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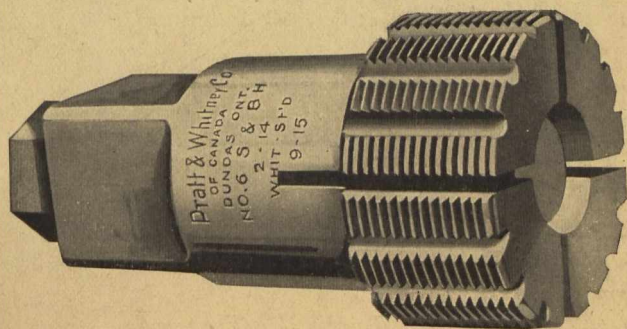
Adjustable Taps for Shell Work

Accuracy is one of the principal requirements demanded in the production of shells.

To maintain it in solid taps is too expensive for modern practice.

The simple adjusting device illustrated on this page gives greatly increased life to your taps and ACCURACY at a very reasonable first cost.

We will be glad to tell you about our other lines of adjustable taps which embody



ACCURACY
and
ECONOMY

Pratt & Whitney Co. of Canada, Limited

DUNDAS, ONTARIO, CANADA

MONTREAL
723 Drummond Bldg.

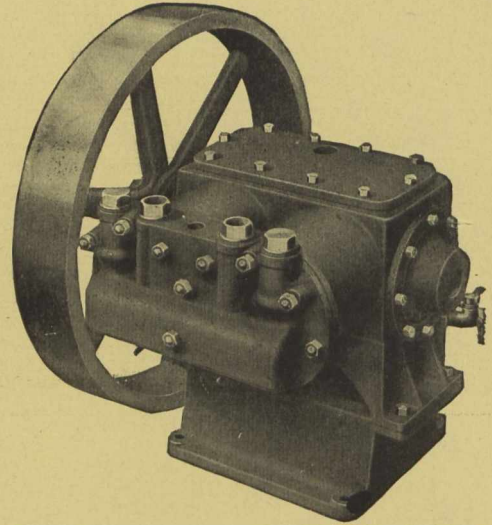
VANCOUVER
609 Bank of Ottawa Bldg.

WINNIPEG
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Westinghouse Belt-Driven Compressors

Compact, efficient, reliable.
May be controlled by an
automatic governor.

The only difference between our
belt-driven and motor-driven com-
pressors is the substitution of a belt
wheel for the motor.



Our nearest office will give full particulars.

Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO MONTREAL OTTAWA HALIFAX FT. WILLIAM WINNIPEG CALGARY EDMONTON VANCOUVER
Traders Bank Bldg. 52 Victoria Square Ahearn & Soper, Ltd. 105 Hollis St. Telfer Bldg. 158 Portage Ave. E. Grain Exchange Bldg. Dominion Bldg. Bank of Ottawa Bldg.

Nova Scotia Steel and Coal Co., Limited

Manufacturers of

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL.
HIGH CALIFORIC VALUE.—LOW ASH.—UNEXCELLED FOR STEAM-RAISING PURPOSES.
BEST HOUSE COAL MINED IN CANADA.

Collieries, Iron and Steel
Furnaces:
SYDNEY MINES, C. B.

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Piers:
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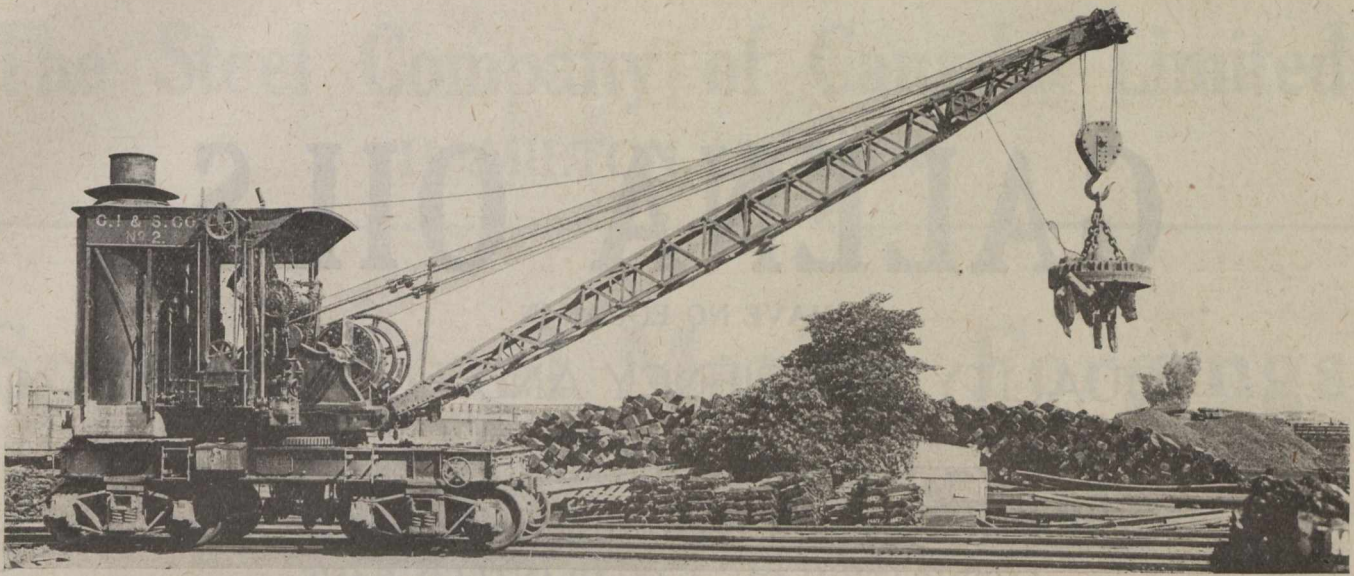
Finishing Mills, Forge, and
Engineering Shops:
NEW GLASGOW, N. S.

ENQUIRIES SOLICITED

Western Steel Sales Office
Room 14, Windsor Hotel,
Montreal, Que.

Western Coal Sales Office:
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Head Office:
NEW GLASGOW, N. S.



Why employ 20 to 40 men to handle your material? A

BROWNHOIST Locomotive Crane

will do the same amount of work with a decided saving to you. Its cost, including 6% interest on investment, depreciation, and operating costs, is only \$6.00 to \$10.00 per day. It is one man operated, powerful, quick-acting, and built to withstand hard and continuous service. Records prove this.

ADAPTABILITY. The equipment is interchangeable. It only takes a short time to apply the Grab Bucket, Bottom Block, Drag-Line Bucket, Pile Driving Attachment, Lifting Magnet, or Shovel Equipment. This makes practically six machines in one.

RAILROADS all over the country are realizing more and more the advantage and economy of having a Brownhoist Locomotive Crane on the job, because it is always ready to work in case of emergency. A Brownhoist Crane can be relied upon. One road uses thirty of them.

INVESTIGATE TO-DAY. Catalogue I shows how and where some of these cranes are used.

THE BROWN HOISTING MACHINERY CO.
CLEVELAND, OHIO

MONTREAL OFFICE, 145 St. James Street

GALENA OILS

HAVE NO EQUAL IN
QUALITY, EFFICIENCY AND ECONOMY

SOLE MANUFACTURERS OF
Celebrated Galena Coach, Engine and Car Oils
LUBRICATION ON A GUARANTEED BASIS

***ELECTRIC RAILWAY LUBRICATION
A SPECIALTY***

Perfection Valve and Signal Oils

Galena Railway Safety Oil—Made especially for use in headlights, marker and classification lamps.

Galena Long Time Burner Oil—For use in switch and semaphore lamps, and all lamps for long time burning, avoiding smoked and cracked chimneys and crusted wicks.

TESTS AND CORRESPONDENCE SOLICITED

Galena Signal Oil Company

WORKS

Franklin, Pa., and Toronto, Ont.

Canadian Sales Office — 603 Shaughnessy Bldg., Montreal, Que.

The Steel Company of Canada, Limited

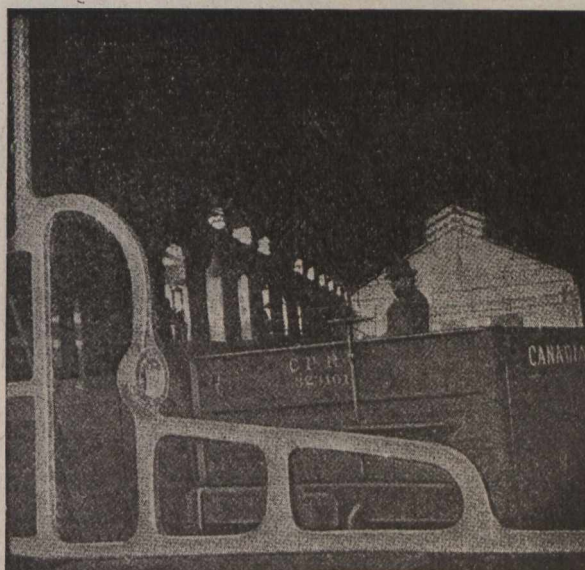
HAMILTON, CANADA

Special Steel Marine Forgings

When forgings are required to stand the strain of rough weather, and to prove themselves reliable and dependable, write us for particulars and prices.

We have the facilities for the production of heavy steel forgings of all kinds, including:

- Connecting Rods
- Crank Shafts
- Eccentric or Cam Forgings
- Marine Engine Forgings
- Piston Heads
- Piston Rods
- Shafting



Stern Frame of Steamship Hamonic

- Rounds
- Squares
- Rudder Frames
- Stern Frames
- Side Rods
- Steam Engine Forgings

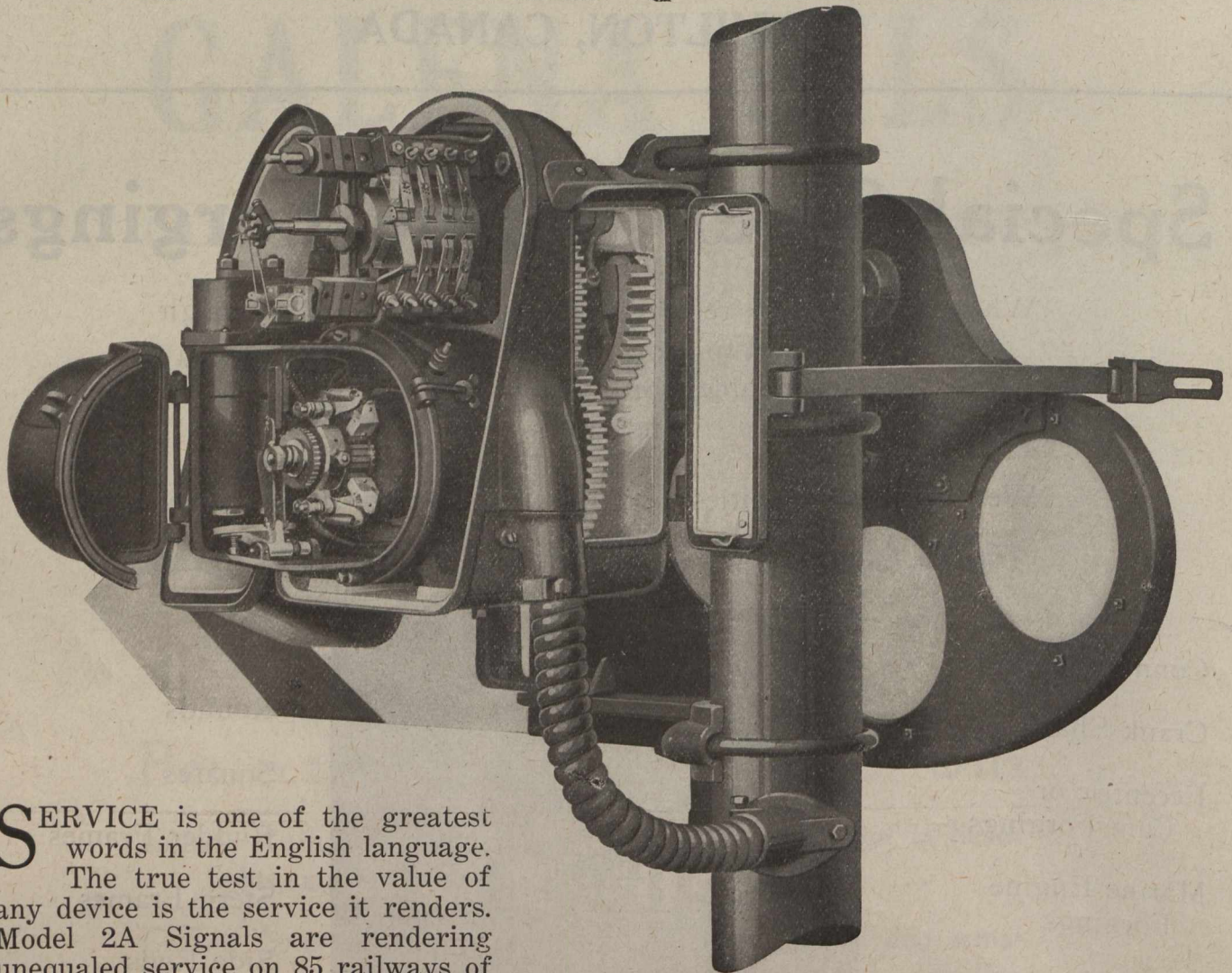
District Sales Offices:

HAMILTON MONTREAL TORONTO WINNIPEG

W. A. MacLennan, Vancouver, B.C.
 J. B. H. Rickaby, Victoria, B.C.

H. G. Rogers, St. John, N.B.
 Geo. D. Hatfield, Halifax, N.S.

SERVICE



SERVICE is one of the greatest words in the English language. The true test in the value of any device is the service it renders. Model 2A Signals are rendering unequalled service on 85 railways of North America. Among many features which account for the successful service of the Model 2A Signal are these:

It has neither **slot—dash-pot—fan** nor **governor**.

The fact is recognized by the best signal authorities that the signal slot is a delicate, complicated and unreliable part of any signal, that it is subject to residual magnetism, improper adjustment, battered stop pins and worn bearings.

The elimination of the slot increases the simplicity and results in reliable service of the Model 2A Signal.

Shunting the motor circuit is the substitute for the dash-pot—fan or governor and is a means of retarding the movement of the semaphore blade in moving from proceed to caution and stop positions. It is a highly satisfactory method and the simplest one known.

Bulletin 115-C on request.

“ Safety First ”



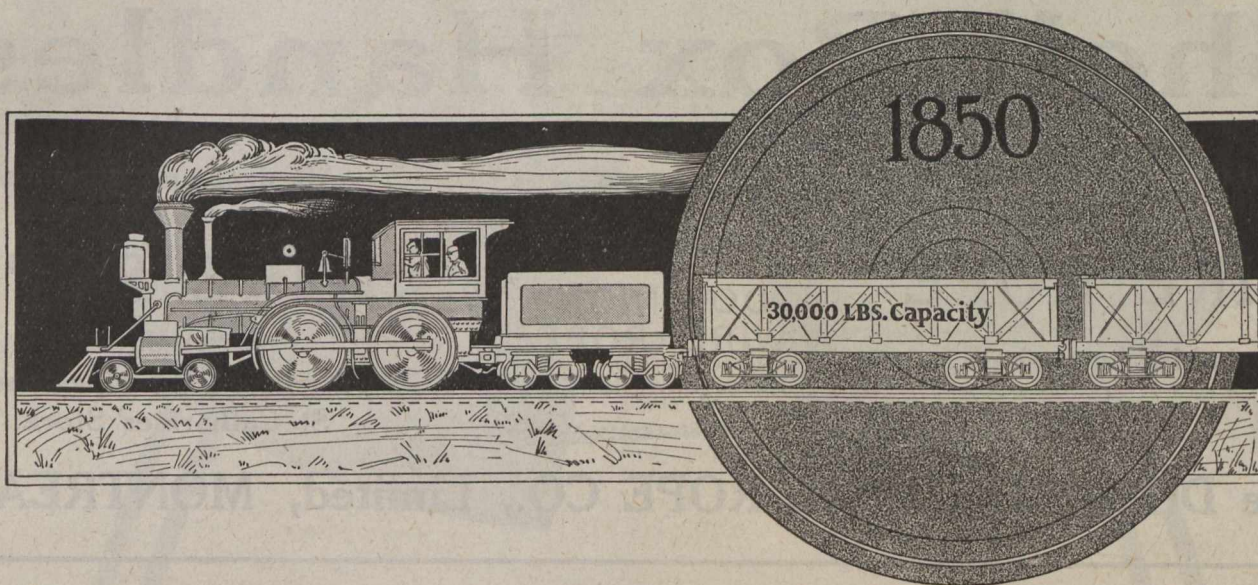
GENERAL RAILWAY SIGNAL COMPANY

OF CANADA LIMITED



Office and Works, Lachine, Quebec

Branch Office, Winnipeg, Manitoba



The Wonderful Single Service Chilled Iron Car Wheel

Chilled Iron means the sudden cooling of molten iron poured against a cold iron ring which is part of the mold.

A 725-pound M. C. B. chilled iron car wheel is poured in 12 seconds and by this quick cooling process a transformation of structure takes place and the result is a clear white iron from one-half to three-quarters of an inch in depth in the tread and flange, which is harder than tempered steel.

The chilled tread is so hard that it will carry a heavier load than the steel rail will carry without deformation of the metal.

Scientific tests have demonstrated the difference in structure between the chilled iron wheel and steel rail because a load can be placed on a chilled iron wheel that will cause it to sink into the rail without deformation of the wheel structure.

There is less wear in the brake shoe and steel rail when chilled iron wheels are used; therefore chilled iron possesses the ideal structure for service.

The plates are soft, because the iron in the plates is cooled gradually in a sand mold; therefore they can withstand temperature stresses due to brake heating.

The hub is soft and easily machined; therefore a strong and perfect axle fit is assured.

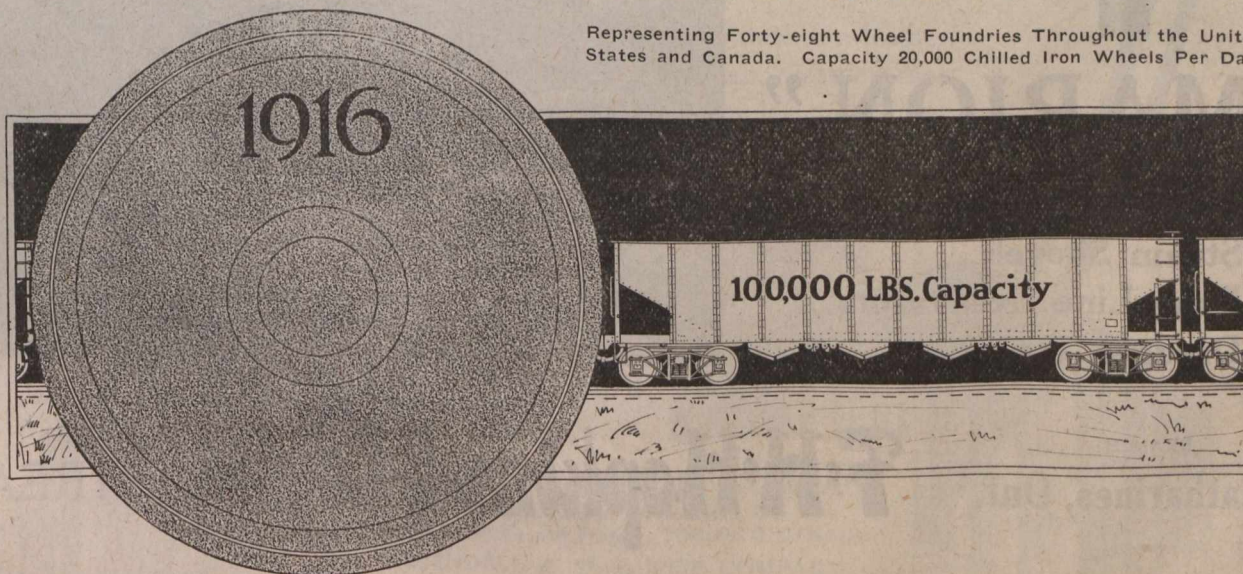
Note carefully the combination of graded iron structure in the single piece chilled iron wheel, namely:

Hard Tread,
Soft Plates,
Soft Hub, and each part of the wheel ideally adapted to service conditions.

Chilled iron Wheels were Standard in the year 1850.
Chilled Iron Wheels are Standard Today.
25,000,000 now running.

Association of Manufacturers of Chilled Car Wheels
1214 McCormick Building, Chicago, Ill.

Representing Forty-eight Wheel Foundries Throughout the United States and Canada. Capacity 20,000 Chilled Iron Wheels Per Day.



Shell Box Handles

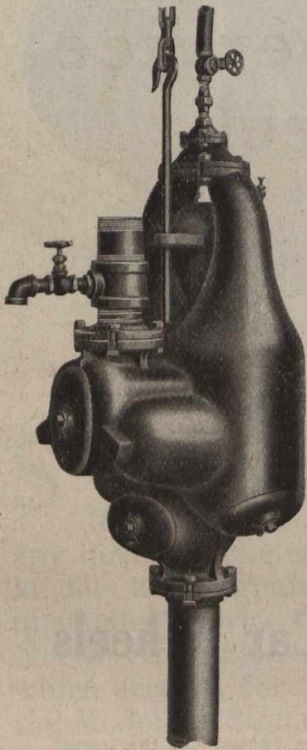
Approved by the Shell Committee.

If you have any
WIRE ROPE
troubles let us help
you.



All sizes and qualities
of
WIRE ROPE
carried in our
Montreal, Winnipeg and
St. Catharines' Stock.

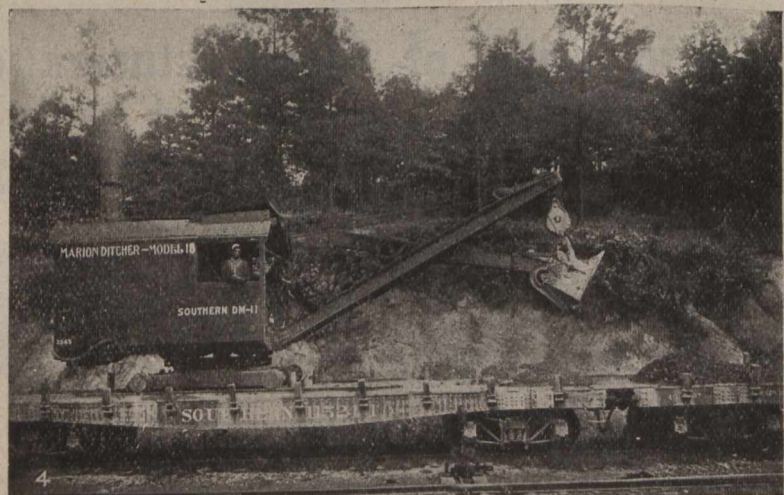
The DOMINION WIRE ROPE CO., Limited, MONTREAL



“Pulsometer” Pumps
“Hayward” Buckets
“Napanee” Hoisting Engines
“Ransome” Concrete Mixers
“Andrews” Drill and Tool Steel

“MARION”

Railroad Ditchers
Steam Shovels
Drag Line Excavators
Dredges, etc.



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St. Catharines, Ont.

F. H. Hopkins & Co

HEAD OFFICE
MONTREAL



DU PONT
FABRIKOID
 REG. U. S. PAT. OFF.

Sanitary
 Dustproof
 Weatherproof
 Durable
 Uncrackable
 Unshrinkable
 Unflakable



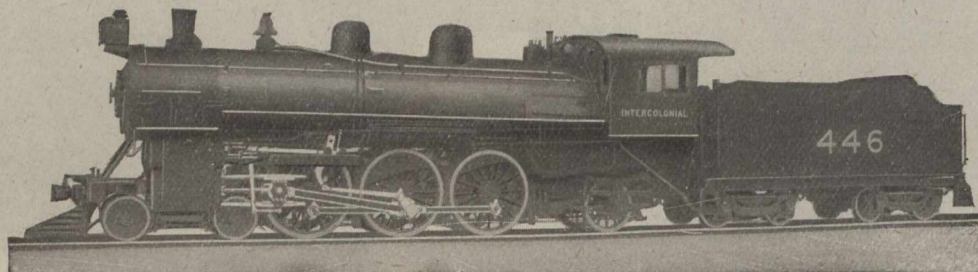
For Car Seating and Curtains

More than a satisfactory substitute for leather.
 Non-splitting, non-peeling, tough, weatherproof.
 Test its durability. Free samples on request.



DU PONT FABRIKOID COMPANY
 Du Pont Building, Wilmington, Del.
 Canadian Office and Factory, **TORONTO, CANADA**
WENDELL & MacDUFFIE COMPANY
 R.R. Department Representatives, 63 Broadway, N.Y.

Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

MONTREAL LOCOMOTIVE WORKS, LIMITED,
DOMINION EXPRESS BUILDING, MONTREAL, CANADA

Coast to Coast Service BETWEEN TORONTO AND VANCOUVER BY Canadian Northern Railway

THE NEW ROUTE to Port Arthur, Fort William, Winnipeg, Brandon, Regina, Saskatoon, Prince Albert, North Battleford, Calgary, Edmonton, Kamloops, New Westminster, Vancouver and All Western Points.

Leave TORONTO 10.45 P.M.
Mon., Wed., Fri.

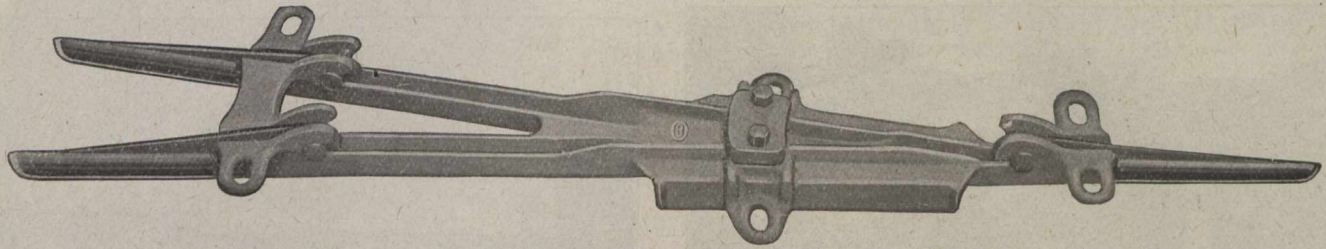


Connections to and from
all points.

ELECTRIC LIGHTED SLEEPERS, DINING CARS AND FIRST-CLASS COACHES.

For full particulars, through tickets to all points and Berth reservations, apply or write to R. L. FAIRBAIRN, General Passenger Agent, 68 King St. E., Toronto, Ont.

A Standard Design With O-B Improvements



Type E High-Speed Trolley Frog

Made along the general lines of the standard Dunne or Detroit design, but equipped with 6 inch renewable bronze Cam Tips. These tips in shorter length have proved a decided success on Type D Frog and other devices.

Body is made of malleable iron and is provided with extra long extensions to steady the trolley wheel and relieve wires of side wear.

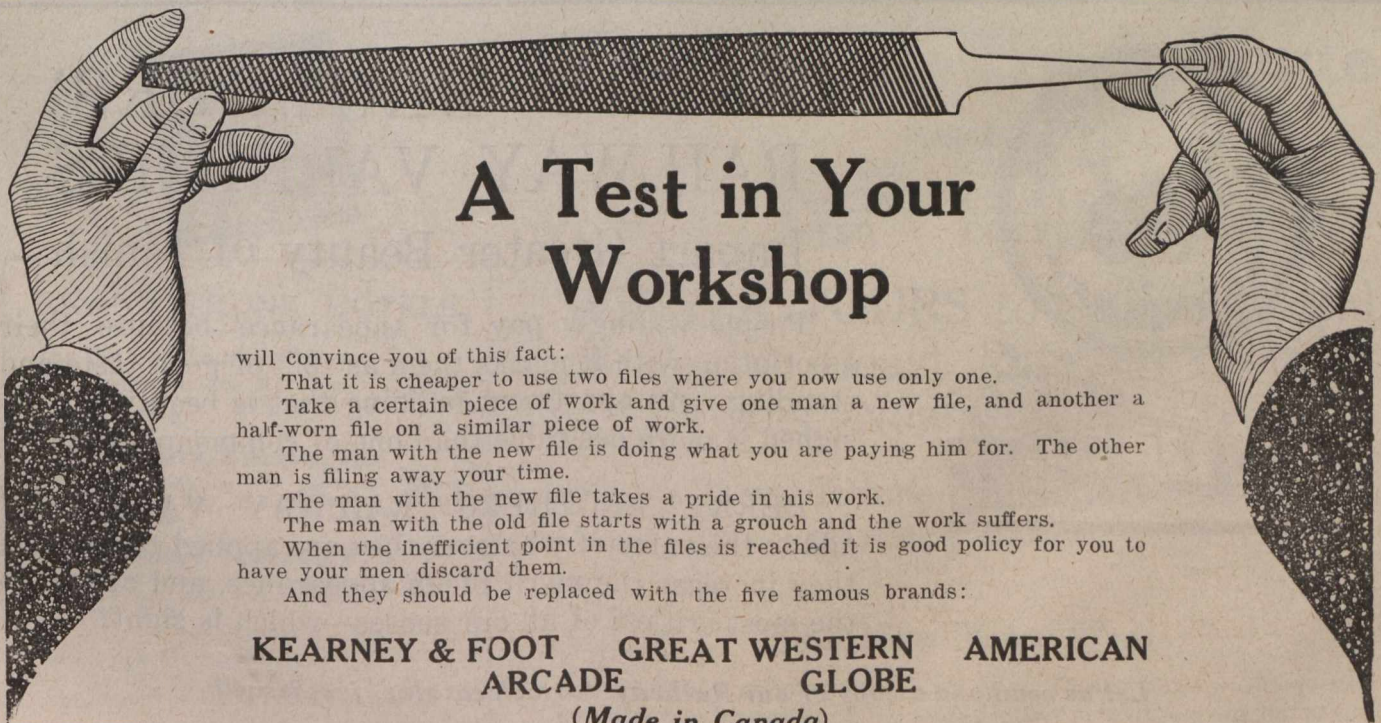
A groove in the pan guides the wheel and overcomes tendency to take turnout when car is passing on a straight line.

Deflector bar prevents wild trolley from catching in the acute angle formed by the turnout wire.

Small number of parts and rugged design mean ease of installation and long life.

Furnished for 0 to 4-0 Round and Grooved wires and for either right hand, left hand or "V" turnout.

THE OHIO BRASS COMPANY, Mansfield, Ohio, U.S.A.



A Test in Your Workshop

will convince you of this fact:

That it is cheaper to use two files where you now use only one.

Take a certain piece of work and give one man a new file, and another a half-worn file on a similar piece of work.

The man with the new file is doing what you are paying him for. The other man is filing away your time.

The man with the new file takes a pride in his work.

The man with the old file starts with a grouch and the work suffers.

When the inefficient point in the files is reached it is good policy for you to have your men discard them.

And they should be replaced with the five famous brands:

**KEARNEY & FOOT GREAT WESTERN AMERICAN
ARCADE GLOBE**

(Made in Canada)

Made in Canada by a plant controlling 90 per cent. of the file business.

Backed by 50 years' experience in the making of efficient files.

Send for your FREE Copy of "File Philosophy" NOW.

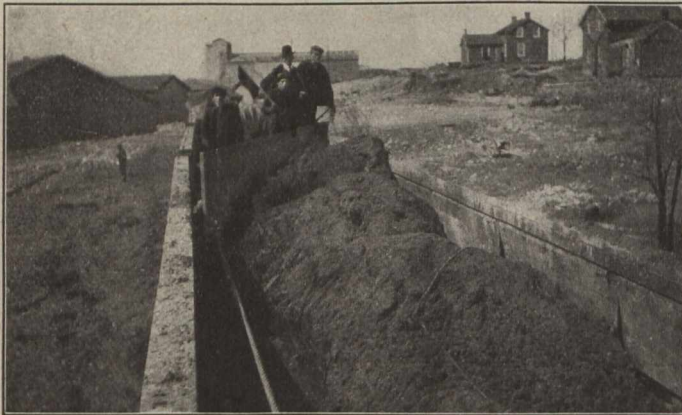
NICHOLSON FILE COMPANY

PORT HOPE

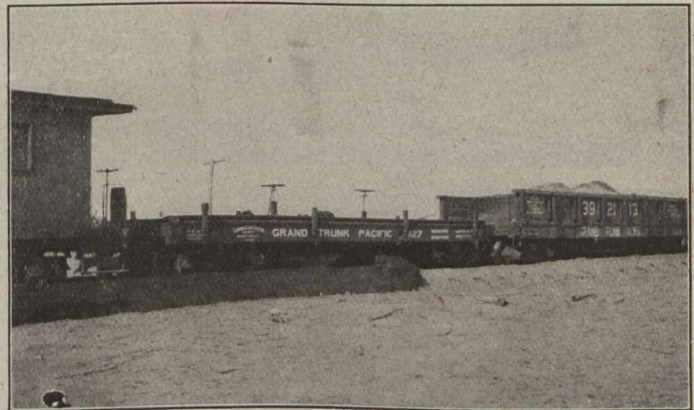
(Dealers Everywhere)

ONTARIO

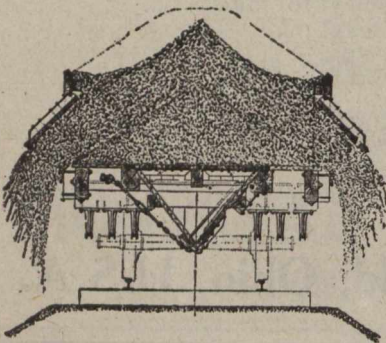
HART CONVERTIBLE CARS ARE MONEY SAVERS IN BALLAST WORK



In Construction Work with Side Plow and Lidgerwood Car



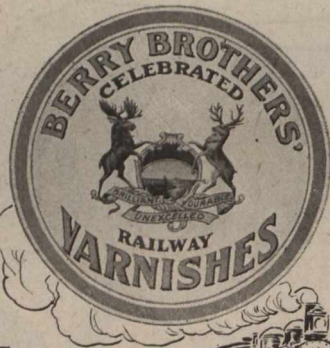
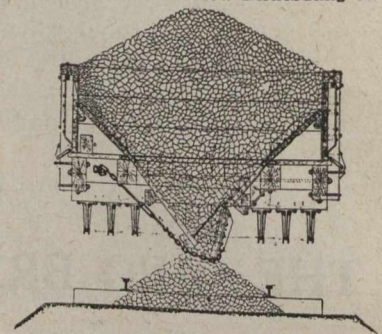
In Ballast Work: Centre Dump with Rodger Double Plow Distributing Car



Three Cars in One { BALLAST CAR
CONSTRUCTION CAR
GONDOLA CAR

Use centre dump for ballast and maintenance work and save \$200.00 per mile over any other method.
Use side dump for heavy construction work.

THE HART-OTIS CAR CO. LIMITED
MONTREAL



BERRY BROTHERS' RAILWAY VARNISHES

Impart Greater Beauty of Finish

People willingly pay for appearance because their association with it marks them as folk of good taste and standing. An apartment building that is beautifully designed is more desirable than one of commonplace finish.

BERRY BROTHERS' RAILWAY VARNISHES add to the value of whatever they are applied to, because they increase the merit of its appearance, and appeal to the most critical of all our senses—which is sight.

Let us send you a copy of our Railway Varnish catalog, just issued

BERRY BROTHERS
(INCORPORATED)
World's Largest Varnish Makers

WALKERVILLE

ONTARIO



Style No. 200.

Garlock High Pressure Piston Rod Packing

Is built up in rectangular form and uniform shape and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

The best materials we can buy are used in the manufacture of our high pressure packing.

The length of service obtained from it is greater than that secured from other makes, therefore the labor cost of applying and adjusting is less.

Our packings are sold at net weights; weights of tubes and boxes are not included.

Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

THE GARLOCK PACKING COMPANY

Hamilton, Ontario



Montreal, Quebec
Toronto, Ontario
Winnipeg, Manitoba

Branches:

342 St. James St. East
Continental Life Bldg.
Galt Building



The Double Track Route

Provides

SERVICE COMFORT
SAFETY COURTESY
SPEED CONVENIENCE

GRAND TRUNK HOTELS

The Chateau Laurier, Ottawa, Ont.

Accommodation 350 Rooms. Rates
\$2.00 per day and upwards. Euro-
pean Plan.

The Fort Garry, Winnipeg, Man.

Accommodation 300 Rooms. Rates
\$2.00 per day and upwards. Euro-
pean Plan.

The Macdonald, Edmonton, Alta.

Accommodation 250 Rooms. Rates
\$2.00 per day and upwards. Euro-
pean Plan.

Hotels under construction—

The Qu' Appelle, Regina.
The Prince Rupert, Prince Rupert.

WINTER TOURS to California and all Pacific Coast Points. Florida, Texas, New Orleans, Etc.

Winter Tours Tickets now on sale. Stop over privilege allowed.

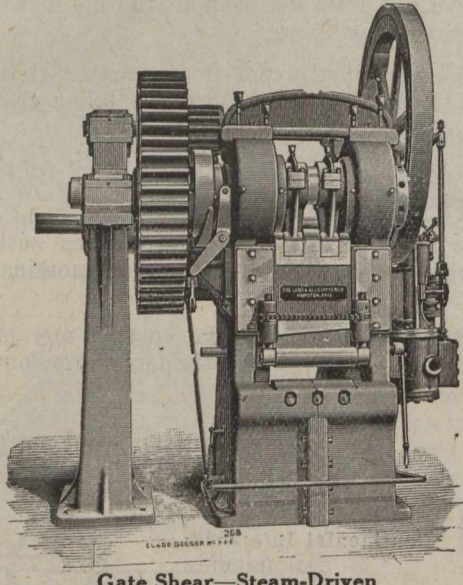
The New Way West

Via the Transcontinental and Grand Trunk Pacific Railway affords new scenery, new interests. Write to any Agent of the Company for a ver-
tising matter, rates, and all particulars.

G. T. BELL,
Passenger Traffic Manager,
Montreal.

W. S. COOKSON,
General Passenger Agent,
Montreal.

POWER PUNCHING AND SHEARING MACHINERY



Gate Shear—Steam-Driven

Over 350 sizes and styles for all kinds of light and heavy work designed and manufactured by

THE LONG & ALLSTATTER CO.

Hamilton, Ohio, U. S. A.

Riveting Machines

Tire Welding Machines

Armature Disc Notching Machines

Tire Bending Rolls

Beam Coping Machines

Bending and Forming Machines

Write for Catalogue if interested. Correspondence invited.

465 Railroad Shops in the United States and Canada Use the Thermit Welding Process



Let us send you this pamphlet.

This comprises practically all the shops of importance in North America, and it can be said without exaggeration that the list of railroads using Thermit includes practically every system from the small road having only three or four locomotives to the largest system in the world having many thousand locomotives.

If by any chance your shop is not using Thermit, you should investigate the process and see how effectively and economically it will handle the many repairs on locomotive frames and other sections.

Remember that the greatest railway systems in the world use hundreds of thousands of pounds of Thermit. They do not use it for any reason except that it "delivers the goods" and has proven itself a profitable investment.

Let us mail you our new pamphlet, No. 2144, which contains full information on the use of Thermit in Railroad Shops.

We have a well equipped shop in Toronto, Ont., for the manufacture of Thermit and appliances used with it.

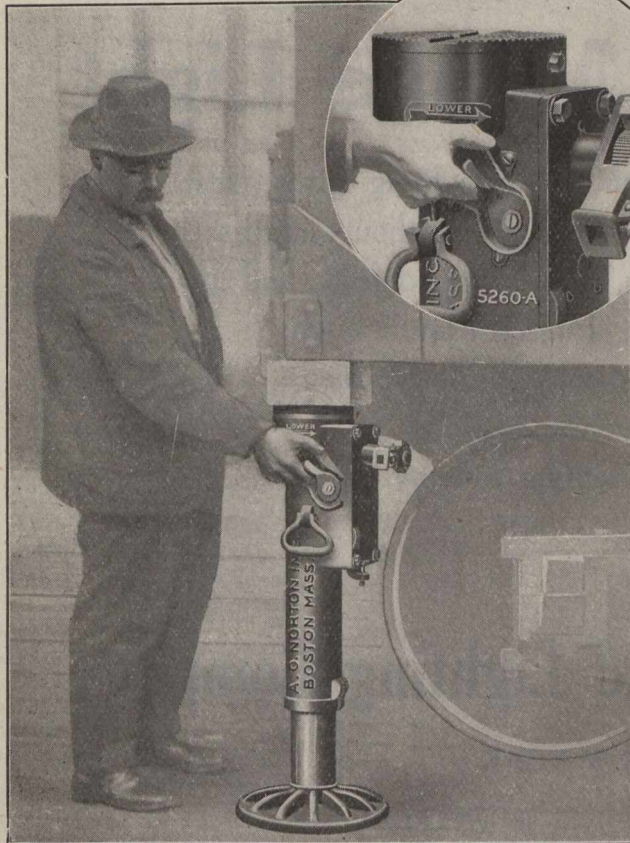
Goldschmidt Thermit Company

103 Richmond St., W., Toronto, Ont.

329-333 Folsom St., San Francisco

7300 So. Chicago Ave., Chicago

90 West Street, New York



Don't Pump Your Jack Down

Lower the Load by "Pressing the Button"

THE NORTON SELF LOWERING JACK

is absolutely Safe and will do your work **Quicker** and **Easier** than you have ever done it before.

Send for Illustrated Catalogue No. 28

A. O. NORTON, Limited
Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: **MUSSENS LIMITED**
Montreal Toronto Winnipeg Cobalt Calgary Vancouver

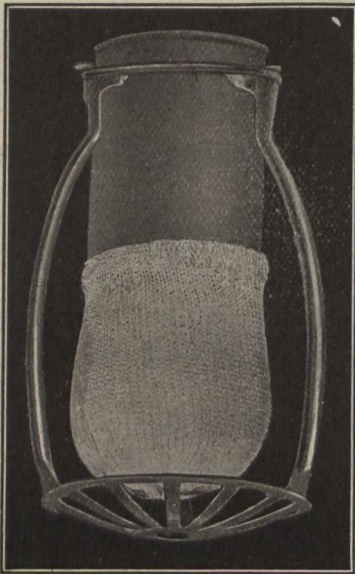
Scientific Treatment of Boiler Waters Dearborn Service to Railroads

Every time an engine failure takes place it means a large expense in dollars to the railroad company in time lost, impairment of service, and cost to send another engine to the rescue. Every time a locomotive goes to shop for repairs, it represents many thousands of dollars invested capital which is earning no revenue.

By the use of Dearborn Treatment engine failures due to the boiler foaming or leaking can be entirely eliminated. Dearborn Treatment counteracts the foaming tendency in waters of that type, and prevents scale formation, and the corrosive and pitting action that results in leaks. By thus overcoming the bad effects of the waters used, and

keeping the boiler tubes and sheets free from incrustation, the engine may be kept in service longer between boiler washings, and the period between shoppings for repairs of this character will be much longer. There are also great savings in fuel and lubricating oil, and the engine will always be in condition to haul full tonnage.

DEARBORN CHEMICAL COMPANY OF CANADA, Limited
Office and Works: 1220-1230 Dundas Street, Toronto, Canada



Pintsch Mantle Light

No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

The Safety Car Heating and Lighting Company

2 RECTOR STREET, NEW YORK


718 TRANSPORTATION BUILDING, MONTREAL



Passenger, Freight
and
Electric Railway,
Car Castings,
Forgings and Repair
Parts.

CROSSEN CAR COMPANY, LTD.
COBOURG - ONTARIO

**HOW RAILROADS SAVE MONEY
BY USING THE
TATE FLEXIBLE STAYBOLT**



TIME HAS DEMONSTRATED

FIRST—That flexible staybolts produce more satisfactory and more economical results than rigid staybolts.

SECOND—That TATE FLEXIBLE STAYBOLTS are best of all, measured by every standard.

Ask for our New Catalog just issued

Manufactured and Sold in Canada by

CANADIAN ALLIS-CHALMERS, Limited, General Offices, TORONTO, ONT.

FLANNERY BOLT COMPANY, - Vanadium Building, Pittsburgh, Pa.

**CANADIAN
STEEL FOUNDRIES
LIMITED**

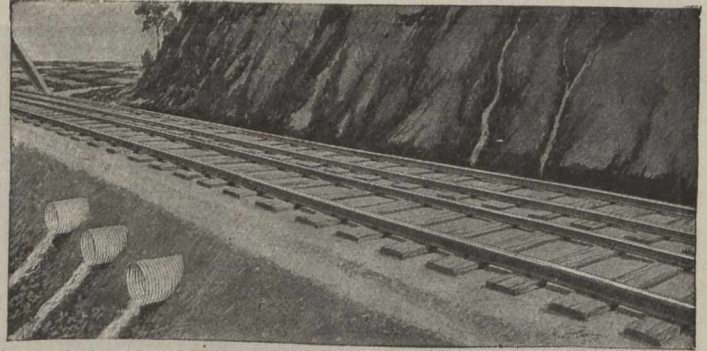
**STEEL CASTINGS - MANGANESE STEEL CASTINGS
COUPLERS - COIL AND ELLIPTIC SPRINGS
STEAM AND ELECTRIC RAILWAY TRACK WORK
BAR STEEL**

**GENERAL OFFICES
TRANSPORTATION B'LD'G
- MONTREAL
BRANCH OFFICE - TORONTO**



**WORKS
WELLAND, ONT.
POINT ST. CHARLES, MONTREAL
LONGUE POINTE, MONTREAL**


The Only Way to be Certain of Permanence



is to specify culverts that cannot deteriorate—that will be in as sound condition when again you think of new tracks or roadbeds as they are when you erect them. Inspect for yourself any of the thousands of

PEDLAR'S PERFECT CULVERTS

in constant use by the best railways and municipalities, under all sorts of strain and climatic conditions, for a number of years, and you'll find them in as perfect condition as when they left our factory.

Pedlar's Perfect  Culverts cannot rust or corrode or crack from frost. The metal used settles that for all time. As for resisting strain or vibration, the corrugations render it 29 times as strong as plain iron pipe of similar gauge.

Keep the fine, complete Culvert Reference Book, No. 4, R.M. always close at hand. It is replete with valuable data and drainage tables you will want to refer to continually. Free to you. Shall we send it to-day?

THE PEDLAR PEOPLE, Limited

(Established 1861)

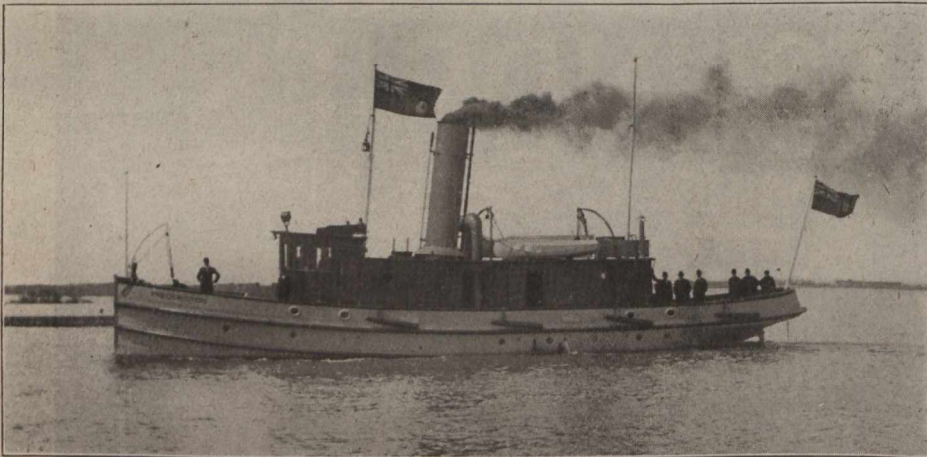
Executive Office and Factories—**OSHAWA, ONTARIO**

Branches: **Montreal** **Ottawa** **Toronto** **London** **Winnipeg**

63-V

STEEL SHIPBUILDERS

Engineers and Boilermakers



Steel Tug "Fredericton" built for the Dominion Government, 80 feet length, 20 feet breadth, 10 feet draught, compound marine engine, 12 x 26 x 18, clyde boiler 10 feet x 11 feet, 145 lbs. steam.

Dredges, Hydraulic and Dipper
Type; Steel Steamers, full Canal
Size; Tugs, Barges and Scows

*Marine Engines and
Boilers, all Sizes*

Polson Iron Works, Limited

Works and Office, Esplanade East, Toronto

Canadian Pacific

When You Travel—Travel In Comfort

“The Canadian Pacific Railway offer to the travelling public service and equipment second to none. They build, own and operate their Compartment Observation Cars, Standard Sleepers, Dining Cars, Coaches and Motive Power.”

“The Canadian Pacific own and operate a line of palatial hotels along the Railway from Atlantic to Pacific, thus affording their patrons every possible comfort.”

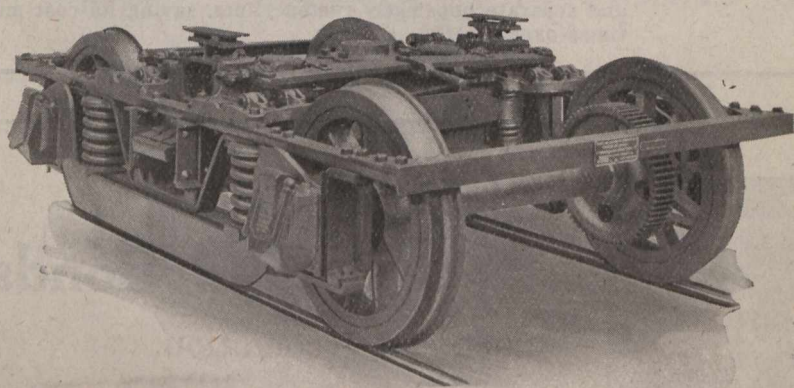
Those contemplating a trip will receive full details and literature on application to any C. P. R. agent, or write

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The truck illustrated is designed for high speed on electric railways, and has a rated carrying capacity of 30,000 pounds on the centre plate.

It has frictional side bearings and is of the equalized pedestal type.

Canadian Baldwin trucks, solve the problem of minimum weight, economical maintenance, simple construction, noiseless operation and easy riding.

There is comfort in riding on roads where Canadian Baldwin Trucks are used.

Canadian Baldwin Trucks, Class 84-30-AA, built for Lake Erie and Northern Ry., Ontario.

Manufactured in Canada by

Canadian Locomotive Company, Limited
KINGSTON, ONTARIO

LINKING PRAIRIE WITH OCEAN

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Canadian Government Railways

OPERATE OVER 4,000 MILES OF RAILWAY

Transcontinental Ry., Intercolonial Ry., Prince Edward Island Ry., St. John and Quebec Ry.

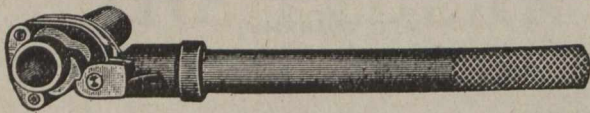
MONTREAL AND HALIFAX—Ocean Limited, Daily, except Saturday—Maritime Express, Daily. Connection for St. John, Prince Edward Island, Newfoundland except Sunday.

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TORONTO AND WINNIPEG—The National (tri-weekly service)—A NEW train via a NEW route through a NEW country.

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The Parmelee Pipe Wrench "The Toothless Wonder"



PRICE LIST C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths	
10 in.	1	3/8, 1/2, 3/4, 1 in.	\$5.00	\$2.25	3/8, 1/2, 3/4, 1 in.	\$.75
20 in.	2 1/2	3/4, 1, 1 1/4, 1 1/2, 2 in.	7.50	2.50	3/4, 1, 1 1/4 in.	1.00
25 in.	3 1/2	1 1/2, 2, 2 1/2, 3 in.	7.50	3.00	1 1/2, 2, 2 1/2, 3 in.	1.25

Prices on larger sizes furnished upon application.

DESIGNED ESPECIALLY to handle pipes spaced closely as in coil work. No. 2 1/2 wrench illustrated requires but three-quarter inch space between pipes.

POSITIVE GRIP instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

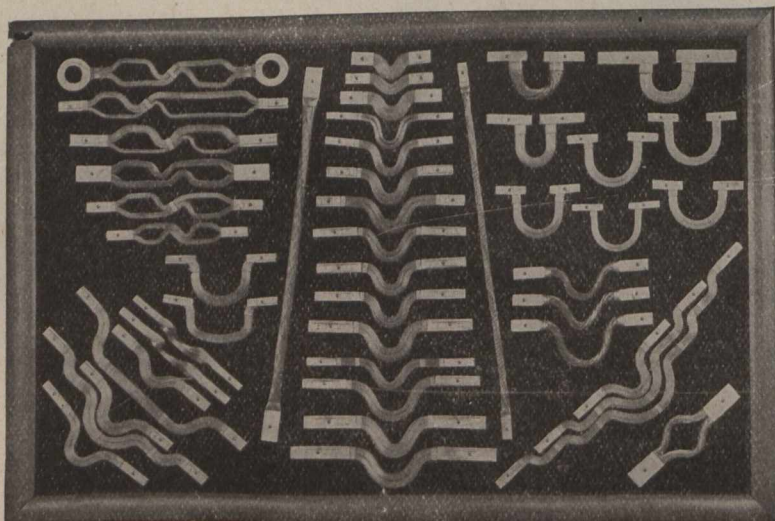
RATCHET-LIKE ACTION. Successive grips can be taken without having to hold the wrench on the pipe. By a slight twist of the handle, which is round and knurled, the wrench is locked in any position.

CAN'T CHEW. The Parmelee will make or break the tightest joints without injuring pipe or threads, as it has no teeth. The only wrench suitable for galvanized pipe.

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The Electric Railway Improvement Co.

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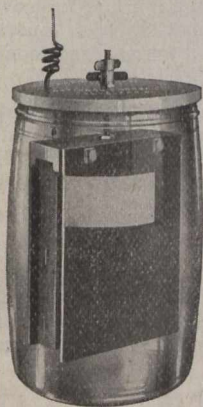
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TYPE 72



is the latest development in primary batteries for all classes of open circuit or closed circuit work.

This cell is designed to operate satisfactorily under all service conditions. It has a high amperage capacity that is not affected by severity of weather conditions.

It is simple, yet very rugged in construction, and a minimum amount of labor is necessary in setting up this cell.

The copper oxide element is made of loose, flaky material contained in a perforated holder. This insures free circulation of the solution and constant internal resistance.

The cell is self oiling—it does not require the addition of any oil.

It is being successfully used by over 30 railroads in Canada and the United States.

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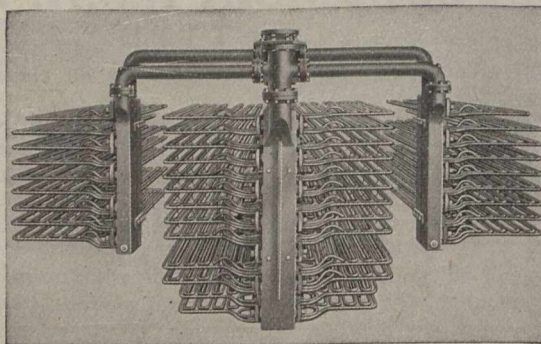
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1. It is adaptable to either new or existing boilers of the fire tube type, and can be applied with no change in design or construction.
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Commercial Acetylene furnishes a strong, penetrating light without being blinding. Nothing to get out of order. Economical to maintain. Small gas cylinder supplies several weeks' lighting.

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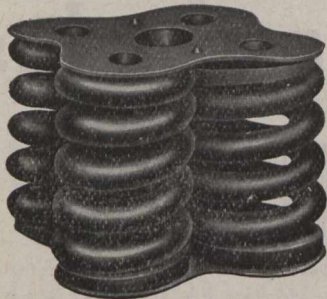
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Commercial Acetylene Railway Light and Signal Company

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LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.

EQUALIZING, DRAWBOARD, BUFFER AND SPIRAL SPRINGS of all kinds, STREET RAILWAY SPRINGS, from the largest to the smallest. TRACK TOOLS, RAIL BRACES, TIE PLATES, GUY ANCHORS AND RODS, LOCOMOTIVE SANDERS, CHAIN, Etc.

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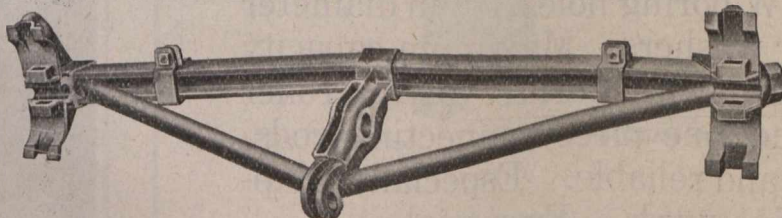
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BUFFALO BEAMS ARE BEST BEAMS

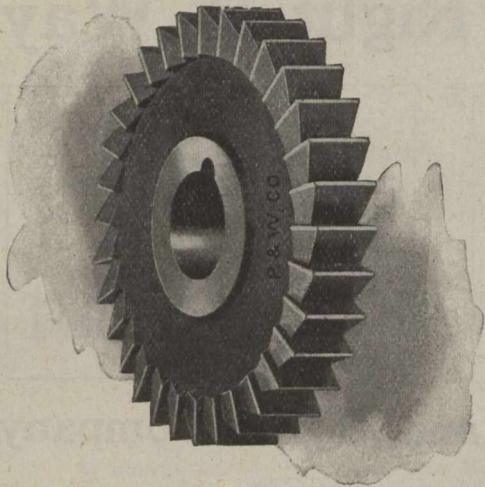
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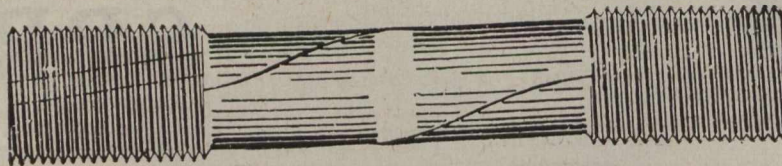
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Made of the best standard staybolt iron, adding flexibility by process of making as shown above--closely approximating a rope structure.

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Size AW boring holes $3\frac{1}{4}$ " in diameter for car floor washers. Maximum capacity 4". Equipped with Corliss valves, roller bearings and one piece connecting rods. Economical and reliable. Especially adapted for marine work. Free trial.

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Independent Pneumatic Tool Company

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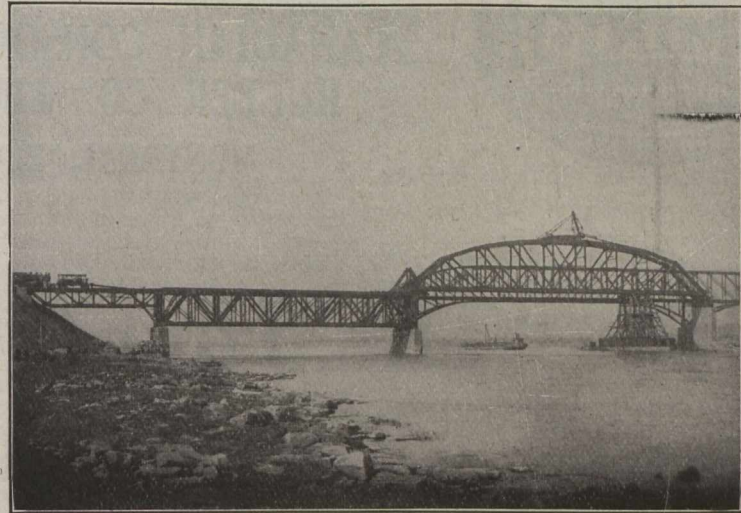
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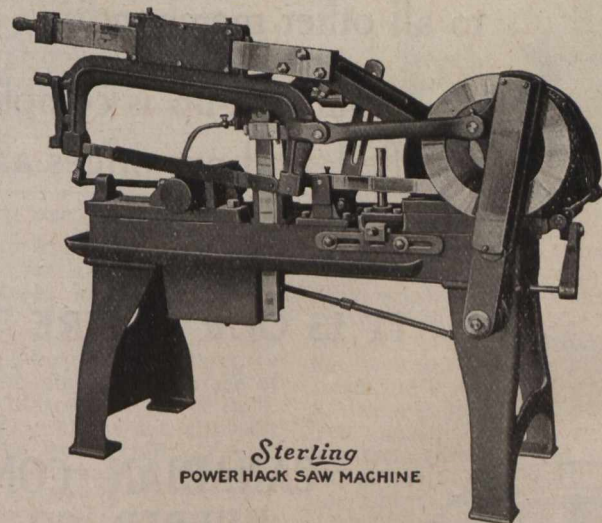
Lachine Bridge.

Engineers, Manufacturers and Erectors of Steel Structures.
CAPACITY 135,000 TONS.

Railway and Highway Bridges, Swing and Bascule Spans, Buildings of all kinds, Hemispherical Bottom and other Tanks, Transmission Poles and Towers, Riveted Pipe, Caissons, Barges, Turntables, Electric and Hand Power Cranes, Hoisting Appliances, Lift Locks, Hydraulic Regulating Gates, etc. Gear Cutting and General Machine Work.

LARGE STOCK OF STANDARD STRUCTURAL MATERIAL AT ALL WORKS.

“STERLING” High Duty Power Hack Saw Machine



Sterling
POWER HACK SAW MACHINE

Cuts round material up to and including 6 in.

Manufactured by

DIAMOND SAW & STAMPING WORKS,
BUFFALO, N.Y., U.S.A.



28 "Service" Branches Throughout Canada

CANADIAN CONSOLIDATED
RUBBER CO., LIMITED
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"The Higher Cost of Paying Less"

There are two costs to every article—*purchase cost* and *service cost*. One gives you ownership. The other gives you results.

And an article is of value only in proportion to its ability to give *Service*.

This applies to rubber goods, as well as to all other merchandise.

Our line-up is complete, our quality is unexcelled, and our prices are right. Let us show you what we can do.

IT IS OUR DESIRE TO SERVE YOU



CANADIAN CONSOLIDATED
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MONTREAL, P. Q.

28 "Service" Branches Throughout Canada



Canadian Railway and Marine World

February, 1916.

Standard Lettering of Freight Cars.

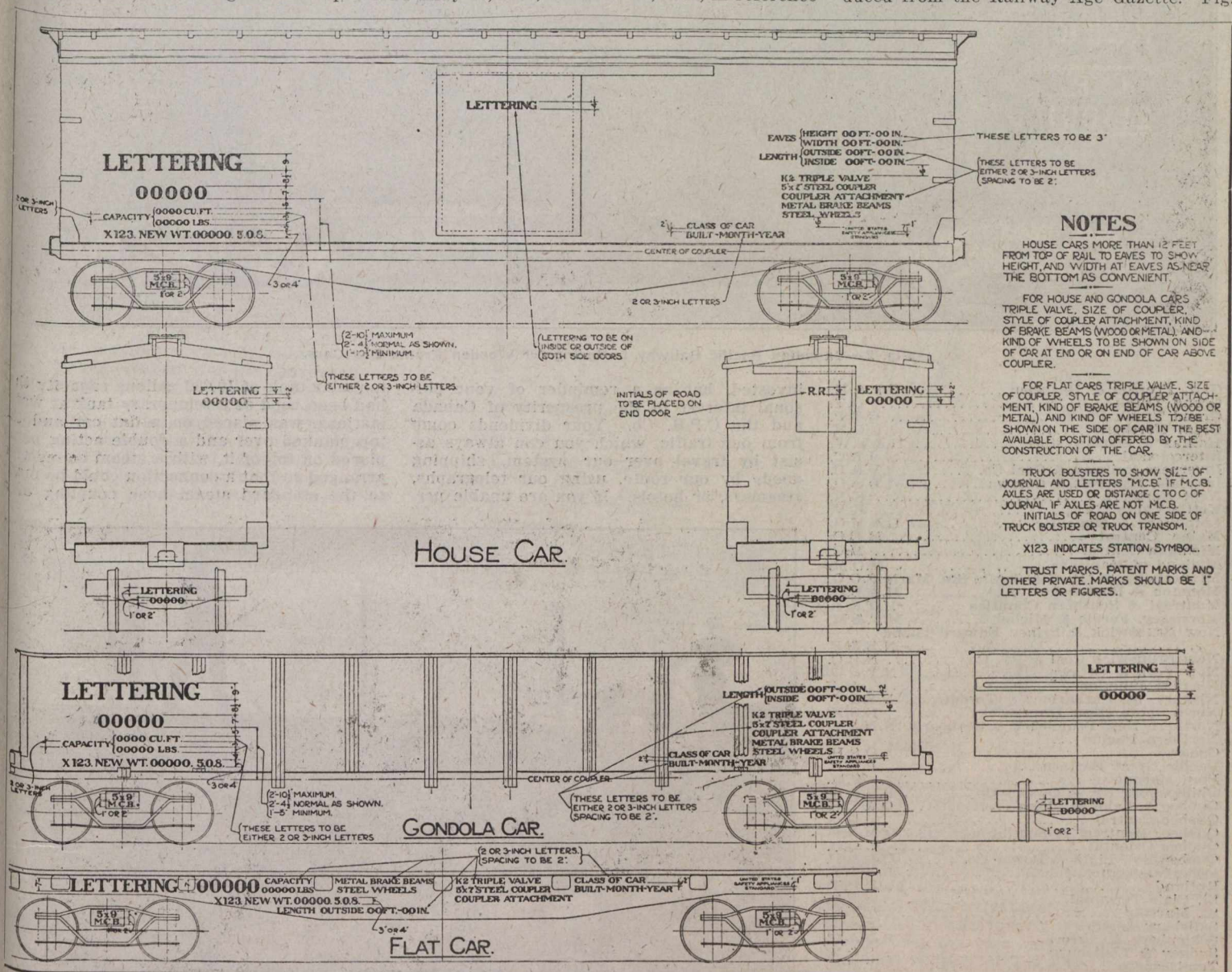
Certain definite regulations regarding the marking to be used for freight cars were made by the Master Car Builders' Association in a report presented at its convention in 1905. This report covered the style of letters and figures to be used, so that uniform stencils might be prepared and used on all freight cars, and, secondly, uniform height of letters and figures for specified

truck as the lettering will permit, preferably to the left of the centre line on side of car.

Various refinements in detail of marking freight cars have been carried out year by year, but several serious objections were not eliminated. As the matter developed, the American Railway Association issued circular to all owners of freight equipment on May 18, 1910, and Nov. 20, 1912, in reference

latter retains the old marking without infringement. Each road acknowledges its official reporting marks by having them appear on all of its freight cars.

The standard marking jointly agreed to by the Master Car Builders' and American Railway Associations is shown by the accompanying drawing, fig. 1, which is reproduced from the Railway Age Gazette. Fig.



NOTES

HOUSE CARS MORE THAN 12 FEET FROM TOP OF RAIL TO EAVES TO SHOW HEIGHT AND WIDTH AT EAVES AS NEAR THE BOTTOM AS CONVENIENT.

FOR HOUSE AND GONDOLA CARS TRIPLE VALVE, SIZE OF COUPLER, STYLE OF COUPLER ATTACHMENT, KIND OF BRAKE BEAMS (WOOD OR METAL) AND KIND OF WHEELS TO BE SHOWN ON SIDE OF CAR AT END OR ON END OF CAR ABOVE COUPLER.

FOR FLAT CARS TRIPLE VALVE, SIZE OF COUPLER, STYLE OF COUPLER ATTACHMENT, KIND OF BRAKE BEAMS (WOOD OR METAL) AND KIND OF WHEELS TO BE SHOWN ON THE SIDE OF CAR IN THE BEST AVAILABLE POSITION OFFERED BY THE CONSTRUCTION OF THE CAR.

TRUCK BOLSTERS TO SHOW SIZE OF JOURNAL AND LETTERS "M.C.B." IF M.C.B. AXLES ARE USED OR DISTANCE C TO C OF JOURNAL IF AXLES ARE NOT M.C.B.

INITIALS OF ROAD ON ONE SIDE OF TRUCK BOLSTER OR TRUCK TRANSOM.

X123 INDICATES STATION SYMBOL.

TRUST MARKS, PATENT MARKS AND OTHER PRIVATE MARKS SHOULD BE 1" LETTERS OR FIGURES.

Fig. 1.—Master Car Builders' Association Recommended Practice for Lettering Freight Cars.

markings, so that in a general way these markings would be standard for all freight equipment cars. No particular location was recommended at that time, as to where the various markings were to be placed, allowing each ownership to use its own judgment in the matter to a certain extent. At the 1909 convention, it was decided to have the markings on sides of cars, wherever possible, carried out in the following order: 1. Lettering (initials or name of road); 2. Number; 3. Capacity; 4. Light Weight. This marking to be located as nearly over the

to the uniform marking of freight cars, and immediately following this a suitable list of official reporting marks was prepared covering each identical road or private owner and arranged in such a way that there could be no possible ground for confiction, as was the case under the old scheme, where perhaps two or more roads persisted in using the same marking. For instance, the Intercolonial Ry. and the Illinois Central Rd., both used the reporting mark "I.C.R.," for a long time and under the new system, "I.R.C." applies to the first road and the

2 shows a C.P.R. car with the new standard lettering.

- Following are the official reporting marks for roads operating in Canada:
- Algoma Central & Hudson Bay A.C. & H.
 - Algoma Eastern (See Algoma Central & Hudson Bay).
 - Bay of Quinte E.Q.
 - Brockville, Westport & Northwestern B.W. & N.
 - Canada & Gulf Terminal C. & G.T.
 - Canadian Government C.G.R.
 - Canadian Northern C.N.
 - Canadian Northern Ontario C.N.O.
 - Canadian Northern Quebec C.N.Q.
 - Canadian Pacific C.P.
 - Cape Breton C.B.N.

Carquet & Gulf Shore	C. & G.S.
Carillon & Grenville	C. & G.V.
Central Ontario	C. O. T.
Central Vermont	C. V. T.
Chatham, Wallaceburg & Lake Erie ..	C. W. & E.
Cumberland Railway & Coal Co.	C. D. & C.
Delaware & Hudson	D. & H.
Dominion Atlantic	D. A.
Duluth, Winnipeg & Pacific	D. W. & P.
Elgin & Havelock	E. & H.
Eastern British Columbia	E. B. C.
Esquimalt & Nanaimo	E. Q. & N.
Essex Terminal	E. T. L.

National Transcontinental.
 Prince Edward Island.
 St. Lawrence & Adirondack.
 Vancouver, Victoria & Eastern.
 Wellington Colliery.

Tank Car for Fire Fighting on National Transcontinental Railway.

The C.P.R. solicits its shareholders' business.—C.P.R. shareholders received with their dividend cheques recently a printed slip reading as follows:—"Take this cheque not merely as a dividend on so much money

A tank car which has been equipped recently at the Canadian Government Railways shops at Moncton, N.B., for fire fighting on the N.T.R. between Edmunston, N.B. and Quebec, is illustrated herewith. A re

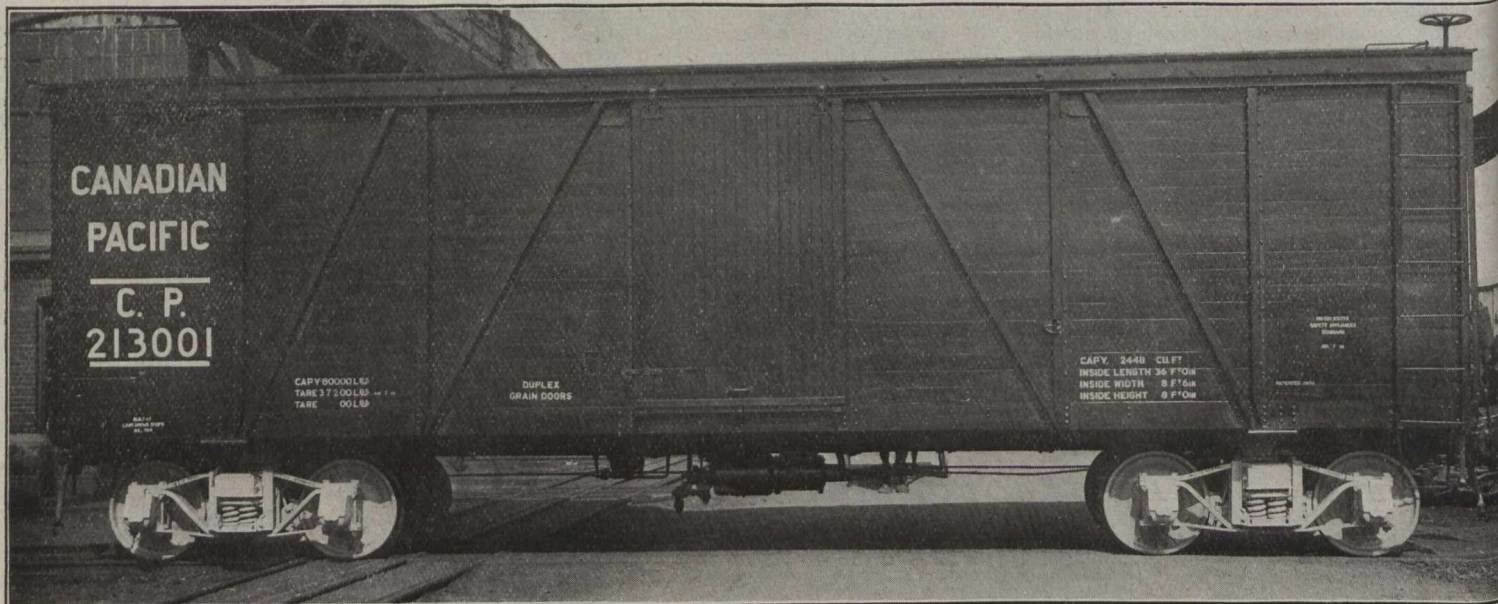
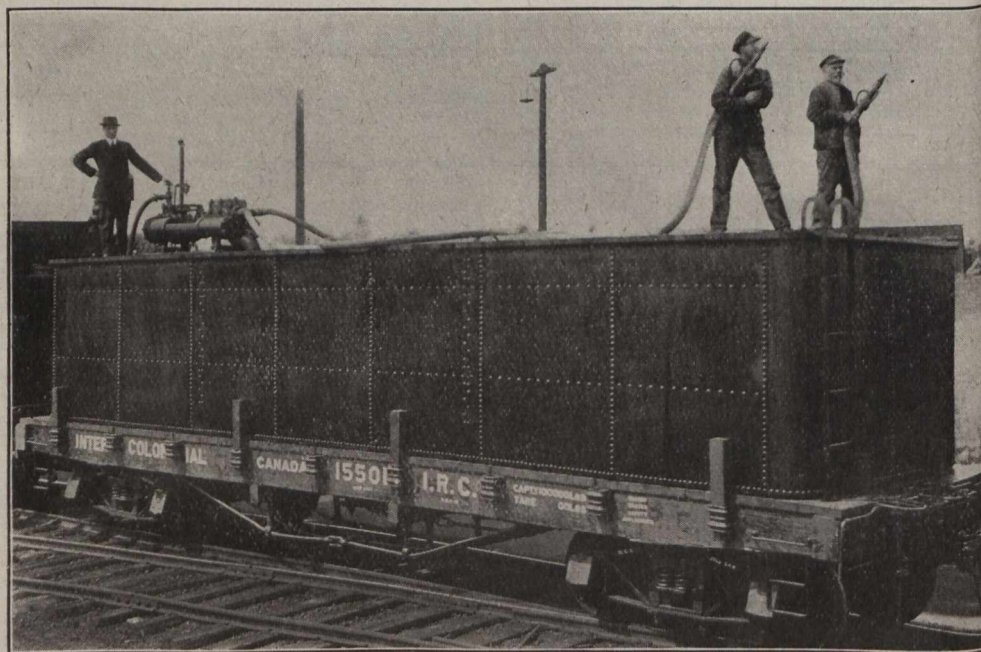


Fig. 2.—Canadian Pacific Railway Lettering for Wooden Frame Box Cars.

Galt, Preston & Hespeler	G.P. & H.
Grand Trunk	G.T.
Grand Trunk Pacific	G.T.P.
Great Northern	G.N.
Halifax & Southwestern	H. & S.W.
Intercolonial	I.R.C.
Inverness Railway & Coal Co.	I.V. & C.
Iroindale, Bancroft & Ottawa	I.B. & O.
Kent Northern	K.N.
Kettle Valley	K.V.
Lotbiniere & Megantic	L. & M.G.
Maine Central	M.E.C.
Michigan Central	M.C.
Midland of Manitoba	M.O.M.
Minneapolis, St. Paul & Saulte Ste. Marie ..	S.O.O.
Moncton & Buctouche	M. & B.U.
Montreal & Southern Counties	M.T. & S.
Morrissey, Fernie & Michel	M.F. & M.
New Brunswick & Prince Edward Island ..	N.B. & P.
New Brunswick Coal & Ry. Co.	N.B.C.
New York & Ottawa	N.Y. & O.
Niagara Junction	N.J.
Niagara, St. Catharines & Toronto ..	N.S. & T.
North Shore (New Brunswick)	N.S.N.
Northern New Brunswick & Seaboard ..	N.N. & S.
Northern Pacific	N.P.
Oshawa	O.S.H.
Pacific Great Eastern	P.G.E.
Pere Marquette	P.M.
Phillipsburg Ry. & Quarry Co.	P.R. & Q.
Quebec & Lake St. John	Q. & L.S.
Quebec Central	Q.C.
Quebec, Montreal & Southern	Q.M. & S.
Quebec Oriental	Q.O.
Quebec Ry., Light & Power Co.	Q.L. & P.
Roberval-Saguenay	R.S.
Rutland	R.U.T.
St. Clair Terminal	S.C.T.
St. Martins	S.M.
Salisbury & Albert	S. & A.
Schomberg & Aurora	S. & A.U.
Sydney & Louisburg	S. & L.
Temiscouata	T.M.C.
Thousand Islands	T.T.I.
Timiskaming & Northern Ontario ..	T.M. & N.
Toronto & York Radial	T. & Y.R.
Toronto, Hamilton & Buffalo	T.H. & B.
Victoria & Sidney	V.T. & S.
Victoria Terminal Ry. & Fy. Co.	V.T. & F.
Wabash	W.A.B.
York & Carleton	Y. & C.

invested, but as a reminder of your personal interest in the prosperity of Canada and the C.P.R. Co. Your dividends come from our traffic, which you can always assist by travel over our system, shipping goods by our route, using our telegraphs, steamers, or hotels. If you are unable per-

tangular tank of 10,000 gallons capacity that had been used as a temporary tank at water stations, was placed on a flat car and the top planked over and a double acting pump placed on top of it, with a steam connection arranged so that a connection could be made to the standard steam hose coupling of a



Tank Car for Fire Fighting on National Transcontinental Railway.

The following lines have not had any markings assigned to them:
 Atlantic, Quebec & Western.
 Bedlington & Nelson.
 Brandon, Saskatchewan & Hudson Bay.
 British Yukon.
 Crows Nest Southern.
 Fredericton & Grand Lake Coal & Railway Co.
 Klondike Mines.
 London & Port Stanley.
 Maritime Coal, Railway & Power Co.

sonally to use our services, talk about Canada and the C.P.R. to your friends. Rest assured there is no finer scenery, no better sport, no greater comfort in travel, no more careful handling of freight and express, no prompter service in any part of the world than is found along the line of the Canadian Pacific."

locomotive. The pump is equipped with a Siamese coupling and will throw two good sized streams of water about 200 ft.

The Dominion Ex. Co. has opened offices at Humphreys Mills, N.B., Redwater, Ont., Secretan, Sask., Compeer, Spring Coulee and Travers, Alta., and Tappen, B.C.

Railway Companies Collection of Cartage Tolls Considered by Board of Railway Commissioners.

Sir Henry L. Drayton, Chief Commissioner, Board of Railway Commissioners, gave the following decision Nov. 22, which was concurred in by the other commissioners:—

Several complaints have been made as to the practice of railway companies in collecting cartage tolls from consignees. The complaints are complaints really made by the consignees against the consignors, as the collection of cartage charges, which from time to time are disputed, are invariably charges which the consignor has instructed the railway company to collect from the consignee. The railway makes no profit out of the transaction, and it is a matter of indifference to it whether it collects from the consignee the cartage charges which have been charged against the railway by the cartage company, or whether the consignor pays them in the first instance.

It is perfectly clear that cartage is not covered under the maximum toll which railways may collect for the service of transportation as contemplated by the act. By this I mean it is not included in any filed tariff applicable to the line haul. It is entirely a separate and distinct matter, and has nothing to do with the factors making up the railway transportation rates as popularly and properly understood. Some of the English acts make the point perfectly clear. The London, Brighton, and South Coast Ry. Act, 26-27 Vic., chap. 218, sec. 51, provides that the maximum rate of charges to be made by the company for the conveyance of animals and goods shall not exceed certain sums prescribed, and especially excepts a reasonable sum for, among other things, delivery and collection. In the case of *Sowerby vs. G.N. Ry.*, 60 L.J., Q.B. 467; 65 L.T. 546, C.A., it is expressly held that a railway performing a cartage service is entitled to be paid for it.

The Board has dealt with the matter similarly. The considered judgment of the Assistant Chief Commissioner will be found in *Stewart vs. C.P.R. Co.*, 11 C.R.C. 197. In that case, the charge had been made for carting a marble slab to the railway company's freight sheds from the consignor's premises. The cartage was included in the railway company's freight bill and paid by the consignee at Hamilton. On it appearing that the company's cartage tariff, which had been approved by the Board, did not include a charge for carting marble slabs in Montreal, but, as pointed out in the judgment, expressly excluded marble slabs, the charge was disallowed, on the ground that it was a charge collected as a toll within the meaning of the railway act not appearing in a tariff, a practice prohibited by sec. 314, ss. 5.

The act itself contemplates charges for cartage. The amendment of 1908 substitutes a new section for sec. 2, ss. 30. This subsection, defining the word "toll" or "rate," specifically includes charges for cartage. Railway companies have since filed proper and appropriate tariffs for cartage service. The practice which has been followed for years has in effect been that the railway companies have advanced cartage charges on outward shipments to the cartage companies, and have included in their freight bills under the caption of "Cartage charges" the amount advanced.

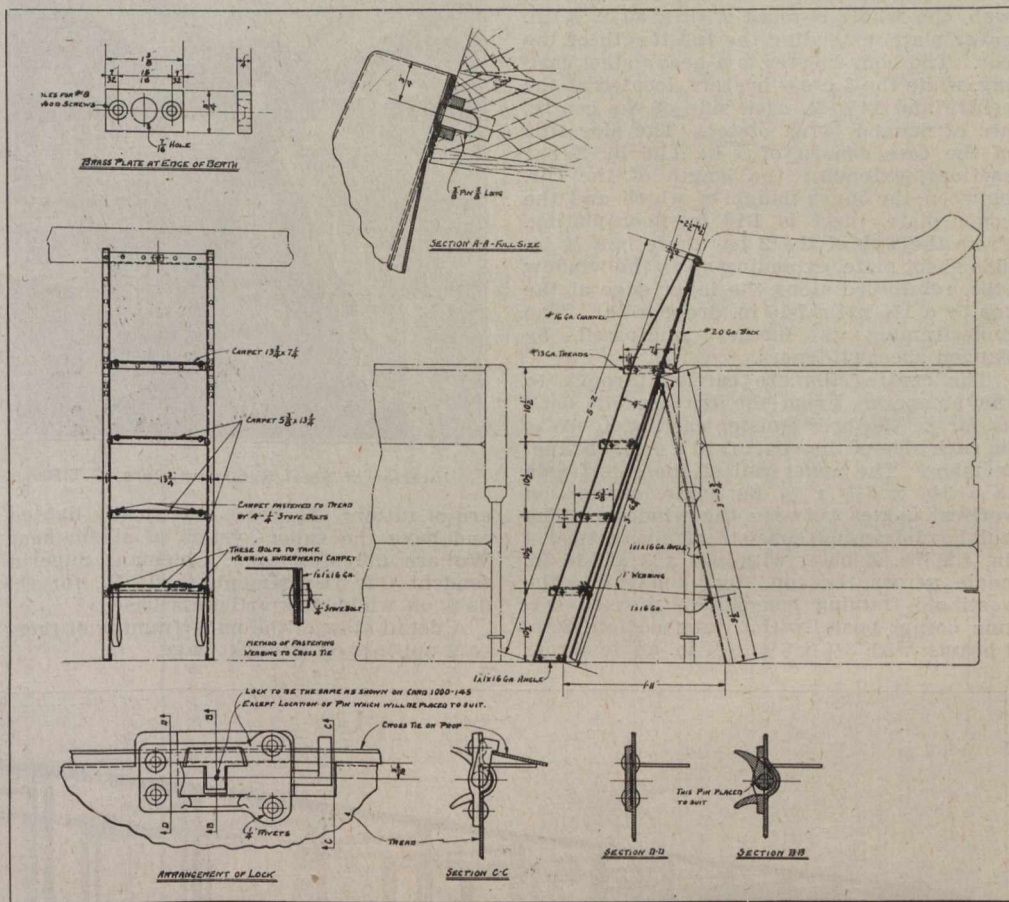
In Aug., 1913, the railway companies proposed to cancel all cartage tariffs, as they desired to discontinue contracts which they had made with the cartage companies. The railway companies urged that they had, in the past, been absorbing part of the charge; and that the service was not a railway service, but one which had been given in ease

of the general situation and for the convenience of the public. Strong protests were made against the proposal. It was reconsidered by the railways; and, at the request of the shippers, the practice was continued under a somewhat higher tariff. The shippers alleged that it would cost much more if the shippers had to have the service performed by independent carters, and that much confusion and inevitable delays would result, if the previous system was abandoned. At that time, as now, the consignees objected to be charged with the cartage rate. The position taken by the Board at that time was that it had not the power and should not attempt to change or modify

has but to deduct the sum collected for cartage, if improperly collected from him, from his invoice. The case is just the same as if the consignor, in a case where the contract called for free delivery at destination, had forwarded the shipment with freight charges collect. In each instance, the question as to whether the freight charges or the cartage charges should be paid by the consignor or the consignee depends on the terms of the contract, to which the railway company is not a party and has no means of ascertaining the facts.

Steel Step Ladder for Canadian Northern Railway Sleeping Cars.

The Canadian Northern Ry. mechanical department has developed an all steel berth step ladder for use on its sleeping cars that



Steel Step Ladder for Canadian Northern Ry. Sleeping Cars.

in any way the rights and obligations of the contracting parties; that the question as to whether the consignees should or should not pay cartage was a matter entirely of contract between the consignors and the consignees, that the Board had nothing to do with the question; and that the work of cartage was not a railway service or facility within the meaning of the act, although covered by the definition of "toll."

In case where the purchase is f.o.b. cars at shipping point, instead of at the warehouse, there is no doubt that the consignees should not have to pay the cost which should be borne by the consignor; but this question is not, however, in any sense, a question for the Board. Generally speaking, the railway company is bound by the consignor's instructions. If these instructions include the collection of the cartage charges, in addition to the collection of the freight charges, there is no reason why the railway company under the act cannot hold delivery of freight until payment is made.

The consignee's remedy is simple, as he

has many advantages from the point of view of construction and convenience over the usual wooden ladder which is placed in the centre of the aisle. The side member consists of 1 1/2 lb. galvanized iron channel, 13 3/4 ins. back to back, with 13 lb. galvanized iron treads, 10 1/2 ins. rise. At the back there is a hinged support of 1 x 1 in. 16 galvanized iron angles, with 1 in. webbing to keep the legs from spreading too far. The top of the ladder has tips which fit into sockets in the upper berth face. Above the top step of the ladder, the back is closed in by 20 lb. galvanized iron sheeting, which will be appreciated especially by women in mounting to an upper berth. When not in use the ladder will fold up neatly in the porter's cupboard at the end of the car.

The Great North Western Telegraph Co. has opened an office at La Tuque, Que., and has closed its offices at Capucins and Little Metis lighthouse, Que., and Badger, Berton, Lorette, Neelin and Vista, Man.

Steel Suburban Cars, Grand Trunk Railway.

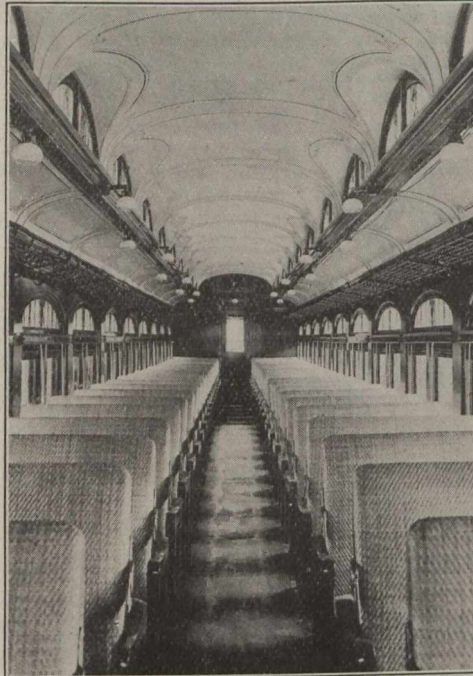
The G. T. R. has in service 15 steel frame suburban cars, which are the first steel passenger cars used by the company, and embody some interesting features of design. The steel body framing of the cars, an interior view and a detail view of the underframing are shown in the accompanying three illustrations.

The underframing is of the fish belly girder type, with a carrying side girder plate. The fish belly centre sill consists of two 5-16 in. web plates, 18 ins. apart, 26 ins. deep through the central 28½ ft., tapering to a depth of 16 ins. at the body bolster casting. The top edges of these web plates are reinforced with 5 x 3 x ¾ in. angles on each side of each web, and the bottom, with 3 x 3 x ¾ in. angles on each side of each web, the whole covered with a 30 x ¾ in. cover plate, extending the full length of the car. The body bolster is a heavy steel casting, while the 3 cross bearers, located at the centre and 14¼ ft. each side of the centre, are of flanged ¾ in. plates. The side sills of the cars consist of 5 in. 11.6 lb. Z bar sections, extending the length of the car, between the inner flange of which and the cover plate, there is 1-16 in. floor plating. From the web of the Z bar there is a ½ in. side sheet plate, extending up to the window sills, reinforced along the inner edge at the top by a 1½ x 4 x 7-16 in. dropper bar. The underframing is further reinforced by flanged sheet stiffeners.

The centre sills are carried through to the bumpers. From the bumper sill back as far as the body bolster casting, there is on each side of the centre sill a 7 in. channel member. The upper rail of the side frame is a 3½ x 3½ x ¾ in. angle, carried on vertical angles between the windows. The bulkhead framing consists of six vertical 4 in. 8.2 lbs. Z bars, with a 4 x 3 x 5-16 in. angle across the top for top rail. The vestibule framing consists of pressed section corner posts, with 2 intermediate 8 in. I beams, with 3½ x 3½ x ¾ in. angle across

with standard 13-16 in. siding. The roof is carried on one piece carlines, forming decking of the standard section.

The cars have an overall length of 82 ft. 10½ ins., 70 ft. long over the body. The interior finish is in mahogany, and the seats



Interior of Steel Suburban Cars, G.T.R.

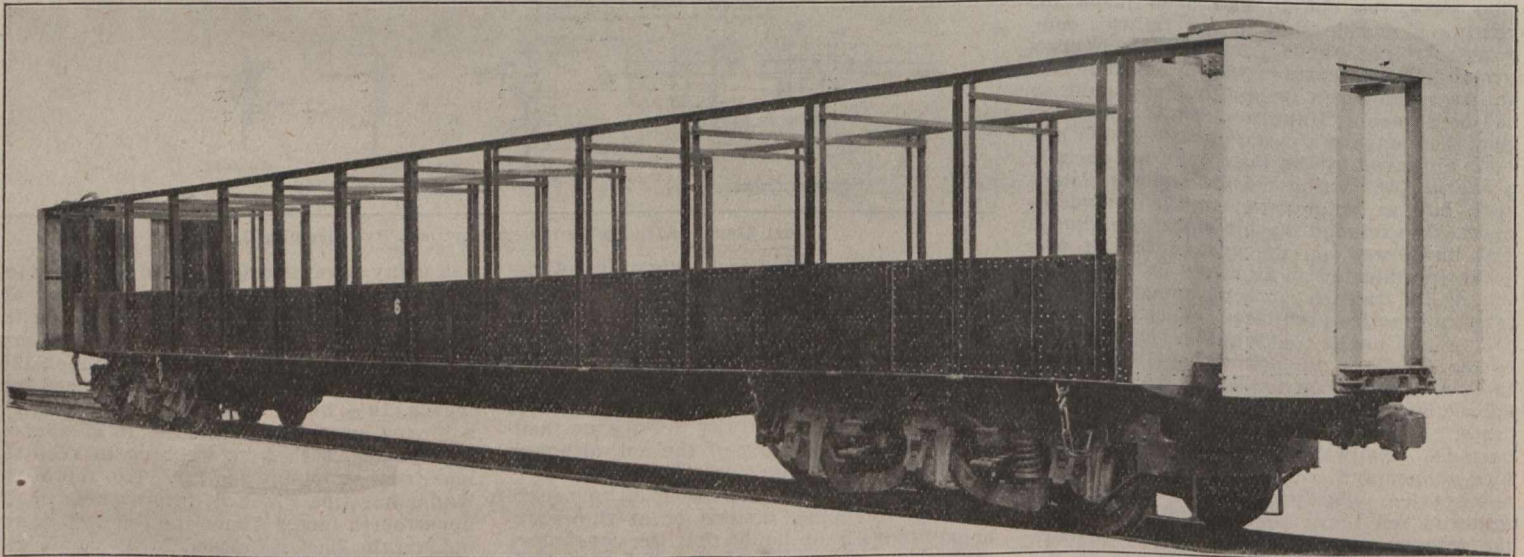
are of rattan. They are electrically lighted, and have the vapor system of steam heat. We are indebted to J. Coleman, Superintendent Car Department, G. T. R., for the data on which this article is based.

A detail view of the underframing of these cars appears on the next page.

Was a Pioneer Tunnel Advisable at Rogers Pass?

One way of doing a thing well is to do it twice. Ordinarily this is an uneconomical procedure, but the builders of the Rogers Pass tunnel claim that it is economical in their case. They had a long tunnel to dig, and so they started by excavating a second tunnel, a useless tunnel, first, and from it they proceeded to attack the main tunnel itself. To describe the striking, iconoclastic method of the "pioneer heading" in the above terms is likely to seem belittling and unfair. The work was carried on in highly successful and expeditious style. Record breaking rates of advance were made, greater at least than any prior performance on the western continent. No untoward incidents interfered with smooth progress. So the work merits congratulations and praise. That fact, however, does not bar the question whether the second tunnel scheme was an essential factor, or whether the same or even better results would have been attained without it.

Comparison with the Simplon tunnel is invited, because there the parallel heading method was also used—in fact it was originated by the Simplon engineers. Two reasons in co-operation made a sound basis for the method there: First, the prospects were that great heat and large waterflows would be encountered, which would call for drainage and ventilation capacity almost impossible to secure in a single heading; and second, if for purposes of ventilation and drainage a second heading were driven along with the main heading, it could be used later for the second tunnel which would shortly be needed to provide double track, and so the parallel expense would involve hardly any dead expense. There has been much difference of opinion in Switzerland among tunneling experts as to whether the Simplon experience justifies the existence of the parallel tunnel method of construction. In the later Loetschberg tunnel, which is shorter than the Simplon but still much



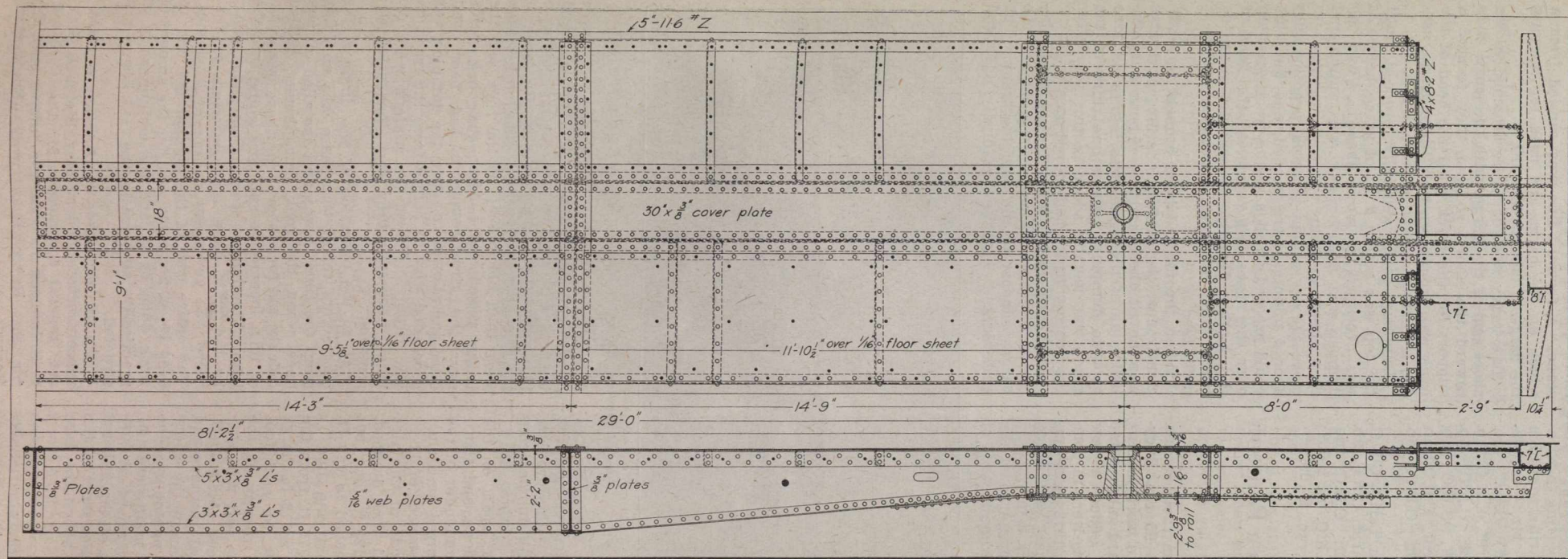
Steel Suburban Car, Grand Trunk Railway, During Construction, Showing Arrangement of Steel Members.

the top, and two 7 in. channels for bumper sill across the bottom.

The flooring consists of two ¾ in. layers of non-conducting material, one above and the other below the 1-16 in. plate flooring, above which there are two layers of ¾ in. flooring, the under one laid diagonally. The siding consists of a ¾ in. layer of non-conductor, with 1½ in. horizontal boarding, sheathed

Port Mann Town Site.—The Pacific Properties, Limited, started proceedings in a British Columbia court, Jan. 7, to recover damages, estimated at \$1,500,000, from the Canadian Northern Ry. The plaintiffs claim that this money was expended on the Port Mann town site on the understanding that it was to be the C.N.P.R. Pacific coast terminus.

longer than the Rogers Pass, the method was not used; and although this is a double track tunnel there is no ground for assuming that the greater width had anything to do with the selection of the driving method. The conclusion is probably conservative that for the Simplon itself the parallel tunnel method was a vitally important device, making possible the suc-



Underframing of Steel Suburban Cars, Grand Trunk Railway.

cessful handling of great springs of water, oppressive heat, and swelling rock; but that it established no valid precedent for other tunneling operations.

It is pertinent to remark that none of the critical conditions of the Simplon were present in the Rogers Pass problem—neither much water and heat, or unsound rock. Moreover, the builders of the latter say directly that, despite the outward similarity, their method has no relation to the Simplon method. They were aiming at speed of advance. This reduces the case to a simple question, which, it may be hoped, the Rogers Pass engineers will answer in due time: Wherein does the supposed gain of speed or convenience by the parallel heading method lie? It cannot lie in the heading advance itself, since the main heading should get along just as fast as a parallel heading, in respect to work at the face, and since no difficulty has been found elsewhere in passing the heading muck through the break-up and enlargement work in the rear. To cite only one case of proof: the Loetschberg headings, while break-up work was proceeding very actively at numerous points back of the face, were uninterruptedly driven forward at a very much faster rate than Rogers Pass has been able to report, so that the Loetschberg or standard method cannot be materially inferior to the Rogers Pass method in regard to muck disposal. Drainage was not a factor at Rogers Pass, it ap-

pears, for if it were the pioneer headings would have been driven on an up slope, to drain. Ventilation, however, may have had important bearing, and a clear statement of how much account was taken of ventilation in adopting the tunneling method will be a most desirable thing.—Engineering News.

Order re Joint Freight Rates and Concurrence Notices.

Sir Henry L. Drayton, Chief Commissioner, Board of Railway Commissioners, gave the following decision Dec. 14:—
The Chief Commissioner:—

The Chief Traffic Officer reports that the Canadian Pacific and the Grand Trunk Pacific Railway Companies have filed with the Board a revocation of the concurrences of the respective railway companies which were filed with the Board, and the effect of which was to concur in joint tariffs issued by the Canadian Northern Railway, lines (West Fort, Ont., and east thereof) and lines (Port Arthur, Ont., and west thereof). The Canadian Northern has retaliated by revoking its concurrence in joint tariffs issued either by the Canadian Pacific or the Grand Trunk Pacific. The notifications differ in form. That of the Grand Trunk Pacific in terms revokes the concurrence filed, and states that "future concurrences in favor of

the Canadian Northern will be covered by specific concurrence notices. The Canadian Pacific simply cancels its concurrence and says nothing as to what stand it takes in so far as future concurrences are concerned.

Under the act, joint rates are obligatory; and while all the railways concerned seem at least to agree in an effort to get rid of them, as they are all filing revocation of concurrences, joint rates were not called for by the act in ease of railway companies, but in ease of the general freight movement and cost to the public. The companies cannot be permitted to destroy the system of joint rates, simply because they so desire. Under the act, as I at any rate read it, no joint tariff can be disregarded by the companies until it has been superseded or disallowed by the Board. While it well may be that the Board is not now immediately concerned as to the proposal of the Grand Trunk Pacific that concurrences in joint rates will be expressed in the future by concurrence of the individual tariff instead of by the general form which the companies file, the Board is concerned in seeing that concurrences are not revoked, in so far as joint rates effective by reason of such concurrences given in the past are concerned.

So as to give full effect to the revocation of concurrences already alluded to, the Canadian Pacific has in addition filed Supplements nos. 9 to C.R.C. no. E, 2841; 29 to C.R.C. no. E. 2843; 2 to C.R.C. no. E. 2894;

3 to C.R.C. no. E. 2895; 1 to C.R.C. no. E. 2896; 1 to C.R.C. no. E. 3079; and other tariffs under these supplements specified. The above tariffs directly cancel joint tariffs as therein set out. The revocation notices given by the different companies, and the supplements issued to tariffs by the Canadian Pacific as above set out, are all cancelled and disallowed. If the companies desire relief in connection with any particular provision of the act, and, so far as the Board is concerned, making out a case justifying the extension of such relief.

The following order, 24588, was issued Dec. 22:—Upon its appearing that the Canadian Pacific, the Grand Trunk Pacific, the Esquimalt & Nanaimo, and the Canadian Northern Railway Companies have filed with the Board certain notices of revocation of general notices of concurrence in joint freight rates between points on the railways of the respective companies and previously filed with the Board, the said notices of revocation being as follows:

Canadian Pacific.—G. C. no. W-60 in favor of Canadian Northern (East); G. C. no. W-61 in favor of Canadian Northern (West).

Grand Trunk Pacific.—G. C. no. A-4 in favor of Canadian Northern.

Esquimalt and Nanaimo.—G. C. no. 7 in favor of Canadian Northern; G. C. no. 55 in favor of Canadian Northern (East).

Canadian Northern Railway (West).—

G. C. no. 1 in favor of Canadian Pacific (West); G. C. no. 4 in favor of Grand Trunk Pacific.

Canadian Northern Railway (East).—G. C. no. E-153 in favor of Canadian Pacific (East); G. C. no. E-154 in favor of Canadian Pacific (West).

It is ordered that, under the authority of sections 323 and 338 of the Railway Act, and of the general powers possessed by the Board in that behalf, the said notices of revocation, in so far as they affect joint rates previously published and filed, be disallowed, leave being reserved to the said companies to proceed in accordance with clause 6 of General Order 146, dated July 7, 1915. And

it is also ordered that the following schedules filed with the Board, purporting to withdraw and cancel the joint tariffs to which they refer, be disallowed, viz.:—supplements no. 9 to C.P.R. Tariff, C.R.C. no. E-2841; no. 29 to C.P.R. Tariff, C.R.C. no. E-2843; no. 2 to C.P.R. Tariff, C.R.C. no. E-2894; no. 3 to C.P.R. Tariff, C.R.C. no. E-2895; no. 1 to C.P.R. Tariff, C.R.C. no. E-2896; no. 1 to C.P.R. Tariff, C.R.C. no. E-3079.

No. 9 to Canadian Northern Tariff, C.R.C. no. W-791; no. 2 to C.N.R. Tariff, C.R.C. no. E-563; no. 3 to C.N.R. Tariff, C.R.C. no. E-568 no. 1 to C.N.R. Tariff, C.R.C. no. E-569; no. 1 to C.N.R. Tariff, C.R.C., no. E-709.

Making a Fill on the Canadian Northern Railway From a Pontoon Bridge.

About half way between Winnipeg and Port Arthur it was found desirable to locate the C. N. R. main line across an arm of Rainy Lake. It was decided to make a rockfill for the crossing, which was 3 miles long, and in order to avoid the necessity of driving piles to support the work trains a special pontoon arrangement was devised. Surveys for determining the nature of the permanent construction were started in 1908, and it was found that the depth to

used in starting fills out from their shores. In Oct., 1910, two model C 95 ton Bucyrus steam shovels were put to work loading broken rock into 12 yd. standard gauge dump cars, and two more were added a few months later. All four shovels were in commission until the autumn of 1912, and during this time each sometimes handled as much as 50,000 cu. yds. of rock a month.

One of the difficulties encountered at the outset was the necessity for some method of

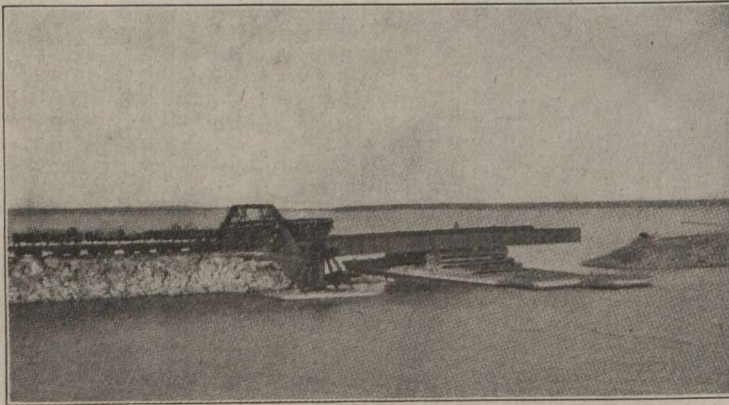
small islands or to a 5 ton anchor block of stone. A forward line was carried from a winch on the barge and used for warping the barge in moving forward.

Two heavy saw logs were attached to the shore end of the barge, with the small ends toward the shore, so that they formed a support for the track until the head of the bank was brought entirely up to grade, usually a distance of not more than 2 ft.

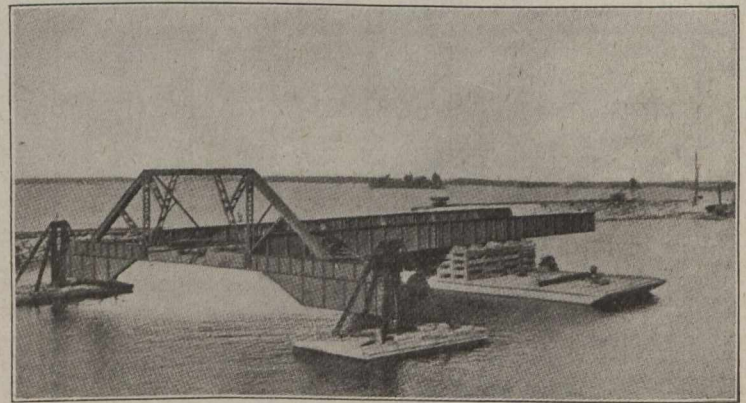
Dumping could generally proceed until the top was within 2 ft. of grade before it was necessary to move ahead. When the dumper was first built it was anticipated that about an hour would be required to move the device, but in actual practice only 3 or 4 minutes were needed, and dumping could proceed as soon as the track was laid over the space left vacant on the head of the bank. Usually the whole operation from start to finish consumed about 15 minutes.

When the fill had been brought up sufficiently near the surface, the floating bridge was moved ahead and the widening and finishing up of the grade was left to be done by side dumping. About one third of the grade was usually added in this way after the floating bridge had moved on.

In closing up the work the gap finally became too short to permit the use of the barges supporting the dumping track. The embankment was then gradually advanced



Making Rainy Lake Rockfill from Pontoon Bridge.



View of Device, Showing Means of Adjustment.

rock bottom was so great that the piers for a series of steel bridges would be very costly. The mud overlying the rock was too soft to hold clusters of piling, but was also pronounced too stiff to allow rock-filled cribs to sink to foundation.

Study of the lake bottom was carried on through the ice for two winters, and was then finished on open water by what is said to have been a more satisfactory method. The summer soundings were made from a 22 by 34-ft. barge with a driving machine over a central well opening. A 70 lb. hammer was used to sink extra heavy 1½ in. strain pipe to refusal. This pipe was joined together in 10 ft. sections by threaded couplings, and steel specials for point and cap were provided. As many as 28 soundings in a day were taken with this equipment.

With this detailed information about the lake bottom at hand, it was decided to make a solid rockfill for the entire crossing. When the most economical projection of the line across the water had been determined, it was found that the fill would have to be more than 60 ft. deep in some places and that a total of about 1,000,000 cu. yds. of rock would be required. Quarries were located on company property near the lake shores, so that an average haul of only 1 mile was necessary. The line was located so as to take advantage of five rocky islands along the route, and of course rock from these was

dumping the rock so that it would give no trouble in settling into the desired position. A very satisfactory solution of this problem was devised in the shape of a dumper consisting of two 6 ft. plate girders 30 ft. apart, with floorbeams 30 ft. apart on the end at which dumping was done, and shorter distances apart for the remainder of the truss. The track was supported on stringers at the centre, leaving distances of 11 ft. between girders and the ends of the ties through which the material was dumped. Originally the girders were 120 ft. long, but they were afterwards lengthened to 140 ft. so as to carry six 12 yd. cars at one time.

The support for the truss, 75 ft. from the embankment end, was a 32 x 112 ft. barge capable of carrying 200,000 lb. for each foot of displacement. When not resting on the head of the bank, the shore end was supported by two pontoons placed about 40 ft. apart. A girder with a portal entrance and bracing carried the weight from the shore end of the dumper to these pontoons. The truss was supported on the main barge by cribbing so that it could be raised or lowered according to the height of the finished embankment above water. For most of the work this was about 15 ft. above the lake surface.

At each end of the barge were capstans from which lines ran out nearly perpendicular for nearly 1,000 ft. to the shores of

from the east until the gap was short enough so that the 140 ft. steel girders could be floated in on the main barge and bearings secured for them on opposite faces of the two approaching fills. The girder ends were then blocked up on the rock and the barge towed out. After the rock voids near the girder supports had been well filled and allowed to settle, the dumping was proceeded with as before from the track on the girders. When the girders were no longer necessary, they were dismantled and removed.

As to the operation of the dumper, the contractors report that there was no delay from the time it was first installed, except once when the rock embankment settled quickly and for a short time there was danger of a locomotive and cars going into the lake. The dumper was carried when empty by the main barge and pontoons so that there was never any danger of it sinking. The entire cost of the dumper did not exceed 1½ c. per cubic yard for the amount of work done by it, and the equipment is in practically as good shape as when constructed.

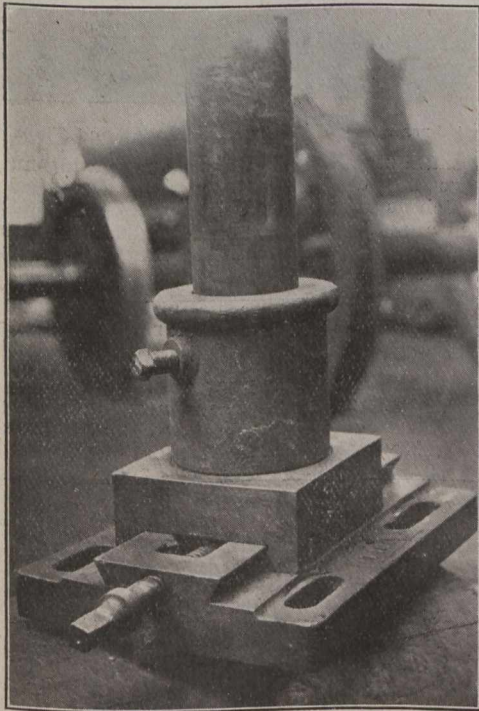
The fill was made by Johnson & Carey, subcontractors, under Foley, Welch & Stewart, general contractors for the C. N. R. E. S. Johnson designed the dumper specially for the Rainy Lake work.—Engineering Record.

Railway Mechanical Methods and Devices.

Adjustable Driving Device for Driving Wheel Lathe in Grand Trunk Shops.

The fitting of the usual driving dog on the face plate of driving wheel lathes, so that the driving arm may bear against a spoke of the driving wheel, is usually more or less laborious, as after each pair of wheels is turned, the dog must be removed from the face plate, the wheels removed, a new pair inserted, and then the dog applied to the face plate. From the closeness of the space between the driving wheel and the face plate, it is necessary to swing the dog into place by means of a crane.

In the G.T.R. shops at Stratford, Ont., there is in use a new type of adjustable driving dog, that does not require to be removed between each pair of wheels. It consists of a cast iron base, bolted to the face plate, with the upper face cut with grooves



Adjustable Driving Device for Driving Wheel Lathe.

to carry a small carriage. In the first dog of this type made, the base, being of cast iron, broke under a heavy cut, but it is the intention in future to make the dogs with a forged base. The small carriage is bored to carry a hollow driving pin, which is held in place by a set screw. The position of the carriage may be shifted on its base by a square threaded screw in the base. With the removable pin, it is only necessary to have it removed when placing a pair of wheels in the lathe, the pin being then replaced, and adjusted to position by the adjusting screw in the base.

Removing and Mounting Passenger Car Wheel Tires in Michigan Central Shops.

The accompanying two illustrations show the practice in the Michigan Central Rd. car shops at St. Thomas, Ont., for removing and replacing passenger car wheel tires. By

the method outlined herein the cost has been nearly cut in half over the practice usually followed of using hoops for heating. The heating pit shown in the foreground is located just inside the car shop door, and is served by a small overhead travelling crane, equipped with an air plunger type of hoist. The crane and air hoist are operated from the wall adjoining.

The pit is about 4 ft. deep, lined with fire-brick, slightly smaller in diameter than the gauge of the track between which it is located. The top of the pit wall has an iron cover ring, into which a thin cast iron cover fits, which can be lifted off by the overhead crane when the pit is required, and placed to one side. When not in use the pit is protected completely. Equidistantly spaced around the outside of the pit, and about 12 ins. below the floor level, are 8 torch nozzles, accessible through the 8 board cover openings in the concrete floor, as shown. In each of these nozzle pits there is a control valve, so that each nozzle may be individu-

ally regulated. For operation, the oil and air are regulated from valves on the wall, which control the whole 8 valves. For removing tires a cast iron cylinder, of such depth that a wheel placed thereon will have the tire level with the 8 nozzles, is lowered in the pit by the crane. The pair of wheels are picked up by the tackle shown in fig. 1, which consists of a clevis with two chains, the end of each chain carrying an eye bolt, which passes through a hole in the web of the wheel, and is bolted on the opposite side. The pair of wheels are lifted up by the crane, and lowered on the supporting sleeve in the pit. The air and oil are then turned on in the 8 nozzles through the central control valve, a single valve regulating the combined air and oil on the wall, with individual valves also on the wall to regulate either the air or oil. The torches will heat the tire sufficiently to come off in from 2 to 5 minutes. The tire is prevented from coming off by two U's, whereby the wheels can be removed, and the tire forced off.

For putting on tires, the supporting cylinder in the pit is removed, and from 6 to 8 tires piled in the pit, being raised slightly from the bottom on blocks. In the centre of the bottom there is a special mushroom burner, with a number of small holes around the outside, drilled at an outward angle of about 6 degrees from the centre line. A nozzle, similar to that used in the sides, is used in conjunction with this mushroom burner, the oil and gas being thoroughly mixed by the former before coming into the mushroom. This nozzle is controlled by a three valve arrangement on the wall, one controlling both air and oil, and the other two the air and oil individually. A cover is placed over the top of the pile of tires, after the mushroom burner is ignited, and the tires heat in a few minutes to a sufficient temperature to allow of their fitting over the wheel centres.

In the background of fig. 2 there is shown a double air hoist, on which the wheel centres are elevated. From the pit the tires

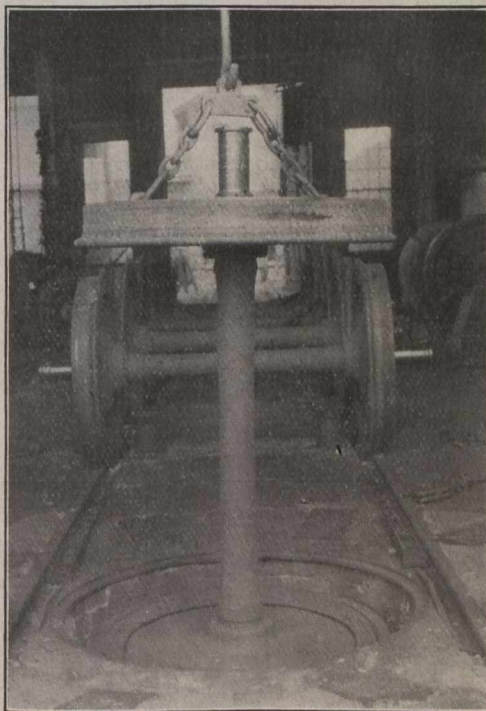


Fig. 1. Tire Heating Pit Removing Tires.

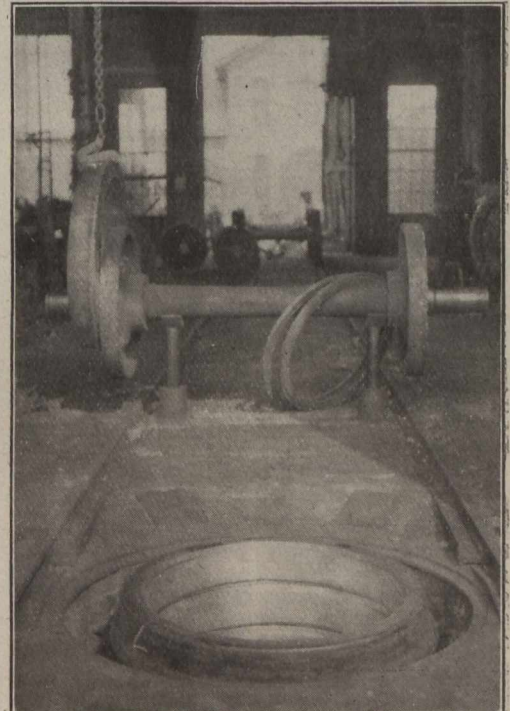


Fig. 2. Tire Heating Pit Heating Tires to Put On.

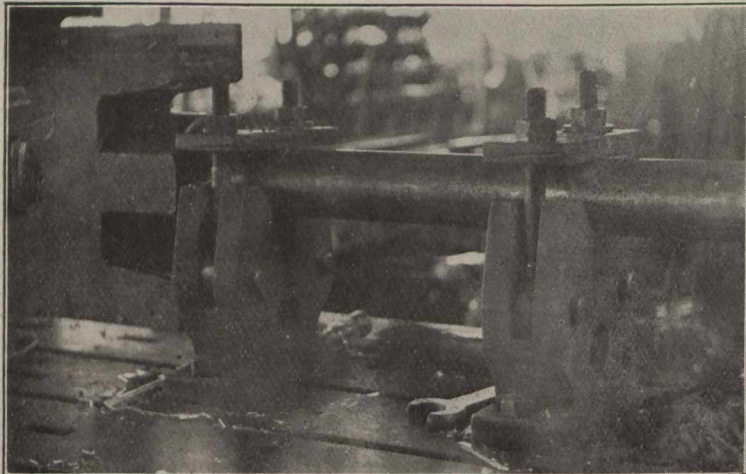
are lifted one by one, with the special clamp arrangement shown to the left in fig. 2, the tire slipped on the centre, and the retaining rings slipped in place, the whole being fastened together by three pin bolts through three of the retaining bolt holes until such time as the bolts may be permanently placed in the latter.

Formerly, when using coal oil or gasoline with the hoop heaters, the cost of mounting a pair of tires was 21c., with the new method, using fuel oil, it has been reduced to 12c. a pair, or almost half.

The arrangement in the shop for handling wheels is handy. The wheels to be re-tired come along outside the shop to the rear of the point from which the views were secured, and pass through the tire removing and tire mounting processes. From there they pass on to the wheel lathe shown in the right background, passing out at the far side of the shop, and along the transfer table there to the tracks where the car trucks are located for replacing in the latter.

Piston Rod V Blocks on Planer in Grand Trunk Shops.

The G.T.R. shops at Stratford, Ont., follow the practice of planing out the crosshead slippers on the assembled crosshead and piston rod, in the planer, with a formed tool that takes the full width of cut of the guide. The tool is fed down from the top, finishing off both sides as it descends, finally removing the full width of babbitt metal



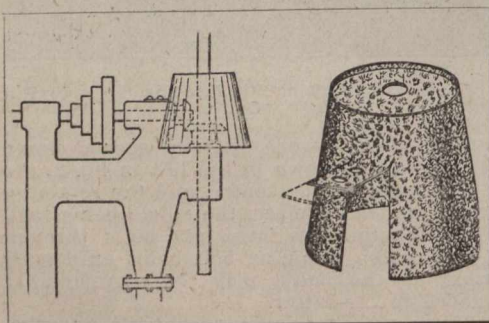
Piston Rod V Blocks on Planer.

at the bottom of the cut. The crosshead and piston rod are mounted in the planer, in the manner shown in the accompanying illustration, on clamp V blocks of simple but accessible form.

These V blocks, as the illustration shows, are slotted castings, with an eye bolt in the slot on either side of the V, and are swung down out of the way when inserting or removing a piston rod. The rod is clamped in place by a strap across the top between the two bolts of each V block.

Bucket Guard for Moving Gears.

The inexpensive, home made guard illustrated herewith was found in use on a drill press in a garage. The device would be equally applicable, however, to a machine shop. It consists simply of an inverted galvanized iron pail, in the bottom of which

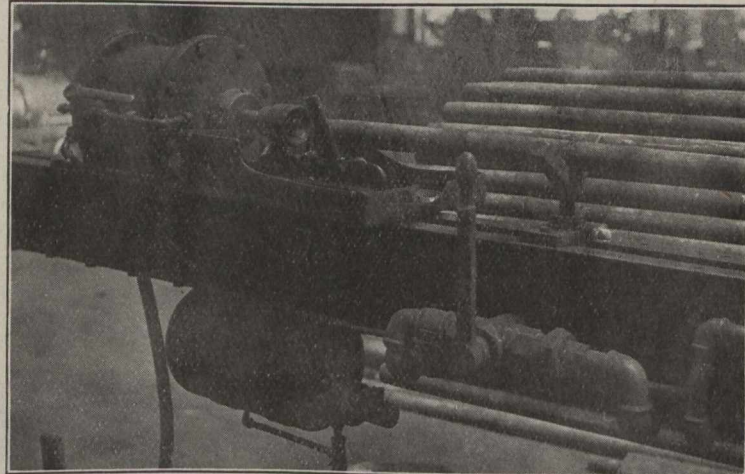


Bucket Guard for Moving Gears.

a circular hole was cut so that it might be slipped over the projecting end of the shaft. Two cuts were also made with a hacksaw on one side of the pail, as shown, and the strip of metal thus freed was bent outward and attached to the frame of the drill press by two cap-screws to hold the pail in position. Although the device is crude, it guards the gears effectively. An ingenious person can often make use of homely materials near at hand in this way to fashion them into satisfactory safeguards, at least for temporary use.

Hydraulic Pressure Control for Tube Testing at Grand Trunk Shops.

Among the feature of the process involved in safe-ending locomotive boiler tubes at the G.T.R. shops at Stratford, Ont., described in Canadian Railway and Marine World for Nov., 1912, was that of the hydraulic pressure test on the tubes to determine their safety after end renewal. The operating end of the machine is shown in the accompany-



Hydraulic Pressure Central Arrangement for Testing Tubes and Flues.

ing illustration. The bed of the machine consists of 2 channels, about 25 ft. long, with a stationary head on the end opposite to that shown, with the latter movable to accommodate the different lengths of tubes met with. This bed frame is on the slope, with the grade towards the stationary end.

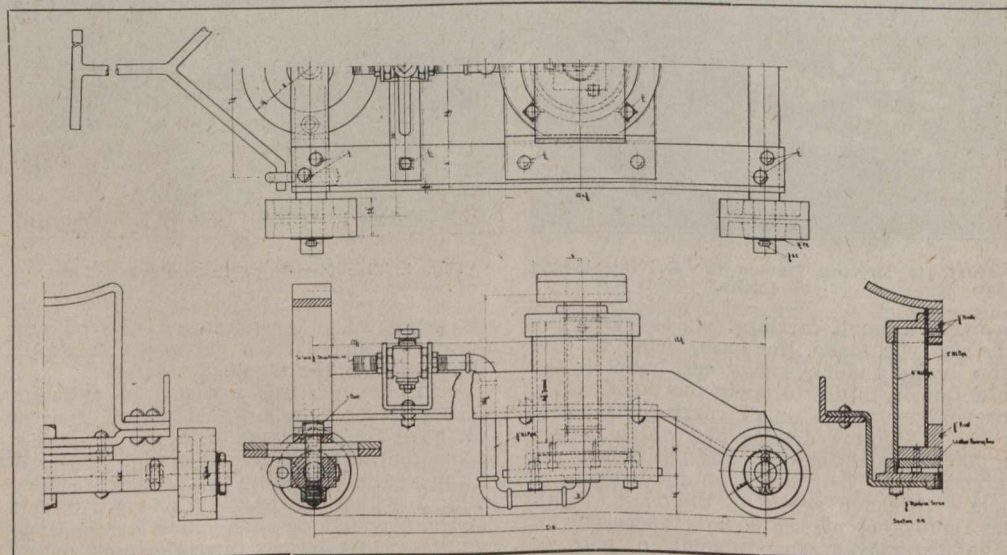
The tube is first placed in a cup recess in the stationary end, from which it is nearly filled with water, and when the latter appears from the end shown in the illustration, the piston in the cylinder shown is operated, closing the tube, the latter being practically full of water before this from the slope of

spring. When the first superheater flues came through for testing, an increased pressure was given the tubes, the same pressure being applied to the smaller tubes as well. It was found that with this, the smaller tubes would frequently be out in the middle, and as this pressure was greater than the test required, it was reduced. The control nut on the regulating valve gives the pressure for the flues when screwed in full way, while the tubes require a lower pressure. This is now obtained by means of inserting

a small steel block under the regulating nut, screwing the latter down on the block, which is fastened to the valve by a light chain, and so is always at hand for use, the change from tubes to flues being only a very simple matter.

Air Jack and Truck for Canadian Northern Railway.

A standard air jack, mounted on a shop truck which has been developed by the Canadian Northern Ry. mechanical department



Arrangement of Air Jack and Truck.

the tube on the frame. The water valve is then shut off, and pressure applied through the valve shown in the tray on the frame. This pressure is regulated from the valve shown on the near end of the drum suspended below the frame, and it is this feature that is unique. The pressure regulating valve is an ordinary air reducing valve, which gives the varying pressures required by screwing in or out the nut on the near end, compressing or releasing the contained

for shop use, is illustrated herewith. The truck consists of a pair of 3 x 3 x 3/8 in. angles for side frames, mounted on a pair of 2 in. square axles, the front one of which has a swivel action. The air cylinder is carried between the angle side members by a dry steel plate member, 3/8 in. thick, which forms a central table. The air cylinder is a length of 6 in. pipe, with cast iron caps, containing a two piece leather bushed cast iron piston, with 2 in. pipe for plunger.

Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta and Great Waterways Ry.—In an interview at Edmonton, Alta., Jan. 5, J. D. McArthur, President, is reported to have said that track had been laid on this line to mileage 182, or 17 miles on the Edmonton side of Christmas River, and that it was expected to have it laid into Fort McMurray by April 1. Ballasting has been completed for some miles beyond Lac la Biche, and is being gone on with as fast as possible. (Jan., pg. 10.)

Burrard Inlet Tunnel and Bridge Co.—At a recent meeting of directors in North Vancouver, B.C., the acting chairman reported that the company was unable to proceed with the construction of the projected bridge across the Second Narrows of Vancouver Inlet, and the other works covered by the charter, and that all arrangements had been made for an application to the Dominion Parliament for the renewal of the charter which expires in April. (Dec., 1915, pg. 469.)

Canadian Pacific Ry.—A deputation from Moose Jaw, Sask., waited upon Grant Hall, Vice President and General Manager, Western Lines, recently, to ask that the company build the necessary mileage to complete a through line between Moose Jaw and Assiniboia. The line at present extends from Moose Jaw through Expanse to Vantage, from which point an extension of eight miles would connect up with a line at present in existence from Assiniboia. (Jan., pg. 10.)

Canadian Terminal Ry.—Application has been made to the New Brunswick Government for a recommendation to the Legislature for a guarantee of bonds for \$20,000 a mile for building a railway from Penfold on the C.P.R. to connect with Beaver Harbor, Blacks Harbor and L'Etang, and to also have a connection with Eastport, Me. A similar application was made in 1915, but was not granted. (May, 1915, pg. 170.)

Central Canada Ry.—In an interview at Edmonton, Alta., Jan. 5, J. D. McArthur, President, is reported to have said that a train service is being given over the line from McLennan, on the Edmonton, Dunvegan and British Columbia Ry., to the Heart River. It was expected to complete the substructure for the bridge across this river Jan. 30, and the superstructure by Mar. 30. Tracklaying will then be resumed and completed to Peace River. (Jan., pg. 10.)

Central Western Canada Ry.—Application is being made to the Dominion Parliament for an extension of time for the building of this projected railway from Winnipeg northwesterly via Yorkton, Saskatoon and Battleford to Edmonton, Alberta. Pringle and Guthrie, Ottawa, solicitors for applicants. (May, 1914, pg. 121.)

Churchill Southern Ry.—The Manitoba Legislature is being asked to extend the time for the building of this projected railway from Fort Churchill southerly to Kettle Rapids, on the Hudson Bay Ry., with branch lines to any point in Manitoba. (Mar., 1914, pg. 121.)

Edmonton, Dunvegan and British Columbia Ry.—In an interview at Edmonton, Alta., Jan. 5, J. D. McArthur, President, is reported to have said that track had been laid beyond Smoky River as far as Burnt River, and was expected to reach Spirit River by Jan. 31, and would be continued immediately thereafter on the branch line to the Grande Prairie settlement, the grading upon which is fully completed. Construction material

for a grain elevator is being delivered at Spirit River. The line is reported fully ballasted to within four miles of McLennan, and the first left of ballast for 15 miles beyond. (Jan., pg. 10.)

Essex Terminal Ry.—The Ontario Legislature is being asked to confirm a bylaw of the City of Windsor granting a right of way and other rights in the city to the company. (May, 1915, pg. 170.)

Grand Trunk Pacific Ry.—A press report states that grading has been completed on the branch line from Harte to Brandon, Man., 26 miles. No track has been laid.

A press report states that grading on the branch line from Young has been completed into Prince Albert, Sask., about 25 miles beyond the present end of track at St. Louis, on the Saskatchewan River.

The Board of Railway Commissioners has authorized the laying of a spur line in the n.e. $\frac{1}{4}$ of sec. 5, s.e. $\frac{1}{4}$ of sec. 7, tsp. 53, range 23, North Alberta, for the Great West Coal Co. This is a spur from the coal area branches starting out from Bickerdike. (Jan., pg. 10.)

Grand Trunk Ry.—The Lachine, Jacques Cartier and Maisonneuve Ry. Co. on Jan. 4 asked the Board of Railway Commissioners for approval of the location plans of the line, which crosses a number of streets in Montreal. The City of Montreal asked that the company be directed to construct subways at several of the street crossings, and that the city be protected from all claims for land damages. The Canadian Northern Ry. is also interested in the matter, and its counsel expressed a willingness to accept any arrangement made with the G.T.R., which is the senior company. The plans were referred to the Commissioners' Chief Engineer for report.

A press report states that the company is arranging for the construction of a new freight shed and additional trackage at Detroit, Mich., to cost about \$300,000. (Jan., pg. 10.)

Great Northern Ry. Lines in Canada.—A press report states that engineers are making surveys for a railway from Port Arthur, Ont., to Duluth, Minn., in the interests of the Great Northern Minnesota and Duluth Rd. The title would imply a connection with the Great Northern Ry., U.S.A., and that it is a Minnesota State charter. We are unaware of any charter being in existence covering the Ontario end of such a line. During the last year or more G.N.R. engineers have been reported to be working between Port Arthur and the International Boundary line, and to have acquired land suitable for railway terminals in the vicinity of Port Arthur and Fort William.

The Board of Railway Commissioners has approved the company's plans for a station building on the False Creek flats, Vancouver. This was reported to the city council Dec. 10, but on Jan. 3 the council decided to call attention to the fact that the Board had directed that actual construction be started on the station by Dec. 1, 1915, which had not been done. (Jan., pg. 10.)

Joliette and Lake Manuan Colonization Ry.—The Dominion Parliament is being asked to extend the time for the building of this projected railway from Joliette to the National Transcontinental Ry., and from Joliette to Montreal. J. Ritchie, Ottawa, solicitor for company. (May, 1914, pg. 214.)

Kettle Valley Lines.—The Dominion Parliament is being asked to confirm an agree-

ment made July 10, 1914, with the Vancouver, Victoria and Eastern Ry. and Navigation Co., with respect to the operation of a joint section from Princeton to Otter Summit, B.C.

Owing to bad weather and other causes there has been a delay in the completion of the bridge over the Ladner Creek on the Coquihalla Valley section. Tracklaying and other work has been suspended until the spring, and it is not expected that the line will be opened for traffic until the summer. (Jan., pg. 10.)

Manitoba-Ontario Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Fort William by the most feasible route to Falcon Island on Lake of the Woods, and across the lake, and by the most feasible route to Winnipeg; a line from Fort William southwesterly to the International boundary between Rainy Lake and Pigeon Bay, and a branch from the first mentioned line from near Manitou Lake northwesterly to Dryden on the C.P.R., and thence northerly to a junction with the National Transcontinental Ry. Dowler and Dowler, Fort William, Ont., solicitors for applicants.

Winnipeg papers, commenting on the notice of application, state that a project of this kind has been talked of at different times during the past 30 years, but its construction may now be looked upon as being within the region of practicability, seeing that the Greater Winnipeg Water District has built a railway from St. Boniface to Shoal Lake, an arm of the Lake of the Woods, 90 miles. The present project is said to be directed by Mackenzie, Mann & Co. interests, and reports state that engineers representing that firm have been making surveys during the past 18 months in the district to be traversed. The purchase of the Greater Winnipeg Water District's railway is talked of as being part of the plans. The Mayor of Winnipeg is reported to have said that the matter of the sale of the Water District's line had been talked of casually in connection with a projected building of an all-Canadian section of the Canadian Northern Ry. between Fort William and Winnipeg. Such a line would be of great benefit, but at present he had no official knowledge of the matter. (See Greater Winnipeg Water District, Jan., pg. 10.)

Pacific Great Eastern Ry.—It is reported that the reconstruction of the bridge over the Capilano River on the North Vancouver-Dundarave section of the line, which was damaged by a log drive recently, is practically completed, and that traffic will be resumed shortly. Pending reconstruction of the bridge, the company has used automobiles for carrying of passengers between the termini.

The new Premier of British Columbia, in a recent speech is reported to have stated that four-fifths of the work on the line between North Vancouver and Fort George had been completed, but in order to secure its completion it will be necessary for the Legislature to make some further financial arrangements. The extension of the line from Fort George to Peace River is also necessary if the province is to reap the full advantage of its investment in the line. A committee of the Cabinet has been appointed to investigate the whole matter, and to report as to what further aid is necessary. (Jan., pg. 11.)

Pere Marquette Rd.—We are officially advised that the company does not intend to

lay a second track between Blenheim and Wilkie, Ont., about four miles on its Canadian Division, as a recent press report stated.

Quebec Bridge.—H. P. Borden, Assistant to the Chief Engineer, is credited with the statement that the construction of the Quebec Bridge will be completed about the end of this year. The central suspended span will, it is expected, be floated into position about October.

Quebec Central Ry.—We are officially advised that it is not likely any further extension of the Chaudiere Valley line beyond English Lake will be built at present. (Jan., pg. 16.)

St. Francis Valley Ry.—The Quebec Legislature is being asked to extend the time for the building of this projected railway from between Richmond or Melbourne, and St.

Francois du Lac, Que. Beique and Beique, Montreal, solicitors for applicants. (Aug., 1914, pg. 371.)

Toronto, Hamilton and Buffalo Ry.—We are officially advised that it is expected to begin construction on the extension of the Erie and Ontario Ry., which now extends from Smithville to Dunnville, on to Port Maitland, early in the spring. The extension to Port Maitland will be 4.5 miles, making the total length of the line about 20 miles. No contract has been let for grading, and we are advised that all other work will be undertaken by the company's own staff. R. L. Latham, Hamilton, Ont., is Chief Engineer. (Oct., 1915, pg. 393.)

Wabash Ry.—A press report states that plans have been prepared for the enlargement of the company's locomotive house, and trackage facilities at St. Thomas, Ont.

H. E. Suckling, Treasurer, C.P.R., Montreal, born at Gibraltar, Feb. 27, 1851.

Hugh Sutherland, Executive Agent, Canadian Northern Ry., Winnipeg, Man., born at New London, P.E.I., Feb. 22, 1845.

F. L. Wanklyn, M.Can.Soc.C.E., General Executive Assistant, C.P.R., Montreal, born at Buenos Ayres, Feb. 25, 1860.

J. R. Watson, Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Eastern Lines, C.P.R., Montreal, born at Morpeth, Eng., Feb. 8, 1873.

John L. Weller, M.Can.Soc.C.E., Engineer in Charge, Welland Ship Canal, St. Catharines, Ont., born at Cobourg, Ont., Feb. 13, 1862.

A. Williams, Superintendent, District 2, Atlantic Division, C.P.R., Woodstock, N.B., born at Mono Road, Ont., Feb. 22, 1872.

Freight Rate Increases in Western U. S. Classification Territory.

The Interstate Commerce Commission gave a decision at Washington, D.C., Dec. 18, 1915, which was summarized as follows:—

Proposed increased carload rates on agricultural implements justified except to points in Louisiana, and to those points not justified.

Proposed increased carload rates on canned goods and flue lining in western trunk line territory justified.

Proposed increased carload rates on eggs from points in Kansas and other points to southwestern points not justified.

Proposed increased carload rates on cider and vinegar from interstate points to Kansas and Missouri not justified.

Proposed increased carload rates on bauxite ore to certain points justified, and to certain other points not justified.

Proposed increased carload rates on boots and shoes, leather, and boot and shoe findings between Missouri manufacturing points and interstate points justified; proposed less-than-carload rates between same points and increases in carload minima not justified.

Proposed increased rates on dried and evaporated fruits in portions of western trunk line territory justified.

Proposed readjustment of rates to Louisiana not justified.

Proposed increased carload rates on furniture from Kansas City and other points to Oklahoma groups 6, 7, and 8 justified; proposed increase to Oklahoma group 9 not justified.

Proposed increased less than carload rates to and from manufacturing points in Missouri on various commodities found unlawful when made to vary with quantity shipped; other proposed increases justified.

Proposed charges for switching "run-by and setback" grain justified.

Proposed transit charges on fruits and vegetables in western trunk line and trans-Missouri territory justified.

Proposed increases upon miscellaneous items justified; others not justified.

The Roberval-Saguenay Ry. has been admitted to the Eastern Canadian Passenger Agents Association's membership, its representative being J. E. Robitaille, G.F. & P.A.

NOTICE.

C. F. Buchanan, of the United States of America, the owner of the exclusive rights to Canadian patent no. 153287, issued to J. B. Cox, and covering improvements in Smoke Jacks, wishes to advise that all possible users of Smoke Jacks covered by this patent can obtain them within reasonable time for use on any railway in the Dominion of Canada.

All enquiries regarding the above should be addressed to C. F. Buchanan, c-o Coleman Fare Box Co., Ltd., 70 Bond Street, Toronto, Ontario, Canada.

Birthdays of Transportation Men in February.

Many happy returns of the day to:—

B. H. Bennett, General Agent, Chicago and North Western Ry., Toronto, born at Cobourg, Ont., Feb. 6, 1858.

F. L. C. Bond, Division Engineer, Eastern Lines, G.T.R., Montreal, born there Feb. 21, 1877.

T. Britt, General Fuel Agent, C.P.R., Montreal, born there Feb. 3, 1871.

G. E. Bunting, General Western Freight Agent, Allan Line Steamships, and Manager, Allan and Co., Chicago, Ill., born at Toronto, Feb. 8, 1873.

J. S. Byrom, Superintendent, Great Lakes Steamships, Canadian Pacific Ry., Port McNicoll, Ont., born at Jersey City, N.Y., Feb. 10, 1872.

J. J. Callahan, Manager of Operation, London and Port Stanley Ry., London, Ont., born at New Glasgow, Que., Feb. 25, 1875.

H. R. Charlton, General Advertising Agent, G.T.R. and G.T.P.R., Montreal, born at St. Johns, Que., Feb. 9, 1866.

R. Colclough, Superintendent, Intercolonial Ry., Levis, Que., born at Bic, Que., Feb. 24, 1871.

F. W. Cooper, A.M.Can.Soc.C.E., Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que., born at London, Ont., Feb. 16, 1880.

R. Crawford, Northwest Agent, Northern Navigation Co., Winnipeg, Man., born at Kingston, Ont., Feb. 21, 1870.

A. J. Donegan, Superintendent, Algoma Eastern Ry., Sudbury, Ont., born at Perth, Ont., Feb. 17, 1872.

R. W. Drew, Division Freight Agent, Saskatchewan Division, C.P.R., Regina, born at Kingston, Ont., Feb. 17, 1874.

E. A. Evans, M.Can.Soc.C.E., ex-General Manager and Chief Engineer, Quebec Ry., Light and Power Co., Quebec, born at Kensington, London, England, Feb. 26, 1855.

Goodwin Ford, General Superintendent, Western Lines, Dominion Express Co., Winnipeg, born at Bordentown, N.J., Feb. 23, 1859.

L. O. Genest, General Storekeeper, Western Lines, C.P.R., Winnipeg, born at St. Henri, Levis County, Que., Feb. 16, 1856.

J. H. Guess, ex-General Purchasing Agent, Grand Trunk Ry., Montreal, born at Raleigh, N.C., Feb. 5, 1878.

J. C. Holden, A.M.Can.Soc.C.E., Division Engineer, C.P.R., Winnipeg, born at St. John, N.B., Feb., 1876.

T. C. Hudson, Division Master Mechanic, Quebec Grand Division, Canadian Northern Ry., Joliette, Que., born at Brockville, Ont., Feb. 20, 1873.

H. Hulatt, Manager of Telegraphs, G.T.R. and Grand Trunk Pacific Ry., Montreal, born in London, Eng., Feb. 15, 1883.

C. Gardner Johnson, Lloyds' Agent for

British Columbia, Vancouver, B.C., born at Dunblane, Scotland, Feb. 8, 1857.

F. C. Johnson, Night Locomotive Foreman, C.P.R., North Transcona, Man., born at Montreal, Feb. 26, 1885.

John McCraw, General Agent, Central Vermont Ry., New London, Conn., born at Craigvale, Ont., Feb. 6, 1868.

G. L. McCrear, Local Freight Agent, C.P.R., Vancouver, B.C., born at Springtown, Ont., Feb. 9, 1876.

D. McDonald, District Passenger Agent, Canadian Government Railways, Montreal, born at Ste. Hyacinthe, Que., Feb. 28, 1862.

T. McNabb, ex-Master Mechanic, Alberta Ry. and Irrigation Co., now of Picture Butte, Alta., born in Scotland, Feb. 16, 1849.

J. K. McNellie, General Superintendent, Canadian Government Railways, Moncton, N.B., born at Toronto, Feb. 23, 1874.

D. C. Macdonald, Assistant General Claims Agent, C.P.R., Winnipeg, born at Elmsdale, N.S., Feb. 9, 1874.

C. S. Maharg, Superintendent, District 3, Manitoba Division, C.P.R., Brandon, born in Dufferin County, Ont., Feb. 4, 1867.

V. J. Melsted, Engineer of Water Service, Western Lines, C.P.R., Winnipeg, born at Gardar, N.D., Feb. 20, 1887.

G. A. Montgomery, General Superintendent, Algoma Central and Hudson Bay Ry., and Algoma Eastern Ry., Sault Ste. Marie, Ont., born at Bradford, Ont., Feb. 11, 1871.

A. Z. Mullins, Commercial Agent, G.T.R., Grand Rapids, Mich., born at Appin, Ont., Feb. 14, 1862.

M. G. Murphy, District Passenger Agent, C.P.R., Toronto, born at Halifax, N.S., Feb. 26, 1878.

J. E. Proctor, District Passenger Agent, C.P.R., Regina, Sask., born at Sarnia, Ont., Feb. 17, 1878.

C. T. Ridalls, Car Foreman, C.P.R., London, Ont., born at St. Heliers, Jersey, Channel Islands, Feb. 8, 1864.

J. E. Robitaille, Treasurer, Roberval-Saguenay Ry., Chicoutimi, Que., born at Quebec, Feb. 17, 1870.

A. E. Rosevear, General Freight Agent, G.T. Pacific Ry. and G.T. Pacific Coast Steamship Co., Winnipeg, born at Montreal, Feb. 20, 1863.

J. G. Scott, ex-General Manager, Quebec and Lake St. John Ry., Quebec, born there Feb. 13, 1847.

J. J. Scully, General Superintendent, Lake Superior Division, C.P.R., North Bay, Ont., born at Montreal, Feb. 3, 1872.

G. Spencer, Assistant Chief Operating Officer, Board of Railway Commissioners, Winnipeg, born in London, Eng., Feb. 21, 1865.

R. H. Sperling, Assistant to Chairman of the Board, British Columbia Electric Ry., London, Eng., born there, Feb. 9, 1876.

Railway Rolling Stock Notes.

The French Government has ordered 2,000 freight cars from Canadian Car and Foundry Co., as reported in our last issue.

The Canadian Northern Ry. has received 4 tank cars, nos. 7161-7164, built in the United States.

The Grand Trunk Pacific Ry. is applying Schmidt type A superheaters to 14 class D2 consolidation, and 5 class E1 mogul locomotives.

The Central Vermont Ry., a subsidiary of the G.T.R., has ordered 1 ten wheel, and 6 consolidation locomotives from American Locomotive Co.

Canadian Government Railways has received a 100 ton wrecking crane from F. H. Hopkins and Co., and 2 consolidation locomotives from Canadian Allis-Chalmers, Ltd.

Canadian Government Railways, operating the National Transcontinental Ry., is renting some locomotives from the Grand Trunk Pacific Ry., and now has 31 of these in use over the line.

The Canada Cement Co. has ordered 12 narrow gauge charging cars, and 30 narrow gauge ingot cars, from Canadian Car and Foundry Co., for February delivery. They will be built at Turcot Works, Montreal.

The C.P.R. has ordered 12 steel mail cars, 1 steel mail and baggage car, 4 steel baggage cars and 1 steel dining car, at its Angus Shops. The order was foreshadowed in Canadian Railway and Marine World for January.

The Timiskaming & Northern Ontario Ry. was stated recently to be in the market for 2 mountain (4-8-2) type and 4 consolidation (2-8-0) type locomotives. We were officially advised, Jan. 3, that the report was quite unwarranted, that no tenders had been invited and no offers received.

The Michigan Central Rd. has ordered 150 steel underframes for flat cars of 100,000 lbs. capacity, from Canadian Car and Foundry Co. The frames will be built at the Dominion Works, Montreal, and the cars will be completed at the M.C.R. shops at St. Thomas, Ont.

Sir John C. Eaton, Toronto, has cancelled the order which he gave to the Preston Car & Coach Co. for a private car and which was announced in Canadian Railway and Marine World for April, 1915. He is said to be negotiating with United States car builders.

Canadian Government Railways has ordered 15 consolidation locomotives and 10 Pacific passenger locomotives from Canadian Locomotive Co., as mentioned in our last issue, and has also ordered 200 wood underframe stock cars, 60,000 lbs. capacity, from Canadian Car and Foundry Co. The cars will be built at Amherst, N.S.

Canadian Government Railways is applying superheaters to 43 Pacific and 117 consolidation locomotives. Of this number, 5 Pacific and 1 consolidation have been converted, and the work is being continued monthly until the whole are equipped. The superheater used is Schmidt type A, manufactured and supplied by the Locomotive Superheater Co.

The French Government has ordered 4,000 freight cars from the National Steel Car Co., Hamilton, Ont. They will be of the customary European type with 4 wheels 41 ins. diam. of rolled steel, or steel tired, axles 5½ by 10 ins., bodies about 24 ft. long by 8½ ft. wide and about 18 tons capacity. They will be equipped with hand brakes, and the usual draft gear, bumpers, etc., standard on European railways.

Following are details of the 10 Pacific

type locomotives which Canadian Government Railways has ordered from Canadian Locomotive Co., as mentioned in our last issue,—

Weight on drivers	150,000 lbs.
Weight in working order, total	230,000 lbs.
Wheel base of engine, rigid	13 ft.
Wheel base engine, total	33 ft. 6 ins.
Wheel base engine and tender	65 ft. 1 in.
Driving wheels diam.	73 ins.
Driving wheels, material and centres	Cast steel
Driving journals	10 by 13 ins.
Cylinders, diam. and stroke	23½ x 28 ins.
Boiler type	Radial stay
Boiler pressure	200 lbs.
Tubes, no. and diam.	200, 2 ins.; 28, 5½ ins.
Tubes, length	20 ft. 6 ins.
Injectors	Locomotive type
Brakes	Westinghouse American
Packing	Metallic
Superheater	Schmidt type A
Cab	Vestibule type
Weight of tender loaded	150,000 lbs.
Tank capacity	6,500 imp. galls.
Coal capacity	10 tons
Truck, type	4 wheel equalized
Wheel, diam. and type	36 ins. steel tired
Journals	5½ x 10 ins. M.C.B.
Brake beam	Simplex high speed

Following are chief details of the 15 consolidation locomotives which Canadian Government Railways has ordered from Canadian Locomotive Co., as mentioned in our last issue,—

Weight on drivers	208,000 lbs.
Weight in working order, total	236,000 lbs.
Wheel base, rigid	16 ft 6 ins.
Wheel base, total	25 ft. 5 ins.
Wheel base, engine and tender	69 ft. 11 ins.
Heating surface, firebox	207 sq. ft.
Heating surface, tubes	1,885 sq. ft.
Heating surface, total	2,092 sq. ft.
Driving wheels, diam.	63 ins.
Driving wheels, material	Cast steel
Driving journals	10 by 14 ins.
Cylinders, diam. and stroke	24 x 32 ins.
Boiler, type	Straight top, radial stay
Boiler pressure	180 lbs.
Tubes, no. and diam.	227, 2 ins.; 30, 5½ ins.
Tubes, length	15 ft. 2¾ ins.
Injectors and safety valve	Locomotive type
Brakes	Westinghouse American
Packing	Metallic
Superheater	Schmidt, type A
Valve gear	Walschaert
Weight of tender, loaded	140,000 lbs.
Tank capacity	6,500 imp. galls.
Coal capacity	10 tons
Tender truck	Outside equalized
Tender wheels	34 ins. diam.
Wheels, type	W.I. centre, steel tired
Truck journals	5½ by 10 ins.
Brake beams	Steel I section

Alberta Public Utilities Commission Rules of Practice.

The recently appointed Board of Public Utilities Commission for Alberta has issued its rules of practice for the guidance of those who will have business before it. The Commission proposes to sit on Tuesdays at 11 a.m. to hear and dispose of applications, complaints, etc., except during July and August, when special sittings will be arranged on application to the Secretary. Sittings may be arranged on other days than Tuesdays, and at other places than Edmonton, where the fixed regular sittings will be held. Six days must elapse between service of notice of application or complaint, and the hearing. The applicant is to file notice of application with copies of any documents, maps or plans necessary to his case, with the Secretary, to which the respondent is to file a written reply. In contested cases the hearing on presentation of the application shall be of a preliminary nature, and reasonable delay shall be allowed before the hearing upon disputed facts. If it appears to the Board that a question of law is involved which it would be convenient to have settled before further proceeding with the case, it may be raised by special stated case or otherwise as the Board deems expedient. The Board may ap-

point any person to make an enquiry and report on any matter pending before it, or over which it has jurisdiction, and may order by whom the expense is to be borne. The Board may order the attendance of any witnesses necessary, and it may issue commissions to take evidence outside Alberta. Evidence by affidavit may be accepted. The conduct of all its proceedings shall be governed by rules adopted by it, but it is not to be bound by the technical rules of legal evidence. Written briefs may be required, and in any case not otherwise provided for the Board may define its procedure. In the case of want of prosecution the Board may, on application, or upon its own initiative, proceed to deal with and dispose of the matter as shall appear proper. Wilful disobedience of an interlocutory order may in the discretion of the Board, in the case of an applicant, result in a stay of proceedings or dismissal of the application, and in the case of a respondent as a withdrawal from the proceedings.

Detroit Reconsigning Case.—In the case of Detroit Coal Co. vs. Michigan Central Rd., the Interstate Commerce Commission decided at Washington, D.C., on Dec. 18, 1915, as follows:—"The tariffs of respondents authorized, under certain circumstances, a charge of \$2 per car for reconsigning coal at Detroit, Mich., to points within the switching limits of that city, but the provisions of the tariff did not, as contended by the complainant, make the imposition of the charge conditional upon the terminal carriers having first given the consignee at Detroit notice that the car had arrived at Toledo, Ohio. Charges collected upon the shipments involved in the complaint not shown to have been unreasonable. Reparation denied and complaint dismissed."

G.T.R. President's New Year's Greeting.—E. J. Chamberlin, President, Grand Trunk and G.T. Pacific Rys., sent the following message, Dec. 31:—"At the closing of the old year and the beginning of the new, I desire to extend to all the officers and employees of the company, my best wishes for the health and happiness of themselves and families during the new year, and to thank them on behalf of myself and the board of directors for the loyal and efficient service rendered the company during the past year by all classes of employees and to solicit the cooperation of every employe in making the Grand Trunk Ry and its service to the public for 1916, the best of any railway on the continent."

Car Operation over Arlington Bridge, Winnipeg.—The Manitoba Public Utilities Commissioner some time since made an order respecting the operation of cars across the Arlington bridge, Winnipeg, by the Winnipeg Electric Ry. The night men made a protest, which was subsequently endorsed by the day men, and a deputation waited on the Commissioner's engineer asking that the company be directed to provide adequate safety appliances on the cars. There is a considerable gradient at the bridge, and a street car crossing at the foot of the gradient. Up to Jan. 10 there has been no regular car service across the bridge.

Short Billing of Freight Alleged.—The Canadian Pacific Ry., according to a press report, has begun an action in an Alberta court, against the Taylor Miller Co., Lethbridge, asking for an accounting and for damages for breach of warranty and breach of contract. The C.P.R. has carried large quantities of grain for the milling company, and alleges in the statement of claim that the waybills showed smaller quantities of grain than were actually carried, in consequence of which the plaintiffs lost certain sums chargeable on the grain so carried.

Freight and Passenger Traffic Notes.

The Lake Erie and Northern Ry.'s standard freight mileage tariff C.R.C.1, and its standard passenger tariff C.R.C.1, have been approved by the Board of Railway Commissioners.

C.P.R. train 16 started, Jan. 3, leaving Montreal daily, except Saturday, for Halifax, and train 15 started leaving Halifax, N.S., and St. John, N.B., daily, except Sunday.

The Great Northern Ry. announced, Jan. 4, that from that date all cars loaded with forest products in British Columbia destined for points on its line in the east would be carried through without being transferred.

Canadian Government Railways Maritime Express between Halifax, N.S., and Montreal, which until January ran daily except Saturday, now runs daily, and the Ocean Limited between the same points, which was running daily, now runs daily except Saturdays.

The Pacific Great Eastern Ry. has extended its train service from Lillooet to Clinton, B.C., 47 miles. It has 166 miles of track in operation from Squamish to Clinton, in addition to the short mileage from North Vancouver to Dunadarave, in the direction of Squamish.

The C.P.R. sleeping car heretofore run on trains 17 and 18 between Montreal and Cochrane, Ont., now runs daily between Montreal and Timmins, Ont., passing through Timagami, Cobalt, Haileybury, Liskeard, Englehart, Dane, Matheson, Porcupine and Schumacher.

The C.P.R. steamships Empress of Russia and Empress of Japan, on their passages from Vancouver westbound, call at Manila, but not at Shanghai, passengers for the latter port being transferred at Nagasaki. On the trip east to Vancouver these vessels call at Shanghai, but not at Manila.

The C.P.R. announces that an agreement has been made with the Spokane and Inland Empire Ry. under which there will be an interchange of passenger traffic at Spokane, Wash., with the Spokane International Ry., which makes a connection with the C.P.R. near Yahk, B.C., by a subsidiary line, the Eastern British Columbia Ry.

The Intercolonial Ry.'s newly completed Dartmouth to Deans, N.S., branch was opened for traffic, Jan. 3. A train leaves Upper Musquodoboit on Tuesdays, Thursdays and Saturdays, at 5.30 a.m., returning from Dartmouth at 3 p.m. The present end of track is at Deans, a short distance beyond Upper Musquodoboit.

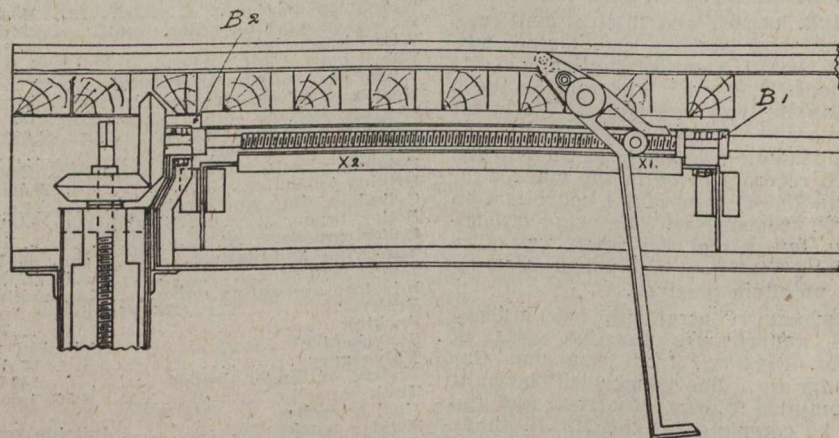
Under present conditions in Mexico, several Canadian railways have announced that through tickets must not be sold or baggage checked to that country, but that intending passengers should be ticketed to Laredo, Eagle Pass, El Paso, Texas, or Nogales, Ariz. The Mexican authorities announce that the Constitutionalist railway trains arrive and depart from the International and Great Northern Ry. station at Laredo, and are running regularly.

The North Pacific Coast Passenger Association met at Seattle, Wash., Jan. 12, to discuss the question of the reduction of fares now in force between Puget Sound and Alaska, and the through rates to the east in connection therewith, with a view to adjust them to meet the lower rates quoted by the Grand Trunk Pacific Ry., via Prince Rupert. The rate prevailing from Ketchikan is \$16 higher, and that from Juneau, Alaska, is \$10 higher, to points in the past via Seattle, than the rates quoted

by the G.T. Pacific Ry. via Prince Rupert. The C.P.R. rate from the same points via Vancouver has already been adjusted to meet the G.T.P. rate.

The Intercolonial Ry. put in force on Jan. 16 an order changing the numbering of its trains, in order to get a more uniform system than in the past. All the passenger trains, except the Ocean Limited, have been given the low numbers between 1 and 50. The local mixed and suburban trains have been given numbers in a series that will correspond with the numbers of each district superintendent's district. For instance, the suburbans on District 1 will be in a series up to 100, in District 2 from 100 to 200, and so on up to District 5, which will be in the 500 series. The fast freights are in the 800 series. Way freights are in the 600 series. A separate timetable is being prepared for each superintendent's district.

It was announced in the West, Dec. 30, that the Canadian Northern Ry. had placed an embargo on all grain shipments to Port Arthur, beginning on Jan. 1. It was stated that the embargo would not apply to shipments to Duluth, Minneapolis and other U.S. grain centres. The cause of the embargo was stated to be the congestion at



Section of Drawbridge Showing Post Spindle.

the Government elevators at Westfort and Port Arthur. G. H. Shaw, General Traffic Manager, Toronto, made the following statement:—"The embargo on grain shipments to Port Arthur for storage is a precautionary measure taken by the Canadian Northern in the public interest. It is a temporary expedient and means the movement of grain for the moment to other storage points served by its line."

Railway Finance, Meetings, Etc.

Canadian Pacific Ry.—The Dominion Parliament is being asked to extend the company's powers in respect of the issuance of consolidated debenture stock, now or hereafter to be issued, by the conversion thereof into denominations of Canadian currency.

Central Ry. of Canada.—The case of the Central Ry. Co. of Canada against the British Corporation of Mexico, Ltd., for damages for failure to take up 150,000 debenture bonds at 90%, was before the Chancery Division in London, England, recently, and was remitted to the official referee on the question of damages.

Great Northern Ry. and Mining Co.—The quarries, plaster areas and railway line owned by the company were sold at Port Hood, N.B., by the sheriff recently, to satisfy the claim of P. M. O'Neill, who holds

a judgment for \$3,000 against the company. The buyer was N. Levoie, General Manager, Banque Nationale, who, it is said, was acting on behalf of the bondholders, the purchase price being \$115,000. Other claims amounting to \$15,000 will be discharged by the purchasers. A Halifax press dispatch states that the ultimate purchaser is P. M. O'Neill, the judgment creditor, of St. John, N.B., who proposes to operate the plant.

White Pass and Yukon Route.—Gross earnings from Jan. 1 to Nov. 30, \$1,460,524, against \$1,493,459 for the same period 1914.

Detecting the Cause of Post Spindle Breaking.

A drawbridge that has been in service for nearly 30 years had latterly a peculiar tendency to break a post spindle from time to time. The bridge was at a considerable distance from the main office, and the supervision was entrusted to a local agent, and all he knew was that when the spindle broke to order a new one from the local machine shop, and forward the bill for payment. The bills came too often and the management decided on sending an experienced engineer to try and discover the cause of the repeated breakages, and it was soon found upon tracing the various points

that the gearing was changed from a comparatively light gear to a heavier gear. By referring to the bearing B1 on the drawing it will be seen that the bearing is proportionately heavy enough, when re-bored to take the heavier shafting. The bearing box, B 2, was re-bored too much in the cup, in order not to make the bottom part too light. By reason of the bearing separating plate being much higher at that end than at the other, the effect was that the spindle was a quarter of an inch out of line.

It was also learned that the spur gears had been changed from time to time without paying due regard as to whether they were the exact mesh or not, consequently shims had to be placed below the bearing box so that the spur teeth would not lock each other, and with this added cause, the spindle was thrown half an inch out of line.

It will therefore be readily understood that the attachment XI, through which the spindle passes, under these conditions of the spindle bearings, between rigid angular guides, managed to carry the spindle as far as X 2 by considerably bending or sagging the spindle, but after repeated operations and consequent bendings the spindle finally broke at that point. Hence the lesson in regard to the inevitable results of cheap, unskilled supervision which is a common weakness on some quarters.—J. G. Koppell, Electrical Superintendent of Bridges, C.P.R., Sault Ste Marie, in Railway and Locomotive Engineering.

Handling of Railway Service Telegrams and Mailgrams on the Canadian Pacific Railway.

By G. W. Carter, Chief Clerk to District Baggage Agent, Canadian Pacific Railway, Calgary, Alberta.

The telegraph service should be used in cases where immediate action is necessary, and when there is not sufficient time to write and receive answers by mail. While business should never be lost for the sake of not sending a telegram, every care should be taken to keep the wires free from unnecessary encumbrance. When preparing a telegram, full and precise particulars should be briefly given so that further use of the wires will not be required. In many cases officials authorized to send service telegrams include words which could without altering the sense of the telegram be eliminated, for example, words like "please" and "kindly." The clerks in charge of our offices should make periodical examinations of the handling of service telegrams under their supervision and inaugurate a system that will tend to relieve the unnecessary loading of the wires.

I would suggest that the classification of service telegrams be discussed. In my opinion the service telegram should be divided into three classes, telegrams pertaining to accidents and other important subjects should take precedence over all others and be prefixed in a manner to indicate their importance. Other telegrams which require immediate transmittal over the wires should have a secondary prefix. The third class of telegrams are those which can be forwarded by train enclosed in the pink envelopes, known as mailgrams. The officials of the telegraph department who are authorized to classify telegrams should take exception to any, which in their opinion could have been carried by passenger train and delivered in time to receive attention at destination, and report each case to the head of the offending department, attaching copy of the telegram to their report. They should also be instructed to be on guard against the slipping through of telegrams of a personal character under the guise of service telegrams.

One step toward the relief of the telegraph service, is the system of handling telegrams by passenger trains, which is known as mailgrams, and which should be more strictly adhered to. Without doubt the use and value of the mailgram envelope as a means of promoting prompt delivery has been lost sight of for some years and little, if any, attention has been given to this method of handling service telegrams. Urgent telegrams relating to company's business, may often be taken to their destination by train and delivered in reasonable time to receive attention providing there be no delay in the local delivery of them. The special color and marking of the mailgram envelope should indicate to agents and others that the prompt delivery of the mailgram after it has left the train is imperative.

The question of handling railway service telegrams by passenger trains over western lines was discussed with the Vice President and it is his wish that every effort be made to use the train service to the best advantage and in consequence a schedule was drawn up by the General Superintendent of the Telegraph Department, at Winnipeg, showing the time and places for which telegrams must be forwarded by mail. The schedule drawn up covers the whole western lines and the question for discussion is, whether it can be relied upon with the guarantee that telegrams sent by train will receive special attention en route.

Another point for discussion is the recording of the mailgram in order to place the

responsibility of delays. In my opinion the envelope itself if revised would serve the purpose, squares on the right hand margin of the envelopes could be provided in order that initials of employes handling the mailgrams could be shown, the time, date and train could also be recorded on the envelope and if delay occurred the envelope could be held and filed. The handling of mailgrams at points where mail rooms are in operation is another point for general discussion. In my opinion arrangements could be made to suit the local conditions. If instructions were issued to the mail clerks to deliver all mailgrams to the various departments immediately after the arrival of each train it would assist in the quick dispatch. All agents at small points where mail rooms are not in operation should be instructed to see that the mailgrams are delivered to the addressee immediately after the departure of the train on which they arrive. The mail clerks at terminal points should record the mailgrams in a book provided for that purpose, and in the event of a delay should be in a position to give the receiving record to the mailgram, also the time delivered to the telegraph department. The importance of legibly addressing the mailgrams and completing the envelope according to its heading, should not be overlooked, as when this is not done it tends to delay the mailgram, thus impairing its efficiency.

The foregoing paper was read at a meeting of Chief Clerks of the Alberta Division, Canadian Pacific Ry., at Calgary, and a discussion on it was led by J. Stevenson, Chief Clerk to Claims Agent, Calgary. The following recommendations were adopted:— That attention be drawn to the instructions regarding the elimination of unnecessary words in telegrams. The chief clerks should use very sparingly the word "Rush" on telegrams. Pink envelopes should not be used except where it is desired that enclosures receive as prompt attention as wired messages. Where a reply by wire is required, the mailgram should so state. That attention be drawn to the schedule for handling messages by mail issued by the General Superintendent of Telegraphs in Jan. 1914.

Eastern Canadian Passenger Agents Association's Officers, Etc.

At the Association's meeting in Montreal, Jan. 11, the following were elected for this year:

Chairman.—G. H. Clark.
Executive Committee.—W. H. Snell (chairman), R. L. Fairbairn, W. S. Cookson, J. F. Pierce.

Rules Committee.—W. Maughan (chairman), C. W. Johnston, R. L. Fairbairn, J. W. Hanley, G. C. Martin, N. Mooney, L. W. Landman, H. H. Melanson, F. T. Grant.

General Baggage Agents' Committee.—J. O. Apps (chairman), G. C. Allen, R. L. Fairbairn, J. F. Pierce, J. E. Quick, H. P. Dearing, W. M. Skinner, G. H. Clark, A. E. Plumer.

Secretary.—G. H. Webster.

C.P.R. Employes' War Contributions.—By a contribution of \$1,000 to the Toronto and York County Patriotic Fund Association, for December, the C.P.R. Ontario Division employes' contributions to it have reached \$3,500 in three months.

Traffic Orders by the Board of Railway Commissioners.

Freight Charges on Ties to Pas.

24541. Dec. 9. Re application of D. D. Campbell, claims agent, Winnipeg, on behalf of H. H. Blackburn, for adjustment of freight charges on 18 cars of ties from Bannock, Sask., to Pas, Man: Upon hearing the application at Winnipeg, Dec. 1, 1915, in presence of counsel for the Canadian Northern Ry., the applicant appearing in person, it is ordered that the application be refused.

Minimum Weights on Lumber.

24550. Dec. 13. Re application of R. H. H. Alexander, of Vancouver, for an order postponing the effective date of the item on pg. 4 of C.P.R. Supplement 59 to Tariff C.R.C. W-1806, providing for a minimum of 35,000 lbs. on fir, spruce, hemlock, and common cedar lumber, and articles taking lumber rates, in cars under 36 ft. long, and continuing the minimum provided for in Supplement 58 to said tariff: It is ordered that the effective date of the said item, namely, Dec. 15, be postponed until further order.

Lake Erie & Northern Standard Freight Tariff.

24600. Dec. 28, 1915. The application for Lake Erie & Northern Ry., under sec. 327 of the Railway Act, for approval of its Standard Freight Tariff, C.R.C. 1: It is ordered that the said tariff be approved.

Montreal and Southern Counties Standard Freight Mileage Tariff.

24626. Jan. 5. The application of Montreal and Southern Counties Ry., under sec. 327 of the Railway Act, for approval of its proposed Standard Freight Mileage Tariff C.R.C. 5, cancelling C.R.C. 1, approved by order 21566, April 1, 1914, it is ordered that the said tariff be approved, to become effective Jan. 15, and that order 21566 be rescinded.

Express Rates on Fish.

24628. Jan. 10. Re application of Canadian Fisheries Association, of Montreal, and the W. J. Guest Fish Co., of Winnipeg, for an order suspending certain schedules of express companies by which it is proposed to make the rates on fish, in carloads, exclusive of cartage: It is ordered that the following tariffs, viz.: Dominion Express Co., Supplement 11 to Tariff C.R.C. 4418; Supplement 8 to Tariff C.R.C. 4437; Canadian Express Co., Tariffs C.R.C. 1683, 1684, 1685, 1686, Supplement 2 to Tariff C.R.C. 1622; Canadian Northern Express Co., Supplement 1 to Tariff C.R.C. 835, Supplement 1 to Tariff C.R.C. 1527, all effective Jan. 15, 1916, be suspended pending a hearing by the Board.

Free Transportation for Live Stock Shippers.

24673. Jan. 22. Re complaint of Executive Boards of Western Live Stock Shippers' Association and Winnipeg Live Stock Exchange against cancellation by Canadian Pacific, Canadian Northern, and the Grand Trunk Pacific Railways, of all free return transportation for live stock shippers west of Port Arthur, to take effect Feb. 1: It is ordered that the following tariffs, effective Feb. 1, 1916, be suspended, pending further order, viz.: Canadian Northern, C.R.C. no. W-899, Grand Trunk Pacific, C.R.C. No. 134, freight; Canadian Pacific, C.R.C. no. W-1902, Grand Trunk Pacific, C.R.C. no. 509, Canadian Northern, C.R.C. no. W-1300, passenger.

The G.T.R. Patriotic Association of Toronto has subscribed an additional \$3,000 to the Toronto and York Patriotic Fund, making a total of over \$7,000 subscribed since its organization.

Canadian Northern Railway Construction, Betterments, Etc.

Canadian Northern Ry.—The Board of Railway Commissioners is being asked to approve harbor plans for a spur line through sections 30 and 19, tp. 25, range 17, west of the 3rd meridian, Sask., the plans, etc., for which are deposited in the Land Titles Office at Moose Jaw, Sask.

R. H. Douglas, engineer of the Alberta Department of Railways, is reported to have stated that his recent inspection of work down on the Calgary-Macleod line during 1915, showed that on June 5, when grading was resumed, three miles of grading had been completed between Calgary and High River, and 14.4 miles between High River and Macleod. Since then 29 miles of grading had been completed, involving the shifting of 560,000 cubic yards of material. A further two miles of grading remained to be completed between Calgary and High River.

Canadian Northern Pacific Ry.—M. H. MacLeod, General Manager and Chief Engineer C.N.R., was present at a meeting of the New Westminster City Council, Dec. 24, when the company's plans for its line in the city were under discussion. The plans entail the erection of a station building, at least equal in size to that of the C.P.R., which will be reached by a line from the bridge over the Fraser River to Lytton Square, thence to Front St., down West St. to the old Royal City Hotel and through Chinatown to the site of the old market, where the station will be built. The proposed route will affect the present C.P.R. tracks, and the British Columbia Electric Ry. tracks. Tenants of the houses acquired by the company on the right of way have been notified to vacate the premises immediately. The work of bricklaying and station building will, it is expected, be gone on with during this year.

Vancouver Terminals.—M. H. MacLeod, General Manager and Chief Engineer, C.N.R., is reported to have said, in an interview at Vancouver recently, that while the company had prepared plans for its own station and terminals on the False Creek property, it had also prepared plans for a combined station building and terminal facilities with the Great Northern Ry. Negotiations were in progress between the two companies and a satisfactory solution was anticipated. Up to the present time the Vancouver City Council has not favored a joint plan, but has been calling upon the two companies to provide the facilities set out in their separate agreements for the reclamation and development of the False Creek property.

Ferry Connection with Vancouver Island.—M. H. MacLeod, General Manager and Chief Engineer, C.N.R., and A. Angstrom, Naval Architect, C.N.R., spent some time recently at the Pacific coast in connection with the car ferry section of the line. Mr. MacLeod is reported to have said it was hoped to have the first car ferry on the route some time during next summer. It would be operated from New Westminster pending the completion of the line to the proposed ferry terminal on Lulu Island. The completion of this line involves the building of a bridge across the north arm of the Fraser River, and the laying of track to mileage 5.42 from New Westminster bridge, whence track is at present laid to Steveston. The ferry slip will be located at Woodward on Lulu Island. It is about 45 miles from this point to Patricia Bay, where the slip on Vancouver Island will be located. It is expected that construction will be started on

these two ferry slips at an early date.

Vancouver Island Lines.—Track laying is reported to have been started at Victoria on the lines to Patricia Bay, but it is said to have been delayed owing to the non-delivery on time of the diamond for the crossing of the British Columbia Electric Ry. The diamond is now said to have been delivered Jan. 10.

In connection with the Selkirk Water reclamation project, in which the Victoria City Council is interested, a settlement was effected Jan. 4, with the C.N.P. Ry., as to its bridge. In April, 1914, the city decided to oppose the company's application for approval of a temporary trestle, and to ask the Dominion authorities to order the building of a permanent bridge of steel or concrete with spans of not less than 50 ft. The city maintained their attitude to Oct., 1915, when, after some negotiations a compromise was arranged. The terms of the compromise were reported to the council by the Selkirk Water Reclamation Committee, Jan. 4. Under its terms a trestle bridge will be built; to be filled in within certain specified limits, the work to begin within seven years, and to be completed within one year after commencement. On other sections steel spans on concrete piers are to be erected, and a navigation span of 70 ft. is to be provided. An agreement embodying the terms of settlement was signed Jan. 6. (Jan., pg. 12.)

St. John and Quebec Railway Operation.

The St. John and Quebec Ry. is completed from Gagetown to Centreville, N.B., and is being operated as a part of the Intercolonial Ry., under the management of Canadian Government Railways officials. The argument as to operation provided for the payment of 40% of the gross earnings to the New Brunswick Government, in consideration of it having financed the construction of the line. This arrangement, we are officially advised, worked out so badly from the standpoint of the Dominion Minister of Railways, that notice was given that it would cease at the end of 1915. In order that there may not be any interruption of the service on the line a temporary arrangement has been made under which the Government Railways will retain the entire receipts. This arrangement will continue until the return of the Minister of Railways, from England, when a new contract will be discussed with the New Brunswick Government and directors of the company. The terms of the new agreement will be made retroactive to Jan. 1.

Rates via Rail and Lake Routes.—The Interstate Commerce Commission decided at Washington, D.C., Dec. 30, 1915, that the proposed increased class and commodity rates via rail and lake, lake and rail, and rail, lake and rail routes between points in the New England and the middle Atlantic states, and the west, were not justified, and that the tariffs must be cancelled.

Western Canada Railway Club.—At the monthly meeting in Winnipeg, Jan. 11, E. T. Spidy, Assistant to the General Locomotive Foreman, Canadian Pacific Ry., there, read a paper on the evolution of the locomotive.

The American Wood Preservers' Association held its 12th annual convention at Chicago, Ill., Jan. 18 to 20, when a number of committee reports and individual papers were read and discussed.

Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, for Western Lines, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,206,100	\$921,000	\$285,100	x\$145,400
Aug.	1,192,800	954,000	238,800	x5,900
Sept.	2,014,600	1,358,000	661,600	1,900
	\$4,413,600	\$3,227,000	\$1,186,600	x\$79,300
Decr.	\$ 658,300	\$ 579,000	\$ 79,300	.....

Mileage in operation at Sept. 30, 1915, 4,965, against 4,670 at Sept. 30, 1914.

Commencing with October, the figures show the earnings of the entire system, both eastern and western lines.

	Gross Earnings	Expenses	Net Earnings	Increase
Oct.	\$3,673,500	\$2,421,500	\$1,257,000	\$ 537,000
Nov.	3,535,200	2,323,800	1,211,400	618,400
	\$7,213,700	\$4,745,300	\$2,468,400	\$1,156,200
Incr.	\$2,407,400	\$1,251,200	\$1,156,200	.....

The mileage operated during December 1915, was 7,775 against 6,886 in December 1914.

Approximate earnings for December, 1915, \$3,435,600 against \$1,809,000, and for three weeks ended Jan. 21, \$1,514,400 against \$987,600 for same period 1915.

Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$7,895,375.47	\$5,094,972.25	\$2,800,403.12	x\$978,042.71
Aug.	8,801,451.52	5,359,126.80	3,442,314.72	79,157.02
Sept.	11,273,165.45	5,527,864.81	4,475,300.64	378,252.25
Oct.	13,433,206.88	6,863,780.29	6,579,426.59	3,258,105.79
Nov.	13,351,233.51	6,996,870.48	6,354,413.03	3,710,340.86
	\$53,764,490.39	\$29,842,624.73	\$23,921,865.66	\$6,447,813.21
Incr.	\$ 5,270,327.24	.....	\$ 6,447,813.21	.....
Dec.	.....	\$1,177,485.97	.....	.....

Approximate earnings for Dec. 1915, \$12,580,000 against \$7,321,000 for Dec. 1914, and for three weeks ended Jan. 21, \$5,647,000 against \$4,028,000 for same period 1915.

Grand Trunk Railway Earnings, Etc.

The following figures show the earnings of the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R., for 1915 compared with those for 1914:—

	1915	1914	Incr.	Decr.
G.T.R.	\$39,820,694	\$41,737,370	.....	\$1,916,676
G.T.W.R.	7,876,304	7,295,822	\$670,482	.....
D.G.H. & M.R.	2,377,912	2,567,503	310,409	.....

Totals..... \$50,574,910 \$51,510,695 \$ 935,785
Approximate earnings for two weeks ended Jan. 14, \$1,847,003 against \$1,523,267 for same period 1915.

Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section, 916 miles, for Dec. 1915, were \$744,584 against \$262,683 for Dec. 1914, and the aggregate for six months ended Dec. 31, 1915, \$3,451,310 against \$2,331,683 for same period 1914.

Buckwheat and Corn Flour Westbound Transcontinental Rates.—The Interstate Commerce Commission, at Washington, D.C., Dec. 20, 1915, after a rehearing, found that for the future no higher rates should be maintained by respondent, Atchison, Topeka and Santa Fe Ry. and Southern Pacific Co., on buckwheat flour or corn flour in carloads from producing points in transcontinental groups A to J, inclusive, to California terminals and intermediate points than are contemporaneously maintained on wheat flour in carloads from and to the same points.

The Winnipeg Transportation Social Club decided at its regular meeting, Jan. 17, to change its name to the Winnipeg Traffic Club, and to extend its sphere of operations so as to induce the traffic men in wholesale and retail business as members. Following are officers for the current year: President, A. Syme; Vice President, K. Watson; Secretary, J. P. Galvrey; Treasurer, J. O. Norrie.

The King's New Years Honors for Transportation Men.

Canadian Railway and Marine World for January had gone to press when the King's New Year's honors were announced. It is gratifying that a larger proportion than usual of those who have been selected for distinction by His Majesty are prominent in transportation work, or are closely allied to it. Lord Mersey, well known in connection with Admiralty investigations, has been raised from a baron to a viscount; Sir Thos. G. Shaughnessy, President, Canadian Pacific Ry., and D. A. Thomas, who has several railway projects in Canada, have been created barons; Sir Alex. Henderson, Bart., Chairman of the Great Central Ry. Co. of England, has been created a baron; Arthur A. Booth, Chairman, Cunard Steamship Co., and A. F. Yarrow, the British shipbuilder, who is also interested in Yarrows Ltd., Vancouver, have been created baronets; Collingwood Schreiber, the veteran civil engineer, has been created Knight Commander of the Order of St. Michael and St. George; W. D. Reid, President, Reid Newfoundland Co., John Kennedy, the distinguished harbor engineer, and Brigadier General Alex. Bertram, who performed splendid service as Chairman of the Sheli Committee, have each been created a knight bachelor.

The Right Hon. Viscount Mersey.

Lord Mersey, who has been raised from Baron to Viscount, is well known in Canada as having conducted the enquiry into the Empress of Ireland disaster in the St. Lawrence in 1914. He also presided over the Lawrence in 1914. He also presided over Titanic, and has been well known in Admiralty cases, as counsel and judge, respectively, for several years.

The Right Hon. Lord Shaughnessy, K.C.V.O.

Sir Thomas G. Shaughnessy, K.C.V.O., was born at Milwaukee, Wisconsin, Oct. 6, 1853, and entered railway service, July 1869, since when he has been, to Jan. 1879, in Purchasing Department, Chicago, Milwaukee and St. Paul Rd.; Jan. 1879 to Oct. 1882, General Storekeeper, same road; Oct. 1882 to Jan. 1884, General Purchasing Agent, Canadian Pacific Ry., Montreal; Jan. 1884 to Sept. 1885, Assistant to General Manager, same road; Sept. 1885 to Sept. 1889, Assistant General Manager, same road; Sept. 1889 to June 24, 1891, Assistant President, same road; June 24, 1891 to June 12, 1889, Director and Vice President, same road; June 12, 1899 to date, President, same road, and from May 9, 1910, also Chairman of the company. Amongst a number of public positions held by him are places on the directorates of the Bank of Montreal, Royal Trust Co., and a number of subsidiary and allied companies of the C.P.R. He was a delegate to the International Railway Congress in 1905. He was knighted by the late King Edward in 1901 and created a Knight Commander of the Royal Victorian Order in 1907. He is a Knight of Grace of the Order of St. John of Jerusalem, and holds the decoration of the Order of the Sacred Treasury of Japan of the second class. It is announced that he has selected the title of Baron Shaughnessy of Montreal, Canada, and Ashford, Ireland.

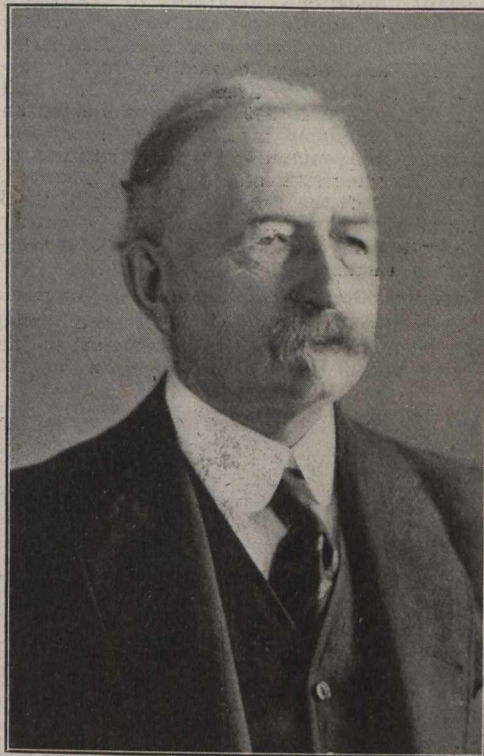
The Right Hon. Lord Faringdon.

Sir Alexander Henderson, who has been raised to the peerage with the title of Baron, is Chairman of the Great Central Ry. of England, and has rendered considerable transportation service during the war.

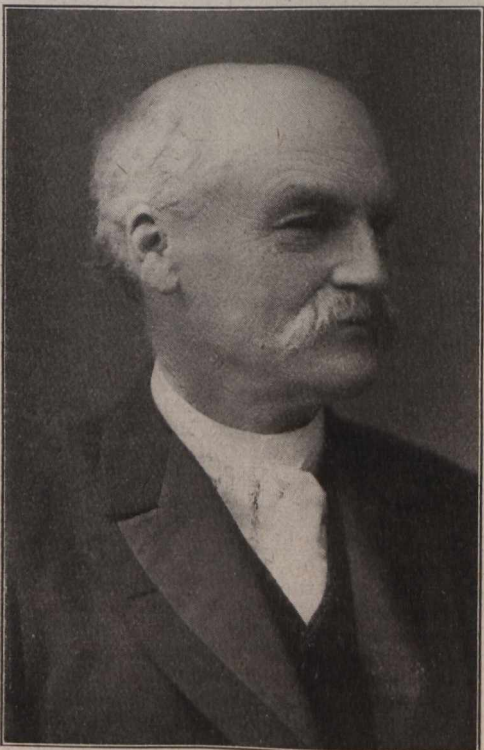
The Right Hon. Lord Rhondda.

D. A. Thomas, who has been created a Baron of the United Kingdom, has been rather intimately associated with Canada

lately in the organization of the Imperial Munitions Board in the Dominion, under the control of the Imperial Minister of Munitions. He has some extensive Can-



The Right Hon. Lord Shaughnessy, K.C.V.O.
President, Canadian Pacific Railway Co.



Sir Collingwood Schreiber, K.C.M.G.
Consulting Engineer, Dominion Government.

adian interests, covering the Athabasca and Fort Vermillion Ry., Pacific Peace River and Athabasca Ry., and the Peace River Tramway and Navigation Co. projects. With his daughter, Lady Mackworth, he was sav-

ed from the s.s. Lusitania, when she was torpedoed by German submarines.

Sir Arthur A. Booth, Bart.

Arthur A. Booth, who has been created a baronet, is Chairman of the Cunard Steamship Line, and has rendered special services during the war in connection with the transportation of munitions, men and war supplies in various parts of the world.

Sir A. F. Yarrow, Bart.

A. F. Yarrow, who has been created a baronet, is head of the well known firm of Yarrow & Co., Ltd., Glasgow, Scotland, and of Yarrows Limited, Vancouver, B.C., and has taken a prominent part in the war in regard to the production of submarines, torpedo boat destroyers, etc., and recently established an experimental tank at the National Physical Laboratory in England, for the elucidation of propeller problems, for the use of any shipbuilder.

Sir Collingwood Schreiber, K.C.M.G.

Collingwood Schreiber, C.M.G., Hon. M. Can.Soc.C.E., who has been created a Knight Commander of the Order of St. Michael and St. George, was born in Essex, Eng., Dec. 14, 1831, and came to Canada in 1852. In that year he was engaged on the Toronto and Hamilton Ry.'s engineering staff and continued in that service until the completion of the road in 1856. From 1856 to 1860 he was in private engineering practice as a partner in the firm of Fleming, Ridout and Schreiber, at Toronto; 1860 to 1863, Superintending Engineer, Northern Ry.; 1863, Division Engineer for the Nova Scotia Government's Pictou Ry., and remained in charge of the work until its completion in 1867. He was subsequently connected with the Intercolonial Ry., first in charge of the surveys for the route by way of Lake Temiscouata, and then in charge of the Eastern Extension Ry., as Superintending Engineer in 1869, and afterwards as Superintending Engineer and Commissioners' Agent for the entire road; 1873 to 1880, Chief Engineer and General Manager of railways operated by the Dominion Government, succeeding the late Sir Sandford Fleming as Chief Engineer, Canadian Pacific Ry., in 1880; 1892 to 1905, Chief Engineer and Deputy Minister, Department of Railways and Canals. Since July 1, 1905, he has been Consulting Engineer to the Dominion Government, and Chief Engineer, Western Division, National Transcontinental Ry. He was appointed a member of the Royal Commission on Railways in 1886, and was created a Companion of the Order of St. Michael and St. George in 1893. He is a member and one of the founders of the Canadian Society of Civil Engineers, of which he was a councillor in 1887 and 1888, and was made an honorary member in 1909.

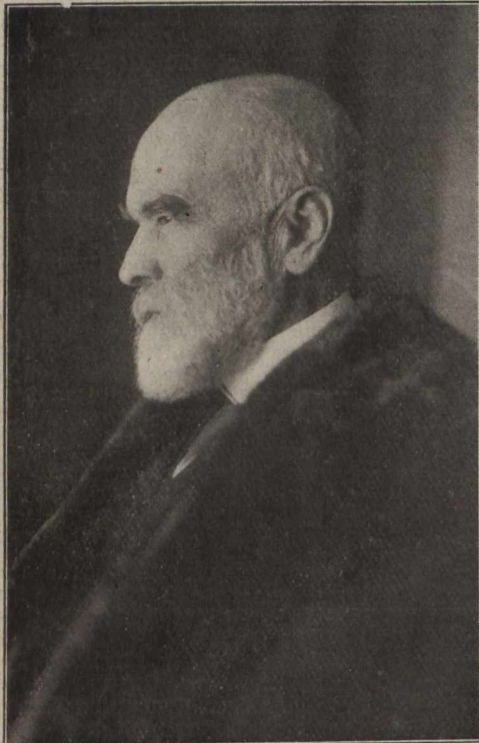
Sir William Duff Reid.

William Duff Reid, who has been created a knight bachelor, is the eldest son of the late Sir Robert G. Reid, the founder of the Reid Newfoundland Co. He was born in Australia, March 20, 1867, and came to Canada with his parents in 1871. He was associated with his father in the construction of a section of the Canadian Pacific Ry., north of Lake Superior, and also in the construction of the C.P.R. bridge over the St. Lawrence River at Lachine, Que. As a contractor on his own account, he built a portion of the C.P.R. Algoma Branch, and the Intercolonial Ry. branch from Hawkesbury to Grand Narrows, N.S. He was subsequently, in conjunction with his father, engaged in the construction and operation of the

steam and electric railways in Newfoundland, and steamships connecting with the main land, owned by the Reid Newfoundland Co., of which he became Vice President and General Manager, and on his father's death in 1908, President.

Sir John Kennedy.

John Kennedy, Hon. M.Can.Soc.C.E., who has been created a knight bachelor, is the eldest son of the late Wm. Kennedy, founder of the manufacturing firm of Wm. Kennedy and Sons Co., Owen Sound, Ont. He was born at Spencerville, Ont., in 1838, and was educated privately, at Bytown High School and McGill University. He commenced his engineering career in 1853, under the late T. C. Keefer, and assisted in the construction of water works at Montreal and Hamilton, and also in railway and other engineering works. He was appointed Assistant City Surveyor of Montreal in 1863, and subsequently Deputy City Surveyor, resigning in 1867 on his appointment as Manager of the Hull Iron Mining and Manufacturing Co.'s smelting works at Ironside, Que. In 1871 he was appointed



Sir John Kennedy, Hon.M.Can.Soc.C.E.

Division Engineer on construction, Wellington, Grey and Bruce Ry., and subsequently became Chief Engineer, Great Western Ry., as such building the Canadian Air Line and some minor branches, all of which now form part of the G.T.R. He also laid the first double track line in the Dominion, between Glencoe and Windsor, resigning in 1875 on his appointment as Chief Engineer, Montreal Harbor Commissioners, which position he held until Feb. 1907, when he became Consulting Engineer. During his occupancy of the position of Chief Engineer, he deepened the ship channel between Quebec and Montreal from 20 to 27½ ft., and designed and carried out all the improvements in the Montreal harbor undertaken in that period. On his retirement the Montreal Harbor Commissioners placed on record their deep sense of his lengthened and devoted service and of his faithful and zealous performance of the same. He was a member of the Royal Commission appointed in 1886 to enquire into the leasing of water power on the Lachine Canal, and

was also a member of the Royal Commission appointed the same year to enquire into the causes of floods in Montreal and to suggest remedies therefor. He was also a member of the Royal Commission appointed in 1888 to report upon the advisability of completing the Trent Valley Canal system, and has often been called upon to act as arbitrator or consulting engineer on important questions relating to railways, waterways, etc. He was one of the founders of the Canadian Society of Civil Engineers in 1887, and was a councillor during several years, Vice President in 1887, 1890 and 1891; President in 1892, and was elected an honorary member in 1907. He is also a member and councillor of the Institute of Civil Engineers, England, and a member, since 1875, of the American Society of Civil Engineers. Sir John and Lady Kennedy celebrated the 50th anniversary of their wedding in August, 1915.

Brigadier General Sir Alexander Bertram.

Brigadier General Alexander Bertram, who has been created a knight bachelor, is the second son of the late John Bertram, one of



Sir William Duff Reid,
President, Reid Newfoundland Co.

the founders of the Canada Tool Works, now known as the John Bertram and Sons Co., Ltd., at Dundas, Ont. He was born at Dundas, Feb. 18, 1853, and was educated there. He joined his father in the business, and was admitted a partner in 1886. He has been, for several years, connected with military matters, and was at one time in command of the 77th Wentworth Regiment. He was transferred to the Reserve of Officers in Jan. 1905, and in December of that year was appointed to a command in the 3rd Infantry Brigade; was appointed Colonel in 1910, after having commanded the Canadian Bisley team in the previous year, and has received the Colonial Auxiliary Forces officers' decoration. On the outbreak of the present war he was appointed Chairman of the Dominion Government Shell Committee, which had the handling of the organization of the manufacture of shells and ammunition, and on the recent reorganization of that board, in the course of which it became the Imperial

Munitions Board, under Imperial control, he was appointed Deputy Chairman. He is included among the transportation men, in this article, on account of having been so intimately connected with them in supplying machinery for railway, locomotive, car and ship building shops.

Railway Profiles to be Based on Mean Sea Level.

The Board of Railway Commissioners passed the following general order 156 Jan. 18:— Re proposal that the profiles of railway companies where lines commence, terminate, or intersect with any of the lines listed in the work entitled *Altitudes in Canada*, hereinafter referred to as "*Altitudes*," edited by James White, Assistant to Chairman and Deputy Head of the Commission of Conservation, including the lines of the said companies which touch tidewater, be based upon mean sea level as provided in *Altitudes*: Upon reading what is filed on behalf of the Canadian Pacific, Canadian Northern, Grand



Sir Alexander Bertram.

Trunk Pacific, and Grand Trunk Railway Companies, the said companies consenting to the proposal, and the report and recommendation of the Board's Chief Engineer, it is ordered that, on or before February 1, 1916, all railways of companies which commence, terminate, or intersect any of the lines listed in *Altitudes*, as well as those which touch tidewater, be based upon mean sea level as provided in *Altitudes*.

Grand Trunk Ticket Clerk Convicted.—W. A. Mason, a ticket clerk at the G. T. R. city ticket office, Toronto, who was found guilty recently of the theft of \$1,500 from the company, obtained by issuing tickets for distant points and marking the stubs for points close in, was sentenced, Jan. 5, to 2 years in Kingston penitentiary.

Toronto Union Station Damaged.—A fire starting in the C.P.R. filing room, on the top floor of the office section of this station, on Jan. 10, did about \$15,000 worth of damage.

Mainly About Railway People Throughout Canada.

P. G. Bromley, at one time agent C.P.R., Boissevain, Man., and afterwards travelling auditor, died at Forest, Ont., Jan. 9.

Nelson Main, an inspector on the Intercolonial Ry., was run over by a travelling crane, Jan. 4, and had both legs amputated, dying shortly after.

Paul J. Myler, Vice President, Canadian Westinghouse Co., Ltd., Hamilton, Ont., has been elected a director of the Bank of Toronto.

Sir William D. Reid, President, Reid Newfoundland Co., accompanied by his family, and F. Rioux, his assistant, left St. John's, Nfld., Jan. 9, for Montreal.

W. H. Stewart, Assistant Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que., has been loaned to the Imperial Munitions Board, Ottawa.

Wm. Jarman, who died in Toronto, Dec. 28, aged 80, was employed in the Grand Trunk Union Station ticket office, Toronto, for over 30 years, retiring about 15 years ago.

Geo. D. Perry, General Manager, Great North Western Telegraph Co., left Toronto Jan. 17, for Bermuda, intending to return about the middle of February.

J. J. Hill, of the Great Northern Ry., St. Paul, Minn., has contributed \$5,000 to the fund for a women's residence at Regina College, Sask.

Bion J. Arnold, consulting engineer, Chicago, has been asked by the grade crossing commission of Syracuse, N.Y., to examine and advise upon plans adopted for the elimination of grade crossings there.

Miss Dorothy Gutelius, daughter of **F. P. Gutelius**, General Manager, Canadian Government Railways, was married at Moncton, N.B., Jan. 5, to Dr. Duncan A. Campbell, of North Bay, Ont.

Hugh Sutherland, General Executive Agent, and **M. H. MacLeod**, General Manager and Chief Engineer, Canadian Northern Ry., Winnipeg, visited the company's headquarters in Toronto in January.

E. H. Wood, formerly Division Car Foreman, Ontario Division, C.P.R., Toronto, who resigned in Sept., 1915, is now General Car Foreman, Michigan Central Rd., Chicago, Ill.

T. H. White, M.Can.Soc.C.E., Chief Engineer, Canadian Northern Pacific Ry., Vancouver, B.C., spent some time in Toronto in January, conferring with the President, Vice President and other C.N.R. officials.

J. G. Sullivan, Chief Engineer, Canadian Pacific Ry., read a paper on the Rogers Pass tunnel construction before the Canadian Society of Civil Engineers in Montreal, Jan. 13.

H. H. Vaughan, formerly Assistant to Vice President, Canadian Pacific Ry., and since April 1915 Consulting Engineer, C.P.R., and President, Montreal Ammunition Co., has been elected a director and a Vice President of the Dominion Bridge Co., Ltd.

T. A. Hiam, private secretary to Sir Donald Mann, Vice President, Canadian Northern Ry., is taking a training course with the Canadian Engineers in Toronto, prior to entering the Canadian Expeditionary Forces for overseas service.

Colonel Lyons Biggar, who has been appointed Director General of Transports and Supply, is a brother of **W. H. Biggar, K.C.**, General Counsel, G.T.R., and Vice President and General Counsel, Grand Trunk Pacific Ry., Montreal.

The tower and chime of bells, given to

Grace Church, Brantford, Ont., by Lieut.-Col. **R. W. Leonard**, ex-Commissioner, National Transcontinental Ry., in memory of his parents, were dedicated there, Jan. 9. Their total cost was about \$45,000.

Westropp Armstrong, latterly Bridge Engineer, Toronto-Hamilton Highway Commission, formerly of Mackenzie, Mann & Co.'s engineering staff, and now a captain in the 86th Machine Gun Battalion, was married at Hamilton, Ont., recently to Miss Colquhoun.

Irving R. Todd, Fredericton, N.B., resigned as President of the St. John and Quebec Ry. Co., Dec. 31. The reason given was that the condition of his health, and the pressure of private business rendered it necessary.

A. B. Ingram, Vice Chairman, Ontario Railway and Municipal Board, has been elected Second Vice President, Ontario Safety League. **D. B. Hanna**, Third Vice President, Canadian Northern Ry., has been elected Third Vice President of the League.



E. W. Beatty, K.C., Vice President and General Counsel, Canadian Pacific Railway.

J. W. Crane, formerly Chief Dispatcher, Canadian Northern Ry., Saskatoon, Sask., was presented recently with an arm chair and humidior, by his associates there, on leaving for Kamloops, B.C., where he has been appointed Chief Dispatcher, Pacific Division, C.N.R.

Lt.-Col. J. J. Creelman, of the 2nd Brigade, Canadian Field Artillery, 1st Division, Canadian Expeditionary Forces, and son of A. R. Creelman, K.C., one of the C.P.R. directors, returned to Montreal at the end of December from France, on six weeks leave of absence.

Dr. J. A. Hutchison, Chief Medical Officer, G.T.R., Montreal, is mentioned as Chairman, with the temporary rank of Lieutenant-Colonel in the Army Medical Corps, of the newly appointed medical board for the 4th Division, for the examination of army pensioners.

W. B. Lanigan, Assistant Freight Traffic

Manager, Western Lines, C.P.R., was the principal speaker at a recruiting meeting at the Royal Alexandra Hotel, Winnipeg, recently. The audience consisted entirely of members of the various C.P.R. office staffs in the city.

Capt. R. Falshaw Morkill, Signal Engineer, Grand Trunk Ry., now of the 34th (Norfolk) Divisional Royal Engineers, wrote from Sutton Veny Camp, Wiltshire, Eng., Dec. 25, to E. W. Oliver, of Mackenzie, Mann & Co.'s engineering staff, Toronto, that he expected to leave for Egypt two days later.

N. P. Dalziel, formerly of Mackenzie, Mann & Co.'s engineering staff, Toronto, who is a provisional lieutenant (supernumerary) in the Canadian Engineers, has been gazetted recently as having been seconded on Sept. 14, 1915, while employed as an assistant inspector of steel.

Thos. Gibson, a Toronto solicitor, formerly President, Lake Superior Corporation, among the subsidiaries of which are the Algoma Central & Hudson Bay Ry., the Algoma Eastern Ry., and the Algoma Central Steamship Co., has given up his practice to become Major in the 168th Oxford Battalion, Canadian Overseas Expeditionary Forces.

W. L. Donaldson, who was appointed Assistant General Freight Agent, Lehigh Valley Rd., Buffalo, N.Y., recently, began railway service in 1898, and served in various capacities in the freight department, G.T.R., Wabash Rd. and Chicago and North Western Ry., entering Lehigh Valley Rd. service in 1906.

A. P. Giles, who has retired from the position of Roadmaster, Intercolonial Ry., Newcastle, N.B., under the provisions of the pension rules, was presented with an address and a purse of money, Jan. 4. He had been in the Government railway service for 35 years, the last five of which were spent at Newcastle, N.B.

E. A. Lancaster, M.P., who died at St. Catharines, Ont., Jan. 4, after a lengthened illness, aged 55, was for several years Chairman of the Railway Committee of the House of Commons. During his membership of the House he was chiefly responsible for legislation dealing with cattle guards and level crossings.

L. C. Fritch, Assistant to the President, and General Manager, Eastern Lines, Canadian Northern Ry., Toronto, and **W. McNab**, Valuation Engineer, G.T.R., Montreal, have been appointed members of the committee of arrangements to prepare for the American Railway Engineering Association's annual convention, March 22 to 25, at Chicago, Ill.

Bruce Hosmer Acton Burrows, B.A.Sc., younger son of Acton Burrows, Managing Director, Canadian Railway and Marine World, has been gazetted recently as having been appointed a provisional lieutenant (supernumerary) in the Canadian Engineers on Sept. 15, 1915. He is at the Canadian Engineers Training Depot, Ottawa, preparatory to going overseas.

E. McDonald, who has been appointed General Baggage Agent, Grand Trunk Pacific Ry., and Grand Trunk Coast Steamship Co., Winnipeg, was from June, 1904, to May, 1910, clerk, General Baggage Agent's office, G.T.R., Toronto, and from May, 1910, to Dec. 31, 1915, District Baggage Agent, G.T.P.R. and G.T.P. Coast Steamship Co., Winnipeg.

M. K. Cowan, K.C., of Toronto, formerly of the Grand Trunk Legal Department, Montreal, collapsed suddenly in the Board

of Railway Commissioner's offices at Ottawa, Jan. 25, owing, it is said, to acute indigestion. He was taken to St. Luke's Hospital there, where he recovered consciousness, and it was stated later in the day that he was not seriously ill.

Andrew Ledingham, who has been appointed City Freight Agent, C.P.R., Winnipeg, was born at Blackford, Scotland, Sept. 29, 1884, and entered C.P.R. service, Jan. 1, 1911, since when he has been, to Jan. 1, 1913, chief clerk to Assistant Freight Traffic Manager, Winnipeg; Jan. 1, 1913, to Jan. 1, 1916, Contracting Freight Agent, Winnipeg.

Barton Wheelwright, who has been appointed acting Signal Engineer, G.T.R., Montreal, was born at Minneapolis, Minn., Mar. 12, 1888, and entered G.T.R. service, July 1, 1911, since when he has been, to Mar. 1, 1912, draughtsman on grade separation, Toronto; Mar. 1, 1912, to Dec. 1, 1914, Block Signal Inspector, Montreal; Dec. 1, 1914, to Jan. 14, 1916, Assistant Signal Engineer, Montreal.

Lieutenant H. F. H. Hertzberg, Jr. M.Can. Soc.C.E., of the Royal Canadian Engineers, who is on active service in Europe, and who has been promoted to the rank of Captain, is a son of A. L. Hertzberg, M.Can. Soc.C.E., Division Engineer, C.P.R., Toronto, and was formerly with the Trussed Concrete Steel Co. of Canada, Walkerville, Ont. This item appeared in the January issue, but owing to typographical errors in the names, is repeated.

Thos. Malcolm, railway contractor, whose latest work was building the International Ry. of New Brunswick, of which company he was President until he sold the line to the Dominion Government, is ill at his home, Campbellton, N.B. He left there Nov. 28 for New York, where he was operated upon on Dec. 6 for obstruction of the pylorus, and progressed satisfactorily until Dec. 21, when complications occurred and he was taken home in the middle of January, accompanied by Mrs. Malcolm, a doctor and a nurse.

Arthur Tilley McKean, who has been appointed Division Freight Agent, C.P.R., Winnipeg, was born at St. John, N.B., Dec. 18, 1886, and entered C.P.R. service, Apr. 1, 1903, since when he has been, to Mar., 1906, clerk and stenographer, General Freight Department, St. John, N.B.; Mar., 1906, to Jan., 1908, clerk, assistant chief clerk and chief clerk to Assistant Freight Traffic Manager, Winnipeg; Jan., 1908, to June, 1911, Soliciting Freight Agent, Winnipeg; June, 1911, to Jan., 1916, City Freight Agent, Winnipeg.

William James Rennie, who has been appointed Soliciting Freight Agent, C.P.R., Winnipeg, was born at Montreal, Aug. 21, 1886, and entered C.P.R. service, Dec. 5, 1899, since when he has been, to May 31, 1911, office boy, junior clerk and claims clerk, Freight Claims Auditor's office, Montreal; June 15 to Oct. 31, 1911, claims clerk, Division Freight Agent's office, Winnipeg; Nov. 1, 1911, to Jan. 31, 1912, assistant chief clerk, same office; Feb. 1, 1912, to June 30, 1914, assistant chief clerk, Assistant Freight Traffic Manager's office, Winnipeg; July 1, 1914, to Dec. 31, 1915, chief clerk, same office.

Charles Henry Towle, who has been appointed Assistant Superintendent, District 1, Atlantic Division, C.P.R., Brownville Jct., Me., was born at Enfield, Me., Apr. 13, 1878, and entered railway service in Oct., 1893, since when he has been, to Feb., 1894, station baggage master, Maine Central Rd., Enfield, Me.; Feb., 1894, to Aug., 1896, freight brakeman, same road, Bangor, Me.; Aug., 1896, to Dec., 1898, freight brakeman, C.P.R., Brownville Jct., Me.; Dec., 1898, to Sept., 1914, freight conductor, C.P.R., Brownville

Jct., Me.; Sept., 1914, to Nov., 1915, General Yardmaster, C.P.R., McAdam Jct., N.B.

George Arthur Walton, who has been appointed General Passenger Agent, Western Lines, C.P.R., Winnipeg, was born at Montreal on July 17, 1881, and entered C.P.R. service, Sept. 1, 1901, since when he has been, to May 31, 1903, chief rate clerk, Winnipeg; June 1, 1903, to Mar. 31, 1906, chief clerk, Winnipeg; Apr. 1 to Aug. 31, 1906, station ticket agent, Winnipeg; July 15, 1907, to Apr. 14, 1910, District Passenger Agent, Brandon, Man.; Apr. 15, 1910, to Aug. 31, 1911, General Agent, Passenger Department, Spokane, Wash.; Sept. 1, 1911, to Dec. 31, 1915, General Agent, Passenger Department, Chicago, Ill.

Albert G. Albertsen, who has been appointed City Ticket Agent, C.P.R., San Francisco, Cal., was born at Copenhagen, Denmark, Dec. 31, 1887, and entered transportation service in April, 1908, since when he has been, to Nov. 1909, passenger clerk, Thos. Cook and Sons; Nov. 1909 to July 1910, Travelling Agent, International Mercantile Marine Co.; July 1910 to Mar. 1911, passenger and ticket clerk, Pacific Mail Steamship Co.;



G. A. McNicholl,

Assistant General Freight and Passenger Agent, Grand Trunk Pacific Railway.

Mar. 1911 to May 1912, City Passenger Agent, C.P.R.; May 1911 to Jan. 1916, Travelling Passenger Agent, C.P.R., all at San Francisco, Cal.

T. J. Wall, who has been appointed General Agent, Passenger Department, C.P.R., Chicago, Ill., was born at St. Louis, Mo., Sept. 10, 1882, and was, to July 1, 1908, Station Passenger Agent, Pennsylvania Lines, St. Louis, Mo.; July 1, 1908, to Feb. 1, 1911, Travelling Passenger Agent, C.P.R., St. Louis, Mo.; Feb. 1 to Oct. 1, 1911, City Passenger and Ticket Agent, C.P.R., Chicago, Ill.; Oct. 1, 1911, to June 1, 1914, General Agent, Passenger Department, C.P.R., Spokane, Wash.; June 1, 1914, to Jan. 1, 1916, General Agent, Passenger Department, C.P.R., Minneapolis, Minn.

Fred L. Nason, who has been appointed General Agent, Passenger Department, C.P.R., San Francisco, Cal., was born at Newton,

N.H., Apr. 16, 1880, and entered railway service in June 1898, since when he has been, to Oct. 1902, telegraph operator and ticket agent, New York, New Haven and Hartford Ry., Hyde Park, and Boston, Mass.; Nov. 1902 to May 1903, telegraph operator, Atchison, Topeka and Santa De Ry., in Arizona; May 1903 to Aug. 1908, telegraph operator and agent, Southern Pacific Co. at various points in California; Aug. 1908 to Jan. 1, 1916, City Ticket Agent, C.P.R., San Francisco, Cal.

Lewis Raymond Hart, who has been appointed General Agent, Passenger Department, C.P.R., Buffalo, N.Y., was born at Fairport, N.Y., June 3, 1877, and entered railway service June 22, 1899, since when he has been, to Jan., 1900, telegraph operator and ticket clerk, New York, New Haven and Hartford Rd., West Quincy, Mass.; Jan. to Sept., 1900, assistant ticket agent, same road, Quincy, Mass.; Sept., 1900, to Dec. 11, 1905, assistant ticket agent, same road, Fall River, Mass.; Dec. 11, 1905, to July 28, 1913, chief clerk, Passenger Department, C.P.R., Boston, Mass.; July 28, 1913, to Jan. 1, 1916, chief clerk, Passenger Department, C.P.R., New York, N.Y.

Frederick William Robertson, who has been appointed District Passenger Agent, Intercolonial Ry., Halifax, N.S., was born at Moncton, N.B., Oct. 10, 1871, and entered I.R.C. service, May 20, 1886, since when he has been, to Aug., 1889, clerk on car mileage; Aug. to Nov., 1889, clerk to Chief Superintendent; Nov., 1889, to Feb., 1891, clerk to General Passenger Agent; Feb. to Apr., 1891, clerk to Chief Superintendent; Apr., 1891, to Nov. 1901, clerk to General Passenger Agent; Nov., 1901, to Sept., 1902, secretary to General Manager; Sept., 1902, to Feb. 4, 1913, secretary to General Passenger Agent; Feb. 4, 1913, to Dec. 1, 1915, chief clerk, all at Moncton, N.B.

George W. Caye, whose appointment as General Purchasing Agent, G.T.R., Montreal, was announced in our last issue, was born at Malone, N.Y., Dec. 1, 1865, and entered railway service, Aug., 1883, since when he has been, to 1897, successively, junior clerk, stenographer and ticket clerk, Passenger Department, Central Vermont Ry., St. Albans, Vt.; 1897 to 1900, chief clerk to General Superintendent, same road, St. Albans, Vt.; 1900 to 1902, Travelling Car Agent, Canada Atlantic Ry., Ottawa, Ont.; 1902 to 1905, secretary to General Manager, same road; 1905 to 1907, chief clerk to Vice President and General Manager, Grand Trunk Pacific Ry., Montreal; 1907 to Dec. 31, 1915, Assistant to Vice President and General Manager, same road, Winnipeg.

George Henry Nowell, whose appointment as District Master Mechanic, District 3, British Columbia Division, C.P.R., Nelson, was announced in our last issue, was born at Montreal, Nov. 13, 1885, and entered railway service, July 2, 1899, since when he has been, to July 2, 1904, machinist apprentice, C.P.R., Montreal; July 2 to Nov. 5, 1904, machinist, C.P.R., Montreal; Nov. 5, 1904 to Feb. 15, 1905, machinist, C.P.R., North Bay, Ont.; Apr. 15 to Sept. 1, 1905, machinist, G.T.R., Montreal; Sept. 1, 1905 to Sept. 30, 1908, machinist, C.P.R., Montreal; Sept. 30, 1908 to Jan. 15, 1910, leading hand, C.P.R., Montreal; Jan. 15, 1910 to Jan. 15, 1913, charge hand, C.P.R., Montreal; Jan. 15, 1913 to Sept. 5, 1915, Erecting Shop Foreman, C.P.R., Ogden, Alta.; Sept. 5 to Dec. 1, 1915, Locomotive Foreman, C.P.R., Cranbrook, B.C.

George N. Goad, who has been appointed Inspector of Transportation, Eastern Lines, Canadian Northern Ry., Toronto, was born there, Nov. 26, 1884, and entered railway service in Sept., 1901, since when he has

been, to July, 1902, junior clerk, Division Freight Agent's office, G.T.R., Toronto; July, 1902, to Sept., 1904, stenographer, same office; Sept., 1904, to Dec., 1905, chief clerk, Canadian Freight Agent's office, Lehigh Valley Rd., Toronto; Dec., 1905, to Mar., 1907, stenographer, Third Vice President's office, Canadian Northern Ry., Toronto; Mar., 1907, to Aug. 31, 1915, chief clerk to Superintendent and General Superintendent, C.N.R., Toronto; Sept. 1, to Dec. 31, 1915, chief clerk to General Manager, Eastern Lines, C.N.R., Toronto.

B. T. Chappell, who has been appointed Superintendent, Pacific Division, Canadian Northern Ry., Vancouver, B.C., was born at Charlottetown, P.E.I., May 1, 1878, and entered railway service, Sept., 1895, since when he has been, to 1897, clerk in Freight Department, Northern Pacific Ry., Winnipeg; 1897 to 1901, in train service, same road; 1901, on the taking over of the Northern Pacific lines in Manitoba by the Canadian Northern Ry., to 1903, in train service, C.N.R.; 1903 to 1905, Yardmaster, same road, Port Arthur, Ont.; 1905 to 1907, Trainmaster, District 1, Western Division, same road; 1907 to Jan. 1, 1913, Trainmaster, District 4, Western Division, same road; Jan. 1, 1913, to Nov. 22, 1915, Superintendent, District 2, Western Division, same road, Saskatoon, Sask.

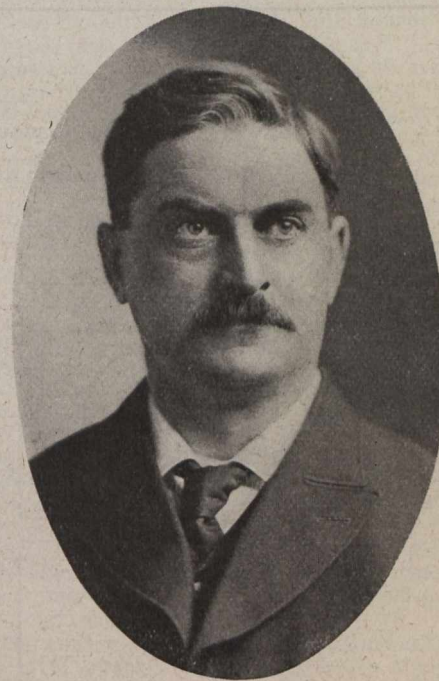
Arthur A. Tisdale, who has been appointed Assistant to Vice President and General Manager, Grand Trunk Pacific Ry., Winnipeg, was born at Mount Vernon, Ont., Mar. 8, 1874, and entered railway service Sept. 18 1889, since when he has been, to July, 1892, in local freight office, G.T.R., Hamilton, Ont.; July, 1892, to May, 1899, secretary to Chief Engineer, Hamilton and Montreal; May, 1899, to Oct., 1907, successively, secretary, chief clerk, and Assistant to Fourth Vice President in charge of Transportation and Maintenance of Way, G.T.R., Montreal; Oct., 1907, to Oct., 1909, Assistant to Vice President and General Manager, Grand Trunk Pacific Ry. Montreal; Oct., 1909, to June, 1915, Superintendent, Lake Superior Division, same road, Fort William, Ont.; June, 1915, to Jan. 1, 1916, Superintendent, Regina Division, same road, Regina, Sask.

E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., who has been elected a director of the company, was born at Thorold, Ont., Oct. 16, 1877. He was educated at the Model School and Harbord Collegiate Institute, Toronto, and the University of Toronto, graduating in 1898. He served his articles with the late D'Alton McCarthy, of McCarthy, Osler, Hoskin and Creelman, Toronto, and was admitted to the bar in 1901. On the appointment of A. R. Creelman, as Chief Solicitor, C.P.R., he accompanied him to Montreal, and was appointed Assistant Solicitor, Jan. 1, 1905; General Solicitor, Mar. 1, 1910; General Counsel, June, 1913, and Vice President and General Counsel, Dec., 1914. He is a son of the late Henry Beatty, at one time Manager of the Upper Lakes Steamships, C.P.R., Toronto, and brother of Dr. H. A. Beatty, Chief Surgeon, Ontario Division, C.P.R., Toronto.

Albert E. Lock, who has been appointed Superintendent of Car Service, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., was born at Albany, N.Y., July 14, 1879, and entered railway service Dec. 1, 1896, since when he has been, to Sept. 1, 1897, telegraph operator and relief agent at various points, Lehigh Valley Rd.; Sept. 1, 1897, to July 1, 1902, tower man, telegraph operator, relief agent, ticket clerk, assistant agent, etc., Mohawk and Adirondack Divisions, New York Central and Hudson River Rd.; July 1, 1902, to Aug. 15, 1903, City Ticket Agent,

same road, Lake Placid, N.Y.; Aug. 15, 1903, to Sept. 15, 1904, Travelling Passenger Agent, New York Central Lines, Saranac Lake, N.Y.; Sept. 15, 1904, to Nov. 1, 1913, Travelling Passenger Agent, New York Central Lines, Montreal; Nov. 1, 1913, to Apr. 1, 1914, Commercial Agent, Toronto, Hamilton and Buffalo Ry., Toronto; Apr. 1, 1914, to Dec. 29, 1915, Car Accountant, same road, Hamilton, Ont.

Frank W. Cooper, A.M.Can.Soc.C.E., who has been appointed Superintendent, District 3, Lake Superior Division, Schreiber, Ont., was born at London, Ont., Feb. 16, 1880, and entered railway service in 1901, since when he has been, to 1903, draughtsman, maintenance of way; and leveller on preliminary location and construction, Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont.; June, 1903, to Nov., 1905, transit man and Assistant Engineer, C.P.R., London and Toronto; Nov., 1905, to Nov., 1911, Resident Engineer, C.P.R., London and Toronto; Nov., 1911, to Apr., 1912, Resident Engineer, C.P.R., Montreal; Apr. to Nov.,



The Late Alexander Shields.

1912, Assistant Engineer in Chief Engineer's office, C.P.R., Montreal; Nov., 1912, to Feb., 1915, Division Engineer, Eastern Division, C.P.R., Montreal; Feb. to May, 1915, acting Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que.; May, 1915, to Jan. 8, 1916, Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que.

Harry Parry, who has been appointed Assistant General Passenger Agent, New York Central Rd., and West Shore Rd., Buffalo, N.Y., was born in Hamilton, Ont., and entered railway service in 1883 as a messenger in the Traffic Manager's office, Great Western Ry. there. In 1884 he was stenographer in the rate department, and subsequently served in the freight claims department until the absorption of the G.W.R. by the G.T.R., when he was, from Jan. to Apr., 1885, stenographer, freight claims department, G.T.R., Montreal; Apr. to Sept., 1885, stenographer in General Freight and Passenger Agent's office, Northern and Northwestern Ry., Toronto; Sept. to Dec., 1885, clerk to General Agent, and Assistant City Passenger and Ticket Agent, West Shore Rd., Buffalo, N.Y.; Dec., 1885, to May 27, 1889, Assistant City Passenger and Ticket Agent, New York Central and Hudson River Rd., Buffalo, N.Y.; May 27, 1889, to Mar. 1,

1897, City Passenger and Ticket Agent, New York Central Lines and West Shore Rd., Buffalo, N.Y.; Mar. 1, 1897, to Jan., 1916, General Agent, Passenger Department, same lines, Buffalo, N.Y.

Alexander Shields, Locomotive Inspector, Canadian Northern Ry., Winnipeg, died Jan. 18, at Rochester, Minn., where he had been to consult the Mayo Bros., Surgeons, who decided that it was useless to operate. The body was taken to Winnipeg and thence to Toronto, the funeral taking place from the home of his brother in law, E. W. Hendrick, Jan. 24. He was born at Toronto, June 14, 1867, and entered railway service there in 1880, as apprentice on the Credit Valley Ry., now part of the C.P.R., and from 1886 to 1901, was in the mechanical department, G. T.R., at Port Huron, Mich.; 1901 to 1903, Locomotive Foreman, C.P.R.; 1903 to Jan. 1912, Locomotive Foreman, and Master Mechanic, Canadian Northern Ry., Winnipeg; Jan. to March 1912, General Master Mechanic, C.N.R., Winnipeg. He resigned from the service in March, 1912, on his election as President Railroaders' Investment Co., and a director of the Consolidated Land Co. He returned to Canadian Northern Ry. service during 1915, as Locomotive Inspector. He is survived by a widow and three daughters.

M. G. Murphy, who has been appointed District Passenger Agent, C.P.R., and Canadian Pacific Ocean Services, Ltd., St. John, N.B., was born at Halifax, N.S., Feb. 26, 1878, and entered C.P.R. service Mar. 31, 1899, since when he has been, to Jan., 1901, agent and operator, Atlantic Division; Jan., 1901, to 1903, chief clerk to Freight Agent, C.P.R., and agent, Dominion Express Co., Halifax, N.S.; 1903 to 1905, Travelling Passenger Agent, Atlantic Division; 1905 to June, 1907, Assistant to District Passenger Agent, St. John, N.B.; June, 1907, to Nov. 1, 1910, General Travelling Passenger Agent, Western Lines, Winnipeg; Nov. 1, 1910, to Oct. 1, 1911, General Travelling Passenger Agent, All Lines, Montreal; Oct. 1, 1911, to Jan. 31, 1916, District Passenger Agent, Toronto, covering rail and lake lines as well as ocean services until the organization of Canadian Pacific Ocean Services, Ltd., Jan. 1, when I. E. Suckling was appointed General Agent, Passenger Department, C.P.O.S., Ltd. He is President of the Toronto Transportation Club. On leaving Toronto he was presented with a gold watch by a number of local transportation men, and with a gold watch chain by his office staff.

George Alexander McNicholl, who was appointed Assistant General Freight and Passenger Agent, Grand Trunk Pacific Ry., Prince Rupert, B.C., recently, was born at Montreal, July 31, 1876, and entered railway service Apr. 1, 1889, since when he has been, to Aug. 14, 1891, apprentice, General Auditor's office, G.T.R., Montreal; Aug. 14, 1891 to July 10, 1895, apprentice, Assistant General Manager's office, G.T.R., Montreal; July 10 to Nov. 7, 1895, clerk, General Passenger Agent's office, G.T.R., Montreal; Nov. 7, 1895 to Feb. 22, 1896, clerk, General Manager's office, G.T.R., Montreal; Feb. 22, 1896 to Dec. 15, 1900, clerk, General Traffic Manager's office, G.T.R., Montreal; Dec. 15, 1900 to June 12, 1902, secretary to Second Vice President and General Manager, G.T.R., Montreal; June 12, 1902 to Jan. 1, 1905, chief clerk, Third Vice President, G.T.R., Montreal; Jan. 1, 1905 to Apr. 1, 1907, secretary to Vice President and General Manager, Grand Trunk Pacific Ry., Montreal; Apr. 1, 1907 to July 1, 1910, Purchasing Agent, G.T.P.R., Vancouver, B.C.; July 1, 1910 to Oct. 1, 1913, Superintendent, G.T.P.R., Prince Rupert, B.C.; Oct. 1, 1913 to Nov. 15, 1915, Commissioner of Colonization and Industries, G.T.P.R., Prince Rupert, B.C.

Steam Railway Track Laid in 1915.

The returns received from steam railway companies throughout Canada, in answer to Canadian Railway and Marine World's inquiries, and which were published in our January issue, showed only 547.47 miles of new first track as having been laid in 1915, but as explained in the article, the returns were incomplete, some companies not having reported, and others having sent in figures based on estimates, which needed revision. The full and revised returns are given in the table below, which shows that 714.26 miles of new first track were laid by 15 separate companies, a mileage which, while considerably below that laid in any one year for the past 12 years or so, is in excess of that which it was estimated would be laid. Track laying was somewhat held up owing to the difficulty of placing orders for steel, the mills finding it more profitable to run on steel for shell making and similar purposes. The details for the several companies are as follows:

	Miles.	Miles.
Alberta and Great Waterways.		
Mileage 78 to 174.5, Alberta	96.50	
Canadian Northern System.		
Canadian Northern Quebec—		
Arundel to Rouge River, Que.	2.00	
Canadian Northern—		
Grand Marais to Victoria		
Beach, Man.	14.07	
Canora to Sturgis, Sask.	21.44	
Bienfait to Estevan, Sask.	8.91	
Elrose to Eston, Sask.	34.81	
Canadian Northern Sask. Ry.—		
Wroxton to Willowbrook, Sask.	41.01	
Canadian Northern Western Ry.—		
Camrose southeasterly	43.00	
Canadian Northern Pacific.—		
Gladwin to bridge 4	32.00	
Bridge 5 to bridge 7	8.00	
Hells Gate to Goose Creek, mileage 370 to 382	12.00	
Mileage 382 to 397	15.00	
	232.24	
Canadian Pacific.		
Coronation, Sask., west	0.75	
Foremost to Pakowki, Alta.	22.30	
	23.05	
Central Canada.		
McLennan to Heart River, Alta.	47.60	
Edmonton, Dunvegan and British Columbia.		
Mileage 246.7 to 336.9	90.20	
Essex Terminal.		
Near Sandwich to Ojibway, Ont.	1.00	
Grand Trunk Pacific.		
Track on Saskatchewan River bridge, Prince Albert branch.	0.20	
Halifax South Western.		
Jordan Falls Station to Jordan Falls, N.S.	1.29	
Hudson Bay (Dominion Government).		
Mileage 197.4 to 241.24	43.84	
Intercolonial.		
Connection with National Transcontinental, Moncton	0.85	
Dartmouth branch—Edenbrook to Upper Musquodoboit, N.S.	17.00	
	17.85	
Kettle Valley Lines.		
Between Midway and Merritt, B.C.	31.00	
Coquihella River Section	33.00	
	64.00	
Pacific Great Eastern.		
D'Arcy to Clinton, B.C.	81.20	
Quebec Central.		
From mileage 5 east of St. Camille to English Lake	14.00	
St. John and Quebec.		
From Fredericton, N.B., south.	1.29	
Total	714.26	
The mileage laid in the several provinces in comparison with that laid in 1914 was:—		
	1915.	1914.
Alberta	299.60	513.12
British Columbia	212.20	679.26
Saskatchewan	107.12	215.97
Manitoba	57.91	300.15
Nova Scotia	18.29	47.80
Quebec	16.00	52.51
New Brunswick	2.14	29.99
Ontario	1.00	200.01
Prince Edward Island		2.50
Miles	714.26	2,041.31

Several United States publications have published tables in which considerable differences occur. The Railway Review gives

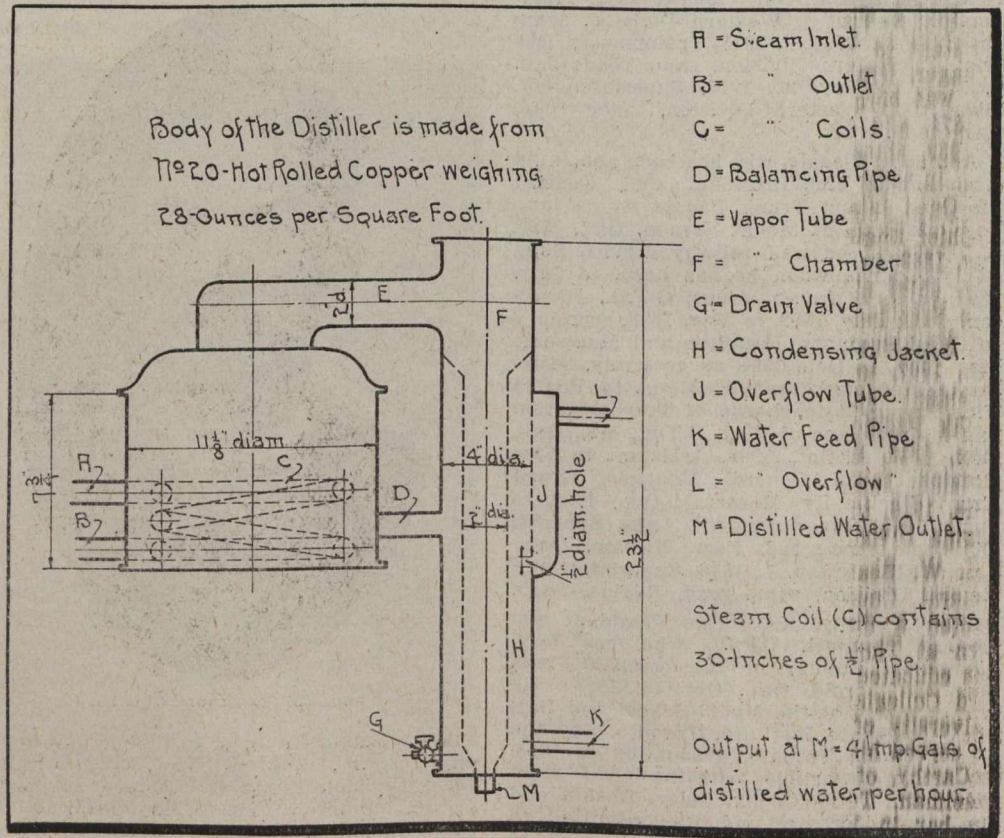
585.10 miles and the Railway Age Gazette 718.37 miles, the latter mentioning 15 railways. An examination and comparison of these figures with our returns for 1915 and 1914, shows that the Railway Age Gazette includes 14.81 miles on the Dominion Atlantic, which was included in our 1914 table; and omits to include the Halifax and South western, the St. John and Quebec, and the Intercolonial's Dartmouth Branch. Among other figures in the Railway Age Gazette's table which do not agree with the returns we have received, are the following:—It gives track as having been laid on the Canadian Northern south easterly from Camrose, Alta., for 60 miles, while we are advised that only 43 miles had actually been laid at the time of our report. It gives the Canadian Northern Pacific as having laid 22 miles, while our figures were held over as the reports we had received did not fit in with previous reports; the figures given in our

official statement only reached us Jan. 19. The other differences between the two reports are fractional.

A Simple Water Distiller.

The accompanying plan represents one of the simplest and yet most effective styles of water distilling outfits yet devised. Being a small apparatus and of simple construction with a capacity of four imperial gallons of distilled water per hour, it meets the ordinary requirements of most storage battery plants, especially those pertaining to railway car lighting service.

Water is supplied through the 1/2 inch pipe K and fills tube H, which forms a condensing jacket around vapor chamber F. The water in the condensing jacket H rises to the level of balancing pipe D, at which point it enters the main drum in which is located the steam coil C. Approximately 30 ins. of 1/2-in. radiating pipe is provided and connected to inlet A and outlet B. By ab-



A Simple Water Distiller.

table are the actual mileages laid in 1915, the figures given in 1914 having been made up in the company's office from progress reports and estimates of what it was expected to do. It gives the entire length of the Central Canada to Peace River Landing, 50 miles, while track had been laid for 47.50 miles, and will not be laid further until the completion of the bridge over Heart River. The track laid on the Edmonton, Dunvegan and British Columbia is placed by the Railway Age Gazette at the round figure of 100 miles, while our revised report shows only 90.20 miles to have been laid. The other important difference is on the Pacific Great Eastern, in regard to which in 1914 we estimated track to have been laid to mileage 120, near Lillooet, that being the objective point for the year, but track end did not reach beyond D'Arcy, in 1914, and reached Lillooet in the spring, the 46 miles estimated in our January issue as having been laid in 1915, being laid in the autumn. The company's

sorbing sufficient heat from the coils, the water forms into vapor and passes through the vapor tube E into chamber F, where it is condensed by the cooling action of water jacket H and passes out of connection M. In case water is forced under pressure through feed pipe K at too great a rate, it is fed back through the 1/2-in. hole in condensing jacket to overflow tube and from thence out through the 3/8-in. overflow pipe, the latter being located so that not more than an inch of water may stand over the top surface of the steam coils C.

The body and tubes of the distiller are made from no. 20 hot rolled copper weighing 28 oz. per sq. ft. There are quite a number of these distillers in service, the Canadian Northern Ry. having adopted it for train lighting storage battery plants. The original design was developed by E. Lindelius, Superintendent, Preston Car & Coach Co., Preston, Ont., to whom we are indebted for the above data.

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TORONTO, CANADA, FEBRUARY, 1916.

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More Evidence of the Return of Canada's Business Prosperity.

Canadian railway earnings continue to show most gratifying results. The remarkable increase of \$6,447,813.21 in Canadian Pacific net earnings for the four months July 1 to Nov. 30, 1915, was referred to in our last issue. The net earnings for December are not available as this is written (Jan. 24) but the gross traffic earnings for December were very satisfactory, viz: \$12,580,000 for 1915, against \$7,321,000 in 1914, an increase for the month of \$5,259,000. Judging by the way the working expenses were decreased in Nov., 1915, a very satisfactory net was no doubt made in December. From Jan. 1 to 14, 1916, the gross traffic earnings were \$3,737,000 against \$2,637,000 for the same period of 1915, an increase of \$1,100,000. Of course the great increases made during the autumn movement of the grain crop could not be kept up, but the figures for the first half of January are very satisfactory and encouraging.

The Canadian Northern's full figures to Nov. 30 are available since our last issue. From Oct. 1, when it commenced to issue figures for the entire system, to Nov. 30, the gross earnings increased \$2,407,400, while the expenses only increased \$1,251,200, an increase in net earnings of \$1,156,200. The gross earnings for Dec. 1915, were \$3,435,600, against \$1,809,600 for Dec. 1914, an increase of \$1,626,000. For the first two weeks of Jan. 1916, the gross receipts were \$1,010,400, against \$665,000 for the same period in 1915, an increase of \$345,000, and from Oct. 1, 1915, to Jan. 14, 1916, the gross receipts were \$11,659,700, against \$7,259,400 in the same period of 1914-1915, an increase of \$4,400,300.

The Grand Trunk System traffic earnings for Dec. 1915 were \$4,819,124, against \$4,807,967 in Dec., 1914, an increase of \$731,157. For the first two weeks of Jan. 1916, the traffic earnings were \$1,847,003, against \$1,523,267 for the same period in 1915, an increase of \$323,736.

The Grand Trunk Pacific earnings, which are given out in sterling figures, increased from July 1, to Dec. 31, 1915, £229,903 over the corresponding period of 1914.

Canada's exports for 12 months ended Oct. 3, 1915, aggregated \$1,147,446,551, against \$1,086,568,316 for same period 1913-1914, \$1,127,282,699 for 1912-1913, and \$991,786,674 for 1911-1912.

Canada's revenues for the 9 months ended Dec. 31, 1915, were \$122,000,000, against \$99,600,000 for the corresponding period of 1914, an increase of \$22,400,000.

The building permits granted in 25 cities in the Provinces of Quebec, Ontario, Manitoba and British Columbia in Dec., 1915, were for \$3,388,714, against \$1,936,529 in Dec., 1914, an increase of 74.9%.

Toronto Telegram, Jan. 21:—Four hundred freight trains were handled on the G.T.R.'s Ontario Division in the past 24 hours, and the C.P.R. handled about 275. This is the largest movement of freight in 10 years.

At the Canadian Bank of Commerce annual meeting in Toronto recently, the President, Sir Edmund Walker, gave the following figures to show the astonishing change in Canada's international position in the last three years:—

	Imports.	Exports.
1913	\$686,515,536	\$377,068,355
1914	635,383,222	455,437,224
1915	497,376,961	461,442,509
6 months	228,335,678	273,377,082
	Excess Imports.	Excess Exports.
1913	\$309,447,181	.....
1914	179,945,998	.....
1915	35,934,452	.....
6 months .....	.....	\$45,041,404

Canada's production from the farms, forests and mines increased enormously in 1915 over 1914. The following figures were compiled by The Monetary Times:—

	1915.	1914.
Field crops	\$ 788,919,535	\$638,580,300
Forests	175,000,000	176,672,000
Mines	128,000,000	128,863,075
Fisheries	31,250,000	31,264,631
	\$1,123,169,535	\$975,380,006

Customs receipts throughout Canada for 1915 show in the aggregate a large increase over 1914. Following are the figures for the principal ports, also those for the whole country.

	1915.	1914.
Montreal	\$21,740,872	\$19,644,444
Toronto	18,630,695	16,508,763
Winnipeg	5,874,707	6,536,617
Vancouver	4,691,111	5,363,862
Hamilton	4,152,640	2,284,007
Windsor	3,843,810	2,094,635
St. John	2,542,059	1,547,318
Halifax	2,488,106	2,063,319
Quebec	2,076,146	1,854,847
Ottawa	1,587,556	1,532,759
Victoria	953,811	1,375,235
Calgary	873,224	1,346,281
Edmonton	718,096	1,159,915
Dominion of Canada total.	\$91,907,716	\$81,771,648

Canada's Remarkable Track Laying Record.

Though in view of the war conditions it could not be expected that the great activity which has been displayed in laying new steam railway track in Canada would be kept up during 1915, what was actually accomplished is a splendid showing, in view of the world wide conditions, no less than 714.26 miles of new first track having been laid.

Reports as to the amount of new first track laid in the United States during 1915 vary, the two leading authorities there giving considerably different figures. The Railway Review, Chicago, shows 1,157.79 miles, while the Railway Age Gazette, New York, shows only 933.24 miles. The significance of these figures will be realized when the respective populations of the two countries are considered. Canada's population by the last census taken in 1911 was 7,206,643, while that of the United States by the census of 1910 was 99,451,000.

The Transportation Interests Pre-eminent Position.

It is estimated that the January dividend and interest disbursements in Canada, exclusive of bonds and debentures, were approximately as follows:—

Transportation	\$6,538,656
Public utilities	2,628,317
Industrial	1,624,590
Mines	1,200,405
Banks	557,500
Mortgages and loans	548,606

The above figures show the immensity of transportation compared with other interests.

Progress of Rogers Pass Tunnel Construction, Canadian Pacific Railway.

The following table, for which we are indebted to J. G. Sullivan, M. Can. Soc. C. E., Chief Engineer, C.P.R., Winnipeg, shows the progress made from Dec. 2 to Dec. 30, also the total progress to Dec. 30, 1915:

	Progress.	Total.
EAST END.		
Main heading	723 ft.	12,583 ft.
Main tunnel	689 ft.	8,742 ft.
WEST END.		
Main heading	346 ft.	12,258 ft.
Main tunnel	742 ft.	7,692 ft.
Broke headings Dec. 19.		

Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Alberta & Great Waterways Ry. See Edmonton, Dunvegan and British Columbia Ry.

Canadian Government Railways.—A. R. MACGOWAN, heretofore Division Engineer, Districts 3 and 4, Intercolonial Ry., and Prince Edward Island Ry., Moncton, N.B., has been appointed Principal Assistant Engineer, Canadian Government Railways Office, Moncton, N.B.

C. B. TRITES, heretofore chief clerk, has been appointed Assistant Secretary, Canadian Government Railways Employes Relief and Insurance Association, W. C. PAVER, Secretary, having been granted leave of absence on account of ill health. Office, Moncton, N.B.

C. J. BOURGEOIS has been appointed acting chief clerk, Canadian Government Railways Employes Relief and Insurance Association, vice C. B. Trites, promoted. Office, Moncton, N.B.

See also Intercolonial Ry. and National Transcontinental Ry.

Canadian Northern Ry.—G. N. GOAD, heretofore chief clerk, General Manager's Office, Eastern Lines, has been appointed Inspector of Transportation, Eastern Lines, with such duties as are assigned to him from time to time. Office, Toronto.

F. E. McCORMICK, heretofore chief clerk, local freight department, Brandon, Man., has been appointed City Freight Agent, Winnipeg, vice R. M. Milliken, whose appointment as District Freight Agent, Brandon, was announced in our last issue.

W. WALKER has been appointed Shop Foreman, Winnipeg locomotive house, vice J. N. Duncanson, Assistant Locomotive Foreman, promoted.

W. SHEPHERD has been appointed Locomotive Foreman, Portage la Prairie, Man., vice S. Hicks, whose appointment as Locomotive Foreman, Boston Bar, B.C., was announced in our last issue.

J. N. DUNCANSON, heretofore Assistant Locomotive Foreman, Winnipeg, has been appointed Locomotive Foreman, Dauphin, Man., vice J. W. Skinner, who has been granted extended leave of absence while on active service.

E. BOWER, heretofore chief clerk to District Passenger Agent, Calgary, Alta., has been appointed Travelling Passenger Agent, Saskatoon, Sask.

W. EAGLESON has been appointed Roadmaster, Lucerne, B.C.

H. A. MacKENZIE has been appointed Roadmaster, Blue River, B.C.

C. F. O'CONNOR has been appointed Bridge and Building Master, Pacific Division Office, Kamloops, B.C.

A. ANDERSON has been appointed Roadmaster, Kamloops, B.C.

T. WEBSTER has been appointed Roadmaster, Boston Bar, B.C.

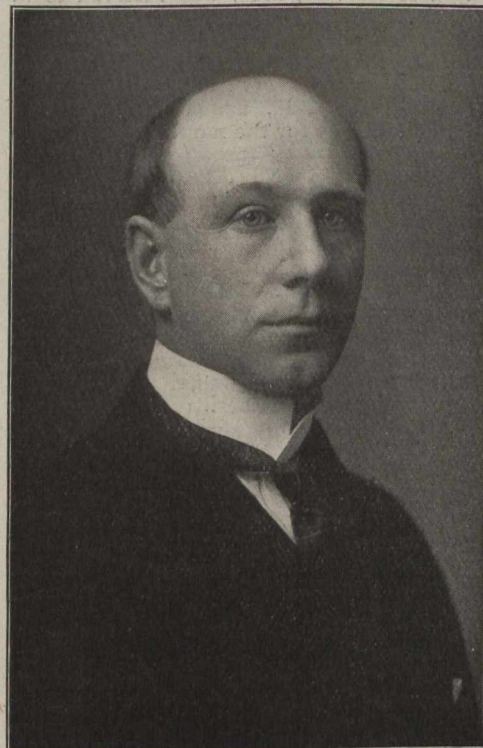
B. T. CHAPPELL, Superintendent, Pacific Division, has had his office removed from Kamloops Jct., B.C., to Vancouver, B.C.

R. B. McINTOSH, heretofore District Freight Agent, Brandon, Man., has been appointed chief clerk in the district freight and passenger office at Vancouver, B.C.

Canadian Pacific Ocean Service, Ltd. The following general agents, Passenger Department, have been transferred from the C.P.R. Steamship Department to Canadian Pacific Ocean Services, Ltd.: W. WEBBER, Montreal; I. E. SUCKLING, Toronto; W. C. CASEY, Winnipeg; J. J. FORSTER, Van-

couver, B.C.; and H. M. MacCALLUM, Chicago, Ill.

G. M. JACKSON, heretofore General Agent, Passenger Department, C.P.R., San



B. T. Chappell,
Superintendent Pacific Division, Canadian
Northern Railway.



G. A. Walton,
General Passenger Agent, Western Lines,
Canadian Pacific Railway.

Francisco, Cal., has been appointed General Agent, Passenger Department, C.P.O.S. Ltd., for Japan and Korea. Office, Yokohama, Japan.

C. E. TAYLOR, heretofore ticket agent, Southern Pacific Co., San Francisco, Cal., has been appointed Passenger Agent, C.P.O.S. Ltd., Yokohama, Japan.

A. J. BLAISDELL, heretofore General Agent, Passenger Department, C.P.R., St. Louis, Mo., has been appointed General Agent, Passenger Department, C.P.O.S. Ltd., for Northern China, including Tientsin and Peking. Office, Shanghai, China.

P. D. SUTHERLAND, heretofore Passenger Agent, C.P.R., Hong Kong, China, has been appointed General Agent, Passenger Department, C.P.O.S. Ltd., for Southern China, Phillipines, Malay Federated States, Java, and India. Office, Hong Kong, China.

T. J. BURNS, heretofore Travelling Passenger Agent, Allan Line, Chicago, Ill., has been appointed Passenger Agent, C.P.O.S. Ltd., Hong Kong, China.

J. R. SHAW, heretofore Passenger Agent, C.P.R., Yokohama, Japan, has been appointed Passenger Agent, C.P.O.S. Ltd., Manila, Phillipine Islands.

Canadian Pacific Ry.—E. W. BEATTY, K.C., Vice President and General Counsel, has been elected a director, succeeding D. McNicoll, resigned.

M. G. MURPHY, heretofore District Passenger Agent, Toronto, has been appointed District Passenger Agent, C.P.R., and Canadian Pacific Ocean Services, Ltd., St. John, N.B., vice W. B. Howard, transferred.

C. C. KIRBY has been appointed Division Engineer, Atlantic Division, vice J. E. Beatty transferred. Office, St. John, N.B.

R. McKILLOP has been appointed Superintendent, District 2, Atlantic Division, vice A. Williams, transferred. Office, Woodstock, N.B.

A. WILLIAMS, heretofore Superintendent, District 2, Atlantic Division, Woodstock, N.B., has been appointed Superintendent, District 1, Atlantic Division, vice V. A. Harshaw, transferred. Office, Brownville Jct., Me.

V. A. HARSHAW, heretofore Superintendent, District 1, Atlantic Division, Brownville Jct., Me., has been appointed Assistant Superintendent, District 3, Eastern Division, vice E. J. Melrose, transferred. Office, Montreal.

A. R. KETTERSON, heretofore in Engineering Department, Western Lines, Winnipeg, has been appointed Assistant Engineer to Assistant Chief Engineer, Eastern Lines, Montreal.

J. W. WANSBROUGH, heretofore chief dispatcher, Toronto, has been appointed Inspector of Transportation, Montreal, vice G. T. Rooke, transferred.

J. BARCLAY is acting Assistant General Storekeeper, Eastern Lines, during the absence of G. E. Hall, on active service in Europe. Office, Montreal.

E. J. MELROSE has been appointed acting Assistant Superintendent, District 1, Eastern Division, vice W. H. Stewart, Assistant Superintendent, loaned to the Imperial Munitions Board, Ottawa.

W. B. HOWARD, heretofore District Passenger Agent, St. John, N.B., has been appointed District Passenger Agent, Toronto, vice M. G. Murphy, transferred.

G. T. COLEMAN, heretofore Car Service and Fuel Agent, Moose Jaw, Sask., has been appointed Car Service Agent, Ontario Division, vice G. T. Rooke, transferred. Office, Toronto.

F. W. COOPER, A.M. Can. Soc. C.E., heretofore Superintendent, District 1, Eastern Division, Farnham, Que., has been appointed Superintendent, District 3, Lake Superior

Division, vice J. H. Boyle, transferred. Office, Schreiber, Ont.

G. A. WALTON, heretofore General Agent, Passenger Department, Chicago, Ill., has been appointed General Passenger Agent, Western Lines, with territory, Field, Kootenay Landing and easterly, vice A. C. Shaw, transferred to other duties at Montreal Office, Winnipeg.

G. H. SMITH, heretofore Division Freight Agent, Manitoba Division, Winnipeg, has been appointed Assistant General Freight Agent, Western Lines. Office, Winnipeg.

H. H. TRIPP, formerly of Edmonton, Alta., has been appointed Resident Engineer, Winnipeg Terminals, vice S. C. Wilcox, who has been appointed a Lieutenant in the 100th Battalion, Winnipeg Grenadiers, for active service.

A. BROWN, heretofore Locomotive Foreman, Fort William, Ont., has been appointed District Master Mechanic, Winnipeg Terminals, vice A. Peers, transferred.

A. T. MCKEAN, heretofore City Freight Agent, Winnipeg, has been appointed Division Freight Agent, Manitoba Division, vice G. H. Smith, promoted. Office, Winnipeg.

A. LEDINGHAM, heretofore Soliciting Freight Agent, Winnipeg, has been appointed City Freight Agent there, vice A. T. McKean, promoted.

W. J. RENNIE, heretofore chief clerk to Assistant Freight Traffic Manager, Western Lines, Winnipeg, has been appointed Soliciting Freight Agent there, vice A. Ledingham, promoted.

A. WALKER has been appointed chief clerk to Assistant Freight Traffic Manager, Western Lines, Winnipeg, vice W. J. Rennie, promoted.

T. FAWCETT, heretofore General Fuel Agent, Western Lines, Winnipeg, has been appointed Assistant General Storekeeper, Western Lines, Winnipeg.

J. M. FRYERS, heretofore Trainmaster, District 3, Saskatchewan Division, Saskatoon, has been appointed Trainmaster, District 3, Manitoba Division, vice J. A. Audrain, transferred. Office, Minnedosa.

J. A. AUDRAIN, heretofore Trainmaster, District 3, Manitoba Division, Minnedosa, has been appointed Trainmaster, District 3, Saskatchewan Division, vice J. M. Fryers, transferred. Office, Saskatoon, Sask.

A. PIERS has been appointed District Master Mechanic, District 2, Saskatchewan Division, vice J. Neill. Office, Moose Jaw.

J. M. MacARTHUR, heretofore Terminal Trainmaster, Calgary, Alta., has been appointed acting Superintendent, District 2, Alberta Division, vice F. Walker, who has been granted indefinite leave of absence owing to illness. Office, Calgary.

J. A. PANTER has been appointed acting Terminal Trainmaster, Calgary, Alta., vice J. M. MacArthur, promoted.

W. J. RENIX, heretofore District Master Mechanic, Calgary, Alta., has been appointed District Master Mechanic, District 1, British Columbia Division, vice L. Fisher, assigned to other duties. Office, Revelstoke.

M. K. WHYTE has been appointed Yardmaster, Revelstoke, B.C., vice T. Hope, enlisted for active service.

The position of Superintending Engineer, British Columbia Lake and River Service, Nelson, B.C., heretofore occupied by D. STEPHENS, has been abolished temporarily. He has been granted leave of absence for a short time, and will probably resume his former position as chief engineer (marine), Okanagan Lake service.

H. A. SPIERS, heretofore Fuel Agent, Vancouver, B.C., has been appointed Assistant Storekeeper there.

T. M. MCKEOWN, heretofore Commissary Agent, Winnipeg, has been appointed Com-

missary Agent, Victoria, B.C., vice W. Bell, enlisted for overseas service.

L. R. HART, heretofore chief clerk, Passenger Department, New York, N.Y., has been appointed General Agent, Passenger Department, Buffalo, N.Y., covering New York State west of and including the Dela-

ger Department, Chicago, Ill., vice G. A. Walton, promoted.

R. S. ELWORTHY has been appointed General Agent, Passenger Department, Minneapolis, Minn., vice T. J. Wall, whose appointment as General Agent, Passenger Department, Chicago, Ill., was announced in our last issue.

F. L. NASON, heretofore City Ticket Agent, San Francisco, Cal., has been appointed General Agent, Passenger Department, there, vice G. M. Jackson, transferred to service of Canadian Pacific Ocean Services, Ltd.

A. G. ALBERTSEN, heretofore Travelling Passenger, San Francisco, Cal., has been appointed City Ticket Agent there, vice F. L. Nason, promoted.

F. J. VILLAIN has been appointed Travelling Passenger Agent, San Francisco, Cal., vice A. G. Albertsen, promoted.

Central Canada Ry. See Edmonton, Dunvegan & British Columbia Ry.

Duluth, South Shore and Atlantic Ry., Mineral Range Rd.—E. R. LEWIS, M.Am. Soc. C.E., Assistant to the General Manager, Duluth, Minn., has been given charge of all matters pertaining to engineering, maintenance of way and structures and federal valuation of these companies.

Eastern British Columbia Ry.—J. M. BOYES, heretofore Locomotive Foreman, C.P.R., Cranbrook, B.C., has been appointed Locomotive Foreman, E.B.C.R., Corbin, B.C., as reported in our last issue.

Edmonton, Dunvegan & British Columbia Ry.—N. F. JUDAH, heretofore in Comptroller's office, C.P.R., Montreal, has been appointed Auditor, E.D. & B.C.R., Alberta & Great Waterways Ry. and Central Canada Ry.

Grand Trunk Ry.—J. B. McLAREN, heretofore Auditor of Freight Accounts, has been appointed Auditor of Revenues in charge of Freight and Passenger Accounts, and his former position, together with that of Auditor of Passenger Accounts, hitherto held by G. B. Filgiano, have been abolished. Office, Montreal.

The position of Superintendent of Time Service, heretofore held by Professor C. H. McLeod, M.Can.Soc.C.E., has been abolished, and all matters pertaining to the time service are now under the jurisdiction of the Manager of Telegraphs, H. HULLATT, Montreal, to whom all correspondence, reports, etc., are addressed.

W. McNAB, heretofore Principal Assistant Engineer, has been appointed Valuation Engineer. Office, Montreal.

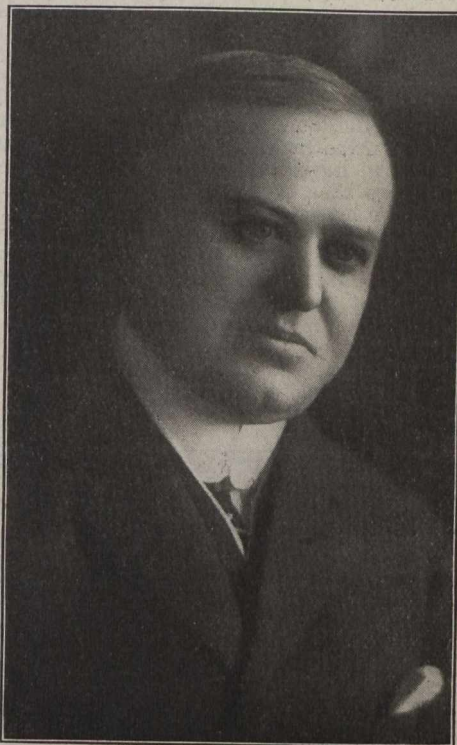
A. CRUMPTON, heretofore Assistant Engineer, Montreal, has been appointed Assistant Valuation Engineer. Office, Montreal.

BARTON WHEELWRIGHT has been appointed acting Signal Engineer, vice R. F. Morkill, Signal Engineer, on active military service. Office, Montreal.

Grand Trunk Pacific Ry.—A. A. TISDALE, heretofore Superintendent, Regina Division, Regina, Sask., has been appointed Assistant to Vice President and General Manager, vice G. W. Caye, resigned to enter G.T.R. service. Office, Winnipeg.

E. McDONALD, heretofore District Baggage Agent, G.T.P.R. and Grand Trunk Pacific Coast Steamship Co., Winnipeg, has been appointed General Baggage Agent, vice J. E. Quick, who retains the position of General Baggage Agent, G.T.R., Toronto. The position of District Baggage Agent has been abolished. Office, Union Station, Winnipeg.

H. McCALL, Superintendent, Winnipeg, Man., to Watrous, Sask., and the Melville-Canora Branch, has had his jurisdiction extended to cover the Regina Division, hitherto



G. W. Caye,
General Purchasing Agent, Grand Trunk
Railway.



A. A. Tisdale,
Assistant to Vice President and General
Manager, Grand Trunk Pacific Railway.

ware, Lackawanna and Western Ry. line from Binghampton to Oswego.

T. J. WALL, heretofore General Agent, Passenger Department, Minneapolis, Minn., has been appointed General Agent, Passen-

under the jurisdiction of A. A. Tisdale, promoted. Office, Melville, Sask.

J. BREWER, heretofore Chief Dispatcher, Regina, Sask., has been appointed Assistant Superintendent, there.

Intercolonial & Prince Edward Island Rys. F. O. CONDON, heretofore Resident Engineer, Intercolonial Ry., Campbellton, N.B., has been appointed Division Engineer, Districts 3 and 4, Intercolonial Ry., and Prince Edward Island Ry., vice A. R. Macgowan, promoted. Office, Moncton, N.B.

The jurisdiction of J. T. HALLISEY, Superintendent, Truro, N.S., has been extended over the Dartmouth-Deans Branch, which has been incorporated with District 3, as the Dartmouth Subdivision.

W. R. CONWAY has been appointed acting wharfinger at St. John, N.B., vice J. McMulkin, resigned.

R. A. BLACK, heretofore Resident Engineer, District 5, National Transcontinental Ry., Edmundston, N.B., has been appointed Resident Engineer, District 2, I.R.C., vice F. O. Condon. Office, Campbellton, N.B.

W. F. SMALLWOOD, heretofore locomotive driver, has been appointed Locomotive Foreman, temporarily, at Newcastle, N.B., a new position.

A. ASTLE, heretofore Roadmaster, Fredericton Subdivision, Fredericton, N.B., has been appointed Roadmaster, Newcastle, N.B. vice A. P. Giles, retired.

S. ALLANACH has been appointed acting Roadmaster, Fredericton Subdivision, Fredericton, N.B., vice A. Astle, transferred.

National Transcontinental Ry.—J. F. FLYNN has been appointed Roadmaster from mileage 63.4, Grant Subdivision, to mileage 132.4, Armstrong Subdivision, vice J. R. Logan. Office, Armstrong, Ont.

H. S. CLARKE has been appointed Resident Engineer, District 5, vice R. A. Black, transferred to I.R.C. service. Office, Edmundston, N.B.

J. REEVES has been transferred from the Transcona repair yard to Redditt, Ont., vice W. Jones.

W. MILLS has been appointed Car Foreman in charge of all work at Transcona yards, Transcona, Man.

W. JONES, heretofore at Redditt, Ont., has been appointed Assistant Foreman in charge of freight car repair yard, Transcona, Man.

New York Central Rd., West Shore Rd.—

W. R. B. BARNET, Assistant General Passenger Agent, lines east of Buffalo, N.Y., having resigned to engage in other business, the following have been appointed:—C. C. HOWARD, Assistant General Passenger Agent, Grand Central Terminal, New York; W. V. LIFSEY, Assistant General Passenger Agent, 1216 Broadway, New York; H. PARRY, Assistant General Passenger Agent, Buffalo, N.Y.

Pere Marquette Rd.—R. C. VANDERCOOK has been appointed Manager of Public Relations Department, Detroit, Mich.

JOHN DUNPHY has been appointed Assistant General Passenger Agent, Detroit, Mich.

Prince Edward Island Ry.—See Intercolonial Ry.

St. John and Quebec Ry.—F. W. SUMNER, Moncton, N.B., is reported to have been elected President, vice I. R. Todd, resigned.

Toronto, Hamilton & Buffalo Ry.—A. E. LOCK, heretofore Car Accountant, has been appointed Superintendent of Car Service. Office, Hamilton, Ont.

Wabash Ry.—J. D. McNAMARA, heretofore General Passenger Agent, has been appointed Passenger Traffic Manager. Office, Railway Exchange Bldg., St. Louis, Mo.

British Columbia Freight Rates and Interswitching Charges.

With the advent of the Canadian Northern Ry. as a transcontinental line, through the recent opening of the Canadian Northern Pacific Ry., a new freight traffic situation has been created in Vancouver. As the new line reaches the Pacific Coast via Edmonton, a considerable stretch of territory is brought much nearer Vancouver by the C.N.R. lines, than it is by the Canadian Pacific, and some portions of the territory in Alberta and Saskatchewan, which heretofore have been regarded as being within the area of trade for eastern wholesalers, are brought within that of the Pacific Coast. The freight rates on the Canadian Northern Pacific, are under the control of the British Columbia Government, that being part of the contract under which that Government guaranteed the bonds for the construction of the line. Part of the area covered by the Canadian Northern lines, in Alberta and Saskatchewan, affected by the present so called "rate war," is served by



C. H. Towle,
Assistant Superintendent, District 1, Atlantic
Division, Canadian Pacific Railway.

the Canadian Northern Western Ry., and the Canadian Northern Saskatchewan Ry., the freight rates on which lines are under the control of the Alberta and Saskatchewan Governments respectively, under the terms of the bond guarantee agreements. The freight rates from the territory served by these lines, owing to the shorter mileage to Vancouver, are lower than those of the C.P.R., but inasmuch as the Canadian Northern is at present without terminal facilities, industrial spurs, etc., in Vancouver, it is dependent upon the C.P.R. for the distribution of its freight there, and the switching of cars from factories, etc., for which services the C.P.R. makes its charge. The C.P.R. routes for freight, interswitching, etc., are subject to the control of the Board of Railway Commissioners, and the tariffs at present in effect have been so approved. The Canadian Northern alleges that the C.P.R. is charging it much higher rates for switching than the tariff calls for,

while the C.P.R. states that it is not called upon to do any of these services for the Canadian Northern, that it can fix its own charges as against a railway whose rates are fixed by the Provincial Government, and that the Provincial Government cannot exercise any control over its rates. When the Canadian Northern appealed to the Dominion Government in 1914 for aid, the question of the Dominion control of freight rates was raised, but owing to protests made by the three Provinces interested a section of the act provides that the Canadian Northern Pacific Ry., the Canadian Northern Western Ry., and the Canadian Northern Saskatchewan Ry., may be brought under the control of the Board of Railway Commissioners, so far as freight rates are concerned, by proclamation of the Governor General, after the completion of the lines. It is said in Vancouver trade circles that steps are being taken to have the Dominion control extended over the lines in question.

Canadian Northern officers in Winnipeg are reported to have stated, on Jan. 5, that most of the freight shipped in and out of Vancouver over their line is not competitive, and the extra charges for interswitching charged by the C.P.R. really hit the manufacturer and the wholesaler. On competitive traffic the Canadian Northern has absorbed the cost of teaming freight between warehouses of shippers and consignees and its freight terminals for its own protection.

White Pass and Yukon Railway Company's Annual Meeting.

At the annual meeting in London, Eng., Dec. 6. C. C. Macrae, Chairman of the company, in moving the adoption of the report for the year, stated that all their anticipations as to the beneficial results which they were led to believe would follow the purchase of the Northern Navigation and Northern Commercial companies, were entirely upset by the war, with the result that they had to go to the debenture holders and ask their forbearance and their consent to the funding of their coupons for the past year. He pointed out that there was an item on the credit side of the profit and loss account, for interest on securities of local companies, mentioned as paid and accrued, but they had recently become acquainted with the fact that none of this amount had been paid, and this had brought about a situation of the utmost possible difficulty, and they were compelled to go to the debenture holders again, but up to the time of his speaking they had not been able to arrive at what might be called a formulated proposal to submit. He disclaimed responsibility for the state of things as shown by the statement, and offered to resign from the chairmanship if thought desirable. The report was adopted without discussion.

Canadian Wheat at Duluth.—A Duluth, Minn., press dispatch, Jan. 13.—"Canadian wheat is arriving in Duluth at the rate of about 50 cars daily. With the elevators at the Canadian head of the lakes congested, Duluth is the only outlet. The elevators here were completely emptied at the close of navigation and are in good shape to care for the Canadian wheat, despite heavy United States receipts. Some all rail shipments from Duluth to the east are being made, but the influx of Canadian wheat has had the effect of making vessel rates for spring very firm. Offers of 1/4c from Duluth to Buffalo for spring tonnage have been refused here. There is said to be some tonnage on the market here at 5c."

Passenger Rate Meetings at Buffalo.

The Niagara Frontier Summer Rate Committee and the Great Lakes & St. Lawrence River Rate Committee met at Buffalo in January. The rate representatives met on Jan. 4 and 5 for compilation of fares, etc., and the annual meetings of the two committees were held on Jan. 6, the proceedings consisting of the usual routine. C. C. Howard, A.G.A., New York Central Rd., New York, was elected Chairman of the Niagara Frontier Summer Rate Committee for this year, and L. G. Lewis, G.P. & T.A., Detroit & Cleveland Navigation Co., Detroit, Mich., was elected Chairman of the Great Lakes & St. Lawrence River Rate Committee. Jas. Morrison, A.G.P.A., Eastern Lines, Canadian Northern Ry., Montreal, is permanent Secretary of both committees.

R. L. Fairbairn, G.P.A., Eastern Lines, Canadian Northern Ry., Toronto, retiring Chairman of the Niagara Frontier Summer Rate Committee, was presented with a gavel, the head of which is a piece of one of the break-up timbers used in constructing the Mount Royal tunnel, Montreal. Embedded in the head of the gavel at both ends are pieces of the drill which first punched a hole through the tunnel, connecting the two sections which had been worked from opposite sides of the mountain. The handle is a piece of mahogany from the C.N.R.'s sleeping car Brockville, which made its first trip on the train inaugurating the C.N.R.'s through Toronto-Winnipeg service on Nov. 1 and on which car Mr. Fairbairn travelled.

The International Water Lines Passenger Association held its meeting Jan. 5, the chair being taken by the Vice President, F. B. Hibbard, G.P.A., Hudson River Day Line, New York, in the absence of the President, W. P. Hinton, T.M., Grand Trunk Pacific Ry. A gavel for the retiring President was presented, made from cabin fittings of the C.P.R. steamship Princess Margaret, which was built in Scotland in 1914 for service on the British Columbia coast and Puget Sound but was taken over by the British Government on completion.

The question of the redemption of passage tickets, or unused portions of them, on which berth reservations were made, was discussed and it was decided that it was largely a matter for the interested lines to agree upon among themselves. After the meeting a number of interested lines agreed that the following rule be placed in effect and tried during this year, viz.:—"That a charge (amount left to each line) be made on all reservations not released at least 48 hours in advance of sailing and which were not resold."

The question of a terminal charge of 10c. to be made in checking baggage, to be in no way connected with the charge for transportation, the additional expense incurred by the passenger to be covered by the acceptance of unlimited liability by the carrier, and also the proposal that the practice

of placing prepaid orders by telegram or telephone be discontinued, were removed from the docket, as it appeared that they had not been placed in effect by other territorial associations or individual railway lines.

It was decided to prohibit the use of imitation passage tickets, or the use of anything having semblance thereto, for advertising, theatrical, school or similar purposes foreign to legitimate use of regular tickets.

It was reported that advice had been received from the Commissioner of Internal Revenue, Washington, D.C., that the War Revenue Tax Law enacted Dec. 17, 1915, is continued in full force and effect up to Dec. 31, 1916.

It was decided that reservations for out of town people, not ticket agents, should be accompanied by deposit.

The following officers were elected for this year:—President, F. B. Hibbard, G.P.A., Hudson River Day Line, New York; Vice President, E. W. Holton, G.P.A., Northern Navigation Co., Sarnia, Ont.; Executive Committee, W. F. Wasley, Muskoka Lakes Navigation and Hotel Co., Gravenhurst, Ont.; J. Berolzheimer, Chicago, Duluth and Georgian Bay Transit Co., Chicago, Ill.; P. Robbins, Goodrich Transit Co., Chicago, Ill. The permanent Secretary is M. R. Nelson, Northern Steamship Co., New York, who was elected in 1910.

It was decided to hold the next meetings of the three associations at Quebec, Que., in Jan., 1917.

Official Freight Classification Ratings in United States.

The Interstate Commerce Commission gave a decision at Washington, D.C., Dec. 14, 1915, which is summarized as follows:

Upon consideration of objections to proposed changes in classification ratings on certain commodities named in supplement 9 to official classification 42, and certain other tariffs, and of the facts, circumstances, and conditions shown of record in relation thereto; held:

Proposed higher ratings on beer, beer tonic, ale, and porter in carloads and less than carloads; on nonalcoholic beverages in carloads and less than carloads; on tobacco cuttings or scraps and tobacco siftings or sweepings in less than carloads; on plug or twist tobacco in carloads and less than carloads; on grain and grain products in less than carloads; on animal, poultry, and pigeon feed, not medicated, in less than carloads; and on rags, waste paper, and other paper makers' fibres in less than carloads, not justified.

Proposed higher ratings on beer barrels and certain other cooperage, both new and old, in carloads and less than carloads; and on old bottles in carloads and less than carloads, and old bottle carriers in carloads, justified.

Proposed establishment of carload and less-than-carload ratings on leaf tobacco in

lieu of any-quantity rating not justified.

Proposed increased estimated weights of flour in barrels and half barrels justified.

Michigan Central Railroad and London and Port Stanley Railway Traffic Arrangements.

The agreement made between the Michigan Central Rd. and the London and Port Stanley Ry. respecting the former's entrance into London, Ont., is dated Dec. 23, 1915. Under its terms the M.C.R. tracks on its terminal property in London, purchased lately from the London and South Eastern Ry. Co., but formerly leased, are to be electrified, and certain connecting tracks at St. Thomas are to be built and electrified for the purpose of facilitating the exchange of traffic at these points. The commissioners operating the L. and P.S.R. will haul between St. Thomas and London all carload freight coming from or going to the M.C.R. at London by its electric locomotives at the following rates: In trainloads of not less than 12 cars, \$3 per loaded car and \$2 per empty car; in trainloads of less than 12 cars, \$4 for each car, and \$5 if the movement is of a single car, provided that if the M.C.R. has ready and placed for movement at one time more than 12 cars the rate shall be \$3 per loaded car and \$2 per empty car. The minimum payment in any calendar year for the hauling of freight cars shall be \$25,000. All passenger traffic between London and St. Thomas is to be handled by the commission and through tickets are to be sold. The agreement is to run for 21 years, which term is to be extended to 30 years if the necessary legislation is obtained. The rates for the services performed by the commission are subject to revision at the end of each five years.

We are officially advised that the commission's staff has started work on the electrification of the M.C.R. yards at St. Thomas and London, and on the connections with the L. and P.S.R.

A St. Thomas press report, Jan. 11, states that the city council there is withholding its sanction to the laying of electrified sidings between the L. and P.S. Ry., and the M. C. Rd., on the ground of the increased danger to traffic. Sir Adam Beck, Chairman, London Railway Commission, who attended the council meeting to support the application, stated that the Board of Railway Commissioners would be asked to authorize the making of the crossings.

Canadian Pacific Ry. President's Greetings.—Sir Thos. G. Shaughnessy telegraphed from Montreal, Dec. 31, to all officers and employes: "You have my very best wishes for the new year." Among the replies received was the following:—"Greetings to yourself and family from the snow shovelers at the Chateau Lake Louise, the highest residential point in Canada. May your happiness be as great as we are high."

Grain of the 1915 Crop Moved from the Prairie Provinces by the Railways.

For the following statement showing the number of cars and quantities in bushels of each kind of grain carried by the different railways from Sept. 1, 1915, to Jan. 7, 1916, we are indebted to the Trade and Commerce Department.

RAILWAY	WHEAT		OATS		BARLEY		FLAX		RYE		SCREENINGS		TOTALS	
	Cars	Bushels	Cars	Bushels	Cars	Bushels	Cars	Bushels	Cars	Bushels	Cars	Bushels	Cars	Bushels
Canadian Pacific.....	93,194	111,832,800	10,577	21,682,850	2,719	3,670,650	945	1,086,750	47	47,000	103	103,000	107,585	138,423,050
Canadian Northern.....	42,363	50,835,600	7,425	15,221,250	2,155	2,909,250	334	384,100	4	4,000	21	21,000	52,302	69,375,200
Grand Trunk Pacific.....	21,630	25,956,000	4,035	8,271,750	368	496,800	169	194,300	5	5,000	.....	.....	26,207	34,923,850
Great Northern.....	2,329	2,794,800	75	153,750	171	230,850	18	20,700	27	27,000	.....	.....	2,620	3,227,100
Total.....	159,516	191,419,200	22,112	45,329,600	5,413	7,307,550	1,466	1,685,850	83	83,000	124	124,000	188,714	245,949,200

Electric Railway Department

Passenger Cars for Lake Erie and Northern Railway.

The Lake Erie & Northern Ry., which is being built from Galt to Port Dover, Ont., and which has been leased to the Canadian Pacific Ry. for 999 years, is starting out with an equipment of eight full vestibule inter-urban passenger cars. The design includes the use of the latest type of composite framing, as generally used in steam railway service, and embodies novel features representing in many respects a noteworthy advance in practice. Special attention was accorded to the importance of having the general scheme of design conform to the latest practice of steam railways, and yet not to include any unnecessary weight of material. The principal dimensions are as follows:

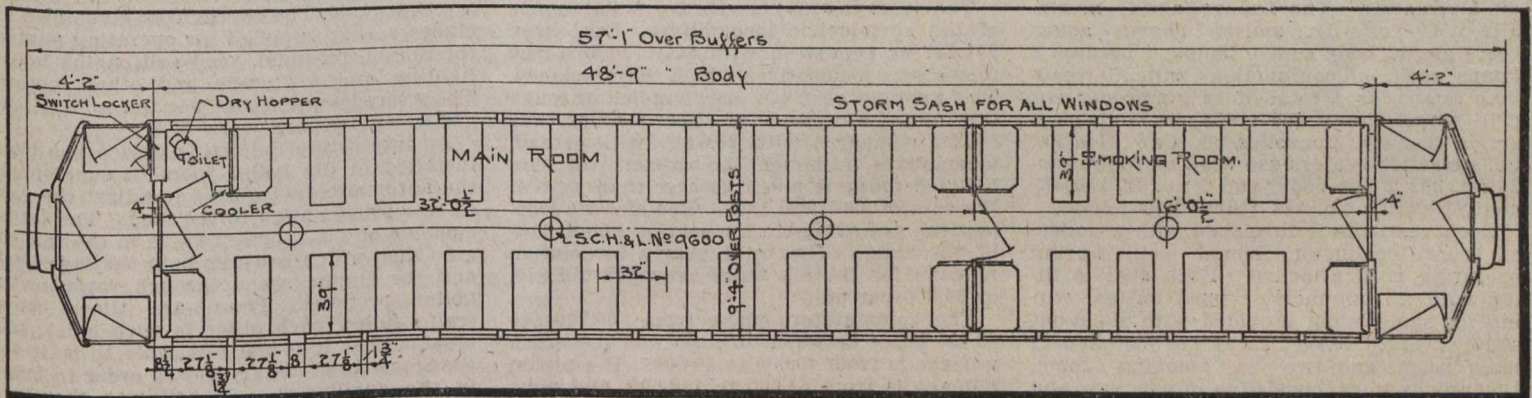
Length over buffers (free)	59 ft. 7 ins.
Length over body corner posts	48 ft. 9 ins.
Length of main room	32 ft. 0 1/2 ins.
Length of smoking room	16 ft. 0 1/2 ins.
Length between truck centres	36 ft. 9 ins.
Length between crossties	8 ft. 0 ins.
Length between body corner post and vestibule end post	4 ft. 2 ins.
Width over side posts	9 ft. 4 ins.
Width between reversible seats	3 ft. 3 ins.
Width between window posts	2 ft. 3 3/8 ins.
Width of aisle	2 ft. 1 in.

plates, and the steel corner posts which are formed from 3 x 3 in. x 1/2 in. angles. The end construction is tied to the side frame so as to form an integral part of same, and is further reinforced by a steel end sill plate 3 ins. thick by 12 ins. wide.

The body bolsters are of the unit built-up type with 3-16 in. thick plate steel diaphragms, reinforced with 2 1/2 x 2 1/2 x 5-16 in. rolled steel angles and 3/8 in. x 15 ins top and 5/8 in. x 15 ins. bottom cover plates. Floor supports of 4 in. rolled steel channels are spaced suitably for carrying the equipment.

Wood mailing strips for the reception of deafening, insulation and flooring are securely attached to the centre and side construction. Flooring is formed from 13-16 in. thick by 3 1/2 in. face tongued and grooved Georgia pine, laid in two thicknesses, with a layer of building paper between. The lower flooring is placed diagonally, and the top flooring is laid lengthwise, and so arranged that the portion located between the seat ends forming the aisle, can be taken up and renewed with-

trailer cars to motor car service by simply installing the necessary wiring and equipment. The upper glass portion of vestibule side doors is movable, and the doors themselves are set out nearly flush with the side of the car. All vestibule sash are stationary and glazed with 1/4 in. thick polished plate glass. Trap doors are located as shown on floor plan and actuated by coil spring balances connected to a system of levers. The vestibule side doors are arranged to open behind the trap door, the latter being provided with a suitable grab iron attached to its lower surface and forming a means of support for passengers entering the car. The vestibule steps are provided with steel sides, wooden treads and composition tread plates. Vestibule floor is formed from two layers of 13-16 in. x 3 1/2 in. face, tongued and grooved Georgia pine, with a layer of felt paper placed between. A motorman's mirror is installed at diagonal corners on vestibule corner post, and suitable marker lamp brackets, are let in flush with face of post at all four corners of car.



Floor Plan, Lake Erie and Northern Railway Cars.

Height—rail to top of roof	12 ft. 11 1/2 ins.
Height—rail to underside of side sill	3 ft. 6 1/2 ins.
Centre to Centre of seats	2 ft. 8 ins.
Seating capacity	70
Size of axles	8 x 9 ins., journal.
Diameter of wheels	36 ins.
Weight of motors	3,100 lbs. each.

The cars are of the monitor deck type of construction, with square deck sash and gothics, having side sash of the lifting type. Single body sash are provided in conjunction with a set of storm sashes for use during the winter only. Vestibule steps are fitted with three risers, and trap doors extend under the vestibule side doors for use with high station platforms if necessary.

The centre construction of the underframe is composed of two 8-in. steel channels 15 1/2 ins. apart, back to back and forming a box girder with top plate 1/4 in. thick and bottom plate 3/8 in. thick, both 20 ins. in width. This member absorbs all buffing and pulling strains, the draft rigging and spring buffing mechanism being rivetted directly to same. The entire load of the body is carried by the side girder, which is transmitted to the centre plates through single body bolsters. The 1/2 in. x 36 in. side girder plate is stiffened at the lower edge by a tension member, consisting of a 3 x 5 in. x 3/8 in. rolled steel angles, and at the upper edge a suitable steel belt rail bar acts as a compression member. Additional flange area is provided by the usual bent angle side post

out interfering with the remainder of the flooring or the seats. No trap doors are provided over the motors.

The principal longitudinal framing members are of long leaf southern pine and full length of body, all other framing is of ash. The side framing is tied vertically between side plate and side sill by 1/2 in. diameter steel rods. The whole of the side framing is solid blocked on the exterior with soft pine 7/8 in. thick and surfaced to receive the sheathing, the latter being of poplar, tongued and grooved, with bevelled edges on the outside. The wooden roof framing is supplemented with steel car line over each wide pier, and so arranged that ample support is provided for pantagraph bases at each end of car. No. 10 cotton duck, laid in white lead and linseed oil, is stretched over the roof boards and tacked in place, forming a waterproof covering.

Three stem type steel spring buffers are arranged to work in unison with Tomlinson no. 12 Master Car Builder's design of car coupler, the latter being located 34 1/2 ins. above rail when car is light.

Vestibules are designed to conform with standard steam railway car practice, the canvas diaphragms only being omitted, and a swing door provided at the end opening, in order that the entire vestibule may be used for a motorman's cab on the motor cars, making it possible to convert any

Railway company's standard design of metal pilot is provided, one at each end of the car, supported from platform framing. Two 12 in. foot gongs are located, one at each end of car underneath platform floor, for use of motorman. Westinghouse air brakes are furnished and fitted up to work in unison with an independent hand brake, the latter being operated by suitable lever in each vestibule. Three bar window guard rods, placed 3 ins. apart, and made of polished brass steel lined tubing, are provided for each end window, and on each main room and four in smoking room.

A lavatory is located, as shown on plan, side of swing door in body. Ten automatic ventilators are provided, six being placed in being equipped with dry hopper. A water cooler alcove is provided in corner of saloon partition. Instead of the usual metal cooler, an inverted glass water bottle scheme has been developed for these cars, at the suggestion of the railway company's general manager, Martin N. Todd. A suitable receptacle with proper tap and glass holder is installed underneath, through which water can be drawn as required.

The interior finish is carried out as follows:—Vestibule, plain mahogany; main room, plain mahogany, with inlay stripes; smoking room, plain quartered oak; ceiling, three-ply poplar veneer. A modified type of beam ceiling finish is developed for the main

room top deck in conjunction with the usual style of lower deck.

Window curtains are of pantasote, pattern silk 4-2, color 77, mounted on 1 in. diameter all-metal rollers and fitted at the bottom with spring-pinch fixtures. Sash locks are of polished bronze. All of the cars, both passenger and trailer, are provided with 27 low back walkover seats and eight stationary seats at bulkhead and end finish, all are upholstered in pantasote and each of the walkover seats is fitted with the usual corner hand grab.

The cars are wired for lights, trolley heaters, headlights and air brake equipment, same being executed in steel conduit, with the usual outlets and junction boxes. The lighting fixtures are as follows:—3 Safety Car Heating & Lighting Co.'s no. 9600, 3 lamps per fixture, main room; 1 Safety Car Heating & Lighting Co.'s no. 9600, 3 lamps per fixture, smoking room. Supplementing the above, a number of Crouse-Hinds type J.R.R.H. hoods, with Crouse-Hinds pendants no. 8294, and shade mounted type J.R.R. conulet body are located along the deck sill. Each vestibule is provided with one Crouse-Hinds 3 light vestibule lamp equipment, consisting of type K.R.Y.A. reflector holder, S.H. 25 reflector and norbitt receptacle C-227. Furthermore, there are four bracket lamps on each side of main room, two each side of smoking room and one in the lavatory. Lighting control in vestibules is carried out by the use of a two-way switch so that the fixtures can be thrown on and off alternately. The line voltage is nominally 1,500 volts d.c., and as shown above there are 12 body centre lamps, 4 fixtures 3 lamps each, in conjunction with 3 vestibule lamps, or a total of 15 lamps per circuit, which allows 100 volts per lamp on a series basis. Consolidated Car Heating Co.'s electric heaters are used as follows:—26 no. 392 T for body, and 2 no. B. 4722 F. control switch no. 313 (three position).

Each vestibule is furnished with a polished bronze conductor's signal bell, having operating cord attached. Each seat is fitted with an annunciator push button, wiring for same being provided with a cut-out switch. Eight basket racks are installed in main room, and two in smoking room. Emergency tools, consisting of axe, saw and sledge are placed in body, accessible for immediate use. Coat and hat hooks are located at each wide pier in body of car. Motorman's steps are secured to body corner post on diagonal corners of car, also grab handles at each door opening as required.

The painting throughout was provided for in the following manner:—Steel work, one coat of red lead; bottom framing and underside of flooring, one coat of red oxide; top of flooring, two coats of paint and oil; exterior of body, builders' standard formula Pullman new body color; lettering and numbering, gold leaf; interior, finished natural (no shellac used), rubbed down to a dull finish; ceilings, gloss finish.

The cars have been built by the Preston Car & Coach Co., Ltd., Preston, Ont.

The Canadian Westinghouse Co. has supplied six 1,500-volt quadruple car equipments, equipment for two trailer cars, and new universal air brakes for both motor and trailer cars. Each of the six 1,500-volt motor car equipments will consist of four 85 h.p. ventilated type motors and AB unit switch type of control. Ordinary wheel trolleys will be used at first, at least, but the cars are so arranged that pantagraph trolleys can be installed in place of the wheel trolleys, or as auxiliaries. The trailers will be equipped with control apparatus, so that a train may be operated from any platform without switching the cars.

The trucks weigh 12,800 lbs. each, or a total of 25,600 lbs. per car. The air brake equipment weighs 2,800 lbs., including the compressor. The electrical equipment in-

cluding control and wiring, weighs 17,000 lbs., and the bodies complete weigh 34,725 lbs., which gives a total car weight without passengers of 80,125 lbs.

St. Clair Tunnel Electrification Operating Data.

The Grand Trunk Ry. tunnel under the St. Clair River between Sarnia, Ont., and Port Huron, Mich., was electrified in 1908. The electrification was fully described in Canadian Railway and Marine World, Dec., 1908.

The system is single phase, 3,300 volts, six 66 ton Westinghouse locomotives being used. Two coupled together haul 1,000 ton trains up the 2% grades encountered in the tunnel at 10 m.p.h. Electric operation has made it possible to handle fully one third more trains than was possible with steam operation, and has eliminated danger from gas.

Through Walter D. Hall, Superintendent of the tunnel, information regarding the results of six years of electrical operation of the tunnel has been made available. He states that the steam locomotive men who, after a few weeks of training, were put in charge of the locomotives are still operating them and, with two exceptions the same firemen, now called assistants, are with them. Not a passenger or member of the yard crew has been injured by electric shock and but two casualties have occurred to workmen in the electric bay of the shops.

The average cost per year for maintenance of the six electric locomotives has been \$11,131 as compared with \$21,173 for the four steam locomotives which they replaced. The average cost per car handled through the tunnel, a distance of about 5 miles, was 17.22c. compared with 26.64c. with steam locomotives, although the capacity of cars handled today is much greater than that of the cars of 1907 and 1908. The electric locomotives are available for service about 90% of the time. The total yearly locomotive mileage for the six units averaged 208,810, or 34,800 per unit.

The commutators make from 60,000 to 99,480 miles between turnings and the brush mileage is from 40,000 to 60,000. The pinion mileage is from 64,000 to 118,000, and none of the gears have worn out in 254,000 miles of service.

Formerly the greatest mechanical expense was due to flange wear, the average mileage between tire turnings being 25,000. Since the installation of electro-pneumatic flange oilers, the invention of Mr. Hall, some tires have already made 184,000 miles since last turning, and are still in service. Tires which formerly made 12,000 miles now reach 33,000 between turnings.

The few train delays which have occurred were due mostly to insulator failures or flashovers caused by the steam locomotive exhaust. At first some short circuits were caused by birds which alighted on the arcing tips of lightning arresters, but this cause of trouble was removed by installing porcelain perches over the arcing tips. Such strain and special insulator failures as occurred were apparently due to expansion under the effect of temperature changes. Strain insulator trouble has been overcome by the use of fibre "shrouds" which protect from rain and steam locomotive gases. The tunnel insulator design was also improved by increasing the amount of insulation between wire and ground and making broken insulators more readily replaceable. A steel contact wire was also placed below the copper wire to reduce the rate of wear.

The wood section breakers gave some trouble due to warping. These have been removed and an overlapping arrangement of the contact wires has been substituted.

The wire hangers of ¼ in. pipe proved satisfactory except where subjected to steam locomotive gases in the yard. In such places ½ in. x 1 in. galvanized or sherardized steel band has been used when hangers needed replacing. A special hanger or universal trolley wire clamp was devised by Mr. Hall for use in supporting the iron contact wire. This consists of two grooved plates, held together by one carriage bolt with provision for attaching a band iron hanger by means of which the clamp with attached wires can be supported from messenger wire or insulator.

The average cost of maintenance per mile per year of the 12 miles of overhead construction and rail bonding was \$127 for labor and \$72 for materials and tools. The saving in the cost of track maintenance in the tunnel is estimated at \$1,500 a year.

The cost of fuel for the steam locomotives was \$42,729 a year, while that for the electric locomotives was \$17,186, with the electric locomotives handling a greater tonnage. While slack coal is used in the power plant in place of the hard coal formerly used on the locomotives, fewer tons of the former are consumed. The energy cost given also includes energy supplied for operating pumps, for tunnel, terminal, yard and engine house lighting and for crane and other motors. The average watt-hours per ton mile at the generator busbars were 37.6.

An interesting indicating device has been installed in the boiler room to supplement the automatic device used to adjust the rate of fuel consumption to the load. The latter consists of a diaphragm valve in the fan engine line, which controls both the fan speed and the engine speed through variation in boiler pressure. There are times when trains follow each other in such quick succession that it is not advisable to wait for the steam pressure to drop in order to bring in the auxiliaries. A coil was therefore placed around the cable feeding the contact wire and the induced current was utilized for ringing a bell and lighting lamps when a train requiring 800 kw. or more moves out of the yard toward the tunnel. This indicates to the fireman that he should prepare to handle a heavy train up the 2% grade in 3 or 4 minutes. He can then cause the fan and stokers to speed up and be ready in ample time to care for a heavy load.—Electric Railway Journal.

Sandwich, Windsor and Amherstburg Ry.'s Franchise.—The Ontario Legislature is being asked by the Windsor City Council to limit the duration of the franchise of the company as to supplying electric energy for lighting, heating and motive purposes within the city under the bylaw of 1892, and the further bylaw of 1896, by providing that the franchise and all the powers granted thereunder shall cease after Dec. 31, 1922, that being the date of the expiration of the company's franchise for the operation of its electric railway in the city.

The Shawinigan Water and Power Co. is asking the Quebec Legislature to authorize it to acquire and deal with the shares and securities of other companies, to carry on all kinds of manufacturing business, to guarantee the performance of contracts, etc. The company owns, among other things, the Three Rivers Traction Co., and the Shawinigan Terminal Ry.

British Columbia Electric Railway Company's Annual Report.

Following are extracts from the report for the year ended June 30, 1915, presented at the annual meeting in London, Eng., Dec. 30:

Owing to adverse circumstances the result of the year's operations is exceedingly unsatisfactory. The period in question has been one of continuous difficulty and anxiety to the directors and the management in British Columbia. The following charges have been made against the revenue account for the year,—

Provision for renewals maintenance	£167,888	3	7	
Addition to capital amortization fund	2,553	10	7	
Provision for income tax	10,000	0	0	
	£180,441	14	2	
The net revenue for the year, after making the above deductions, amounts to	£180,661	10	4	
Add—				
Balance brought forward from last year	6,884	7	7	
Amount transferred from reserve fund	60,000	0	0	
				£247,545 17 11
Deduct—				
Interest on debentures and debenture stock to June 30, 1915	£132,879	4	6	
Dividends already paid—				
On 5% cumulative perpetual preference stock for year to June 30, 1915	72,000	0	0	
On preferred ordinary stock for year to June 30, 1915, at 2½% per annum	36,000	0	0	
				£240,879 4 6
Leaving a balance to carry forward to next account of	£6,666	13	5	

In order to make the above dividend payments it has been necessary to transfer £60,000 from the reserve fund.

Owing to the war and especially to the resultant paralysis of the shipping trade commercial depression of the most acute severity has prevailed throughout British Columbia, which has brought about an almost complete cessation of expenditure by the Government, municipalities, railways and other large undertakings. This depression has been responsible for a decrease in population, estimated at about 30%, in the districts served by the company. The spending power of the remaining population has been reduced, and a general tendency to economize has resulted. As one result of the depression a very serious difficulty arose at the beginning of 1915, when the company had to meet an extraordinary form of competition from privately owned motor cars which started plying for hire at ordinary tram fares in opposition to the company's cars. The directors have already issued circulars to the stockholders drawing their attention to the fact that these motor cars, which are called jitneys, are allowed by the authorities to compete with the company on a very unfair basis. Strict regulations and limitations as to frequency of service, accommodation and construction of cars are imposed upon the street car service in order to secure the safety, comfort and convenience of the public, whereas these motor cars are allowed to run practically unregulated in these respects, paying no percentage of their receipts to the cities and without contributing to road maintenance. To meet this jitney competition, the company, some months ago, reduced some of its fares as an experiment. The results of this experiment have been disappointing, and other measures are being adopted to cope with the situation. It has been proved that cities of the size of those served by the company cannot support a thoroughly efficient and convenient electric railway service and also an unrestricted service of jitneys. At the present time the tramway service is run to a regular schedule. It serves all districts, including outlying ones, at all hours, regardless of whether such service is profitable or not. The inhabitants will therefore have to

choose whether they will retain the present tramway service, or whether they prefer the unregulated service of jitneys, coupled with a very much curtailed service by the tramways, which would necessarily be restricted to the actual requirements of present business and would also be restricted to routes and districts which were profitable to operate.

The depression and jitney competition combined have rendered it impossible for the company, notwithstanding the most

rigid economy, to operate the street railway system at a profit. In order to meet the new conditions, the most determined efforts have been made by the board and management to curtail expenditure in every direction. The General Manager has been compelled to reduce and carefully reorganize the staff in British Columbia, but the directors are satisfied that the present managing staff is carrying on the business of the company in a thoroughly efficient manner. During the financial year operating and all other expenses of the company have been drastically reduced, but the full effect of these economies is not apparent from the accounts now submitted to the stockholders. On June 30, 1915, the wages agreement between the company and its employes terminated, and the board of arbitration made an award, reducing the rates of wages paid to the employes by about 8½%, which will represent a saving of about £22,000 per annum. The General Manager estimates that the various economies put into force during the current year, together with the reduction in wages, will amount to a reduction in expenditure, as compared with the year ended June 30, 1914, of very nearly £200,000, and he states that this will be accomplished without in any way affecting the efficiency or general upkeep of the plant or the public safety. Unfortunately against this economy there is a decrease in gross earnings during the first four months of the current year of £124,147. For the purpose of comparison, it must be borne in mind that during the corresponding four months of last year the jitneys had not commenced to compete and the full effect of the war had not been felt.

In reviewing the work which has been accomplished during the year, the General Manager reports that the company's plant has never been in a higher state of efficiency, and the company is in an excellent position to profit by an improvement in business conditions when the war is over. £167,888 3s. 7d. has been set aside out of earnings for renewals maintenance. This charge is calculated upon a fixed basis settled some years ago, and the board have determined to adhere to this basis. The charge is a heavy one to provide in times like the present, but provisions of this char-

acter make for a sound financial status. The expenditure on capital account during the past year by the company and its subsidiaries has been \$875,558, against \$4,110,327 for the previous year. Practically the whole of this expenditure relates to works authorised and entered into some time prior to June 30, 1914.

In considering capital expenditure, it is necessary to remember that the population of newly developed countries fluctuates to a considerable extent and that such countries are susceptible to the extremes of prosperity and depression. It is, therefore, impossible for a public utility company always to provide the plant and equipment that is precisely adequate to the requirements of the moment. For many years the company was altogether unable to keep pace with the needs of the communities which it served. The records of the company show that serious risks were then being taken as the company had absolutely no reserve of generating plant, rolling stock and equipment. This gave rise to continual complaints from the authorities and the population, on the ground of overcrowding and breakdowns of service. Moreover, dissatisfaction was expressed because the company was not extending its services to new districts, and that it was failing to carry out the obligations which devolved upon it in view of the special privileges which the company enjoyed in these districts. Careful estimates as to future developments were made by the board, based on the reports of highly qualified experts, and power plants were laid down to meet the needs of the rapidly growing communities; the tramway and lighting systems were laid out on a similar policy. The provision made was very much below the demands of the municipal authorities and others, and due allowance was made for a probable temporary set back, such as occurred in the financial year ended June 30, 1914, and which had actually been anticipated by the board. The directors, however, did not contemplate a European war, and they are confident that, if it had not been for that catastrophe, the provision for the future development of the districts served would not have been more than sufficient for the actual needs. As it is the company will probably have for some time a general equipment considerably in excess of immediate needs, and it may have to face a delay of some years in the development which would, but for the war, have taken place in the Province. At the same time, the company is now undoubtedly in a very strong position to take advantage of the revival in business when it extends from the eastern part of Canada to the western coast.

Without in any way minimising the difficulties which will have to be met in the next few years, the directors feel that they can congratulate themselves and the stockholders upon the strong financial position in which the company stands. It had on June 30 the following liquid assets,—marketable securities (at cost), £105,000; short loans and cash in hand, £418,876; total, £523,876. Since that date the liquid resources have increased. Although there is no immediate prospect of sufficient profits being earned to pay the dividend on the 5% cumulative perpetual preference stock, the directors are of opinion that the company's financial position justifies the payment of the dividend for the current year out of the reserve fund, and a resolution will be submitted to the stockholders to approve of this course being adopted. The directors are unable to hold out any hope that they

will be able to recommend the payment of any dividend on the preferred ordinary or deferred ordinary stocks for the current year.

Shortly after the outbreak of the war the company made substantial contributions to a local patriotic fund, and also gave the military authorities transportation concessions during mobilisation. A canvass was made of the employes and nearly all the office staff and many of the outdoor staff agreed to contribute 1% of their salaries each month to the patriotic fund so long as the war lasted. These contributions amounted up to Oct. 30 to \$12,763. When the last war loan was issued the directors, in view of the large liquid resources, subscribed for £100,000 thereof, which has been paid up in full, and is now held by the company as part of its liquid assets. Although it is somewhat unusual to make a reference to any matter which does not strictly relate to the company's business, the directors desire to make fitting reference to the magnificent response of Canada to the call of the Empire, and to the glorious deeds of the Canadians at the front. The company's staff, both in British Columbia and London, has contributed its quota to the Canadian and British forces, and the directors desire to extend their sympathy to the relatives and friends of those who have given their lives for the country.

In considering the situation the directors realise the severe disappointment of the stockholders at the present results and the hardship imposed on many of them, but they wish to warn them against undue pessimism. The directors remind the stockholders that a young country in the geographical situation of British Columbia feels the effect of the war far more acutely than an old country like England, and, on the other hand, British Columbia, with its magnificent and scarcely developed natural resources, should recover far more rapidly than older countries. In his last report, the General Manager states:—"I wish to record my faith, which is shared by every member of the management, in the future, both of the territory we serve, and of the undertakings we are operating. All we ask is reasonable time in which to readjust the business to changed conditions, requiring patience on the part of the proprietors."

The directors again have pleasure in expressing their appreciation of the loyal and satisfactory service rendered by the management and staff in British Columbia under difficult and disheartening conditions.

A comparative statement, appended to the report, shows the number of passengers carried for the years ended June 30 as follows:—1912, 385,846; 1913, 401,836; 1914, 410,229; 1915, 201,768.

The following expenditures on appropriations of capital account were made for the year ended June 30, 1915:—

Rolling stock.....	\$128,201.10
Permanent and double tracking and sundry improvements.....	139,129.79
Track extensions.....	27,595.40
Lighting and power extensions.....	8,470.03
Steam plant.....	19,161.21
Lands and buildings.....	260,377.74
Electrical machinery.....	89,938.17
Extending light and power system North Vancouver — Rolling stock, meters, transformers, and initial installations.....	252.62
Sundries.....	19,113.58
Transmission lines and railway feeders.....	8,108.57
	<hr/>
	\$701,121.59

The Athabasca Power Co., Ltd., has been incorporated under the Dominion Companies Act, with \$100,000 capital and office at Winnipeg, to carry on business as a light, heat and power company, and to own and operate steam and sailing vessels of every description.

The Jitney Situation in Canada.

The Three Rivers City Council is applying to the Quebec Legislature for power, among other things, to regulate or prohibit autobus traffic within the city limits.

The contract with the Canadian Autobus Co. has been again before the Montreal City Council. At a meeting of the Board of Control the City Attorney was asked to advise the Board definitely as to its power to enforce the carrying out of the franchise agreement.

It was reported recently that there were only 11 jitneys operating on Yonge St., Toronto, against over 700 some six months ago. The residents of North Toronto, on Jan. 14, entered a protest against the regulations, which they contend are driving the jitneys out of business, and they claim that the jitney is a necessity to them.

The Edmonton, Alta., City Council, on Jan. 4, gave a second reading to a new by-law for the regulation of street traffic, and referred it to a committee. The by-law has not been published, and its probable effect on the jitney traffic is not known.

About 150 jitney licenses for 1916 had been issued by the Vancouver City Council to Jan. 8, but it is reported that there are some jitneys being operated for which new licenses have not been taken out. In 1915 459 licenses were issued.

The Victoria, B.C., City Council, on Jan. 4, appointed examiners of jitney drivers for the current year. It is proposed to amend the jitney by-law by providing that a driver once having received the proficiency certificate shall not be required to secure another, so long as he remains continuously a licensed driver.

Concrete Poles for Electric Railways.

The American Electric Railway Association's Committee on Power Distribution presented a report at the convention in San Francisco recently in which it summarized its tests and experience of several years as follows:—

Failure of a pole is always due to stretching of the reinforcing rods on the tension side.

A failure is always preceded by the appearance of hair-line cracks in the concrete on the tension side, at rather frequent and regular intervals from the ground line up.

It is advantageous to use a high grade of reinforcing steel to secure the maximum tensile strength.

Plain round reinforcing rods are essentially as satisfactory as twisted or other rough rods, because in general the rods will elongate before they slip in the concrete.

A large number of small rods is preferable to a smaller number of large rods, as a better distributed reinforcement may be secured for a given amount of steel and a greater bonding contract surface is presented to the concrete.

The reinforcement need not be uniform throughout the length of the pole, but may be stepped off as the top of the pole is approached.

A pole with uniform reinforcement will break at the ground line, while one with tapered reinforcement will break at some point above the ground, depending on the taper of the reinforcement.

A concrete pole has an element of safety in it, as a failure of the pole will not in general allow it to fall to the ground. It is difficult at times to pull over a pole after failure, even though it is inclined at a large angle from the vertical.

The committee presented complete specifications for manufacture of reinforced con-

crete poles, from which the following is condensed:—

Weights—Variations in weights of poles shall not exceed 5% over or under the weights specified in the order.

Reinforcement—The area of reinforcing rods shall constitute practically 3% of the cross-sectional area of the pole at the ground line, and shall be made up of 16 reinforcing bars placed as shown. The modulus of elasticity of the reinforcing steel shall be at least 30,000,000.

Pole Attachments—Holes shall be provided in the pole for steps, cross arms, span wire attachments, bracket arms and other fixtures.

Test—One per cent. of the number of poles (minimum of one pole) may be tested to destruction, and 10% of the total number of poles may be tested for deflection with the specified loading, all at the expense of the contractor. Any additional testing that may be required by the company shall be at its expense. The poles to be tested may be selected by the company.

Rejection.—The failure of 40% of the poles tested to meet the requirements as herein specified shall be sufficient cause for rejection of the entire order.

Regina Municipal Railway Held Liable for Damages.

A Saskatchewan court has, under the Workmen's Compensation Act, awarded \$2,000 damages to the widow of T. F. Cook, an employe of the Regina Municipal Ry. who died as the result of injuries received Oct. 14, 1914, while engaged in the uncoupling of "hauling" cars. A common law action was originally brought, and on May 13, 1915, a jury found for the plaintiff on a number of points, fixing the damages at \$5,000. As the jury found there was contributory negligence on Cook's part it was held there was no liability for damages, and in June, 1915, action was brought under the Workmen's Compensation Act. Judge Newlands gave judgment, Dec. 29, against the city's contention that the action had not been brought immediately, holding that under all the circumstances it had been brought as soon as possible; that the plaintiff's rights were fixed by the act, and there was, therefore, no actual necessity for the setting out of the matter on the statement of claims.

The chief point raised was that the act does not apply to injuries received on a municipal street railway. The judge said: "The last objection is based on subsec. 1 of sec. 3 of the act, which says: 'Railway means a road used by a private person or public company on which,' etc. Mr. Blair claims that a municipality is neither a person nor a public company. He apparently interprets the word 'used' as meaning 'owned or operated.' 'Used' does not mean either of those things, and if I give it its ordinary meaning, which I think I must, the Regina Municipal Railway is certainly used by private persons. As deceased received more than \$2,000 in the three years preceding the injury, I fix the compensation at that amount. Costs in the successful proceedings are awarded the plaintiff, except in so far as they are increased by any part of the proceedings that fail, and the plaintiff ought to bear all costs occasioned by such failure."

Heavy snow caused a suspension of street railway traffic in Brandon, Man., Jan. 10, and it was anticipated that several days would elapse before the streets were sufficiently cleared to permit cars to be again operated.

Electric Locomotives for Lake Erie and Northern Railway.

The L.E. & N.R. has received one of its 60-ton electric locomotives and the second is expected to be shipped by March 31. The principal dimensions are as follows:

Gauge, 4 ft. 8½ ins.
 Distance between truck centres, 17 ft. 8 ins.
 Wheelbase, each truck, 6 ft. 8 ins.
 Wheelbase, total, 24 ft. 4 ins.
 Driving wheels, diameter, 36 ins.
 Journals, 5½ x 10 ins.
 Width over all, 10 ft.
 Height to top of cab, 12 ft. 0½ in.
 Height over all, 12 ft. 10 ins.
 Length, centre to centre of coupler knuckles, 37 ft. 6¼ ins.
 Weight, 120,000 lbs.

voltage across each is 750 volts. Their nominal rating is 75 kw. (100 h.p.).

The frame is of soft steel, cast in a single piece. The projections of the frame, to which the axle caps are bolted, extend over the axle, to a large extent relieving the axle cap bolts of the weight of the motors. At each end there is a large bored opening through which the armature, pole pieces and field coils may be removed. These openings are enclosed by housings, which will carry the bearings and oiling arrangements and are securely bolted to the frame. Tapped holes are provided in each housing

preventing vibration and chafing, and are protected from abrasion by metal coil shields.

The commutating poles are of steel and are bolted to finished seats. The coils are wound, insulated and prevented from vibrating in substantially the same manner as the main field coils.

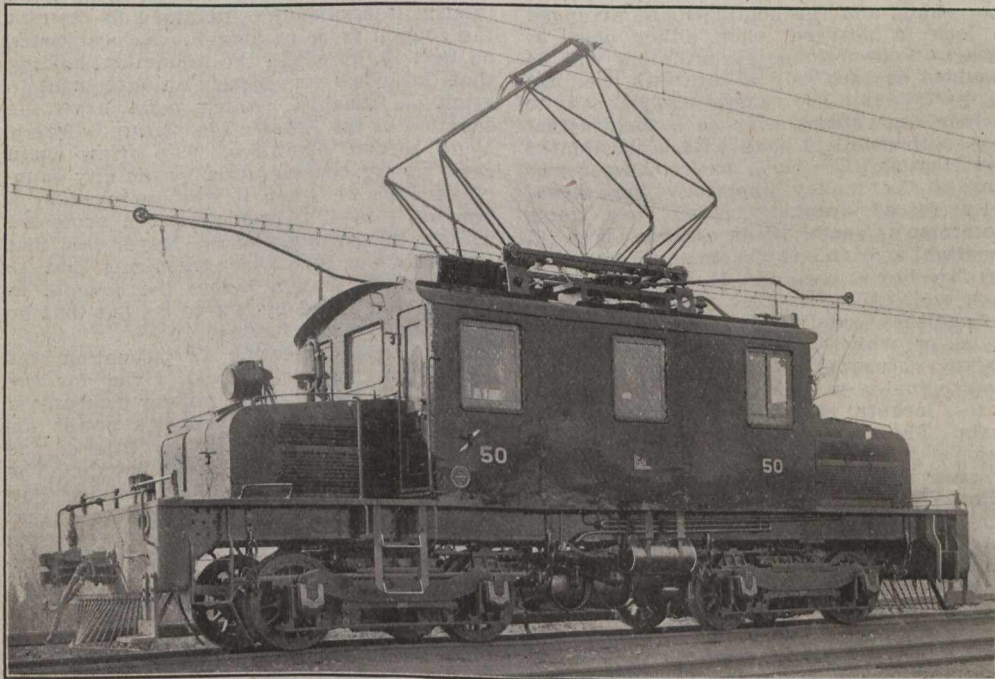
The brushholder is readily accessible for adjustment, cleaning and removal of carbons. Each holder is supported by two insulated pins, over which are placed porcelain bushings, which give a large creepage distance between the holder and the motor frame. The holders are arranged for radial adjustment to allow for wear of the commutator. The proper brush tension is provided by an adjustable spiral spring. A flexible shunt protects the springs for excessive current.

Both armature and axle bearings are arranged for oil and waste lubrication. Large waste pockets are provided having an opening into the low pressure side of the bearings. Separate oil reservoirs permit the fresh oil to be fed and filtered up through the waste to the bearing. The depth of oil in the reservoir may be easily gauged, so that the most economical height may be maintained. Oil guards and wiper rings prevent the oil from reaching the inside of the motor.

Two separate field windings are used on the main poles. By connecting the two field windings in series during acceleration, a relatively high tractive effort at low speed is secured with a small current. After all the resistance has been cut out, one of the field windings is cut out reducing the total active field turns. This gives a higher speed at any given current. While the full field connection is intended primarily for acceleration, it may be used to some extent for slow-speed running.

The motors have a unique system of ventilation. While air for cooling is normally provided by a motor driven blower, each motor has a fan at one end of the armature which will provide sufficient ventilation to operate the locomotive at three-quarter capacity in case of accident to the blower.

The control equipment used on the locomotives is HB electro pneumatic and is practically the same as the high voltage



These locomotives are of the 8-wheeled, double-truck type, so equipped that they can be used in passenger, freight or switching service. They will operate on 85-lb. rails, traversing curves of 40 ft. radius without a trailing load and of 130 ft. radius with a trailing load. In service they will handle standard freight cars and Canadian Pacific passenger cars, the maximum train load being about 800 tons.

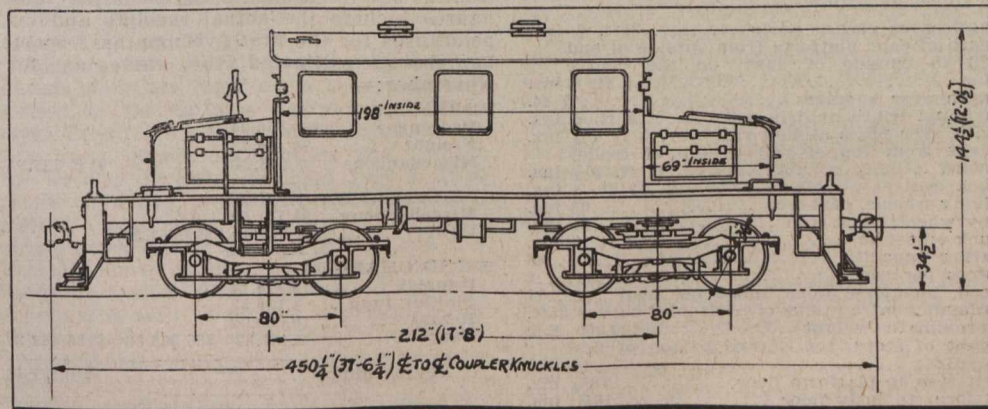
The trucks are of the equalized pedestal type, with rigid bolsters and half elliptical springs. This design of truck, it is claimed, combines simplicity of construction with ample strength, and with riding qualities which are satisfactory for locomotive service. The wheels are steel tired, with cast steel centres. The longitudinal frame sills consist of four 13-in. steel channels, which are strongly braced transversely above the truck centre pins. The bumpers are of cast iron, with push pole pockets, and are made in one piece with heavy lugs which are riveted to the frame sills. This provides a most substantial frame structure. Iron pilots and short shank M.C.B. couplers are applied at each end.

The locomotives are arranged for double end operation and they have central cabs with sloping hoods at either end. The cab is of steel, and is lined with wood for the comfort of the enginemen. Steps and hand-holds are arranged to conform to the Board of Railway Commissioners' requirements.

The motors are of a new type, styled 562-D-5, which has been developed by the Westinghouse Electric & Mfg. Co. for high potential direct current. Two motors are permanently connected in series so that the

for use in removing it. Access to the commutator and brushes is afforded by a large opening over the commutators. The cover is held by a tee bolt at one end and a locking device at the other. Tapped drain holes are provided through the bottom of the frame.

The four main poles are built up of



laminations of soft steel, riveted between end plates. The main poles are secured by studs extending through the frame and fitted with easily accessible nuts. The field coils are wound with flat copper strap, insulated between turns with asbestos ribbon. The outside is protected by a covering and the entire coil is impregnated with a heat conducting and water proofing insulating compound. The coils are held rigidly against the pole tips by stiff flat springs,

control outfits used on the motor cars.

The various main circuit connections are made by individual or unit switches, arranged compactly in a group, these switches being operated by compressed air. The magnet valves governing the flow of air to the switch cylinders are actuated by low voltage current from a storage battery. The switch group consists of a number of unit switches in a common frame. Each switch is provided with a powerful magnetic blow

out coil, which effectually extinguishes the arc whenever the switch is opened. The switches are normally held open by strong coiled springs, contained in the cylinders, and are closed against the action of the springs by compressed air. Since the air under normal pressure exerts a force approximately double that of the spring, the action of the switch in either opening or closing is always quick and positive.

The master controllers are located at either end of the locomotive cab. Two levers are provided on the master controllers, one for notching up and one for reversing. The reverse lever is mechanically interlocked with the operating handle, so that it cannot be thrown unless the main drum is in the off position. There are four running positions on the drum, together with seven resistance notches in series and five in parallel. The running positions are short and full field in series and short and full field in parallel.

With forced ventilation, the motors and auxiliary apparatus has sufficient capacity to enable the locomotives to exert continuously a tractive effort of 9,200 lbs. with an average of 600 volts at each motor. With 750 volts at the motors the locomotive is able to exert a tractive effort of 13,800 lbs. for one hour at approximately 14 m.p.h. With 25% adhesion the locomotives are able to exert a maximum effort of 30,000 lbs. Their maximum speed is 40 m.p.h.

The equipment includes Westinghouse air brakes, which can also be operated by hand; air signal; one foot gong; two air whistles and a locomotive bell with air ringer.

The locomotives were ordered from the Canadian Westinghouse Co. and were built in the Westinghouse works in the United States.

Additional Cars for Toronto Civic Railway.

The City of Toronto Works Department has received tenders for the supply of 13 semi-steel, double end, double truck, city cars, to be delivered in knock down shape at the Danforth Ave. car barn, where they will be assembled. Contracts will be awarded under six separate heads, viz., car bodies, trucks, motor equipment, air brake equipment, wire and cable, and fare boxes. The general dimensions of the car bodies are to be as follows,—

Length over corner posts	31ft. 8 ins.
Length of each platform from outside of end sill to outside of dash, on the centre line	7 ft. 8 ins.
Length over bumpers	47 ft.
Maximum width at drip rail	8 ft. 6 ins.
Width over posts at belt rail	8 ft 4 3/4 ins.
Height from top of rail to top of trolley board	11 ft. 8 1/2 ins.
Truck centres	19 ft. 8 ins.
Driving wheels, cast iron	33 ins.
Pony wheels, cast iron	21 ins.
Truck wheel base	4 ft 10 ins.
Seating capacity	48
Motors per car	2
Speed, including stops, miles per hour	11
Minimum centre radius of horizontal curves	35ft.
Approximate weight	20,000 lbs.
Height of steps, top of rail to top of first step	14 ins.
First step to platform floor	12 1/4 ins.
Platform to body floor	10 1/4 ins.
Ramp in floor from end sill to bolster	3 ins.
Body floor to top of rail	3 ft. 3 1/2 ins.

It is specified that the body bolster shall be designed to carry a safe load of 11,000 lbs. at each end when supported in the centre, allowing a safe unit stress in tension at the outer fibre of 12,500 lbs. per sq. in. The side bearings, to be of approved design, are to be mounted 26 ins. on each side from the centre of king pin, which is to be supplied by the builder, the centre plate of approved design to be furnished by the truck builder. Cars will

be supplied with cast steel pull couplers bolted to centre platform knees. The inside finish will eliminate all corners where dust and dirt are likely to accumulate. The interior finish will be no. 1 red cherry. The side sheathing will be a 9-64 in. plate with top, bottom and intermediate stiffening. Side posts will be of ash, notched out to give air circulation between panels, and be bolted to side girder. The interior finish below bolt rail will be cherry veneer with a layer of tar paper inside. The roof framing will be of the plain arch roof type, covered with tongued and grooved poplar sheathing and 8 oz. cotton duck.

The door operating mechanism will be arranged so that the step will drop into place as the door opens, and will fold as the door shuts, and the doors will be arranged to lock in position when either open or closed. Four automatic ventilators will be provided on each side of car, with openings 5 1/4 by 7 1/4 ins. The general equipment is to include four straps over each longitudinal seat, with celluloid hand hold, Consolidated Car Heating Co.'s push button buzzer system of the trolley operated type, signal bells, forced draught heaters, foot gong, motorman's seats, Crouse-Hinds type Z headlight at each end, Coleman no. 4 stationary fare box at each end, H. B. life guard at each end, trolley catcher at each end, fire extinguisher, sanding apparatus, etc. The seats, of which there will be 16 of the walkover type arranged crosswise, and 4 longitudinally, will be of cherry, with sandboxes, lockers, etc., under the longitudinal seats. The air brake equipment is to be of General Electric type with C.P. 27B compressor, and the motor equipment of Canadian Westinghouse type with no. 533 fully ventilated interpole box frame street railway motors and K. 51 A controllers arranged for field control, etc.

In addition to tenders for the supply of the necessary materials to enable the Works Department to assemble the cars at the car barns, separate prices for the assembling of the parts and the installation of the equipment are also under consideration.

London and Port Stanley Railway Earnings.

Following is a statement for six months ended Dec. 31, 1915, as supplied by the Auditor and Treasurer, J. E. Richards. The figures include the actual receipts and expenditures for the first five months, December being estimated the same as for November:—

REVENUES.			
Passenger	\$63,758.34		
Freight	78,456.23		
Miscellaneous	3,523.27		\$145,737.84
OPERATING EXPENSES.			
Miscellaneous	81,111.60		
Power	17,949.60	\$99,061.20	
FIXED CHARGES.			
Interest	18,778.14		
Sinking fund	4,139.52		
Rental	10,000.02		
Taxes	3,481.32	\$36,339.00	\$135,460.20
Net earnings			\$10,277.64

Brantford Municipal Railway Commission.

—Brantford, Ont., ratepayers, at the municipal election, Jan. 3, elected C. H. Hartman, W. R. Turnbull and F. J. Calbeck as the commission for 1916. Messrs. Hartman and Turnbull were commissioners last year, and Mr. Hartman headed the poll this year, although he strongly opposed the sale of the Paris-Galt section of the Grand Valley Ry. to the Lake Erie & Northern Ry., which the ratepayers authorized by a majority of some 300. A. K. Bunnell, City Treasurer, who was a commissioner last year, was defeated.

The Edmonton Power Company's Railway Project.

For some time past there has been considerable speculation in Edmonton, Alta., as to the plans of the Edmonton Power Co., which is seeking to obtain a franchise for the supply of electric power in Edmonton at a price which would compete with the plant owned by the city. After considerable agitation a bylaw was submitted to the ratepayers in Nov., 1915, authorizing the granting of a franchise, and was approved. The city council, on Nov. 24, refused to give the bylaw a third reading pending certain modifications in its terms, and on Dec. 7 an interim injunction was obtained to restrain the council from passing it. A local court, on Dec. 10, dissolved the injunction, holding that the bylaw was merely an agreement to grant a franchise, which must have the sanction of the Alberta Legislature before it could become operative. The bylaw again came up for consideration by the city council on Dec. 24, when it was approved by a vote of 7 to 4. Three aldermen protested against its passing, and the Mayor said that he would not sign the agreement; that he had put the motion before the council, as he was compelled by law to do, but that he would not go any further.

At the same meeting an intimation was given that application was given for the incorporation of a radial railway company in connection with the company's power development project, under the title of the Edmonton and South Western Ry. Co. The notice of application to the Dominion Parliament respecting this company states that power is desired to build a railway from Edmonton southwesterly to the Saskatchewan River, near Blue Rapids, 70 miles, together with telegraph and telephone lines, and with power to use part of its right of way for a power transmission line. It is asked that the railway be declared to be an undertaking for the general advantage of Canada, and that the company have power to enter into agreements under the terms of sec. 361 of the Railway Act with the Grand Trunk Pacific Ry., the Canadian Northern Ry., and the Canadian Pacific Ry., or any of them. Pringle, Thompson, Burgess and Cote, Ottawa, are solicitors for applicants.

A local newspaper article respecting the company's power development plans states that the project has been under investigation for about three years by Sir John Jackson, Limited, a British firm of engineers and contractors, that the site of the proposed dam is on the Saskatchewan River, about 65 miles southwesterly from Edmonton, but considerably further by the river, that the dam will be 1,500 ft. long, and 105 ft. high, and will make an artificial lake of 60 square miles, that the power plant development is estimated to cost \$6,000,000, that for the purposes of the company a 65 mile railway will be built to the power plant site, by an independent but apparently associated company. The route through which the railway is projected is reported to be fairly well settled, and should offer considerable opportunities for further settlement. G. W. Farrell and Co., Montreal, who are interested in the project, state that they are unable to give any information as to the company's plans until after legislative sanction has been obtained.

The Regina, Sask., City Council has appointed Aldermen Wilson, Baker, Black and McInnes as its street railway committee for the current year.

Electric Railway Projects, Construction, Betterments, Etc.

Buffalo, Fort Erie Ferry and Rd. Co.—The Ontario Legislature is being asked to incorporate a company with this title to, among other things, acquire by lease or otherwise the right of way, rolling stock and all such other assets as may seem desirable, formerly owned by the B. F. E. Ferry and Ry. Co., and to operate the railway now terminating at Fort Erie, Ont. Authority is also being asked to extend the line from Fort Erie to any part of Point Abino, in Bertie Tp., to Port Colborne; through the eastern part of Bertie and Willoughby Tps., with a branch line from Crystal Beach to Ridgeway. F. V. R. Bardoe, 400 D. S. Morgan Building, Buffalo, represents the company, and Fasken, Cowan, Chadwick and Rose, Toronto, are its Canadian solicitors. The company, it is said, has been reorganized recently. (June, 1913, pg. 286.)

The Chestermere and Calgary Suburban Ry. Co. was incorporated by the Alberta Legislature in 1910, to build a railway to be propelled by electricity or any other motive power from Calgary to Chestermere Lake, 12 miles. The lake is an artificial one, having been created by the C.P.R. irrigation canal flowing into it, and the project was understood to be connected with a number of real estate development plans, as the route proposed was a somewhat circuitous one, through various subdivisions which were then being put on the market. The provisional directors were:—G. E. Tudor, J. A. MacCullough, A. J. Samis, E. F. Ryan, Calgary; G. B. Tudor, Cleveland, Ohio. We are informed that between three and four years ago some light grading was done at the Calgary end of the proposed line, and later on poles were erected for a considerable distance to carry on the overhead wires, while several car loads of ties were delivered, but were never placed in position. These ties lay on the ground for nearly two years, decreasing in number and deteriorating in quality. The City of Calgary subsequently purchased the remaining ties for its municipal electric railway, and some poles which were subsequently used for street lighting purposes. The city has not entered into any agreement with the company regarding the operation of the line, and is in no way interested in the concern. As far as we can ascertain it was entirely a private proposition, and it may be considered dead, at all events for the present. (May, 1913, pg. 235.)

Edmonton and South Western Ry.—See under "The Edmonton Power Co.'s Electric Railway Project," on another page of this issue.

Edmonton Interurban Ry.—Workmen are reported to be stringing wires on the line from the Edmonton Radial Ry., on 124th St., along Alberta Ave. and 127th St. to the Grand Trunk Pacific Ry. near West Edmonton. Track is reported to have been laid as far as the G.T.P.R. shops, but pending the obtaining of an order from the Board of Railway Commissioners for the crossing, there will be no physical connection of the two sections. It was expected to have the line ready for operation to the G.T.P.R. tracks by Jan. 31. The line will be operated by the Edmonton Radial Ry. (owned by the City of Edmonton) under an arrangement made in Sept., 1915. (See Edmonton Radial Ry., Jan., pg. 30, and Oct., 1915, pg. 404.)

Lake Erie and Northern Ry.—M. N. Todd, General Manager, is reported to have said in an interview, Jan. 11, that it was ex-

pected to begin operating the Galt-Brantford section of the line about Feb. 1, and that as soon as arrangements with the Brantford and Hamilton Ry. were completed, an hourly service would be given. He also said that an announcement would be made shortly respecting the opening for traffic of the Brantford-Port Dover section. (Jan., pg. 28.)

London and Port Stanley Ry.—The property owners of London, Ont., have approved a bylaw to raise \$110,000 to provide a new station, additional sidings, etc. It is proposed to provide for the interest and sinking fund for these debentures out of the earnings of the line. (Jan., pg. 30.)

Moncton Tramways, Electricity and Gas Co.—The Sunny Brae, N.B., Town Council has under consideration the company's proposal to extend its line from Moncton into that town. A special committee reported a recent interview with E. B. Reeser, Vice President of the company, when the question of the crossing of the Intercolonial Ry.'s Union St. bridge and the widening of Town St. were discussed. The General Manager of the Canadian Government Railways had promised the use of the bridge, provided it did not necessitate any expenditure on the part of the railway. The council appears to be opposed to the widening of the street, but the matter will be again taken up with the company. (Jan., pg. 30.)

Montreal and South Western Ry.—The Quebec Legislature is being asked to reenact the Act constituting "the said company incorporation, sanctioned Mar. 24, 1911, statute 1, Geo. V., 2nd session, chap. 82, under reserve, and moreover to give more rights permitting said company to acquire, possess, develop and operate hydro electric power within 125 miles from Montreal, and for other things in connection therewith." (Jan., pg. 30.)

Montreal Tramways Co.—A press report states that construction will be started soon on an extension of the Park Ave. line from Van Horne to Atlantic Ave. (Dec., 1915, pg. 482.)

Morrisburg and Ottawa Electric Ry.—The Ontario Legislature is being asked to extend the time for the building of this projected railway from Morrisburg to Ottawa. G. D. Kelley, Ottawa, solicitor for company. (June, 1915, pg. 227.)

Niagara Falls Park and River Ry.—Alternative plans are reported to have been submitted to the Ontario Railway and Municipal Board for alternative changes on the line near Queenston Heights, Ont., where the serious accident occurred July 7, 1915. Some time ago the Board, it is said, submitted a plan proposing a new down grade single track line which would take one continuous curve, leaving the existing line for up grade traffic. The company's alternative proposal is said to involve a partial reconstruction of the existing double track line, by lengthening the curves and cutting down the gradients. The new plans are under the Board's consideration. (Aug., 1915, pg. 317.)

Oshawa Ry.—We are officially advised that during 1915 the company reconstructed and paved half a mile of main line track in Oshawa, Ont.; and laid 1,024 ft of new sidings. (Nov., 1915, pg. 441.)

St. John Ry.—We are officially advised that the company started operating its cars between East and West St. John, N.B., on Jan. 1. over the new arch bridge, which replaces the old suspension bridge across the St. John River at the reversing falls. (Sept., 1915, pg. 359.)

Schomberg and Aurora Ry.—We are officially advised that this railway, extending from a junction with the Toronto and York Radial Ry.'s Metropolitan Division at Bond Lake to Schomberg, Ont., 14.42 miles, which has hitherto been operated by steam, has been electrified. The electrification plans were described in Canadian Railway and Marine World for July, 1915. It is expected to start the electrical operation about Feb. 1. (Jan., pg. 30.)

Three Rivers Traction Co.—The track built and in operation is 3.9 miles long, consisting of a belt line, 2.9 miles, and an extension to the Wayagamac Pulp and Paper Co.'s plant. The belt line starts at the corner of St. Maurice and St. Cecile Sts., runs southeasterly to Notre Dame St., along that street to St. Antoine St., south on St. Antoine track along Du Fleuve St., north on Du Plator St. (this forms a small loop), thence along Desforges St., westerly on Champlain St., north on St. George St., to the corner of St. Marie St., and thence easterly along St. Marie, Champfleure and St. Maurice Sts. to the starting point. The Wayagamac extension runs from the corner of St. Maurice and St. Cecile Sts. to the St. Maurice River, which is crossed, to St. Christopher Island, and thence southerly to the pulp and paper plant, with a spur line on the mainland to the Shawinigan Power Co.'s plant. The extension to Cap de la Madeleine will start at the point where the Wayagamac extension turns southerly on St. Christopher Island, and will be about two miles long. The Quebec Legislature is being asked to grant the company power to run its cars within the village and parish of Cap de la Madeline, notwithstanding the opposition of the Council and its refusal to submit a bylaw to the ratepayers, and for such other powers which the putting into operation of the tramway has rendered necessary. (Jan., pg. 28.)

Vercheres, Chambly and La Prairie Tramways Co.—The Quebec Legislature is being asked to incorporate a company with this title, to build an electric railway from Montreal to places south of the St. Lawrence River. The points to be connected, it is reported, are St. Roch and Chateaugay, and La Prairie and Chambly with loop lines and connections branching to various places in the counties of Chateaugay, La Prairie, Chambly, Vercheres and Richelieu. The company is reported to have a provisional organization, and to have plans prepared to secure an entrance into Montreal, the character of which will be made known when the project comes before the Legislature.

Vancouver Car Schedules.—The British Columbia Electric Ry. announced, Jan. 10, a new car schedule for its Vancouver city lines, to come into effect Jan. 15. In announcing the change the management stated that the latest figures available showed that in Nov., 1915, the car mileage was 542,390 miles, against 521,538 for Nov., 1914, while 342,438 fewer passengers were carried than in Nov., 1914. The new schedule will, the circular adds, "entail a very heavy additional operating expense to the company, but is in line with the policy which the company intends to adopt and which it trusts will meet with the support of the travelling public. The traffic will be very carefully watched as in the past, and special cars will be run, if necessary, to supplement the ordinary services detailed above."

Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies.

July 1 to July 1 to
Nov. 1915 Nov. 1914 Nov. 30, 1915 Nov. 30, 1914

Gross earnings.	\$562,782	\$648,485	\$2,636,479	\$3,324,836
Expenses.	478,643	501,224	2,407,173	2,561,905
Net earnings.	84,139	147,261	229,306	762,931

Cape Breton Electric Co.—

Gross earnings	\$33,011.80	\$30,044.59	\$165,348.63	\$152,777.74
Expenses	17,789.98	17,847.12	88,690.77	91,338.18
Net earnings	15,221.82	12,197.47	76,657.86	61,439.56

London St. Ry.—

Gross earnings	1915	1914	Increase
Expenses	\$398,858.00	\$375,895.25	\$22,962.72
Net earnings	275,212.04	267,900.83	7,311.21
	123,645.96	107,994.45	15,651.51

Nova Scotia Tramways and Power Co.—

The Nova Scotia Public Utilities Board has refused the company's application for permission to increase its capital stock from \$6,000,000 to \$10,000,000, as no organization has been effected and therefore no vote of the shareholders authorizing an increase, as required by the charter, can be taken. The increase was desired for the absorption of the Halifax Electric Tramway Co.

Toronto Ry., Toronto and York Radial Ry., and allied companies:

Jan. 1 to Jan. 1 to
Nov. 1915 Nov. 1914 Nov. 30, 1915 Nov. 30, 1914

Gross earnings.	\$851,113	\$824,634	\$8,793,719	\$9,296,377
Expenses.	397,383	431,109	4,391,382	4,765,099
Net earnings	453,730	393,525	4,402,337	4,531,278

Toronto Ry.—The receipts and the percentages paid to the city, for 1915, compared with those for 1914, were as follows.

	1915	City per-	1914	City per-
	Receipts	centage	Receipts	centage
January	\$471,226	70.486	\$501,844	75.257
February	440,314	66.047	461,274	72.058
March	488,468	93.141	510,751	102.150
April	467,702	93.540	501,435	100.287
May	468,954	93.791	534,466	106.893
June	450,582	90.116	525,534	105.107
July	449,108	89.822	515,883	103.177
August	447,969	89.594	507,912	101.582
September	489,573	39.166	525,265	42.021
October	461,683	36.935	487,689	39.274
November	472,759	46.301	465,035	46.503
December	501,958	58.715	437,424	59.610
	\$5,610,296	\$867,654	6,034,512	\$954,000

Winnipeg Electric Ry.:

Jan. 1 to Jan. 1 to
Nov. 1915 Nov. 1914 Nov. 30, 1915 Nov. 30, 1914

Gross earnings.	\$323,025	\$330,398	\$3,122,620	\$3,732,901
Expenses.	188,067	206,394	2,036,092	2,185,489
Net earnings	134,958	124,004	1,086,528	1,547,412

During January, \$750,000 of two year 6% gold notes, dated Jan. 15, and due Jan. 15, 1918, were offered for sale in New York at 100 and interest. These are a direct obligation of the company, specifically secured by deposit with the Central Trust Co., New York as trustee, \$970,000 of 4½% perpetual consolidated debenture stock secured by a mortgage on all the company's property, subject to \$5,000,000 of underlying bonds.

Winnipeg press dispatch, Jan. 19:—The Winnipeg Electric Ry. has notified the City Treasurer that its gross earnings for 1915 were \$1,856,867.70, on which 5% or \$92,843.88 will be paid the city.

The company has declared a dividend of 2% for the last quarter of 1915, making a total of 9½% for the year, against a total of 12% in 1914, 1913 and 1912. The dividends in 1911 totalled 11½%, 10% in each of several previous years.

Windsor, Essex & Lake Shore Rapid Ry.—Reference has been made from time to time to the Dominion Traction & Lighting Co. It was incorporated under the Dominion Companies Act in Jan. 1913, with head office at Toronto, which appears to have been moved to Windsor, Ont., where W. C. Ken-

nedy is President. The company is a holding one and among other securities has \$750,000 first mortgage bonds, W.E. & L.S.

R.R. and also the Windsor Gas Co.'s stock and bonds. The D.T. & L. Co. has issued \$1,825,000 first mortgage 5% bonds.

Mainly About Electric Railway People.

P. Pocock was re-elected Chairman of the London, Ont., City Council's Public Utilities Committee, Jan. 12.

W. B. Baptiste has been appointed Manager, Three Rivers Traction Co., Three Rivers, Que. J. H. McNeil is Superintendent.

Geo. Rapsey and A. E. Wideman were re-elected Utilities Commissioners by Port Arthur, Ont., ratepayers, Jan. 3.

B. I. Dasent has been appointed Publicity Agent, British Columbia Electric Ry., Vancouver, vice F. Harris, resigned.

Edmund E. Walker has been appointed Sales Manager, Light & Power Department, British Columbia Electric Ry., Vancouver.

A. G. Workman has been appointed Chief Dispatcher, British Columbia Electric Ry., New Westminster, succeeding T. G. Connon.

C. Rummel, heretofore Manager, Light & Power Department, British Columbia Electric Ry., Vancouver, has been transferred to the same position at New Westminster.

Aldermen Picard, Bush and Wilson were appointed as a committee on public utilities by Edmonton, Alta., City Council, Jan. 4, Alderman Picard being chairman.

A. C. Eddy has been appointed Engineer, Maintenance of Way, British Columbia Electric Ry., Vancouver, succeeding H. J. Tippet.

Geoffrey Porter, heretofore Assistant Chief Engineer, British Columbia Electric Ry., Vancouver, has been appointed Chief Electrical Engineer.

J. E. Richards, formerly General Freight & Passenger Agent, Chatham, Wallaceburg & Lake Erie Ry., Chatham, Ont., has been appointed Auditor and Treasurer, London & Port Stanley Ry., London, Ont.

H. A. Robson, K.C., ex-Public Utilities Commissioner for Manitoba, gave an address to the Alberta Law Society, at Calgary, Alta., recently on the work of a public utilities commission.

W. D. McGregor, heretofore in the London & Lake Erie Ry. & Transportation Co.'s service, London, Ont., has been appointed Freight and Passenger Agent, London and Port Stanley Ry., St. Thomas, Ont.

G. Gordon Gale, General Manager, Hull Electric Co., Hull, Que., has been elected a member of the managing committee of the Canadian Society of Civil Engineers' Ottawa Branch.

Lieutenant Gordon Duke, attached to the Royal Navy Aviation Corps, who was killed in an aviation accident at Eastbourne, England, Jan. 10, was formerly employed on Toronto Civic Ry.'s staff.

Arthur Reid, who was Commissioner of Public Utilities for Lethbridge, Alta., during 1914, handed over the office to his successor, M. Freeman, Jan. 1. It is said that Mr. Reid will remove from Lethbridge, where he has resided since 1905.

Geo. W. Caye, heretofore Assistant to Vice President and General Manager, and Purchasing Agent, Grand Trunk Pacific Ry., has been appointed Purchasing Agent, Montreal and Southern Counties Ry., as well as of the Grand Trunk Ry. vice J. H. Guess, resigned.

Lieut. Lorenzo Evans, who was reported recently as having been seriously wounded in Flanders, is not a son of E. A. Evans, M. Can. Soc. C.E., ex-General Manager, Quebec Railway, Light, Heat & Power Co., as stated

in a number of daily papers, his father being Lorenzo Evans, of Dobell, Beckett & Co., Quebec.

T. F. Ahearn, only son of Thos. Ahearn, President, Ottawa Electric Ry., and who is himself a director of that company and of the Ottawa Car Manufacturing Co., entered the Army Service Corps in Oct., 1914, as a lieutenant, went to England in March, 1915, and went on to France in Sept., 1915. He has been promoted to a captaincy, and has been recalled to militia headquarters, Ottawa, to assist in munitions work.

P. A. Macdonald, barrister-at-law, Winnipeg, has been appointed Public Utilities Commissioner for Manitoba, in succession to H. A. Robson, who resigned recently to become Chief Counsel for the Union Bank. Mr. Macdonald was born at Gananoque, Ont., Jan. 6, 1857, educated at Kingston Grammar School and Queen's University, from which he graduated 1876, and proceeded to the study of law at Toronto, being called to the bar at Osgoode Hall, Jan., 1880. He entered into practice at Winnipeg in partnership with the late J. M. Macdonell in 1882, as Macdonell and Macdonald; subsequently practising in the firm of Macdonald and Brophy, and later as Macdonald and Cameron. In 1888 he was appointed Master in Chancery, referee and accountant, and he has had considerable experience in local arbitrations, among the matters in which he acted being one in connection with the threatened strike of C.P.R. employes in 1910, when he was chairman of the conciliation board. He resigned his public position in 1911, and returned to private practice. In Sept., 1915, he was appointed police magistrate to hear the charges against Sir Rodmond Roblin and other ex-members of the Manitoba Government.

Attempt to Secure Free Transportation of Soldiers on Toronto Railway.

The Toronto Board of Control, at a meeting, Jan. 21, decided, on the Mayor's motion, to apply to the Legislature for legislation providing that in cities having a population of 200,000 or more, electric railway companies shall carry soldiers and nurses, including soldiers in training, free of charge, notwithstanding any law, statute, custom or usage to the contrary, and providing a penalty of \$100 for failure to give a service and for each breach of the Act. The Mayor stated that soldiers are carried free on the cars operated by the municipality, and are carried free in Great Britain, Australia, and other countries.

Toronto is the only city in Ontario which would come under this proposal, and in newspaper interviews, R. J. Fleming, General Manager, Toronto Ry., is reported to have characterized the suggestion as a gross impertinence, and added that the company had done much for the soldiers, a good deal of which was not made public. The company had supplied free cars on several occasions. He continued that until the city saw fit to provide the soldiers with almost everything they needed free of cost, the company should not be asked to provide free transportation, and the proposed legislation to force the company to give free transportation to soldiers will be fought strenuously.

Electric Railway Notes.

The Quebec Public Utilities Commission is investigating two recent accidents on the Montreal Tramways Co.'s lines.

On account of the extension of the St. John Ry. service across the river bridge at St. John, N.B., the issue of transfers by way of the ferry steamboat has been discontinued.

The Board of Railway Commissioners has approved Montreal and Southern Counties Ry. freight mileage tariff C.R.C. 5 cancelling C.R.C. 1, effective Jan. 1, 1916, and rescinding order 21566, April 1, 1914.

The North Shore Power Co. is applying to the Quebec Legislature for authority to extend its operations beyond the limits of the district of Three Rivers, and more especially in the counties of Portneuf and Lotbiniere.

The Twin City Rapid Transit Co. is conducting a campaign for a new street railway franchise in Minneapolis, Minn. The company secured its charter in 1875 for 50 years. Its franchise for St. Paul is perpetual, and has been so decided by the court and accepted by the city.

The British Columbia Electric Ry. has maintained since 1913 a technical school in Vancouver for the benefit of its employees. At the annual gathering of the pupils, Dec. 30, addresses were delivered by G. Kidd, General Manager; R. M. Freer, President of the School, and J. G. Lister, technical instructor.

A Board of Railway Commissioners' traffic inspector visited New Westminster, Jan. 10, investigating the service given by the British Columbia Electric Ry., as a result of complaints made by residents along the Burnaby Lake line. The inspector heard statements from all parties concerned and will report to the Board.

The Lethbridge Municipal Ry. has on hand \$8,500 of tickets in books of 30, and under the resolution of Dec. 20, 1910, it sells 8 tickets for 25c. In order to use up the old tickets, the Commissioners passed a resolution, Dec. 30, 1915, to sell these tickets at 30 for \$1. The new rate is 3 1-3 cents, against the old one of 3 1/4 cents a ride, an increase of 5-24 of a cent.

The Brantford, Ont., Tp. Council passed a resolution, Jan. 11, to the effect that while the council is willing to encourage the municipal ownership of public utilities its solicitor be instructed to oppose the application of the Brantford City Council as to the Grand Valley Ry., unless the charter imposes upon the railway the same obligation to pay taxes as if it were privately owned.

In connection with a recent threatened strike of electrical workers in Vancouver, B.C., the British Columbia Electric Ry., it is alleged, declared a lockout. The electrical workers instituted criminal proceedings against the company for causing an illegal lockout, but owing to some technicality Judge McInnes dismissed the case, Jan. 7.

Following the reception, by the Ontario Railway and Municipal Board, of a deputation of citizens respecting additional car service, R. J. Fleming, General Manager, Toronto Ry., stated to the Board, on Jan. 5, that the company would be prepared, provided the city would build the necessary loop line, at Keele and Dundas Sts., to operate its cars over it at a price per car mile to be fixed by the Board, and to operate over the Toronto Civic Ry. line west of Dundas St., on Bloor St., at 20c. per car mile.

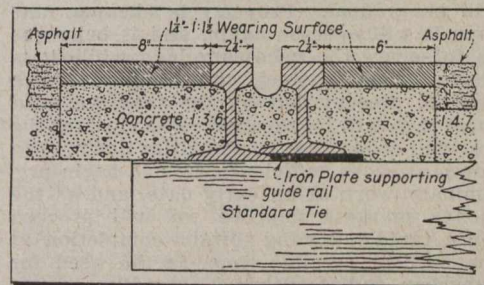
Sir Adam Beck, Chairman, Hydro Electric Power Commission of Ontario, stated that

the passing of the hydro radial railway by-law in Toronto, has opened the way for the purchase of the Toronto and York Radial Ry.'s Metropolitan Division, and that negotiations will be commenced forthwith. The City of Toronto has made a request that the Commission undertake the negotiations on its behalf.

Cost of Concrete Header Along Rails.

By H. R. Ferris, Victoria, B.C.

The accompanying sketch shows concrete header laid along the rails of a car line in asphalt pavement in a fairly light traffic residential street. The track is all on curve as it follows the inside of a circular "place" where four streets come together. The headers have been down nearly two years and are still in good condition, although several lateral cracks have occurred between expansion joints. This is possibly due to the jarring of cars passing around the Circle, as, where similar headers have been laid on straight tracks, no difficulty has arisen. It has been suggested by the engineers of the street railway company that this defect could be avoided by the use of re-inforcement laid longitudinally with the rails. The



Cross Section of Concrete Header Along Street Car Tracks.

concrete was machine mixed; it would probably have been cheaper to lay by hand. The cost of constructing 2,200 lin. ft. of header was as follows:

	Cost per 100 lin. ft.
Labor:	
Foreman, 33 hrs. at 55 cts.	\$0.825
Mixer eng., 9 hrs. at 45 cts.	0.184
Mixer helper, 14 hrs. at 35 cts.	0.222
Cement man, 4 hrs. at 30 cts.	0.055
Common labor, 170 hrs. at 30 cts.	2.318
Form setter, 11 hrs. at 50 cts.	0.250
Form setter and helper, 30 hrs. at 40 cts.	0.545
Form setter and helper, 10 hrs. at 35 cts.	0.159
Finisher, 40 hrs. at 60 cts.	1.091
Finisher helper, 30 hrs. at 40 cts.	0.545
Finisher helper, 2 hrs. at 30 cts.	0.027
Labor mixing surface, 40 hrs. at 30 cts. ..	0.545
Total labor	\$3.766
Cartage on tools, etc. (\$2)	0.091
Materials delivered:	
Cement, 51.25 bbls. at \$2.60	\$6.057
Sand, 13.6 cu. yds. at \$1.70	1.050
Gravel, 28 cu. yds. at \$1.60	2.036
Lumber for forms	0.273
Total materials	\$9.416
Grand total	\$13.273

The Toronto Ry. and the Outside Running Board on Summer Cars.—The Ontario Railway and Municipal Board has ordered the Toronto Ry. to have 25 cars in service by March 1, with longitudinal seats and the windows so arranged that sufficient ventilation shall be obtained during the summer months. A considerable time has been taken up in experimenting with various types of car with the view of eliminating the outside running board. Cars have been equipped with a longitudinal seat on the one side and cross seats on the other, and also with the cross seats half on one side and half on the other, but neither design has been acceptable. The present order merely permits of the ordinary cars being used, with open windows.

Electric Railway Track Laid in 1915.

Revised figures of new track laid by electric railways in Canada during 1915, show that 86.35 miles were laid by 14 lines. Of these, the London and Port Stanley Ry. was converted from a steam railway, the line being entirely reconstructed.

The Lake Erie and Northern Ry. track laid in 1914 was included in the table for steam railways for that year, as it had not been definitely announced that it would be operated by electricity. The total length of this line from Brantford to Port Dover, Ont., is 503 miles. Track was laid in 1914, from Brantford to Galt, 21.1 miles, and from Waterford to Simcoe, 6.8 miles, a total of 27.9 miles. The final reports sent in by the company for 1914, and published in our revised table in Feb., 1915, show 30 miles of track as having been laid, viz.: Brantford to Galt, 22.00 miles; Waterford towards Simcoe, 8.00 miles, or 2.1 miles more than the actual mileage between the four points named.

The Sudbury and Copper Cliff Suburban Electric Ry. began track-laying in 1914, laying 0.43 of a mile within the limits of the town of Sudbury, Ont.; it completed the line to Copper Cliff in 1915, making a line having a total present length of 6.09 miles.

Brandon Municipal Ry.:	
Three extensions	1.27
Brantford Municipal Ry.:	
Extensions in city	1.25
Lake Erie and Northern Ry.:	
Brantford to Waterford	15.70
Simcoe to Port Dover	6.70
	<hr/> 22.40
London and Port Stanley Ry.:	
London to Port Stanley	23.60
Montreal and Southern Counties Ry.:	
St. Cesaire to Granby, Que.	15.67
Montreal Tramways Co.:	
Four extensions	1.18
Peterborough Radial Ry.:	
Park St. to Monaghan Road	0.38
Sandwich, Windsor and Amherstburg Ry.:	
Windsor city limits to Sandwich	0.50
Sudbury & Copper Cliff Suburban E. Ry.:	
Limits of Sudbury to Copper Cliff ..	4.35
Ramsay Lake line	1.12
Frood Mine section	0.19
	<hr/> 5.66
Three Rivers Traction Co.:	
Extension to Wayagamac Pulp and Paper Co.'s plant.....	1.0
City belt line	2.9
	<hr/> 3.90
Toronto Ry.:	
Ossington Ave. (feet) ..	4,161.52
Hallam St.	5,149.27
Dufferin St.	178.05
Lappin Ave.	3,907.84
Curved track in connection with these lines	998.43
	<hr/> 14,385.11
	<hr/> 2.72
Toronto Civic Ry.:	
On Bloor St.	0.75
Toronto Suburban Ry.:	
From Lambton, mileage 1.82, to Mimico Creek, mileage 3.61	1.79
From the Speed River, mileage 45.11, to Guelph, mileage 48.29 ..	3.18
	<hr/> 4.97
Winnipeg Electric Ry.:	
Extensions in city	2.10
Total	86.35

Saskatoon Municipal Ry. Results, Etc.—E. S. Martin, Commissioner, in estimating the financial requirements of the City of Saskatoon, Sask., for 1916, in his report, dated Dec. 30, said: "During December the street railway, for the first time since its inception, will, it is anticipated, show a profit of approximately \$800." The estimated deficit for 1915 was \$32,500, while that for 1916 is \$20,000. He also referred to the necessity for additional capital expenditure for an extension of the power house, and the installation of additional plant.

The Hydro Electric Power Commission of Ontario's Proposed Electric Railway From Toronto to London.

Canadian Railway and Marine World for January gave details of the electric railway which the Hydro Electric Power Commission of Ontario proposes to build to form a trunk line from which to radiate other lines serving country districts at present without transportation facilities. The various municipalities through which the line is to pass are to be responsible for the financial success of the undertaking, and are to be assessed pro rata for the whole cost and any deficiency that may occur, while the Commission will do the actual construction and financing, and conduct the operation of the line when completed and equipped. The details are put into the form of an agreement with the Commission, which is to be executed by the municipalities, and on Jan. 1, the majority of the municipalities submitted a bylaw to the vote of qualified rate-payers, empowering the local councils to enter into the agreement with the Commission.

Of the 31 municipalities concerned, 24 voted on Jan. 1, and of these, 20 returned majorities authorizing the councils to enter into the agreement, a copy of which was incorporated in the bylaw, and four municipalities rejected it. The total votes registered in favor of the bylaw in the municipalities which voted were 31,509, and the total voting against were 11,097. The municipalities which did not vote on Jan. 1, but which have decided to take a vote during February, are, the townships of Toronto, Eramosa and Nelson, while the townships of South Easthope, Puslinch and Ellice decided by votes of their councils against putting the bylaw to the vote, and in the township of Etobicoke, an injunction was obtained against a vote being taken, on a technicality. In the four places where the bylaw was defeated, arrangements are being made for its resubmission, and in these places, as well as in others where a vote has not yet been taken, meetings are being held, at which the details are being more fully explained.

In the townships affected by this vote, and which are also likely to be served in part by the Toronto Suburban Ry. extension from Lambton to Guelph, the attitude of the Commission towards this road is of some interest. It is reported that the Commission has made an offer to the company, to take over the entire extension as constructed, at cost plus 10%, but no confirmation of this is forthcoming. The route of the proposed new line as laid out by the Commission, parallels the Toronto and York Radial Ry.'s line from Sunnyside, Toronto, to Port Credit, and it is surmised that it is the Commission's intention to acquire this line on behalf of the municipalities.

Following are the figures of the voting in 23 municipalities on Jan. 1, showing those for and against, with the majority in either case. Where the majority was against the by-law an asterisk is shown:—

	For	Against	Maj.
City of Toronto	21,247	5,711	15,536
" London	2,763	2,087	676
" Stratford	1,693	420	1,273
" Berlin	1,078	413	665
" Guelph	932	306	626
Town of St. Marys	400	288	112
" Waterloo	344	135	209
" Milton	138	2	136
Township of Wilmot	383	160	223
" Waterloo	322	425	*103
" London	287	118	169
" Biddulph	281	121	160
" Downie	211	168	43
" Guelph	179	160	19
" Trafalgar	174	25	149
" Blanshard	102	158	*56

Township of N. Easthope ..	96	224	*128
" East Zorra ...	0	12	*12
" Esquesing ...	34	7	27
" Nassagaweya ..	129	46	83
Village of Mimico	318	45	273
" New Hamburg ..	158	35	123
" Port Credit	123	15	108
" New Toronto ...	117	16	101

Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario, is reported to have said in recent interviews:

"The only places that have voted adversely are those not contiguous to the line, and under a clause in the act their consent is not necessary for the construction of the radials. They are not touched by the radials, and, of course, our work will not be delayed. However, we can go back there and institute another campaign, and have another vote taken, and this is probably what we will do. The first thing we shall do will be to finally decide upon the routing of the line, especially through the larger cities. We shall also complete our plans and specifications. Our first expenditure will be for the right of way. The acquisition will be gradual. Property is cheaper now than it will ever be again, and it behooves us to secure the necessary land while it is cheap. Copper, steel, and aluminum are dear at present, but by the time we need them they will be cheaper. The close of the war will send these commodities down. We hope to secure sufficient funds to begin preliminary work at an early date, and as the money markets improve we will proceed more rapidly, aiming toward completion at the earliest possible time, as the need for suburban radial railways steadily grows greater. Our progress in this connection will, however, be guided absolutely by considerations of our paramount and dominant duty in the great struggle for righteousness, freedom and justice being waged in Europe. We shall be prepared to give work to many men just at a time when work will be needed. At the close of the war there will likely be many men out of work, and we will be able to provide for large numbers of these. We shall proceed cautiously, as finances will permit."

In view of the increased demand for power which the radial railways will create, the Commission, which is now using about 120,000 horse power, proposes to construct a power plant at Niagara Falls to develop 600,000 h.p.

Postmen's Transportation in Peterborough.

—Following the example of the Sherbrooke Ry. and Power Co., which refused to enter into another agreement to carry postmen for \$25 a man per year, the Peterborough Radial Ry. also refused, but offered to do so for \$35, which the Post Office Department declined to pay. The Peterborough Co. had its conductors keep a record of the postmen's rides and found that for the week of Nov. 23 to 29, 1915, the 17 postmen made 829 trips, an average of 8 trips per man per day, so that the company was getting a fraction less than 1c. for each ride. The Department has authorized the postmaster to buy car tickets for the postmen and in view of the result of its count of the number of rides taken it is doubtful if the Peterborough Company would now accept \$35 a man per year.

The Port Arthur, Ont., Utilities Commissioners decided, Dec. 29, to again start operating the south belt line for the convenience of residents of Mariday Park and vicinity.

Brantford Sells Part of Grand Valley Ry.

Brantford, Ont., property owners approved, on Jan. 3, by a majority of 396, a bylaw to sell the Paris-Galt section of the Grand Valley Ry. to the Lake Erie and Northern Ry. for \$30,000. The right of way of the Blue Lake siding is granted to the L.E. and N. Ry., but the ties, rails, poles, wire and other material are reserved to the Brantford Municipal Railway Commission. The L.E. and N.R. agrees to operate its entire line from Galt to Port Dover by electricity only; and agrees not to operate within the Flats district of Paris except for freight only, and upon such further conditions as shall be approved by the Brantford City Council. The agreement is to be ratified by the shareholders of the L.E. and N.R., and approved by the Board of Railway Commissioners and the Dominion Parliament.

A Brantford press dispatch of Jan. 24 says that the third reading of the bylaw was laid over by the city council for two weeks, some aldermen taking the ground that it should have been submitted to all voters and not to the property owners alone, and that the proposed sale price of \$30,000 is insufficient.

Tango Tickets Discontinued.—The British Columbia Electric Ry. gave notice, Dec. 27, that the 8 for 25c. no transfer tickets, known as "tango tickets," which were put on sale in May last, were to be discontinued Jan. 1. The notice stated that although there had been a larger number of passengers carried since the tango tickets were put on sale, yet the increase was not sufficient to meet the cost of operation; the no transfer feature of the tickets was also unpopular. The old rate of 6 for 25c., with transfer, was put in force Jan. 1. These tickets are available in Vancouver and Victoria day and night.

Jitney Accidents in Portland.—The Spectator, of Portland, Ore., says that during 9 months, 82 persons were injured in jitney accidents in that city. Since Feb. 13, 1915, the jitneys were responsible for 441 accidents to property; there were 51 collisions in which city property was injured; 14 collisions between jitneys; 38 collisions with private automobiles and 338 collisions with street cars. The statement is made that "nearly every one of these accidents was preventable and almost all were due to violation of ordinances that all our vehicles, apparently with the exception of the jitney, must observe."

Victoria Harbor Works.—During 1915, the channel leading to the inner harbor at Victoria, B.C., was widened, and the greater portion of the upper basin was dredged to 20 ft. In the lower basin there is a depth of 20 ft. at low water. Various rocks at the entrance have either been removed or cut back, straightening out a difficult turn in addition to widening. The northern end of the channel is being straightened gradually and rocks are being removed. The construction of a turning basin having about 21,000 superficial feet area was also completed during the year. This has a depth of 30 ft. at low water. About two-thirds of the total length of the breakwater is above high water, and nine of the large caissons for the two piers have been placed in position. The total outlay to the end of the year, on the breakwater, was \$1,400,000, and on the piers, \$740,000.

Load Line on Steamships.—A press report states that the Dominion Government has under consideration the establishment of a load line regulation for ocean going vessels, similar to that in effect in Great Britain and other maritime countries.

Marine Department

Shipping Letters From the Head of the Great Lakes.

F. & W. Jones, shipping brokers, Fort William, Ont., wrote, Dec. 31, as follows:

The coal movement at the Canadian head of the lakes during the season of 1915 has only been of moderate volume. It had been expected that a much more substantial movement would have developed, but those expectations did not eventuate, partly on account of the financial depression which ruled at the commencement of the season and partly on account of a revival of activity in the Canadian western coal fields. The total amount of the season's coal arrivals by lake aggregated approximately 1,565,000 tons, distributed at the various docks as follows: Canadian Northern 650,000 tons; Canadian Pacific, 675,000 tons; Grand Trunk Pacific, 175,000 tons; Murphy's, 65,000 tons. The greatest volume on record of coal at these ports was in the season of 1913 when a total of 3,828,500 tons was brought in. In 1914 arrivals dropped to a little more than 1,000,000 tons. The past season has, therefore, made a fair advance in volume, but it is not considered that the amount of receipts is at all adequate to the prospective demand. This tonnage was carried in 224 vessels of which 115 were U. S. register carrying 849,000 tons, and 109 Canadian carrying 715,200 tons.

It is somewhat difficult to secure actual figures representing the stocks of coal now on pile, owing to the only available records being in the hands of private companies. We have, however, made a careful estimate from what data has been available and have arrived at the following stocks, which we believe will be found to be as near accurate as possible: Canadian Northern, 590,000 tons, 16% commercial; Canadian Pacific, 550,000 tons, 60% commercial; Grand Trunk Pacific, 230,000 tons, 15% commercial; Murphy's, 30,000 tons, 100% commercial. Westbound rail movement was very active during the late autumn and every indication is that very heavy demand will be made on stocks right through the winter months, and it is anticipated that by the opening of navigation the coal piles will be very nearly depleted, as a matter of fact, one railway has already been drawing on its service coal stocks east of Port Arthur.

Grain.—The close of navigation at the Canadian head of the lakes was unprecedented in the volume of grain moved. From Dec. 1 to the close, 34,886,308 bush. were shipped east, in 139 vessels, of which 51 were Canadian register and 88 U. S. There are 18 vessels tied up for winter storage, 13 Canadian and 5 U. S. At time of writing 16 of these are loaded with a total tonnage of approximately 2,500,000 bush. Two U. S. bottoms are still unchartered, with a capacity of about 750,000 bush.; these will probably be loaded before final ice conditions set in. Although the official closing was slated for Dec. 12, four of the above vessels cleared after that date, the last one leaving for Duluth Dec. 18.

From Sept. 1, the date at which new crop records begin, there was received at the terminal elevators 179,055,251 bush. of all grains. At that date there was also in store of old crop about 1,566,927 bush., making a total of grain stored of 180,622,184 bush. During the same period there has been shipped out 1,099,684 bush. At the close of navigation stocks on hand were reduced to about 10,000,000 bush., since then to time of writing, grain has been arriving at

the rate of approximately 1,000,000 bush. per working day. Stocks in store have consequently climbed up considerably, and now stand, after allowing for all rail shipments, at 22,500,000 bush. It is estimated that several thousand cars are on track west of Fort William and Port Arthur probably 4,000 on the Grand Trunk Pacific, and a similar number on the Canadian Northern and Canadian Pacific, for which storage must be found. It will thus be seen that but a short time can elapse before elevators will be filled to capacity.

The total quantity of grain moved by lake during the whole navigation season of 1915 was 201,639,325 bush., carried in 1,139 vessels, of which 687 were of Canadian register and 452 U. S. Of this 106,543,046 bush. were carried in U. S. vessels or 52% of the whole movement.

Shipment of grain eastbound, all rail, commenced somewhat ahead of time and at the close of navigation shippers had placed orders for upwards of 5,000 cars, and additional orders have been steadily piling up. All rails have moved, at an average rate of some 250 cars a day and, to date of writing, this would account for about 4,000,000 bush. This can easily be seen is quite an insignificant amount, in face of the large accumulating of stocks in store. While everything possible is being done to facilitate eastbound movement, it is very questionable whether more than 300 cars a day can be loaded and shipped, in fact it is doubtful whether anything in excess of that figure could be handled at the various eastern points considering the congestion which already exists there.

Taking the previous total crop figures of 742,163,155 bush. of all grains as final, which is now universally conceded; and after allowing the lake shipments of 170,996,844 bush., it will be seen there is still a volume of 571,166,311 bush. to be accounted for. Of this it is estimated there will be retained in the west for domestic purposes 190,000,000 bush., thus leaving some 380,000,000 bush. to be handled after the close of navigation for eastern movement. At present prospects, all rail shipments will not take care of more than 30,000,000 bush., which means that at the opening of 1916 navigation, not only will terminal and line elevators be loaded to capacity, but all available cars will be en route with grain, and then leave a substantial balance in the farmers' hands to come forward.

Estimates of preparation for next season's crop are already being compiled, and while every indication is of great activity, still it is very evident that a repetition of this season's bumper crop can scarcely be expected. There is no doubt that a very great factor in final crop results rests in the amount of acreage of fall ploughing. The coming season will fall short of that of the past one to the extent of probably 25%; against, this, however, must be mentioned that new ground broken up for cultivation will be in the neighborhood of 25% increase, whilst the amount of summer fallow will remain about the same. All things considered, therefore, the coming season will open up with good prospects, as regards activity and preparedness.

The Keystone Transportation Co. of Canada, Ltd., Montreal, has increased its authorized capital from \$500,000 to \$750,000.

The New York State Barge Canal's Progress and Prospects.

The eastern half of the Erie Canal and the Champlain Canal have each a single unfinished and unawarded contract which has been the chief obstacle to the entire completion of its respective section. By letting these contracts together with one or two bridge contracts, and by pushing work on them and on the few other contracts which are under award but not quite completed, it is expected that one season's time will be all that is needed to finish the Champlain Canal and also a channel from the Hudson to Lake Ontario by way of the Erie and Oswego branches. The Erie Canal west of the Oswego junction contains several uncompleted portions. Here legal complications are largely responsible for the unfinished condition. There are numerous railway crossings which have proved to be very troublesome from the standpoint of the state, both because of delays in coming to agreements with the railway companies and on account of the slowness in performing the work in such manner as not to interrupt traffic. Because of the amount of work still to be done and the number of crossings still to be made, it is anticipated that two seasons will be required to complete the western half of the Erie Canal. The State Engineer intends to do his utmost to have all uncompleted work under contract at the earliest possible moment, so that the state may no longer than necessary be denied the benefits of the completed waterway, and meantime may utilize its finished parts. Thus he will justify his prediction that the Champlain Canal can be completed in one year, as can also the canal between Waterford and Oswego and the branch into Cayuga and Seneca lakes, and that the balance of the canal through to Buffalo can be finished in two years. To do this, however, it will be necessary for the legislature at the beginning of its session and as one of its first acts to make provision for the immediate issuing of the \$27,000,000 of bonds authorized by the vote of the people at the last election.

Proposed Provincial Aid for British Columbia Shipbuilding.

At a recent joint session of the Vancouver and Vancouver Island Boards of Trade, the question of shipbuilding in the province was discussed, and a resolution was passed recommending to the B. C. Government that it should aid construction and ownership by contributing a cash bonus, the amount of which might remain to be agreed upon, and which should form a first charge against the vessels and be non-collectible for 20 years, unless the vessels were removed from British Columbia service. It was also recommended that the Government subsidize all freight originating in the province and handled out of B. C. ports, and half of such subsidy amount on other Canadian shipments, applicable to all vessels owned and built under the arrangement outlined, and all such vessels to be considered under the Government control as regards freight rates and routes. Other suggestions were made with a view to assisting in the development of the shipbuilding trade in the province, and a letter was read from the Premier suggesting that a deputation be appointed to meet the sub-committee or shipping appointed by the Government recently, to discuss the matter.

The Batiscan-Bengore Head Case and the Dominion Wreck Commissioner.

At a meeting of the executive council of the Mercantile Marine Service Association, at Liverpool, Eng., recently, amongst other things discussed was that relating to the request for the intervention of the Imperial Government regarding the sentence passed by the Dominion Wreck Commissioner, on Capt. Green of the s.s. Batiscan, for responsibility for the collision with the s.s. Bengore Head in the St. Lawrence on Aug. 1, 1915, by which his certificate was suspended for two years, and provision made for the granting of a first mate's certificate for the second year. The Journal of Commerce, Liverpool, in dealing with the meeting, says "The meeting was much concerned to learn that the Board of Trade has intimated their inability to interfere in the case of the collision between the Bengore Head and the Batiscan, whereby the master's certificate of the latter steamer had been suspended for no less than two years, a savage sentence, which has aroused no little indignation throughout the profession. The council were naturally dissatisfied at the Board of Trade's reply and determined to continue their efforts to secure redress to a finding which was not concurred in, even by one of the assessors. The well known severity of the Canadian courts has on several occasions in the past been the cause of considerable agitation, and it is felt that no efforts should be spared to bring their judgments more in accord with those of similar courts in the United Kingdom."

The review of the evidence tendered in the case mentioned, with the court's judgment, were given in full in Canadian Railway and Marine World, for Oct. 1915, and were delivered by Capt. L. A. Demers, Dominion Wreck Commissioner. The judgment was assented to by Capt. F. Nash, one of the nautical assessors, the other, Capt. J. A. Murray, dissenting. He concurred on the main points, but dissented on the sentences passed, and so far as Capt. Green's sentence is concerned, suggested that he be granted a mate's certificate for the full period of the suspension of his master's certificate. By this it will be seen that the Commissioner and the two assessors are agreed on the main findings, and in Capt. Green's case, which is the only one which the paper in question comments upon, they differ regarding the granting of a mate's certificate for the first half of the suspension period. The Imperial Board of Trade has carefully reviewed the case, and expresses its inability to interfere, and in addition to this, the Dominion Admiralty Court has held that the Batiscan was solely to blame for the collision. It would therefore appear that the court's decision was correct, and that the sentence passed is, in view of the evidence adduced at the formal investigation, justifiable.

This is not the first time that the Journal of Commerce has developed hysteria about decisions of the Wreck Commissioner's court, and one cannot help but come to the conclusion that it is biased against marine decisions in Canada, as it has previously shown itself to be, without proper reason, against the St. Lawrence route. In the course of its remarks, previously quoted, it refers to "a finding which was not concurred in, even by one of the assessors." If this quoted portion means what it says, it is incorrect, as one of the assessors did concur in the Commissioner's decision. Probably what it intends to convey is that one of the assessors dissented, but in the excitement of the moment, a comma was placed wrongly.

Navigation Aids Throughout Winter.

Recent press reports stated that the Marine Department had arranged for the future continuous maintenance of navigation lights on the Great Lakes, throughout the winter. This is somewhat misleading, and has to some extent been misunderstood. The facts are that the Marine Department has hitherto, towards the close of navigation, removed the light keepers from Michipicoten Island, Michipicoten Island east end, Michipicoten harbor, Otter Island Gargantua, Corbeil Point and Ile Parisienne, and thereafter the lights have been discontinued. In addition to the difficulty experienced in removing the keepers from these stations after severe winter weather sets in, it has become apparent that those engaged in navigation up to the last moment on Lake Superior are considerably inconvenienced by the discontinuance of the lights and fog alarms at these points. While the Department has recognized that it is somewhat unpleasant for the keepers to remain at their posts throughout the winter, the conclusion has been reached that the shipping interests have become so important as to require a change of policy. Arrangements are therefore being made with the various keepers by which it is pro-

posed that they shall remain at their stations throughout the winter hereafter, so that the lights and fog alarms can be kept in operation as long as there is any necessity for doing so.

Toronto Harbor Improvements.

The work to be undertaken during 1916 will consist chiefly of reclamation of land, and the construction of seawall foundations. Most of this work will be undertaken in the western section, and will cover land reclamation along the Lake Shore Road toward Exhibition Park, where grading for the proposed boulevard is to be commenced. During 1915 about 3,800 ft. of foundation for the outside seawall was laid, and during this year it is proposed to lay the concrete superstructure thereon. A further 4,800 ft. of foundation will also be laid, extending easterly from the point where work stopped for the winter. On the eastern section, practically the only work to be carried out will be the construction of a lift bridge over the Don River. Apart from this the only work to be undertaken on the east side will be the overhauling of certain work done by subcontractors, and of which complaints had been dealt with by the Dominion Government.

Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during 1915.

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL	
Copper.....	Eastbound	Short tons	20,331	136,105	156,436
Grain.....	"	Bushels	24,922,096	39,833,151	64,755,247
Building stone.....	"	Short tons			
Flour.....	"	Barrels	2,720,828	5,716,009	8,436,837
Iron ore.....	"	Short tons	4,050,350	41,161,754	45,212,104
Pig iron.....	"	"	6,770	10,830	17,600
Lumber.....	"	M. ft. b.m.	45,916	410,535	456,451
Wheat.....	"	Bushels	63,428,417	192,053,141	255,481,558
General merchandise.....	"	Short tons	117,333	214,831	332,164
Passengers.....	"	Number	13,100	12,837	25,937
Coal, hard.....	Westbound	Short tons	58,133	1,973,597	2,030,730
Coal, soft.....	"	"	416,248	10,910,080	11,326,328
Flour.....	"	Barrels		100	100
Grain.....	"	Bushels	873	31,250	31,623
Manufactured iron.....	"	Short tons	22,370	171,311	194,181
Iron ore.....	"	"		1,500	1,500
Salt.....	"	Barrels	46,981	653,256	699,337
General merchandise.....	"	Short tons	302,388	960,846	1,263,234
Passengers.....	"	Number	11,858	12,541	24,399
Summary.					
Vessel passages.....		Number	4,323	76,910	21,233
Registered tonnage.....		Net	8,480,300	47,918,847	56,399,147
Freight—Eastbound.....		Short tons	6,935,083	49,434,159	56,369,242
—Westbound.....		"	806,228	14,114,834	14,921,062
Total freight.....		"	7,741,311	63,548,993	71,290,304

COMPARATIVE STATEMENT FOR THE SEASONS 1914 and 1915.

Items	Season 1914	Season 1915	
Vessels : Steamers.....	Number	14,394	17,699
Sailing.....	"	1,682	1,334
Unregistered.....	"	2,041	1,650
Total.....		18,717	21,233
Lockages.....	"	13,502	13,808
Tonnage : Registered.....	Net	41,986,339	56,399,147
Freight.....	Short tons	55,369,934	71,290,304
Passengers.....	Numbers	59,801	50,336
Coal : Hard.....	Short tons	2,240,505	2,030,730
Soft.....	"	12,246,716	11,326,328
Flour.....	Barrels	9,715,085	8,436,937
Wheat.....	Bushels	150,284,095	255,481,558
Grain.....	"	68,338,072	64,756,870
Manufactured and pig iron.....	Short tons	239,633	211,781
Salt.....	Barrels	777,208	699,337
Copper.....	Short tons	91,764	156,436
Iron Ore.....	"	31,413,765	45,213,604
Lumber.....	m. ft. b.m.	452,148	456,451
Building Stone.....	Short tons		
General Merchandise.....	"	1,317,304	1,595,398

The Canadian canal was opened April 13 and closed Dec. 16, 1915; season, 248 days.
The U.S. canal was opened April 17 and closed Dec. 20, 1915; season, 248 days.

Longshoremen's Dispute at St. John, N.B.

The dispute between the vessel owners and the longshoremen at St. John, N.B., has been referred to a conciliation board under the Industrial Disputes Act. The vessel owners will be represented on the board by J. Herbert Lauer, General Manager, Marconi Wireless Telegraph Co. of Canada, Montreal, and the longshoremen by J. E. Tighe, of St. John. W. E. Foster, President and General Manager, St. Martin's Ry., St. John, has been appointed chairman by mutual consent. He was also chairman of the conciliation board which sat at St. John in 1913, under the award of which the longshoremen's work has since been carried on and against the terms of which the men are applying, although the scale of pay then granted is higher than at either Halifax or Montreal. Mr. Lauer was, in 1907, a member of the Quebec board of conciliation to represent the employes of the province in labor disputes. In 1910 he was a member of a board of conciliation under the Lemieux Act representing the the Shipping Federation of Canada in a dispute between ship owners and carpenters, and although his report was a minority one it was accepted and acted upon by the employers and employes. In 1910 he was also appointed representative of the Shipping Federation for five years on the permanent board of arbitration to consider grievances which might arise between the vessel owners and the shipping companies.

A St. John press dispatch of Jan. 24 gives particulars of the board's unanimous decision. It says that no change is made in the working schedule of 10 hours day or night in the winter, and 9 in the summer. The demand for 40c. an hour in the winter was refused, the present scale of 35c. an hour in the winter for week days being retained. Extra money is allowed for bulk grain handling on week days, Sundays or holidays. The request for the raising of a number in a gang from 15 to 16 was declined. The board recommends that the shipping companies enter into an agreement with the St. John Longshoremen's Association, to appoint a permanent local arbitration board to deal with disputes, introduce various protective devices to safeguard workmen loading or unloading ships, and better the accommodation of the longshoremen. It is proposed that the agreement should run to Dec., 1919.

The Great Northern Pacific Steamship Co. has been permitted to continue its business, after an investigation into its railway connections, on the ground that the service is in the interest of the public and of advantage to the convenience and commerce of the people, and that a continuance of it will neither exclude, prevent nor reduce competition on the water route. All rates are to be filed with the Interstate Commerce Commission. The company is owned by the Spokane, Portland and Seattle Ry., which is owned by the Great Northern Ry. and the Northern Pacific Ry.

The Farrar Transportation Co., Ltd., held its annual meeting in Toronto, Jan. 25. It paid off about \$16,500 of its bonded indebtedness, this payment being equivalent to about 7% on capital stock, and also paid 25% dividend to its shareholders, and carried a considerable balance to profit and loss account. The officers this year are:—T. I. Thomson, Owen Sound, President; W. E. Allen, Toronto, Vice President; and G. E. Fair, Toronto, Managing Director.

Marine Associations' Annual Meetings.—The Dominion Marine Association's annual meeting will be held in Toronto on Feb. 3 in the morning, and the Canadian Lake Protective Association's annual meeting in the afternoon of the same day.

Steel Tank Vessels for Imperial Oil Co.

The Imperial Oil Co., Ltd., Toronto and Sarnia, Ont., ordered a steel oil tank vessel, from the Collingwood Shipbuilding Co., Collingwood, Ont., in June, 1915, for delivery on the opening of navigation this year, mention of which was made in Canadian Railway and Marine World for July, 1915. The company has ordered two additional vessels of similar type from the same place. They will be each 258 ft. long, 43 ft. beam and 18 ft. deep to main deck, with an expansion trunk 7½ ft. above the deck running fore and aft. They will be classed at Lloyd's for the highest classification for ocean going steamers, as they are intended, not only for the lake trade, but for transportation to Montreal, Quebec and Halifax.

A great many closely spaced bulkheads will be fitted athwartships, and a continuous longitudinal bulkhead will divide the hold spaces into 10 tanks for crude or refined oil, and four tanks for lubricating oil. A cross bunker for carrying oil fuel will be fitted forward of the boiler room. The pump room will be located at the fore end of the foremost tank, in which will be placed the large pumps for handling oil cargoes. They will be engined for a speed of 8 knots an hour when loaded.

The Coastwise Steamship and Barge Co., which operates the s.s. Amur between Vancouver and Granby Bay, is reported to have purchased the s.s. Turret Crown, for transporting coal, coke and ore on that route. The Turret Crown was built at Sunderland, England, in 1895, and is of steel with double bottom for watertight ballast. Her dimensions are, length 253 ft., breadth 44 ft. 4 ins., depth 19 ft. 4 ins.; tonnage, 1,827 gross, 1,142 register. She is equipped with triple expansion engines with cylinders 22, 36 and 59 ins. diam., by 39 ins. stroke, 1,100 i.h.p. at 70 r.p.m., and supplied with steam by 2 Scotch boilers 14 by 11 ft. at 180 lbs. She was formerly owned by Turret Crown, Ltd., Toronto, controlled by Mackenzie, Mann and Co. interests, and during 1915 was under charter to the Nova Scotia Steel and Coal Co., New Glasgow, N.S. She is stated to be refitting at Perth Amboy, N.J., after which she will operate between New York and the West Indies until the Panama Canal is reopened, when she will proceed to Vancouver.

The Imperial Merchant Service Guild held its annual meeting at Collingwood, Ont., Jan. 21, when considerable criticism was levelled at the Canada Shipping Act, which was characterized as in a large measure detrimental to the successful carrying on of navigation. It was claimed that 5% of the vessels on the Great Lakes are under equipped, as under the law it is not necessary to have a chart on board. The method of appointing lighthouse keepers, harbor masters and inspectors was also criticized, it being claimed that men often entirely unacquainted with the needs of seamen are appointed. The officers for the current year are:—Capt. W. C. Jordan, Collingwood, Chairman; Capt. W. Inkster, Collingwood, Secretary-Treasurer.

Sailing Vessels for Newfoundland.—It is reported that a number of wooden sailing vessels are under construction for the Newfoundland trade, which has been interfered with to a considerable extent, owing to the shortage of steam vessels and of men capable of handling them, due to war requirements. For some years past the export of fish has been carried on by steam vessels, which have latterly either been requisitioned by the Admiralty, or purchased by the Russian Government for service in ice, for which they are specially adapted.

Grand Trunk Pacific Coast Steamship Company's Steamship Records.

The following figures show the records of the steamships Prince Rupert and Prince George for the past season:

s.s. Prince Rupert, June 8 to Oct. 30—		Miles.
20 trips, Seattle to Prince Rupert and return		25,080
11 trips, Seattle to Anyox and return....		15,818
		40,898
s.s. Prince George, June 10 to Nov. 2—		Miles.
20 trips, Seattle to Prince Rupert and return		25,080
10 trips, Seattle to Anyox and return		14,380
1 trip, no call at Victoria		1,235
1 trip, Seattle, Victoria and Vancouver.		145
		40,840

The total time taken on these trips, including time spent in manoeuvring in harbors, and running slow during fogs, etc., was 103 days, 7 hrs., 34 mins., and the average distance per day was 395.86 miles. The average speed per hour was 16.49 knots; longest non-stop run, north and south, 482 miles, on which the vessels arrived on the average, 6 mins. and 10 mins. ahead of schedule time, on the north and south runs respectively.

Erie Canal Route for Canadian Grain.

Speaking before the Canadian Club in New York recently, Secretary of State Hugo, who is a member of the New York State Canal Board, is reported to have said:—"One of Canada's greatest economic problems and a threatening menace to her future prosperity—freight rates—will be solved to a large extent by the New York barge canal. Over half of the Canadian wheat exported in 1913 reached the Atlantic Ocean through Buffalo and New York, and with the greatly enlarged transportation capacities of the new canal, a big increase in the wheat export trade by way of New York City may be expected."

The Shipmasters' Association of the Great Lakes held its annual meeting at Toronto, Jan. 25 to 30, the first time its meeting has been held in Canada.

Atlantic and Pacific Ocean Marine.

The Cunard Co. is reported to be asking for tenders for building eight steamships for Atlantic service.

The Quebec Steamship Co., a subsidiary of Canada Steamship Lines, Ltd., has leased Pier 46, East River, New York, for six months.

The s.s. Shabonee put in at St. John's, Nfld., towards the end of December, having lost a propeller. The replacing was done by the Reid Newfoundland Co., without the vessel being docked.

The France and Canada Steamship Co., Ltd., incorporated in Montreal recently, has increased the number of its directors to nine. The President is E. G. Bennett, and W. J. Shaughnessy is Secretary.

It is reported that the s.s. Belgenland, now being completed at Belfast, Ireland, for the Red Star Line, will be transferred to the White Star Line for operation between Liverpool and New York. It is also stated that she will be renamed Homeric.

In connection with the taking over of the Johnston Line by Furness, Withy and Co., mentioned in a previous issue, it has now been announced that the latter company has acquired all the shares held by the Johnston family, and assumed entire control on Jan. 1.

The Great Northern Steamship Co.'s s.s. Minnesota, which sailed from San Francisco, Cal., recently for Great Britain, where

it was announced she was to be sold, had to put back with boiler trouble. It is now announced that extensive repairs, including the installation of new boilers, will be carried out before she again sails.

A report from New York states that the Canadian Pacific Ry. will have two new steamships completed in British shipbuilding yards for its trans-Pacific service, within three months. It is stated that Capt. Hopcraft, of the s.s. Empress of Japan, is to take charge of one of the vessels. They will, it is said, be 540 ft. long, and somewhat similar in size to the Canadian-Australian Line's s.s. Niagara.

The C.P.R. s.s. Empress of Russia, which has been refitted, after service from the commencement of the war as an auxiliary cruiser, is intended to sail from Hong Kong, China, Mar. 23, and from Vancouver on her first trip westward, Apr. 20, calling at Yokohama, Kobe, Nagasaki, and Manila. Thereafter the steamships Empress of Russia and the Empress of Asia, which is also being refitted at Hong Kong, after similar service, will sail every four weeks.

The Montreal Transportation Co.'s s.s. Northmount was reported recently to have been abandoned at sea, about Dec. 18, when bound from Newport News, Va., to Trinidad. The crew were picked up by the s.s. Yaqui, and landed at Turks Island. The Northmount was built at Dumbarton, Scotland, in 1908, and was of steel, with steel tank top, four watertight and two non watertight bulkheads, steel boiler house, steam pump wells, etc. Her dimensions were: length, 249 ft.; breadth, 43 ft.; depth, 19 ft. 5 ins.; tonnage, 1,908 gross, 1,172 register. She was equipped with triple expansion engines, with cylinders 18 x 30 x 48 ins. and 33 ins. stroke, 950 i.h.p. at 90 r.p.m., supplied with steam by two Scotch boilers 12½ by 11 ft., at 185 lbs. She had been engaged in grain traffic from the head of the lakes for some time, and during the war has been under charter for the West Indies service.

Maritime Provinces and Newfoundland.

The figures of export traffic from West St. John, N.B., for December, show that 38 steamships cleared with 181,370 tons of cargo and 1,166 horses, against 20 steamships with 60,346 tons of cargo and 1,262 horses in Dec., 1914.

The Victoria Steamship Co.'s annual meeting was held at St. John, N.B., Dec. 29 when the report showed that the year had been a successful one. An offer was received for the purchase of the controlling stock, on behalf of some St. John and Fredericton parties.

The St. John, N.B., harbor revenue for 1915 was \$122,362.80, against \$97,998.01 for the previous year. During December 38 vessels cleared with 1,166 horses and 181,370 tons of cargo, against 20 vessels with 1,263 horses and 60,346 tons of cargo in Dec., 1914. The custom receipts for 1915 were \$2,554,212.11, against \$1,540,788.85 for 1914, and pilotage receipts were \$36,143.28 and \$33,012.93 for the two years respectively.

The Black Diamond Steamship Co.'s s.s. Coban ran ashore at Placentia, Nfld., at the end of December, and it was stated that she might become a total loss. She was, however, released and taken to St. John's, where repairs were undertaken. It was found after she was docked that only certain minor repairs could be carried out, until a new stern frame and rudder could be obtained, so the vessel was floated out of the dock Jan. 11, and towed to Sydney, N.S., where the balance of her cargo was removed.

Province of Quebec Marine.

The overhauling of the Canada Steamships Lines' s.s. Rapids King, which was recently damaged by fire, has been completed at Sorel, Que. The damage was comparatively slight, and the overhauling did not include any change in the previous layout or decoration, the chief damage being in the saloon which was only slightly burned.

Ontario and the Great Lakes.

The Canadian Stewart Co.'s steam tug A. M. Stewart, which was completed at Glasgow, Scotland, recently for work on the Toronto Harbor improvements, has been requisitioned by the Admiralty.

The Interlake Steamship Co., Cleveland, Ohio, has purchased the Cleveland Steamship Co.'s business at a valuation of about \$3,000,000. The Cleveland Steamship Co. operated 13 vessels in the Great Lakes trade.

The United States Lake Survey reports the levels of the Great Lakes, for December, in feet above tidewater, as follows,—Superior, 602.72; Michigan and Huron, 579.51; Erie, 571.37; Ontario, 244.78. As compared with the average December levels for the past ten years, Superior was 0.47 ft. above; Michigan and Huron 0.63 ft. below; Erie 0.36 ft. below and Ontario 0.72 ft. below.

The s.s. Turret Cape, which was stranded at Cove Island, Georgian Bay, Nov. 7, 1911, and abandoned to the underwriters as a total loss, and subsequently repaired and purchased by the former owners, was formerly registered in England. The register there was closed Jan. 9, 1912, and since then she has been operated as an unregistered vessel. She has now been registered in Canada by the Canadian Ocean and Inland Navigation Co., Toronto.

A New York report states that a large shipping company is in process of formation in connection with Great Lakes shipping, which will take over all vessels hitherto owned or controlled by railway companies, which have now, under the Interstate Commerce Commission's ruling, to divorce their railway and steamship interests. It is stated that an expenditure of from \$7,000,000 to \$10,000,000 is contemplated. W. J. Conners, Buffalo, N.Y., is said to be interested in the matter.

G. R. Crowe Steamship Co., Ltd., has been incorporated under the Dominion Companies Act, with \$50,000 authorized capital, and office at Toronto, with power to own and operate steam and other vessels and to conduct a general navigation business, etc. The company has acquired the s.s. G. R. Crowe, formerly owned by the St. Lawrence and Chicago Steam Navigation Co., Toronto, the sale of which, to A. B. Mackay, Hamilton, Ont., and other details, were given in our last issue.

The Great Lakes Transportation Co.'s s.s. Calgary is being converted into an oil tanker at Baltimore, Md., and will be utilized in this trade on the ocean. Reports to the effect that she has recently changed owners, emanating from New York, are not correct. She was originally registered as being owned by James Richardson and Sons, Ltd., Kingston, Ont., but this was merely pending the organization of the Great Lakes Transportation Co., of which Jas. Playfair is President and General Manager, and H. W. Richardson, Kingston, is Vice President.

Russian Freight Rates.—It is announced that rates on grain traffic, except oats, between Russia and China, for export, have been considerably reduced.

British Columbia and Pacific Coast.

The construction of the Dominion Government grain elevator at Vancouver was expected to be completed by the end of January.

During December, 144,425 passengers were carried on the ferries between Vancouver and North Vancouver, a slight increase as compared with the previous month.

The north arm of Burrard Inlet was frozen over Jan. 3, and one of the Dominion Government steam tugs was dispatched from Vancouver to act as an icebreaker. This is the second time in 20 years that ice has caused any difficulty at this point.

Mainly About Marine People.

Miss Annabelle Murray, who died in Montreal recently, aged over 90, was the only daughter of the late William Murray, of that place, who founded the Beaver Steamships Line.

F. H. Clendenning, Division Freight Agent, British Columbia Coast Service, and Ocean Steamship Lines, C.P.R., Vancouver, has received word of the death of his brother, from wounds, while serving with the 24th Battalion of Montreal.

Sir Arthur A. Booth, who has been created a baronet, is Chairman of the Cunard Steamship Line, and has rendered special services during the war in connection with the transportation of munitions, men and war supplies in various parts of the world.

Lt.-Col. G. P. Murphy, Vice President, Ottawa Transportation Co., Ltd., who is in the Canadian Army Service Corps, and has been engaged on staff work since the war began, will, it is said, be added to the staff of Major General Carson, who specially represents the Canadian Minister of Militia in England.

F. F. Pickard, formerly Inspector of Hulls for Victoria, B.C., is reported to have been a passenger on the s.s. Persia, which was sunk by the enemy in the Mediterranean Sea recently. As a member of the Indian Marine Reserve he was ordered to report in London, Eng., about three months ago, and it is stated that he was ordered to take charge of some machine shops in Mesopotamia, whence he was bound at the time of the disaster. As no list of survivors has been published, it is not known if he is amongst those saved.

The Status of a Shipping Contract During War Time.

The case of James Carruthers and Co., Ltd., Montreal and elsewhere, and Danon Freres, Antwerp, Belgium, came before the King's Bench Division in London, England, recently, when a number of points arose as to the position of shippers in regard to contracts which were interfered with by the war. The first named firm were sellers of wheat under a c.i.f. contract, and had up to Sept. 15, 1914, to make deliveries. The latter firm, as buyers, sued for damages for failure to deliver, and the question arose as to whether there was a breach of contract, having regard to the conditions that existed during August and September of that year. The court was asked to say that non delivery was excused by the exception clauses in the contract, and whether there was prevention within that clause owing to the impossibility, as claimed, or difficulty of getting vessels at the material dates to carry freight from American ports for delivery at Antwerp. It was also asked to say if circumstances did not arise which discharged the parties from their obliga-

tions under the contract. The contract was made in Antwerp and had the usual prohibition and arbitration clauses. In the resulting arbitration the first award was against the sellers, but there were appeal proceedings before the Trade Committee, and the court was asked to review the findings. It was decided to remit the matter to the Appeal Committee for them to ascertain, if possible, and append to the case, the forms of bill of lading referred to in the sale contract and the charter party.

St. Lawrence and Chicago Steam Navigation Company's Annual Report.

The following report was submitted at the annual meeting in Toronto, Jan. 21, over the signatures of W. D. Matthews, President, and A. A. Wright, Managing Director: The season of 1915 has been one of the best in the company's history. Owing to the exceptional crop in the west, and the demand for iron ore, the highest rates since the year 1905, prevailed during the fall months, and prospects for the beginning of the season 1916 are decidedly encouraging. The steamship G. R. Crowe, not being entirely suitable for our trade, has been sold, and your directors are considering the policy of replacing her with a larger and more modern steamship as soon as practicable. The company's steamships have gone through the season virtually free of accidents and are all in first class condition. Our policy regarding insuring only part of our risk continues satisfactory, and the balance at credit of our insurance fund is \$135,689.67. The directors from the earnings of the season have declared a dividend of 10% and a bonus of 2% on the capital stock amounting to \$115,968, and, after payment of same, carried forward the balance, \$162,622.33, to the credit of profit and loss, making the balance at credit of that account \$393,791.88.

ASSETS AND LIABILITIES.

Four steamships, J. H. G. Hagarty, E. B. Osler, W. D. Matthews, Iroquois	\$1,120,000.00
Accounts receivable	631.86
Cash in bank and office	385,714.14
	<hr/>
	\$1,506,346.00
Capital stock, fully paid	\$ 966,400.00
Accounts and bills payable	10,464.45
Insurance Fund	135,689.67
Balance of profit and loss carried forward	393,791.88
	<hr/>
	\$1,506,346.00

PROFIT AND LOSS ACCOUNT.

Balance forward Jan. 2, 1915	\$231,169.55
Steamship earnings	301,690.25
	<hr/>
	\$532,859.80
Cost of management	\$ 23,099.92
Dividend 10% payable Jan. 3, 1916	\$96,640.00
Bonus 2% payable Jan. 3, 1916	19,328.00
	<hr/>
	115,968.00
Balance carried forward	393,791.88
	<hr/>
	\$532,859.80

The following are the directors for the current year:—W. D. Matthews, President; J. H. G. Hagarty, Vice President; Sir Edmund B. Osler, C. S. Gzowski, G. R. Crowe, Jas. Carruthers, S. Crangle and A. A. Wright, Managing Director.

British Columbia Merchant Marine, Limited.

As a result of numerous discussions in Vancouver, recently, it is announced that steps are being taken for the incorporation of a company with the name of The British

Columbia Merchant Marine, Ltd., with an authorized capital of \$2,500,000, divided into 250,000 shares of \$10 each, with a minimum subscription of \$250,000 before proceeding to allotment. No promotion expenses will be paid, nor will commission for the sale of stock be paid by stock, nor will any expense be incurred until it is assured that the minimum amount stated will be subscribed. It is proposed to build vessels, as well as charter or purchase them, for which cash will be raised by bonds, which it is anticipated will be guaranteed as to principal and interest by the B. C. Government. Agencies will be established, and for the present, the office of the Agent General in London, England, will be used, and when the business warrants, a separate office will be established. The directors are to be 15 in number, and the qualification 50 shares. A preliminary subscription list has been thrown open to the public, and a number of shares have been applied for. C. Gardner, Lloyd's representative in British Columbia, is interested in the project.

Oil Burning Tug in New York Harbor.

The first commercial oil burning tug in New York Harbor is the Mexpet, which went into service last summer. It is owned by the Mexican Petroleum Co. and is used for handling oil tankers and ocean vessels docking at the company's pier to fill its bunkers with fuel oil. The tug is 112 ft. overall and has a beam of 24½ ft. The hold is 14 ft. deep. The rudder is unusually large for ease in short turning. The boat has one Scotch boiler 14½ ft. in diameter by 12 ft. long, with three corrugated suspension furnaces 48 in. in diameter. The pressure carried is 165 lb. per sq. in. The mechanical fuel oil firing system is employed, there being two oil pumps and two heaters. The main engine is an inverted compound with 18 and 38-in. cylinders and a 26-in. stroke. In service the Mexpet has evaporated 16.4 lb. of water per pound of oil from and at 212 degrees F. Oil is sprayed at from 240 degrees to 280 degrees F. under 40 to 80-lb. pressure. The engine horsepower ranges from 650 to 750, and a speed of 10 knots has been developed. Ninety tons of fuel oil is carried, sufficient for 10 days run. A crew of 10 men is required.

Marconi Wireless Telegraph Company of Canada.

Following are extracts from the annual report for the year ended Jan. 31, 1915, issued recently: During the six months which elapsed before the outbreak of the war, the business continued to make normal and satisfactory progress. The range of the Cape Race station has been greatly increased by its equipment with steel masts 250 ft. high, in replacement of the 160 ft. wooden spars, and on the return to normal conditions there should be a marked improvement in the earnings of the station. The establishment of a well equipped factory in Montreal, with excellent shipping facilities, has been amply justified, and despite increasing difficulties in obtaining raw materials, the company has been able to meet all demands. During the year permanent stores and offices have been opened at Toronto and Vancouver. Message traffic to and from ships, which forms an important source of the company's revenue, and which prior to the war was showing a gratifying increase, has naturally been adversely affected by the severe censorship imposed, the general dislocation of passen-

ger traffic and the placing of important stations at the disposal of the Government. It is impossible at this time to fully relate the very important services your company has rendered to the naval authorities. Calls for assistance have been received almost daily, operators required at short notice for special duty, apparatus for urgent requirements installed practically on demand, and especially powerful installations for new stations supplied in record time. It is a tribute to the company's organization to record that in no single instance has it failed to fully meet the demands made upon it. In addition, the company has had to provide for the loss of trained operators and engineers who have enlisted for active service. Your directors have accordingly submitted appropriate claims to the naval authorities for compensation in respect of the reduced revenue of the various coast stations as compared with the corresponding period anterior to the war. This matter is still in abeyance, but your directors have reason to believe that an equitable settlement will be duly arranged. Practically the whole of the mercantile marine of Canadian and Newfoundland registry has now been equipped with Marconi wireless telegraph apparatus. Towards the close of the year the Newfoundland Government enacted legislation providing for the compulsory wireless equipment of all vessels engaged in the seal fishery. The company's transatlantic service has shown important gains in traffic despite the adverse conditions imposed by the war. The publicity campaign inaugurated by the board two years ago has made Marconi a household word among the cabling public and throughout Canada. The balance sheet showed net profit for the year \$50,020.11, less interest on advances \$28,956.49 an d balance of deposit account at Jan. 31, 1914, transferred, \$15,335.75, leaving a net balance of \$5,727.37.

The directors, who were re-elected, are: Andrew A. Allan, President; G. Marconi, Vice President; J. N. Greenshields, K.C.; Robert Bickerdike, M.P.; G. C. Isaacs, G. M. Bosworth, W. D. Birchall, E. J. Nally, J. H. Lauer, General Manager.

Telegraph, Telephone and Cable Matters.

The cable companies announced a temporary suspension of their deferred trans-Atlantic cable service recently.

The Association of Railway Telegraph Superintendents will hold its 35th annual meeting at St. Paul, Minn., June 20 to 22.

The Great North Western Telegraph Co. has completed the work at its new office at Ottawa, and is now operating Morkrum printing installations between Ottawa and Montreal and Ottawa and Toronto.

The Pacific Cable Board's report for the year 1914-15 shows traffic receipts \$1,106,400; other receipts \$18,825; total \$1,125,225; expenditures \$731,795; surplus \$393,430. The interest and sinking fund requirements were \$433,005, the deficit being provided by the British and Dominion Governments. The deficit was \$39,575 against a deficit for the previous year of \$60,175, and the net traffic receipts were \$126,125 more. The traffic at ordinary tariffs showed a decrease, but there was an increase in deferred traffic of 599,879 words, and in the week end traffic there was an increase of 747,332 words, practically 200%.

Among the Express Companies.

W. J. Alles has been appointed agent, Canadian Ex. Co., Berlin, Ont., vice E. Gellatly.

M. S. Anderson has been appointed agent,

Canadian Ex. Co., Regina, Sask., vice W. R. Perry.

A. Scholey has been appointed agent, Canadian Ex. Co., Prince George, B.C., vice G. Bennett.

D. F. Martin has been appointed route agent, Dominion Ex. Co., North Bay, Ont., vice W. Aitchison, promoted.

The Canadian Ex. Co. has opened offices at Abbotsford, Parent and St. Basile, Que., and Reaboro, Ont.

W. Aitchison, heretofore route agent, Dominion Ex. Co., North Bay, Ont., has been appointed agent at Windsor, Ont., vice C. F. Price, resigned.

The liquidator of the United States Ex. Co., D. I. Roberts, has made a second distribution of 25%. The first payment was distributed No. 15, 1915. The stock as at Dec. 1 was estimated at a total liquidation value of \$96.60 a share, including the 25% payment already mentioned.

The Canadian Ex. Co.'s revenues, expenses, etc., for Aug., 1915 and 1914, were as follows,—

	1915	1914.
Mileage of lines covered.....	10,238.13	9,676.50
Charges for transportation....	\$325,941	\$291,320
Express privileges, Dr.....	170,060	167,663
Operation other than transportation	5,370	5,494
Total operating revenue	161,250	149,131
Operating expenses	133,942	140,064
Net operating revenue	27,307	9,066
Express taxes	4,200	4,000
Operating income	23,094	5,066

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

John Millen & Son, Limited, Montreal, have sold their railway supply department to F. D. Lyman, who has been its manager since its inception some nine years ago, and it will in future be carried on by Lyman & Lyman, Limited.

M. Beatty & Sons, Limited, Welland, Ont., have received an order from the Confederation Construction Co., contractors, section 3, Welland Ship Canal, for 6 electric hoists, 2 of 50-h.p. with single drums, two 50-h.p. with double drums. They are to be used on the concrete handling plant, which the contractors are building this winter for use on the twin flight locks next spring.

Calendars for 1916 have been received from the W. W. Butler Co., Ltd., railway, marine and mining supplies, Montreal; Hart-Otis Car Co., Ltd., Montreal; Diamond Saw and Stamping Works, Buffalo, N.Y.; The Hiram L. Piper Co., Ltd., railway and steamship supplies, Montreal; John Bertram & Sons Co., Ltd., machinery manufacturers, Dundas, Ont.; Pratt and Whitney Co., of Canada, Ltd., Dundas, Ont.

Transportation Conventions in 1916.

March 21-23, 1916.—American Railway Engineering Association, Atlantic City, N.J.

May, 1916.—International Railway Fuel Association, Chicago, Ill.

May 2-5, 1916.—Air Brake Association, Atlanta, Ga.

May 19, 1916.—Association of Railway Claim Agents, Atlantic City, N.J.

June 20-22, 1916.—Association of Railway Telegraph Superintendents, St. Paul, Minn.

June 20-23, 1916.—American Association of Freight Agents, Cincinnati, Ohio.

June 21, 1916.—Train Despatchers' Association of America, Toronto.

June 21, 1916.—American Association of General Baggage Agents, Boston, Mass.

June 28, 1916.—Association of American Railway Accounting Officers, Detroit, Mich.

August, 1916.—International Railroad Blacksmiths' Association, Chicago, Ill.

September, 1916.—Master Car and Locomotive Painters' Association of United States and Canada, Wilmington, Del.

September, 1916.—Railway Signal Association, Mackinac Island, Mich.

Sept. 19-22, 1916.—Roadmasters and Maintenance of Way Association, Chicago, Ill.

Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July, and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.

Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July and August.

KETTLE VALLEY RAILWAY COMPANY.

NOTICE.—The Kettle Valley Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which the company may construct the following lines of railway—

(a) From a point at or near the Otter Summit by the most feasible route to the Aspen Grove mineral district in the Province of British Columbia, not exceeding thirty miles.

(b) From a point fifty miles to the north fork of the Kettle River, thence northerly by the most feasible route to Fire Valley, thence northwesterly following the general course of Fire Valley to Vernon, thence westerly to a junction with the line of the Nicols, Kamloops and Similkameen Coal and Railway Company at or near Quilchena.

(c) From a point on the line mentioned in paragraph (b) at or near the junction of the east fork and west fork of the north fork of Kettle River in a generally north-easterly direction to Franklin Camp, thence to Killarney.

(d) From a point at or near Hedley on the line to be constructed from Midway to Hedley northerly along Twenty Mile creek for a distance of about twenty miles.

Dated at Montreal, this 9th day of December, 1915.

H. C. OSWALD,
Secretary.

Pringle, Thompson, Burgess & Cote,
Ottawa agents.

CANADIAN PACIFIC RAILWAY CO.

Notice.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its next session, for an Act amending and extending the powers of the company in respect of the issuance of consolidated debenture stock now or hereafter issued by the conversion thereof into denominations of Canadian currency.

Dated at Montreal, this 3rd day of January, 1916.

W. R. BAKER,
Secretary.

Pringle, Thompson, Burgess & Cote,
Ottawa agents.

KETTLE VALLEY RAILWAY COMPANY.

Notice.—The Kettle Valley Railway Company will apply to the Parliament of Canada, at its next session, for an Act ratifying and confirming an agreement dated the tenth day of July, one thousand nine hundred and fourteen, entered into between the Vancouver, Victoria and Eastern Railway and Navigation Company and The Kettle Valley Railway Company respecting a joint section from Princeton to Otter Summit.

Dated at Montreal, this 5th day of January, A.D. 1916.

H. C. OSWALD,
Secretary.

CANADIAN PACIFIC RAILWAY COMPANY.

NOTICE.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its next session, for an Act:—

1. Extending the time within which the company may construct the following lines of railway—

(a) From a point on its Pheasant Hills Branch in Township 36 or 40, Range 19 or 20, west of the 3rd Meridian in a northerly and westerly direction towards the Battle River, thence westerly through Township 43, 44, or 45 to a point in Range 5 or 6, west of the 4th Meridian, thence southerly and westerly, crossing the said Pheasant Hills Branch to a junction with the Lacombe extension of the Calgary & Edmonton Railway in Township 36, 37 or 38, Range 11, 12 or 12, west of the 4th Meridian, a distance of about 180 miles;

(b) From a point in Township 6, 7, 8 or 9, Range 30, west of the 2nd Meridian in a westerly direction to a connection with the Crow's Nest Pass Branch, between Range 16, west of the 4th Meridian and Lethbridge, a distance of about 350 miles, or at a point on the Alberta Railway and Irrigation Company's railway in or near the Town of Sterling;

(c) From a point at or near Sedgewick on its Hardisty subdivision in a southerly direction to a point in Township 39 or 40, Range 11, 12 or 13, west of the 4th Meridian, in the Province of Alberta;

(d) From a point at or near Irricana in an easterly and southeasterly direction to a point in Township 20 or 21, Range 11 or 12, west of the 4th Meridian, in the Province of Alberta;

(e) From a point at or near Killam or some point in Township 44, Range 12, 13 or 14, west of the 4th Meridian in a northwesterly direction to a point at or near Strathcona, in the Province of Alberta.

2. Amending and extending the powers of the company in respect of the issuance of preferred shares now or hereafter issued by the conversion thereof into denominations of Canadian currency.

And for other purposes.
Dated at Montreal, this 9th day of December, 1915.

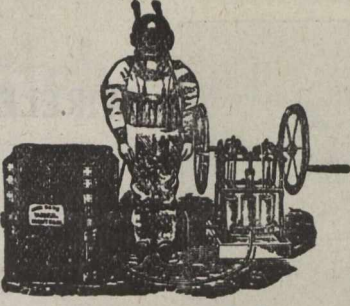
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Secretary.

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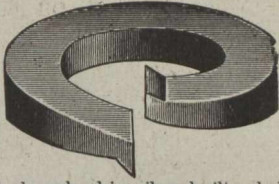
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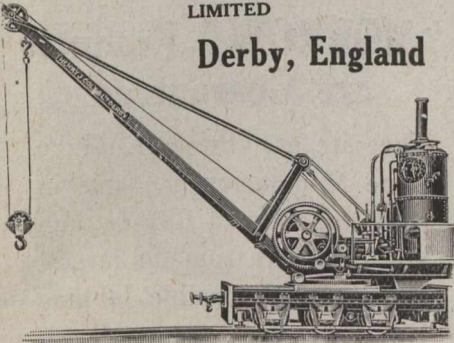
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CALGARY AND EDMONTON RAILWAY COMPANY.

NOTICE.—The Calgary and Edmonton Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which the company may construct the following lines of railway:

(a) From a point of its Macleod Branch in Township 19, 20 or 21 in a westerly direction to a point on the south branch of Sheep Creek in Range 4, west of the 5th Meridian.

(b) From a point on the line described in paragraph (a) to a point on the north branch of Sheep Creek in Range 2, 3 or 4, west of the 5th Meridian, and

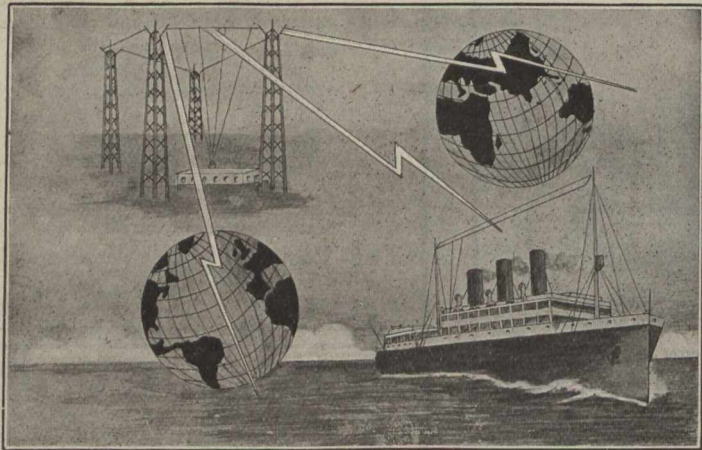
(c) From a point on the line described in paragraph (a) to a point on Trap Creek in Range 6, west of the 5th Meridian, all in the Province of Alberta.

Dated at Montreal, this 9th day of December, 1915. H. C. OSWALD,

Secretary.

Pringle, Thompson, Burgess & Cote,
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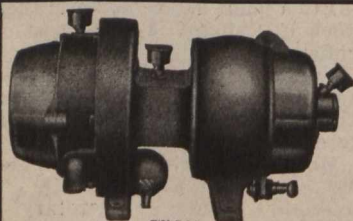
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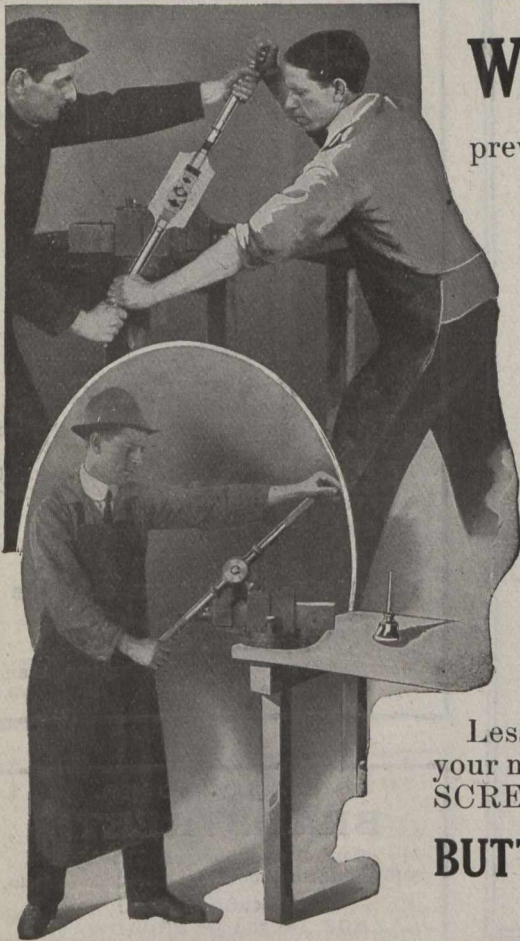
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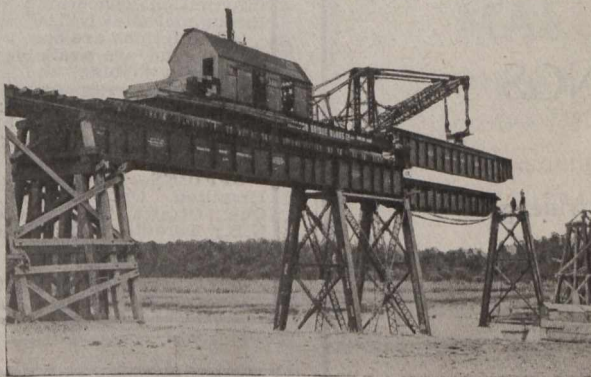
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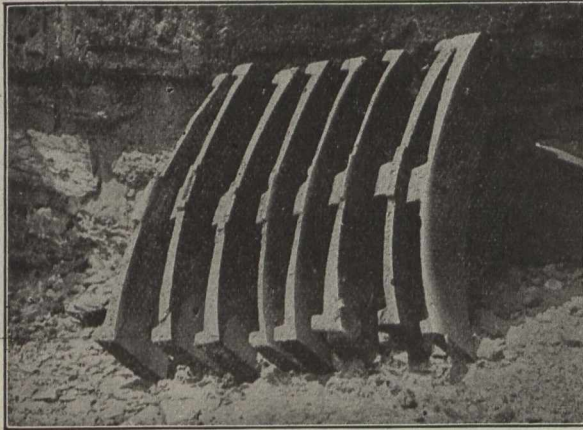
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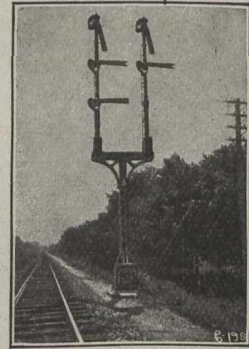
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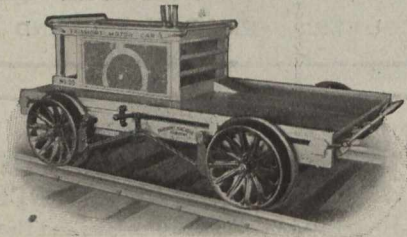
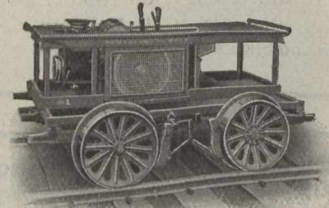
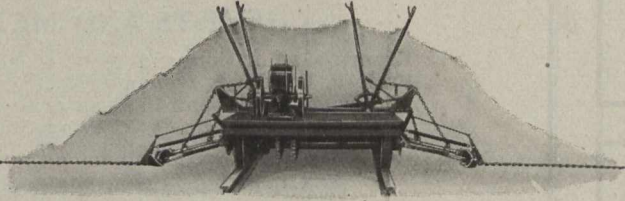
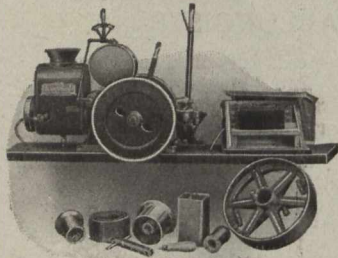
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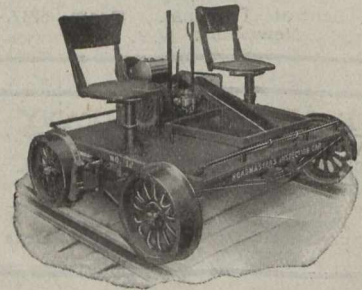
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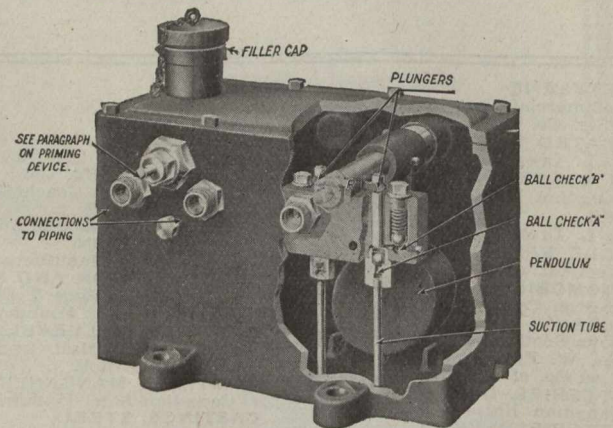
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Locomotive Superheater Co.
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Commercial Acetylene Ry. Lt. and Sig. Co.
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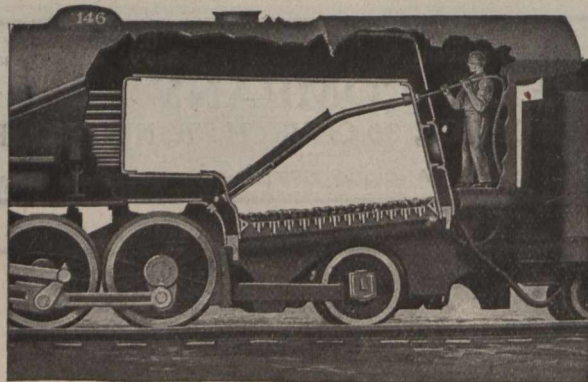
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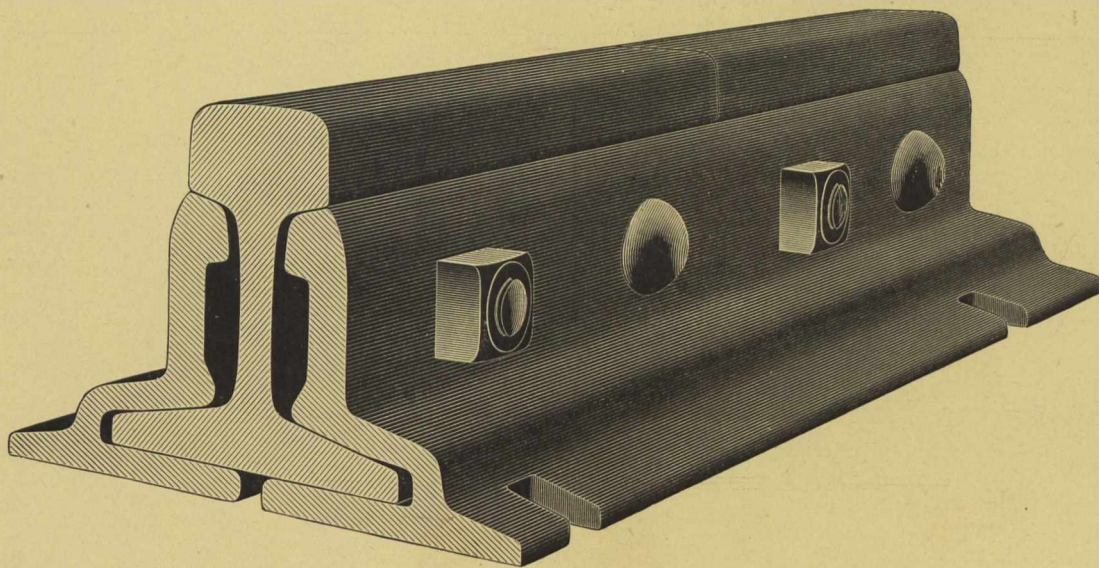
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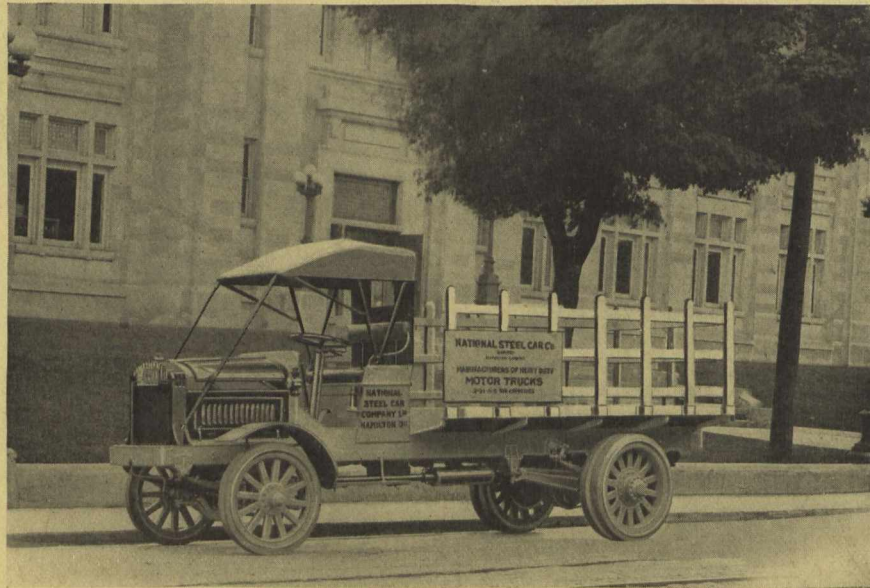
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