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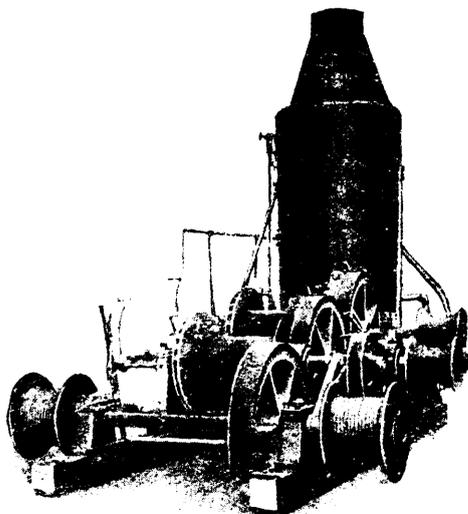
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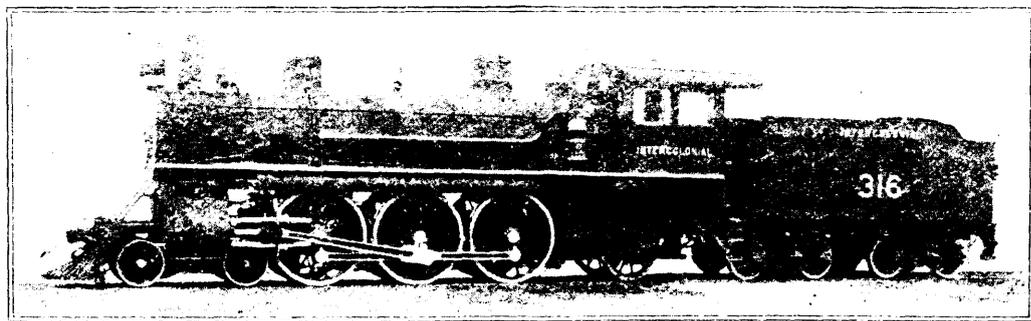
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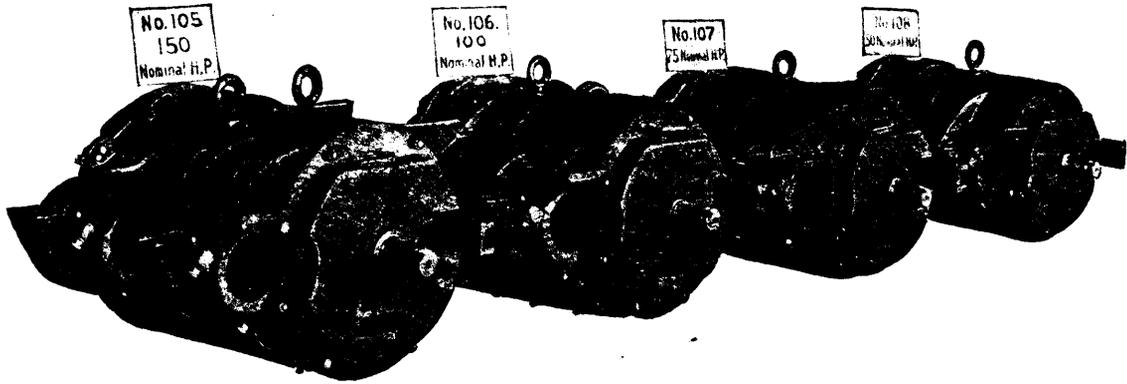
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Orders by the Railway Commissioners.

The following orders have been issued by the Board of Railway Commissioners:—

Authorizing the Department of Railways and Canals to put into use an interlocking, derailing and signal system on the Nassau, Ont., drawbridge over the Trent Canal. (Aug. 10).

Approving plans for the reconstruction of a bridge on the Tring-Megantic branch, Quebec Central Ry. (Aug. 11).

Approving plans for the construction of bridges at Lorch's Creek, between mileage 16 and mileage 17, Guelph and Goderich Ry. (Aug. 11).

Authorizing the C.P.R. to construct a branch line in Winnipeg, crossing Higgins Ave., and Henry St., to lot 7, block 15. (Aug. 11).

Granting leave to the light commissioners of Berlin, Ont., to carry six electric light wires across the G.T.R. tracks at Waterloo St., Berlin, on conditions named. (Aug. 11).

Authorizing the Toronto, Hamilton and Buffalo Ry. to construct a spur line across the Beach road at Hamilton, Ont. (Aug. 11).

Sanctioning plans for a bridge over Moose Creek, mileage 36.5 from Ottawa, for the Canada Atlantic Ry. (Aug. 11).

Granting permission to the Guelph, Ont. City Council to lay sewer pipes under the G.T.R., in Guelph, according to plans filed and conditions agreed upon. (Aug. 11).

Approving plans of a bridge across the North Saskatchewan River at Fort Saskatchewan, Alta., for the Canadian Northern Ry. (Aug. 11).

Sanctioning a deviation from the location previously approved for the Wetaskiwin, Alta., branch of the Calgary and Edmonton Ry., between mileage 96 and mileage 100. (Aug. 11).

Approving plans for the diversion of the C.P.R. from its constructed line near Palliser, B.C. (Aug. 11).

Approving plans for the location of a branch of the C.P.R., from the main line at Sudbury to Hutton, Ont., 30.1 miles. (Aug. 16).

Approving location between mileage 88 and mileage 97 of the C.P.R. Wolseley-Reston branch in Saskatchewan. (Aug. 16).

Sanctioning the crossing of highways at 20 points by the Guelph and Goderich Ry. (Aug. 16).

Approving of plans for concrete abutments of the proposed bridge over the Nottawasaga River, on the C.P.R. Toronto-Sudbury branch. (Aug. 17).

Authorizing the James Bay Ry. to construct an under crossing of the C.P.R. on lot 13, concession 2, from Toronto Bay; also to construct an under crossing of the C.P.R. at mileage 8.5 from Toronto. (Aug. 17).

Authorizing the C.P.R. to open for public traffic that portion of its McGregor-Varcoe branch between Brookdale and Varcoe, Man. (Aug. 21).

Authorizing the C.P.R. to open for public traffic the diversion recently completed at Palliser, B.C. (Aug. 21).

Granting permission to the G.T.R. to lay a watermain under the tracks of the Montreal Park and Island Ry. in Notre Dame de Grace parish, Que., on conditions specified. (Aug. 21).

Granting permission to the Toronto City Council to lay a sewer under the G.T.R. tracks at Roncesvalles Ave., Toronto. (Aug. 21).

Natural Gas Co., to lay pipes under the G.T.R. tracks at a number of points where they cross the public highway near Hamilton, Ont. (Aug. 25).

Granting permission to the village of Creemore, Ont., to lay watermain under the G.T.R. tracks in the village. (Aug. 25).

Granting the Waterloo, Ont., town Council permission to lay a sewer and gas pipes under G.T.R. tracks at certain street crossings in the town according to plans filed and conditions agreed to. (Aug. 25.)

Sanctioning deviation from previously located line of the Vancouver, Victoria and Eastern Ry., from lot 641, township 67, sec. 3, for a distance of 17.07 miles. (Aug. 31).

Authorizing the Lake Erie and Detroit River Ry. to construct a branch from its present main line near Kettle Creek, to a junction with the Canada Southern Ry., in the Township of Yarmouth, Ont. (Aug. 31).

Authorizing the construction of an electric railway upon certain streets in Hamilton, Ont., for the Brantford and Hamilton Electric Ry., subject to the terms of by-law 484 of Hamilton city. (Sept. 1).

Sanctioning location plans of the Vancouver, Westminster and Yukon Ry., from station 1058.10 to station 1671.10. (Sept. 1.)

Sanctioning the location of the line of the Vancouver, Victoria and Eastern Ry. from the International boundary in Indian Reserve No. 7, to Kermeos, B.C., 18.7 miles. (Sept. 1.)

Approving plans for the construction of a railway on certain streets in Hamilton, Ont., mentioned in by-law No. 484 of the City Council, for the Hamilton, Galt and Guelph Ry. (Sept. 1).

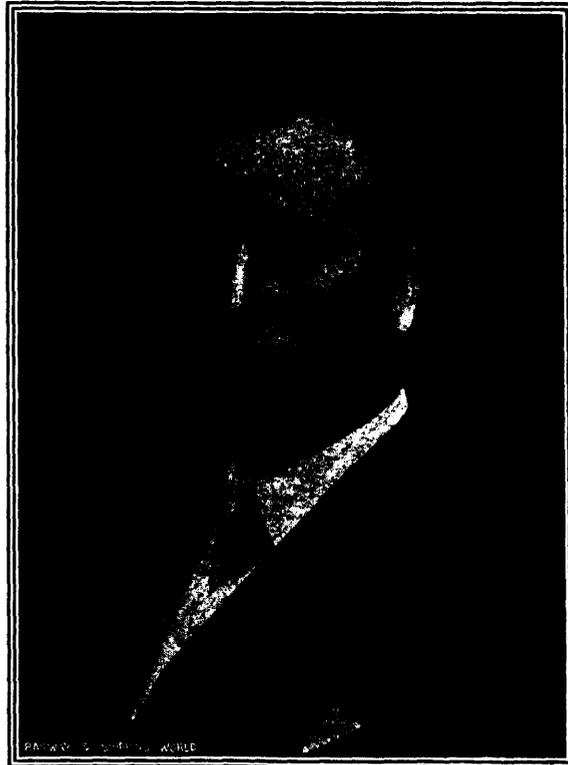
Authorizing the Salmon River and Northern Ry. to cross the C.P.R. tracks about four miles east of Montebello, Que., on terms of agreement made between the companies. (Sept. 2.)

Varying the order of the Board dated May 11 by authorizing the deviation of the high-way on the Lake Shore Rd., in Hope township, Ont., so that it can be carried under the G.T.R. tracks at right angles about 300 ft. east of the present crossing. (Sept. 2).

Approving plans for the construction of bridges over the Whanapitae, French and Pickeral Rivers, on the C.P.R., Toronto-Sudbury line. (Sept. 2).

Authorizing the G.T.R. to employ watchmen at its crossings of Kent St., and Lindsay St., south, Lindsay, Ont. (Sept. 4).

Approving plans for the location of the Grand Trunk Pacific Ry. main line from mileage 50.841 to mileage 84.543, Portage la Prairie district, Man. (Sept. 4).



THOMAS MARSHALL
Secretary-Treasurer Canadian Freight Association.

Sanctioning amended plans and book of reference for deviation of the projected line of the Alberta Ry. and Irrigation Co., plans of which was approved by the Board, Feb. 11, 1905. (Aug. 25).

Sanctioning a proposed revision of location of the Prince Albert branch Canadian Northern Ry., between mileage 438 and mileage 448. (Aug. 25).

Granting permission to the Peregrine Coal Co., Hamilton, Ont., to lay a sewer under the G.T.R. tracks on Ferguson Ave., Hamilton. (Aug. 25).

Granting permission to the Dominion

(Continued on page 453.)

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Orders by the Railway Commissioners.

(Continued from page 449.)

Approving plans for the location of the Nicola, Kamloops and Similkameen Coal and Ry. Co. from mileage 45, Nicola Lake, to Tuck-ul-nu-it Lake in the Okanagan Valley. (Sept. 5).

Granting the James Bay Ry. permission to cross the right of way of the G.T.R. in the township of Thorah, Ont., on condition that if the G.T.R. shall require to lay tracks on the right of way, the J.B. Ry. shall raise the grade and put in an ordinary diamond crossing. (Sept. 5).

Granting permission to the Montreal Park and Island Ry. to carry electric wires over the G.T.R. tracks at Cote St. Paul Rd., Montreal. (Sept. 6).

Sanctioning location plans of the Canadian Northern Ry. through townships 8 to 10, range 26, west, between mileage 23 to mileage 36.34, reckoned from Hartney, Man. (Sept. 12).

Authorizing the Brantford Electric and Operating Co. to carry two electric wires over the G.T.R. tracks in Brantford, Ont. (Sept. 12).

Authorizing R. T. Walsh & Co. to carry four electric light wires over the G.T.R. at Ormstown, Que. (Sept. 12.)

C.P.R. ANNUAL REPORT.

Following is the 24th annual report, addressed to the shareholders, over the signature of the President, Sir Thos. G. Shaughnessy:

The accounts for the year ended June 30, 1905, show the following results:

Gross earnings.....	\$50,481,882 25
Working expenses.....	35,069,793 79
Net earnings.....	\$15,475,088 46
Interest on deposits and loans.....	\$372,531 47
Interest due from Duluth, South Shore & Atlantic Ry. Co. on consolidated bonds held by the Co.....	\$604,280 00
Less advanced by the Co.....	179,280 00
Interest from Minneapolis, St. Paul & Sault Ste. Marie Ry. Co. on bonds held by the Co.....	1,59,720 00
Interest from Mineral Range Rd. Co. on bonds held by the Co.....	50,160 00
Interest from Montreal & Atlantic Ry. on bonds held by the Co.....	47,250 00
Dividends on Minneapolis, St. Paul & Sault Ste. Marie Ry. preferred and ordinary stocks held by the Co.....	530,002 00
	<u>1,584,663 47</u>
	\$17,959,751 93
Deduct fixed charges.....	7,954,065 76
Surplus.....	\$ 9,105,686 17
Deduct amount applied against cost of steamships and for contribution to Pension Fund.....	230,000 00
From this there has been charged a half-yearly dividend on preference stock of 2% paid April 1, 1905.....	\$ 757,066 66
And a half-yearly dividend on ordinary stock of 3% paid April 1, 1905.....	2,515,000 00
	<u>3,292,066 66</u>
	\$ 5,583,619 51
From this there has been declared a second half-yearly dividend on preference stock of 2% payable Oct. 2, 1905.....	\$ 757,066 66
And a second half-yearly dividend on ordinary stock of 3% payable Oct. 2, 1905.....	3,042,000 00

The working expenses for the year were 69.35% of the gross earnings, and the net earnings 30.65%, compared with 69.42 and 30.58% respectively in 1904. Four per cent. consolidated debenture stock to the amount of £1,406,575 was created and sold, and the proceeds were applied towards the

construction of branch lines and the acquisition of mortgage bonds of the Calgary and Edmonton Ry., the Tillsonburg, Lake Erie and Pacific Ry., the Northern Colonization Ry., and the Guelph and Goderich Ry., the interest on which had been guaranteed by your company. Preference stock to the amount of £900,000 was also created and sold and the proceeds applied to purposes for which your authority had already been obtained.

During the year 509,386 acres of land were sold for \$2,446,300, an average of \$4.80 per acre, and from the proceeds of land sales a further amount of \$3,500,000 was deposited with the Dominion Government, on account of the \$15,000,000 land bonds mortgage, leaving a balance due on account of this mortgage of \$8,000,000, against which are deferred payments, on account of land and townsites sold, of \$14,659,179.63.

Your company's guarantee was endorsed on consolidated bonds of the Minneapolis, St. Paul and Sault Ste. Marie Ry. Co. to the amount of \$3,620,000, representing the cost of 181 miles of additional railway constructed in extension of its system, which extension promises to add to the already prosperous business of that company.

Two additional steamships for the Atlantic service of 14,500 tons gross register and 18½ knots sea speed are being constructed under a contract authorized at the last annual meeting. It is expected that these will be ready for service on the opening of St. Lawrence navigation in 1906. Their cost with equipment will be approximately £800,000, and a resolution authorizing the issue and sale of the necessary securities to meet this expenditure will be submitted for your approval.

For the purpose of reaching the trade and participating in the development of Vancouver Island, your directors secured the necessary legislation and made the requisite agreements to enable you to acquire control of the Esquimault and Nanaimo Ry. extending from Victoria to Wellington, 78 miles. The Esquimault and Nanaimo Ry. Co. owns a land grant on Vancouver Island of approximately 1,600,000 acres. You will be asked to authorize a lease of the railway of the Esquimault Co. to your company for a term of years, at a rental equal to the interest at 4% per annum, payable on bonds from time to time issued by that company with the consent of your company, to an amount not exceeding \$30,000 per mile of the railway, upon the condition that the Esquimault Co. shall apply the proceeds of all sales of land towards the redemption of said bonds at par until such time as the total amount of said bonds outstanding shall have been reduced from \$30,000 per mile to \$14,000 per mile of railway.

Your directors have entered into an agreement for an interchange of traffic at the International Boundary with the Spokane International Ry. Co. whose line will be connected with yours by a branch, 12 miles in length, now under construction from Yahk on your British Columbia Southern line. By this means your railway and its connections will secure access to Spokane, a most important commercial and industrial centre in the State of Washington.

The Nicola, Kamloops & Similkameen Ry. Co. is constructing a railway from Spence's Bridge on your main line in British Columbia to the coal fields in Nicola valley, a distance of 45 miles. It is intended that this line shall be gradually extended through the Similkameen valley, and, eventually, to a connection with your Columbia and Western section at Midway. There will be submitted for your approval a resolution authorizing a lease by your company of the section now under construction at a rental equal to the interest at 4% per annum on bonds of that company issued with the consent of

your company to an amount not exceeding \$30,000 per mile.

On all your traffic to and through St. John, N.B., you have been required to pay tolls to the St. John Bridge and Railway Extension Co., owners of the bridge between your terminus at Carleton and St. John. With the increase in business these tolls became burdensome, and your directors decided to ask your authority to build another bridge unless some more favorable agreement could be made with the proprietors of the present structure. An arrangement has been made that gives your company absolute control of the property at a cost of \$200,000, and a resolution will be brought before the meeting authorizing capital expenditure to that amount. The property is subject to outstanding mortgage bonds to the amount of \$125,000, bearing interest at 5% per annum and to a Government lien of \$433,900 at 4% per annum. This transaction will, on the basis of last year's traffic, represent to your company an annual saving of over \$30,000.

To serve a large district that is being rapidly settled it is necessary to build a branch line from the vicinity of Wolseley, on your main line, to Reston on the Souris branch, a distance of 122 miles. A resolution will be submitted approving the construction of this line and authorizing the issue and sale of the requisite 4% consolidated debenture stock for the purpose.

There will be laid on the table for your further information, and you will be asked to approve an agreement between your company and the British Columbia Electric Ry. Co. for the operation by electricity of your Vancouver and Lulu Island Ry. between Vancouver and Steveston, in order that a more frequent service may be provided than would be practicable on a line operated by steam. The agreement provides, amongst other things, that the B.C. Electric Ry. Co. shall equip the railway as an electric line and operate it continuously over its whole length, giving a good and sufficient service, until Feb. 11, 1924, unless the property of the Electric Company be taken over by the city of Vancouver, in 1919, in which event the contract will lapse.

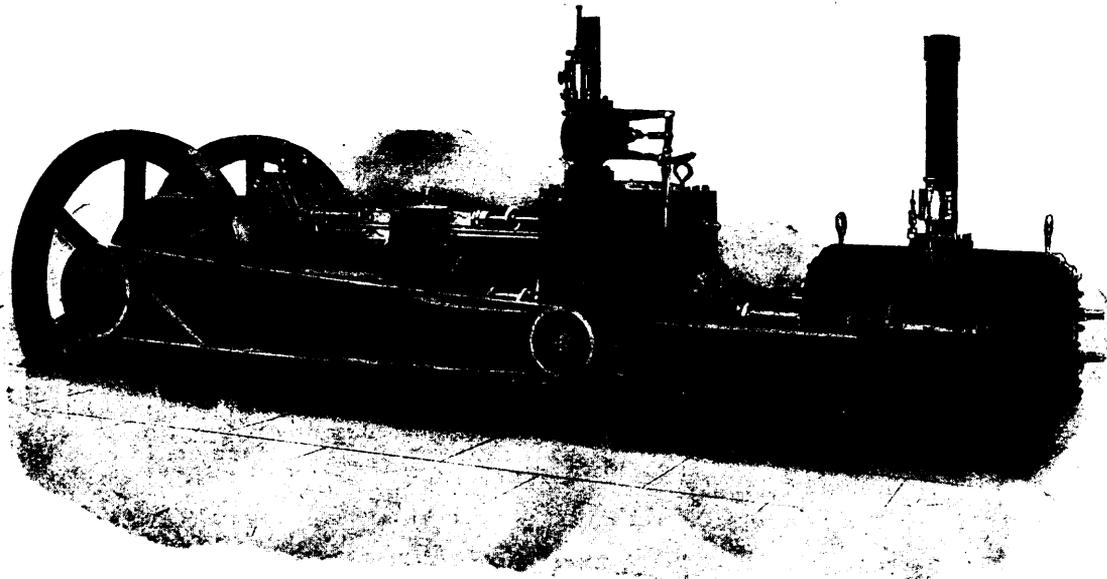
The construction of the second track between Winnipeg and Fort William, mentioned at the last annual meeting, is proceeding, and it is expected that the work will be completed in about three years, by which time everything indicates that it will be urgently required. In the meantime, as the result of your expenditures for the reduction of gradients and general improvements, enabling you to run heavier locomotives and cars, you can move over the single track between Winnipeg and Fort William a very much larger tonnage than would have been possible in previous conditions.

The construction of the main canal and of secondary canal A, for the irrigation of the company's lands between Calgary and Gleichen, is progressing satisfactorily, and it is expected that about 110,000 acres of irrigated land will be available early next year. Work will then be prosecuted on secondary canal B, for the purpose of bringing water on about 200,000 additional acres.

For some time past your directors have been engaged in the development of a coal mine on the company's lands near Banff. The development work is nearing completion and the mine promises not only to safeguard your fuel supply in that district but to be a source of considerable profit.

You will observe that the item "Cash subsidies from Dominion and Provincial Governments and Municipalities," and so much of the proceeds of land sales as were applied to the construction and equipment of the railway, have been transferred from the credit side of the balance sheet, where

CANADA AIR COMPRESSORS



**STRAIGHT LINE OR DUPLEX. SIMPLE OR COMPOUND
STEAM, BELT, GEAR, OR MOTOR DRIVEN**

**MADE FOR ALL CONDITIONS OF SERVICE IN
MACHINE SHOPS, FOUNDRIES, MINES, REFINERIES
BREWERIES, BLOCK SIGNAL WORK, ETC.**

SEND FOR BULLETIN No. 26

CHRISTENSEN AIR BRAKES FOR ELECTRIC TRAMWAY SERVICE

CANADA FOUNDRY COMPANY

LIMITED

HEAD OFFICE

TORONTO, ONTARIO

DISTRICT OFFICES:

MONTREAL, HALIFAX, OTTAWA, WINNIPEG, CALGARY, VANCOUVER, ROSSLAND.

they have appeared up to the present time, to the other side of the account in reduction of the item "Cost of Railway and Equipment." After providing for the outstanding land grant bonds the balance of the proceeds of sales amounting to \$7,676,552 is a free asset, and may properly be classed with your surplus, available for any purpose.

Of the additional \$25,500,000 ordinary capital stock authorized at the last annual meeting, the amount of \$16,900,000 was offered to the shareholders at par, and all was subscribed for excepting 2,500 shares, which will be sold in the open market.

Your directors recommend that an amount equivalent to 15% of the last issue of ordinary share capital, or \$2,535,000 be transferred, as was done in the case of the previous issue, from the accumulated surplus earnings; this amount to be transferred to a special fund for improvements, and for such other purposes as may conduce to the company's advantage.

In accordance with the by-laws the following directors will retire from office at the approaching annual meeting; they are eligible for re-election: C. R. Hosmer, Hon. R. Mackay, D. McNicoll, R. G. Reid. The company sustained a serious loss by the death in March last of G. R. Harris, who had been a member of your Board since 1885. He was always an active and zealous member of the board, and at all times evinced the greatest interest in the welfare of the company.

CONDENSED BALANCE SHEET.

Cost of railway and equipment.....	\$275,837,497 22	
Less amount subsidies and bonuses received.....	\$39,752,195 07	
Less proceeds of land sales expended in construction.....	\$66,045,716 07	
		\$208,891,781 15
Ocean, lake and river steamships.....	\$15,217,113 18	
Less amount applied in reduction of cost.....	2,268,224 69	
		12,948,888 49
Acquired securities held (cost): Properties held in trust for the company.....	1,935,608 24	
Deferred payments on land and townsite sales.....	\$14,659,179 63	
Advances:		
To Duluth, South Shore & Atlantic Ry., car trust, etc.....	236 213 19	
Material and supplies on hand Station and traffic balances, accounts receivable.....	8,191,297 27	
	3,870,440 19	
Imperial and Dominion Governments: Accounts due for mail transportation.....	254,612 42	
Cash in hand.....	16,496,291 41	
		\$319,784,846 21
In addition to the above assets, the company owns 10,863,977 acres of land in Manitoba and the Territories (average sales past year \$4.80 per acre) and 3,681,480 acres in British Columbia.		
Capital stock.....	\$84,500,000 00	
Payments on subscription to new issue capital stock \$16,900,000.00.....	14,238,074 00	
4% preference stock.....	37,853,333 33	
4% consolidated debenture stock.....	89,200,549 32	
First mortgage bonds, 5%.....	\$34,998,633 33	
Canada Central Ry., 6%.....	973,333 33	
Due Province of Quebec on Q.M.O. & O. & North Shore Ry.....	7,000,000 00	
Algoma branch, 1st mortgage.....	3,650,000 00	
North Shore Ry., 1st mortgage.....	616,119 67	
	47,238,086 33	
Land grant bonds—		
Guaranteed 3 1/2% land bonds	15,000,000 00	
Less amount paid Dominion Government towards redemption.....	7,000,000 00	
	8,000,000 00	
Current accounts, pay rolls and traffic balances.....	8,183,221 95	

Interest on funded debt and rental of leased lines—	
Coupons due July, 1905, and including coupons overdue, not presented.....	1,484,203 94
Accrued to date, not due....	284,879 96
	1,769,083 90
Equipment replacement fund	874,279 55
Steamship replacement fund	340,666 67
Land grant—	
Sales of land and town sites.	7,676,552 25
Surplus.....	19,910,998 91
	\$319,784,846 21

FIXED CHARGES FOR YEAR ENDED JUNE 30.	
1st Mortgage Bonds 5% due July 1, 1915..	\$1,749,931 66
Province of Quebec, 4 1/2%.....	283,500 00
Canada Central Ry. 2nd mortgage 6% bonds due Nov. 1, 1910.....	58,400 00
St. Lawrence & Ottawa Ry. 4% 1st mortgage bonds due June 15, 1910.....	38,933 34
Man. Southwestern Colonization Ry. 1st mortgage 5% bonds due June 1, 1934.....	127,200 00
Toronto, Grey & Bruce Ry. rental.....	140,000 00
Ontario & Quebec Ry. Debenture Stock 5% Ontario & Quebec Ry. (Ordinary Stock) 6%.....	975,129 56
	120,000 00
Atlantic & North-West Ry. 1st mortgage bonds (less Government proportion) due Jan. 1, 1937.....	136,333 34
Algoma Branch 5% 1st mortgage bonds due July 1, 1937.....	182,500 00
Rental Calgary & Edmonton Ry.....	138,357 60
Rental, Farnham to Brigham Jct.....	1,400 00
Rental, Mattawankeag to Vanceboro.....	23,800 00
Rental, New Brunswick Ry. System.....	372,829 74
Rental of terminals at Toronto.....	31,553 64
Rental of terminals at Hamilton.....	33,754 40
Rental, Hamilton Jct. to Toronto.....	40,027 86
Rental St. Stephen and Milltown Ry.....	2,050 00
Rental Lindsay, Bobcaygeon & Pontypool Ry.....	9,661 54
Rental, Lachine Canal branch.....	1,021 80
Interest on Montreal & Western Ry. purchase.....	19,235 77
Interest on equipment leases.....	146,643 00

4% CONSOLIDATED DEBENTURE STOCK.	
Interest from July 1, 1904.....	\$3,313,675 36
Interest from Jan. 1, 1905.....	16,127 15
	\$3,329,802 51
Less received from subsidy Northern Colonization Ry.....	8,000 00
	\$3,321,802 51
	\$7,954,065 76

EARNINGS FOR YEAR ENDED JUNE 30, 1905.	
Passengers.....	\$13,583,052 11
Freight.....	31,725,290 10
Mails.....	793,896 48
Sleeping cars, express, elevators, telegraph and miscellaneous, including profit from ocean steamships.....	4,469,643 56
Total.....	\$50,481,882 25

WORKING EXPENSES FOR YEAR ENDED JUNE 30.	
Conducting transportation.....	\$16,905,848 92
Maintenance of way and structures.....	8,527,035 07
Maintenance of equipment.....	6,616,257 76
Parlor and sleeping car expenses.....	172,123 61
Expenses of lake and river steamers.....	515,397 02
General expenses.....	1,634,698 91
Commercial telegraph.....	635,432 50
Total.....	\$35,006,793 97

DESCRIPTION OF FREIGHT FORWARDED.		
	1905	1904
Flour, brls.....	5,010,868	5,270,432
Grain, bush.....	59,739,180	52,990,151
Live stock, head.....	1,360,560	1,314,814
Lumber, ft.....	1,435,758,930	1,267,804,321
Firewood, cords.....	261,794	270,803
Manufactured articles, tons.....	3,250,067	3,119,659
All other articles, tons.....	3,894,250	3,620,515

FREIGHT TRAFFIC, YEAR ENDED JUNE 30.		
	1905	1904
No. of tons carried.....	11,892,204	11,135,896
No. of tons carried one mile.....	4,155,256,309	3,809,801,952
Earnings per ton per mile.....	0.76 cts.	0.77 cts.

PASSENGER TRAFFIC, YEAR ENDED JUNE 30.		
	1905	1904
No. of passengers carried.....	6,891,511	6,251,471
No. of passengers carried one mile.....	736,774,844	677,940,496
Earnings per passenger per mile.....	1.84 cts.	1.83 cts.

TRAIN TRAFFIC STATISTICS.		
TRAIN MILEAGE.		
		Increase or decrease. Per cent.
Passenger trains.....	9,797,618	11.17+
Freight.....	14,429,739	4.40+
Mixed.....	1,537,781	1.70-
Total trains.....	25,765,138	6.53+

CAR MILEAGE.		
PASSENGER—		
Coaches and P.D. and S. cars.....	47,640,910	10.08+
Combination cars.....	2,012,194	6.96-
Baggage, mail and express cars.....	18,102,150	14.99+
Total passenger cars.....	67,755,254	10.74+
FREIGHT—		
Loaded.....	262,519,047	7.86+
Empty.....	71,001,171	16.70+
Caboose.....	15,390,124	4.69+
Total freight cars.....	348,910,342	9.40+
Passenger cars per traffic train mile.....	5.98	1.36+
Freight cars per traffic train mile.....	21.85	5.35+

PASSENGER TRAFFIC.		
Passengers carried (earning revenue).....	6,800,427	10.47+
Passengers carried (earning revenue) one mile.....	724,981,215	8.74+
Passengers carried (earning revenue) one mile per mile of road.....	85,437	3.17+
Average journey per passenger..... miles	106.60	1.57-
Average amount received per passenger.....	\$ 1.91	1.04-
Average amount received per passenger mile.....	cts. 1.79	.56+
Average number of passengers per train mile.....	63.96	.48-
Average number of passengers per car mile.....	14.90	.86-
Revenue from passengers per passenger car mile.....	cts. 26.71	.15-
Total passenger train earnings per train mile.....	\$ 1.40	
Total passenger train earnings per mile of road.....	\$ 1,864.30	3.57+

FREIGHT TRAFFIC.		
Tons of revenue freight carried one mile.....	4,018,602,710	9.47+
Tons non-revenue freight carried one mile.....	777,323,013	25.80+
Total tons (all classes) freight carried one mile.....	4,795,925,723	11.83+
Tons of revenue freight carried one mile per mile of road.....	472,432	4.16+
Tons of non-revenue freight carried one mile per mile of road.....	91,418	19.23+
Total tons (all classes) freight carried one mile per mile of road.....	563,850	6.33+
Average amount received per ton per mile of revenue freight.....	cts. 0.767	.78-
Average no. of tons of revenue freight per train mile.....	251.69	5.42+
Average no. of tons of non-rev. freight per train mile.....	48.68	21.12+
Average no. of tons of (all classes) freight per train mile.....	300.37	7.68+
Average no. of tons of revenue freight per loaded car mile.....	15.31	1.53+
Average no. of tons of non-rev. freight per loaded car mile.....	2.96	16.53+
Average no. of tons of (all classes) freight per loaded car mile.....	18.27	3.69+
Freight train earnings per loaded car mile.....	cts. 11.75	.86+
Freight train earnings per train mile.....	\$ 1.93	4.32+
Freight train earnings per mile of road.....	\$ 3,627.04	3.39+
	+ Increase.	- Decrease.

Earnings of lake and river steamers not included in this statement.

	1905	1904
Mileage included in C.P.R. traffic returns.....	8568.0	8332.0
Mileage of other lines worked.....	438.0	438.0
Mileage under construction.....	481.4	338.5
	9487.4	9108.5
Mileage of Minneapolis, St. Paul & Sault Ste. Marie Ry.....	1829.2	1648.1
Mileage of Duluth, South Shore & Atlantic Ry.....	565.0	565.0
Total.....	11,881.6	11,321.6

The Canadian Fairbanks Co. has shipped a complete machine shop equipment consisting of power steam hammers, punch and shear lathes, drill presses and a full set of small tools to the Fiji Islands.

The Westinghouse Companies' Publishing Department issued a special booklet describing in a general way the lines of apparatus and machinery for construction and operation of electric railways, for the recent meeting of the American Street Railway Association at Philadelphia. It has also issued circular 1120 describing no. 113 railway motor for direct current service; and circular 1123, describing Westinghouse prepayment Watt meters.

Flour and Other Grain Product Rates.

The Board of Railway Commissioners issued the following order Sept. 4. In the matter of the application of the C.P.R. Co. and the G.T.R. Co., that the order of the Board in the matter of the complaint of the Dominion Millers' Association, dated July 25 (as published in the RAILWAY AND SHIPPING WORLD for Sept., pg. 401) be held in abeyance pending an opportunity to the railway companies to present to the Board the position in which they will be placed by the enforcement of the rate basis ordered. Whereas by the said order, it was provided, inter alia, that certain station groupings and percentages of the Chicago to New York rates should be substituted for those previously adopted on freight traffic for export from Ontario to the Canadian and U.S. Atlantic seaboard. And whereas at the hearing on Aug. 29, it was represented to the Board, on behalf of the railway companies, that the said order would work a hardship and injustice to them in respect of traffic to New York and ports south thereof, and the Board was urged to approve in lieu of the station groupings and percentages provided in said order, a new list of station groupings and percentages which they considered should govern the rates to New York and ports south thereof, the said new lists being from certain groups more favorable to the railways than that embodied in the order dated July 25, but more favorable to the public than the basis of rates heretofore charged. Upon the report of the Chief Traffic Officer of the Board recommending the acceptance of the said new list of stations and percentages in substitution of those provided for in the order of July 25. It is ordered that the order, dated July 25, be amended by substituting, in lieu of the station groupings and percentages embodied therein, the following station groupings and percentages of the Chicago to New York rates to New York, with the customary differentials to Philadelphia and Baltimore:

- Group no.
1. Niagara Falls to Paris, Brantford, Jarvis and Niagara Peninsula 70%
 2. East of Hamilton to Toronto, inclusive, thence west along main line Grand Trunk Ry. to Berlin and Waterloo and other points south thereof not included in Group 1. 73%
 3. East of Toronto to Port Hope and Peterboro, inclusive, thence west along line Grand Trunk to Lindsay, through Manilla and Blackwater Jct. to Scarboro and Whitby and stations within that group; also north of Waterloo, Guelph, Georgetown and Brampton, including line of C.P.R. Brampton to Elora; also north of Toronto to King and Kleinburg; also north of Port Hope to Peterboro and intermediate stations 75%
 4. East of Port Hope and Peterboro to Kingston and Sharbot Lake, inclusive, and intermediate territory; Madoc branch; west of Kleinburg to Grand Valley and Shelburne, both inclusive; also intermediate points north of Inglewood and Cataract; north of Inglewood to Alliston and Allandale; north of King to Barrie; north of Stouffville to Jackson's Point; north of Blackwater Jct. to Lorneville Jct.; north of Lindsay to Fenelon Falls and Bobcaygeon; north of Peterboro to Lakefield. 78%
 5. North of Alliston to Collingwood; north of Barrie to Atherly Jct., Midland, Penetang, Collingwood; north Lorneville Jct. to Cobocok; west of Lorneville Jct. to Orillia 82%
 6. West of Collingwood to Meaford 85%

The percentages from stations not included in the list given above to be the same as set forth in the order of July 25.

The Ocean Limited, the summer fast train on the Intercolonial Railway, made its last run for the season east bound from Montreal to Halifax, Sept. 15, and west-bound from Halifax to Montreal, Sept. 16.

The Canadian Westinghouse Co. has issued circulars dealing with Westinghouse type c.c.l. solid frame polyphase induction motors, direct current self-contained generators, and Westinghouse regulating and reversing controllers.

The Kahn

TRUSSED BAR



Diagram showing the action of the Kahn Trussed Bar, indicating the lines of stress. Note that the concrete takes all compressive stresses and the steel all tensile stresses.

NOTE THE TRUSS ACTION



A 42 foot span of reinforced concrete used in the construction of the Western State Normal School, Kalamazoo, Mich. Built according to the Kahn System of reinforced concrete.



THE KAHN TRUSSED BAR

offers the following advantages over any other known method of reinforcing concrete:
It has sustained the heaviest beam tests on record.
Shear members are obtained from that portion of the steel which in other forms of reinforcement is wasted, thus making a saving in steel.
The diagonals being integral with the bar, results in great saving of time and labor.

Our engineering department is prepared to furnish complete plans and designs for any class of work. Competent superintendents furnished when required.
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TRUSSED CONCRETE STEEL CO.
GUSTAVE KAHN, Manager
18 Toronto Street TORONTO

Trussed Concrete Steel Co.



DESK 9 WAYNE COUNTY BANK BUILDING - DETROIT, MICHIGAN

October Birthdays.

Many happy returns of the day to
 E. P. Allen, Travelling Passenger Agent, C.P.R., Syracuse, N.Y., born Oct. 21, 1839.
 R. A. Burford, City Passenger and Freight Agent, C.P.R., Buffalo, N.Y., born at Brooklyn, N.Y., Oct. 4, 1878.
 G. E. Burns, Freight Claim Agent, C.P.R., lines east of Port Arthur, Ont., born at St. Thomas, Ont., Oct. 6, 1863.
 T. C. Burgess, Commercial Agent, G.T.R., Minneapolis, Minn., born at New York City, Oct. 2, 1853.
 C. E. Cartwright, Division Engineer C.P.R., Vancouver, B.C., born at Toronto, Oct. 14, 1864.
 James Conmee, M.P., railway contractor, etc., Port Arthur, Ont., born at Sydenham, Ont., Oct. 13, 1848.
 G. L. Courtney, District Freight and Passenger Agent, C.P.R., Victoria, B.C., born at Chatham, Ont., Oct. 7, 1868.
 F. S. Darling, Division Engineer of Construction, C.P.R., Toronto, born at Burlington, R.I., Oct. 8, 1863.
 J. Earls, ex-Secretary and Treasurer Canadian Freight Association, Toronto, Ont., born in Ireland, Oct. 30, 1838.
 W. H. Harper, C.P.R. ticket agent, Chatham, Ont., born at Napierville, Que., Oct. 19, 1850.
 A. H. Harris, C.P.R. freight department Montreal, Que., born in Devonshire, Eng., Oct. 15, 1855.
 W. P. Fitzsimons, Manager Lackawanna Grand Trunk Line, Buffalo, N.Y., born at Detroit, Mich., Oct. 27, 1868.
 C. F. Gildersleeve, President Lake Ontario and Bay of Quinte Steamboat Co., Kingston, Ont., born there Oct. 17, 1833.
 B. W. Greer, General Freight Agent, C.P.R., Vancouver, B.C., born at Aldboro, Ont., Oct. 4, 1867.
 W. M. Kirkpatrick, Acting Export Agent, C.P.R., Montreal, born at Kingston, Ont., Oct. 8, 1874.
 J. W. Leonard, Manager of Construction, C.P.R. Lines in Ontario, Toronto, born at Epsom, Ont., Oct., 1858.
 W. T. Marlow, Import Freight Agent, C.P.R., Montreal, born at Limerick, Ireland, Oct. 25, 1872.
 R. Marpole, General Superintendent C.P.R. Pacific Division, Vancouver, born in Montgomeryshire, Wales, Oct. 9, 1850.
 W. H. Moore, Secretary Canadian Northern Ry., etc., Toronto, born Oct. 19, 1872.
 G. Olds, ex-General Traffic Manager C.P.R., born at Stapleton, Gloucestershire, Eng., Oct. 29, 1832.
 W. H. Olive, Assistant General Freight Agent, I.C.R., Montreal, born at St. John, N.B., Aug. 5, 1837.
 H. Paton, Secretary-Treasurer Shedden Forwarding Co., director Bell Telephone Co., Montreal, born at Johnstown, Renfrew, Scotland, Oct. 5, 1852.
 C. A. Pilon, Passenger Agent for Ontario, International Mercantile Marine Co., Toronto, born at St. Heliers, Jersey, Oct. 19, 1855.
 D. Pottinger, General Manager Canadian Government Rys. Moncton, N.B., born at Pictou, N.S., Oct. 7, 1843.
 N. L. Rand, Master Mechanic, I.C.R., Moncton, N.B., born at Shediac, N.B., Oct. 28, 1843.
 G. B. Reeve, ex-Second Vice-President and General Manager G.T.R., La Mirada, Cal., born in Surrey, Eng., Oct. 23, 1840.
 Sir Thos. G. Shaughnessy, President C.P.R. Montreal, born at Milwaukee, Wis., Oct. 6, 1853.
 C. W. Spencer, Manager Mackenzie, Mann & Co.'s lines east of Port Arthur, Ont., Montreal, born at Kemptville, Ont., Oct. 31, 1857.
 W. S. Taylor, Treasurer C.P.R., Montreal, born at Dornoch, Sutherlandshire, Scotland, Oct. 18, 1839.
 L. H. Wheaton, ex-Chief Engineer and

General Superintendent Halifax and Yarmouth Ry., born at Sackville, N.B., Oct. 5, 1866.

E. A. Williams, ex-Superintendent Rolling Stock, C.P.R., now Assistant General Manager Erie Rd., at New York, born at Wiscasset, Me., Oct. 4, 1848.

Freight Rates on Metallic Shingles.

The Board of Railway Commissioners issued the following order Sept. 13, under date of July 5: In the matter of the application of the Canadian Manufacturers' Association and the manufacturers of metallic shingles, under the Railway Act, 1903, to the Board for an order reducing the rating of metallic shingles from 5th class and restoring it to 7th class of the Canadian Freight Classification; counsel having been heard for the Canadian Manufacturers' Association and the Canadian Freight Association, and upon the evidence adduced—it is ordered that the C.P.R. Co., the G.T.R. Co., the Canadian Northern Ry. Co., and such other railway companies as are represented by the Canadian Freight Association, be, and they are hereby, ordered to establish, with no greater delay than may be absolutely necessary for the publication of their tariffs, commodity rates on metallic shingles, in carloads, equal to the rates at which metallic shingles, in carloads, were carried immediately before the change of classification in March, 1901, and that the same rates be applied on metallic siding; mixed carloads of the two articles to be carried in all cases at the same rates as charged on straight carloads.

Quebec Bridge and Railway Co.

The report presented at the annual meeting on Sept. 5, stated that as soon as the bond issue authorized at the special general meeting of Jan., 1904, could have been delivered by the engraver, the same consisting of 11,696 bonds in denominations of £100 and £200 sterling, were signed by the President and Secretary and handed to the Royal Trust Co. in conformity with the mortgage trust deed. As the financial market was not then found favorable for a sale of the bonds, temporary arrangements were made with the Bank of Montreal, so as to continue the bridge work without interruption.

The report of E. A. Hoare, Chief Engineer, was appended. Following are extracts:—

BRIDGE OVER RIVER ST. LAWRENCE.—The progress of work at all points for this structure can be considered as very satisfactory. The total metal manufactured amounts to 24,500 tons, out of which 8,300 tons are delivered at yard near the bridge site and 2,500 tons of permanent steel erected. Previous to the erection of any part of the permanent structure for the south anchor arm, a massive temporary steel structure, for supporting the erecting traveller and members of the bridge, had to be constructed and placed in position, together with an interior trestle very substantially built of southern pine timber, principally used for railway tracks for delivery of materials, and deck space for working purposes. These heavy structures were completed early this summer, together with the steel traveller and other plant all completely rigged with hoisting machinery, and equipped with the most complete electrical power and modern appliances, all of which will be used for the construction of the southern half of the bridge, to be afterwards removed for the same operation on the north side.

RAILWAY CONSTRUCTION.—On the south shore the bridges over the River Chaudiere, St. Nicholas public road, and the long temporary trestles required for construction trains and delivery of structural materials for the cantilever bridge have been completed, and considerable progress made towards the

completion of the heavy embankments—with steam shovel and cars—between the I.C.R. and the bridge, and the heavy rock cuttings being finished early in the summer, enabled the railway tracks—which were partly laid last year—to be continued to the bridge. Safety signals have been erected at the lumber railway crossing. On the north side work is in progress between the cantilever bridge and Point à Pizeau, consisting chiefly of earth and rock excavation, construction of bridges over public roads, culverts, etc., in addition to the delivery of track and other materials made last year.

The report was adopted, as also was a financial statement, which is not made public, and directors were elected. The officers and directors for the current year are:—President, S. N. Parent; Vice-President, R. Audette; other directors: Hon. N. Garneau; Hon. J. Sharples, V. Boswell, G. LeMoine, H.M. Price, Quebec; H. A. Allan, Montreal.

Canadian Northern Ry. Earnings, etc.

Gross earnings, working expenses, net profits, increases or decreases over 1904-05, from July 1, 1905:

Earnings.	Expenses.	Net Profits.	Increase or Decrease.
July.. \$395,100	\$ 252,600	\$ 142,500	\$ 51,400+
Approximate earnings for Aug., \$357,000, against \$302,700 for Aug., 1904.			

C.P.R. Earnings, Expenses, etc.

Gross earnings, working expenses, net profits, increases or decreases over 1903-04, from July 1, 1904:—

Earnings.	Expenses.	Net Profits.	Increase or Decrease.
Jly \$4,629,174.95	\$2,991,397.29	\$1,449,652.14	\$188,125.52+
Approximate earnings for Aug., \$4,718,000 against \$4,394,000 for Aug., 1904.			

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Gross earnings for July, \$269,497.87; net earnings, \$102,810.86 against \$276,908.70 gross and \$87,217.50 net for July, 1904. Approximate earnings for Aug., \$287,670 against \$239,830 for Aug., 1904.

MINERAL RANGE RY.—Approximate earnings for Aug., \$68,009, against \$56,650 for Aug., 1904.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Gross earnings for July, \$777,433.97; net earnings, \$345,918.32, against \$641,479.17 gross and \$304,167.69 net for July, 1904. Approximate earnings for Aug., \$775,050 against \$610,149 for Aug., 1904.

Canadian Pacific Railway Land Sales.

	Acres.		Amount.	
	1905.	1904.	1905.	1904.
July..	58,477.37	36,425.75	\$304,795.23	\$117,473.94
Aug..	58,542.44	15,669.90	327,579.63	88,735.88
	117,019.81	52,095.65	\$ 632,374.86	\$ 206,209.82

Grand Trunk Ry. Earnings, Expenses, etc.

The following statement of earnings, supplied from the Montreal office, includes the G.T. of Canada, the G.T. Western, and the Detroit, Grand Haven & Milwaukee Rys.

	1905.	1904.	Increase.	Decrease.
July	\$3,301,254	\$3,108,137	\$193,117	....

The following figures relate to the individual lines, and are made out in sterling:

GRAND TRUNK RY. CO.

Revenue for July:—	1905.	1904.	Increase.	Decrease.
Gross receipts...	£519,800	£517,500	£2,300	....
Working expenses	355,400	354,000	1,400	....
Net profit.....	£164,400	£163,500	£ 900	....

GRAND TRUNK WESTERN RY. CO.

Revenue for July:—	1905.	1904.	Increase.	Decrease.
Gross receipts...	£ 81,200	£74,900	£ 6,300	....
Working expenses	75,600	74,400	1,200	....
Net profit.....	£5,600	£ 500	£ 5,100	....

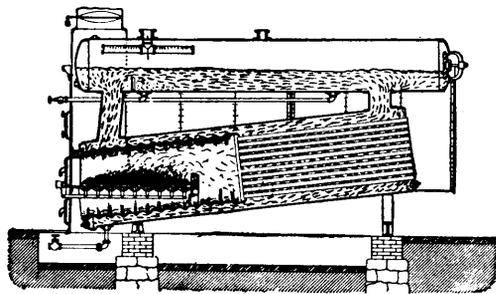
DETROIT, GRAND HAVEN & MILWAUKEE RY. CO.

Revenue for July:—	1905.	1904.	Increase.	Decrease.
Gross receipts...	£ 28,500	£ 26,700	£ 1,800	....
Working expenses	19,800	19,000	800	....
Net profit	£ 8,700	£7,700	£1,000	....

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from July 1 to Aug. 31:	1905.	1904.	Increase.	Decrease.
Grand Trunk..	£1,065,678	£1,047,815	£17,863	....
G. T. Western	181,981	150,359	31,622
D. G. H. & M.	60,235	59,624	611
Total.....	£1,307,894	£1,257,798	£50,096

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Your coal bill is a large item in your expense account, and if it could be reduced **TEN PER CENT.** it would mean a large addition to your net profit.

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The NORTON BALL-BEARING JACK

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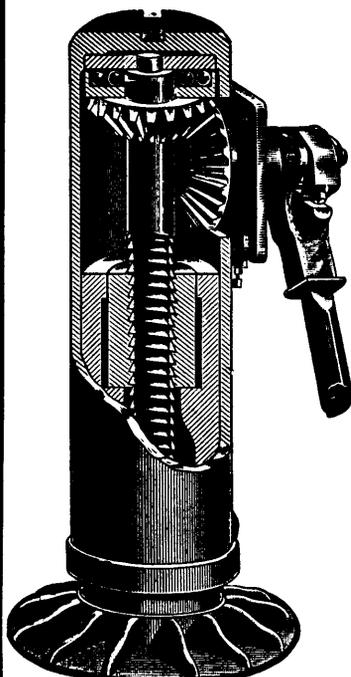
reduce the friction and increase the power of the Jack.

THE GEARS

are cut from solid steel forgings, thereby giving highest efficiency and greatest durability.

THE SCREW

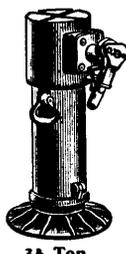
runs in a Phosphor Bronze Nut and is covered by a sliding sleeve which takes all the side strain, prevents the Screw from bending, and protects the working parts from Grit and Rust.



Sectional View of Norton Jack.



Foot-Lift Jack.



35 Ton Jack.



Journal Jack.

Made in 50 styles—8 to 70 tons capacity.

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COATICOOK, PROV. QUEBEC.

Stock carried by
W. H. C. MUSSEN & CO., Montreal.

RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Canada Atlantic Ry.—The work of strengthening the bridges on the line between Parry Sound, Ont., and Swanton, Vt., has been commenced by the G.T.R., although the line has not been formally transferred to it. (Aug., pg. 349.)

Central Ontario Ry.—The Ontario courts have authorized the C.O. Ry. to expend \$25,000 upon further construction from near Bancroft, to effect a junction with the Canada Atlantic Ry. at Whitney, Ont. A contract has been let for the grading of seven miles of track north of Bancroft, and for the construction of a single span steel girder bridge, 100 ft. long, over the York River. (June, pg. 241.)

Detroit River Tunnel.—Work has been in progress since Sept. 1, on test borings for the shaft on the United States side of the river, and it is expected that the real work of sinking the shaft will be commenced Oct. 1. (Sept., pg. 405.)

Great Northern Ry. of Canada.—The company's terminal tracks in Quebec have been overhauled and put in shape for the resumption of traffic to the elevator, in connection with the Quebec Transportation Co.'s steamers from Quebec to Great Britain. (Aug., pg. 351.)

Great Northern Ry. (U.S.)—A line has been practically completed from Starkweather, N.D., to the International boundary near Turtle Mountain, and press reports state that the line will be continued to Brandon, Man., under a Canadian charter. A charter was obtained from the Manitoba Legislature in 1903 by C. S. Mellen, H. P. Upham, C. E. Hamilton, J. S. Ewart and Jas. Fisher, under the title of the Midland Ry. Co. of Manitoba, to construct a network of lines in the province including one from Brandon southerly to the International boundary. (July, pg. 281.)

Guelph and Goderich Ry.—The Board of Railway Commissioners has given the G. and G. Ry. the right to use certain lands and premises of the G.T.R. in Guelph, Ont., and the G.T.R. is given permission to use certain portions of the C.P.R. tracks there. Track-laying on the line is being pushed from the Guelph end, and bridge construction at various points is well forward. Tenders for the construction of the stations on the line have been received. The plans for the entrance of the line into Goderich, as originally located, did not prove satisfactory, and others have been filed showing a number of deviations. (Sept., pg. 405.)

Halifax and South Western Ry.—The grading between Sable River and Shelburne, N.S., has been completed, and work between Sable River and Liverpool is well advanced. R. McColl, Provincial Engineer, recently inspected the line, accompanied by T. H. White, Chief Engineer, and approved of the location of stations. The ballasting of the Middleton and Victoria Beach section has been completed.

Mackenzie, Mann & Co. have ordered from F. H. Hopkins & Co., Montreal, 8,000 tons of English steel rails for this line, delivery to be made this fall.

An order has been placed with the Acton Burrows Co., Toronto, for enamelled iron station name signs for all the stations on the line. (Sept., pg. 407.)

Intercolonial Ry.—A new bridge over the Sackville River, at Bedford, N.S., is under construction in connection with the second track work now in progress. The substructure will consist of two piers 50 ft. high, and 48 by 16 ft. at the top. The foundations

will be of solid concrete, 14 ft. under the river bed. Wing walls are to be built in connection with the abutments of the present bridge. The bridge will consist of three spans having a total length of 320 ft. Ronan & Co., Halifax, N.S., are contractors for the substructure, and the superstructure will be built by the Dominion Bridge Co., Montreal.

Tenders will be received to Oct. 4, for the construction of a bulkhead sea wall of concrete at Halifax, N.S.

James Bay Ry.—According to a decision of the Ontario Government the route on the east side of Lake Couchiching has been approved. The Premier recently stated that the original plan was to construct the line on this side of the lake, and it would appear that the proposal to change the route so as to touch Orillia was sanctioned by the late Government a few days before the elections. It was now suggested that the Government grant a bonus to construct the line round the west side of the lake as a loop line, but the Government, in view of its present policy in regard to railways, felt itself unable to extend the guarantee. (Sept., pg. 407.)

The following are the sub-contractors on the grade between Toronto and Mount Albert under the general contractors, the Northern Construction Co.:—H. Allan, Don, mileage 4 to 5; Chapman, Kettle and Sarvis, Thornhill, mileage 12 to 16; D. McKellar, Richmond Hill, mileage 16 to 18; S. H. O'Connor, Elgin Mills, mileage 18 to 20; O. D. Brooks & Co., Gormley, mileage 21 to 24; McLean & McDonald, Vandorf, mileage 24 to 32; McDonald Bros., Mount Albert, mileage 32 to 38. The sub-contractors between Mount Albert and Washago are: A. F. Mackenzie, Beaverton; Trumble & Tisdale, Beaverton; McLean & Webster, Brechin; P. J. McDonald, Beaverton; McPhee Bros., Washago. The contractors for the cement work are Doyle, McLean & Webster, Don.

Kettle Valley Lines.—Work is in progress on the extension of the line from Grand Forks, up the north fork of the Kettle River to Franklin camp. From this point it is intended ultimately to extend the line through Fire Valley into the Nicola district. H. W. Warrington, Superintendent and Chief Engineer, is in charge of the construction and survey work. (June, pg. 243.)

Klondike Mines Ry.—The Minister of the Interior was in Dawson, Yukon, during Sept. with a view of straightening out affairs in connection with the right of way. Construction was being held up by a number of injunctions secured by those whose property the right of way traversed. Material for the construction of the bridge across the Klondike River has been delivered. The bridge will consist of four spans, and trestle approaches. (Sept., pg. 407.)

Maritime Coal and Ry. Co.—This company was incorporated by the Nova Scotia Legislature in 1904, to construct a line of railway to connect its collieries at Chignecto with the I.C.R. at Maccan station, N.S. The line has been constructed, the gradient being an easy one all the way from the collieries to Maccan. The collieries are only being developed, but during the first year of the company's operations showed a profit of \$34,703.07. The company has authority to issue \$250,000 of bonds, of which \$100,000 has been issued, and \$50,000 were recently offered for subscription. The company has a capital of \$2,000,000, all of which has been issued. Following are the officers for the current year: President, Hon. W. Mitchell, Drummondville, Que.; Vice-President, N. Curry, Amherst, N.S.; Managing Director, D. Mitchell, Chignecto, N.S.; other directors: W. Farwell, Sherbrooke, Que.; L. E. Kimton, Montreal. On Sept. 12 it was reported that the output of the collieries was 200 tons a day.

Michigan Central Rd.—Plans for the construction of a subway under the M.C.R. (Canada Southern Ry.) tracks at Ross St., St. Thomas, Ont., have been approved by the City Council. The plans provide for a 36 ft. roadway, with a 6 ft. sidewalk on each side and steps leading down from Centre St. to the west walk. The sidewalks are to be 5 ft. higher than the roadway and protected by railings. The total cost of the work, including sewer connections and damages, is estimated at \$65,000, of which the city will contribute \$18,000. The work will be gone on with in the spring, and will be done under the supervision of the City Engineer. (Feb., pg. 49.)

New Brunswick Coal and Ry. Co.—The contract for the improvements on this line was signed Aug. 24, and work was started Aug. 26. G. Brown, C.E., is in charge of the work for the contractors, Brown Bros. (Sept., pg. 407.)

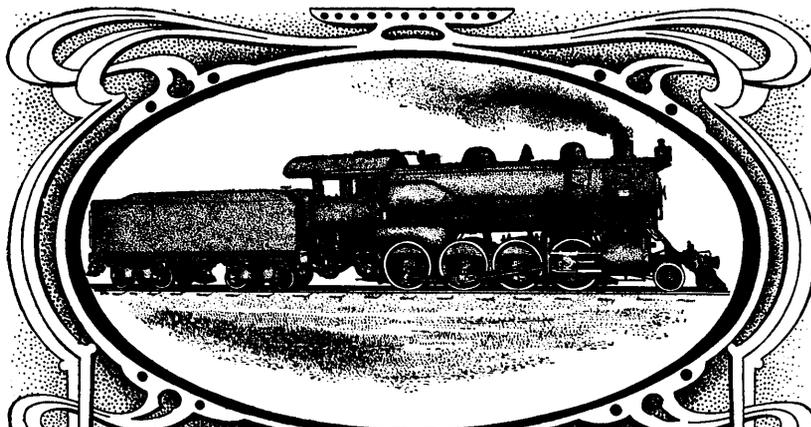
New Brunswick Southern Ry.—The new steel bridge over the Lepreaux River has been completed, and the first regular train crossed over it Sept. 9. Work on the other new bridges being constructed is in progress. (Aug., pg. 351.)

Nicola, Kamloops and Similkameen Coal and Ry. Co.—Some difficulty was experienced for some time in getting all the men required by the sub-contractors, but a recent report states that this has now been overcome, and that full gangs are at work between Spence's Bridge and Nicola Lake, B.C., 45 miles. It is expected that the grading will be completed before the snow flies. (Aug., pg. 351.)

Nova Scotia Eastern Ry.—A press report dated Sept. 7 stated that the issue of \$4,500,000 of 5% mortgage bonds in London, Eng., at 92½ had been a complete failure, not more than \$5,000 having been subscribed. J. W. Grier, Vice-President, Montreal, stated the following day that the Canadian Board thought the amount subscribed by the public was sufficiently large to proceed to allotment, but the Administrative Committee in England thought it should be increased first. He also said that negotiations were in progress with a group of capitalists who offered to take up £200,000 of bonds. A meeting of directors was held in Toronto Sept. 14, when the bond issue was discussed. (Sept., pg. 407.)

Pere Marquette Rd.—The company has recently purchased a considerable area of land in Southwold township, for an extension of its St. Thomas yards. The president has entered upon negotiations with the city of London respecting the improvements necessary on the London and Port Stanley Ry., which the P.M. Rd. operates on lease. The bridges require strengthening in order to carry the heavier traffic offering; snow fences are needed to prevent blockades in winter, and a good many other improvements are necessary. (Jan., pg. 13.)

Prince Edward Island Ry.—It is not expected that during the current year there will be anything done in the way of reduction of gradients or laying new rails, except the tracklaying on the extensions between Mount Albion and Vernon River Bridge, on the Murray Harbor Branch under construction, and the Cardigan and Montague branch also under construction. Tracklaying is in progress on this latter branch, and the work is expected to be completed by Oct. 31. The water tanks, of which there will be eight in all, are under construction, and will be completed this fall. These tanks are being erected at Alberton, West Devon, Summerside, Hunter River, Mount Stewart, Georgetown, Dundee and Harmony. They will have a capacity of 25,000 gals. each, and will be worked by steam pumps. The extension to the wharf at Georgetown is under construction, and is expected to be com-



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TERMS OF PAYMENT.

An actual settler may purchase not more than 640 acres, on the ten instalment plan by paying a cash instalment at time of purchase, interest at six per cent. on the unpaid purchase money at the end of the first year, and the balance of the principal with interest in nine equal instalments annually thereafter as shewn in the following table:—

160 Acres at \$3.50 per acre, cash payment \$83.00, first year's interest \$28.58 and nine instalments of \$70.00	4.00	95.85	32.64	80.00
" " 4.50 " " 107.85, " " " 36.73 " " 90.00	5.00	119.85	40.81	100.00
" " 5.50 " " 131.80, " " " 44.89 " " 110.00	6.00	143.80	48.98	120.00

Purchasers who do not undertake to go into residence on the land are required to pay one-sixth of the purchase money down, balance in five equal annual instalments with interest at the rate of 6 per cent. per annum.

DISCOUNT FOR CASH.

If land is paid for in full at time of purchase, a reduction from price will be allowed equal to ten per cent. on five-sixths of the purchase money.

Interest at six per cent. will be charged on overdue instalments.

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89 PRINCESS STREET, - WINNIPEG, MAN.
403 CORDOVA STREET, - VANCOUVER, B.C.

pleted this fall. The Murray Harbor branch is completed, with the exception of a few stations, which are in progress of erection. A telegraph line is being constructed on this branch, and is expected to be completed by the end of Oct. (Sept., pg. 407.)

Prince Edward Island Tunnel.—The engineering staff of the Department of Public Works is looking into all the data in possession of the Department of Railways with respect to a tunnel under Northumberland Strait, between New Brunswick and P.E.I. (June, pg. 243.)

Quebec Bridge and Ry. Co.—The Commissioners for the Transcontinental Ry., together with the Premier, paid a visit of inspection to the site of the bridge and inspected the work in progress there Sept. 18 and 19. (Aug., pg. 351.)

Quebec Oriental Ry.—The Quebec Legislature at its last session granted an extension of time for the starting of construction of this projected line, for a period of two years, and for five years for its completion. It was also given power to enter into agreements with other companies for running powers, making connections, for acquiring other lines, or amalgamating with other lines.

Saguenay and James Bay Ry.—Power was given the S. and J.B. Ry. Co., which has a Quebec charter, to construct a line to connect James Bay and the navigable waters of the Saguenay River, at the last session of the Quebec Legislature, to sell its line or any portion of it preferentially to the Trans-Canada Ry., or the Quebec and Lake St. John Ry.

Salmon River and Northern Ry.—An act was passed last session of the Quebec Legislature incorporating J. S. Fasset, Elmira, N.Y.; G. W. Thayer, Rochester, N.Y.; C. Adsit, Hornersville, N.Y.; W. L. Haskell, F. W. Hibbard, Westmount, Que.; J. Walker, Montreal, as a company with this title to construct a railway from Grenville to Montebello, thence in a northerly direction along the Salmon River valley to Lake Papineau; thence along the North Nation and Rouge River valleys to a point of junction with the Eastern Division of the Grand Trunk Pacific Ry. Power is given to construct telegraph and telephone lines, to acquire ferries, construct docks, develop electric power, construct workshops, etc., and to enter into agreements for running powers over connecting or joining railways, acquiring branch lines, etc. The capital of the company is fixed at \$300,000, and bonds to the extent of \$25,000 a mile of railway may be issued. The company's offices are to be at Montebello, Que.

Spokane International Ry.—This line is being constructed from Spokane, Wash., to the International boundary at a point where it will connect with a branch line under construction from Yahk on the C.P.R. line. The S.I. Ry. will have a length of 140 miles, the construction work being medium and heavy. There is a great scarcity of labor in Washington, and work on the line is being hindered. It is expected, however, to get it completed in June, 1906. The line will be operated by the S.I.R., of which the principal promoter is D. C. Corbin, Spokane, Wash.

St. Francis Valley Ry.—At the last session of the Quebec Legislature an act was passed incorporating a company with this title—the incorporators being: T. Crockett, S. C. Riou, E. H. Cimon, L. J. Dougal, E. A. Doucet, J. O. Girard, C.E., N. and E. Dube, of Fraserville, Que., and R. Dubord, Quebec. The company is authorized to construct a railway from St. Francis on the Temiscouata Ry., following the St. Francis River valley to Lake Pohenegamook, thence by or near St. Eleuthre parish to a point near the boundary between Quebec and New Bruns-

wick. Power is given to construct branch lines, not exceeding 10 miles in length in any one case, to enter into agreements with other companies, to use steam, electricity or any other motive power; to acquire water powers and develop electrical power; to construct telegraph and telephone lines, and to engage in manufacturing enterprises. The construction of the line is to be commenced within four years and completed within seven years.

St. Maurice Valley Ry.—The Dominion Parliament last session passed an act incorporating a company with this title to construct a railway from Three Rivers to Shawenegan Falls and Grand Mere, 28 miles. The company has been organized in Montreal, and it is understood that the line, when completed, will be operated by the C.P.R. A contract has been let to the St. Maurice Construction Co., 222 St. James St., Montreal, to construct the section of this line from Three Rivers to Shawenegan Falls, 22 miles. The officers of the construction company are: President, Hon. R. Mackay; Vice-President, H. S. Holt; Secretary-Treasurer, H. Murray; chief engineer, L. A. Darey. The municipality of Three Rivers has voted a subsidy of \$3,000 a mile to be paid when the line is completed to Shawenegan Falls, and a further sum of \$18,000 when the line is completed to Grand Mere. The work is to be completed by Dec. 1, 1906, or the subsidies will be forfeited. (July, pg. 287.)

Temiskaming and Northern Ontario Ry.—Tracklaying was commenced on the extension from New Liskeard northerly towards Lake Abitibi, early in Sept., at the point to which work was completed in 1904, viz., 26 miles north of New Liskeard. This was at the point of crossing of the first branch of the White River. We were advised Sept. 23 that about nine miles of track had been laid to that date, this season. Construction gangs are completing the grade to 80 miles north of New Liskeard, and the location surveys have been completed on 30 miles further to Abitibi River. There are two survey parties in the field locating a further 50 or 60 miles so as to connect with the Eastern Division Transcontinental Ry. C. B. Smith, Chairman of the Commission for the construction of the line, on his return to Toronto from a trip over the line, said the country the surveyors have been going through involves great difficulties in construction, there being so much rock; this continues to the height of land at Lake Sesananika, after which the land is fine, light clay all down the banks of the White Clay and Black Rivers to the Abitibi. An exploring party is out looking for a suitable harbor on James Bay. The proposal to utilize Moose Factory at the outlet of Abitibi River is not likely to be adopted, the water being too shallow.

In reference to the proposal to operate the first section of the line from North Bay to New Liskeard by electricity, tenders have been invited for the supply of four electric locomotives—two freight and two passenger. They are to be of the single phase alternating type, the passenger locomotives to be capable of drawing a train of 250 tons between the terminal points in 2 hours and 50 minutes, and the freight locomotives to haul a train of 1,200 tons, at a speed of not less at any point than 10 miles an hour.

The stations on the line are to be equipped with the Acton Burrows Co.'s enamelled iron station name signs. (Sept., pg. 407.)

Vancouver, Victoria and Eastern Ry.—The Board of Railway Commissioners' considered the application for the approval of plans for the proposed line through the Similkameen valley, at Ottawa, Sept 4. The plans were opposed by the Similkameen and Keremeos Ry., which, though not yet fully organized, has made surveys through

the valley. The Commissioners reserved judgment.

The line has already been completed to Midway, and a contract from Midway to Keremeos, B.C., 118 miles, has been let to Sims and Shields. The entire distance covered by this contract is heavy rock work, the section between Midway and Oroville, being particularly heavy. (Aug., pg. 353.)

Vancouver, Westminster and Yukon Ry.—In connection with its lines in and around Vancouver, B.C., the company will construct a bridge about 2,000 ft. long across the second narrows to the north shore of Burrard Inlet. (Mar., pg. 95.)

Wolfe, Lotbiniere and Megantic Ry.—The Quebec Legislature at its last session passed an act repealing section one of the act of incorporation, and naming the following as the incorporators: F. T. Sairre, Plessisville, Que.; C. W. Campbell, S. Jamieson, W. H. Dunning, L. Noel, D. McMillan, F. Wark, J. W. Mooney, J. A. Wallace, F. X. and L. J. Frechette, J. L. Larochelle, Hon. N. C. Cromier. The company was given a term of three years to commence construction and six years to complete the line from July 1, 1905. A clause in the act provides that the Lotbiniere and Megantic Ry. shall not be prevented from enjoying and exercising the rights it would have if this act had not been passed.

York and Carleton Ry.—An extension of 4½ miles is being constructed westerly from Stanley, N.B., to the mouth of Ryan brook. The extension passes through a settled area, and opens up a large area of timber land from which a considerable traffic is expected. The timber lands contain large quantities of birch and maple and other hard woods. The line at present extends from Cross Creek, on the Intercolonial Ry., (the old Canada Eastern Ry.), to Stanley, a distance of 5.75 miles.

Yonge St. Bridge, Toronto.—Nothing has been done during the year in connection with the projected erection of a bridge over the railway tracks at the foot of Yonge St., Toronto, for which the city obtained an order. Recently the city has passed a resolution authorizing an application to carry the street railway tracks on Yonge St. across the C.P.R. tracks in the north part of the city. The City Engineer is opposed to a level crossing at this point, and the application will raise the whole question and lead to a definite settlement of how much, if any, of the cost of subway, a bridge, or other system of crossing steam railway tracks the city must pay. (Jan., pg. 9.)

The Great Northern Ry. (U.S.) freight and passenger offices in Winnipeg, Man., have been moved from 498 to 477 Main St.

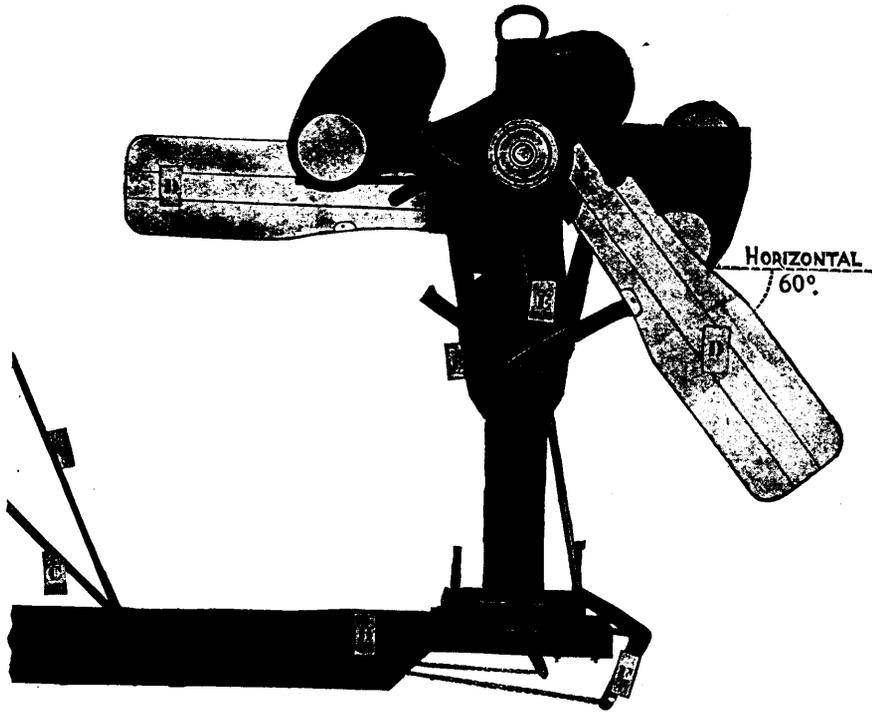
The capital stock of the John Bertram & Sons Co. (Ltd.), Dundas, Ont., has been increased to \$600,000 by a Dominion supplemental charter.

The G.T.R. offered two scholarships in the faculty of applied science at McGill University, Montreal, for competition among the apprentices and other employees of the company under 21 years of age, and to minor sons of employees, at the matriculation examinations, held Sept. 11 to 15. The scholarships are tenable for four years.

The Intercolonial Ry.'s Passenger Department had a unique and telling display at the recent Industrial Exhibition at Toronto, which occupied two rooms in the old art gallery, and for which it was awarded a gold medal. It included a number of large pictures of scenery along the railway, and trophies of game, animals and fish. One of the rooms was artistically treated with rough hemlock bark over the walls, the other being given a rock tunnel effect, and containing a number of tanks with live fish.

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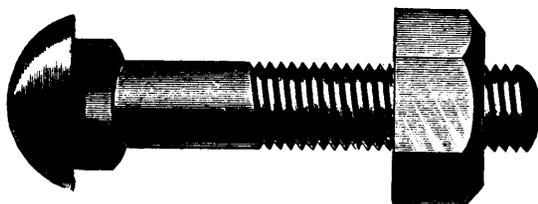
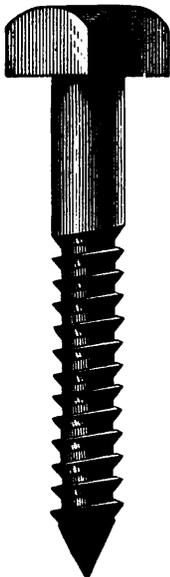
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Railway Equipment Notes.

The York and Carleton Ry. has practically completed the rebuilding of its locomotive.

The New Brunswick Coal and Ry. Co. has purchased a locomotive, snow plow and ballast shovel.

The G.T.R. has added to its rolling stock one standard caboose car constructed at its Port Huron, Mich., shops.

The Intercolonial Ry. has received 19 box cars, 60,000 lbs. capacity, since Aug. 19, to replace rolling stock destroyed.

The Salisbury and Harvey Ry., the Vice-President stated Sept. 12, will shortly be in the market for some new rolling stock.

The Halifax and Southwestern Ry. has received two standard conductors' cabooses from Rhodes, Curry & Co., Amherst, N.S.

The private car Alexandria built by Rhodes Curry & Co., Amherst, N.S., for the use of the Governor-General, has been delivered at Ottawa.

The James Bay Ry. has added four standard cabooses to its rolling stock, from the works of the Crossen Car Manufacturing Co., Cobourg, Ont.

The C.P.R. between Aug. 17 and Sept. 16 received the following rolling stock: 22 locomotives, 2 sleeping, dining and parlor cars, and 585 freight cars.

The Canadian Northern Ry. has placed an order with Rhodes, Curry & Co., Amherst, N.S., for 100 box cars, 60,000 lbs. capacity, for immediate delivery.

Record of Recent Construction of the Baldwin Locomotive Works, Philadelphia, deals with the principles and performances of the balanced compound locomotive.

The Intercolonial Ry. recently asked tenders for 100 box cars, 80,000 lbs. capacity; 200 box cars, 60,000 lbs. capacity; and 130 ballast cars, 80,000 lbs. capacity.

The Temiskaming and Northern Ontario Ry. has ordered 3 first-class passenger cars and one combined baggage and mail car from the Crossen Car Manufacturing Co., Cobourg, Ont.

The Canadian Northern Ry. has recently received the following rolling stock: 150 box cars, 60,000 lbs. capacity, from Rhodes, Curry & Co., Amherst, N.S.; 100 box cars, 60,000 lbs. capacity, from the Crossen Car Manufacturing Co., Cobourg, Ont., and 10 first-class day coaches from the United States.

The dimensions of the five Rodgers ballast, Hart convertible cars which F. H. Hopkins & Co., Montreal, have had built by Rhodes, Curry & Co., Amherst, N.S., for the Winnipeg City Council are: length over end sills 34 ft., width inside 8 ft. 8 in., capacity 40 tons. They are convertible into three uses, viz., for centre hopper ballast distribution, high side swinging door for side dump, and as standard gondola for general service.

The C.P.R. between Aug. 17 and Sept. 16 placed orders for the following additional equipment at its Angus shops: 5 dining cars, 14 sleeping cars, 4 parlor cars, 4 cafe parlor cars, 8 cafe coaches, 4 baggage and sleeping cars, 20 suburban cars, 25 first-class cars, 27 colonist cars, 10 baggage and express cars, 8 baggage and mail cars; 5 fruit express cars, 524 30-ton stock cars, 1,136 30-ton box cars, 653 30-ton flat cars, 500 Rogers ballast cars, 50 freight refrigerators, 5 snow ploughs and 86 40-ton coal cars. An order for 37 standard vans has also been placed at the company's Farnham shops.

The Quebec Central Ry. has placed an order with the Canadian Locomotive Co., Kingston, Ont., for two mogul locomotives, specifications for which are:

WEIGHT.—In working order, 124,000 lbs.; total, 144,000 lbs.

WHEEL BASE OF ENGINE.—Rigid, 15 ft.; total, 23 ft., and tender, 49 ft. 8½ in.

DRIVING WHEELS.—Diameter, 56 in.; material, cast iron; diameter and length of driving journals, 9 by 12 ins.

CYLINDERS.—Diameter, 20 in.; stroke, 26 in.

BOILER.—Type, radial stayed; no. of tubes, 280; diameter, 2 in.; length, 12½ ft.

BRAKES.—Westinghouse.

TENDER.—Style of tank, level top; capacity, 4,000 Imperial gallons, and 5 tons of coal. Weight loaded, 90,000 lbs.

Style of truck, Q.C.R. standard; diameter of wheels, 33 in., kind of wheel, steel tired; diameter and length of journal, 5 by 9 ins.; brake beam, steel.

The Cumberland Ry. and Coal Co. has placed an order with the Locomotive and Machine Co., of Montreal, for a consolidation type locomotive, for Dec. delivery. The locomotive is a duplicate of one at present owned by the company.

CYLINDER.—Simple; diameter, 21 in.; stroke, 28 in.

TRACTIVE POWER.—37,500 lbs.

WHEEL BASE.—Driving, 17 ft.; rigid, 17 ft.; total, 25 ft. 3 in.; total engine and tender, 56 ft. 4 in.

WEIGHT.—In working order, 167,500 lbs.; engine and tender, 301,500 lbs.

HEATING SURFACE.—Tubes, 2,566.34 sq. ft., fire-box, 239.00 sq. ft.; total, 2,805.34 sq. ft.; grate area, 34.94 sq. ft.

AXLES.—Driving journals, main, 9½ by 10 in.; others, 9 by 10 in.; engine truck journals, diameter, 6½ by 10 in.; tender, 5 by 9 in.

BOILER.—Type, extension wagon top; outside diameter first ring, 70 ins.; working pressure, 200 lbs.

FIREBOX.—Type, on top of frames; length, 121½ in.; width, 41½ in.; thickness of crown, ¾ in.; tube, ½ in.; sides, ¾ in.; back, ¾ in.; water space, front, 4 in.; sides, ¾ in.; back, ¾ in.

CROWN STAYING.—Radial.

TUBES.—Material, charcoal iron; no. 374; diameter, 2 in. outside; length, 14 ft. 2½ in.; gauge, 12, B.W.G.

BOXES.—Cast Steel.

ENGINE TRUCK.—Radial center bearing.

GRATE.—C. I. rocking to Ry. Co.'s B. P.

TENDER FRAME.—Steel channels, 10 in.

TANK.—U-shape, level top; capacity, 6,000 U.S. gallons water, 10 tons coal.

WHEELS.—Driving, 56 in., outside tire, 50 in. centers; material, cast steel. Other wheels, cast iron. Engine truck, diameter 30 in.; cast iron center, steel tired. Tender, diameter, 33 in.; cast iron center, steel tired.

BRAKES.—Westinghouse American to driver; Westinghouse for tender.

Freight Rates on Sectional Bookcases.

The Interstate Commerce Commission has given a decision in a case in which complaint was laid against a number of railway companies, including the G.T.R., respecting the rate for sectional or elastic bookcases. The Commissioners held that while there is much to support the view that sectional bookcases might properly be placed in the first class of the official classification, it does not appear upon the proofs presented that one-and-one-half times first-class rates for all bookcases is an unlawful discrimination against the sectional variety, the action of the defendants in fixing the same classification and rates for sectional as for other bookcases does not exceed the limits of their discretion; nor is defendant's one-and-one-half times first-class rate for the transportation of sectional and other book cases shown by the record to be unreasonable. The complaint was dismissed without prejudice to further investigation. The complainant in the case was the Globe-Wernicke Co., which in addition to its factories in Cincinnati, Ohio, has one at Stratford, Ont.

The C.P.R. has opened a passenger and freight office in Edmonton, Alta.

The double daily transcontinental service on the C.P.R. is to be continued until the end of Oct., and may be extended to an even later date.

An arbitration board, consisting of W. R. Baker, Assistant to the President, C.P.R.; W. G. Brownlee, Superintendent G.T.R., Toronto, with J. E. Duval, Manager Canadian Car Service Bureau, met in Toronto, Sept. 23, to consider certain accidents, the settlement of which will form a basis for future cases of a like nature.

MAINLY ABOUT PEOPLE.

Senator T. R. Black, a director of Rhodes, Curry & Co., Amherst, N.S., died there Sept. 14, aged 73.

Hon. R. Prefontaine, Minister of Marine, is expected to sail from Montreal, for a trip to Europe Oct. 20.

E. L. Drewry, Winnipeg, has been elected President Winnipeg branch Canadian Manufacturers' Association.

L. Poupore, son of W. J. Poupore, contractor, Montreal, was drowned while canoeing at Morrisburg, Ont., Sept. 1.

J. G. Scott, General Manager Quebec and Lake St. John Ry., spent the greater part of Sept. on a trip to the Pacific coast.

Lady Shaughnessy and her family have returned to Montreal from St. Andrew's, N.B., where they spent the summer.

Mrs. Piers, wife of the Manager C.P.R. steamships, and Miss Piers, returned to Montreal from Great Britain Sept. 10.

J. H. Murray, train despatcher Intercolonial Ry., Sydney, N.S., was married to Miss J. Munroe, of Glace Bay, Sept. 14.

A. R. Creelman, K.C., Chief Solicitor C.P.R., and the Misses Creelman have returned to Montreal from a trip to Europe.

V. G. Curry, son of N. Curry, President Rhodes, Curry & Co., Amherst, N.S., was married there Sept. 14, to Miss M. I. Chapman.

G. H. Ham, C.P.R. head office staff, Montreal, had sufficiently recovered from his recent severe illness to return to his office Sept. 21.

S. N. Parent, Chairman Transcontinental Ry. Commission, has purchased a house on the corner of King and Stewart streets, Ottawa.

Mrs. James Curle, who died at Brockville, Ont., Sept. 11, was mother of W. J. Curle, Superintendent Brockville, Westport and Northwestern Ry.

Thos. Skinner, the London, Eng., director of the C.P.R., arrived in Montreal Aug. 31, and subsequently made a trip of inspection to the Pacific coast.

P. F. Sise, son of E. F. Sise, President of the Bell Telephone Co., was married Sept. 27, to Miss P. E. F. Porteous, daughter of C. E. S. Porteous, of Montreal.

F. H. Alfred, Chief Engineer Pere Marquette Rd., Detroit, Mich., is reported to have resigned to enter the service of the Canadian White Co., Montreal.

Mrs. Naismith, wife of P. L. Naismith, General Manager Alberta Ry. and Irrigation Co., Lethbridge, Alta., was visiting friends in Toronto during Sept.

J. Melville, chief clerk G.T.R. General Passenger and Ticket Agent's office, Montreal, returned to work Sept. 9, after some weeks' absence on account of illness.

F. Grundy, Vice-President and General Manager Quebec Central Ry., returned to Sherbrooke, Que., from England, early in Sept., and Mrs. Grundy returned Sept. 16.

J. Enright, who is now in his twentieth years' service as C.P.R. station agent at Ingersoll, Ont., has moved into new office quarters, which have been nicely fitted up.

G. White, assistant cashier C.P.R., Quebec, who was arrested in Chicago, Ill., Sept. 10, on a charge of having embezzled \$1,000, has been sentenced to two years imprisonment.

W. B. Kingsmill, local solicitor Michigan Central Rd., St. Thomas, Ont., son of Nicol Kingsmill, K.C., Toronto, was married in London, Ont., Sept. 12, to Miss F. Puddicombe.

M. J. Haney, railway and general con-

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tractor, Toronto, has presented the Toronto General Hospital with four large microscopes and other apparatus, of the total value of \$1,200.

Press reports are current to the effect that the name of W. Mackenzie, President Canadian Northern Ry., will be submitted to the King for the honor of knighthood, in the birthday list in Nov.

W. Z. Earle, Manager St. John Ry., St. John, N.B., was married at Rothesay, N.B., Sept. 12, to Miss Isabel Domville, third daughter of Hon. J. Domville. They are spending their honeymoon in England.

J. W. McDermott, formerly in the I.C.R. service at Moncton, N.B., and the Sydney and Louisburg Ry. at Sydney, N.S., has been appointed general yardmaster of the Pennsylvania Rd. freight yards at New York.

M. J. Haney, railway and general contractor, Toronto, has been appointed one of the four members of the Toronto Hospital Trust, to have charge of the construction of a new general hospital for the city.

G. M. Bosworth, Fourth Vice-President C.P.R., was married in London, Eng., Sept. 29, to Miss Alleyne Birchall, daughter of W. D. Birchall, Vice-President of A. T. Wiley & Co., china and crockery importers, etc., Montreal.

G. M. Bosworth, Fourth Vice-President C.P.R., left Montreal for England on the Lake Manitoba, Sept. 14. He was accompanied by Allan Cameron, who goes to London to take a position in the traffic department.

J. McManus, one of the contractors on the Intercolonial Ry. second track work at Windsor Jct., N.S., was hit, but not seriously injured, by a pistol shot fired from a crowd of men, while he was inspecting the work Aug. 30.

W. D. Reid, Vice-President and General Manager Reid Newfoundland Co., has received an autograph photograph and a silver cigar case from Prince Louis of Battenberg, as a souvenir of his visit to Newfoundland.

Sir D. Dixon, managing owner of the Lord Line of steamers, trading to Montreal, and owner of lumber vessels sailing between Belfast, Ireland, and Miramichi ports, has been elected member of the Imperial Parliament for North Belfast.

Mrs. Mackenzie, who died at Hampstead, N.H., Sept. 1, was mother of W. B. Mackenzie, Chief Engineer Government Railways; J. J. Mackenzie, of the I.C.R. audit department, Moncton, N.B., and H. J. Mackenzie, engaged on the Transcontinental Ry. survey.

R. Marpole, General Superintendent Pacific Division, C.P.R., Vancouver, B.C., was married at Victoria Sept. 17, to Miss Anna I. Holmes, daughter of Col. Holmes, D.O.C. Military District no. 11. Mr. and Mrs. Marpole made a tour of Puget Sound on J. Dunsmuir's yacht.

H. P. Dwight, President G.N.W. Telegraph Co., Toronto, has presented a collection of books as a library for the hamlet of Devil's Angle, north of Dwight, Ont. Mr. Dwight had previously presented libraries to a number of the small villages in the Muskoka country.

H. G. Luke was presented with a purse of gold and an address by steamboat men, Sept. 18, on the occasion of his resigning the position of local manager at Toronto for the Niagara, St. Catharines and Toronto Ry., and of the N., St. C. and T. Navigation Co., to go to Winnipeg.

R. Enman, of Moncton, N.B., who was secretary to J. E. Muhlfeld, when he was Superintendent of Motive Power Intercolonial Ry., and who accompanied him when

he went into the Baltimore and Ohio Rd. Co.'s service, has been appointed Secretary to the General Manager B. and O. Ry.

T. P. Coffee, of Toronto, one of the directors of the Nova Scotia Eastern Ry., who had been in London, Eng., for some time in connection with the placing of the company's bonds, died in a hospital there Sept. 14, from typhoid fever. He was also interested in the Kettle Valley lines in British Columbia, and Washington, U.S.A.

Larratt W. Smith, K.C., who died in Toronto, Sept. 18, aged 85, was chairman of the Royal Commission appointed in 1876 to investigate the affairs of the Northern Ry., and was at one time Vice-President of the old Muskoka and Georgian Bay Navigation Co. One of his sons, George, is in the service of the Union Pacific Rd.

C. F. McIsaac was presented recently with a cabinet of silverware by the members of the House of Commons representing Nova Scotian constituencies, and with a combination silver and cut glass dinner service by his late constituents of Antigonish, on his retiring from Parliament to take up his duties as a member of the Transcontinental Ry. Commission.

J. B. Jones, who died in Toronto Aug. 20, as the result of an operation, came to Toronto from England in 1853. He was at one time connected with the G.T.R. freight department, serving successively at Toronto, London, Detroit, and Montreal. He was afterwards agent of the Dominion Line steamships at Toronto, from which position he retired a number of years ago.

C. W. Spencer, Manager of Mackenzie, Mann & Co.'s eastern lines, speaking at the opening of the Ottawa exhibition Sept. 13, said he did not see why two transcontinental railways should not be built at the same time, and if the country continued to develop as it was doing at present another transcontinental line would be necessary. Ottawa, he added, was being developed into a great railway centre.

S. N. Parent, Chairman of the Transcontinental Ry. Commission, has resigned his seat in the Quebec Legislature, and his position as Mayor of Quebec city. He desired to retire from the directorate of the Quebec Bridge and Ry. Co., but the shareholders re-elected him, being advised that there was no objection to his holding the two positions. He was afterwards re-elected President of the company.

J. C. Reed, of the C.P.R. service, Cranbrook, B.C., who was married at Stratford, Ont., Sept. 11, to Miss J. Ballantyne, is a son of W. Reed, Superintendent of Government railways in Jamaica; who was in the G.T.R. service from 1873 to 1883, first as chief machinist at Stratford, and subsequently as Master Mechanic at Montreal and Belleville; and later for some years in the C.P.R. mechanical department at Winnipeg.

W. M. Townsend, who died in London, Eng., Aug. 26, was at one time Secretary of the Northern Ry., at Toronto. On the death of F. W. Cumberland he acted as General Manager until the appointment of S. Barker, and remained with the company until its absorption by the G.T.R. He subsequently went into the railway supply business at Montreal, but retired some years ago, and became Managing Director of the British Columbia Exploration Co., in England, and subsequently General Manager of the Hare Hope Colliery Co., at Fosterley, Durham, Eng., which position he held when he died.

Mrs. G. H. Daniels, wife of the General Passenger Agent of the New York Central Rd., who died Sept. 7, at Lake Placid, N.Y., the family's summer home in the Adirondacks, had been ill for some months. Five weeks before her death her condition became so

serious that Mr. Daniels left for Lake Placid to remain at her bedside constantly. Mrs. Daniels was born at Elgin 55 years ago. She was married to Mr. Daniels in 1870. The funeral was held at Troy, N.Y. Besides Mr. Daniels, two children survive her—J. C. Daniels, a business man of Chicago, and Miss Harriet Daniels, who was at the Lake Placid home when she died.

G. H. Eaton, who has been appointed Assistant Master Car Builder C.P.R. Western Lines, was born in Staffordshire, Eng., June 9, 1860, and entered railway service in 1876, since which his record has been: 1876 to 1879, carpenter, Brockville and Ottawa Ry., at Brockville, Ont.; 1879, carpenter, G.T.R. at Toronto; 1879 to 1884, Credit Valley Ry. (now merged in the C.P.R.), Toronto; 1884 to 1887, C.P.R. yard foreman of repairs and cleaning; 1887 to 1888, C.P.R. shop foreman; 1888 to 1893, C.P.R. car foreman; 1893 to 1897, general car foreman, C.P.R. Hochelaga shops, Montreal; 1897 to Aug., 1905, general car foreman C.P.R. shops at Farnham, Que.

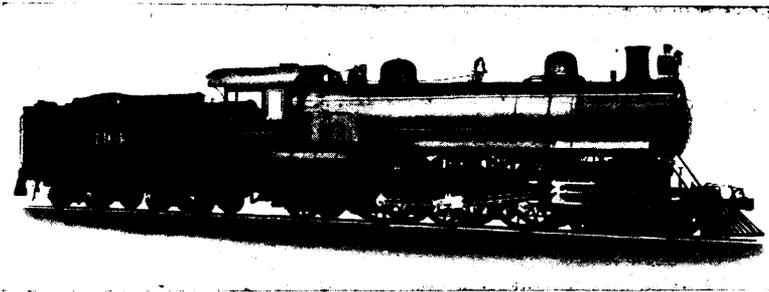
W. H. Fletcher, who has been appointed Locomotive Foreman C.P.R., at Chapleau, Ont., was born at Gloucester, Eng., 1875, coming to Canada in 1882. He entered railway service in the G.T.R. shops at Point Edward, Ont., completing his apprenticeship in that company's shops at Stratford. He entered the C.P.R. service 1898, since which his record has been: 1898 to 1901, fitter Delorimier Avenue shops, Montreal; 1901, relieving locomotive foreman, Naskusp, B.C.; engineer C.P.R. steamers between Vancouver and Hong Kong, and in the Northern Pacific Ry. shops at Tacoma, Wash.; 1901 to 1904, shop foreman, C.P.R., North Bay, Ont.; 1904 to Sept., 1905, locomotive foreman C.P.R., White River, Ont.

Sir T. G. Shaughnessy, President C.P.R., returned to Montreal, Sept. 30, from a trip of inspection over the company's transcontinental line from Montreal, and the various lines in the West. He left Montreal Sept. 9, travelling by special train, and visited all the important points on the company's lines to the coast. The return journey was made by the Crow's Nest Pass route, and via the Minneapolis, St. Paul and Sault Ste. Marie Ry., to Sault Ste. Marie, thence over the C.P.R. branch line to Sudbury, Ont. The President was accompanied by R. B. Angus, C. R. Hosmer, W. D. Matthews, E. B. Osler, M.P., directors; Hon. L. J. Forget, Montreal; and from Winnipeg to the Pacific coast by W. Whyte, Second Vice-President.

W. R. Baker, who has been appointed Assistant to the President C.P.R., was born at York, Eng., 1852, and entered railway service in 1873 as local freight and passenger agent at Ottawa, with the Canada Central Ry., since which he has been consecutively: Feb. to Sept., 1881, Assistant to General Superintendent and Local Treasurer Western Division C.P.R.; Sept., 1881, to May, 1882, Purchasing Agent, same division; May, 1882, to June, 1883, Assistant to General Manager, same road; June, 1883, to Sept., 1892, General Superintendent Manitoba and North-Western Ry.; Sept., 1892, to May, 1900, General Manager, same road; May, 1900, to June, 1901, Executive Agent C.P.R. at Winnipeg; June, 1901 to Jan., 1904, Assistant to 2nd Vice-President C.P.R. at Montreal. Jan., 1904, to Sept., 1905, Assistant to Vice-President C.P.R., Montreal.

Allan Cameron, who has been appointed to a position in connection with C.P.R. traffic matters in London, Eng., was born March 14, 1864, and entered railway service 1879, since which he has been consecutively to July 31, 1882, messenger and clerk Great Western Ry. of Canada, at Toronto; Aug. 7, 1882, to May 1, 1883, baggage master Northern Ry. of Canada, at Orillia, Ont.; June 1, 1883, to June 1, 1887, clerk local

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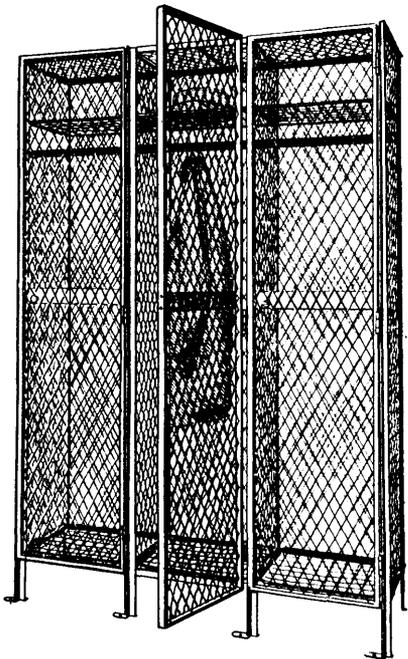
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VIA C.P.R.Y., AND NEWPORT, VT.

Lv. Montreal	*9.00 a.m.	*7.45 p.m.
Arr. Lowell	*7.29 p.m.	*6.37 a.m.
" Worcester	*9.04	*9.19
" Boston	*8.15	*7.30

VIA G.T.R.Y., AND WHITE RIVER JCT.

Lv. Montreal	*9.01 a.m.	*8.40 p.m.
Arr. Lowell	*6.11 p.m.	*7.17 a.m.
" Worcester	*9.04	*9.19
" Boston	*6.55	*8.05

VIA G.T.R.Y., WEST SHORE & ROTTERDAM

Lv. Toronto		*4.10 p.m.
" Niagara Falls		*6.15
" Buffalo	*4.30 a.m.	*7.20
Arr. North Adams	*1.05 p.m.	*5.08 a.m.
" Worcester	*4.55	*8.59
" Boston	*5.20	*9.50

TO PORTLAND, ME., AND OLD ORCHARD, ME.

Through the Heart of the White Mountains and famous Crawford Notch, via C.P.R.Y.

Lv. Montreal	*9.00 a.m.	*7.45 p.m.
Arr. Portland	*7.45 p.m.	*8.05 a.m.
" Old Orchard	*8.16	*8.42

*Daily. Runs to Sept. 4. †Except Sunday.

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freight office, C.P.R., at Vancouver, B.C.; June 1, 1887, to Feb., 1890, clerk General Freight and Passenger Department, C.P.R., Vancouver; Feb., 1890, to July 1, 1893, freight and passenger agent, C.P.R., Victoria, B.C.; July 1, 1893, to Sept. 30, 1896, freight and passenger agent, C.P.R., Portland, Ore.; Oct. 1, 1896, to July 1, 1899, District Freight Agent C.P.R.; July 1, 1899, to Dec., 1900, Assistant General Freight Agent, C.P.R., Vancouver; Jan., 1901, to Aug., 1905, in charge of Asiatic business Oregon Rd. and Navigation Co.'s steamers as General Agent at Hong Kong, China.

Henry Barker Lake, who has been appointed Chemical Engineer and Analyst of the C.P.R. Western Lines at Winnipeg, was born in Derbyshire, Eng., in 1877, and educated at Peoples College, Nottingham, finishing with three years' science course, specializing in chemistry. His record is as follows; 1896 to 1898, pupil to consulting engineer, and continued studies at Birmingham College, taking 1st class honors in analytical chemistry; 1898 to 1899, Inspector of locomotive and railway materials for the Great Indian Peninsular and Indian Midland Ry. Cos. under Sir George Bruce; 1899 to 1901, further experience in the drawing office and works of Sir James Kitson, locomotive builder, Leeds, Eng., and as outside inspector; 1901 to 1902, chemist and tester to the Sheffield Testing Works, including further course at the University in micrographical analysis and pyrometry; 1902, appointed chemical engineer to the Actien Gesellschaft fur Kolendestellation en bulurke, Gelsenkirchen, Prussia, but accepted interest in previous employer's business and practised as consulting engineering chemist for three years, including expert evidence in law cases, resigned Jan., 1905; elected associate member of the Institute of Mechanical Engineers of London, 1904; June, 1905, appointed Chemical Engineer and Analyst C.P.R. Western Lines.

TRANSPORTATION APPOINTMENTS.

Algoma Central and Hudson Bay Ry.—R. W. Seelye has been appointed Superintendent of the Michipicoten branch, vice C. Shields, resigned.

Canadian Pacific Ry.—The position of Assistant to the Vice-President, vacant by the appointment of W. R. Baker as Assistant to the President, had not been filled up to the time of writing (Sept. 29).

The position of General Superintendent of Transportation, Eastern Lines, vacant by the resignation of C. W. Spencer, has not been filled. The work of the office is being carried on by the staff under the direction of Vice-President McNicoll.

J. Burns has been appointed General Locomotive Foreman at North Bay, Ont., succeeding T. Bate, appointed Locomotive Foreman at Schriber, Ont. W. H. Fletcher has been appointed Locomotive Foreman at Chapeau, Ont., succeeding J. Burns, and is succeeded at White River, Ont., by R. Johnson, formerly at Schriber.

W. Toole, C.P.R. District Land Agent, Calgary, Alta., has not been appointed Commissioner of Irrigated Lands as stated in recent press reports. We are informed that there is no change in his position except that in addition to his other duties as District Land Agent the sale of irrigated lands is included.

Grand Trunk Pacific Ry.—D'Arcy R. Tate, heretofore of the law firm of Carscallen and Cahill, Hamilton, Ont., has been appointed Assistant Solicitor G.T.P.R. at Montreal. A. Glassco is reported to have been appointed bridge engineer.

Grand Trunk Ry.—Thos. Rodger, heretofore chief operator G.N.W. Telegraph Co.,

Montreal, has been appointed Inspector of Telegraphs and Telephones, G.T.R., with supervision over all lines east of Detroit and St. Clair Rivers, reporting to the Superintendent of Telegraphs. Office, Montreal.

J. Luscombe has been appointed train dispatcher at London, Ont., succeeding J. P. McMullen, resigned.

The following agents have been appointed Thornbury, Ont., A. Roach; Limehouse, Ont., G. T. Coe; Wanstead, Ont., G. Van-Horne; Hickson, Ont., J. T. Clancy.*

Intercolonial Ry.—W. F. Taylor has been appointed General Storekeeper instead of C. R. Palmer, who has been assigned other duties. An unconfirmed Moncton dispatch says Mr. Palmer is to be Inspector of Stationery.

Mackenzie, Mann & Co.'s Eastern Lines.—C. W. Spencer entered on his duties as Manager of the James Bay Ry., the Great Northern Ry. of Canada, the Halifax and Southwestern Ry., and the Inverness Ry. and Coal Co.'s line on Sept. 1, with offices at 286 St. James St., Montreal. No circular announcing the appointment had been issued up to the time of writing (Sept. 29).

Niagara, St. Catharines and Toronto Ry., and N., St. C. and T. Navigation Co.—J. R. Wilson, heretofore chief clerk in the Toronto local manager's office, has been appointed local manager, succeeding H. G. Luke, resigned.

Pere Marquette Rd.—J. P. McMullen, heretofore train dispatcher G.T.R., London, Ont., has been appointed train dispatcher P.M.R.

Turbine Steamship Co.—F. H. Baker, in charge of Toronto business for the steamer Argyle, has been appointed Toronto agent for the Turbinia for the balance of the season, succeeding J. Burke, resigned.

The Railroad Gazette, New York, had the following in its issue of Sept. 15:

CANADIAN PACIFIC.—J. W. Leonard, Manager of Construction, has been appointed General Superintendent of Transportation of the Eastern lines, succeeding C. W. Spencer, resigned.

We were officially advised Sept. 23 that no such appointment had been made.

The Trades and Labor Congress meeting at Montreal, Sept. 14, passed a resolution asking the Dominion Government for an interpretation of the decision given by Justice Anglin in the Pere Marquette Rd. case, under the Alien Labor Act. An appeal under the decision will be heard by the Privy Council in London, Eng., in Feb., 1906.

The question of the appointment of a successor to J. E. Duval, Chief Inspector, has not been definitely decided by the Board of Railway Commissioners, and it is not likely that anything will be done until after the Commissioners return from the West. Press reports state that an Inspector will be appointed to investigate accidents in the West, with office at Winnipeg. The question of an appointment of an Inspector of Rolling Stock has not been under the consideration of the Board.

The Department of Marine is working out details of a plan for the improvement of the lighthouses on the Atlantic seaboard, and in the St. Lawrence Gulf and River. The old-fashioned reflecting lamps, fixed and revolving, in use at the present time, and burning coal oil, will be replaced with petroleum vapor lamps; other improvements will be made at the several stations. The first lighthouse to be fitted with the petroleum vapor lamp will be that at Gannet Rock, and the next will be that at the confluence of the St. Martin and the St. Lawrence rivers. The plans also provide for the installation of a new and powerful hyper-radial light at Cape Race, Nfld.

Canadian Ticket Agents' Association.

Secretary De la Hooke has issued his usual second circular to members of the Association respecting the annual meeting to be held in Portland, Me., in October. The party will assemble in Montreal, leaving the Bonaventure Station there on Saturday, Oct. 14, at 8 a.m., by special G.T.R. train to reach Portland about 6 p.m. Portland will be left on the return trip on Thursday morning, Oct. 19, by special train over the Maine Central, Boston and Maine and C.P.R. to Montreal.

The Portland Express says that a most hospitable welcome awaits the party. Freight Agent R. W. Scott, of the G.T.R., formerly of London, Ont., is acting as Secretary De la Hooke's representative at Portland, in consultation with a committee of local transportation men, including President Goding, of the Board of Trade; F. C. Boothby, G.P.A., Maine Central Rd.; J. F. Liscomb, Eastern Steamship Co.; G. F. West, President Harpswell Steamboat Co.; H. C. Clay, Agent Maine S. S. Co.; H. A. Snow, Union Station Ticket Agent, and J. Lawlor, G.T.R. Ticket Agent. On the arrival of the G.T.R. special at Portland, the Portland Rd. Co., which will extend its courtesies to the visitors during their stay, will have special cars waiting to take them from the station to the New Falmouth Hotel, the Chase Transfer Co. transferring the baggage complimentary. The party will have Saturday evening and Sunday at their own disposal. On Monday, Oct. 16, at 9.30 a.m., the Mayor will officially welcome them at the city hall, after which the annual meeting will be held at the hotel, where the annual dinner will take place in the evening. On Tuesday, Oct. 17, the hotel will be left by special electric cars at 9.30 a.m., for the Casco Bay Steamboat Co.'s wharf, where one of the steamers of the line will be boarded for a trip which is expected to last until about 4 p.m. It is likely that a monster clam bake will be given on one of the islands in the bay. On Wednesday, Oct. 18, the Portland Rd. Co. will take the party on special cars to Cape Cottage, Riverton and about the city, and in the afternoon to Old Orchard. There will probably be a theatre party on one evening of the trip.

Grand Trunk Pacific Railway.

At the annual meeting in Montreal, Sept. 19, Sir W. L. Young, G. Von Chauvin and A. Hubbard, of London, Eng., were elected directors in place of Lord Welby, J. A. Clutton-Brock and the late Jos. Price. The officers and directors for the current year are: President, C. M. Hays; Vice-President and General Manager, F. W. Morse; Second Vice-President, W. Wainwright; other directors: Sir C. Rivers Wilson, A. W. Smithers, Sir W. L. Young, G. Von Chauvin, A. Hubbard, Hon. G. A. Cox, J. R. Booth, E. R. Wood, E. H. Fitzhugh, W. H. Biggar, H. A. Allan and E. B. Greenshields. Secretary, H. Phillips; Treasurer, F. Scott; General Auditor, H. W. Walker.

In regard to construction work, F. W. Morse, Vice-President and General Manager, stated on his return to Montreal recently, from Winnipeg, that no rails would be laid this year, but it was hoped to commence in the spring. Nothing had been decided about the terminals at Winnipeg, the negotiations in regard to the same were proceeding, but there was as yet nothing to announce. In connection with the line Mr. Morse stated that it was proposed to operate hotels at various points as the C.P.R. was doing; and it is stated that hotels will be erected at Montreal, Ottawa, Winnipeg and at the Pacific terminals. The hotel at Ottawa is likely to be constructed in connection with the projected new station.

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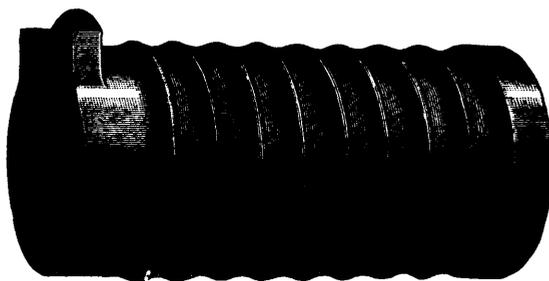
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An order for 30,000 tons of steel rails for spring delivery has been placed in Scotland. Daily press reports which recently stated that the contract for building the entire line of the G.T. Pacific Ry. had been let to the National Construction Co. were incorrect. We are advised by an officer that the organization of the construction company was a formality. The G.T.R. Co., which has guaranteed the bonds of the Lake Superior branch, has no power to build the same, and therefore a subsidiary company has been created with the necessary powers. The whole of the stock in the construction company, except such as is necessary to qualify the directors, who are officers of the G.T.R., is held by the G.T.R. Co. It is further said that the construction company takes the contract for building the branch for the amount of bonds which the G.T.R. Co. is guaranteeing.

The first sod of the Lake Superior Branch was turned by Sir Wilfrid Laurier, at Fort William, Ont., Sept. 11. The site of the ceremony was near where the first sod of the C.P.R. was turned in June, 1875. The Premier was presented with a silver spade as a souvenir of the occasion. The Lake Superior branch, according to the latest surveys, is expected to be 205 miles in length, some 15 miles shorter than was originally expected would have been possible. The line will start from the Mission property at Fort William, and run in a northwesterly direction through the townships of Vreeburg, McIntyre, Oliver and Ware, practically paralleling the C.P.R. Shortly after leaving Kaministikwia the line will cross Dog River, passing near Linko station, and will join the main transcontinental line near Minnetakie Lake, and Abraham's Lake. Tenders for the construction of the branch were opened at Montreal, Sept. 15, but no contract had been announced up to Sept. 29.

The C.P.R. in its protest against the approval of the route of the main line from Portage la Prairie to the Touchwood Hills, set out that the route is a violation of the act of Parliament constituting the new company; and that the location so far decided upon is contrary to the policy of the Government as declared in Parliament. The protest was heard by the Railway Commissioners, Sept. 4, and the chairman in giving judgment said it did not seem to him that any question of law was involved; the company had obtained a special act authorizing it to build a line within certain points. The Minister had approved of the plans, and after this there could be no alteration of the route except by the Minister himself. The position of the board was not that of one who had the right to say whether the line should be built or not. The Minister having approved of the plans, the board had no right to say they should not be carried out. If in no way objectionable on engineering grounds, and no public or private interests were affected, there was no reason why the order applied for should not be granted. There was not a shadow of doubt in his mind that the company had authority to build upon the line chosen, and that the Minister had authority to sanction the plans. The clause creating a limitation as to the route in the Northwest Territories did not bind the Government to anything. The whole route was practically left open, as it would be in the case of any other railway under the general railway act, and which had no limitation as to route. There was nothing in the question of law which would justify a reference to the Supreme Court. The usual order would issue as to approval of plans.

The route is practically an air line from Portage la Prairie for about 84 miles, and of that distance 45 miles is a tangent. It closely parallels the C.P.R. main transcontinental line as far as McGregor, at which point the C.P.R. deflects southwesterly. The new line continues for a distance of 12 miles to Wheat-

lands, and then proceeds northwesterly via Crandall, entering the Assiniboine Valley south of Beulah, crossing Bird Tail Creek near its mouth, and continuing up the valley of the Assiniboine River to a short distance above the confluence of the Qu'Appelle River, where it crosses the Assiniboine River, and then running along the valley of the Qu'Appelle River practically as far as township 18, range 30, west of the first principal meridian. The line then runs north-west about 85 miles, to township 26, range 13, west of the second principal meridian, within a short distance of the Hudson's Bay Co.'s Touchwood Hills post. From Portage la Prairie it is fairly light prairie work until Wheatlands is passed, and then the work becomes heavier, especially near the crossings of the Arrow River, Bird Tail Creek, Assiniboine River, and in the valley of the Assiniboine and Qu'Appelle Rivers. The contract let to Macdonald, McMillan & Co. comprises grading and completing the line ready for tracklaying, with the exception of the steel bridge work. The contracts for the steel bridge work will be let direct by the company, which will do the tracklaying, and ballasting, and possibly the putting up of the station buildings also. There will be two division points on this 275 miles of line. The principal bridges will be required at the crossings of the Little Saskatchewan River, Arrow River, Bird Tail Creek, Assiniboine River, and Cut Arm Creek. A sub-contract has been let to G. H. Strevel, Winnipeg, for 36 miles of grading. It is expected to grade about 100 miles this season. The work will be in charge of E. R. McNeil, the company's division engineer at Winnipeg. It is not intended to let any further contracts for work on the main line this year, but it is hoped to have the line to Edmonton under contract early next season. Plans for the portion of the line from the end of the 275 miles from Portage la Prairie to the vicinity of Touchwood Hills, have been filed at Ottawa.

The B.C. Government has entered into an arrangement with the G.T.P. Ry. Co. for the establishment of the Pacific terminals on Kaien Island. The Government has agreed to sell 10,000 acres in the vicinity of Tucks Inlet at \$1 an acre, and to retain one-quarter interest in the townsite. In the event of the agreement not being carried out, the land is to revert to the Government.

Canadian Northern Ry. Construction.

Winnipeg Hotel and Station.—W. Mackenzie, President, recently stated in Winnipeg that the company had prepared plans for a building to comprise hotel, station and general office building to cost about \$2,500,000. He also stated that negotiations were pending with other companies to join in the enterprise, but nothing definite has been decided.

Winnipeg Terminals.—At the sitting of the Railway Commissioners at Winnipeg, Sept. 14, the company made application to expropriate a large area of land, and to close up nine streets at Fort Rouge for terminal purposes.

Oak Point Branch.—A contract has been let to Jas. Cowan for the grading of a piece of line to connect the branch to Oak Point, with the main line at St. Charles, Man. The line will start at the point where the branch intersects the C.P.R., and will run through St. James, just outside the city limits, crossing over the Assiniboine River, and through St. Charles to the C.N.R. main line, connection being made therewith a short distance west of Fort Whyte.

Hartney to Regina.—The construction of the line from Hartney to the westerly boundary of the Province, is to be completed this season, and contractors are pushing ahead with the work. It is stated that the inten-

tion of the company is to extend the line to Regina, Sask.

Grand View Extension.—Grading has been completed into Edmonton and to a junction with the short piece of line constructed by the Edmonton, Yukon and Pacific Ry., from Strathcona into Edmonton. The tracklaying was expected to be completed by the end of Sept.

G.T.R. Betterments, Construction, Etc.

Midland Branch.—In connection with an application before the Railway Commissioners recently, F. H. McGuigan, Manager, stated that it was the intention of the company to double track the Midland branch in the near future.

Queen Street Subway, Toronto.—A proposal has been under consideration for the construction of a subway under the tracks at Queen St. East, but F. H. McGuigan, Manager, informed the Mayor that the company was preparing plans for improvements which would render the construction of a subway unnecessary.

Brantford Improvements.—The big improvements in the vicinity of Brantford, Ont., have been so far completed that it was arranged to divert the main line trains through the city Oct. 1. A public demonstration to celebrate the event was arranged for Sept. 30.

Guelph Freight Yards.—The residents of Guelph, Ont., have signed, in large numbers, a petition to the City Council objecting to the sale of the fair grounds for use as freight yards. The City Council, Sept. 12, declined the invitation of the company to inspect the freight yards at Hamilton, Brantford and other points.

Improvements at Norwich.—The Brantford and Port Burwell branch, and the Stratford-Port Dover line cross at Norwich, Ont., and the company is asking the village to grant \$10,000 and to provide a right of way to deflect the lines, so as to provide a new and central station.

Komoka-Kingscourt Second Track.—The steel has been laid on the second track constructed between Komoka and Kingscourt Jct., Ont., and the ballasting is nearly completed.

New Station at London.—The company's plans for the improvement of its station and terminal facilities at London, Ont., are taking shape, and it is reported that they will involve the expenditure of about \$2,000,000. The plans, it is said, include the building of a new passenger station and freight sheds in the city, and a passenger station at East London, with other improvements.

The Transportation Commission is making a tour in Western Canada, sittings having been held at Winnipeg, Man.; Regina, Sask.; Calgary, Edmonton, Alta.; Vancouver, Victoria, New Westminster and Nelson, B.C. The sitting at Victoria was fixed for Sept. 28, and the Commissioners' arrangements were to return east by the Crow's Nest Pass route.

At a special meeting of the Central Passenger Association, at Chicago, Ill., Sept. 15, an effort was made to secure an agreement to pool all the steamship business between the differential lines including the Michigan Central Rd. The G.T.R. opposed the suggestion on the ground that the M.C.R. was not entitled to any of this business unless it would say over what routes and under what conditions it could carry the traffic. The G.T.R. also gave notice that if the M.C.R. put on a new through car service between Chicago and New York over a differential line from Buffalo, an application would be made for a rehearing of the differential cases recently decided in favor of the M.C.R.

N. CURRY, President. N. A. RHODES, Vice-President. J. M. CURRY, Sec.-Treas.

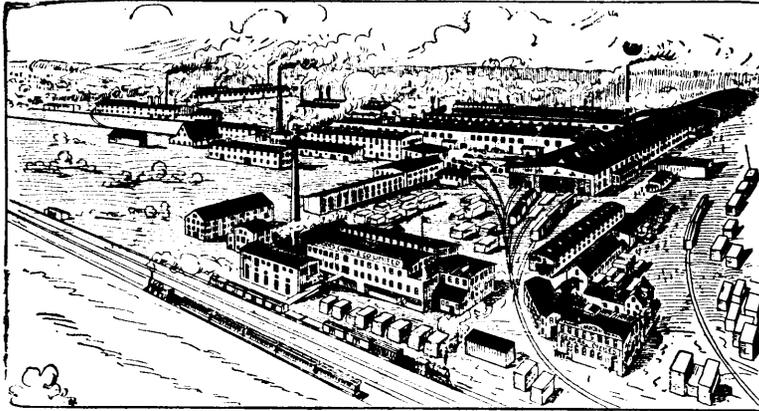
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C.P.R. Betterments, Construction, Etc.

Quebec Jct. to Mattawamkeag.—Reports from Houlton, Me., state that engineers are in the field making a survey between Debec Jct. and Mattawamkeag, Me., in behalf of the C.P.R.

Place Viger Yard Improvements.—The C.P.R. and the City of Montreal will apply next session of the Quebec Legislature for an act confirming an agreement entered into between them, dated June 30, 1905, in connection with the leasing of certain streets for 99 years. The Montreal Brewing Co. has entered an action against the city and the C.P.R. to have the agreement in question set aside.

Kingston and Pembroke Ry.—The car shops at Kingston, Ont., were destroyed by fire, Sept. 12, the extent of the damage being placed at \$50,000. The shops have been unused for some time, but contained a lot of machinery, a locomotive, some box cars, patterns, etc.

Land Purchases in Toronto.—The company has purchased from the Polson Iron Works, four water lots on the Esplanade, Toronto. The company undertakes to keep the lots free of buildings until May, 1906, and in the event of Lake St. being closed, agrees to use its best endeavors to have a street opened.

Toronto-Owen Sound Branch.—With the exception of a few miles north of Orangeville, the entire line from Toronto to Owen Sound, Ont., has been relaid with 72-lb. rails. The old 60-lb. rails north of Orangeville will be taken up and replaced with 72-lb. steel next spring.

Branch to Stratford, Ont.—J. W. Leonard, Manager of Construction, Ontario Lines, wrote the Mayor of Stratford, on Sept. 6, that it had been decided not to ask for a bonus, and that should the company eventually come to the conclusion to construct a line, the city would probably be asked to grant such right of way and station grounds as were owned or controlled by the corporation. The by-law which was about to be submitted to a vote, to grant a \$30,000 bonus for purchase of right of way, has been withdrawn.

Toronto-Sudbury Line.—Grading is well forward, and tracklaying is expected to be commenced early in Oct.

Branch to Hutton.—Plans have been approved by the Railway Commissioners for the construction of a branch line from Sudbury to Hutton, Ont., 30.1 miles. We are advised that this is a mining spur projected to run north from Sudbury to Hutton township, which was located about two years ago. Nothing was done in the way of construction at the time, and nothing has been decided in regard to it.

Fort William-Winnipeg Second Track.—A contract has been let by the general contractors for this work, to Geo. McKenzie, for a portion of the distance.

Winnipeg Hotel.—Good progress has been made upon the building of the company's hotel, and it is expected to have it completed for opening by June, 1906.

Carberry Surveys.—A press report states that a survey party has been placed in the field at Austin, Man., to run a line through that district parallel with the G.T. Pacific Ry., which is located about eight miles north of Carberry.

The Pheasant Hills Branch of the C.P.R. was opened for traffic Sept. 25, on the extension of 55 miles from Lipton to Strassburg. The branch starts from the main line at Kirkella, Man., and is 202 miles in length to Strassburg, Sask.

Branch to McLeod.—An agreement was signed Sept. 25, between the company and

the town of McLeod, Alta., for the construction of a line into the town.

Wetaskiwin Branch.—The first 25 miles of the branch easterly from Wetaskiwin, Alta., has been completed and passed by the Government Inspector. The second 25 miles was expected to be completed and ready for operation Sept. 30. A contract has been let to J. D. McArthur for grading a further 50 miles easterly. It is intended to carry the line easterly to a junction with the Manitoba and North-Western Ry., which now runs to Shebo, Sask. The branch will cross the Qu'Appelle, Long Lake and Saskatchewan Ry. at Saskatoon, Sask., and J. D. McArthur has a contract for grading 50 miles westerly from this point, to meet the 50 miles he is grading easterly.

Victoria Hotel.—The tourist hotel which the company is erecting at Victoria, B.C., is expected to be completed early in 1907.

The Railway Commissioners in the West.

For the convenience of all parties concerned the Board of Railway Commissioners arranged for the holding of a series of sittings at central points in Western Canada. A. C. Killam, K.C., Chief Commissioner, and Jas. Mills, Commissioner, formed the court, and they were accompanied by G. A. Mountain, Chief Engineer; J. Hardwell, Chief Traffic Officer and Assistant Secretary Primeau; J. A. Marlow, Transportation Officer of the Canadian Manufacturers' Association, Toronto, also went west to attend the sittings of the Commissioners in behalf of the Association. The principal cases to come before the Commission were a number heard in 1904 by Hon. A. G. Blair and Commissioner Mills, but in which judgment had not been delivered when Mr. Blair resigned the chairmanship. The first sittings were held at Fort William, Ont., Sept. 7; the Commissioners moving to Winnipeg on the following day. The sittings at Winnipeg opened Sept. 11, when among the matters considered were the crossing of the Canadian Northern Ry. line in Fort Rouge; the question of three level crossings for the Canadian Northern Ry. at St. Boniface; the consideration of the question governing mixed car loads; the crossing of the C.P.R. by the Canadian Northern Ry. at Neepawa, Man.; freight interchange between C.P.R. and C.N.R. in Winnipeg; as well as a number of other and more routine matters. The work planned for the meeting of the Commissioners at Winnipeg was not completed within the time allotted and it was arranged to hold further sittings on the return of the Commissioners from the Pacific Coast. The Commissioners visited a number of points in Manitoba for inspection purposes, and held sittings at several points, including Calgary and Vancouver.

Canada Atlantic Railway Transfer.

At the annual meeting of shareholders, Sept. 26, the board was reorganized as follows:—President, C. M. Hays; Vice-President, E. H. Fitzhugh; Secretary-Treasurer, F. Scott; other directors, F. H. McGuigan, J. Hobson, W. H. Biggar, and J. W. Loud.

The following circular was issued Sept. 26, by C. M. Hays, Second Vice-President and General Manager, G.T.R.: Effective at 12 o'clock midnight, Sept. 30, the G.T.R. Co. will take over the management and operation of the Canada Atlantic Ry. and branches and the Canada Atlantic Transit Co., and the officers and employes of the companies named will be governed accordingly. The jurisdiction of the following general officers is hereby extended over the property of the companies named in their respective departments:—C. M. Hays, Second Vice-President and General

Manager; E. H. Fitzhugh, Third Vice-President; F. H. McGuigan, Fourth Vice-President; W. Wainwright, General Assistant and Comptroller; R. S. Logan, Assistant to Second Vice-President; W. H. Biggar, K.C., General Solicitor; M. K. Cowan, Assistant Solicitor; J. W. Loud, Freight Traffic Manager; J. Pullen, Assistant Freight Traffic Manager; J. E. Dalrymple, General Freight Agent; A. E. Rosevear, Freight Claim Agent; A. F. Read, Foreign Freight Agent; W. E. Davis, Passenger Traffic Manager; G. T. Bell, General Passenger and Ticket Agent; H. G. Elliott, Assistant General Passenger and Ticket Agent; J. E. Quick, General Baggage Agent; H. R. Charlton, Advertising Agent; J. Hobson, Chief Engineer; W. D. Robb, Superintendent of Motive Power; W. McWood, Superintendent of Car Department; M. C. Sturtevant, Car Service Agent; W. W. Ashald, Superintendent of Telegraphs; J. A. Hutchison, M.D., Chief Medical Officer; A. Butze, General Purchasing Agent; F. Scott, Treasurer; H. W. Walker, General Auditor; N. J. Power, Auditor of Disbursements; G. B. Filgiano, Auditor of Passenger Accounts; W. Clark, Auditor of Freight Accounts; W. H. Rosevear, General Car Accountant; E. Donald, Tax and Land Agent.

The following circular was issued Sept. 30:—The lines and branches heretofore known as the Canada Atlantic Ry. will, from this date, be operated as the Ottawa Division of the G.T.R. System, and will be divided into the following named districts:

	MILES.
DISTRICT 30: Ottawa to Boundry Line.....	134.7
Boundary Line to Alburgh Junct.	3.1
Glen Robertson to Hawkesbury.	21.0
South Indian to Rockland.....	16.4
Total.....	175.2
DISTRICT 31: Ottawa to Madawaska.....	130.2
Golden Lake to Pembroke.....	20.9
Total.....	151.1
DISTRICT 32: Madawaska to Depot Harbor.....	133.6

E. J. Chamberin, heretofore General Manager of the C.A.R. and J. W. Smith, General Assistant, have retired from the service to go into other business.

In order that the organization and methods of operating the new Ottawa Division (formerly Canada Atlantic Ry.) may conform to those in effect on all other divisions of the system, the position of General Superintendent has been abolished and M. Donaldson, heretofore General Superintendent of the Canada Atlantic Ry. has been appointed Superintendent, in charge of all matters pertaining to Transportation and Maintenance of Way, office at Ottawa, Ont. Officers in charge of these departments will hereafter report to and receive instructions from Mr. Donaldson.

W. P. Hinton, heretofore General Freight and Passenger Agent C.A.R. has been appointed General Agent, Passenger Department, G.T.R. with office at Ottawa, to have charge of immigration and other trans-Atlantic passenger traffic and to perform such other duties in connection with the General Passenger Department as may be assigned him.

E. R. Bremner, heretofore Assistant General Freight Agent C.A.R. has been appointed Division Freight Agent in charge of the G.T.R. line from St. Polycarpe, Que., to Depot Harbor, Ont., inclusive, also Hawkesbury, Rockland and Pembroke Branches, office at Ottawa.

The Minister of Railways completed his inspection of the Intercolonial Ry., Sept. 7. He was accompanied by the Deputy Minister, M. J. Butler, who has made a report on the position of the line. On Sept. 13, the Minister held a private meeting with the General Manager and the heads of departments, and on Sept. 14, met the representative of the locomotive engineers, firemen, conductors and brakemen at Moncton, N.B.

BIG GAME

MOOSE, CARIBOU, DEER

OPEN SEASON:

QUEBEC—Sept. 1st to Dec. 31st.

NEW BRUNSWICK—Sept. 15th to Nov. 30th.

NOVA SCOTIA—(Moose only)—Oct. 1st to Jan. 1st.

THE **INTERCOLONIAL RAILWAY** IS THE DIRECT ROUTE TO THIS TERRITORY

Write GENERAL PASSENGER DEPARTMENT, Moncton, N.B., for Descriptive Pamphlets.

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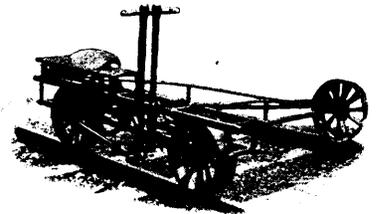
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Decision re Ex-Lake Grain Rates.

Following is a copy of a letter addressed to the Board of Railway Commissioners by the American Cereal Co., dated at Chicago, Ill., April 25:—"This company has mills in Peterborough, Ont., largely used for the manufacture of cereal products for export. In selling to the foreign trade, we have to meet the competition of mills located at the American seaboard, said mills being able to secure supplies of what is known as ex-lake grain on the basis of either lake and canal or lake and rail freight rates. For example, freight rates on export grain from Georgian Bay ports to Montreal during the past season of navigation, as we have learned, ranged from 2½ to 4c. per bush. of 60 lbs., being equal to 4.166c. and 6.666c. per 100 lbs.; whereas, the rate charged us on ex-lake grain milled in Peterborough was 3c. per 100 lbs. Midland to Peterborough, and 9¼c. per 100 lbs. Midland to Montreal, making the rate paid by us 12¼c. per 100 lbs.

"In addition to this, we have to meet the competition of mills in Liverpool and other foreign seaports, which are able to secure a supply of Canadian grain at an ocean rate, averaging from 2 to 5c. per 100 lbs. lower on the grain than on the manufactured product. To overcome the latter, Canadian mills have a prior selection of the grain, and are able to deliver at any foreign seaport; whereas, the foreign mills, on account of their high inland freight rates, are practically confined to their own markets.

"This company has already taken up the inland discrimination mentioned with the management of both the G.T. and C. P. Railways, which have declined to put the product rate for export on the same basis as the grain, stating that they are able to carry ex-lake grain in trainloads from Georgian Bay to Montreal at a lower cost than they can afford to make on grain milled in Ontario. This, to a considerable extent, may apply on grain milled by small country mills, but in our judgment does not apply to the cereal products turned out by this company in Peterborough. For instance, the country mills ship the product in sacks, not materially increasing the weight; whereas we, in the case of oat products, ship over two-thirds of the output in cases, each case containing thirty-six 2 lb. packages, making 72 lbs., the pulp-board, wrappers and case aggregating 18 lbs. per case. This means that the railways collect freight on said 18 lbs. of material manufactured in Canada and brought in by the roads from different parts of the country. In other words, the railroads collect freight on 18 lbs. in and 18 lbs. out, in addition to the 72 lbs. of grain or product, while on the product shipped in sacks they would only collect freight on the 72 lbs. In addition to this, it requires about ten times the help to put the output into packages that it does to put same into barrels or sacks.

"To substantiate our position, we are ready to submit published railway tariffs, showing you that competition now forces the Canadian roads to carry cereal products manufactured in the U.S. through Canada, for export, at rates netting them as little per ton per mile as the ex-lake rates mentioned. In addition to this, if an opportunity is given us, we believe we can satisfy the Commissioners that it is clearly to the interests of the railways and the country that all the cereals possible be manufactured in Canada instead of in foreign countries.

"What we ask for is that the Railway Commissioners establish a basis of rates on ex-lake grain, originating in Chicago, Milwaukee, Duluth, Ft. William, or Pt. Arthur, by way of the Georgian Bay, to be milled in Peterborough, for shipment via the ports of Montreal, Portland, Boston, or West St. John, that will not exceed the grain rate.

"Our Treasurer, Mr. Stuart, and Mr

Richards, our Traffic Manager, will be pleased to meet your Commission, and representatives of the roads at the earliest date you may be able to name, prepared to go into this matter in detail."

On Sept. 6, the Secretary of the Board of Railway Commissioners wrote the American Cereal Co. that the Board had considered the application and was of opinion that no change should be directed to be made except such as would be involved by the reduction in export rates recently directed by the Board, as published on page 456 of this issue.

The Alleged Vessel-Owners' Combine.

A. A. Wright, of Toronto, Manager of the str. Tadousac, said, in an interview in the Toronto Globe, Sept. 27:—"I notice a press report from Winnipeg expressing shippers' dissatisfaction over alleged combine of vessel-owners. I take exception to the expression, as the term is incorrect. The only agreement is one not to carry below reasonable cost of transportation, considering the season of the year and the delay boats get in loading and unloading. The shippers forced the vesselmen to this to save them from bankruptcy, as in addition to the low rates, shippers insist on vessels loading at as many elevators as a shipper has grain in, regardless of what it costs the vessel. And, as if that was not enough, insist, further, on the captain signing what is known among vesselmen as the cut-throat bill of lading, in which the vessel guarantees to pay for any shortage the unloading elevator may make on cargo, which in several cases lately has come to more than the freight, and in other cases left the steamer \$300 or \$400 for a trip which may have cost the vessel-owner \$1,500. Some vessel companies have not paid a cent in dividends in four years, largely owing to the low rates and great delays, and if despatch does not improve shippers will pay very much higher rates this fall than those in question. Some shippers are now offering Canadian vessels from ¼c. to ½c. per bushel less than they are now chartering U.S. vessels for. It is still taking from 36 to 48 hours to load boats of from 80,000 to 100,000 bush. capacity, though this should be done in 6 to 10 hours, and Canadians have sufficient boats to take care of all the grain the elevators at Fort William and Port Arthur will load this fall if they would give the vessels the despatch they are entitled to at each end of the route."

Grand Trunk Pacific Ry.—Dr. J. Alex. Hutchison, Chief Medical Officer of the G.T.R. has also been appointed Chief Medical Officer of the G.T.P.R.

Reid Newfoundland Co.—W. E. Hamilton has been appointed General Passenger Agent of this Company's Railway and Steamship System, with office at St. John's, vice H. A. Morine.

R. P. Inglis, of Montreal, the promotor of the Edmonton Street Ry. and of the Shippers' Cartage Co., Ltd., has gone to Australia for some months.

The Westinghouse Air Brake Co.'s surplus for the last fiscal year amounted to \$760,564 after paying dividends, against a deficit of \$79,740 in 1903-4.

The G.T.R. has offered to contribute \$4,500 towards the erection of a building at Allandale, Ont., for the Y.M.C.A., to which a large number of the G.T.R. employes belong, and to contribute \$90 a month towards its maintenance. In order to provide a suitable building public subscriptions to an equal amount are asked.

SHE—Why are all vessels spoken of as she? Is it because they glide so gracefully?

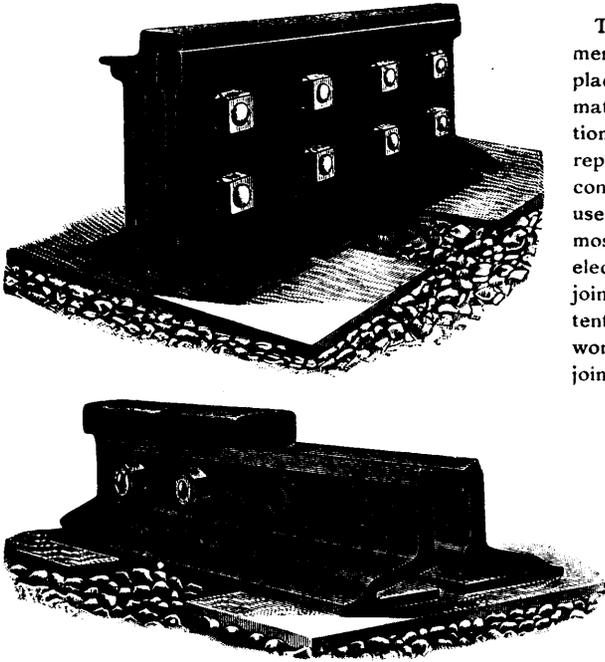
HE—No. It's because their rigging costs so much.

American Locomotive Company.

The report covering the operation of the various works for the year ended June 30, states that the gross earnings were \$24,150,201.06, a decrease of \$8,918,549.50 from those of the year previous. The earnings include the revenue from new work, and also to an increased extent, the overhauling of old locomotives, and sundry other items of income. The expenses were \$19,796,533.49, a decrease of \$7,608,451.91. In making up the expenses, the principles of previous years have been followed, namely, to include the direct manufacturing cost—both labor and material—and all indirect charges against production. The expenses also include the usual depreciation charge of 20% of the book value of patterns, drawings and templets, iron flasks, formers and dies, and the customary adjustment of stock material values. There have been deducted from the resulting net earnings the interest on the bonds of constituent companies, the interest on miscellaneous outstanding obligations, and the usual 7% dividend on preferred stock. It also seemed wise to the directors to charge against income \$1,883,556.96, representing the cost to the company of its permanent investment in the works at Montreal. The result is a surplus of \$607,924.26, which has been carried to the credit of profit and loss account. During the year the policy of improvements and re-construction of shops and machinery has been continued, a further reduction in manufacturing cost being one of the satisfactory results. There have been additions to the property of \$466,952.48 and betterments costing \$131,251.14, all of which have been charged against the extraordinary improvement and betterment fund of \$1,000,000 created June 30, 1904, leaving a balance of \$401,796.38 which will be used for similar additions and betterments during the new fiscal year. In considering the large decrease in operations as compared with previous results, the stockholders should bear in mind that the depression in general business throughout the country began in the fall of 1903 and lasted until a corresponding period in 1904. During this depression very little new business originated among the iron and steel producing and manufacturing companies, which worked chiefly on orders received prior to Oct. 1, 1903. This condition applied with particular force to the manufacturers of railway rolling stock; although having so large a number of contracts on the books, the shops were kept busy on existing orders during the first nine months of the previous fiscal year, viz., 1903-4, and the effect of the absence of new orders was not apparent in the last annual report. As a matter of fact the output for 1903-4 was based almost entirely on the heavy orders received in 1902-03; and the lack of corresponding new orders in 1903-04 is the direct cause of the large decrease in the fiscal year which has just closed. It was because such an outcome was clearly in sight that the directors inserted a precautionary note in the last annual report.

The board is pleased to announce that the company has passed through this trying period of severe business contraction without in the least jeopardizing the dividend on its preferred stock, and since the resumption of business prosperity, it has secured its full share of orders for new locomotives. The company has completed four years of existence, each of which has varied greatly from the others—not only from the standpoint of the general condition of business, but in respect of the company's preparation to handle its product most economically; and the financial results, under such widely

Railroad Essentials.



The day has passed when men of finance are willing to place their money into bad material in railroad construction only to be compelled to replace it by renewals or reconstruction after very little use. Many of the best and most successful steam and electric railroads use the rail joints of the Continuous patent type for standard track work, insulated joints, step joints, and electric bonding joints, for the reason that experience has proven it to be the best appliance of its kind ever put upon the market, as evidenced by the fact that it is used in all parts of the world on over 20,000 miles of track.

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WM. E. CLARK, Manager.

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 The Brostrom Detachable Handles
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IMPROVED FARMS in all districts of the province can be purchased at from \$10 to \$40 per acre. These prices are advancing every year.

A FEW POINTERS

On arrival at Winnipeg the wisest policy for any new settler to adopt is to remain in Winnipeg for a few days and learn for himself all about the lands offered for sale and to homestead.

There are districts that have been settled for many years in which land can be purchased. Some of this may be unbroken prairie which still possesses all the richness and productive powers of our virgin prairies. Other lands, cultivated and having comfortable farm buildings, are ready for immediate possession.

There are Provincial Government lands, Dominion Government homesteads, and railway lands to be secured.

The price of land varies from \$3 to \$40 per acre. Location with respect to railways, towns, timber and water determines the price of land.

For information regarding homesteads, apply at the Dominion Land Office.

For purchase of Provincial lands apply at the Provincial Land Office in the Parliament Buildings.

For C.P.R. or C.N.R. lands apply at the land offices of said railway companies.

For lands owned by private individuals apply to the various real estate agents in the city.

For situations as farm laborers apply to :

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 617 MAIN ST., WINNIPEG

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different conditions, have strengthened the expressed faith of the management in the company's future. The most important financial transaction of the fiscal year just ended was the purchase of nearly all of the capital stock—preferred and common—of the Rogers Locomotive Works, of Paterson, N.J., on terms which were satisfactory to the directors. The cost of these securities, which is carried in the investment account on the general balance sheet, is to be met entirely from the surplus of the American Locomotive Co. The Rogers Locomotive Works was organized in 1831, and it is therefore one of the oldest locomotive building establishments in this country. It has a capacity of 300 standard gauge locomotives per annum, and its manufacturing equipment has been greatly improved in recent years. It will be the policy of the American Locomotive Co. to protect the excellent reputation of this veteran organization and to develop its resources to the utmost.

Satisfactory progress has been made in the development of the Atlantic steam shovel. Its mechanical efficiency is thoroughly established and its sales have greatly increased. The company proposes to devote a separate shop at the Brooks works exclusively to the manufacture of this shovel, the sales of which, as heretofore, will be negotiated through the Atlantic Equipment Co. The directors and officers, aided by experts specially engaged for the purpose, are constantly watching for opportunities to broaden the scope and strengthen the position of the company in the industrial field. Particular attention is being paid to the possibilities of development of the electric locomotive, trucks for electric service, motor cars and other power vehicles, etc. In conclusion, the directors express their confidence in the outlook for the company's business during the current fiscal year.

	1904-5	1903-4
Gross earnings.....	\$24,150,201.06	\$33,068,750.56
Manufacturing, maintenance and administrative expenses..	19,796,533.49	27,404,985.40
Net earnings.....	\$4,353,667.57	\$5,663,765.16
Interest on bonds of constituent companies, bills payable, etc.	112,186.35	238,226.07
Profit available for dividend.....	\$4,241,481.22	\$5,425,539.09
Dividend on preferred stock, at 7%.....	1,750,000.00	1,750,000.00
	\$2,491,481.22	\$3,675,539.09
Investment in Montreal works.....	1,883,556.96	*1,000,000.00
Bal. to profit & loss..	\$607,924.26	\$2,675,539.09

*Extraordinary improvement and betterment fund. In the condensed general balance sheet the property, securities owned, convertible assets, and securities held in trust are valued \$63,910,822.78 against \$60,216,945 at June 30, 1904. The Locomotive and Machine Co. of Montreal is entered under convertible assets "advances to Montreal works, \$924,392.06"; and the item of cost of property \$45,657,080.63 includes all the capital stock of the Richmond Locomotive Works, Manchester Locomotive Works, and American Locomotive Co. of New Jersey, and securities and other property of the Locomotive and Machine Co. of Montreal. There are outstanding \$430,000 of 5% gold bonds maturing 1921, of the Rogers Locomotive Co., and \$1,500,000 4% gold bonds maturing 1924, of the Locomotive and Machine Co. of Montreal, which are not carried as a liability. The liabilities are: Preferred stock, \$25,000,000; common stock, \$25,000,000; bonded debt of constituent companies, \$1,237,500; current liabilities, \$6,851,506.91; extraordinary improvement and betterment fund, \$401,796.38; surplus after paying dividend on preferred stock July 1, 1904, to June 30, 1905, \$607,924.26; credit balance June 30, 1904, \$4,812,095.23.

The report contains illustrations showing the Rogers Locomotive Works, interior views of portions of several other works, and eight photographic views of locomotives built during the year. These include consolidation freight locomotive 1620 for the C.P.R., two cylinder compound mogul freight locomotive 789, for the G.T.R., built by the Locomotive and Machine Co. of Montreal, and two cylinder compound consolidation freight locomotives for the Minneapolis, St. Paul and Sault Ste. Marie Ry., built at the company's Schenectady works.

Minneapolis, St. Paul and Sault Ste. Marie Railway.

Following are extracts from the report for the year ended June 30, presented at the annual meeting in Minneapolis, Minn., Sept. 19:—

	1905.	1904.
Gross earnings from operation.....	\$ 8,716,621.38	\$ 6,993,498.41
Income from other sources..	66,335.98	88,654.78
Total income from all sources.....	8,782,957.16	7,082,153.19
Operating expenses.....	4,502,607.33	3,746,780.49
Net earnings.....	\$ 4,280,349.83	\$ 3,335,372.70
Fixed charges, taxes, etc.....	2,216,934.92	1,948,126.82
Surplus income.....	\$ 2,063,414.91	\$ 1,387,245.88

Notwithstanding the partial destruction of the north-western grain crop of 1904, the gross earnings increased 24.6%; net earnings 29.8%, and surplus earnings 48.7%. The operating expenses increased 20.2% and fixed charges (which include interest on funded debt, rentals paid for terminal property and taxes) increased 15.7%. The following comparisons show the rapid growth during the last five years. In 1900 the gross earnings were \$4,006.39 a mile, in 1905 \$4,913.60 a mile, an increase of 22.6%. The surplus earnings during 1900 were \$685.11 a mile, and in 1905, \$1,163.15 a mile, an increase of \$478.04 a mile or 69.8%. During the same period the company's financial condition has greatly improved. In 1900 the funded debt aggregated \$26,375.40 a mile; in 1905, \$24,500.03, a decrease of \$1,875.37 a mile. In 1900 its funded debt and capital stock aggregated \$42,805.39 a mile, and in 1905 \$36,097.82 a mile, a decrease of \$6,707.57 a mile.

From June 30, 1900, to June 30, 1905, there has been added 532.54 miles and the fact that with this additional mileage the gross earnings have been largely increased per mile of road, indicates that the new lines have been located in profitable territory. During the year there has been completed the line from Glenwood, Minn., to a connection with the C.P.R. at Emerson, Man., giving direct connection to Winnipeg. This line passes through the lake region of Northern Minnesota and the Red River valley, reaching the finest farming country in the Northwest. The line is laid with 80-lb. steel, is well ballasted with gravel, and in first-class condition in every respect. The wide territory served via Winnipeg insures a large tonnage and satisfactory passenger traffic. The company is building a line from Thief River Falls, Minn., on its Winnipeg line, westward crossing the Red River valley, passing through the northern part of North Dakota and terminating at Kenmare, on its Pacific coast line, a distance of 300 miles; also a branch leaving this line at Egeland, extending 21 miles northwest to Armourdale, N.D., and an extension of the line north of Bismarck from Underwood to Garrison, N.D., a distance of 20 miles, making about 340 miles new construction during the year. This will all be completed in time to move a large portion of this season's grain crop. The funds for the construction of these new lines are provided by the issuance of 4% first consolidated mortgage bonds. Many improvements have been made during the year to enlarge the company's facilities for business, among

which are a six-story fireproof office building in Minneapolis, the purchase of additional grounds in St. Paul and Minneapolis for terminals, including an independent right of way into both cities; additional buildings and expensive modern machinery have been added to the company's shops in Minneapolis, and numerous buildings, stockyards, loading platforms, track scales, improved water supply, interlocking plants, automatic coaling stations at various points along the road, twenty-two miles of passing and side tracks, and additional telegraph lines from Minneapolis to Emerson, 386 miles in length. During the year the work of improving the alignment and reducing the grades on the line from Minneapolis to Paynesville, Minn., was begun. The cost aggregates about \$490,000, of which \$214,603.42 was charged against the fund appropriated from surplus earnings for improvements, leaving \$183,000 for similar work now under way. Substantial additions were made to the equipment, including 2,000 box cars, 15 cabooses, 12 passenger cars, 150 ballast cars and 9 locomotives. The operating efficiency of the property has not only been maintained, but much improved in both motive power, equipment and roadbed.

The prospects for a very large crop this season are now well assured and should result in a most satisfactory showing for the ensuing year.

The mileage owned and operated is 1,789.79 and 20.90 miles of spur lines. In addition, the company has trackage facilities over 18.52 miles of terminal property in Minneapolis, St. Paul and Sault Ste. Marie.

EARNINGS AND EXPENSES.

Freight.....	\$6,387,247.86
Passenger.....	1,799,034.13
Mail, express and miscellaneous	530,339.59
	\$8,716,621.58
Maintenance of way and structures.....	\$ 743,693.20
Maintenance of equipment.....	881,702.13
Conducting transportation.....	2,687,173.57
General expenses.....	190,038.43
	\$4,502,607.33
Net earnings from operation.....	\$4,214,014.25
Interest, discount and exchange..	60,249.83
Interest on bonds and stock.....	6,085.75
	\$ 66,335.58
Total income.....	\$4,280,349.83
Interest on bonds.....	\$1,706,826.67
Taxes.....	411,163.68
Rental of terminals.....	92,944.57
	\$2,216,934.92
Net surplus for year.....	\$2,063,414.91

The Expenditure Account Construction and Equipment.—Tony branch, \$10.00; Birchwood extension, \$12,976.40; Winnipeg line, \$2,053,984.76; Bismarck, Washburn & Gt. Falls Ry., \$874.85; Rex branch, \$305.03; Thief River Falls line, \$912,495.59; Egeland line, \$6,554.81; Underwood extension, \$36,710.80; A. B. and N. W. Ry., \$204.21; preliminary surveys, \$8,769.36; terminal property, St. Paul, Minneapolis and other points, \$155,806.67; betterments to main line, \$120,075.24; new equipment, \$1,504,493.56; total, \$4,813,261.28.

Canada Atlantic Railway Transfer.

The following information is supplemental to that published on pg. 471.

The office of M. A. Overend, Foreign Freight Agent, C.A.R., Montreal, has been merged with the office of the Foreign Freight Agent, G.T.R., Mr. Overend having entered the G.T.R. service, attached to the Division Freight Agent's office in Montreal.

We were recently officially advised that no changes had been made, nor were any then contemplated in the position of the following C.A.R. representatives, who have been retained in the G.T.R. service:—H. S. Heyden, General Agent, New York; J. Ritchie, General Eastern Agent, Boston; G. J. Harris, General Western Agent, Chicago; J. B. Heckendorn, Agent, Milwaukee; W. H. Burk, Agent, St. Paul and Minneapolis.

Jas. Ogilvie, heretofore Superintendent

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Motive Power C.A.R., has been appointed Master Mechanic, Ottawa Division G.T.R. Office, Ottawa.

J. E. Dalrymple, General Freight Agent G.T.R., issued the following circular Oct. 1:—"All freight tariffs and percentage divisions issued by the Canada Atlantic Ry. and Canada Atlantic Transit Co., now in effect, are hereby authorized for use until further advised."

Railway Finance, Meetings, etc.

Brockville, Westport and Northwestern Ry.—At the annual meeting held at Brockville, Ont., Sept. 5, the report of the Treasurer showed gross receipts of \$54,045.76, operating expenses \$30,145.74, net earnings \$23,900.02, against \$48,431.25 gross; \$30,792.66 operating expenses, and \$17,638.59 net earnings for same period 1903-4. During the year there had been expended \$20,183.73 on permanent improvements to the roadbed and equipments. Following are the officers and directors for the current year: President, J. Gerken, New York; Vice-President, C. P. King, Philadelphia, Pa.; Secretary, C. Heilshorn, New York; Treasurer, H. W. Gennerich, New York; General Manager, M. Zimmerman, New York; other directors: V. Schmitt, New York; J. Cumming, Lyn, Ont.; W. H. Comstock, W. S. Buell, R. Bowie, Brockville, Ont.; W. S. Fredenburg, A. Bernard, Westport, Ont.

Buffalo and Lake Huron Ry.—The usual dividend of 5s. 3d. per share was declared at the half-yearly meeting held in England. The line is leased at a fixed sum annually to the G.T.R.

Canadian Pacific Ry.—Two rumors affecting C.P.R. finances were denied by Sir Thos. Shaughnessy, President, during Sept. The first of these reports was to the effect that an arrangement had been concluded between the C.P.R. and the G.T. Pacific Ry. for the joint promotion of immigration and development in Manitoba, Saskatchewan and Alberta, and the second was that a syndicate had offered to purchase the balance of the C.P.R. lands in the Northwest, about 11,000,000 acres for \$70,000,000.

Joliette and Brandon Ry.—At the last session of the Quebec Legislature an act was passed incorporating a company with this title—the incorporators being the Comte de Semalle, Hon. N. Perodeau, A. E. Brown, and C. L. M. de Martigny. The first named is described as sole holder of bonds and coupons of the Montreal and Lake Maskinonge Ry., and the next two are described as trustees for the bonds, and the object of the act is to legally vest them with all the powers, etc., possessed by that railway company. The bondholders took possession of the line Oct. 15, 1901, under the powers of a mortgage dated Dec. 1, 1888, and have been in undisputed possession ever since. The line extends from St. Felix, on the C.P.R., to St. Gabriel de Brandon, 11 miles, and is operated under lease by the C.P.R. The company may issue bonds to the extent of \$20,000 a mile, and may enter into agreements with the C.P.R. or the Great Northern Ry. of Canada for the lease or sale of the line, etc.

Massachusetts Valley Ry.—Following are the officers and directors for the current year: President, J. G. Foster, Derby Line, Vt.; Vice-President, C. W. Coate, Sherbrooke, Que.; Treasurer, J. H. Williams, Bellows Falls, Vt.; other directors: C. D. White, J. W. Dunklee, Boston, Mass.; C. W. Kathan, Rock Island, Que.; C. D. White, F. Grundy, Sherbrooke, Que.; Hon. C. C. Colby, Stanstead, Que. Secretary, S. Stevens, Stanstead. This railway, which extends from Lennoxville, Que., to the International boundary, is operated under lease by the Boston and Maine Rd.

Northern Colonization Ry.—An action to recover \$325,000 damages has been started in the Quebec courts, by A. Desmarteau, curator of the insolvent estate of A. Villaini. A claim for \$90,000 was originally made for damages by a fire alleged to have been caused by the company's negligence, June 3, 1903, which destroyed the lumber mills and the village of Villainville; the owner subsequently had to assign, and the second action is to recover for the estate damages for injury to business.

Pere Marquette Rd.—It has been officially announced in New York that the Cincinnati, Hamilton and Dayton Rd., including the Pere Marquette Rd., has been purchased by J. P. Morgan & Co., but in what interest is not known. The mileage of the joint systems is 3,643, of which 223.41 miles are in Canada, and the P.M.Rd. has also an arrangements for running rights over the Michigan Central Rd., from near St. Thomas to the Niagara frontier, Ont.

Quebec Southern Ry.—Under an order of the Court of Exchequer tenders will be received at Ottawa, until Nov 2, for the lines comprising the Quebec Southern Ry. as a whole, or for the separate lines. The Q.S. Ry. is an amalgamation of the United Counties Ry., the East Richelieu Valley Ry., and the South Shore Ry. The first two lines were amalgamated as the Quebec Southern Ry., and the South Shore Ry. was subsequently acquired. The sale of this latter line was the subject matter of actions in court between certain sections of the shareholders, but the transfer to the Q.S. Ry. was finally affirmed. The combined lines have been operated by G. C. Dessaulles, as Receiver, for the last two years.

St. Lawrence and Adirondack Ry.—Following are the directors for the current year: W. K., F. W. Vanderbilt, C. M. Depew, W. H. Newman, H. McK. Twombly, J. P. Morgan, W. S. Webb, W. Rockefeller, J. Stillman.

Temiskaming and Northern Ontario Ry.—Gross earnings for Aug. \$28,019, expenses \$14,795, net earnings \$13,224.

The Ontario Government has decided to arrange for the direct issue of \$7,000,000 of Provincial bonds, for the purpose of retiring the original loan, renewed in May, and due Nov. 15, and to provide an additional \$1,000,000 for completing the line to the junction with the Eastern Division of the Transcontinental Ry.

Temiscouata Ry.—Gross earnings for Aug. \$13,882.89, against \$13,961.72 for Aug., 1904.

Toronto, Hamilton and Buffalo Ry.—Estimated earnings for Aug. \$57,024.64, against \$49,687.32 for Aug., 1904.

ELECTRIC RAILWAYS.

Canadian Street Railway Association.

The quarterly meeting was held at St. John, N.B., Aug. 29 and 30, on the invitation of the St. John Ry. Co. Among those present were:—The President, W. G. Ross, Managing Director, Montreal St. Ry.; the Secretary-Treasurer, A. H. Royce, Vice-President Toronto Suburban Ry.; P. Dubee, Secretary; D. McDonald, Manager; D. E. Blair, Supt. of Rolling Stock; M. Neilson, Consulting Engineer, Montreal St. Ry.; E. A. Evans, General Manager, Quebec Ry., Light and Power Co.; C. E. A. Carr, General Manager, London St. Ry.; J. Murphy, Electrician, Ottawa Electric Ry.; J. C. Rothery, Supt. International Ry., Niagara Falls; J. W. Morris, Electrical Superintendent, St. John's, Nfld., St. Ry.; J. W. Crosby, Manager Halifax Electric Tramway; A. J. Pattison, Vice-President, Grand Valley Ry.; C. L. Wilson, Traffic Manager Toronto and York

Radial Ry.; Col. H. H. McLean, K.C., Vice-President; J. Manchester, R. B. Emmerson, H. B. Robinson, directors; W. Z. Earle, Manager; J. Hopper, Accountant; H. A. Brown, Electrician; T. Irwin, Chief Engineer St. John, N.B., Ry.; Acton Burrows, publisher of THE RAILWAY AND SHIPPING WORLD, the official organ of the Association.

A recommendation of the Executive Committee that after the next meeting in Dec., meetings should be held half-yearly instead of quarterly, was adopted.

Dr. S. Ritter Ickes, President Grand Valley Ry., being unable to be present, sent an interim report on the fender question, in which he pointed out the disadvantages of the projecting fender and recommended for interurban lines a modified pilot as the only real protection for passengers. D. McDonald approved of the pilot for suburban lines, but it could not be used in cities. The projecting fender had many disadvantages and no doubt multiplied accidents by really increasing the length of the car. If the projection could be done away with many accidents would be prevented. The ideal fender was undoubtedly one underneath the car, close to the front wheels, but in most Canadian cities this could not be used on account of the snow difficulty. C. E. A. Carr explained the Ontario Government regulations in regard to fenders. Three makes had been approved of, but where an agreement existed between a railway company and a municipality for the use of another make of fender, the government did not interfere. In London, by agreement with the city, the old form of dish pan fender was used. He agreed with Mr. McDonald in regard to a fender right in front of the wheels. He considered a cushion on a fender a disadvantage, as in many cases it would throw a person back to the ground. E. A. Evans said that no fender could be adopted which would suit all companies in Canada, as local conditions were different. In the city of Quebec, on account of the narrow streets and short curves a short fender was necessary. They used the dish pan.

A suggestion by President Ross to establish a question box for members was approved.

Col. McLean explained the extraordinary action of the New Brunswick Legislature in passing an act varying the agreement between the St. John Ry. Co. and the city of St. John.

STREET RAILWAY ACCOUNTING.

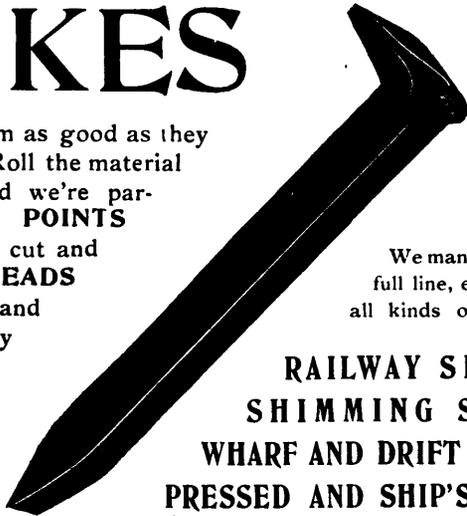
In the absence of J. M. Smith, Comptroller of the Toronto Railway Co., the following paper, written by him, was read by C. L. Wilson, Traffic Manager Toronto and York Radial Ry:

Since the organization in March, 1897, of the Street Railway Accountants' Association of America, the subject of street railway accounting has occupied the minds of most of the brightest accountants in street railway work throughout the United States and Canada, and as I feel certain that all street railway companies here represented are members (if not they should be) of the above association, they will have fuller information than I can possibly give, in their libraries, in the many papers which have been prepared and read, and published each year in the annual report of said association, dealing with all branches of accounting necessary to street railways.

Accounting is as a barometer, which indicates to the management the fluctuations in earnings, operating expenses and net incomes, or briefly, the exact condition of the company at any and all times. To be able to properly classify accounts, it is essential that the accountant should familiarize himself with the use of all classes of material. He should be able to discuss intelligently with the heads of the different departments, all matters per-

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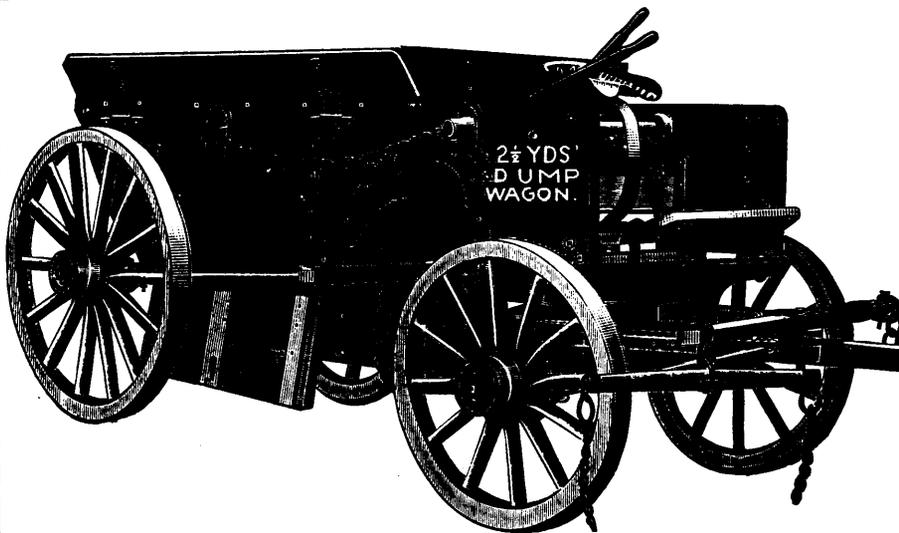
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taining to construction and operation, and by so doing, not only will he be able to keep his records and accounts in much better form, but in reasoning out matters with them, this knowledge will prove of inestimable value to all parties interested. The chief accountant should be in close touch with the manager at all times. He should make his monthly reports in such detail and in such form that will enable the management to make regular comparisons, not only with other companies similarly situated, but which will enable comparison and checking the cost of operation from time to time in all departments of the company. It must be borne in mind that every manager is not a trained accountant; it therefore becomes the duty of the accountant to see that his reports are such as to be clearly understood. A good practice is to accompany said reports with an explanatory letter setting forth the reasons for increases and decreases where they occur, that will enable the manager to look into excesses. I am of the opinion that the untiring efforts of many conscientious accountants in supplying great detail are not appreciated, or that the information is not made use of to the extent that it should be. The accountant is not called upon for information as to practical mechanical construction, etc., but is looked to for full detail as to cost of everything, such as power station, steam and electrical equipment of same, car houses, tracks, overhead feeder and trolley lines, cars, trucks, motors, tools and machinery, etc., and the cost of operation in all its various divisions, such as transportation, power expenses, maintenance of equipment and miscellaneous expenses. To properly answer all inquiries, requires that the accountant classify all labor and material under a large number of headings to enable him to keep the information. The 37 operating accounts recommended by the Street Railway Accountants' Association, have been sub-divided into about 150 or 160. To some it may seem a great task and a waste of labor, but with a proper system, no difficulty should be experienced and the labor involved would be slight compared with the value of the results. A system can be adapted to every company, large or small, city or suburban, that will place the accounting department in a position to give all information required.

SHOP ORDER.—The introduction of shop order numbers can be so easily arranged to any class of work that it will be found of great advantage. Many times the department is asked the cost of certain repairs or renewals, but on account of the work having been done by the same men who attended to the general repairs, and the work being of a similar nature, the charges very often are mixed so that it is impossible to tell the exact cost of the work; hence, an estimate is all that can be obtained, whereas, if a number is placed on a certain piece of work and instructions given that all material and labor must be charged to said number, no matter how many different numbers are in force, you can always turn to the different numbers and find the exact cost of labor and every item of material used in connection with the work. It may only be the painting of five cars, the rebonding of a certain portion of track, the renewal of a section of the overhead trolley, etc., all of which would come under general repairs, the satisfaction would be in knowing the exact cost of the particular work, where if done under general repairs, the cars would be painted and charged along with all other car repairs, the track with general track repairs, and the overhead trolley with general overhead repairs. Everything can be charged to the order numbers until work is completed and carried in a general ledger account or distributed monthly as desired. Too much stress cannot be laid upon the necessity for keeping in great detail, labor and material separately, of everything that enters into the cost of construction and operation of a street railway, as sooner or later

you will be called upon for information that can only be supplied by the introduction of some such system.

MATERIAL AND SUPPLIES.—In the purchase of material and supplies, lack of system may frequently mean loss of money in duplicate charges and payments or differences in price. In our company no material is ordered by the purchasing agent until a requisition is made out in duplicate and is approved for purchase by the manager, when the original is returned to the purchasing department and the duplicate is forwarded to the accounting department. When the material requisitioned is ordered, a duplicate of the order for the material showing from whom same was ordered, is forwarded to the accounting department. The stores are required to report daily all material and supplies received, and when the invoices come to hand, the purchasing agent certifies the prices correct. The order of purchasing summarized is as follows:—1. Manager's approval for purchase. 2. Orders placed for supplies. 3. Receipt of material by stores department. 4. Prices of goods certified correct. I might say the system in vogue in this company's stores is the lot number system, which is working very satisfactorily. All the labor that is required of the store department when issuing material and supplies to the different departments is to enter the lot number in the proper column, on the various orders, the value and class of material being in possession of the accounting department. The forms used by the several departments for ordering material from stores are filled out by each and are so arranged that by using a carbon the same is duplicated, thus saving considerable writing, the original being forwarded daily by stores to the accounting department when the price of the material is entered and the charges made to the proper accounts.

EARNINGS.—Car earnings should be so reported to the manager as to enable him to see the comparison of one route or line with another, that he may be enabled to operate the system with the smallest number of cars consistent with good service. For instance, if on one line the records are continuously showing earnings of 32c. per mile, while on another line they are 16c., there must be some reason for the difference. It will enable him to look into the matter when his attention is called to it.

TICKET DESTROYING.—The question of destruction of tickets is one that is being inquired about at the present time. The general custom I find has been to burn either in a large stove or furnace or at the boiler-room in the power stations. It has been admitted by many, that this system has not been satisfactory, and while there are ticket destroying machines, the experience of this company with one, some years ago, was that you could only feed the machine a few at a time or it would choke; this you will see gave the clerk having in charge the destruction of the tickets an opportunity to appropriate some of them if so inclined. Some six or seven years ago, I had our engineer construct in the basement of our office building, a small furnace, a simple square brick enclosure with a large iron door in front. In this enclosure was placed a cylinder made of extra heavy mesh; the cylinder is constructed so as to allow a portion to open, being hinged at the back and having a fastener at the front; the cylinder revolves on a short axle in one end with a longer one at the other, the long one being extended through the end of the furnace wall, to the end of which is attached a handle by which the cylinder can be turned as often as required. Under the cylinder is a gas pipe running the full length, with holes to allow the gas to ignite when wanted. The ticket counters, when through counting, place their tickets in small bags which are immediately handed the cashier, who encloses them in 50 lb. flour sacks, seals the same and places them in his vault until it is convenient for him to take them to the cylinder.

He is accompanied by one of the clerks, when the large bags of tickets are placed in the cylinder which is immediately locked, then the outer door to the furnace is also locked with spring locks, the keys of which do not leave the hands of the cashier, then the gas is turned on and match applied. The gas is left burning only long enough (about five minutes) to allow the tickets to ignite. The tickets will not burn through without being turned over by the rapid revolving of the cylinder, which can be done occasionally by the office boy turning the handle above referred to; they are allowed to remain in the cylinder until next day, when the cylinder will be cooled off to allow the next batch of tickets to be placed in. In the cylinder is placed a bar of iron so that when the cylinder is being revolved, the bar bangs and dislodges the tickets so that they burn more freely. This bar also breaks the charred tickets when cooled off, sufficient to allow the refuse material to fall through the mesh when the cylinder is turned each day before placing therein a fresh bag of tickets. Thus you will see no person (other than your trusted cashier) can possibly come in contact with the tickets.

I regret very much that time will not permit my dealing with other points that might be touched upon, but will again strongly advise the careful perusal of the reports and many suggestions laid down by the Street Railway Accountants' Association of America, which I am sure will prove of profit to all who will do so.

J. W. Crosby said that in Halifax they used to burn the tickets in the boiler furnaces, but some slightly charred tickets came back as fares and they now use a chopping machine which cuts the tickets into three parts, after which they are burned. J. Hopper said the St. John Ry. followed the plan recommended by the Street Ry. Accountants' Association. C. E. A. Carr approved of Mr. Smith's suggestion for the closest connection between the manager and the accountant. The destruction of tickets was a much more important matter on Canadian than U. S. lines. In the U. S. cash fares predominated, in Canada it was the reverse. In London the ticket fares amounted to 78% of the total. They had some charred tickets tendered a few years ago, but they were still burning them at the power house. They were, however, considering the installation of a machine to work the tickets into a pulp, under the charge of the cashier. J. C. Rothery emphasized the necessity for close communication between the manager and accounting department. On the Niagara Falls Park and River Ry., 95% of the passengers used tickets. The tickets were burned weekly, under his personal supervision, and in 12 years' experience he had not known of any charred ones having been tendered. He thought the idea of macerating tickets a good one. W. Z. Earle said that in St. John, N.B., they burned the tickets in a furnace, closing the damper for a few minutes and raking the heap over. D. McDonald, in moving a vote of thanks to Mr. Smith for his paper, endorsed the remarks in connection with the importance of close connection between the manager and the accounting branch. The accountants' department was the barometer of the general conditions of the business. He advocated that managers should be supplied with daily approximate statements of earnings, expenses, etc., so as to guard against surprises. President Ross warmly commended the paper, although he did not quite agree with its suggestions in regard to lot numbers, to which he thought some objections might be urged. In regard to ticket destroying, some one must be trusted, and he thought the boiler furnaces at the power house as good a place as any if proper precautions were taken. He referred to the establishment of the Street Ry. Accountants' Association at Cleveland in 1897, when he and Mr. Smith

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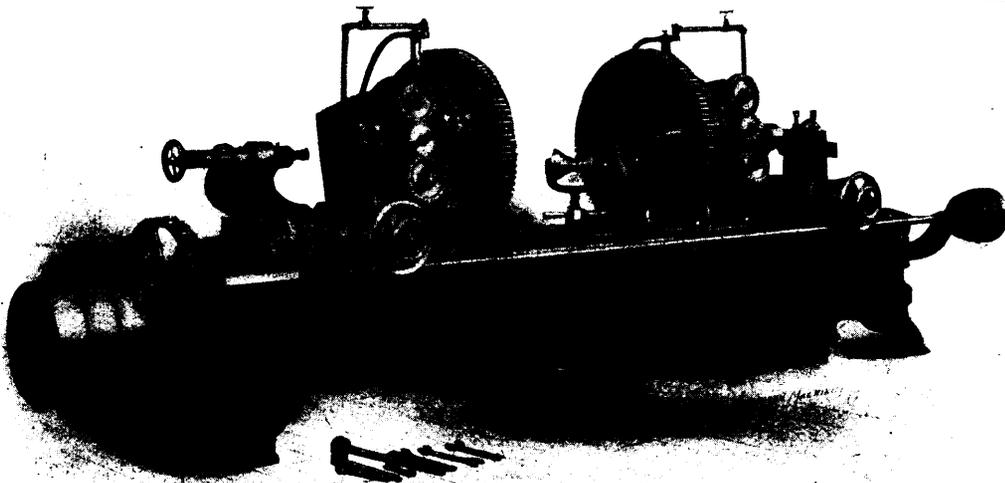
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were among the organizers. Of about 25 lines represented, some had no accounting systems except on paper, others had very complicated ones. A committee was appointed to recommend a uniform system, and the Association practically adopted the systems which the Toronto Ry. and the Montreal St. Ry. had been using since 1892. He thought very few lines went into as close details as the Montreal St. Ry. The chief accountant should be in close touch with the manager at all times. He agreed with Mr. Smith's recommendations in regard to the shop order system, which he thought was followed by most companies.

Some discussion took place in regard to the crossing of electric railways by steam railways, A. H. Royce explaining the practice adopted by the Board of Railway Commissioners in regard to the cost of installation and maintenance.

It was decided to take a mail vote of the members as to the most suitable months in which to hold the semi-annual meetings in future.

On the second day of the meeting, P. Dubee explained the working of the Montreal St. Ry.'s Mutual Benefit Association, which was followed by an interesting discussion in which Messrs. Rothery, Evans and Murphy took part. The question of uniforms and the cost of water power were also discussed.

The members inspected the power house and plant of the St. John Ry. and expressed their satisfaction with its excellent condition and the methods of its operation.

The St. John Ry. Co., represented by its Vice-President, Col. McLean, entertained the members most hospitably. On the evening of the first day of the meeting they were tendered a dinner at the Union Club, the arrangements for which were most perfect. The floral decorations of the table were in exquisite taste, the cuisine was faultless, and in every respect the affair was one of the most enjoyable the writer has ever attended. Col. McLean, who is an excellent after dinner speaker, presided with great tact and kept things moving with a "go" which is so often lacking at large dinners. A number of toasts were proposed and responded to, the speakers being, Col. McLean, W. G. Ross, A. H. Royce, Col. Tucker, T. Trenholme, D. McDonald, C. E. A. Carr, E. A. Evans, J. W. Crosby, J. W. Morris, W. Z. Earle, Acton Burrows, A. J. Pattison, J. C. Rothery, H. B. Robinson and P. Dubee. The menus were beautifully got up in antique leather covers, bearing the St. John coat of arms, and containing a number of charming views of scenery in and around the city. On the following day the members went as guests of the St. John Ry. Co. to the seaside park which the company has established in the west part of the city.

Electric Traction for Railway Service.

By J. A. Shaw, Assistant Electrical Engineer, C.P.R. Montreal.

It is to-day generally admitted that, so far as the actual moving of trains is concerned, the electric motor can do the work better than the steam locomotive. But the more important question is, will it pay to convert steam roads to electric. This is best answered by the amount of such work which is now being carried out throughout the world, the results obtained and the advantages possessed by electric traction. These may be briefly enumerated as follows: 1. Those appealing to the passenger, and the consequent increase in traffic. 2. Those relating to the operating of trains from one central power house. 3. The savings in capital, maintenance, and operation.

The most noticeable to the passenger, namely those affecting his comfort, are the

cleanliness of the cars due to the absence of smoke and cinders, especially in tunnels, also the better distribution of heating and lighting made possible. Another factor is the higher speed attainable, not only for continuous runs, but with the same running speed as on a steam line, the average speed is higher and the duration of the trip reduced by the more rapid starting and stopping made possible by the increased traction due to the uniform rotary movement of motors. An additional gain in runs of considerable length would be in the abolition of stops for water or fuel.

The saving in the cost of generating power in a large central power house, with the refinements possible in steam generation and consumption as well as to the high load factor, is apparent especially as the cost of fuel increases at the more remote fuel stations on a steam road. An inferior grade of coal may also be used or if water power is available the cost of power will be very largely reduced. In spite of these advantages, it is questionable if a saving could be shown for electric traction in its present stage, on a road with infrequent trains. Under present economical conditions, electricity is limited to a certain degree, to large terminals, suburban lines, spurs to main lines, and mountain railways. However, the operation of through trunk lines will come shortly as the art advances and as the various water powers throughout the country are developed.

The cost of roadbed construction is in favor of electric traction, a higher grade being attainable and permitting of a shorter route. The equipment of an electric road is higher than the initial outlay for equipping the same road for steam operation; this difference is, however, counterbalanced by the larger outlay for terminal facilities and the cost of steam and water stations for a steam road.

Experience has shown that maintenance and operating expenses with electric traction are much lower than with steam. This applies specially as regards track up-keep, the roadway being subjected to less wear and tear as there is no jumping, pitching or side-way oscillation. A road with heavy traffic and a large and efficiently operated power house should use only one-half as much coal as one using steam locomotives and this may even be reduced to one-third by the application of refinements made possible with large steam generating plants. This saving, it is stated, has been made by the Italian Mediterranean Ry. On another converted road it has been observed that the cost of lubrication is now less with electric traction, and the absence of smoke results in an important reduction in the cost of cleaning. The wages of train staffs on an electrically operated road can be materially reduced, as the engineer and fireman are replaced by a motorman who does not need to go through a long and complicated training, and who consequently is not entitled to so high a rate. This saving in labor, however, is questionable practice, especially where a high speed schedule is in force.

Actual figures of the comparative cost of electric and steam roads, operating under similar conditions, are difficult of obtaining as yet. It has been determined by city elevated roads that the capacity of lines has been increased by one-third, and the operating expenses reduced from more than 55% to less than 45% of its gross receipts.

The Assistant General Manager of the North-Eastern Ry. of England stated recently in Washington, that his road had in self-defence converted a suburban service in order to regain traffic from competing tramways and to increase its amount. This they had successfully accomplished with a large increase in traffic with a resulting reduction in expenses so that the net revenue

now more than covers the interest on the extra cost of installation of new system.

The experience of another English railway, the Lancashire and Yorkshire, has been somewhat similar. This line adopted electric traction not primarily for the sake of economy, but to increase receipts and decrease the crowding of terminals. During the twelve months the line has been operated electrically, there has been an increase in traffic, but the cost of operation has been more expensive. The cost of coal per ton mile is greater, but the running expense less, because of the greater mileage run by train crews. The introduction of electricity has increased the capacity of terminals 30 to 40%, due to the elimination of the time lost in handling a train upon its arrival, the electric motor cars only requiring motormen to carry operating lever from one end of train to the other, and the throwing of one or two switches is the only operation required for fitting the train for a run in the opposite direction. Total combined operating expenses show a considerable reduction can be made in the cost of conducting transportation by the introduction of electric traction, but it is difficult to secure figures that will permit an exact analysis of each of the items which go to make up the saving.

At present there are, generally speaking, five systems available for heavy electric traction: 1. The direct current system, such as now exists on our street and inter-urban lines. 2. The alternating-direct current system, consisting of sub-stations placed at intervals along the line to which alternating current power is transmitted at a high voltage and then lowered by step-down transformers to synchronous motors driving direct current generators feeding the trolley. 3. The single phase alternating current system, in which single phase motors receive power from transformer sub-stations along the line which receive either high voltage single phase or polyphase alternating current from the power station. 4. The Leonard system, in which direct current motors are fed from motor-generators on the locomotives, the latter receiving single phase alternating current from the power station, either direct or through transformer sub-stations along the line. 5. Polyphase system, in which three phase alternating current induction motors on the locomotive are fed from three phase transformer sub-stations along the line, which receive three phase alternating current from the power station. Diagram herewith shows the different features of the various systems. The advantages, disadvantages, and limitations of the various systems are as follows:

1. Direct Current. Propulsion by direct current distribution direct is limited to short distances on account of the low limiting pressure of 600 volts, which makes the cost of copper prohibitive for heavy traction over average distances. Other things being equal, the weight of copper required is inversely as the square of the voltage. The collection of the large amounts of current required with a larger electric locomotive, frequently amounting to 2,000 h.p. at starting, becomes extremely difficult if not impossible with an overhead feeder in a 600 volt d.c. system, so that recourse has to be taken to the third rail. The objections to the latter are so numerous and are so well known that they need not be gone into in detail, except to mention that the third rail is likely to cause accidents to section men, increase cost of maintenance, and in case of a slight derailment, its presence might result in serious damage and the blocking of road for a considerable length of time. It is indeed true that the wrecked portion might be isolated, as regards danger, by cutting off the current; it would also, however, to a great extent, be isolated as

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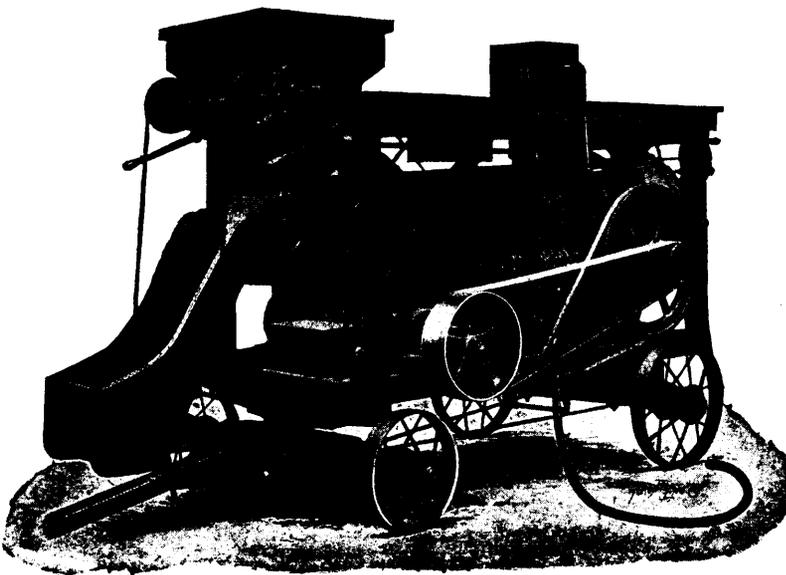
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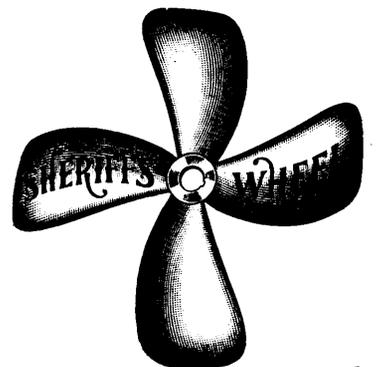
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regards ability to bring up other apparatus for clearing the track. In fact, if the presence of a third, and probably a fourth rail were a necessity in connection with the introduction of electric traction, it is seriously to be doubted whether most of our railway companies would ever be brought to consider it. Other serious drawbacks, such as the comparatively large rheostatic losses occurring at the starting up of motors, also the dangers from electrolysis, might be mentioned showing the unsuitableness of this system for heavy traction.

2. Alternating direct current. In this method of distribution, the losses in transmission and the expenditure for copper are avoided by distributing alternating current at a high voltage to sub-stations placed at convenient distances, in which are installed step-down transformers and rotary converters which convert the alternating current of lowered pressures to 600 volts direct current feeding it into trolley of third rail. This is the system adopted by the New York Central Rd., and is the one installed by the Lancashire and Yorkshire Ry. on its double tracked 23 mile line between Liverpool and Southport. Alternating current three phase power is generated for this road at 7,500 volts, of a frequency of 25 cycles, and is transmitted from a power house to four sub-stations, which step-down the high tension current to low tension alternating current, from which it is converted in rotary converters to direct current, at 600 volts. This power is fed thence through feeder conductors, to the third rail, and returned from fourth rail, bonded to each running rail by return feeders. The drawbacks to the previous system apply equally to the direct current part of this system, and in addition there are the disadvantages of the sub-stations containing the direct current rotary converters, which being revolving machines require manual attendance, entailing a large initial expenditure, and a large operating staff as well as increasing liability to break down, by the introduction of another link in the electric circuit. In view of the various disadvantages, as mentioned in the foregoing, it might be interesting to look into the reasons for the adoption by the New York Central Rd. of this system. The reason for their action, it would appear, were those of policy, as well as engineering. The word policy in this respect refers to the idea that the system adopted should leave every opportunity for the possible future interchange of equipment with other local systems, including the rapid transit lines. The relative costs of the a.c. and d.c. systems were in favor of the direct current equipment, and a further objection to the a.c. system was the use of an overhead construction of bare wire in tunnels and viaducts, which included liability of injury to trainmen as well as a tendency to corrosion of wires from the gases of freight steam locomotives. Among other points, was the fact that the a.c. locomotive would have a greater weight, thus adding 7 to 10% to the train weight, with a consequent increased cost of transmission, installation, and operation of power plants. Further, the cost of maintenance of alternating current apparatus would be greater. The depreciation would also be greater, due to the equipment being more novel, and more or less untried, and would, therefore, have to be discarded in the near future to make room for improved types, whereas the direct current apparatus, being standardized, and universally in application, would prove a good asset.

3. The single phase system to-day is, in the opinion of the majority of engineers, the one which is essential for heavy and long distance railway service, and conforms to the ideal requirements for electric traction. The development of the system has only

become prominent and made possible within the last two years, due to the fundamental feature of the system, the single phase commutator motor having been brought to a high degree of perfection for railway work. It should be borne in mind that the advantages accruing from this system, are due primarily to the use of alternating current, rather than to any advantages, of the a.c. railway motor over the d.c. railway motor, though it should be noted that it has equally good characteristics, and is almost as efficient. The credit of the many advantages gained with this system, however, must be given to the a.c. railway motor since its development has made the exclusive use of single phase alternating current on railway systems practicable.

The details of one of the several single phase roads now operating are as follows: Power is generated at 2,200 volts, and in the power house, by means of static transformers having no moving parts, transformed to 33,000 volts. At this voltage, it is transmitted to transformer stations, located every 10 or 12 miles along the line, where it is reduced to 3,300 volts and fed to the trolley. The transformer stations require no attendants, as the feeder lines are all controlled from the power house, and the stations have no apparatus with moving parts. The 3,300 volt trolley current is carried into the car by a bow trolley, and through a static transformer, in the car, reduced to 250 volts for which the motors are designed. This is an extremely flexible system; by making changes in the transformers, which are not expensive and always good assets, the transmission voltage or the trolley voltage can at any time be changed to meet the requirements of new conditions which may arise. The trolley voltage could be increased to 6,000 volts, which would give sufficient power for operating 100-ton locomotives, with the same size trolley wire, in use. In order to protect passengers and crew from the high pressure used in this system, all car wiring is placed in metal conduits and connected to trucks, so that should any defect in insulation develop it will result in the tripping of the automatic circuit breaker in car or locomotive.

With the single phase a.c. system, the overhead conductor and its many advantages are retained. There are objectionable features to its use, some of which may be named as follows: Difficulty of securing head room through tunnels under bridges as existing structures. These have been eliminated by using a third rail. Snow and ice will collect on the trolley wire. This has been overcome, with more or less success, by coating wire with various solutions or greasing it, by supporting wire from underneath, and collecting current from top of wire, as is done in several Swiss installations, or by passing a heavy low voltage current through wire, raising temperature of same. Poles and guy wires breaking, and allowing the trolley wire to fall, or

breakage of trolley wires. These latter objections are possible to avoid by better construction, which has been introduced with the single phase railway, and consists of a catenary suspension cable or cables supported on insulators on suitable brackets from poles, trolley wire being suspended at intervals of ten to twelve feet from steel cables; this method of suspension allowing of trolley wire being kept at a uniform height above the tracks. For heavier service steel bridges spanning tracks, and carrying the suspension cables, may be used. Liability of a break occurring is reduced to a minimum by using two cables.

A summary of the principal advantages of the a.c. electric traction over the d.c. are: Limits to trolley voltage are removed. Avoiding of rheostatic losses. No necessity for rotary converter sub-stations with manual attendance. Danger of electrolysis by return current avoided. These and other advantages are so well recognized by engineers, that this form of electric traction is now being taken up in England, Europe, and South Africa, as well as on this continent. The Swedish Government Railways have purchased equipment, and are making experiments with trolley voltages up to 18,000 volts, and eliminating the use of sub-stations with step-down transformers for lowering transmission voltage to a lower trolley voltage. In South Africa the Government has recently placed an order for the equipment of one of its main lines with this system.

In order to consider more in detail the relative costs of the alternating and direct current systems I give herewith a comparative list of costs of entering into the equipment of a 60 mile interurban road where the schedule proposed requires five local cars having one hour headway; one express car making the round trip in three hours and one freight car making trip between terminals in eight hours.

	Direct Current.	Alternating Current.
POWER-HOUSE.		
Building.....	\$10,000	\$10,000
Foundations.....	2,500	2,500
Boilers and settings.....	12,000	12,000
Steam piping and covering.....	7,500	7,500
Engines.....	22,000	22,000
Generators.....	18,000	23,000
Exciters.....	1,000	1,000
Step-up transformers, 800-kw.....	8,000	7,500
Switchboard.....	3,500	3,000
Wiring.....	3,000	2,500
Feed-water heater.....	800	800
Pumps.....	800	800
Coal storage.....	1,000	1,000
Smoke-stack and flues.....	2,000	2,000
Fuel economizers.....	3,000	3,000
Stokers.....	3,500	3,500
Incidentals.....	4,400	4,400
Totals.....	\$103,000	\$106,500
SUB-STATION IN POWER HOUSE.		
Building extensions.....	\$1,000	\$1,600
Synchronous converter, 300-kw.....	4,800	
Transformer, 300-kw.; 200-kw. alternating current.....	3,200	2,000
Switchboard.....	2,000	1,300
Wiring.....	1,000	500
Incidentals.....	600	200
Totals.....	\$12,600	\$4,600

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Poles charged on trolley line....		
Copper.....	\$10,000	\$11,500
Insulators, pins and cross-arms..	7,500	5,000
Erection.....	4,000	3,000
Incidentals.....	1,000	1,000
Totals.....	\$22,500	\$20,500

SUB-STATIONS ALONG THE ROAD.

Building.....	\$2,000	\$1,000
Synchronous converter.....	4,800	
Step-down transformers.....	3,200	2,000
Switchboard.....	2,000	1,300
Wiring.....	1,000	500
Incidentals.....	500	200
Totals.....	\$13,500	\$5,000

TROLLEY-LINE AND FEEDERS.

Poles, 3,500.....	\$17,500	\$17,500
Poles distributed and set.....	4,000	4,000
Guy and anchors.....	2,000	2,000
Brackets with hangers.....	18,000	25,000
Copper, direct current:		
Feeder, 12 mls., 500,000 cir. mls.		
Feeder, 48 mls., No. 0000.....		
Trolley, 120 mls., No. 000.....	95,000	
Alternating current:		
Trolley, 60 miles, No. 00.....		21,500
Feeder insulators.....	2,000	
Erection.....	10,000	4,000
Incidentals.....	7,500	4,000
Totals.....	\$156,000	\$78,000

BONDING OF RAILS.

Both rails bonded.....	\$30,000	
One rail bonded.....		\$15,000
Cross bonds.....	2,000	1,000
Totals.....	\$32,000	\$16,000

ROLLING STOCK.

Ten vestibuled passenger cars, each equipped with 4 motors, and weighing about 30 tons.....	\$75,000	\$85,000
Two express passenger cars, equipped with 4 motors, and weighing about 35 tons.....	18,000	20,500
Two freight cars, each equipped with 4 motors, and weighing about 30 tons.....	10,000	12,000
Snow-plough and construction car.....	7,000	8,500
Totals.....	\$110,000	\$126,000

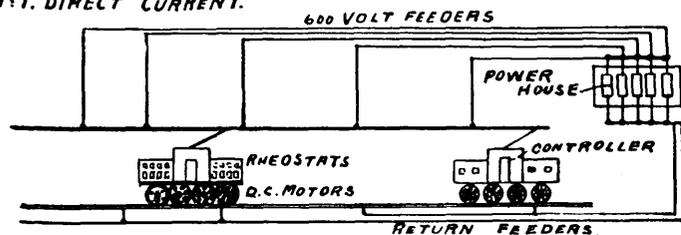
RECAPITULATION.

Power House.....	\$103,000	\$106,500
Sub-station in power house.....	12,600	4,600
Transmission line.....	22,500	20,500
Sub-stations.....	54,000	20,000
Trolley line and feeders.....	156,000	78,000
Bonding.....	32,000	16,000
Rolling stock.....	110,000	126,000
Totals.....	\$490,100	\$371,600
Cost per mile, direct current system.....	\$490,100/60 = \$8,168	
Cost per mile, alternating current system.....	371,600/60 = 6,193	
Saving per mile, alternating current system..	\$1,955	

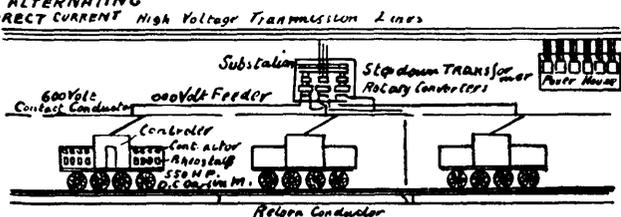
The decrease of alternating current cost in terms of direct current investment, 25%.
The increase of direct current cost in terms of alternating current investment, 32%.

4. The Leonard system is in reality a form of foregoing system, and involves the supply of single phase current to an alternating current motor on the locomotive, motor in turn driving a direct current generator. This generator furnishes current for the operation of the car motors. By varying the voltage of d.c. generator by means of rheostat, any desired voltage may be obtained on motor supply circuit, thus allowing of the obtaining of a perfectly smooth and rapid acceleration, with minimum energy, from the supply circuit, and the starting up of a locomotive does not produce a peak in the load diagram. Such a system, while it may be feasible in the case of large locomotives, yet does not furnish a general solution of the railway problem, as the arrangement is not flexible enough. In the ideal system the same method of operation, and the same types of apparatus, should be used on the feeders or branch lines as on the main lines, if full benefit is to be obtained by electrification.

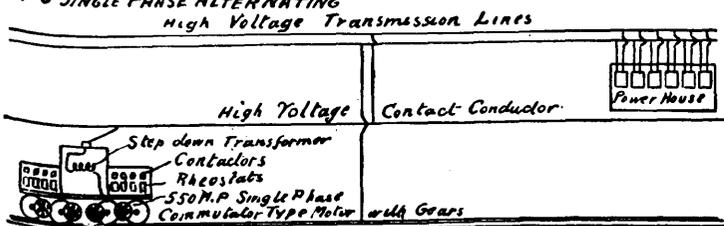
№1. DIRECT CURRENT.



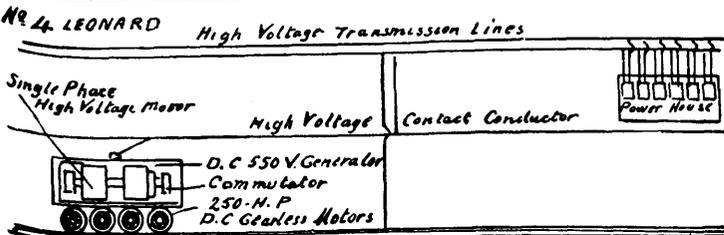
№2 ALTERNATING DIRECT CURRENT



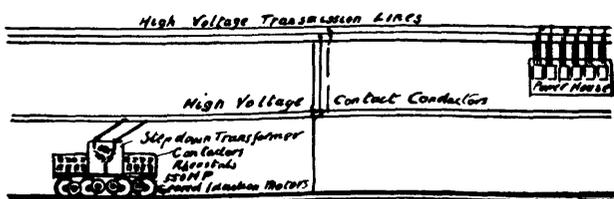
№3 SINGLE PHASE ALTERNATING



№4 LEONARD



№5 POLYPHASE



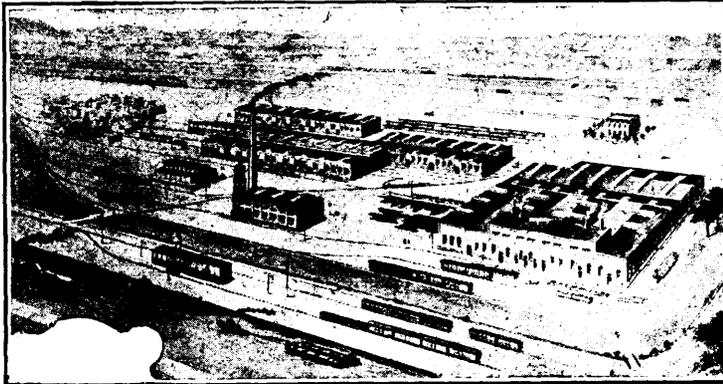
5. The polyphase system has been developed by European engineers, and a number of installations have been made in Europe. American engineers consistently refuse to adopt the polyphase induction motor for the following reasons, namely: (a) The motor is inherently a constant speed one, and therefore not adapted for traction work; at one definite speed only is the polyphase motor efficient. One expedient used to overcome this is to run motors in concatenation or tandem, which gives a second speed at one-half of normal speed. By winding motors for a different number of poles, more than the two speeds may be obtained, but this arrangement has the disadvantage of being able to use but one-half of the total motor capacity above half speed, while the greatest expenditure of energy takes place above that speed. (b) The necessity of providing for at least two overhead conductors. (c) The fact that motors must be built with small air gaps to give most efficient results.

The advantages of the polyphase motor for traction purposes are as follows: In contrast to the single phase motor, the tractive effort at starting is greater. This is due to the fact that in the single phase motor the torque is not constant, but varies between a maximum and zero, with double the frequency of the line current. The mean value of the torque is only one-half of the maximum torque when slipping wheels, which means, where the tractive effort required necessitates going to the limit of adhesion between wheels and track, a single phase locomotive must have almost twice as much weight on drivers as either a d.c. or three phase locomotive. This difference holds true only for motors mounted directly on car axles, and will be somewhat less if geared. The weight of a three phase motor is only about three-quarters of the d.c. motor of equal capacity, and approximately one-half that of a single phase motor, and the cost is also less. The cost of equipment is also made lower, as the transformers on the locomotive may be dispensed with, as motors of this type are now made for operation direct on voltage up to 10,000 volts. The three phase motor is probably the most robust and thoroughly mechanical piece of machinery extant, and the maintenance of same would be less than with any other system. Generally speaking, the conditions most favorable for the adoption of this system are rare, and are when the lines are long, when there are few trains with few stops, and when the lines have long and regular gradients, particularly if there is plenty of motive power and it is cheap. In the case of mountain railways, the polyphase system has a special advantage in that power may be returned to the line when running down hill, motors acting as generators and thus allowing of the electrical braking of trains.

While the wholesale retirement of the steam locomotive in favor of its electrical competitor cannot take place in the immediate future, owing to capital now invested, there are many isolated sections of steam roads in the operation of which electric traction could effect economies which would pay well for its adoption. These economies may be in the direction of a reduced fuel, labor, and maintenance account, but may be more far-reaching, and warrant changes in the present method of operating by steam. The millions of dollars contemplated for reducing grades, and double tracking certain sections of single track roads in order to increase their capacity with steam locomotives, might be spent with promise of greater return if used for installing electrical equipment.

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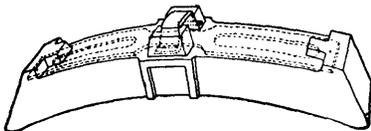
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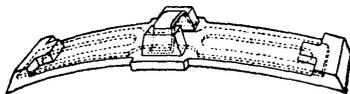
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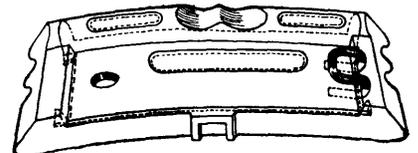
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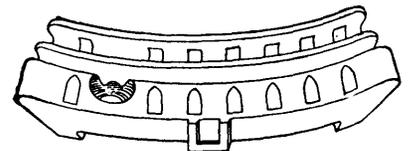
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The whole situation as regards electric traction is excellently summed up in a few words spoken by Mr. George Westinghouse, during the opening exercises of the American Railway Appliance Exhibition, held in Washington, in connection with the International Railway Congress. He stated the case as follows: "A new era in railway operation has dawned with its many new problems. I refer to the growing use of electricity for the movement of trains. There have already been such demonstrations of the benefits to be derived from the substitution of the electric motor for the steam locomotive, that it requires no great prophet to predict the extensive growth of electric traction upon the great railways of the world, and the eventual replacement of the steam locomotive. Fortunately, the time element, which is such a controller of events, and the financial problems involved, will ensure gradual development and extension of the use of electricity. With these changes have come vastly different engineering problems and new sources of danger, which should, and will, command and receive that attention which is essential to the surmounting of every difficulty as it arises."

The foregoing was read at a recent meeting of the Canadian Railway Club.

Projects, Construction and Betterments.

Brantford and Hamilton Ry.—The promoters of the Hamilton, Ancaster and Brantford Ry. have completed negotiations with the owners of the B. and H. Ry., by which they secure the Dominion charter to construct an electric railway to connect Hamilton and Brantford, Ont., in addition to the Provincial one they previously owned. The transfer of the charter was signed at Brantford, Sept. 6, on which day the franchise granting an entrance into Brantford was also signed. C. D. Haines subsequently stated that the line would be constructed under the charter of the Brantford and Hamilton Ry., that grading would be gone on with at once, and that orders for rails, cars, etc., would be placed as quickly as possible. Under the Hamilton by-law the line has to be in operation by Nov., 1906. (July, pg. 313).

Brandon, Man.—A company with the title of the Kensington-Brandon Land and Development Co. has applied to the Brandon, Man., city council for a franchise for a street railway there. J. Curry, broker, Toronto, is Vice-President of the company, which owns considerable real estate in Brandon.

British Columbia Electric Ry.—Arrangements are in progress for the construction of a branch in North Vancouver, B.C., at a cost of about \$200,000. The surveys for the line are to be made at once. (Aug., pg. 369).

Buckingham Electric Ry., Light and Power Co.—At the last session of the Quebec Legislature several sections of the act incorporating this company were repealed and new sections added. In the first place the name of the company is changed to the Lievre Valley Power, Traction and Manufacturing Co., and the route of the electric railway authorized to be constructed is defined in the new clause to be from Hull to the mouth of the Du Lievre River in the township of Buckingham or L'Ange Gardien, and along the Lievre River valley to meet the G.T. Pacific Ry. The company is given extensive rights to develop water powers, work mines, carry on business as ship-owner, ship-builder, expressman, mail carrier, wharfinger and warehouseman. The line has to be completed within 15 years, but if it has not been constructed to the mouth of the River Kiamika within that period, the company shall pay to the Crown \$1,000 a year at the end of 50 years; if at the end of 15 years the line is completed to Kiamika River, the \$1,000 a

year will not be payable until the lapse of 100 years from the passing of the act.

Fraser Valley Electric Ry. and Power Co.—J. B. Morgan, the General Manager and promoter of the company, which was originally called the Chilliwack Power and Light Co., has been spending a good deal of time in canvassing the municipalities to be served by the proposed line. A meeting was held in New Westminster, B.C., Sept. 8, when Mr. Morgan explained that in connection with the power development plant on the Chilliwack River it was desired to construct an electric railway from Chilliwack to New Westminster. The route had been surveyed, and the report of the engineer showed that a line could be constructed with a maximum gradient of 1%, with very easy curves. Work had been started on the power station and a portion of the right of way had been cleared. (Sept., pg. 425).

Fort Erie to Crystal Beach.—The project to construct an electric railway from Fort Erie to Crystal Beach, or Point Albino, Ont., has been revived, and District Attorney Coatsworth of Buffalo recently stated that he had been told by those interested that the capital had been subscribed, and that it was also hoped to secure the franchise of the Fort Erie Ferry.

Grand Valley Ry.—The Galt, Ont., Town Council has reached an agreement with the G.V.R.Co., under which the company will pay the corporation \$1,100 in lieu of building the roadway along which its tracks extend into the town to join those of the Galt, Preston and Hespeler Electric Ry. The franchise question has now been satisfactorily settled. (June, pg. 261).

Hamilton, Ancaster and Brantford Ry.—See Brantford and Hamilton Ry.

Hamilton Radial Ry.—All the bridges and culverts on the extension from Burlington to Oakville, Ont., have been completed as far as Bronte, and the grading finished. A good deal of the grading between Bronte and Oakville is completed, but it will be some time before the bridge at Bronte will be built. (Aug., pg. 369).

Hamilton, Grimsby and Beamsville Electric Ry.—Representatives of the Lincoln County Council recently discussed with the directors the question of the abandonment of the Vine-land extension. The directors said the decision to tear up the tracks was irrevocable, but the extension would be operated until the end of the fruit season. (Aug., pg. 369).

Lake Achigan Electric Tramway.—A. B. Crachet, St. Hyppolite, Que.; J. W. Molson, Montreal; J. Boisseau, St. Jerome, Que., were incorporated at the last session of the Quebec Legislature, with this title, for the purpose of constructing an electric railway from Lake Achigan in St. Hyppolite, to St. Jerome, Que., either by Shawbridge, or by New Glasgow. The company is authorized to develop power, to construct telephone and telegraph lines, etc. Bonds to the extent of \$15,000 a mile may be issued, and municipalities are authorized to subscribe for shares in the company.

London Street Ry.—The company has decided not to re-construct the High St. extension, but to construct either the Wortley St. stub, or the Edward St. line as the city desires. The mayor expressed an opinion that a census should be taken in 1906, when he thought the population would show a sufficient increase to demand two additional miles of line. The corporation has decided in favor of the construction of the Edward St. line. (Aug., pg. 369).

Longueuil Tramways Co.—An act incorporating a company with this title was passed last session of the Quebec Legislature, the incorporators being—Hon. J. Girouard, J. Riendeau, V. Pigeon, O. Dufresne, H. St. Mars, P. Z. Ste. Marie, L. Trudeau, S. Labonte,

E. Pigeon, J. I. Lamarre, of Longueuil, Que. The company was given power to construct a tramway to be operated by electricity or any other power than steam, from Longueuil to some point in Montreal or Maisonneuve, Que., by way of Victoria Bridge, (with the consent of the G.T.R.) or by any other bridge that may be built, or by laying rails on the ice during the winter. The company may only lay tracks in Montreal or Maisonneuve to the nearest point where a suitable junction may be made with the Montreal Street Ry. The capital is fixed at \$100,000, and \$25,000 of unassessable stock may be issued to creditors in payment of services, rolling stock, etc. Power to run stage lines is also given, and the company may amalgamate with any other railway, tramway or transportation company.

The company has made an application to the Longueuil Council for a franchise. (Sept., pg. 427).

The Montreal Street Ry. has completed its new line on St. Lawrence St., giving a double-track between Mount Royal Ave. and Sherbrooke St. The line was opened for traffic, Sept. 12. The old tracks on St. Dominique St. are to be abandoned. (Sept., pg. 427.)

Ottawa Electric Ry.—The Board of Railway Commissioners has granted the company leave to appeal to the Supreme Court, against the order directing it to pay a proportion of the cost of the Bank St. subway. The ground of the appeal is that the company is entitled by its franchise to the unimpeded use of the street, and cannot be compelled to pay for its improvement in the way suggested.

The St. Catharines, Pelham and Welland Electric Ry. Co. was incorporated by the Ontario Legislature in 1904, to construct an electric railway from St. Catharines to Welland, Ont., with a branch from near Fonthill to Fenwick Station, on the Toronto, Hamilton and Buffalo Ry., and was given power last session of the Ontario Legislature to extend its projected line from Fenwick to Dunnville, Ont. The company's charter had been sold to the interests which now own the Niagara, St. Catharines and Toronto Ry., and the power transmission line now under construction from Niagara to Toronto.

(See Niagara, St. Catharines and Toronto Ry., Sept., pg. 427).

Southwestern Traction Co.—Application was made to the Railway Committee of the Ontario Government asking for an order to expropriate certain lands for its right of way without the consent of the municipalities interested, and without an order from the county judges. The Committee decided recently not to give the order, but further consideration will be given to the question upon the company submitting a draft form of the expropriation order desired. The company has secured its right of way, and almost completed its line between London and St. Thomas, but one or two owners will not enter into negotiations for the sale of their land. (Aug., pg. 373).

Toronto and Hamilton Ry.—A meeting of the Electrical Development Co. has been called to be held in Toronto, Oct. 2, for the purpose of considering a proposal of the T. and H. Ry., for the use of a portion of the right of way of the Toronto and Niagara Power Co., between Toronto and Niagara Falls, Ont. The proposed agreement is to run for 99 years, and the rental to be paid is 5% upon one-half of the total cost of the right of way, the T. and H. Power Co. to have the right to patrol the line with its cars, and to have free transportation for its operating staff. (June, pg. 261.)

Toronto and York Radial Ry.—At a meeting of the Railway Committee of the Ontario Government recently, the plans for the extension of the Mimico division from Long

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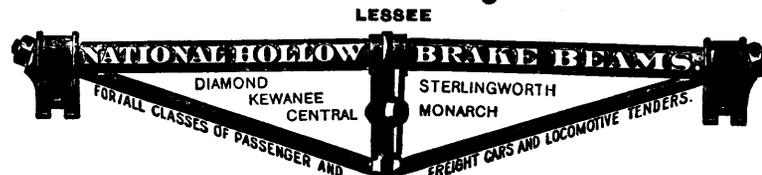
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Nosbonsing and Nipissing Ry.—No changes were made in the directors or officials of this railway at the annual meeting, held Sept. 25.

Union Station, Toronto.—G. Healey, Baggage Master, has resigned.

A Toronto daily paper stated on Sep. 28, that F. H. McGuigan was about to retire from the position of Manager of Transportation, Maintenance and Construction, to confine himself to his executive duties as Fourth

Vice-President G.T.R. Mr. McGuigan has not held the title of Manager since he became Fourth Vice-President, but has remained in charge of operating, maintenance and construction. The same report stated that the operating, maintenance and construction would be placed under W. G. Brownlee, at present Superintendent of the Middle Division at Toronto, who would be succeeded by U. E. Gillen, now Assistant Superintendent at Lon-

dor. On Sept. 29, we were officially advised that the statements made by the Toronto daily paper were incorrect.

W. H. Taylor, who has been appointed General Storekeeper of the Intercolonial Ry. comes from Albert Co., N.B.

W. E. Hamilton has been appointed General Passenger Agent of the Reid Newfoundland Co.'s railway and steamship system, vice H. A. Morine.

Projects, Construction and Betterments.*(Continued from page 487.)*

Branch to Oakville, were under discussion, and certain difficulties were adjusted. Construction is being proceeded with in the vicinity of Port Credit, and it is understood that the grading is to be gone on with right through. The line has been completed from Mimico to the Etobicock River.

During a thunderstorm on Sept. 12, the Mimico division car barns near Toronto were struck by lightning and burned, together with several cars, and a quantity of tools. The barns are to be rebuilt at once. (Sept., pg. 427)

Windsor, Essex and Lake Shore Rapid Ry.—A Detroit, Mich., press report states that the provisional directors, at a meeting held Sept. 19, decided to begin construction within a few days. The company, it was stated, had secured its right of way from Windsor to Chatham, Ont., via Maidstone and Tilbury. We think that statements in regard to this project should be accepted with caution. (June, 1904, pg. 193.)

Electric Ry. Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings, railway and lighting, \$89,398; working expenses, \$45,975; renewal funds, \$8,500; net earnings \$34,923, against net earnings of \$25,696 for July, 1904. Approximate income from investments \$5,467, making the net income for the month \$40,390. The gross receipts for July include receipts from C.P.R. line to Steveston operated by electricity under recent agreement.

Halifax Electric Tramway.—Railway earnings for Aug. \$17,754.53 against \$17,402.03 for Aug., 1904.

The directors have declared a quarterly dividend at the rate of 6% per annum, payable Oct. 2. The company paid a 6% dividend in 1898, but since then the dividends have been at the rate of 5%.

Hamilton Street Ry.—The Hamilton City Council has received a report from its auditors who have made an examination of the books relating to the line for a number of years past. Electric cars displaced the old horse cars in 1892; in 1899, there was a change in the management of the Company and in 1900 the Hamilton Cataract Power, Light and Traction Co. became the owner of the system. The report shows that from 1890 to 1899 the net profits on the line, all expenses being paid, were \$60,103.57. Out of this, dividends amounting to \$44,010.80 were paid, leaving a balance, a surplus, of \$16,092.77 for the nine years. From 1900 to 1904 the net profit has been \$122,648.94. Adding this to the balance under the old management, the net profits from 1890 to 1904 have been \$138,741.71. In this time no charge has been made for director's fees, or administration purposes, nor has any account been taken of the depreciation in plant and equipment, except a sum of \$23,492.05, spent in the period between 1900 to 1904. The new owners spent on the line \$60,705.70, for which a debit is entered in the railway books. An estimate of the depreciation, prepared by an expert, this year, shows that to bring the condition of the line up to the standard of 1892 would cost \$372,908.91. That, in other words, is the estimated depreciation in the 12 years. To bring the present system right up to date would entail a further cost of \$77,600, the extra expenditure being for heavier rails, and better cars. Therefore, to entirely bring the street railway up to date, and wipe out the indebtedness to the Cataract Power Company, would mean an expenditure of \$521,210.61. To provide for this there is only a net profit on the whole time of \$138,741.71. The capital stock now is practically the same as in 1892—\$205,000. No dividend has been paid since

1899. From 1892 to 1904 a percentage amounting to \$202,283.81 has been paid to the city. The present bond indebtedness of the company is \$500,000, of which \$295,500 consists of the cost of the change from horse cars to electric. The charge of the Cataract Power Co. to the street railway for power is based on car mileage, and the cost for power in the four years was: 1900, \$12,442; 1901, \$25,343; 1902, \$25,343; 1903, \$31,277; 1904, \$34,460. The increase has not been in extending the lines, but in more frequent and faster trips made by the cars. Compared with Ottawa, where there are special advantages in water power plant, the cost of operating expenses per car mile, is 11.42 cents, and in Hamilton it is 11.48 cents. In 1904, 1,290,644 miles were travelled, as against 1,193,760 in 1900. The auditors state that on the basis of figures prepared by New York experts for New York state, the cost of power operation for Hamilton would be \$22,881.92, whereas it is \$34,460.22 in actual fact.

Montreal Street Ry.—Passenger earnings for Aug., \$257,463.20; total earnings, \$262,009.08, against \$226,764.08 and \$236,245.27 for Aug., 1905. Working expenses, \$136,198.83; fixed charges, \$35,469.16; surplus, \$90,341.04, against \$122,991.36 working expenses, \$30,255.99 fixed charges, and \$82,998.97 surplus for Aug., 1904. Net earnings for 11 months ended Aug. 31, \$912,790.23; fixed charges, \$267,388.89; surplus, \$645,401.34, against \$820,653.63 net earnings, \$231,262.81 fixed charges, and \$589,390.82 surplus for same period 1903-04. Interest on Montreal Park and Island Co.'s bond held not included.

St. Thomas, Ont., Street Ry.—Total receipts for Aug., \$2,691.91 against \$2,017.11 for Aug., 1904.

St. John Ry., N.B.—Application is being made by the company to the Privy Council to have set aside the act passed last session of the New Brunswick Legislature dealing with the assessment of the company's tracks and other property in the city. The application will be heard at Ottawa early in Oct.

Toronto Ry.—The Court of Revision has confirmed the assessment of the company's rails, ties, poles and wires at \$7,500 a mile, being an increase of \$1,200 a mile on the assessment for the current year. The company is assessed on 92,936 miles of rails, etc., a total of \$697,920.

Electric Railway Notes.

The B.C. Electric Ry. Co. has completed several new city and interurban cars for use on its various lines.

After meeting all expenses the Montreal Street Ry. Mutual Benefit Association cleared \$5,000 at its recent picnic.

D. A. Starr, formerly President and Managing Director of the Cornwall, Ont., Street Ry., is now General Manager of the Clyde Valley Electrical Power Co., Glasgow, Scotland.

The G.T.R. granted the Toronto and York Radial Ry. permission to take several cars of the Toronto Ry Co. across its tracks at Sunnyside, Toronto, to replace those burned in the car barn Sept. 12.

The International Ry. Co. of Buffalo, N.Y., has completed a funeral car for use on its lines. It is a single deck car, and is divided into two sections, the smaller one in front being for the coffin and chief mourners.

The observation car of the Montreal Street Ry., which was illustrated in our Aug. issue, has been placed in use on the company's lines, and on the Montreal Park and Island Ry., making trips round the two mountains every hour.

F. Hoffmeister, who was recently appointed Electrical Superintendent of the

B.C. Electric Ry., Vancouver, B.C., has resigned on account of ill-health. Just after his appointment, and before moving from Winnipeg, his wife died.

The Toronto Ry. is equipping its cars with air brakes, and as a result the indictment against the company for alleged neglect to have its cars fitted with proper appliances for the protection of passengers has been allowed to stand until the December assizes.

Application has been made to the Minister of Marine by the Winnipeg Electric Street Ry. Co., for permission to place a high potential wire over the Red River at Lombard St., Winnipeg, to carry current from the Lac du Bonnet power plant, for distribution in Winnipeg.

E. A. Evans, General Manager, was presented with a silver-mounted pipe, and A. P. Doddridge, Superintendent, was presented with a suit case, by the employes of the Quebec Ry., Light and Power Co., in connection with the recent successful picnic held.

A. J. Beamis, Manager Cape Breton Electric Co., Sydney, N.S., has resigned, being succeeded by T. C. Townsend, Assistant Manager. Mr. Beamis was presented with a travelling trunk, rifle and shooting outfit by the employes of the company, Sept. 12, on the occasion of his leaving for Grand Rapids, Mich.

C. E. A. Carr, who has been General Manager of the London, Ont., Street Ry. for some years, has resigned, and has been succeeded temporarily by G. W. Bender, of Cleveland, Ohio. C. Tolmie, the company's Treasurer, has also resigned, and — Benson, of Cleveland, Ohio, has been appointed temporarily as his successor.

The Township of Sarnia recently brought an action in the Ontario courts for the purpose of restraining the Sarnia Street Ry. from operating its cars on the Huron Beach extension of its lines on Sundays. After hearing counsel Justice Magee, on Sept. 8, directed that an order be made restraining the company from operating its cars on Sunday mornings, with the exception of the milk car, and a single passenger service for church goers.

Grain Elevator Notes.

The Northern Elevator Co. has opened new elevators at Creelman and Rossburn, Sask.

The Medicine Hat Milling Co. has arranged to build a 50,000 bush. elevator at Medicine Hat, Sask.

Green Bros. elevator at Harrow, Ont., on the Pere Marquette Rd., was burned to the ground recently.

The Alberta Pacific Elevator Co., and the Western Milling Co., it is reported will erect elevators at Wetaskiwin, Alta., this fall.

The Prescott Terminal Co. has announced that its elevator at Prescott, Ont., will be fitted up and placed in operation this season.

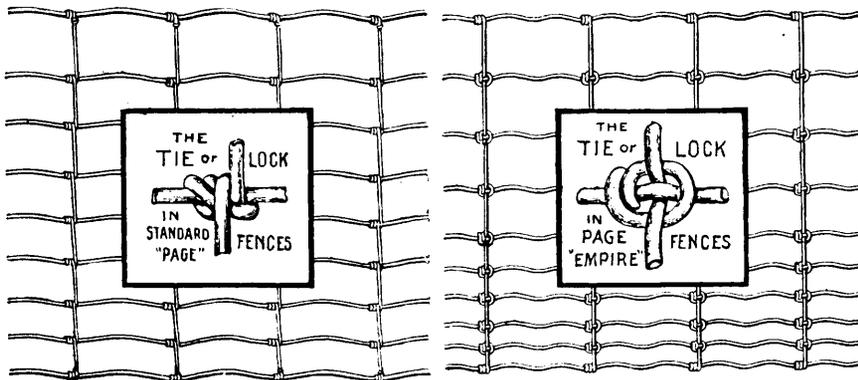
The Alexander Brown Milling and Elevator Co.'s mill and elevator at Toronto were burned out Sept. 19, the damage being estimated at \$180,000.

The Keewatin Flour Milling Co. expects to have its mill building and elevator, now under construction at Keewatin, Ont., completed by Jan. 1, 1906.

With the completion of the new C.P.R. sorting yard at Fort William, Ont., work at the elevators will be expedited. On arrival at the yard the grain trains will be inspected, and the cars sorted out and made up into trains for the different elevators.

The taxpayers of Goderich, Ont., have passed a by-law guaranteeing \$25,000 of bonds of the Goderich Elevator and Transit

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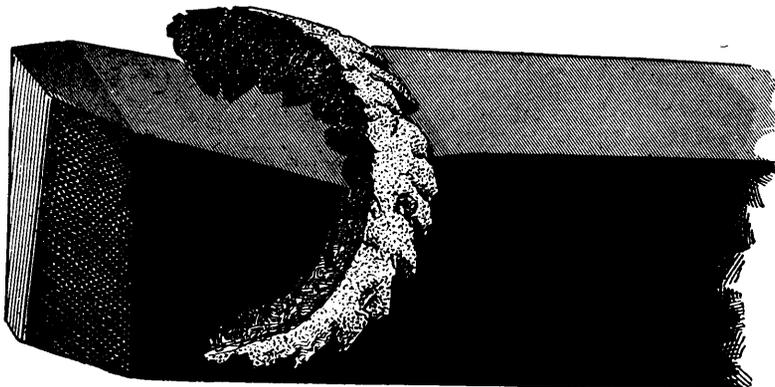
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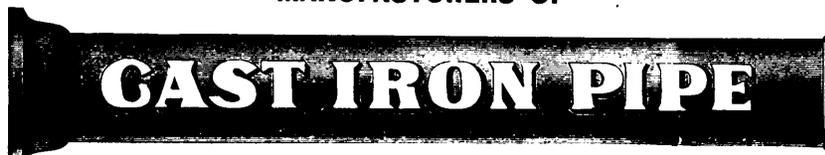
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Co., and granting exemption from taxes for 10 years for the elevator now under construction to replace the one recently burned.

Plans have been ordered by the Montreal Harbor Commissioners to be prepared for a complete system of conveyors for the elevator at the harbor. The plans will be prepared by the John S. Metcalfe Co., Chicago, Ill., which is also to have the supervision of construction.

A recent press despatch from London, Eng., stated that the Western Canada Cement and Coal Co., a British company, proposed to erect 300 to 500 elevators throughout the Northwest, and that the company was floating an issue of £225,000 first mortgage bonds, for the purpose of acquiring lands, and erecting a cement manufacturing plant at Kananaski, Alta.

P. Burns & Co. is the title of a company to which incorporation has been given under the Dominion Companies' Act for the purpose of carrying on a general business in grain, farm produce, etc., and in connection therewith to purchase or construct elevators, charter or purchase steam and sailing vessels, or to acquire any similar business. The offices of the company are to be at Calgary, Alta., and the capital is fixed at \$2,000,000.

SHIPPING MATTERS.

The Turbinia-Primrose Collision.

Commander O. G. V. Spain, R.N., Dominion Wreck Commissioner, assisted by Capt. S. Crangle and A. A. Wright, of Toronto, as assessors, held an investigation in Toronto, Aug. 29 and 30, respecting the collision in Toronto harbor Aug. 12, between the S.S. Turbinia, owned by the Turbine Steamship Co., Hamilton, Ont., and the Toronto Ferry Co.'s str. Primrose. Judgment was delivered by Commander Spain, in Toronto, Sept. 22, the assessors concurring. After giving particulars as to the tonnage, crews, and inspection of the two vessels, the judgment says:—

"The Turbinia and the Primrose were lying at their respective wharves in Toronto; the Turbinia stern out and the Primrose bow out. In accordance with her usual custom, the Turbinia backed well out into the bay, somewhere in the vicinity of 1,000 yards, far enough as the captain considered to make his turn and proceed through the western channel. The Primrose left her wharf and ported her helm when she was clear, and proceeded on her course to her destination at the Island. After getting out far enough and just as she started ahead, the Turbinia signalled a steamer, presumably the Kathleen, which vessel got out of her way. The helm of the Turbinia was then put hard a-starboard, and at this time there were some 1,500 yards between the Primrose and the Turbinia. At this point there is very conflicting evidence in regard to some small boats in the vicinity of the Turbinia; however, there is no doubt that it did not require much manœuvring on the part of the Turbinia to clear these boats as her helm was kept hard a-starboard the whole time. When within 500 or 600 yards of the Primrose it apparently occurred to Capt. Bongard of the Turbinia that the Primrose might possibly be in his way, and at this distance he signalled with two blasts of his whistle; this signal was taken no notice of by the master of the Primrose, and from the many witnesses examined there appears every reason to believe that the signal was not heard on board the latter ship, more especially when it is taken into consideration that the master of the Primrose was in full view of the master of the Turbinia, and no action was observed on the part of the Primrose after the two blasts were given, and this fact should have been evident to the master of the Turbinia. The

master of the Turbinia did not repeat the signal and still held to his course, giving the danger signal when within about 300 yards of the Primrose and reversing his engines. Captain Murphy, of the Luella, stated that he was about 200 yards to the southward and westward of the two vessels at the time of the collision, and previous to it he thought the Turbinia was going under the stern of the Primrose, and he could not understand when he heard the two whistles why the Turbinia apparently intended to cross the bows of the Primrose, as there was ample room between the Primrose and the shore (with no obstacle in the way) for the Turbinia to pass.

"The court is of opinion that the engines of the Turbinia should have been stopped when the two blasts were given and no notice taken of this signal by the Primrose, which vessel, as already stated, at that time was some 500 to 600 yards distant. The master of the Turbinia seems to have been aware from the time he started to make his turn, after backing out from the dock, of the position of the Primrose, that is to say when she was some 1,500 yards away, and secondly, when she was 500 or 600 yards distant from him. There is no doubt that both vessels were in fault in regard to speed, as laid down by the regulations of the Toronto Harbor Board—the Primrose slightly in fault, and the Turbinia considerably so.

"Taking all the facts into consideration, the court considers that it ought to have been brought to the mind of the master of the Turbinia that the courses upon which the vessels were approaching, and attending circumstances, involved risk of collision, and as the Turbinia was the overtaking vessel, with the Primrose on her starboard side, the onus is thrown on the master of the Turbinia in not doing that which the rule prescribes, that is, to keep clear of the overtaken vessel.

"It seems to the court that it showed lack of judgment on the part of the master of the Turbinia, that, having a vessel fitted with every modern appliance under his command, with an experienced wheelman at the helm, and with steam steering gear, with which, as the nautical expert retained by the Turbine Steamship Co. so aptly puts it, she can be steered accurately with one finger, he should have been unable within a distance of 1,500 yards to avoid a collision, which he himself apparently considered a possibility. From the evidence adduced there is no doubt that, had it not been for the action of the master of the Primrose in porting his helm when a collision was imminent, the Turbinia would have struck his vessel stem on, as her helm at the moment of striking was still hard a-starboard.

"The court cannot favorably comment on the action of the master of the Turbinia after the collision occurred. From the evidence, it appears that the Turbinia proceeded on her course after the collision, without making any inquiries as to what damage had been done, or whether the Primrose was in need of assistance. The court can well see that possibly it is not so material in this case to ascertain what damage had been done as it would have been had the casualty occurred on the open lake, but considers that the well-known rule of 'standing by' should have been observed in this case, as it is a recognized fact that a ship should obey this rule, even at some risk to herself, and although the other appears to be in no danger.

"Taking all these facts into consideration, the court considers that Capt. Bongard showed a very grave lack of judgment, thus endangering the lives of hundreds of passengers on both vessels, and therefore suspends his certificate for nine months from Aug. 12, the date of the collision.

"The court wishes to bring to the attention of the Harbor Commissioners of Toronto that the second paragraph of section 8, by-

law 11, of the by-laws and regulations of the harbor, seems to be entirely a dead letter, it being proved by all the witnesses at the investigation who were questioned on the subject, that not only is the law in regard to the speed of four miles an hour not carried out, but that it is impossible to carry it out. This being the case, the court would suggest that this by-law be amended to more fully meet the requirements of the increasing trade of the port of Toronto. It is understood that these by-laws came into operation nearly 20 years ago.

"The court also desires to point out to the Toronto Ferry Co. that the system of not having a proper look-out on board the ferry boats, and the captians more or less enclosed in the pilot house, is not a good one, although the court is fully aware that the same practice is followed elsewhere."

After reading the judgment, Commander Spain read the following statement:—"The master of the Primrose holds a service certificate as master of a passenger steamer in inland waters. The master of the Turbinia holds a certificate of service as master of a fore-and-aft-rigged sailing ship in inland waters, which certificate is endorsed to act as master of steamers also. The certificate of Capt. Bongard did not entitle him to command a passenger steamship, but he is exonerated from any wilful desire to act in a wrong capacity, as he might have misunderstood the limitations of his permit."

Jas. Mann, 1st officer of the Turbinia, and who was last year mate on the Niagara Navigation Co.'s str. Chippewa, is now in command of the Turbinia, in consequence of Captain Bongard's suspension.

Notices to Mariners.

The Department of Marine has issued the following notices:

No. 72. Aug. 8.—British Columbia—178. Ganges harbor, uncharted shoal.

No. 73. Aug. 9.—New Brunswick—180. South coast, Bay of Fundy, southwest Wolf Island, change in character of light.

No. 74. Aug. 10.—Quebec—183. River St. Lawrence, ship channel between Quebec and Montreal, Champlain upper range, front tower moved, lights shown from beacons temporarily. 184. River St. Lawrence, Lake St. Peter, east lightship moved temporarily.

No. 75. Aug. 11.—Ontario—185. River St. Lawrence, Thousand Islands, Gananoque Narrows, gas buoy established. 168. River St. Lawrence, Thousand Islands, Jackstraw shoal, change in color of light.

No. 76. Aug. 12.—New Brunswick—187. South coast, Bay of Fundy, Passamaquoddy bay, St. Andrew's harbor, buoy established. Nova Scotia—188. West Coast, Tusket river, buoys established.

No. 77. Aug. 14.—British Columbia—189. Vancouver Island, Albert head, telegraph cable, caution.

No. 78. Aug. 22.—Nova Scotia—192. 192. Bay of Fundy, Lurcher shoal, lightship to be removed from her station temporarily for repairs.

No. 79. Aug. 22.—Ontario—195. St. Joseph channel, Wilson channel, range lights established.

No. 80. Aug. 31.—Quebec—196. Chaleur Bay, Macquereau Point, lighthouse burnt down, temporary light.

No. 81. Sept. 1.—Quebec—197. Submarine telephone laid across the River St. Lawrence between Doucet's Landing and Three Rivers.

No. 82. Sept. 2.—Ontario—198. Lake Huron, Goderich, new range light.

The following have been issued by the U.S. Hydrographic office:

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No. 35. Sept. 2. St. Mary's River—1371. Sault range light station, alteration. 1872. Hay Lake channel, east side middle float light, alteration. St. Lawrence River—1375. Ogdensburg N.Y., harbor, entrance channel, depths.

Maritime Provinces and Newfoundland.

A press report states that the ice-breaking str. Montcalm will be stationed at North Sydney, N.S., during the winter, for the purpose of keeping the harbor open.

The Dominion Government has presented R. McLeod, a light keeper on St. Paul's Island, with a gold watch in recognition of his services in assisting the crew of the str. Turret Bay, when she was wrecked there recently.

There has been added to the Newfoundland register of shipping, during the current year, the names of 125 vessels, of which 73 were built on the island, the remainder having been purchased at St. Pierre, Miquelon, or at Maritime province ports.

The Dominion Government has awarded a contract for dredging in St. John, N.B., harbor to G. T. Mayes. The amount of work to be done under the contract has not been stated, but \$100,000 was voted during the last session of Parliament for the work at that point.

The Dominion Atlantic Ry. Co.'s str. Prince Arthur has been chartered to the Southern Pacific Rd., to run between New Orleans, La., and Havana, Cuba; and its str. Prince George to the Munson Steamship Co., to run between Mobile, Ala., and Havana, Cuba, during the winter.

The Maritime Board of Trade at its recent session reaffirmed its resolution in favor of government assistance to steel shipbuilding,

and urging that early action be taken by the government to grant the measure of assistance necessary to secure the resumption of work in the ship yards now idle, and to establish other shipbuilding plants in Canada.

Negotiations are in progress for establishing another ferry company to operate between Sydney and North Sydney, N.S. Options have been secured upon land for the terminals at both these points. It is proposed to have constructed two ferry steamers planned to take horses and vehicles in the centre, and passengers at the sides and on promenade deck.

The Dominion Government has made the following appointments to the pilotage authorities for the several districts named: Capt. H. LeMarchant, County of Richmond, N.S., succeeding the late Capt. S. Bouchie; E. Gillespie, secretary Parrsboro, N.S., Pilotage Commissioners, succeeding S. R. DeWolfe, resigned; J. T. Profit, Alberton, P.E.I., succeeding the late C. Morrison.

The Department of Marine has under consideration a project for the maintenance of a wrecking plant at North Sydney, N.S. A subsidy of \$10,000 a year has been offered by the department for the maintenance of a wrecking steamer and tender with up-to-date wrecking plant, including pumps, diving suits, anchors, chains, boats and other plant, together with the necessary skilled labor for the operation of the same.

The sailing packet which made its regular trips to ports on the Bay of Fundy, is making way for the small coasting steamer. Several of these routes have been served by steamers during the past couple of years with satisfaction. Another sailing packet—the Citizen, now on the route from St. John, N.B., to Bear River, Clementsport, and

other points in Annapolis Basin, is to be retired in favor of a steamer. The hull of the steamer has been launched at Shelburne, N.S., and engines are being installed at Yarmouth, N.S. Messrs. Clark, of Bear River, N.S., are the owners.

The Dominion Coal Co.'s new str. Christian Knudsen, and the str. Thrift, collided off Cape North, N.S., Sept. 12, the bow of each being stove in. The Coal Company's steamer was fully loaded, and some thousands of tons of coal were washed out, and she was in considerable danger of sinking before she reached Sydney. The Thrift, which was bound for Tilt Cove, Nfld., in ballast, was also considerably damaged, and put into Sydney for repairs. The repairs to the two steamers will cost about \$20,000. Actions have been entered by the owners of each steamer against the owners of the other for damages.

The Lake Freight Situation.

Our Winnipeg correspondent wrote on Sept. 15: "The Western crop is now assured as to bushels, although there may still be some damage by rains and it is generally conceded from what threshing returns have been received that the wheat crop will run in the neighborhood of 100,000,000 bushels, with other grains in proportion. The movement from the interior has been somewhat earlier this year than in past seasons owing to the extremely favorable weather during the last two weeks the crop was growing, and the movement towards the lake is already assuming very large proportions, and it is expected that the eastward movement over the lakes will also commence at least 10 days earlier than in the past.

"Canadian lake grain carriers have agreed

LIST OF STEAMSHIPS REGISTERED IN CANADA FROM AUG. 15 TO SEPT. 15.

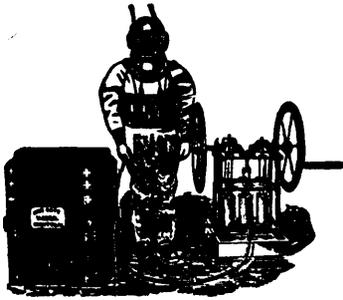
Name.	No.	Where and When Built.	Engines, etc.	Length	B'dth.	Depth.	Gross tons.	Reg. tons.	Home Port.	Owners.
Amethyst	79,042	Stocton-on-Tees, Eng., 1878	Screw N.H.P.	240.2	32.0	16.7	1357	872	Halifax, N.S.	G. C. Cook, Halifax, N.S.
Ariel	121,673	Vancouver, B.C., 1905	3	40.0	8.2	3.6	12	8	Vancouver, B.C.	G. E. Bower, Vancouver, B.C.
Beaver	117,119	Vancouver, B.C., 1905	4	46.5	11.0	4.5	20	14	Vancouver, B.C.	A. M. Edwards, Vancouver, B.C.
Celt	116,666	Toronto, Ont., 1900	1	34.0	8.0	2.8	6	4	Midland, Ont.	A. Campbell, Midland, Ont.
Elsie	116,606	Georgetown, Que., 1905	4	37.4	9.0	3.3	7	5	Montreal, Que.	N. A. Beach, Georgetown, Que.
Gypsy	117,120	Vancouver, B.C., 1905	5	46.2	12.5	5.3	27	18	Vancouver, B.C.	B. C. Timber & Trading Co., Vancouver
Harold	116,719	St. Laurent, Que., 1905	1	31.4	9.4	3.2	7	6	Quebec, Que.	Hon. R. Turner, Quebec
Idle Hour	116,663	Midland, Ont., 1905	2	36.0	9.5	4.5	13	9	Midland, Ont.	M. Chew, Midland, Ont.
Swiftsure	121,675	Vancouver, B.C., 1905	2	35.0	8.3	3.5	8	5	Vancouver, B.C.	W. J. Massey, Vancouver, B.C.
Two Friends	100,627	Port Dover, Ont., 1905	9	52.3	13.0	5.0	23	16	Port Dover, Ont.	H. W. Ansley, Port Dover, Ont.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA FROM AUG. 15 TO SEPT. 15.

Name.	No.	Where and When Built.	Rig.	Length	B'dth.	Depth.	Gross tons.	Reg. tons.	Home Port.	Owners.
Anna F.	117,028	Ingonish, N.S., 1905	Sloop	37.0	12.4	6.3	14	14	Sydney, N.S.	J. Brewer and J. Hawley, Ingonish, N.S.
B. No. 1.	121,674	Vancouver, B.C., 1905	Barge	80.0	30.0	8.0	169	169	Vancouver, B.C.	A. R. Bissett, et al, Vancouver, B.C.
Baessa	121,800	Shelburne, N.S., 1905	Sloop	38.0	12.2	6.6	15	11	Yarmouth, N.S.	J. B. Clements, Yarmouth, N.S.
Edna I.	116,239	Rossway, N.S., 1905	Schr.	31.5	11.3	5.5	11	15	Digby, N.S.	K. H. A. Lewis, Rossway, N.S.
Etta N.	121,796	Cape Island, N.S., 1904	Sloop	31.0	11.4	6.0	10	10	Yarmouth, N.S.	J. G. Newell, Cape Island, N.S.
Florence D.	117,093	Port Felix, N.S., 1905	Schr.	36.0	12.0	5.8	11	11	Arichat, N.S.	H. Dorion, Port Felix, N.S.
Fred C.	117,045	Clark's Harbor, N.S., 1905	Sloop	33.8	11.8	6.2	12	12	Barrington, N.S.	M. G. Nickerson, et al, Clark's Harbor, N.S.
Fredena	121,793	Cape Island, N.S., 1905	"	32.0	11.0	6.0	10	10	Yarmouth, N.S.	S. Hopkins, Cape Island, N.S.
Hattie and Ina.	121,797	Shelburne, N.S., 1905	"	31.0	11.6	6.0	10	10	Yarmouth, N.S.	A. H. Perry, North-West Harbor, N.S.
Jennette	116,665	Mt. Clements, Mich., 1881	Schr.	145.0	28.5	10.9	368	334	Midland, Ont.	The Morden Transit Co., Midland, Ont.
John L.	121,795	Tusket Wedge, N.S., 1905	Sloop	34.0	11.0	6.0	11	11	Yarmouth, N.S.	F. L. Fother, Tusket Wedge, N.S.
Kathie J.	111,795	West Arichat, N.S., 1905	Schr.	39.9	12.6	4.5	11	11	Pt. Hawkesbury, N.S.	J. McNeil, Port Hawkesbury, N.S.
Kenneth S.	121,798	Clark's Harbor, N.S., 1904	Sloop	31.0	10.6	6.0	10	10	Yarmouth, N.S.	G. H. Smith, Clark's Harbor, N.S.
K. W. No. 3.	116,240	U.S.A., 1891	Yawl	27.0	10.4	3.5	5	5	Digby, N.S.	A. E. Symons, Weymouth, N.S.
Mabel H.	117,151	New Westminster, B.C., '05	Barge	41.0	18.0	4.5	35	34	N. Westminster, B.C.	G. C. McKean, New Westminster, B.C.
Mabel V.	116,533	Lunenburg, N.S., 1905	Schr.	67.2	21.4	8.6	64	64	Lunenburg, N.S.	D. Heisler, Lunenburg, N.S.
Maggie Alice	121,799	Cape Island, N.S., 1904	Sloop	31.0	10.6	6.0	10	10	Yarmouth, N.S.	D. O. Smith, Cape Island, N.S.
Maggie & Esther	117,094	Port Felix, N.S., 1905	Schr.	36.0	12.1	5.7	11	11	Arichat, N.S.	P. Cashin, Port Felix, N.S.
Marie Joseph	116,918	Port Mouton, N.S., 1905	"	42.0	12.0	5.0	11	11	Liverpool, N.S.	R. J. and S. H. Colp, Port Mouton, N.S.
Marie Louise	116,720	La Petite Riviere, St. Francois Xavier, Que., 1905	"	63.0	19.6	5.6	40	40	Quebec, Que.	J. Bluteau, La Petite Riviere, St. Francois Xavier, Que.
M. J. Butler	116,302	St. Fidele, Que., 1905	"	49.6	15.9	6.2	29	29	Quebec, Que.	J. Lavoie, St. Fidele, Que.
Mowsena	121,749	River John, N.S., 1901	Dr'dge	102.5	40.8	7.3	459	459	Charlotte'n, P.E.I.	M. J. Haney, Toronto.
Muriel G.	117,051	Port La Tour, N.S., 1904	Sloop	32.0	11.0	6.0	10	10	Yarmouth, N.S.	B. C. Crowell, Port La Tour, N.S.
Olivia	112,065	White Haven, N.S., 1905	Schr.	41.6	15.0	6.6	21	21	Canso, N.S.	A. Munroe, White Haven, N.S.
Speed	121,672	Dunbarton, Scot., 1892	Barq.	220.7	35.0	21.0	1196	1138	Windsor, N.S.	D. Munro, Windsor, N.S.
Sweetheart	116,534	New Westminster, B.C., 1904	Scow	50.0	22.0	5.4	51	51	Vancouver, B.C.	J. R. Croll, New Westminster, B.C.
Twin Sisters	121,792	Lunenburg, N.S., 1905	Schr.	44.2	13.6	6.2	15	15	Lunenburg, N.S.	W. R. Seaboyer, Lunenburg, N.S.
Valmore	117,143	Shelburne, N.S., 1905	Sloop	31.0	11.0	6.0	10	10	Yarmouth, N.S.	S. Stephens, Cape Island, N.S.
		Mahone Bay, N.S., 1905	Schr.	42.8	12.3	5.6	11	11	Halifax, N.S.	L. Hubley, Indian Harbor, N.S.

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on their rates for the fall months from Port Arthur and Fort William to Eastern lake ports as follows: From Sept. 16 to Oct. 15 to all Lake Huron and Georgian Bay ports, 2c. a bushel, and to Montreal 6½ c. a bush., and from Oct. 16 to Nov. 25 to Lake Huron and Georgian Bay ports, 2½c.; and to Montreal 7c., the Montreal rates in both cases, including marine insurance, but the shippers have the option of handling their own insurance, in which case the rate will be ¼c. less. The Canadian vessels had also agreed on rates to Buffalo and other Lake Erie ports at ¼c. over the Georgian Bay rates, but owing to the extent of the U.S. competition this season it was seen that such an arrangement would not be practical, and Buffalo rates were thrown out, leaving the rates to that port to be adjusted by competition. From the shipper's standpoint, the idea of having fixed rates is somewhat of an advantage, but on a crop the size of that now being harvested it also has its disadvantages, inasmuch as fully 80% of the crop will be for export and should U.S. routes be able to name lower through rates than those named by the Canadian channels, the former routes will get the business at the expense of the latter. U.S. vessels are now freely offered in Winnipeg at 2c. a bush. for all Oct. shipment from Port Arthur and Fort William to Buffalo.

"The coal movement to Port Arthur and Fort William from Lake Erie ports is now in full swing, and it is being about evenly divided between Canadian and U.S. vessels. The ore movement is still as heavy as it has been at any time during the season, although recent rains in Minnesota have somewhat delayed mining operations and resulted in somewhat of a blockade at Duluth. "The steel rail movement from Sault Ste. Marie is still good, and is expected to keep up until the close of navigation. Rates on coal ore and railway iron have not changed since last report."

Province of Quebec Shipping.

The name of the str. Arizona, of Quebec, official number 100,595, has been changed to Ruth.

A temporary lighthouse has been erected at Macquereau Point, Que., pending the erection of a permanent structure to replace the one destroyed by fire Aug. 28.

The plant of the Quebec Steam Whaling Co., at Seven Islands, Que., was recently inspected by the Minister of Marine and Fisheries. The company, which only began operations at this point during the current year, was reported to have captured 23 whales up to Aug. 31.

Owing to the increasing volume of tourist travel on the St. Lawrence, the Richelieu and Ontario Navigation Co. is considering the desirability of placing orders for two new steamers one for the Toronto-Prescott and the other for the Montreal-Quebec routes. A number of alterations and improvements in the company's fleet are also contemplated, but the exact details have not been settled.

The passenger str. White Star, formerly running between Toronto and Oakville, Ont., and owned in Cornwall, Ont., was making a trip to Quebec recently, and while near Vercheres, Que., Sept. 6, collided with the str. Hosanna, owned by the Richelieu and Ontario Navigation Co., but under charter to the Dominion Government. The Hosanna sank in 23 ft. of water in five minutes, the crew and passengers being saved. An investigation was held by Commander Spain, and judgment reserved.

The Ogdensburg Coal and Towing Co.'s steam barge Nicaragua, carried away the

Canada Atlantic Ry. bridge across the Soulanges canal at Coteau, Que., Sept. 12. The captain of the barge states that a green light was displayed indicating that the bridge was open, but when within a few yards of it he found it closed, and notwithstanding that full steam astern was ordered, the barge ran into the bridge. The canal was blocked practically to all traffic for several days, until the wreckage was cleared.

With the signing of the agreement with the Quebec Harbor Commissioners the Quebec Transportation Co. completed arrangements for despatching the first steamer from Quebec to London, Eng. Thos. Harling, Montreal, who has been active in promoting the enterprise, will probably be Managing Director of the company, when organization takes place, after the issuing of the charter. Pending the chartering or building of steamers the company temporarily chartered the str. Sif, and she left on her first trip Sept. 23.

Ontario and the Great Lakes.

The Department of Marine is being asked to erect a lighthouse on Batteaux Island, near Port Arthur.

The str. Persia went aground in the narrows near Brockville, Ont., Sept. 2, and was released on the following day without serious damage.

The str. Antelope has been sold by the Canada Carriage Co. to Smith's Falls, Ont., men. She will be run on the Rideau Canal, between Smith's Falls and Portland.

The Rainy River Navigation Co. has sold its str. Majestic to R. Lockhart & Co. She will be used in future on Rainy Lake for excursion and towing purposes.

A tug was launched at Collingwood, Ont., Sept. 5, for J. McRae, and was named John McRae. Her dimensions are:—length, 68 ft.; breadth, 14 ft.; depth, 6 ft. 4 ins.

The tonnage passing through the Canadian and U.S. canals at Sault Ste. Marie, for Aug., was 6,327,195 tons, making the total for the season of navigation, 26,164,799 tons.

A contract is reported let at Collingwood for a steamer 150 ft. long, fitted for freight and passenger trade, for J. Perks. This steamer is to replace the J. D. Hamill, which has been sold.

The tug James Norris and a scow, owned by Haney & Davis, contractors, reached Kingston, Ont., from Charlottetown, P.E.I., Sept. 5, and were given an overhaul before proceeding to Toronto.

The str. Canada, as well as the other property of the King's Royal Park Co., Owen Sound, Ont., was sold Aug. 29. The steamer was sold to Jas. McLauchlan, who had a \$3,300 mortgage on it, for \$3,150.

The three motor boats seized at Brockville, Ont., for disregarding the Steamboat Inspection Act, in failing to carry proper lights after sundown, have been released, pending the decision of the Department of Marine.

Haney & Miller, Toronto, are having built at Collingwood, Ont., a tug for use in connection with their contracts at Toronto. The tug will be 52 ft. long, 14 ft. breadth, and 7 ft. deep, and will be fitted with engines now in another tug.

G. Durnan, who was lighthouse keeper at the Island, Toronto, from 1853 until the present season of navigation, was decorated recently with the Imperial Service medal, by the Lieut.-Governor of Ontario, on behalf of the King.

The U.S. str. Dorothy, which carried a cargo of dynamite from Wilmington, Del., to Hough-

ton, Mich., and collided with the Canadian str. W. J. Plummer, in the St. Lawrence, has been libelled at St. Catharines, Ont., in connection with a suit for damages.

The fisheries protection cruiser Vigilant captured the U.S. fishing tug Bertha L. Cockell, of Erie, Pa., Sept. 12, fishing in Canadian waters, and a few days later fired on and damaged another Erie tug, which was fishing over the boundary.

Work is reported to be progressing satisfactorily upon the construction of the new steamer for the Niagara Navigation Co., the keel for which was recently laid in the yard formerly owned by the Bertram Engine Works Co., and now by the Canadian Shipbuilding Co.

Recent reports stated that a big leakage had been discovered in the concrete work of the lift lock on the Trent Valley Canal at Kirkfield, Ont. An investigation was made and the damage repaired at a cost of \$200. The work of erecting the steel work is being proceeded with.

The str. recently launched at Toronto for the Canadian Towing and Wrecking Co., Port Arthur, Ont., has been named the James Whalen. She is to be used for harbor work, in towing and wrecking, ice breaking and general all-round work. The engines will develop 750 h.p.

Owing to the picking up of some wreckage bearing the name Osceola, a report was circulated that the Hamilton str. Golspie, which was last year known under that name, had been wrecked, during a heavy storm in Lake Huron, Sept. 5. The report proved to be unfounded, as the Golspie reached Sault Ste. Marie, Sept. 6.

A proposal for the construction of a canal through the upper peninsula of Michigan, to connect Lake Michigan and Lake Huron, is being talked about. The suggestion is to utilize Manistique Lake, and Manistee River. By the suggested route there would be a saving of about 300 miles between ports on the south shore of Lake Superior and Lake Huron points in comparison with the present route via Sault Ste. Marie.

The O'Connor Steamboat and Hotel Co. has been incorporated under the Ontario Companies' Act with a capital of \$150,000 and offices at Temagami, Ont., to carry on a general navigation and hotel business. The provisional directors are D. O'Connor, M. A. O'Connor, Temagami; and R. McKay, Toronto. D. O'Connor owns some steamers on Lake Temagami, and has built an hotel there for the development of the tourist traffic.

A contract has been placed in the U.S. for a car ferry steamer to operate between Ashtabula, Ohio, and Port Burwell, Ont. The car will have four tracks, with a capacity for the transfer of 30 cars, 100,000 lbs. capacity. It will be equipped with engines capable of propelling the ferry at the rate of 12 miles an hour. The ferry will be owned and operated in connection with the Pennsylvania Lines, West, and the C.P.R.'s Tillsonburg, Lake Erie and Pacific branch, and by the coal operating firm of J. W. Ellsworth & Co.

The International Waterways Commissioners met at Buffalo, N.Y., Sept. 11, and discussed future plans. They subsequently made an inspection of the harbor and had a trip on Niagara River, visiting the Welland Canal on the following day, and the Niagara River below the falls on Sept. 13 and 14. On Sept. 15, the Commissioners opened their sittings at Toronto, and heard statements from representatives of the Board of Trade and other public bodies as to water levels in Lake Ontario, etc. The Commissioners also held sittings at Hamilton.

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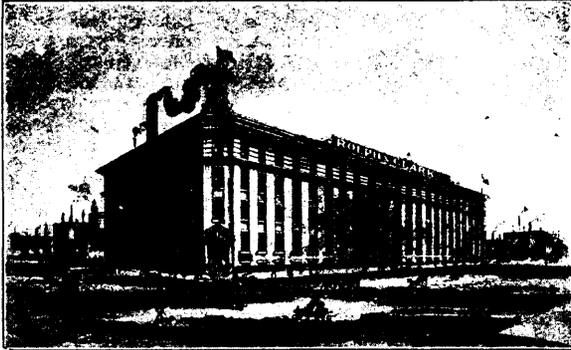
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Catalogues, Plans and Estimates on Application

The str. Melbourne, trading between Hamilton and Montreal, calling at various other ports, was burned to the water's edge and sank near the entrance of the Murray canal Sept. 20. The traffic in the canal was almost entirely blocked by the wreckage. The steamer, which was owned by the Melbourne Steamship Co., Ltd., Montreal, was operated by C. A. Jaques, Montreal. She was a screw steamer of 54 horse power, built at Port Stanley, Ont., 1893, her dimensions being: length, 179.6 ft.; breadth, 26 ft.; depth, 11.3 ft.; tonnage—gross, 894 tons; register, 540 tons.

It is not quite right, we have been informed, to state that the reciprocal inspection arrangements between Canada and the United States are in an unsatisfactory condition. On the contrary the arrangements made this year were exceedingly satisfactory, and the discussion that has recently taken place in regard to them merely brings out the point that they may, like most things, be improved. The principal objection raised at present is that an inspection is made on one side of the line and the certificates granted, and that thereafter, while the vessel is supposed to be subject to no further inspection in the other country, except such as is necessary to satisfy the Inspector that the condition of her boilers and life-saving equipment is as stated in the first certificate, the result of the arrangement is that in certain cases, depending upon the construction the Inspector may place upon the law, the vessel is really subjected to a complete reinspection at a cost of considerable time and trouble. The definite advantage that has been gained is that each vessel need only comply with the actual requirements of her own country. A point in which improvement may be made is that the certificate granted in the first instance might possibly be accepted without further scrutiny. This would save a good deal of trouble to the vesselmen. Objection has also been raised that, on account of the variance in the rules of Canada and of the United States regarding passenger accommodation, the present arrangement gives an advantage to U.S. passenger steamers over those of Canadian registration coming in competition with them.

Manitoba and the Northwest Territories.

News has reached St. John's, Nfld., to the effect that the Hudson's Bay Co.'s str. Pelican has broken her rudder, while on her annual voyage from Hudson Bay posts to London, Eng.

A Selkirk, Man., paper referring to the state of the Red River at the point entering Lake Winnipeg, says it is well known that steamboats and barges have been coming in with light loads all summer, which alone is a very great loss, and they have had to remain at the mouth frequently for a whole day on account of low water. It is further stated that a little work every year would keep a good clear channel in the old route, and that this is the fourth year the Dominion Government has been spending money on what is described by the paper as an "imaginary channel."

Mails from the Dominion Government patrol str. Arctic, dated Aug. 18, have reached Canada, having been brought to St. John's, Nfld., by a British man-of-war. The Arctic had left Hudson Bay to meet the str. Neptune, which left Halifax, N.S., in Aug. with supplies, and was cruising in Ungava Bay, when the man-of-war was sighted. The Neptune was detained at St. John's, Nfld., for some weeks owing to some question between the Department of Marine and the Mounted Police Department at Ottawa, as to the control of the steamer. The Arctic, on Sept. 13, was reported at Chateau Bay, opposite Belle Isle, with machinery disabled.

B.C. and Pacific Coast Shipping.

The name of the str. Queen of the Pacific, of Vancouver, B.C., official number 116,465, has been changed to Claxton.

The New England Fish Co. is having a steam trawler built at Philadelphia, Pa., for its halibut fishery in the North Pacific.

The Government str. Georgia lost a blade of her propeller Sept. 13, by striking a snag in Fraser River, near New Westminster, B.C.

A report is current that a company of Victoria men are arranging to put another steamer on the Victoria-Port Townsend-Seattle run.

The C.P.R., since it acquired the Esquimalt and Nanaimo Ry., has re-arranged the schedule of the str. Joan, so that she will call at Ladysmith on the trip both to and from Vancouver.

The steamer which the C.P.R. is building at Nelson, B.C., for the Nelson-Kootenay Landing run, is being constructed of wood, 185 ft. long, 29 ft. broad, and 7 ft. deep. She will be a stern-wheeler.

The Indians of Valdez Island have constructed the hull of a steamer 70 ft. long, which has been taken to Victoria to be fitted with boilers and machinery. The builders of the steamer were given their training at the Indian industrial school, Cowichan, B.C.

Dr. W. B. Dawson, of the Tidal Survey branch of the Department of Marine, has been spending some time at Victoria, B.C., in connection with the investigation of the tides on the west coast of Vancouver Island. Some new observation stations are being established on the coast.

The str. Pheasant has been purchased by Capt. Magar, her former owner. He will take command and O. Brown, who has been in charge for the past two years, has been appointed mate, J. McInnes remaining as chief engineer. The Pheasant trades between Vancouver and Skeena River points.

Col. Anderson, Chief Engineer of the Department of Marine, Ottawa, spent some considerable time during Sept. inspecting existing lighthouses and aids to navigation on the Pacific Coast. He is also arranging for the erection of a number of new lighthouses, and buoy stations. The most important of the new lighthouses will be erected at the southern extremity of Trial Island.

The schooner Carmencita, which held a provisional registry at San Francisco for a voyage to Acapulco, Mexico, did not go there, but went on a sealing expedition, and was seized at Victoria, B.C., by the customs authorities and fined \$1,600. On payment of the fine the vessel was released, but was subsequently seized under an admiralty warrant for wages due certain members of the crew.

The Canadian schooner Agnes Donohue which was seized by the Government of Uruguay, on a charge of poaching seals, has been released.

An action has been instituted by the C.P.R. against W. D. Reid, Vice-President Reid Newfoundland Co., arising out of the stranding of the C.P.R. Atlantic steamship Monterey, in July, 1903. The steamer carried a large number of cattle, which were thrown overboard when she stranded, and of these over 800 swam to Langley Island, off the Newfoundland coast near Miquelon. An agreement was made on behalf of all interested parties and Mr. Reid, and a large number were removed and paid for. The C.P.R. claims \$6,360 as the value of the remaining cattle, which it is alleged were left on the island at Mr. Reid's risk.

Among the Express Companies.

Mrs. M. E. Sharpe, mother of H. P. Sharpe, General Agent Dominion Ex. Co., Toronto, died at London, Ont., Sept. 1.

The Canadian Ex. Co. proposes to erect an office and warehouse in the G.T.R. yards at Hamilton, Ont., at a cost of \$5,000.

W. S. Stout, President and General Manager Dominion Ex. Co., returned to Toronto Sept. 23, from a trip to Manitoba and other western points. He was accompanied by Mrs. Stout, Miss H. Stout and W. S. Stout, Jr.

Owing to the heavy harvest in Manitoba, Saskatchewan and Alberta, there has been a great demand for reapers, and the Dominion Ex. Co. carried quite a number at express rates, the purchasers not being able to wait until delivery could be made by freight train.

J. B. Prentiss, for 20 years Superintendent of the Western New York and Eastern Pennsylvania division of the American Ex. Co., died at Rochester, N.Y., Aug. 27, aged 73. Prior to becoming a route agent in 1865, he had a run between Rome and Cape Vincent, N.Y., and Kingston, Ont.

The annual financial statement of the Expressmen's Mutual Benefit Association for the year ended June 30, 1905, showed receipts of \$119,715.00 and expenses of \$72,704.95. The assets amount to \$164,201.10, and the liabilities are: net reserve, American Experience table and 3%, \$144,585; death claims, proofs not completed, \$7,000; leaving a surplus of assets over liabilities of \$12,616.10. The Association has 2,561 certificates in force, representing a total insurance of \$3,245,500.

Telegraph and Cable Matters.

The Halifax-Bermuda Cable Co. proposes paying a further dividend of 2½%, making 5% for the year ended June 30, 1905.

The Canadian Northern Telegraph Co. has extended its lines to Lloydminster, Sask., and has opened a commercial office there.

Miss M. G. Earle, daughter of W. E. Earle, manager of the Western Union cable office at North Sydney, N. S., was married there, to E. J. Mabon, of Winnipeg, Aug. 23.

The cable str. Colonia was placed in the dry dock at Halifax, N.S., after being towed off the reefs near Canso, and repaired, resuming her cable laying work at the end of Sept.

The Commercial Cable Co. has increased its capital from \$12,000,000 to \$15,000,000. It is proposed to extend its cables from Manila, in the Philippine Islands, to Shanghai, China.

Signals by Marconi wireless telegraphy have passed between the Dominion Government station on Sable Island, N.S., and the German liner Kaiser Wilhelm der Grosse, when the latter was 650 miles out at sea.

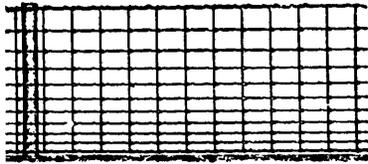
The Marconi Wireless Telegraph Co. is erecting a telegraph station at Partridge Island, N.B. The tower will be 180 ft. high, and will be erected on the highest point of the island. This is one of the stations for the Dominion Government.

The laying of the new cable from Canso, N.S., to Port Aux Basques, Nfld., for the Newfoundland Government, has been completed. The cable is being operated by the Commercial Cable Co., and through it the C.P.R. Telegraph lines are given a connection with the island colony.

J. G. Ridout, Toronto; C. Thompson, Montreal, and H. Aylen, K.C., Ottawa, have been appointed arbitrators to decide on a question of priority of invention of wireless signalling in connection with wireless telegraphy. The persons interested in the inventions are Sir O. Lodge, Dr. DeForest and R. A. Fessenden.

A British parliamentary paper states that during the first three months of the current

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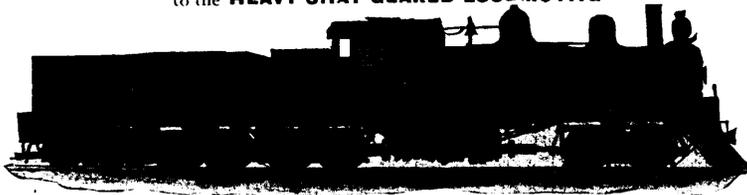
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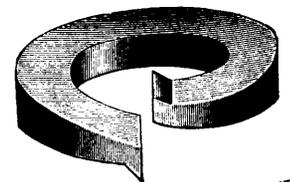
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STEAM ATTACHMENTS

year 1,766 wireless telegraph messages were handled by the post office telegraph system. Of these, 1,655 were received from ships at sea, and 111 were received from the general public for transmission to ships at sea. Of the messages handled only 21 could not be delivered.

At the annual convention of the Old Time Telegraphers' Association and other telegraph officers' associations in New York, Aug. 29 and the following days, there were present from Canada:—W. J. and Mrs. Camp, J. Horn, Mrs. L. B. McFarlane, Thos. and Mrs. Rodger, F. H. and Mrs. Waycott, W. P. and Mrs. Powell, Montreal; G. F. Macdonald and niece, Ottawa; I., Mrs. and Miss McMichael, Toronto.

The United Empire Club, London, Eng., has re-issued Sir Sandford Fleming's paper advocating a free press service over the Pacific cable. The Canadian Government has asked the British and Australian Governments to approve of this, as it could be arranged without adding anything to the working expenses. At present it is pointed out all the commercial messages could be despatched in three hours per day.

Judgments have recently been given by Judge Barron at Stratford, Ont., and by Judge Dowling at Chatham, Ont., in appeals by the G.N.W. Telegraph Co., and the C.P.R. in regard to the assessment of telegraph lines under the new Assessment Act. The Stratford judgment decided that the companies were not liable for business tax and that if anyone were to be assessed it should be the local agent. Under the Chatham judgment it was held that the company and not the agent was assessable.

General Telephone Matters.

The Bell Telephone Co. has over 5,000 subscribers at its Winnipeg exchange.

The Ontario Telephone Co. is reported to be preparing to submit an offer to the Brantford, Ont., City Council to instal a system there.

The Bell Telephone Co. has purchased the independent telephone line between Bancroft, Coehill, Madoc, Eldorado and Mar-mora, Ont.

The Bell Telephone Co. is publishing in various daily papers a series of telephone talks addressed to telephone users and the general public.

The Valley Telephone Co., Middleton, N.S., is equipping its offices with blue and white enamelled iron signs, supplied by the Acton Burrows Co., Toronto.

The Bell Telephone Co. has completed a metallic circuit between Newmarket and Sutton, Ont., thus giving a connection between the latter point and Toronto.

The terms of the agreement between the Vancouver City Council and the B.C. Telephone Co. have been approved, and the document prepared for signature.

G. McDonald, formerly with the Nova Scotia Telephone Co., has been appointed Superintendent of Equipment for the Telephone Co. of Prince Edward Island at Charlottetown.

The Bell Telephone Co. has opened general offices at St. Thiele, Lake St. Joseph, Piedmont, and Woodlands, Que. It has also completed a metallic line between Montreal and St. Jerome, Que.

The Bell Telephone Co. has completed a copper metallic line from Doucet's Landing to Nicolet, Que., and has converted its grounded circuit from St. Hyacinthe to Yaska West, Que., to a metallic circuit, and extended it to Sorel, Que.

The Bell Telephone Co. has completed its long distance line from Toronto to Collingwood, Ont.; and is extending the long distance line from Huntsville to North Bay,

Ont. It contemplates building a line from North Bay to Sturgeon Falls.

Sir Wm. Mulock, chairman of the House of Commons Telephone Committee, stated Sept. 13 that the enquiry would be resumed next year, and it was hoped to reach a conclusion at a sufficiently early stage to admit of legislative action during the next session.

The Commissioners of the Temiskaming and Northern Ontario Ry. are establishing a circuit line telephone system between North Bay and Temagami, and another between North Bay and New Liskeard, Ont. The instruments, etc., are being supplied by the Bell Telephone Co.

In connection with the construction of a telephone line between Nicola and Penticton, B.C., an interesting fact may be mentioned, namely, that about three miles of cable used to connect Kelowna with the line on the west side of the lake is a portion of the old Atlantic telegraph cable.

The Bell Telephone Co. proposes to erect a \$40,000 building in Brantford, Ont., and to instal a central energy system. At a meeting held Sept. 11, the City Council declined to grant the company an exclusive franchise for three years at \$800 a year, and a reduction of the rates on instruments rented for city purposes.

A conference of representatives of independent telephone companies and of municipalities favoring municipal ownership, was held in Toronto Sept. 6 and 7. An association was formed with the title of the Canadian Independent Telephone Association, the following being elected officers: President, A. Hoover, Green River; Vice-President, F. D. McKay, Peterboro; Secretary-Treasurer, A. F. Wilson; executive committee, Dr. Demers, Levis, Que.; Dr. Doan, J. A. Sprague, Demorestville, Ont.; T. H. Eastabrooks, St. John, N.B.; Dr. Oches, Hespeler, Ont.; E. Vigers, Port Arthur, Ont.; Dr. Hart, Brantford; L. Moyer, Beamsville, Ont.; C. J. Thornton, Kerby, Ont.

Telephone Companies in New Brunswick.

The Bell Telephone Co. about 1885 opened up a telephone business in New Brunswick, at the more important centres, but subsequently withdrew, handing over its lines to the Nova Scotia Telephone Co. in 1887. In 1888 the New Brunswick Legislature passed an act incorporating the New Brunswick Telephone Co., granting it an exclusive franchise for 10 years, and giving it power to construct a line from St. John, via Fredericton, to Woodstock; from St. John to Moncton, and from St. John to St. Stephen's via St. Andrew's. Under this act a central system was started in Fredericton and other points, with the result that the Nova Scotia Telephone Co. sold out its New Brunswick business to the local company. The capital of the company was fixed at \$100,000 in 2,000 shares of \$50 each. As a result of the taking over of the interests of the Nova Scotia Telephone Co., C. F. Sise of the Bell Telephone Co. became a shareholder of the New Brunswick Telephone Co. The consideration paid for the Nova Scotia Telephone Co.'s interest was \$50,000, of which one-half was paid in cash, and 500 fully paid-up shares were allotted to cover the balance. The lines taken over included exchanges in St. John, Fredericton, Moncton and Woodstock, with about 20 miles of long distance lines from Moncton. At that time there were 374 subscribers in St. John, 108 in Fredericton, 81 in Moncton and 32 in Woodstock.

Since then the capital of the company has been increased to \$204,050, of which \$69,100 is held by the Bell Telephone Co. The total authorized capital is now \$600,000, and there is a bond issue of \$100,000. The company now has exchanges at St. John, with 1,761 subscribers; Fredericton, 335 subscribers; Mon-

ton, 350 subscribers; Woodstock, 209 subscribers; St. Stephen's, 127 subscribers; Dorchester, 25 subscribers; Grand Falls, 11 subscribers. In 1902 a new building was erected at St. John fitted with a central energy system, at a cost of about \$120,000. At St. Stephen's connection is made with the New England Telegraph and Telephone Co., of Boston, Mass.; connection is also made with the Nova Scotia Telephone Co.; the Central Telephone Co.; the Sackville Telephone Co.; the Miramichi Telephone Co.; the Buctouche Telephone Co., and the Stanley Telephone Co. These connections are merely for the exchange of business, the rural or farmers' lines not being up-to-date. The company has two metallic copper lines from St. John to Fredericton, without intermediate instruments; two metallic copper lines from St. John to Moncton; one metallic copper line from Fredericton to Edmundston; one metallic copper line and one metallic iron wire no. 9 from Fredericton to Chatham. The company has a trunk line from St. John to the Nova Scotia boundary, and it is contemplated to extend the lines to give connection with Quebec lines. The policy of the company has been to construct trunk lines, and to give connection to the rural lines, and all other companies when they desire to have it, with the exception of the one case at Woodstock, where the Union Telephone Co. does business. The N.B.T. Co. does not guarantee the service over the rural lines, because they are filled with instruments having short distance, and it is impossible to have a successful telephone conversation for any distance over lines that are loaded with intermediate telephones and particularly single line wires, as they are susceptible to all sorts of interruptions.

The Union Telephone Co. was established in 1902, and operates a system in York, Carleton and Victoria counties. The system consists of party lines connected at convenient points by switches; some single wire or ground lines, about one-half metallic wires. The company has an automatic exchange in Woodstock. There are about 350 miles of line on which there are 200 subscribers. These are party lines with from 10 to 26 instruments on one line. One of the lines is 65 miles in length or, with some spurs, 70 miles of wire, and on this line there are 26 subscribers. Such a line would cost, including instruments, calculating one to every two miles of wire, \$140 a mile. The subscribers on this line pay \$25 a year for business men and \$15 a year for farmers; on other lines a metallic circuit line is rented at \$15, and a single wire line at \$12 an instrument a year. For this the subscribers can talk all they want to on their own line, but if they want to call up anyone on another line a switching charge of 10c. a call is made. The farmers very rarely require to make such a call, but the business men frequently do. The company has an automatic exchange in Woodstock, where there are 113 subscribers. The charge is \$15 for business instruments, and \$10 for residence instruments. The total income for the last financial year was \$6,871.78, and the expenses \$1,830.01; the dividends paid were \$2,898.04, and \$2,143.73 was spent on improvements and further developments.

The Central Telephone Co. obtained a charter from the N.B. Legislature in 1904, and has about 200 miles of rural lines. It recently acquired the rights of the New Brunswick Telephone Co. in Hampton. The Central Co. has established local exchanges at Richibucto, Bathurst and Campbellton, N.B. It has also acquired the stock of the Miramichi Telephone Co., which operated a line from Nelson to Tracadie, N.B. It has also acquired a number of local lines and proposes to connect them up. Extensions will be made with a view of giving connection with Montreal and Gaspé, Que.

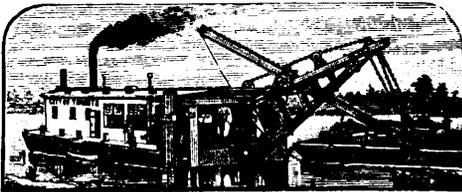
The other lines are all small, and there are some mutual companies, of which that operated by M. Walsh is the principal.

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Export Elevator, Buffalo, N.Y.		1,000,000 "
J. R. Booth Elevator, Depot Harbor, Ontario		1,000,000 "
Southern Pacific Terminal Co.'s Elevator, Galveston, Texas		1,000,000 "
Erie R. R. Transfer & Clipping House, Chicago, Ill.	100 cars in 10 hrs.	"
Manchester Ship Canal Co.'s Elevator, Manchester, Eng.		1,500,000 "
Burlington Elevator Co., Peoria, Ill.		500,000 "
Canada Atlantic Railway Elevator, Coteau Landing, Que.		500,000 "
Northern Grain Co., Manitowoc, Wis.		1,350,000 "
Union Elevator, East St. Louis, Ill.		1,100,000 "
Montreal Warehousing Co.'s Belt Conveyor System		"

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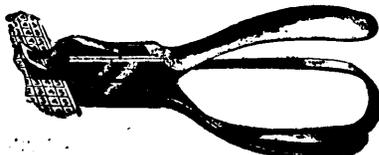
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PURCHASING AGENTS' GUIDE.

(Continued from third page of cover.)

Car Replacers
N. J. Holden & Co. Montreal.

Cars
Canada Car Co. Montreal.
Crossen Car Mfg. Co. Cobourg, Ont.
F. M. Hicks & Co. Chicago, Ill.
Rhodes, Curry & Co. Amherst, N.S.

Car Ranges
Geo. R. Prowse. Montreal.

Car Upholstery
N. J. Holden & Co. Montreal.

Car Wheels
Canada Car Co. Montreal.

Castings
Crossen Car Mfg. Co. Cobourg, Ont.
Conveyors, Coal and Ash
Babcock & Wilcox (Ltd.) Montreal.

Castings, Brass
Kerr Engine Co. Walkerville, Ont.
St. Thomas Brass Co. St. Thomas, Ont.

Castings, Iron
Kerr Engine Co. Walkerville, Ont.

Castings, Steel
Canada Car Co. Montreal.
W. Kennedy & Sons, Ltd. Owen Sound, Ont.
Montreal Steel Works. Montreal.
Rhodes, Curry & Co. Amherst, N.S.

Cast-Steel Hammers
American Brake Shoe & F'dry Co. Mahwah, N.J.

Cast-Steel Track Tools
American Brake Shoe & F'dry Co. Mahwah, N.J.

Cast-Steel Wrenches
American Brake Shoe & F'dry Co. Mahwah, N.J.

Cement
Thorn Cement Co. Buffalo, N.Y.

Cement Machinery
Jas. W. Pyke & Co. Montreal.

Coal Haulage Ropes
The B. Greening Co. Hamilton, Ont.

Concrete
Thorn Cement Co. Buffalo, N.Y.

Concrete Mixers and Rock Crushers
Goold, Shapley & Muir Co. Brantford, Ont.
F. H. Hopkins & Co. Montreal.
W. H. C. Mussen & Co. Toronto.
Toronto Pressed Steel Co. Toronto.

Conduit Contractors
F. T. Ley & Co. Springfield, Mass.

Contractors
F. T. Ley & Co. Springfield, Mass.

Contractors' Plant
M. Beatty & Sons. Welland, Ont.
F. H. Hopkins & Co. Montreal.
The W. H. Kelson Co. Montreal.
T. A. Morrison & Co. Montreal.
W. H. C. Mussen & Co. Toronto.
Toronto Pressed Steel Co. Toronto.

Contractors' Supplies
J. A. Dawson & Co. Montreal.
Toronto Pressed Steel Co. Toronto.

Cooking Apparatus
Geo. R. Prowse. Montreal.

Copperware
Geo. R. Prowse. Montreal.

Corrugated Furnaces
Continental Iron Works. Brooklyn, N.Y.

Cross Arms, Top Pins and Side Blocks
Canadian General Electric Co. Toronto.
The Firstbrook Box Co. Toronto.

Cross Arm Braces
Canadian General Electric Co. Toronto.
Montreal Rolling Mills Co. Montreal.
Toronto Bolt and Forging Co. Toronto.

Crossing Gates
General Railway Signal Co. Buffalo, N.Y.
The N. L. Piper Railway Supply Co. Toronto.

Crowbars
Toronto Bolt and Forging Co. Toronto.

Culvert Pipe (Cast Iron)
Gartshore-Thompson Pipe & F'dry Co. Hamilton.

Cuts
Acton Burrows Co. Toronto.

Derrick Ropes
Dominion Wire Rope Co. Montreal.
The B. Greening Co. Hamilton, Ont.

Derricks
M. Beatty & Sons. Welland, Ont.
F. H. Hopkins & Co. Montreal.
W. H. C. Mussen & Co. Montreal.

Diaphragms
N. J. Holden & Co. Montreal.

Diving Outfits
John Date. Montreal.
W. H. C. Mussen & Co. Montreal.

Door Signs
Acton Burrows Co. Toronto.

Drawing Materials
Eugene Dietzgen Co. New York.
James Foster. Toronto.

Dredges
M. Beatty & Sons. Welland, Ont.

Drilling Machines
The John Bertram & Sons Co. Dundas, Ont.

Drills
W. Abbott. Montreal.

Dry Goods
The Hudson's Bay Co. Toronto.

Dump Cars (Contractors')
Toronto Pressed Steel Co. Toronto.

Dynamo and Electric Castings
American Brake Shoe & F'dry Co. Mahwah, N.J.

Economizers
Babcock & Wilcox (Ltd.) Montreal.

Electric Car Fenders
The G. B. Meadows Wire, etc., Co. Toronto.

Electric Car Route Signs
Acton Burrows Co. Toronto.

Electric Car Wire Guards
The G. B. Meadows Wire, etc., Co. Toronto.

Electric Cranes
Canada Foundry Co. Toronto.
Dominion Bridge Co. Montreal.
W. H. C. Mussen & Co. Montreal.

Electric Ry. Brake Shoes
American Brake Shoe & F'dry Co. Mahwah, N.J.

Electric Railway Builders
F. T. Ley & Co. Springfield, Mass.

Electric Ry. Supplies
J. A. Dawson & Co. Montreal.

Electric Supplies
J. A. Dawson & Co. Montreal.

Enameled Iron Signs
Acton Burrows Co. Toronto.

Engineers, Consulting
H. W. Breithaupt. Berlin, Ont.

Engineers' Supplies
Canadian Fairbanks Co. Montreal.
The Canadian Rubber Co. of Montreal.
Williams & Wilson. Montreal.

Engines, Automatic
Robb Engineering Co. Amherst, N.S.

Engines, Corliss
Robb Engineering Co. Amherst, N.S.

Engines, Gasoline
Goold, Shapley & Muir Co. Brantford, Ont.
Ontario Wind Engine and Pump Co. Toronto.

Engines, Hoisting
M. Beatty & Sons. Welland, Ont.

Engines, Stationary and Marine
Canada Foundry Co. Toronto.
H. W. Petrie. Toronto.
Polson Iron Works. Toronto.
Robb Engineering Co. Amherst, N.S.

Engines, Steam
Erie Heating Co. Chicago, Ill.
Williams & Wilson. Montreal.

Engraving
Rolph & Clark (Ltd.) Toronto.

Engraving (Copper and Steelplate)
Rolph & Clark (Ltd.) Toronto.

Express Office Signs
Acton Burrows Co. Toronto.

Feedwater Heaters
Canadian Fairbanks Co. Montreal.
H. W. Petrie. Toronto.
Robb Engineering Co. Amherst, N.S.
Williams & Wilson. Montreal.

Fencing
Canada Foundry Co. Toronto.
Canadian Steel and Wire Co. Hamilton, Ont.
McGregor, Banwell Fence Co. Walkerville, Ont.
Owen Sound Wire Fence Co. Owen Sound, Ont.
Page Wire Fence Co. Walkerville, Ont.

Fire Brick
W. H. C. Mussen & Co. Montreal.

Fire Escapes
The G. B. Meadows Wire, etc., Co. Toronto.

Fire Insurance
Dale & Co. Montreal.

Flags
The Hudson's Bay Co. Toronto.

Flour
The Hudson's Bay Co. Toronto.

Forgings
Canada Car Co. Montreal.
Crossen Car Mfg. Co. Cobourg, Ont.
General Railway Signal Co. Buffalo, N.Y.
Standard Steel Works. Philadelphia, Pa.

Gasoline Engines
Canadian Fairbanks Co. Montreal.

Gas Pipe (Cast Iron)
Gartshore-Thompson Pipe & F'dry Co. Hamilton.

Gates
Canada Foundry Co. Toronto.
McGregor, Banwell Fence Co. Walkerville, Ont.
Owen Sound Wire Fence Co. Owen Sound, Ont.
Page Wire Fence Co. Walkerville, Ont.

Gears (Heavy)
W. Kennedy & Sons (Ltd.) Owen Sound, Ont.

Grain Elevators
John S. Metcalfe Co. Chicago, Ill.

Groceries
The Hudson's Bay Company. Toronto.

Handcars
Crossen Car Mfg. Co. Cobourg, Ont.
W. H. C. Mussen & Co. Montreal.
Toronto Pressed Steel Co. Toronto.

Hardware
The Hudson's Bay Company. Toronto.

Headlights
N. L. Piper Railway Supply Co. Toronto.

Headlinings
Crossen Car Mfg. Co. Cobourg, Ont.

Heaters
Erie Heating Co. Chicago, Ill.

Heating for Power Plants
Erie Heating Co. Chicago, Ill.

Hose, Air Brake and Steam
The Canadian Rubber Co. of Montreal.

Hose, Fire
The Canadian Rubber Co. of Montreal.

Hose, Suction
The Canadian Rubber Co. of Montreal.

Illustrations
Acton Burrows Co. Toronto.

Hydrants
Kerr Engine Co. Walkerville, Ont.

Inspections
R. W. Hunt & Co. Montreal.
H. Jarvis & Co. Chicago, Ill.

Instruments, Surveying and Engineering
Eugene Dietzgen Co. New York.
James Foster. Toronto.

Insurance (Fire and Marine)
Dale & Co. Montreal.

Interlocking and Signalling
General Railway Signal Co. Buffalo, N.Y.

Interlocking Signals
Montreal Steel Works. Montreal.

Iron Fencing
The G. B. Meadows Wire, etc., Co. Toronto.

Iron and Steel Castings
American Brake Shoe & F'dry Co. Mahwah, N.J.

Iron, Pig
John McDougall & Co. Montreal.

Iron Signs
Acton Burrows Co. Toronto.

Japans
McCaskill, Dougall & Co. Montreal.

Journal Bearings
Canada Foundry Co. Toronto.
Crossen Car Mfg. Co. Cobourg, Ont.
Kerr Engine Co. Walkerville, Ont.
Jas. W. Pyke & Co. Montreal.
St. Thomas Brass Co. St. Thomas, Ont.

Journal Boxes
N. J. Holden & Co. Montreal.

Lager Beer, &c.
E. L. Drewry. Winnipeg.

Lamps, Incandescent
Canadian Westinghouse Co. Hamilton, Ont.

Lamps and Lanterns
The Hudson's Bay Company. Toronto.
N. L. Piper Railway Supply Co. Toronto.

Lathes
The John Bertram Sons Co. Dundas, Ont.
H. W. Petrie. Toronto.
Williams & Wilson. Montreal.

(Continued on page 502.)

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PURCHASING AGENTS' GUIDE.

(Continued from page 501.)

Launches
Polson Iron Works.....Toronto.

Lights, Contractors' and Wrecking
F. H. Hopkins & Co.....Montreal.
W. H. C. Mussen & Co.....Montreal.

Lithographing
Rolph & Clark (Ltd.).....Toronto.

Locomotive Boiler Washer, Automatic
Erie Heating Co.....Chicago, Ill.

Locomotive Driver Brake Shoe
American Brake Shoe & F'dry Co., Mahwah, N.J.

Locomotive Lagging and Covering
Canadian Fairbanks Co.....Montreal.

Locomotives (Compressed Air)
Baldwin Locomotive Works.....Philadelphia, Pa.
Canadian Locomotive Co.....Kingston, Ont.
Locomotive and Machine Co. of Montreal.

Locomotives (Electric)
Baldwin Locomotive Works.....Philadelphia, Pa.
Canada Foundry Co.....Toronto.
Locomotive and Machine Co. of Montreal.

Locomotives (Logging)
Canadian Locomotive Co.....Kingston, Ont.
Lima Locomotive and Machine Co., Lima, Ohio.

Locomotives (Back)
Baldwin Locomotive Works.....Philadelphia, Pa.
Canadian Locomotive Co.....Kingston, Ont.
Locomotive and Machine Co. of Montreal.

Locomotives (Steam)
Baldwin Locomotive Works.....Philadelphia, Pa.
Canada Foundry Co.....Toronto.
Canadian Locomotive Co.....Kingston, Ont.
F. M. Hicks & Co.....Chicago, Ill.
F. H. Hopkins & Co.....Montreal.
The W. H. Kelson Co.....Montreal.
Lima Locomotive and Machine Co., Lima, Ohio.
Locomotive and Machine Co. of Montreal.

Locomotive Stack Netting
The G. B. Meadows Wire, etc., Co.....Toronto.

Machine Tools
W. Abbott.....Montreal.
Canadian Fairbanks Co.....Montreal.
H. W. Petrie.....Toronto.
Williams & Wilson.....Montreal.

Machine Screws, Set Cap and Planer
John Morrow Machine Screw Co.....Ingersoll.

Machinery, Marine
Sheriffs Mfg. Co.....Milwaukee, Wis.

Machinery Repairs, Marine
Sheriffs Mfg. Co.....Milwaukee, Wis.

Manganese Steel Castings
Montreal Steel Works.....Montreal.

Manhole Frames and Covers
American Brake Shoe & F'dry Co., Mahwah, N.J.

Maps
Rolph & Clark (Ltd.).....Toronto.

Marine Insurance
Dale & Co.....Montreal.

Mats and Matting
The Canadian Rubber Co. of Montreal.

Misspost Numbers
Acton Burrows Co.....Toronto.

Milling Cutters
W. Abbott.....Montreal.
Williams & Wilson.....Montreal.

Milling Machines
The John Bertram Sons Co.....Dundas, Ont.
H. W. Petrie.....Toronto.

Mills, Boring and Turning
The John Bertram Sons Co.....Dundas, Ont.
H. W. Petrie.....Toronto.

Mill Tools and Supplies
J. A. Dawson & Co.....Montreal.

Nickel
The Orford Copper Co.....New York.
The Orford Copper Co.....New York.

Numbers
Acton Burrows Co.....Toronto.

Nuts, Cold Pressed
John Morrow Machine Screw Co.....Ingersoll.

Nuts, Square and Hexagon
Canada Foundry Co.....Toronto.
Montreal Rolling Mills Co.....Montreal.
Toronto Bolt and Forging Co.....Toronto.

Oakum
The Hudson's Bay Company.....

Office Desks
Canadian Office & School Furniture Co., Preston, Ont.

Office Fittings
Canadian Office & School Furniture Co., Preston, Ont.

Office Ballings
The G. B. Meadows Wire, etc., Co.....Toronto.

Office Signs
Acton Burrows Co.....Toronto.

Oils
Galena Signal Oil Co., Franklin, Pa., and Toronto.

Packing
The N. L. Piper Railway Supply Co.....Toronto.
Williams & Wilson.....Montreal.

Packing, High Pressure Sheet
The Canadian Rubber Co. of Montreal.

Packing, Piston
The Canadian Rubber Co. of Montreal.

Paints, Acid Proof and Anti-rust
American Asphaltum & Rubber Co., Chicago, Ill.

Paints, Asphaltum
American Asphaltum & Rubber Co., Chicago, Ill.

Paints, Bridge
American Asphaltum & Rubber Co., Chicago, Ill.

Paints, Locomotive Front end
American Asphaltum & Rubber Co., Chicago, Ill.

Paints, Mineral Rubber
American Asphaltum & Rubber Co., Chicago, Ill.

Paints, Structural Iron
American Asphaltum & Rubber Co., Chicago, Ill.

Pinch Bars
The N. L. Piper Railway Supply Co.....Toronto.

Pipe
Erie Heating Co.....Chicago, Ill.

Pipe and Pipe Coverings
W. C. Baker.....New York.

Pipe Covering
Canadian Fairbanks Co.....Montreal.
Mica Boiler Covering Co.....Montreal.

Planers
The John Bertram Sons Co.....Dundas, Ont.
H. W. Petrie.....Toronto.

Ploughs, Contractors'
W. H. C. Mussen & Co.....Montreal.
Toronto Pressed Steel Co.....Toronto.

Pneumatic Tools
N. J. Holden & Co.....Montreal.

Porter
E. L. Drewry.....Winnipeg.

Portable Boilers
Babcock & Wilcox (Ltd.).....Montreal.
Canada Foundry Co.....Toronto.
Robb Engineering Co.....Amherst, N.S.

Portland Cement
Thorn Cement Co.....Buffalo, N.Y.

Power Plants, Contractors'
Erie Heating Co.....Chicago, Ill.

Printing
The Hunter, Rose Co.....Toronto.
The Mail Job Printing Company.....Toronto.

Propeller Wheels
W. Kennedy & Sons (Ltd.).....Owen Sound, Ont.
Sheriffs Manufacturing Co.....Milwaukee, Wis.

Pumps
Canadian Fairbanks Co.....Montreal.
Canada Foundry Co.....Toronto.
Erie Heating Co.....Chicago, Ill.
Goold, Shapley & Muir Co.....Brantford, Ont.

Pumps (Centrifugal)
M. Beatty & Sons.....Welland, Ont.

Punches
F. J. Myers Mfg. Co.....Hamilton, Ohio.

Punching and Shearing Machines
The John Bertram Sons Co.....Dundas, Ont.

Rail Benders, Roller
Montreal Steel Works.....Montreal.

Rails (new)
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F. H. Hopkins & Co.....Montreal.
J. J. Gartshore.....Toronto.

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J. J. Gartshore.....Toronto.
I. A. Morrison & Co.....Montreal.
W. H. C. Mussen & Co.....Montreal.
Jas. W. Pyke & Co.....Montreal.

Railway Equipment
F. M. Hicks & Co.....Chicago, Ill.

Railway Interlocking
General Railway Signal Co.....Buffalo, N.Y.

Rail Joints
N. J. Holden & Co.....Montreal.

Railway Pile Drivers
W. H. C. Mussen & Co.....Montreal.

Railway Signalling
General Railway Signal Co.....Buffalo, N.Y.

Railway Supplies
J. A. Dawson & Co.....Montreal.
Canadian Fairbanks Co.....Montreal.
The W. H. Kelson Co.....Montreal.
The N. L. Piper Railway Supply Co.....Toronto.

Reamers
W. Abbott.....Montreal.

Refrigerators
Geo. R. Prowse.....Montreal.

Rivets, Boiler, Bridge and Structural
Canada Foundry Co.....Toronto.
Montreal Rolling Mills Co.....Montreal.
Toronto Bolt and Forging Co.....Toronto.

Rolled Wheels
Standard Steel Works.....Philadelphia, Pa.

Rolls, Plate Bending
The John Bertram Sons Co.....Dundas, Ont.

Roof Trusses
Canada Foundry Co.....Toronto.
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.....Montreal.

Roofing Composition
American Asphaltum & Rubber Co., Chicago, Ill.

Roofing Pitch
American Asphaltum & Rubber Co., Chicago, Ill.

Roofing, Ready
American Asphaltum & Rubber Co., Chicago, Ill.

Roofs, Car
American Asphaltum & Rubber Co., Chicago, Ill.

Rope
The Hudson's Bay Co.....

Rotary Snow Ploughs
Crossen Car Mfg. Co.....Cobourg, Ont.

Rubber Tiling, Interlocking
The Canadian Rubber Co. of Montreal.

Saw Steel
Montreal Steel Works.....Montreal.

Scrapers (Wheel and Drag)
W. H. C. Mussen & Co.....Montreal.
Toronto Pressed Steel Co.....Toronto.

Screws, Coach and Lag
Montreal Rolling Mills Co.....Montreal.
Toronto Bolt and Forging Co.....Toronto.

Semaphore Arms
Acton Burrows Co.....Toronto.

Semaphores
The N. L. Piper Railway Supply Co.....Toronto.

Sewer Pipe (Cast Iron)
Gartshore-Thompson Pipe & F'dry Co., Hamilton.

Shaking Grates
Babcock & Wilcox (Ltd.).....Montreal.

Shaping Machines
The John Bertram Sons Co.....Dundas, Ont.

Ship Lamps
The N. L. Piper Railway Supply Co.....Toronto.

Ships
Polson Iron Works.....Toronto.

Shovels
F. H. Hopkins & Co.....Montreal.
The Hudson's Bay Co.....

Side Bearings
Simplex Railway Appliance Co.....Montreal.

Signal House Numbers
Acton Burrows Co.....Toronto.

Signals
General Railway Signal Co.....Buffalo, N.Y.
N. L. Piper Railway Supply Co.....Toronto.

Signs
Acton Burrows Co.....Toronto.

Slack Adjusters
Chicago Railway Equipment Co.....Chicago, Ill.

Slotting Machines
The John Bertram Sons Co.....Dundas, Ont.

Snow Ploughs
Crossen Mfg. Co.....Cobourg, Ont.
Rhodes, Curry & Co.....Amherst, N.S.

Specialties in Brass and Iron Wire
The G. B. Meadows Wire, etc., Co.....Toronto.

Speedicut High Speed Steel
Montreal Steel Works.....Montreal.

Spikes, Railway, Ship or Pressed
Montreal Rolling Mills Co.....Montreal.
Toronto Bolt and Forging Co.....Toronto.

Springs
Montreal Steel Works.....Montreal.
Standard Steel Works.....Philadelphia, Pa.

Station and Tower Heaters
W. C. Baker.....New York.

Stationery
Rolph & Clark (Ltd.).....Toronto.

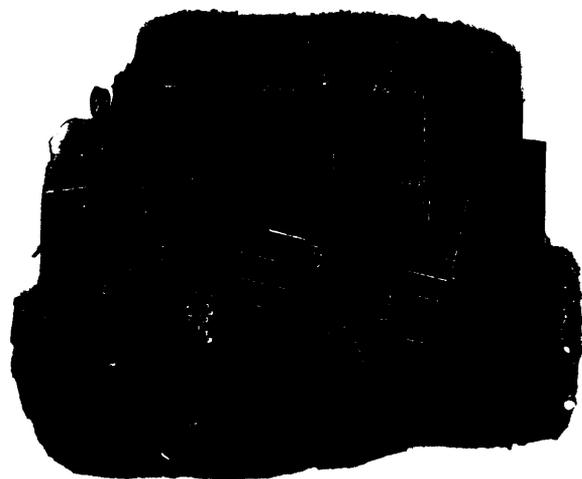
Station Name Signs
Acton Burrows Co.....Toronto.

Steam Attachments for Car Heating
W. C. Baker.....New York.

Steam Couplers
Safety Car Heating and Lighting Co., New York.

Steam Hammers
The John Bertram Sons Co.....Dundas, Ont.

Steam Shovels M. Beatty & Sons.....Welland, Ont. F. H. Hopkins & Co.....Montreal. W. H. C. Mussen & Co.....Montreal.	Ticket Wickets The G. B. Meadows Wire, etc., Co.....Toronto.	Washers Montreal Rolling Mills Co.....Montreal.
Steamship Supplies The W. H. Kelson Co.....Montreal.	Tie Plates Montreal Rolling Mills Co.....Montreal.	Waste N. L. Piper Railway Supply Co.....Toronto.
Steamships Polson Iron Works.....Toronto.	Time Table Racks The G. B. Meadows Wire, etc., Co.....Toronto.	Water Filters Geo. R. Prowse.....Montreal.
Steamship Signs Acton Burrows Co.....Toronto	Tires Standard Steel Works.....Philadelphia, Pa.	Water Pipe (Cast Iron) Gartshore-Thompson Pipe & F'dry Co., Hamilton.
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Steel W. Abbott.....Montreal. F. H. Hopkins & Co.....Montreal. Wm. Jessop & Sons.....Sheffield, Eng. Williams & Wilson.....Montreal.	Towers Goold, Shapley & Muir Co.....Brantford, Ont.	Wheelbarrows F. H. Hopkins & Co.....Montreal. Toronto Pressed Steel Co.....Toronto.
Steel Buildings Canada Foundry Co.....Toronto. Canadian Bridge Co.....Walkerville, Ont. Dominion Bridge Co.....Montreal.	Track Jacks Canadian Fairbanks Co.....Montreal. F. H. Hopkins & Co.....Montreal. Montreal Steel Works.....Montreal. W. H. C. Mussen & Co.....Montreal. A. O. Norton.....Coaticook, Que.	Wheels, Car John McDougall & Co.....Montreal. Jas. W. Pyke & Co.....Montreal. Rhodes, Curry & Co.....Amherst, N.S. Standard Steel Works.....Philadelphia, Pa.
Steel for Springs James Hutton & Co.....Montreal.	Track Tools N. J. Holden & Co.....Montreal. F. H. Hopkins & Co.....Montreal. Montreal Steel Works.....Montreal. W. H. C. Mussen & Co.....Montreal.	Wheels, Locomotive John McDougall & Co.....Montreal.
Steel Plate Jas. W. Pyke & Co.....Montreal.	Tracklaying Lorries Crossen Car Mfg. Co.....Cobourg, Ont.	Wheels, rolled, solid forged Standard Steel Works.....Philadelphia, Pa.
Steel, Nickel for Nickel The Orford Copper Co.....New York.	Tramway Equipment J. J. Gartshore.....Toronto.	Wheels, steel tired Standard Steel Works.....Philadelphia, Pa.
Steel Rolling Doors W. H. C. Mussen & Co.....Montreal.	Trucks (Electric Car) Baldwin Locomotive Works.....Philadelphia, Pa. Canada Foundry Co.....Toronto. Montreal Steel Works.....Montreal.	Windmills Canadian Fairbanks Co.....Montreal. Ontario Wind Engine and Pump Co.....Toronto.
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Switch Targets Acton Burrows Co.....Toronto.	Valves, Iron and Brass Canada Foundry Co.....Toronto. Canadian Fairbanks Co.....Montreal.	Wire, Transmission and Trolley The Wire and Cable Co.....Montreal.
Tanks and Tank Fixtures Canadian Fairbanks Co.....Montreal. Canada Foundry Co.....Toronto. Goold, Shapley & Muir Co.....Brantford, Ont. Ontario Wind Engine and Pump Co.....Toronto.	Valves, Iron Gate Kerr Engine Co.....Walkerville, Ont.	Woodworking Machinery H. W. Petrie.....Toronto.
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Tests R. W. Hunt & Co.....Montreal. H. Jarvis & Co.....Chicago, Ill.	Varnishes McCaskill, Dougall & Co.....Montreal.	Wrought Steel Piping Canada Foundry Co.....Toronto.
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Jas. W. Pyke & Co., Montreal.
Rhodes, Curry & Co., Amherst, N.S.

Babbitt

Williams & Wilson, Montreal.

Bearings, Side

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Belting, Rubber

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H. W. Petrie, Toronto.
Robb Engineering Co., Amherst, N.S.

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H. W. Petrie, Toronto.

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Babcock & Wilcox (Ltd.), Montreal.
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Simplex Railway Appliance Co., Montreal.

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Bolts, Carriage and Machine

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Box Car Loaders

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(Continued on page 501.)

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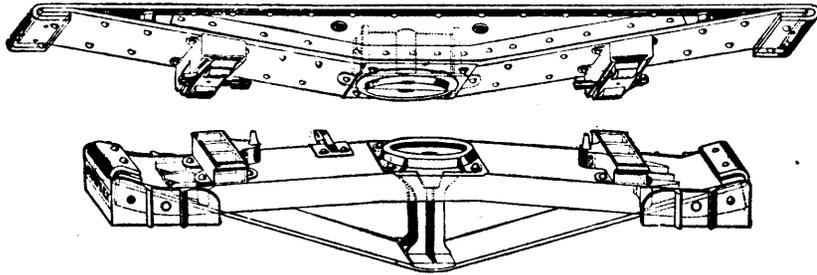
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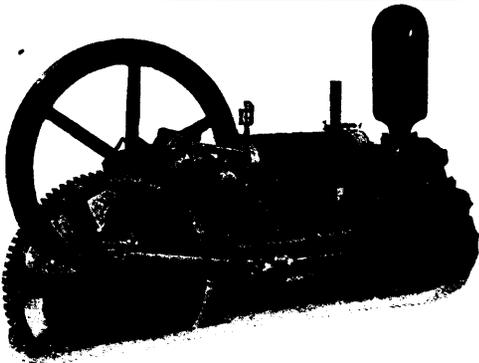


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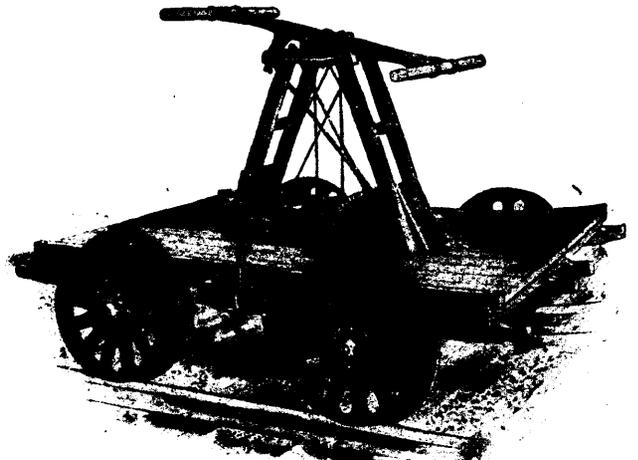
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