of quaky consistency. If the wall is subjected to unusual stress of any kind, half-inch reinforcing rods may be introduced at the time of filling the hollow spaces with concrete. If a hollow space is filled in this manner on each side of a window, a reinforced concrete pier is created which gives remarkable stability to the wall.

Concrete block should invariably be laid in cement

mortar, mixed in the proportion of one sack of Portland cement to two cubic feet of clean sand. A small quantity of hydrated lime, not exceeding ten per cent. of the weight of the cement, may be added for the purpose of making the mortar easier to work. Block should be thoroughly soaked with water before laying in the wall in order to prevent them from absorbing water from the mortar. No mortar should be used after it has been wet more than thirty minutes. Mortar joints should be uniform and carefully filled. Nearly all manufacturers of block machines now furnish mortar plates or templates, which make it easier to secure uniform joints; three-eighths inch is probably the best thickness of mortar joint to adopt.

* * *

Suitable Paint for Cement or Concrete Surfaces

A paper on "Paint Protection for Portland Cement Surfaces," by H. A. Gardner, Washington, D.C., has for its object the determination of what constitutes a suitable paint for the protection and decoration of exterior and interior stucco walls constructed of Portland cement, and for decorating and rendering wearproof Portland cement floors.

Mr. Gardner instituted a series of tests to determine the durability of various types of paint upon Portland cement surfaces exposed to the weather. The panels for the tests were prepared by constructing a long board wall to which was fastened expanded metal. A mixture of 1 part of Portland cement and 2 parts of clean sand was made and applied to the expanded metal, forming a cement wall 3 in. in depth. The wall was divided into 35 sections or panels, each 30 in. wide and 40 in. high. Three coats of paint were applied to each panel by a practical journeyman painter. In order to make the test more severe, nearly all of the paints were applied in white. (Tinted paints are known to be much more durable than white paints.) A strip of chrome green, 6 in. wide, was placed over the top of the third coat of paint, in order to determine whether or not the lime which might be present on the surface of the cement would have any effect upon the paint coating. Fading of the green to a yellow would indicate such action. A priming coat of 25 per cent. zinc sulphate solution was applied to the panels, to neutralize any free lime, but this is held to be unnecessary if the surface is dry when painted and will not be exposed to the weather.

Results of Tests.

The general results of the tests at the end of a two-year period, together with an outline of the composition of the paints tested, is given as follows:

Class No. 1—Single-pigment paints made with white lead or zinc oxide ground in pure linseed oil. (These paints are in very good condition throughout.)

Class No. 2—Combination-pigment paints made of mixtures of white lead, zinc oxide, or similar pigments ground in pure linseed oil. (These paints are in generally excellent condition.)

Class No. 3—Combination-pigment paints ground with mixtures of raw and heavy-bodied linseed oil or with treated Chinese wood oil. The viscosity of these oils requires the use of considerable turpentine or other thinner in the manufacture of such paints, in order to make them of the right viscosity for application. Semi-flat surfaces are therefore produced during the drying. (Most of these paints are in excellent condition.)

Class No. 4—Single and combination-pigments ground in oil varnishes containing acid resins. (These paints are checking and scaling in many spots. Such varnish paints are apparently not suited to exterior exposure.)

Class No. 5—Paints containing resins dissolved in volatile spirits (spirit varnishes) with or without pigments. (These

paints are not giving very satisfactory service, the clear varnishes having entirely decayed in some cases. Those to which pigment has been added are in somewhat better condition.)

Class No. 6—Paints made with single and combination pigments ground in a water medium containing glue or casein as a binder. (These paints are chalking rapidly and are not moisture-proofing the cement. The pigment binder has been destroyed by the weather.)

The tests showed that the amount of free lime in fairly dry cement surfaces does not adversely affect high-grade oil paints. The tests also showed that zinc sulphate may be used with excellent results as a primer to neutralize free lime in damp cement surfaces which are to be painted.

Opaque white pigments, such as basic-sulphate white lead, basic-carbonate white lead, zinc oxide, and lithopone, were present in the paints which gave the best results. In some of these paints there was present a percentage of inert pigments, such as barytes, asbestos, whiting, china clay, gypsum, and silica. The sealing of varnish paints, which developed in several tests, apparently showed that resinous paints are not well suited for cement surfaces.

The oil paint is not attacked by the dry cement, and holds both texture and color. Equally satisfactory results were obtained with boiled linseed oil, mixtures of raw and boiled oil, and mixtures with Chinese wood oil. Such simple paint coatings were also found to be excellent for concrete floors, being durable, wear-resisting, and dust-preventive.

As a result, therefore, it can be stated that excellent results may be obtained by treating cement walls or floors with paints made with raw and heat-treated linseed and Chinese wood oil, containing durable, wear-resisting pigments. When the cement surface is freshly laid and damp, such paints may be safely applied after treating the cement with a zinc sulphate primer.

* * *

To Prevent Concrete from Sticking to Moulds

To prevent concrete from sticking to molds: For wood molds use a thin mixture of lard and lard oil, or liquid waterproofing, or dampproofing; when this coat is thoroughly hard, give rub with cloth slightly moistened with mixture of lard and lard oil, before each cast is made. This same mixture can be applied to iron molds, but mixtures can be thinned with kerosene.

Prepare plaster mold with a mixture of linseed oil and yellow beeswax; let this soak well into the mold; after two days wash with kerosene; before each casting brush mold with mixture of stearic acid dissolved in kerosene. This should be very thin.

For glue or gelatine molds when glue is well hardened, prepare a coating of three parts alum and one part formaldehyde. This hardens the surface of the glue and protects it against the action of cement, so that several casts can be made. Before each cast brush freely with mixture of stearic acid and kerosene.

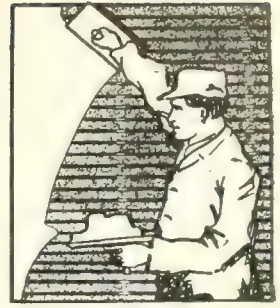
Care must be taken to screen glue after remelting, to eliminate the hard, thin coating which has become insoluble under the action of the formaldehyde.—A. Schilling, in *Concrete-Cement Age*.

* * *

The cut illustrating a store front on page 25 of the September issue of *Canadian Builder & Carpenter*, should have been credited to "Radford's Details of Building Construction," copyrighted by the Radford Publications, Chicago, publishers of *American Carpenter & Builder*.



Brick Work *and* Plastering



Dimensions of Fireplace Flues and Openings

One of the worst diseases of the coal and wood fireplace is the smoky one. In most cases this is caused by the flue not being large enough or high enough, says the Bungalow Magazine. Even a poorly constructed fireplace will not smoke if the chimney is an exceptionally good one. The exact size of flue for a given size of fireplace is very difficult to estimate, because there are so many factors for consideration. Friction, height of flue, the kind of fuel to be burned, whether the chimney is an inside or an outside one—these and many more questions need to be considered.

Flues Should be Lined.

Friction is an important item. It is a very wise plan to line flues with flue lining, which reduces friction to a minimum and ensures a smooth flue that will never get clogged with soot. It also keeps the inside of flue dry. In some localities, however, flue lining is very expensive, and everyone cannot afford to use it. In that case, it is best to use hard brick, which absorbs very little moisture. While building, care should be taken to keep the inside of the flue smooth. Be sure that the flues are large enough and extend well above the ridge of the roof.

Sizes of Flues Giving Good Results.

The following is a list of comparative sizes of flues and fireplaces that will bring uniformly good results:

| Fireplace Opening. | Flue Necessary |
|-----------------------|----------------|
| 24 in. wide | 8 x 8 |
| 30 in. wide | 8 x 12 |
| 36 in. wide | 8 x 16 |
| 42 in. wide | 12 x 12 |
| 48 in. wide | 12 x 16 |
| 54 in. wide | 16 x 16 |
| 60 in. wide | 16 x 20 |

The chimney itself, however, is not the only cause of smoky fireplaces.

Back Wall Construction is Important.

The overhanging back wall plays two very important parts in the correct operation of fireplaces. It radiates heat into the room and also concentrates the smoke, making it travel faster up the flue. It is very important that the back wall be carried well forward at the top and well above top of fireplace opening.

Guard Against Obstruction Above the Throat.

The one feature in fireplace construction which seldom gets consideration is the part immediately above

the throat. In nine cases out of ten, the chimney is built first, and the mantel afterwards. The mason is then likely to leave a rough brick opening, and support the brickwork above it with either an arch or an angle iron. (Of the two, the angle iron is preferable.) Now, the point is this: There is a square offset right above the throat, which theoretically should not be there. But there must be something to support the chimney, which at that point has about as much pressure as a wall of the same height. This square offset, however, will not be a serious obstruction if it is left high enough to allow the smoke to get up into the flue. The rough brick opening should never be less than forty-five inches from the floor. Not infrequently this rough brick opening is only thirty-eight inches high. The average height of a finished opening is thirty inches.

If the throat is of brick, it is from four to seven inches above this opening, and a cast iron throat is even higher. Consequently, there will be left very little space for the smoke to get by under the square offset. Fireplaces which smoke because of insufficient clearance at this point are very difficult to correct. One should always see that the rough opening is left sufficiently high to avoid this difficulty.

Width of Throat.

There is much difference of opinion as to how wide a throat should be. The throats of manufactured fireplaces, also iron throats, vary from four to eight and one-half inches in width, depending on the general size of the fireplace. To estimate the proper width of throat for any given size of fireplace is a difficult problem. Four inches wide is the general rule which fireplace builders follow; but this is not sufficient in all cases.

The width of throat depends somewhat upon the kind of fuel used, the depth and height of the fireplace opening, and how much ventilation one can afford in the room when the fireplace is not in use. A throat four inches wide will do in most cases; five inches is nearly always sufficient; and seven inches will meet all conditions.

Dampers Should be Used.

The easiest way out of the dilemma is to install a good damper or throat that can be regulated. Ventilation is a good thing, but the fact that most fireplaces when not in use are choked up with rags to prevent loss of heat and to keep the soot out of the room, is certainly a strong argument in favor of dampers.

Dead Air Spaces Back of Brickwork Lining.

The heat from a fireplace is radiated from the fire and from the heated brick of the overhanging back wall and splayed sides. There should be a dead air space back of the brickwork lining. This permits the firebrick to become very hot, the air being a good non-conductor, preventing the loss of heat through the

brickwork of the backing. It also keeps the moisture out of the firebrick. This air space, therefore, is a very necessary asset to a fireplace.

Another way of making air spaces is to lay brick, or pieces of brick, diagonally behind the firebrick. Care must be taken to see that all dead air spaces are tightly closed at the top.

Generally the more the sides of the fireplace are splayed, the more heat they will radiate, for heat rays travel in direct lines. Sides may be splayed as much as four inches for each foot in width of fireplace opening. Two inches is a good unit, and is most always followed.

Table of Width and Depth of Fireplace Openings.

A fireplace should not be too deep, for a deep fireplace will not radiate as much heat as one that is properly proportioned as to depth. This point is especially noticeable in coal-burning fireplaces. The following table shows the proper proportions between the width and depth of fireplace openings where wood alone, or wood and coal, is used:

| Width of Opening. | Depth of Opening. |
|-------------------|-------------------|
| 26 inches | 16 inches |
| 30 inches | 17 inches |
| 34 inches | 18 inches |
| 38 inches | 19 inches |
| 42 inches | 20 inches |
| 46 inches | 21 inches |
| 50 inches | 22 inches |
| 54 inches | 23 inches |

When coal only is to be burned, it is well to build the fireplace just wide and deep enough to fit the grate to be used. The height of the fireplace opening may vary according to the width—from twenty-five to thirty-five inches—but usually the thirty-inch height is preferred.



Specifications for Applying Metal Lath to the Stud Direct

The following is reprinted from the August Bulletin of the Associated Metal Lath Manufacturers' giving the standard specifications for applying exterior stucco:

Inside Waterproofing: (a) The faces of the stud and for one inch back of the face on each side where the plaster may come in contact with them, shall be thoroughly waterproofed with tar or asphalt.

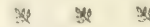
(a) The first coat shall be applied to the outside of the lath and pushed through sufficiently to give a good key. Over the face of the studs the plaster shall be forced well through the lath in order to fill entirely the space between the lath and the stud. The backing coat shall be applied to the back of the lath and shall be thoroughly pushed back into the mortar with a clean wood trowel, but no rubbing of the surface shall be done after the pebbles are embedded.

Insulation (a): After the lath on the outside has been back-plastered, the air space may be divided by applying heavy building paper, quilting, felt or other suitable insulating material between the studs by nailing wood strips over folded ends of the material. This insulation should be so fastened as to clear the bridging, leaving the preponderance of the air space next to the plaster. Care must be taken to keep the insulating material clear of the outside plaster, and make tight

joints against the wood framing at the top and bottom of the spaces and against the bridging where the face intersects.

Plaster: (a) The first coats shall contain not more than two and one half parts of sand to one part of Portland cement by volume. If lime putty is added, it shall not be in excess of one-third of the volume of cement. Hair or fibre may be added.

Thickness of Coat: (a) The first coat shall be at least 3/8 in. thick over the face of the lath and project through behind the lath about 3/8 in. The backing coat shall increase the thickness behind the lath to not less than 5/8 in. The final coat shall not be less than 3/8 in. thick



Terra Cotta Tile Walls

Hollow tiles may be used for building primary bearing walls, which may be defined as walls that may be used to receive directly the loads from floors or roofs in addition to their acting as partition walls, provided the proportion between thickness of wall and free height between the floors does not exceed fifteen feet, and the load, including the weight of the construction, does not exceed 350 lbs. per square inch of net sectional area of tile, and shall be of the thickness specified by this chapter for brick walls.

Hollow terra cotta tile may be used for exterior walls, but when so used the thickness and height of the work must conform to the dimensions required for brick walls in this chapter, but in no case exceed four storeys in height in any building. The thickness of the walls shall be calculated as the outside dimensions of the tile, and each tile shall be full thickness of wall. The thickness of the plastering is not to be included as a part of the thickness of the wall. Walls having a thickness of 4 in. may be used when the height does not exceed 5 ft. The quality of the workmanship as specified for terra cotta columns shall apply to terra cotta tile walls.—From Handbook for Architects and Builders.



The Possibilities of Interior Brick Work

In former days, those few architects who used brick for building material seemed content with a brick of any particular color, provided that each unit of the shipment was of the same identical monotonous shade, and there was no encouragement to the manufacturer to give any special attention to the artistic qualities of this product. To-day the manufacturer has to cater to advanced and higher ideas of brick decoration. Any kind of brick will not do. The selection of a brick from a few samples laid on the architect's table is a thing of the past, and brick to-day, with the advent of generous width and suitable color, is judged from its effect in the wall itself as a general color scheme, rather than from a microscopic inspection of the single brick unit.

Some years ago a well-known authority on decoration stated that in America, "the return to a more substantial way of building would undoubtedly lead in time to the use of brick, stone, or marble floors." To-day, in what is practically a renaissance of brickwork, we have not only the brick floors, but the interior brick wall. While the exterior of a residence or business building may be designed with an eye to its general effect upon the public at large, it is naturally the decoration of the interior which is most closely associated

with its occupants. For this reason, especially in the case of the private house, while the building itself may pass from owner to owner in the course of time without any exterior change, yet its interior decorations are often subject to many vicissitudes, owing possibly on the one hand to such causes as fading wall paper or the soiling of stucco, and on the other hand to the fact that, both these materials being easily removable, a free hand is given to the exercise of individual taste, which is too often out of all harmony and spirit, not only with the general architectural feeling, but with the surroundings.

Among the several materials used in the decoration of the interior, marble, stone, wood, tile, stucco, and wall paper, each and all will ever continue to fill the decorative schemes of certain rooms; but there is another material which, considering its fireproof and sanitary attributes, together with practicability of cost, would seem to merit consideration with other

which brick would be totally out of place, at the same time there are certain rooms, such as the den, billiard room and library, which might well be carried out in good brickwork laid up in decorative effect.

In such rooms the necessity of repapering or renovating would be obviated, as would otherwise be the case with, say, ordinary wall paper, in which new designs are constantly being produced and older patterns withdrawn; so that, even after one has expended time and thought in the selection of an appropriate pattern and shade, the continuity of a particular decorative scheme in your room is dependent entirely upon the life of the paper itself, and, being unable to duplicate it, one is forced once more to search for a suitable background for pictures, hangings, and furniture.

Artistic Possibility of Interior Brick.

The mind of the average householder may at first recoil from the idea of a brick interior as presenting



Handsome brick and stone residence of Mr. J. R. Booth of Ottawa.

materials for certain interiors, the character of which it may be of interest to discuss.

Where Brick is Now Used.

Brick in the private house is being used in hall, library, billiard room, and pergola, and in such parts of larger buildings as the church, theatre loggia, hotel vestibule, and rathskeller, while libraries, railroad waiting rooms, and many other public buildings are, under the skilful hands of our modern architects, being constructed of brick in forms and color schemes which a short time ago would have been almost undreamed of.

An important point in favor of the selection of brick as a decorative medium for interiors is its imperishable qualities, and, while there are many rooms in

a cold and unfinished appearance. The partial reason for this may be the fact that he has always associated brick with the exterior of the building only, and, indeed, the general idea of brickwork itself is something in the nature of an uninteresting brick surface of red, grey, or yellow hue, the term "masonry" perhaps better illustrating a conception of the effect, rather than "finished brickwork." Under the circumstances, the view taken is a very natural one, for an interior constructed of mere masonry would have an unfinished, cheerless, and undoubtedly unsightly appearance. The crux of the situation lies in the fact that the brickwork of to-day has reached a point of artistic possibility where it competes successfully with any of the other building materials, and, just as one cannot attempt to compare the appearance of a wall hung with cheap monotone hangings with one draped with rare Eastern

fabrics, so, too, there is absolutely no comparison between an ordinary brick wall and a finished interior constructed of some of the high-class decorative brick products of to-day.

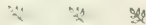
Brick, as a building material, is one of the oldest in the world, and its comparatively recent adoption in connection with interior decoration is due to the wonderful colors and textures of the modern artistic face brick. The various shapes and shades of the modern rough-textured brick have resulted in the introduction of ornamentation of the same texture and finish as the field of the brickwork, thus obviating the introduction of glazed tile and marble.

Cost of Brick Decoration.

The cost of brick decoration compares favorably with either marble or decorative plaster. For example, brick decorative panels, according to some recent estimates, average about \$1.50 per square foot, including designs, and \$1.50 per square foot for installation, while the cost for less pretentious decoration seems in the neighborhood of 75 cents per square foot for material, and the same amount per square foot for installation.

It is an undeniable fact that there are still a number of architects who do not appreciate the possibilities of brickwork, possibly for the reason that they have not availed themselves of the opportunity of observing some of the latest examples of brick decoration; but, judging by the increasing use of artistically shaded and textured brick laid in mortar joints of characteristic size, color, and composition, it seems safe to predict that the old style brickwork with monotone pressed brick and thin mortar joints will soon be a relic of the past.

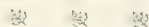
Brick has been raised to a high plane as a decorative medium through its use for interior decoration, and, taking into consideration the fact that brick once more holds its own with stone, stucco, and even marble, it seems reasonable to suppose that brickmakers will continue to develop the possibilities of their product.—Construction News.



Plastering Estimating

The standard rules for measuring plastering adopted by the Employing Plasterers' Association of Chicago, Ill., state that openings in plastering are to be measured between grounds. No deductions are to be made for opening of 2 ft. or less in width. One-half of contents to be deducted for openings 2 ft. or more in width. The contents of all store front openings to be deducted and the contractor to be allowed 1 ft. 6 in. for each jamb by the height.

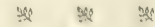
Other rules for measurement allow one-half the area of openings for ordinary doors and windows, while some make no allowance for openings of less than 7 square yards.—American Carpenter and Builder.



Catalogue Review Patents, Designs and Trade Marks

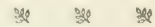
A very interesting booklet has been issued under this title by Stanley Lightfoot, registered patent solicitor and attorney, Lumsden Building, Toronto, for the guidance of inventors and manufacturers making applica-

tion for patents, etc. The booklet explains clearly the various ways and means of obtaining protection by means of patents, trade marks, copyrights, etc., and gives many valuable suggestions for avoiding procedure which would endanger the validity of the patent.



Saws and Builders Tools

A compressed and comprehensive catalogue is the 1914 issue of Henry Disston & Sons' catalogue. It is a booklet bound in cloth which might easily slip into a man's pocket, but contains all the same 200 pages of illustrations and descriptive matter covering the Disston full line. Saws, of course, take up a large amount of space, and such saws—they are of all sorts, sizes and styles, and for all purposes. Then there are machines for sharpening, setting, filing and doing all the other necessary things to make saws fit; and as well a big section is devoted to the Disston building tool line—trowels, knives, squares, screw drivers, levels. The matter is splendidly arranged and a comprehensive index enables one to find any of the numerous articles mentioned almost immediately.



Rules Covering Patents

The question has often been asked as to what is the position of an applicant for a patent or a patentee who has volunteered for active service, and thus is unable to attend to the prosecution of his case.

It is generally known that in all patent offices certain rules are laid down restricting the length of time in which certain documents may be filed, renewal fees paid, and so on.

In Great Britain, I am advised, an Act has now been passed under which the Comptroller of Patents has the authority to grant extensions of time for the filing of such documents, the duration of such extension being governed by the particular conditions of the case. This provision is made for the benefit of applicants or patentees who are absent from their country on active service or for any other justifiable reason are prevented from attending to their cases by circumstances arising from the present state of war.

The extension may be also granted when it is shown that the documents could have been filed, but under the circumstances arising from the state of war this would be prejudicial to the rights or interests of the applicant or patentee.

The provisions apply only to patents in Great Britain and it remains yet to be seen whether a similar Act will be passed in Canada and other British possessions.

The British Patent Office has also made arrangements regarding documents intended for countries at war, in which the lodging of documents may be difficult. These documents should be filed through the British Patent Office, when the comptroller will date-stamp them, and retain until such time as conditions would make it safe to forward to their destination. By this means official evidence will be shown that the papers were duly executed and forwarded for filing on specified dates. Foreign renewal fees, etc., may also be paid in a like manner.—Stanley Lightfoot, Patent Attorney, Toronto.



Mr. Geo. E. Turner, building commissioner at Edmonton, Alta., since 1909, has resigned.

Price List of Building Materials—Revised to Date

EDITOR'S NOTE—Great care is exercised in obtaining prices for this department. They are as accurate as it is possible for us to make them. We know, however, that because of varying conditions, different dealers' prices are bound to vary somewhat; and our purpose in publishing this department is to give readers an idea of prices, rather than absolutely definite information.

In some cases a range of prices appears. This is given to cover the variation in quotations given by different dealers, and also to cover slight variations in conditions of measurement or purchases, which space will not permit us to specify in detail.

We will be glad to give readers prices on materials not appearing here (hardwood flooring and hardware trim for instance), and also the names of dealers from whom such materials can be obtained. Such information will be supplied promptly if you write us specifying in detail what is desired.

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 |

Price at Montreal—Continued

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, 3/4 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 to 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 | 33.00 to 40.00 |
| 7/8 x 12 pine shelving | 45.00 to 48.00 |
| No. 1 white pine flooring | 34.00 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 36.00 |
| 2 x 4 in. to 2 x 14 in., 18 to 20 ft. | 29.00 to 38.00 |
| 2 x 4 in. to 2 x 14 in., 22 to 24 ft. | 31.00 to 40.00 |

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 | 45.00 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 |

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

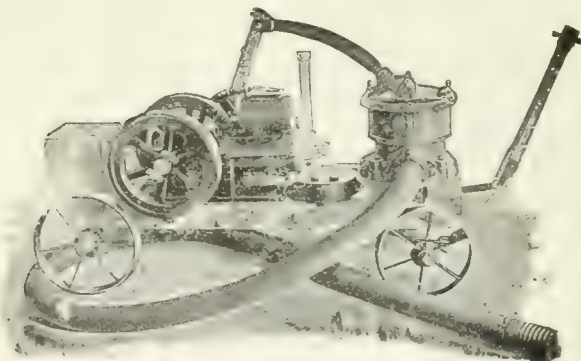


New Singer Block Machine

Has fewer parts than any other block machine sold. Adjustable for a large range of work, making all sizes up to 12 x 20 inch blocks. Absolutely positive, and every block must be perfect. Our vertical drawn cores allow the use of a much wetter material than otherwise possible, making stronger and more moisture-proof blocks.

Our New Gasoline Driven Water Pump

This machine is very effective in pumping out abutments, cellars, etc. It has proven to be of great value to both large and small contractors by reason of its ability to stand up on the job. Very light and can be easily moved about.

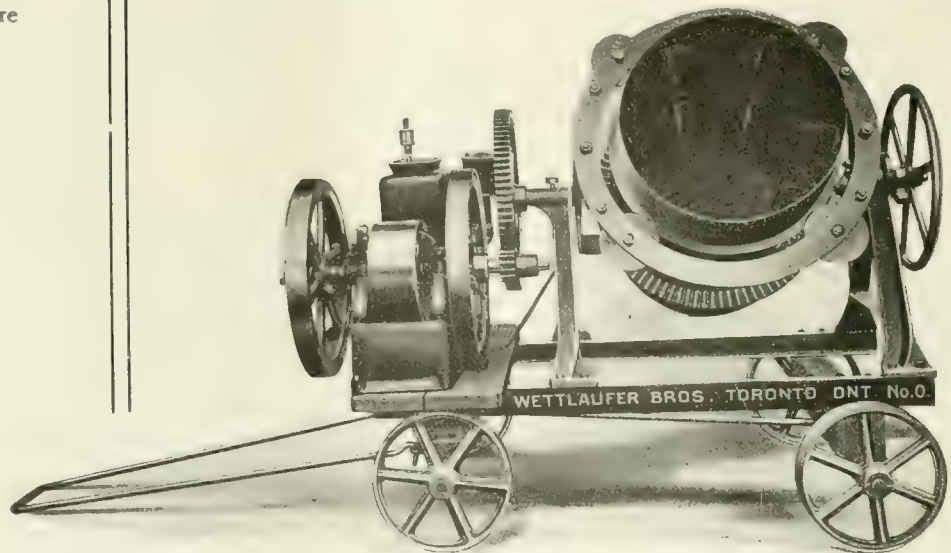


Get This Money-Saver on Your Present Job

DON'T put it off for that "next" job. You can have this Wettlaufer Power Mixer partly paid for out of its earnings on your present job, not only in better mixed concrete, but also in lower expenses, *before you start on your next contract.*

The Wettlaufer No. O Power Mixer

turns out a batch of uniform, thoroughly mixed concrete in less than one minute. No scaly spots if you use a Little Famous No. O, and it will mix more concrete in one day than five men possibly could with shovels.



Write for Literature and Prices

Wettlaufer Bros.

178 Spadina Ave., Toronto

Office and Warerooms
WETTLAUFER BROS.
316 LaGauchetiere St. W.
Montreal

G. B. GRANDBY & CO.
20 Princess St.
Winnipeg, Man.

MAYSMITH & LOWE
545 Bastion St.
Victoria, B.C.

A. E. HODGERT
Regina, Sask.

R. F. MANCEL
41 Cadogan Blk.
Calgary

A. R. WILLIAMS
MACHINERY CO.
15 Dock St.
St. John, N.B.

The HALLMAN
MACHINERY CO.
3743 Alexander St.
Vancouver, B.C.

Professional Directory


Architects, Engineers, Patent Attorneys, Etc.

PATENTS *A good Patent is a property of great value*
 A new invention requires protection. Patent your ideas, and we will sell it for you. Expert advice free to inventors. We cheerfully and promptly give information concerning Patents, home or foreign. Twenty-four years' experience. Send sketch with description for free reports and leaflets. Write or call J. Arthur Macmurray & Co., Patent Attorneys, 154 Bay St., Toronto, Can. Patents obtained, bought or sold.

TRADE MARKS, COPYRIGHTS & DESIGNS
PATENTS
STANLEY LIGHTFOOT
 REG'D PATENT SOLICITOR AND ATTORNEY
 LUMSDEN BLDG. (COR. ADLAIDE & YONGE) TORONTO.
 NEW BOOKLET OF COMPLETE INFORMATION FREE
(MENTION THIS PAPER) M. 3713

ALFRED A. GILMORE, Architect
 Preston, - Ont.
Specializing in
 Rinks, Exhibition Buildings,
 Sanitary Dairy and Stock Barns.

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

Price List of Building Materials—Continued.

| | |
|---|---|
| <p style="text-align: center;">Price at Winnipeg—Continued</p> <p>Crushed stone, ¾ in. 2.90 Hardwall plaster 13.00 per ton Gravel 1.85 per yard Hair (plaster) 1.25 per bale</p> <p style="text-align: center;">PRICE AT VANCOUVER</p> <p>Shingles, Lath Roofing, Etc.</p> <p>XXX B. C. cedar shingles \$2.20 & 2.10 per M No. 1 pine lath 2.25 per M</p> <p>Hardware</p> <p>Nails, wire, common \$3.25 per keg Nails, cut, common 4.25 Tarred felt paper90 per roll Building paper70</p> | <p style="text-align: center;">Price at Vancouver—Continued</p> <p>Brick, Tile, Terra Cotta, Sewer Pipe</p> <p>No. 1 dry pressed red bricks \$42.00 per M No. 1 dry pressed buff bricks 42.00 Red stock bricks 13.00 Fire Brick 45.00 Sewer pipe, 4-inch25 per ft.</p> <p>Cement, Plaster, Stone, Etc.</p> <p>Cement (bags extra) \$3.00 per bbl. Lime 1.35 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</p> |
|---|---|

This Paper costs \$1.00 per Year—less than 10c. each month. If you are not now getting it regularly, will it not pay you to subscribe?

The Canadian Builder & Carpenter
 32 Colborne Street, Toronto

CLASSIFIED DIRECTORY—A BUYER'S GUIDE FOR BUILDERS IN CANADA

- Acetylene Lighting**
Davis Acetylene Co., Niagara Falls, Ont.
- Air Compressors**
Stuart Machinery Co., Ltd., Winnipeg.
- Alabastine**
Alabastine Co., Paris, Ont.
- Asphalt**
Canadian H. W. Johns-Manville Co., Toronto.
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Asphalt (Mastic)**
Canadian H. W. Johns-Manville Co., Toronto.
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Asphalt (Paint)**
Canadian H. W. Johns-Manville Co., Toronto.
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Automatic Gas-Steam Boilers**
Consumers' Gas Co., Toronto.
- Barrows and Concrete Carts**
London Concrete Machinery Co., London, Ont.
- Beaded Sheets**
Metal Shingle & Siding Co., Preston.
- Belting**
Stuart Machinery Co., Ltd., Winnipeg.
- Bevels**
Henry Disston & Sons, Philadelphia.
- Blinds**
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros. Ltd., Collingwood.
- Blinds, Venetian**
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros. Ltd., Collingwood.
- Boilers**
Stuart Machinery Co., Ltd., Winnipeg.
- Brick**
Sun Brick Co., Ltd., Toronto.
Milton Pressed Brick Co., Toronto.
- Bronze Cast**
W. H. Thornhill Co., Winnipeg.
Dennis Wire & Iron Works Co., London.
- Builders' Supplies**
Bournival & Co., Montreal.
Georgian Bay Shook Mills, Midland.
Wilson Bros. Ltd., Collingwood.
- Cast Stone Block Machinery**
Canadian Zagelmeyer Co., Limited, Windsor, Canada.
- Cars (Contractors)**
Stuart Machinery Co., Ltd., Winnipeg.
- Casement & Sash (Steel and Bronze)**
W. H. Thornhill Co., Winnipeg.
- Carts (Concrete)**
London Concrete Machinery Co., London, Ont.
- Ceilings (Metal)**
Metal Shingle & Siding Co., Preston.
- Cement (Portland)**
Braid & McCurdy, Winnipeg, Man.
Ontario Lime Association, Toronto.
- Cement Castings**
W. J. Hynes, Limited, Toronto.
- Cement Tools**
Wettlaufer Bros., Toronto, Ont.
- Cement Stains**
London Concrete Machinery Co., London, Ont.
- Chain Hoists**
Stuart Machinery Co., Ltd., Winnipeg.
- Chain Sprockets**
Stuart Machinery Co., Ltd., Winnipeg.
- Colors for Concrete**
Ideal Concrete Machinery Co., London.
- Columns**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros. Ltd., Collingwood.
York Lumber Co., Toronto.
- Combination Woodworkers**
W. A. Elliott, Toronto.
Hutchinson Woodworker Co., Toronto.
Parks Ball Bearing Machine Co., Cincinnati.
- Composition Capitals for Columns**
W. J. Hynes, Limited, Toronto.
- Concrete Block Machines**
Canadian Zagelmeyer Co., Limited, Windsor, Canada.
Exeter Mfg. Co., Limited, Exeter, Ont.
Ideal Concrete Machinery Co., London.
London Concrete Machinery Co., London, Ont.
Wettlaufer Bros., Toronto, Ont.
- Concrete Brick Machine**
Exeter Mfg. Co., Limited, Exeter, Ont.
Ideal Concrete Machinery Co., London.
London Concrete Machinery Co., London, Ont.
Wettlaufer Bros., Toronto, Ont.
- Concrete Mixers**
Bournival & Co., Montreal.
Eureka Machine Co., Lansing, Mich.
Ideal Concrete Machinery Co., London.
London Concrete Machinery Co., London, Ont.
Stuart Machinery Co., Ltd., Winnipeg.
Wettlaufer Bros., Toronto, Ont.
- Concrete Forms**
Exeter Mfg. Co., Limited, Exeter, Ont.
- Concrete Sill, Lintel Machines**
Exeter Mfg. Co., Limited, Exeter, Ont.
- Concrete Tile Machines**
Exeter Mfg. Co., Limited, Exeter, Ont.
Ideal Concrete Machinery Co., London.
Wettlaufer Bros., Toronto, Ont.
- Concrete Reinforcements**
Metal Shingle & Siding Co., Preston.
- Contractors' Machinery**
Stuart Machinery Co., Ltd., Winnipeg.
Wettlaufer Bros., Toronto, Ont.
- Contractors' Plants**
Stuart Machinery Co., Ltd., Winnipeg.
- Conveying Machinery**
Stuart Machinery Co., Ltd., Winnipeg.
- Cornices (Galvanized Iron)**
Metal Shingle & Siding Co., Preston.
- Corrugated Sheets (Steel)**
Metal Shingle & Siding Co., Preston.
- Cranes and Hoists**
Stuart Machinery Co., Ltd., Winnipeg.
Sasgen Derrick Co., Toronto.
- Crestings**
Metal Shingle & Siding Co., Preston.
- Cross-cut Saws**
Henry Disston & Sons, Philadelphia
- Crushers**
Wettlaufer Bros., Toronto, Ont.
- Curb Stone Machines**
Ideal Concrete Machinery Co., London.
- Daylight Rods**
Consolidated Plate Glass Co., Toronto.
- Derricks**
Ideal Concrete Machinery Co., London.
London Concrete Machinery Co., London, Ont.
Sasgen Derrick Co., Toronto.
Stuart Machinery Co., Ltd., Winnipeg.
- Doors**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
York Lumber Co., Toronto.
- Doors (Veneered)**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
Wilson Bros. Ltd., Collingwood.
York Lumber Co., Toronto.
- Door Trimmings**
Metal Shingle & Siding Co., Preston.
W. H. Thornhill Co., Winnipeg.
- Drag Scrapers**
London Concrete Machinery Co., London, Ont.
- Draughting**
The Patent Selling & Mfg. Agency, Toronto.
- Drawing Materials**
Eugene Dietzgen Co., Ltd., Toronto.
- Driers**
London Concrete Machinery Co., London, Ont.
- Eavestrough and Conductor-Pipe**
Metal Shingle & Siding Co., Preston.
- Electrical Fixtures and Specialties**
Duncan Electrical Co., Montreal.
W. H. Thornhill Co., Winnipeg.
- Electrical Machinery**
Stuart Machinery Co., Ltd., Winnipeg.
- Elevator Fronts**
Dennis Wire & Iron Works Co., London.
- Elevators (Passenger and Freight)**
Stuart Machinery Co., Ltd., Winnipeg.
- Emery and Emery Wheels**
Stuart Machinery Co., Ltd., Winnipeg.
- Engines (Steam)**
Stuart Machinery Co., Ltd., Winnipeg.
- Engines (Gas and Gasoline)**
Consumers Gas Co., Toronto.
Ideal Concrete Machinery Co., London.
London Concrete Machinery Co., London, Ont.
Stuart Machinery Co., Ltd., Winnipeg.
Wettlaufer Bros., Toronto, Ont.
- Excavators**
Stuart Machinery Co., Ltd., Winnipeg.
- Felts (Asphalt)**
Canadian H. W. Johns-Manville Co., Toronto.
- Felts (Hair)**
Canadian H. W. Johns-Manville Co., Toronto.
- Felts (Plain Building)**
Canadian H. W. Johns-Manville Co., Toronto.
- Felts (Tar)**
Canadian H. W. Johns-Manville Co., Toronto.

CLASSIFIED DIRECTORY—Continued

- Fences**
Dennis Wire & Iron Works Co., London.
Dominion Ornamental Iron Co., Ltd., Toronto.
George B. Meadows, Toronto.
- Fence Post Mould**
London Concrete Machinery Co., London, Ont.
- Files**
Henry Disston & Sons, Philadelphia.
- Finials**
Metal Shingle & Siding Co., Preston.
- Fire Brick and Fire Clay**
Stuart Machinery Co., Ltd., Winnipeg.
- Fir Doors**
Georgian Bay Shook Mills, Midland.
- Fire Escapes**
Dominion Ornamental Iron Co., Ltd., Toronto.
George B. Meadows, Toronto.
Dennis Wire & Iron Works Co., London.
Eberhard-Wood Mfg. Co., Toronto.
- Fireproof Windows**
Metal Shingle & Siding Co., Preston.
- Flooring**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros. Ltd., Collingwood.
Siemen Bros., Ltd., Toronto.
York Lumber Co., Toronto.
- Floor Scrapers**
Exeter Mfg. Co., Ltd., Exeter, Ont.
Fox Supply Co., Brooklyn, Wis.
- Frames (Knockdown)**
York Lumber Co., Toronto.
- Frames and Sash**
York Lumber Co., Toronto.
Wilson Bros. Ltd., Collingwood.
- Forms (Concrete)**
Exeter Mfg. Co., Ltd., Exeter, Ont.
Ideal Concrete Machinery Co., London.
London Concrete Machinery Co., London, Ont.
Wettlaufer Bros., Toronto, Ont.
- Framing Tools**
G. A. Topp & Co., Indianapolis, Ind.
- Gas Lightings Appliances**
Consumers' Gas Co., Toronto.
- Gas Ranges**
Consumers' Gas Co., Toronto.
- Gates**
Dennis Wire & Iron Works Co., London.
George B. Meadows, Toronto.
- Glass**
Consolidated Plate Glass Co., Toronto.
The Toronto Plate Glass & Importing Co., Toronto.
- Gravel Screens (Power)**
Ideal Concrete Machinery Co., London.
- Grills (Steel and Bronze)**
Dennis Wire & Iron Works Co., London.
- Hair (Plasterers')**
Ontario Lime Association, Toronto.
- Hand Scrapers**
Fox Supply Co., Brooklyn, Wis.
- Hard Wall Plaster**
Crown Gypsum Co., Lythmore, Ont.
- Hardwood Flooring**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Siemen Bros., Ltd., Toronto.
Wilson Bros. Ltd., Collingwood.
- Heating Apparatus**
Stuart Machinery Co., Ltd., Winnipeg.
- Heaters (Glue Pot)**
Consumers Gas Co., Toronto.
- Heaters (Gas)**
Consumers Gas Co., Toronto.
- Herringbone Lath**
Metal Shingle & Siding Co., Preston.
- Hoists**
Ideal Concrete Machinery Co., London.
- London Concrete Machinery Co., London, Ont.
Wettlaufer Bros., Toronto, Ont.
- Hoisting Engines**
London Concrete Machinery Co., London, Ont.
Stuart Machinery Co., Ltd., Winnipeg.
- Imitation Marble**
W. J. Hynes, Ltd., Toronto.
- Interior Trim**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
The W. A. Moore Co., Ltd., Meaford.
Wilson Bros. Ltd., Collingwood.
York Lumber Co., Toronto.
- Interlocking Hollow Building Tile**
Sun Brick Co., Ltd., Toronto.
- Iron Fences**
Dennis Wire & Iron Works Co., London.
Eberhard-Wood Mfg. Co., Toronto.
George B. Meadows, Toronto.
- Joiners' Work**
Georgian Bay Shook Mills, Midland.
Wilson Bros. Ltd., Collingwood.
- Keene's Cement**
Braid & McCurdy, Winnipeg, Man.
- Lath**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros. Ltd., Collingwood.
York Lumber Co., Toronto.
- Lime**
Ontario Lime Association, Toronto.
- Lockers (Steel)**
Dennis Wire & Iron Works Co., London.
Geo. B. Meadows, Toronto.
- Lumber**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros., Ltd., Collingwood.
York Lumber Co., Toronto.
- Machinery (Brick and Tile)**
Stuart Machinery Co., Ltd., Winnipeg.
- Machinery (Woodworking)**
Stuart Machinery Co., Ltd., Winnipeg.
- Marble (Imitation)**
W. J. Hynes, Limited, Toronto.
- Mineral Wool**
Canadian H. W. Johns-Manville Co., Toronto.
- Model Makers**
The Patent Selling & Mfg. Agency, Toronto.
- Mortar Colors**
Ontario Lime Association, Toronto.
- Mitre Box**
Goodell Mfg. Co., Greenfield, Mass.
- Moulds (Concrete)**
Ideal Concrete Machinery Co., London.
- Mortar Gauges**
Ideal Concrete Machinery Co., London.
- Mortar Mixers**
London Concrete Machinery Co., London, Ont.
- Mouldings**
Batts, Ltd., Toronto.
Georgian Bay Shook Mills, Midland.
Wilson Bros., Ltd., Collingwood.
- Nails**
P. L. Robertson Mfg. Co., Milton.
- Ornamental Iron Work**
Dennis Wire & Iron Works Co., London.
Eberhard-Wood Mfg. Co., Toronto.
George B. Meadows, Toronto.
- Ornamental Bronze Work**
Dennis Wire & Iron Works Co., London.
- Ornamental Moulds**
London Concrete Machinery Co., London, Ont.
Ideal Concrete Machinery Co., London.
- Paints (Asphalt)**
Canadian H. W. Johns-Manville Co., Toronto.
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Paper (Asbestos)**
Asbestos Mfg. Co., Montreal.
Canadian H. W. Johns-Manville Co., Toronto.
- Paper (Felt Building)**
Canadian H. W. Johns-Manville Co., Toronto.
The R. Laidlaw Co., Limited, Toronto.
- Paper (Insulating)**
Canadian H. W. Johns-Manville Co., Toronto.
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Paper (Waterproofing)**
Braid & McCurdy, Winnipeg.
Canadian H. W. Johns-Manville Co., Toronto.
- Patent Attorneys**
The Patent Selling & Mfg. Agency, Toronto.
J. A. MacMurty & Co., Toronto.
Stanley Lightfoot, Toronto.
- Pile Driving Machinery**
Stuart Machinery Co., Ltd., Winnipeg.
- Plaster**
Crown Gypsum Co., Lythmore.
Ontario Lime Association, Toronto.
- Plaster (Hardwall)**
Crown Gypsum Co., Lythmore.
Ontario Lime Association, Toronto.
- Plaster (Inside, Asbestos)**
Canadian H. W. Johns-Manville Co., Toronto.
- Plaster Ornaments**
W. J. Hynes, Limited, Toronto.
- Plaster Paris**
Crown Gypsum Co., Lythmore.
Ontario Lime Association, Toronto.
- Plaster (Stucco Asbestos)**
Canadian H. W. Johns-Manville Co., Toronto.
- Plumbs**
Frank Sand Mfg. Co., Windsor, Ont.
- Plumbs and Levels**
Henry Disston & Sons, Philadelphia.
- Plumbing Supplies**
Canadian H. W. Johns-Manville Co., Toronto.
- Portable Saw Rigs**
Oshkosh Mfg. Co., Oshkosh, Wis.
- Pulpstone**
Alabastine Co., Paris, Ont.
- Pulleys**
Stuart Machinery Co., Ltd., Winnipeg.
- Pumps**
London Concrete Machinery Co., London, Ont.
Stuart Machinery Co., Ltd., Winnipeg.
Wettlaufer Bros., Toronto, Ont.
- Quarrying Machinery**
Stuart Machinery Co., Ltd., Winnipeg.
- Receptacles (Electrical)**
Duncan Electrical Co., Montreal.
- Red Slate Roofing**
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Ridge (Galvanized)**
Metal Shingle & Siding Co., Preston.
- Ridgings**
Metal Shingle & Siding Co., Preston.
- Rivets**
P. L. Robertson Mfg. Co., Milton.
- Rock Crushers**
Wettlaufer Bros., Toronto, Ont.
Stuart Machinery Co., Ltd., Winnipeg.
- Roofing (Asbestos Corrugated)**
Asbestos Mfg. Co., Montreal.
Canadian H. W. Johns-Manville Co., Toronto.

Advertisements that Remind You

R. Laidlaw Lumber Co., Limited

Everything in Lumber

Timbers, Sash Doors, Columns, Etc.

Head Office: 65 Yonge St., TORONTO

Powell Lumber and Door Co., Ltd.

KORELOCK and KLIMAX Doors

In Oak, Birch and Fir

LARGE STOCK RIGHT PRICES PROMPT SHIPMENT

310-12 Front Street West, TORONTO

Readers Attention

If you have any little problems you would like solved, write to the Editor.

He will place the problem before all the readers, and thus get the opinion of many on the question.

STOP THOSE RATTLING WINDOWS

Do away with sash weights, cords, pulleys and pocket frames and save money by using
AUTOMATIC SASH HOLDERS

Proved by Use—
Unexcelled for windows without pocket frames. Excellent for new windows.



Send for circular and prices, or \$1.00 for trial set prepaid; state approximate weight of sash.

P. L. Schmidt Hardware, Ltd., Montreal, Que.

THE IDEAL WAY TO BUILD

Use a Van Guilder Hollow Wall Concrete Machine

It builds double monolithic walls tied together and steel reinforced. Continuous space, dry, warm, sanitary, fire proof, age proof, repair proof. Better than brick, cheaper than wood.

Large illustrated Catalogue and Book "How to Build" free.

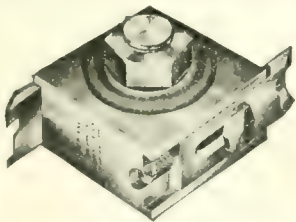
VAN GUILDER HOLLOW WALL CO.

710 Chamber of Commerce Building, Rochester, N.Y.

WINDOW LETTERS

BRASS PLATES
ENAMELLED IRON
HOUSE NUMBERS
WOOD & GLASS

J.E. RICHARDSON & CO. 147 CHURCH ST. TORONTO.



Cutter Head

Patented
December 30, 1913

An all steel head that can be used on saw table and adjusted by headless set screws. Runs like a solid cutter. Knives held by dovetail sides and hexagon head bolt.

Huther Brothers Saw Manuf'ng Co.

Rochester, N.Y.

7% INVESTMENT

PROFIT-SHARING

Series \$100 \$500 and \$1,000.

Business at back of this investment, established 28 years. All or any part of investment may be withdrawn at any time after one year on 60 days' notice. Safe as any mortgage. Send for special folder.

National Securities Corporation

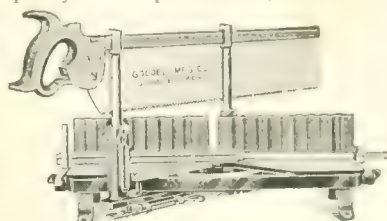
Limited

Confederation Life Building, Toronto.

GOODELL MITRE BOX

Made of STEEL Cannot Break

For years this Box has been recognized as being first in quality and improvements, and the new STEEL BOTTOM



PLATES with ANGULAR SERRATURES to prevent the work from slipping add still more to its convenience and attractiveness. Write for new Circular D, describing this and many other features.

GOODELL MFG. CO., Greenfield, Mass., U. S. A.



NOTE—NAIL PASSES THROUGH BOTH MOULDING AND FELT.

The Most Effective Weather Strip Made

It will thoroughly exclude Wind, Cold, Snow, Rain and Dust and the fact that the felt is glued to the bottom of the moulding makes it the only dust-proof weather strip on the market.

Write for Free Sample to N. L. Alderson, 186 Evelyn Ave. West Toronto, Ont. Beware of Imitations: For Sale at all Leading Hardware Stores.

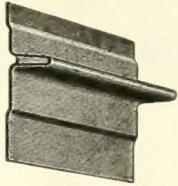
Made by—**W. J. Dennis & Company**

2222-24-26 W. Lake St.

Chicago, U.S.A.

CLASSIFIED DIRECTORY—Continued

- Roofing (Asbestos Shingles)**
Canadian H. W. Johns-Manville Co., Toronto.
- Roofing (Asphalt Shingles)**
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Roofing (Prepared Asbestos)**
Canadian H. W. Johns-Manville Co., Toronto.
- Roofing (Rubber)**
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Roofing (Sand Surface Felt)**
Canadian H. W. Johns-Manville Co., Toronto.
- Roofing (Smooth Surface Felt)**
Canadian H. W. Johns-Manville Co., Toronto.
- Roofing (Wool Felt Shingles)**
Canadian H. W. Johns-Manville Co., Toronto.
- Roofing Tile Machines**
Ideal Concrete Machinery Co., London.
- Sand Sifting Machines**
London Concrete Machinery Co., London, Ont.
- Sash**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros., Ltd., Collingwood.
- Saw Mill Machinery**
Stuart Machinery Co., Ltd., Winnipeg.
- Saws (Band)**
Henry Disston & Sons, Philadelphia.
Simonds Canada Saw Co., Montreal.
- Saws (Hand)**
Henry Disston & Sons, Philadelphia.
Simonds Canada Saw Co., Montreal.
- Saws (Circular)**
Henry Disston & Sons, Philadelphia.
Simonds Canada Saw Co., Montreal.
- Saws (Hack)**
Henry Disston & Sons, Philadelphia.
Simonds Canada Saw Co., Montreal.
- Scraper Knives**
Fox Supply Co., Brooklyn, Wis.
- Scrapers**
Fox Supply Co., Brooklyn, Wis.
- Scrapers (Drag)**
London Concrete Machinery Co., London, Ont.
- Scrapers (Wheel)**
London Concrete Machinery Co., London, Ont.
- Scraper Sharpening Device**
Fox Supply Co., Brooklyn, Wis.
- Screens (Sand)**
London Concrete Machinery Co., London, Ont.
- Screens (Window and Door)**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros., Ltd., Collingwood.
- Screws**
P. L. Robertson Mfg. Co., Milton.
- Sewer Pipe**
Ontario Lime Association, Toronto.
- Sewer Pipe Moulds**
London Concrete Machinery Co., London, Ont.
- Shingles**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
Wilson Bros., Ltd., Collingwood.
York Lumber Co., Toronto.
- Sheeting**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
- Sidewalk Dividing Plates**
Wilson Bros. Ltd., Collingwood.
- Sidewalk Forms (Steel)**
London Concrete Machinery Co., London, Ont.
- Sidewalk Prisms**
Consolidated Plate Glass Co., Toronto.
- Siding**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
Wilson Bros., Ltd., Collingwood.
- Sill and Cap Moulds**
London Concrete Machinery Co., London, Ont.
- Silo Block Machines**
London Concrete Machinery Co., London, Ont.
- Sockets (Brass and Porcelain)**
Duncan Electrical Co., Montreal.
- Soldering Iron Heaters**
Consumers' Gas Co., Toronto.
- Shooks**
Georgian Bay Shook Mills, Midland.
- Skylights**
Metal Shingle & Siding Co., Preston.
- Staff Plaster**
W. J. Hynes, Limited, Toronto.
- Stairs**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Limited, Toronto.
Wilson Bros., Ltd., Collingwood.
- Stairs (Iron)**
Dennis Wire & Iron Works Co., London.
George B. Meadows, Toronto.
- Stanchions**
Metal Shingle & Siding Co., Preston.
- Steel Buildings and Garages**
Metal Shingle & Siding Co., Preston.
- Steam Shovels**
Stuart Machinery Co., Ltd., Winnipeg.
- Stone (Crushed)**
Ontario Lime Association, Toronto.
- Stone Crushers**
Stuart Machinery Co., Ltd., Winnipeg.
- Store Fixtures**
Metal Shingle & Siding Co., Preston.
Batts, Limited, Toronto.
The R. Laidlaw Co., Ltd., Toronto.
Wilson Bros., Ltd., Collingwood.
- Store Front Bars**
Consolidated Plate Glass Co., Toronto.
Detroit Show Case Co., Detroit.
- Storm Sash**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Ltd., Toronto.
Wilson Bros., Ltd., Collingwood.
- Surveying Instruments**
Eugene Dietzgen Co., Ltd., Toronto.
- Tanks, Steel**
Stuart Machinery Co., Ltd., Winnipeg.
- Tanks, Galvanized Iron**
Metal Shingle & Siding Co., Preston.
- Terra Cotta**
W. H. Thornhill Co., Winnipeg.
Toronto Plate Glass Importing Co., Toronto.
- Thimbles**
Metal Shingle & Siding Co., Preston.
- Tile, Block and Brick Cars**
London Concrete Machinery Co., London, Ont.
- Tile Machine, Drain**
London Concrete Machinery Co., London, Ont.
- Tile Machine, Sidewalk**
London Concrete Machinery Co., London, Ont.
- Tiles, Brick**
Braid & McCurdy, Winnipeg, Man.
- Timber**
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Ltd., Toronto.
- Transfer Cars**
London Concrete Machinery Co., London, Ont.
- Transmission Apparatus**
Stuart Machinery Co., Ltd., Winnipeg.
- Trowels, Brick and Plastering**
Henry Disston & Sons, Philadelphia.
- Trucks**
Stuart Machinery Co., Ltd., Winnipeg.
- Turbine Pumps**
Stuart Machinery Co., Ltd., Winnipeg.
- Valley, Galvanized**
Metal Shingle and Siding Co., Preston.
- "V" Crimp Roofing and Siding**
Metal Shingle & Siding Co., Preston.
- Veneered Doors**
The W. A. Moore Co., Ltd., Meaford.
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
Benson & Bray, Midland.
- Ventilators**
Metal Shingle & Siding Co., Preston.
- Verandah Columns**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Ltd., Toronto.
Wilson Bros., Ltd., Collingwood.
- Wall Board**
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Ltd., Toronto.
Walkerville Roofing Mfg. Co., Walkerville, Ont.
- Wall Plugs**
Ideal Concrete Machinery Co., London.
- Washers**
P. L. Robertson Mfg. Co., Milton.
- Waterproofing**
Ideal Concrete Machinery Co., London.
W. H. Thornhill Co., Winnipeg.
- Watering Bowls for Stock**
Metal Shingle & Siding Co., Preston.
- Waterworks' Supplies**
Stuart Machinery Co., Ltd., Winnipeg.
- Weather Strips**
Eberhard-Wood Mfg. Co., Toronto.
William Pease Co., Hamilton.
- Weather Strip "Felt."**
W. J. Dennis & Co., Chicago.
- Window Frames, Complete**
Batts, Limited, Toronto.
Benson & Bray, Midland.
Georgian Bay Shook Mills, Midland.
- Window Frames**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
Wilson Bros., Ltd., Collingwood.
- Window Trimmings**
Metal Shingle & Siding Co., Preston.
W. H. Thornhill Co., Winnipeg.
- Window Screens**
Batts, Limited, Toronto.
Georgian Bay Shook Mills, Midland.
The R. Laidlaw Co., Ltd., Toronto.
- Wire**
P. L. Robertson Mfg. Co., Milton.
- Wire Rope**
London Concrete Machinery Co., London, Ont.
- Wire Work, Special**
The Stuart Machinery Co., Winnipeg.
- George B. Meadows, Toronto.**
Dennis Wire & Iron Works Co., London.
- Wood Mantels**
The W. A. Moore Co., Ltd., Meaford.
- Woodworkers, Combination**
Elliot Woodworker Co., Toronto.
M. Hutchinson, Toronto.
Parks Ball-Bearing Machine Co., Cincinnati, Ohio.
- Woodworking Machinery**
Stuart Machinery Co., Ltd., Winnipeg.



**The "Peace" Patent
Improved
Metal Weather Strip
For Windows and Doors**

To Carpenters and Builders this weather-strip constitutes a necessary part of the equipment in the building of factories, offices and residential property. It is wind and dust proof, and reduces fuel bills. Windows work easier with than without it. It does away with storm sash, and lasts a lifetime. Write for illustrated pamphlet or further information to

WILLIAM PEACE CO., LIMITED

Bank of Hamilton Building, Hamilton, Ont.

Phone 286

Live Agents Wanted

Sand Gravel
Cement
Building Stone
Granite Brick
Lumber Sash
Doors
Hardwood
Flooring
Cork Tiling
Marble Tiling
Mantels Glass
Paint Specialties
Builders' Hardware

Let us quote on your requirements—You will find our prices right.

Phone Main 4940

EVERYTHING FOR BUILDINGS

Showrooms and Office 8, 9, 10

34 YONGE STREET

STANDARD SUPPLY CO.
TORONTO

DO YOU LABEL YOUR WORK?

There is nothing more dignified or elegant than our large Weatherproof Fiber Cardboard Signs. More serviceable than iron, wood or cloth. Packed in a box—printed—ready for displaying,

2 x 3 ft. SIGNS—12c EACH

\$12.00 per 100. Check with the order. Other sizes, 1½ x 3 ft. to 3 x 4 ft., proportionate prices. Send for an Illustrated Folder.

INDEPENDENT PRINTING CO.'S of U.S.

(Canadian Orders Printed at our Canadian Plant.)

General Secretary's Office
Washington, D.C.

W. J. Hynes, Limited

The Largest Staff Manufacturers in Canada

We Manufacture:

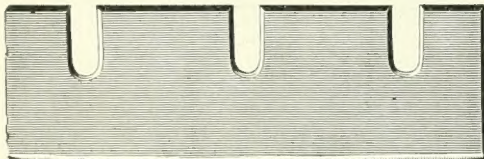
Plaster Relief Decorations
Cornices ready to nail in position
Exterior Caps for Columns and Pilasters
Indirect Lighting Fixtures
Imitation Marble or Scagliola
Castings in any kind of Cement

Write us for further Information.

720 Dupont St., - Toronto

Floor Scraper Blades

You men at the trade know that the business end of a Floor Scraper is the blade. Fox Special Carbon Steel is the basis of the extraordinary cutting qualities of Fox Floor Scraper Knives.



The following Canadian dealers can supply you now.

NEW GLASGOW & NORTH SYDNEY, N.S.

Thompson & Sutherland, Limited

WINNIPEG, Man.

The Canadian British Engineering Co., Limited

WINNIPEG, Man.

Aikenhead-Clark Hardware Co.

MONTREAL

E. Cavanagh Co., Ltd.

CALGARY

Canadian Equipment & Supply Co., Limited

SARNIA, Ont.

Mackenzie-Milne & Co. Limited

MONTREAL

James Walker Hardware Co., Ltd.

MONTREAL

Darand Hardware Co.

MONTREAL

Frothingham & Workman, Limited

EDMONTON

Sommerville Hardware Co., Ltd.

SASKATOON, Sask.

Canadian Fairbanks Co., Limited

SHERBROOKE, P.Q., Can.

J. S. Mitchell & Co.

REGINA

Canadian Equipment & Supply Co.

MADE BY

FOX SUPPLY CO., Brooklyn, Wis., U. S. A.

Bull Dog Batch Mixer

Big Capacity—Long Life—Low Price

THE BULL DOG BATCH MIXER is just the machine for small jobs. It is light and easy to move about, can be operated with few men, and does any kind of mixing to perfection.

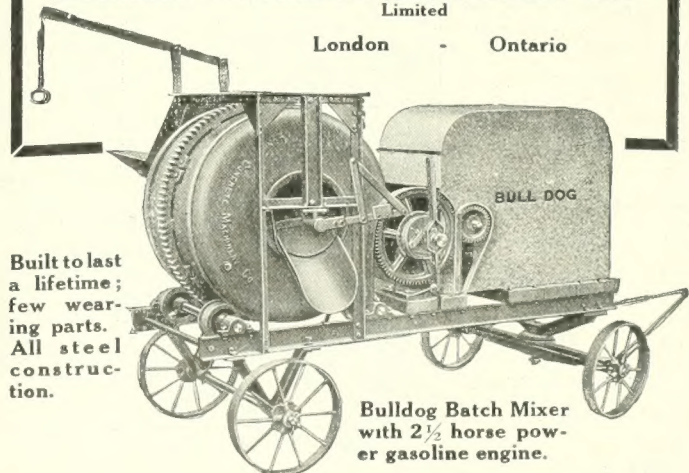
Capacity, 5 cubic feet per batch, 50 cubic yards per 10 hours. By manufacturing this machine in very large quantities, and every machine exactly the same, we are able to furnish this high grade machine at a low price.

Write us for particulars, asking for catalog No. 1-B.

We manufacture twenty-three different sizes and styles of concrete mixers, and a full line of concrete machinery.

LONDON CONCRETE MACHINERY CO.
Limited

London - Ontario



Built to last a lifetime; few wearing parts. All steel construction.

Bulldog Batch Mixer with 2½ horse power gasoline engine.

Artistic Gas Lighting Fixtures for the Home

Gas lighting of to-day is far different from what it was five years ago. The perfection of *Modern Gas Fixtures* and the newest type of incandescent gas burners make

Modern Gas Light the finest artificial light in the world.

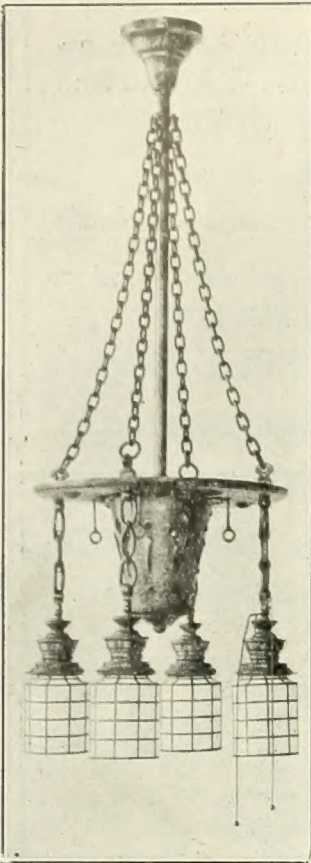
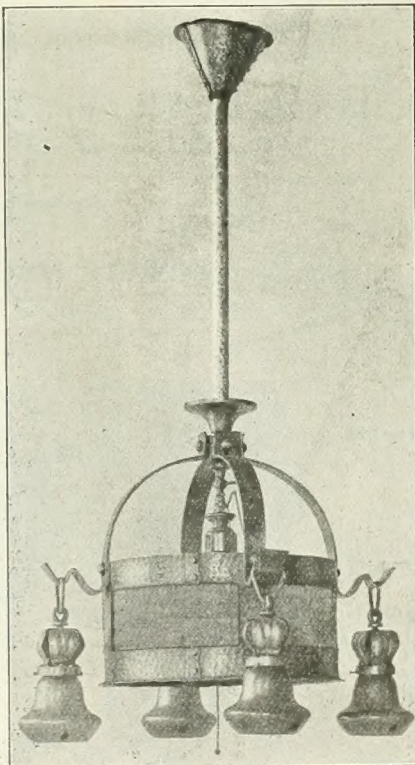
The *Modern Gas Fixtures* handled by us are real works of art, and specially designed to meet the needs of our most exacting customers.

Our Toronto gas customers are asked to send for full particulars.

The
**Consumers'
Gas
Company**

12-14 Adelaide St.
West

Phone M 1933-1188
TORONTO

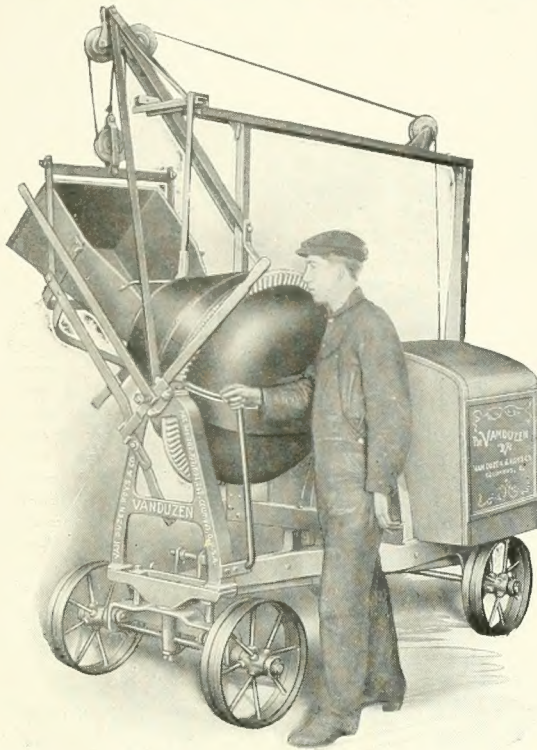


Index to Advertisements

| | |
|--|-----------|
| B | |
| Belleville Hardware Co. | 6 |
| Benson & Bray, Ltd. | 9 |
| Batts Limited | 12-13 |
| C | |
| Clare Bros., Ltd. | 15 |
| Canadian H. W. Johns-Manville Co., Ltd. | 8 |
| Canadian Zagelmeyer Co., Ltd. | 11 |
| Consolidated Plate Glass Co. | 10 |
| Consumers' Gas Co. | 54 |
| Crown Gypsum Company | o.b.c. |
| D | |
| Dennis, W. J., & Co. | 51 |
| Dennis Wire & Iron Works | 14 |
| Disston, Henry, Mfg. Co. | 8 |
| E | |
| Eberhard Wood Mfg. Co. | 8 |
| Elliot Woodworker, Ltd. | 4-5 |
| Exeter Mfg. Co., Ltd. | 14 |
| F | |
| Fox Supply Co. | 53 |
| G | |
| Georgian Bay Shook Mills, Ltd. | 3, i.f.c. |
| Gilmore, A. A. | 48 |
| Goodell Mfg. Co. | 51 |
| H | |
| Hutchinson Woodworker Co. | 18 |
| Huther Bros. Saw Manufacturing Co. | 51 |
| Hynes, W. J., Co. | 53 |
| I | |
| Independent Printing Co. | 53 |
| L | |
| Laidlaw, R., Lumber Co., Limited | 51 |
| Lightfoot, Stanley | 48 |
| London Concrete Machinery Co. | 53 |
| M | |
| Macmurtry, J. A., & Co. | 48 |
| Marois, Joseph P. | 10 |
| Metal Shingle & Siding Co., Ltd. | 16 |
| Meadows, Geo. B., Co. | i.b.c. |
| N | |
| National Securities Corporation, Ltd. | 51 |
| O | |
| Oshkosh Mfg. Co. | 10 |
| P | |
| Peace, Wm. | 53 |
| Powell Lumber & Door Co., Ltd. | 51 |
| R | |
| Richardson, J. E., & Co. | 51 |
| S | |
| Schmidt, P. L., Hardware, Ltd. | 51 |
| Standard Supply Co. | 53 |
| Stuart Machinery Co. | 6 |
| T | |
| Toronto Plate Glass Co. | 48 |
| V | |
| Van Dusen & Roys Co. | i.b.c. |
| Van Guilder Hollow Wall Co. | 51 |
| W | |
| Wettlaufer Bros. | 46 |
| Wilson Bros. | 6 |
| Y | |
| York Lumber Co., Ltd. | 7 |

We Can Help You Save Money in Your

CONCRETE MIXING



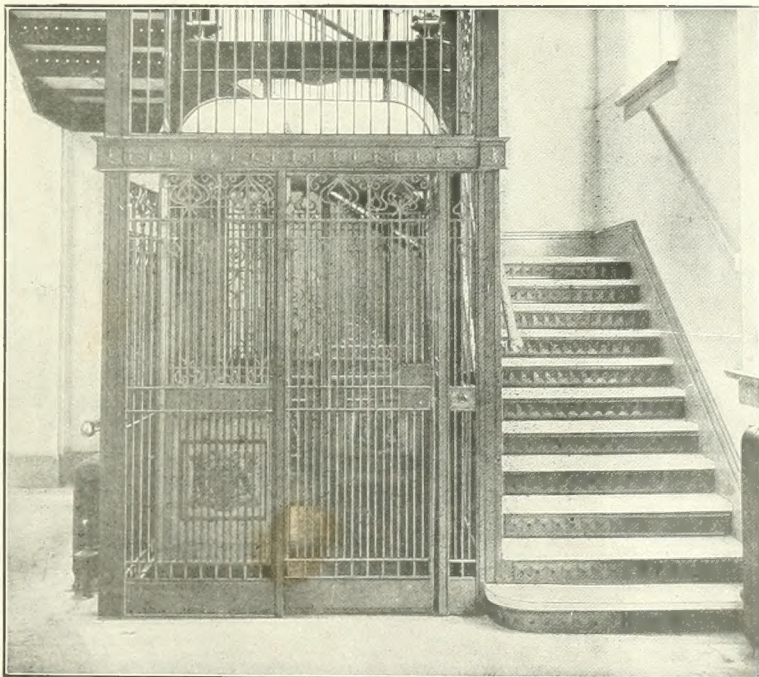
It is not our purpose to take up your time with incomplete details. Look at this 5-foot mixer with side loader. Our catalogue is fully illustrated and complete in its description. It is yours for the asking. Send for it and we will show you why we can help you and save you money.

*Canadian Agents Wanted for
Open Territory*

Van Duzen, Roys & Co.
Dublin Ave.

COLUMBUS

OHIO



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.

Crown Gypsum Co., Limited

MANUFACTURERS

HIGH GRADE GYPSUM PRODUCTS



Hard Wall Plasters
Finishing Plasters
Plaster-Paris

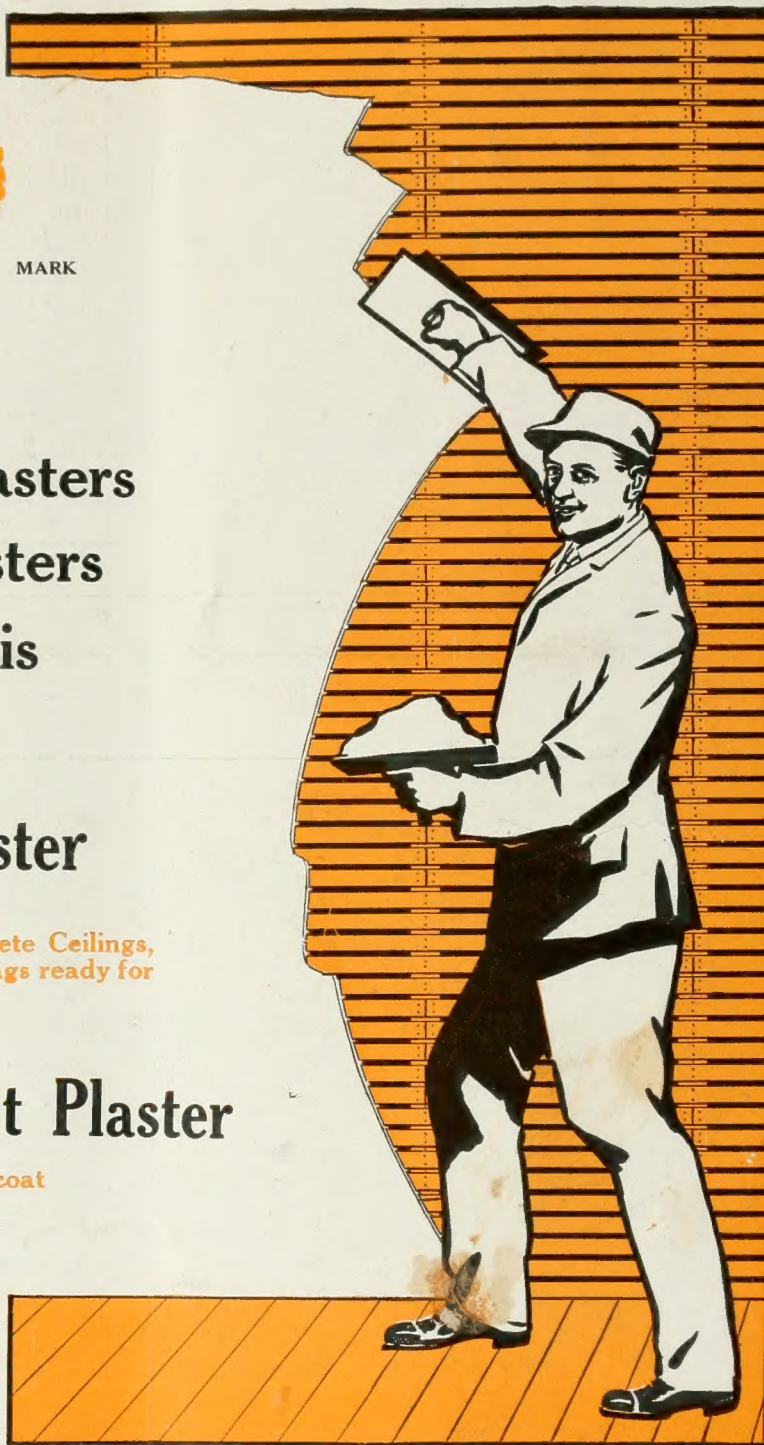
Concrete Plaster

For plastering directly on Concrete Ceilings,
Beams and Walls. In 100 lb. bags ready for
use.

"BEAVER" Cement Plaster

A neat hair fibred base coat

Mines, Mills and Office located
at
Lythmore, Ontario, Canada



CROWN GYPSUM CO., Limited, Lythmore, Ont., Canada