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See page 827.

Locomotive Dispatching and Terminal Facilities.

By C. Kyle, General Master Mechanic,
Eastern Lines C.P.R.

In preparing this paper I have, as far as possible, aimed to keep clear of the technical and theoretical side, and have rather inclined to the practical or everyday side of the question, having in mind an after discussion somewhat on the lines of the old time bunk-room chats. To my mind there is no department connected with railway operation that so much depends upon as that charged with the dispatching of locomotives. The roundhouse is the most important of all the departments, for no matter what figuring and calculating is done elsewhere or what business may be secured, if, from various causes, the roundhouse fails in prompt and reliable dispatching thus causing detentions, etc., the business will eventually fall off. The dispatching of locomotives embraces many features that may not be known to those not directly connected with this branch of railway operation. The successful and economical dispatching of locomotives depends, in a large measure, on good government, and organization which will bring about team work of the whole staff, and only those absolutely necessary to handle the business carried on should be considered as members of this team; any surplus help will only tend to diminish interest and lead to sloppy work.

In the best organized shops a general tendency will be noticeable towards tidiness both around the premises and with the equipment; the practice of making temporary repairs merely to tide a case over at these points will rarely, if ever, be resorted to. These particular shops appear to be able to handle the business without the necessity for doing work in such a manner as to invite failures; at all times the idea prevails that the efficiency of the road depends upon the condition of the power, which, if first-class, will greatly aid in train operation, and all the statistics being prepared on a basis of tons handled seems to appeal to all concerned; the question of aggressive departmental controversies has no place here, but where a general betterment can be effected, there is no hesitation, but rather a desire to assist, both by example and practice, the other departments, so that the general result on the particular district with which the shop is identified may be a cause for special mention; in this way the credit is shared by all.

In former days it was enough to turn

a locomotive out for a trip with a supply of stores, fuel, etc., that to-day will take care of a machine of double the capacity; then the question of costs for repairs, fuel, lubrication, etc., was not gone into as thoroughly as at present, and it was considered the duty of an up-to-date shop to turn out a fine looking machine without regard to cost. A change in the state of affairs has been brought about by the handling of competitive business, making it imperative that the freight offered at present shall



F. M. SPAIDAL

General Superintendent Canadian Northern Quebec Ry.
and Quebec and Lake St. John Ry.

be handled with such dispatch as will ensure its delivery as contracted for, and the demands made on the machine, both in the matter of greatly-increased tonnage hauled and in the decrease in time allowed for so doing should be taken into consideration. To-day, careful record is kept of shop expenses, cost of locomotive repairs, fuel consumed, lubrication used, etc. This, along with the possibilities of engine failures and detentions, makes locomotive dispatching somewhat of a difficult problem. It may, therefore, not be considered out of place to look into a few points that may be considered as essential in modern locomotive dispatching; among these the question of terminal facilities that will

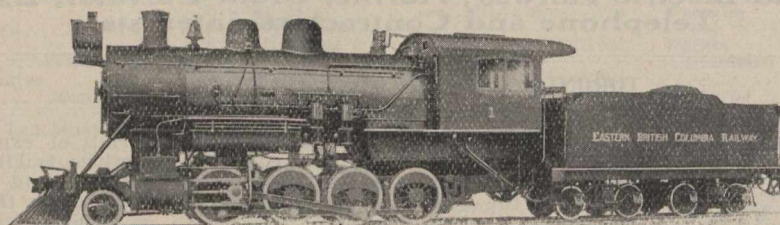
permit of expeditious handling of locomotives, is I think, one of the most important, and generally speaking, does not receive the consideration it should, as with the close of navigation the railways are called upon to handle important business promptly in cold and stormy weather, and there should be no question about providing sufficient in-coming and out-going tracks equipped with coal and sand hoppers, ash-pits with proper ash-handling devices, and water cranes of such capacity as will care for the business without detention to locomotives to and from the shop. The turn-table should be looked upon as the key to the situation, and should be of such construction as will enable it to hold up against the weight of the heaviest locomotive in service; it should be preferably power driven. There should be one person specially appointed to take care of its inspection and oiling, and it should be his duty to know beyond doubt, that it is always in satisfactory condition.

The shop should be roomy, well ventilated, and heated, and special attention given to proper drainage from both the pits and floor, thus making it possible for the men to get about without the inconvenience of wet feet, etc., which affects the efficiency of the average man. There should be provision made for a suitable office for foreman, and an engineer's registering room; there should also be a well ventilated rest house for engine crews, equipped with sleeping and dining room accommodation, which will permit of the men getting a warm, substantial meal.

At the principal shops that are responsible for the upkeep of locomotives, there should be provided tracks of sufficient capacity to take care of locomotives out of service on account of waiting repairs, traffic conditions, etc., and also wheel tracks sufficient to take care of new and old wheels kept in stock. There should be both driving and truck wheel pits, and all pits should be provided outside with jacking planks or timbers. There should be appliances for loading and unloading wheels, suitable lorry tracks for trucking heavy materials, up-to-date boiler tester and hot water washing out plant, with pits specially allotted and constructed for this purpose, special care being given to bad water districts. There should be sufficient modern machinery to take care of the proper maintenance of tire work, driving boxes and wedges, pistons, valves, and motion and rod work, also a proper blacksmith and boilermakers' equipment; all obsolete tools originally used for repairs to the smaller power should either be disposed of or scrapped.

The roundhouse staff should be looked

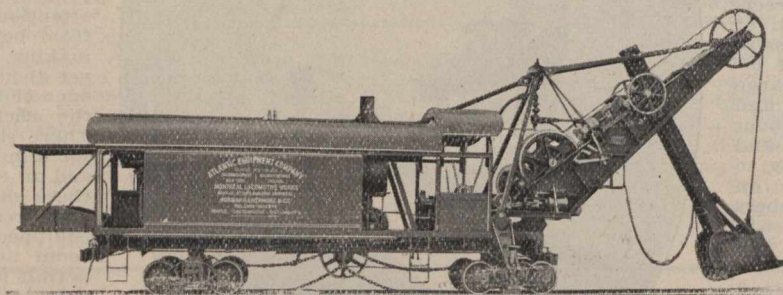
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upon as the bone and sinew of the concern; each one should be imbued with a feeling of loyalty to his foreman, and have such a sense of the chain of responsibility, from the call boy up that he will realize it is only by his individual efforts that the best results can be obtained. The foreman who gives thought and study to his business, and is thorough in system, straightforward, honest, and true in his dealings with his staff and other departments, excels; the most careful foreman is one who, while exercising close supervision, is possessed of tact and diplomacy, as no matter what the conditions are or how much expense has been gone into for equipment, etc., if the staff is not properly managed the result will be disappointing.

The importance of knowing costs promptly is an absolute necessity in successful locomotive dispatching this does not necessarily mean elaborate statements of figures, etc., but rather implies a systematic method of expending money, watching and knowing costs on lines that are applicable to any other business. To quote from H. H. Vaughan's presidential address at the recent Master Mechanics' convention: "In short, that without in any way reducing the interest we have in locomotive engineering, we take up in a far more business-like and serious way the financial problems connected with the operation of the loco. department, the form of organization that will give the best results, and the commercial aspect of work of the motive power official in conducting his department as though he were manager of a large business enterprise."

A foreman who can in a quiet way make it known to his staff just what a job is worth, and if necessary be prepared to demonstrate that he has gone into the question sufficiently to know his statements are correct, will enjoy the confidence and loyal support of all.

Investigations should be made into cases of damage and the cause ascertained if at all possible, so that all questions relating thereto may be answered promptly and recommendations outlined that will assist in reducing possible future cases to a minimum. It should be the ambition of those handling correspondence to feel that when a file of papers connected with such an investigation leaves their office, the investigation is complete as far as they are concerned.

The chargeman or leading hand should so figure on his work that only at a time when power can be best spared should heavy repairs be undertaken, at which time it is preferable to see that all that is possible is done, and done in such a manner that there shall be no necessity to hold the locomotive out of service at the first turn around point, to go over what had not been properly done in the first instance. The chargehand should be in the relation of a doctor with the locomotives as patients; he should know the particular ailment or tender spot of each locomotive and by encouraging engine crews to explain defects and talk over conditions, be in a position to decide just how long it would be wise to keep an engine in service without attention; this will greatly assist in the economical handling of repairs. He should make it apparent to his foreman that there need be no anxiety as to his ability to handle his position, or of the question as to whether he can carry the responsibility of work done under his supervision, by cultivating friendly relations with both loco. crews and shop staff; he will soon find them becoming so interested that they will of their own accord feel like sharing the responsibilities, thereby lightening the daily load.

The chargehand should consult with his foreman regularly as to his doings and how he figures to handle his work; he should feel it is his privilege to make recommendations that will, in his

opinion, result in economy or a betterment of shop conditions. He should be prepared to give an intelligent and honest expression of opinion as to the cause of any failure, having in mind that it is his business to know, and if it is a case of either faulty workmanship or material the facts should be given without hesitation, making it clear that he is in all respects worthy of the position he has been selected to fill.

The machinist, boilermaker, blacksmith, and carpenter should be closely in touch with the chargeman or leading hand and should lose no opportunity of bringing to his notice conditions or defects that may have been observed which, in their opinion, might lead to failures. Since from this class of men intelligence and skill are looked for, each one should, when given a job, use thought as to how the work is to be performed with the best possible dispatch, always having in mind that a failure from inferior workmanship reflects on the shop and directly on himself, and also bearing in mind the fact that when vacancies occur for higher positions, selection is invariably made from among those who have been energetic, thoughtful and loyal in the general performance of their duty.

The engine hostler is a very important person in the roundhouse staff; he should be the diplomat of the concern, and being in daily contact with the locomotives and crews, must by meeting the men familiarize himself with the condition of their engines. He should know of any defects that would necessitate the blowing off of boiler, emptying of tank, changing of wheels, etc., and should in turn arrange to place the engine on the proper pit allotted for the work required, and incidentally advise the chargeman of his doings; he should know the individual peculiarity of the men, and give serious consideration to the importance of their getting all the rest possible, and by his many acts of common courtesy inspire such a confidence as would cause the foreman no concern regarding detentions from waiting engineers and firemen. Should a cause of discipline be under consideration, the hostler should be of such standing that he might be looked upon as a referee and be prepared to give a straightforward opinion if questioned by the foreman.

The apprentice of to-day may be looked upon as the mechanic of the future, and while it is true the different companies have taken a greater interest in the training of the boys, and as far as they can have made it possible for the boy to enjoy all the privileges necessary to qualify as a successful journeyman, it must also be borne in mind that time has brought about change in equipment, more efficient machines, systems and methods of handling repairs, so that the responsibility for the training of the boys from the shop standpoint has increased in proportion, and it is the duty of all fair-minded men to keep this before them, and so by their example make it apparent to the lad that his selection of the trade is a wise one. The cultivation of studious habits and perseverance, and generally of manly deportment, should

be encouraged from the start; there should be a feeling grow up between man and boy that their interests are mutual. By exercising kindness and patience the man will soon see the fruits of his labor in the training of the boy, who will seek his advice and confide his little difficulties and secrets to him; this will be the time to discourage any inclination to coarseness or unmanly behavior and to impress on the boy to at all times endeavor to keep the dignity of the trade uppermost in his mind, so that when the time comes for the boy to start out for himself, he will be a mechanic reflecting credit on the shop that turned him out. A story occurs to me at this moment of a man who secured a position in an up-to-date shop, who on starting was given a piece of work that required accurate filing; the foreman noticed in passing by the new man that he was handling the file like the bow of a violin. On calling the man's attention to this, and intimating that work of that kind could not be permitted the man replied: "If I only had the file I served my time with, I could show you how to do a good job." The point I wish to bring out is that in the training of our boys we should endeavor to teach them the use of any file; or, in fact, of any tool or machine so thoroughly as will ensure getting everything possible out of it.

To the enginemens belong the task of conducting their respective duties in such a manner that by their individual and collective efforts, the district with which they are identified generally, and themselves individually, shall be prominent in favorable mention when comparisons are being made. The changes that have recently been made, and those that are constantly taking place in locomotive design, call for not a little thought and study on the part of engine men. The engineer of to-day should closely watch the new devices introduced, and only be satisfied after he has become familiar with the workings of the same. He should avail himself of every opportunity of being present when any discussion or demonstration is being made pertaining to his business, and should aim at becoming an authority on some particular feature of his business. This, along with a keen sense of economy, the exercising of care and intelligence when reporting repairs required, having in mind what it costs to perform work that might be done more economically, at a time for instance when the boiler is being washed and the like, and the exercise of thought and judgment in other ways, will result in considerable saving. The ideal engineer will be careful to see that no entry of repairs required is recorded over his signature that there is any doubt about; there are always ways and means for the proper method of locating defects, and until such defects are known the report should be withheld. When on the life there should be a desire to gain a reputation for good judgment in train handling in order that the superintendent and train dispatcher may be justified in making the statement that they have men on their districts who can do, and are doing, good work, for experience has shown that superintendents and those in charge are liberal to a fault in sounding the praises of enginemens rendering good service.

The economical use of fuel has always been, and I presume always will be, a subject of interest. There can be no question as to what can be accomplished when all concerned are fully alive to this question, and while the engine crew can, with careful practice, take advantage of each and every move made by each other in respect to this item for the most efficient working of the machine, I would beg leave to quote the following extract, bearing on this subject, from the report of the committee dealing with this at the Master Mechanics' Convention of June,

A PERSONAL MENTION.

The Managing Director of the Railway and Marine World left Toronto hurriedly, Oct. 15, to sail by the s.s. New York for Plymouth, en route to London, Eng., in response to a cablegram advising him of his second daughter's sudden, and apparently hopeless, illness there.

This mention will explain his present inability to attend to personal correspondence and other matters requiring his individual attention.

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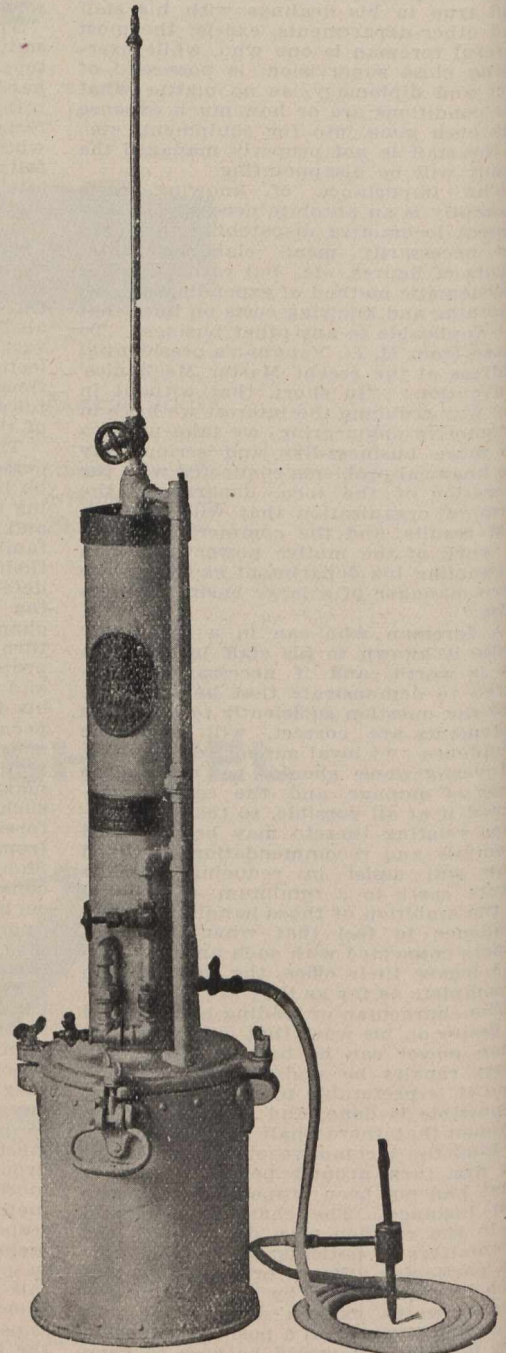


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1909: "Efficient handling of this involves the work of both the engineer and fireman, and to our minds constitutes one of the most, if not the most important element in fuel economy. The question of running an engine in order to get most economic results involves the work of both engineer and fireman, and is so important from that point of view, that we shall introduce this portion of the subject by making the following statement: An engine may be built of the very best material, and of the most approved design, mechanically perfect, with all the modern conveniences to assist in its perfect manipulation, and you place that engine in the hands of an incompetent engineman, and you have almost nullified the combined expert mechanical skill necessary to turn out the finished product; we think you will all agree it is most important that the finished machine should have skillful operation."

While the above is true, there is little accomplished unless those who have to do with the handling of orders, station work and the like, understand that fuel consumed when delays are taking place is wasteful, and that the responsibility rests on someone; this, along with fuel unnecessarily burned at terminals when the locomotive is in the hands of shop staff, tends to lessen the interest of enginemen, since they are responsible in all such cases for excessive fuel consumption, over which they have practically no control. No case of this kind should be allowed to pass unnoticed, for when enginemen are thus assured that interest is being taken elsewhere than in the engine cab, it will become an incentive for them to be on the alert and prompt in the discharge of their respective duties, and thus create the desire to establish a record for their district that will outclass all others on their system.

The fireman of to-day may be looked upon as the engineer of the future. He should have in mind his ideal of what constitutes a successful engineer. He is, of course reminded by the more extensive examinations he is called upon to write up, of the increasing importance of giving attention to his business, and to what will be expected of him as advancement takes place. By close attention he will hear the name of some particular person in his line being continually mentioned by the engineers as one who can be depended upon under all conditions to do a good job; requests from engineers on most important runs will be made to foremen for this class of man. A man of this kind becomes known, his opinion is valuable, and is sought by those in charge and also by his associates in cases of dispute; in cases of discussion and arguments pertaining to subjects for advancement in his line of business his remarks are listened to with interest, and by his example he discourages thoughtless expressions which are disloyal, and neither good for the employe nor the company. It should then be worth his while to locate this type of fireman, get in touch with him, and gain all the good points possible, always realizing he has to handle one of the greatest items of cost in the business of transportation. I will here again, with your permission, refer to the statement made by R. Quayle, at the recent Master Mechanics' convention, in which he says: "We will suppose the fuel is all right, the specifications are all right, the purchasing agent is all right, and the delivery on the ground is all right. I made this statement to 22 locomotive firemen within the last two weeks, that I would select 100 locomotive firemen on the C. & N. W., and I would guarantee that if I had every other man on the railway equally as good firemen as the 100 I could select, that I could save easily \$500,000 a year in fuel."

The importance, therefore, of familiarizing himself with just what can be got from one scoopful of coal properly ap-

plied is something for serious consideration, and will eventually result in the fireman's ability, rather than his seniority, being the cause for his being selected for important runs or promotion. In going into the fuel question, I find I have gone a little outside of the terminal switch, but the importance attached to this particular item, and what it is possible to accomplish by constantly keeping before all concerned what this account means to a company, is the only excuse I have to offer.

I would also beg leave to touch on the importance for the necessity of friendly co-operation between the two departments responsible for the handling of terminal traffic. I feel satisfied that a hearty co-operation of the trainmaster and the locomotive foreman, at the terminal with which they are together identified, would make a freight blockade next to impossible, and this combination along with proper equipment, efficient help, and intelligent supervision, are, in my opinion, what may be considered as the essential factors required for successful locomotive dispatching.

The foregoing paper was read before the Canadian Railway Club recently.

Telephone Dispatching on the C.P.R.—

Our September issue contained a paragraph stating that during August the equipment of several telephone circuits was completed on the C.P.R. system, among others one from White River to Fort William, Ont., 251 miles, and that the same had been placed in use for dispatching trains. A C.P.R. official at Fort William informed us that this was not quite correct, and stated that between White River and Fort William the dispatching was being carried on by telegraph, but that telephone wires had been strung, so that in case of an accident on the line, engineers or conductors could attach a telephone to the wires and get into touch with the dispatcher. We were officially advised Oct. 2 that the item referred to in our September issue was practically correct; that trains were being handled by telephone between White River and Pearl, the latter point being 215.2 miles west of White River and only 28.5 miles east of Fort William, and that the balance of the line to Fort William would be dispatched by telephone within a short time.

Railways Lands Patented.—Letters patent covering Dominion lands in Manitoba, Saskatchewan, Alberta and British Columbia, were issued during July, as follows:—

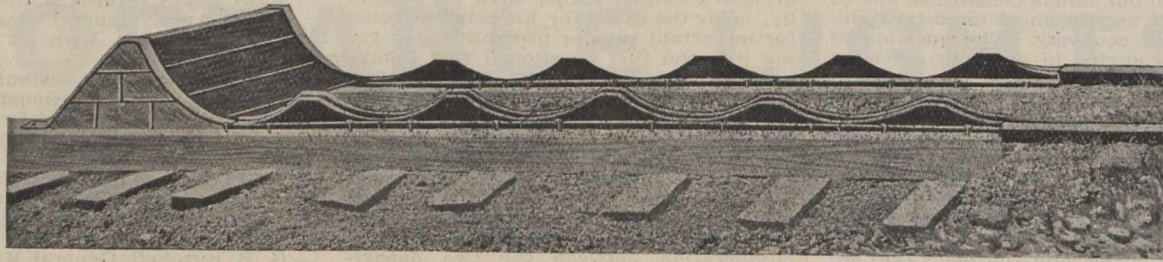
	Acres.
Canadian Northern Ry.	1,247.01
Canadian Pacific Ry. grants . .	161.00
	1,408.01

The board of conciliation appointed to enquire into points at issue between the Government Railways Managing Board and the Intercolonial Ry. roundhouse employes at Halifax, N.S., consists of Sir George Garneau, Chairman; J. H. Gilmour, Brockville, and A. C. R. Moshier, Halifax.

J. S. Dennis, Assistant to the Second Vice President C.P.R., speaking in reference to the Company's Bow River irrigation project, stated recently, that at the close of 1908, 1,150 miles of canals and ditches were completed, and during this year, 500 additional miles would be completed, making a total of 1,650 miles of waterways in the western section, and providing water for 350,000 acres. The surveys indicate that about the same amount of canals and ditches will be required for each of the other sections, so that when the scheme is fully completed, there will be about 5,000 miles of waterways, constructed at a total estimated cost of \$9,000,000.

November Birthdays.

- Many happy returns of the day to—
 J. O. Apps, General Baggage Agent C.P.R., Montreal, born at Tara, Ont., Nov. 9, 1877.
 A. B. Atwater, Assistant to Second Vice President and General Manager G.T.R., for lines west of Detroit and St. Clair Rivers, Detroit, Mich., born at Sheffield, Ohio, Nov., 1845.
 W. F. Brougham, Local Right-of-Way and Lease Agent C.P.R., Vancouver, B.C., born in Westmoreland, Eng., Nov. 25, 1865.
 G. B. Burchell, General Manager Maritime Coal, Ry. and Power Co., Joggins Mines, N.S., born at Sydney, N.S., Nov. 1, 1877.
 M. J. Butler, C.M.G., Deputy Minister of Railways and Canals, Ottawa, born at Deseronto, Ont., Nov., 19, 1856.
 J. R. Cameron, General Superintendent Canadian Northern Ry., Winnipeg, born at Truro, N.S., Nov. 5, 1865.
 L. D. Chetham, City Ticket Agent C.P.R., and District Passenger Agent Esquimalt and Nanaimo Ry., Victoria, born at Matlock, Eng., Nov. 5, 1869.
 F. H. Clendenning, Assistant General Freight Agent C.P.R., Pacific Division, Vancouver, B.C., born at Montreal, Nov. 9, 1881.
 F. Conway, acting General Superintendent Kingston and Pembroke Ry., Kingston, Ont., born at Ernestown, Ont., Nov. 19, 1850.
 C. W. Cooper, Assistant General Passenger Agent Canadian Northern Ry., Winnipeg, Man., born at Montreal, Que., Nov. 16, 1868.
 W. L. Creighton, Advertising Agent Intercolonial Ry., Moncton, N.B., born at Derby, Eng., Nov. 9, 1871.
 W. Cuthbert, Fuel and Tie Agent G.T.R., Montreal, born at Longueuil, Que., Nov. 9, 1856.
 W. Downie, General Superintendent C.P.R. Atlantic Division, St. John, N.B., born at Rock Currie, Ireland, Nov. 12, 1850.
 Jos. Dubrule, Jr., Manager Canadian Pacific Car and Passenger Transfer Co., Prescott, Ont., born at Spencerville, Ont., Nov. 14, 1872.
 Grant Hall, Superintendent Motive Power, C.P.R. Western Lines, Winnipeg, born at Montreal, Nov., 1863.
 C. R. Hosmer, director C.P.R., born at Coteau Landing, Que., Nov. 12, 1851.
 J. McGillivray, Superintendent Inverness Ry. and Coal Co.'s lines, Inverness, N.S., born at Nairn, Scotland, Nov. 13, 1867.
 T. E. Martin, Local Freight Agent, C.P.R., Quebec, Que., born at Beauharnois, Que., Nov. 23, 1852.
 C. Murphy, General Superintendent Eastern Division C.P.R., Montreal, born at Prescott, Ont., Nov. 20, 1865.
 F. Nicholls, Vice President Toronto Ry., director Canadian Northern Ry., born in England, Nov. 23, 1856.
 H. P. Sharpe, General Agent Dominion Express Co., Toronto, born at Brockville, Ont., Nov. 24, 1864.
 G. H. Shaw, Traffic Manager Canadian Northern Ry., Winnipeg, Man., born at Smith's Falls, Ont., Nov. 25, 1859.
 J. S. Sheppard, Contracting Freight Agent C.N.R., Winnipeg, born at Teeswater, Ont., Nov. 27, 1881.
 F. M. Spaidal, General Superintendent Canadian Northern Quebec Ry., and Quebec and Lake St. John Ry., Quebec, born at Gananoque, Ont., Nov. 13, 1858.
 J. Sparks, Assistant General Baggage Agent C.P.R. Western Lines, Winnipeg, Man., born in London, Eng., Nov. 25, 1874.
 H. P. Timmerman, Industrial Commissioner C.P.R. Eastern Lines, Montreal, born at Odessa, Ont., Nov. 6, 1856.
 H. E. Whittenberger, Superintendent Eastern Division G.T.R., Montreal, born at Peru, Ind., Nov. 9, 1864.



Saunders Corrugated Car Stopper

Stops cars without damage

Simple and easily installed

Cost of maintenance very low

As shown in the illustration, this device is installed at the end of the track and is designed to take the place of the Rigid Bumping Post. It consists of ten heavy steel corrugated castings set securely on timbers and when in place is sixteen feet long. It is very serviceable and requires no special attention when installed.

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One bad accident caused by cars hitting a Rigid Bumping Post while running at a high rate of speed will cost as much as it would to equip all the dangerous tracks in the average sized yard.

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Steam Shovel Plant

We have the following plant to dispose of immediately, subject to inspection and acceptance before shipment and subject to prior sale:

- 1 "Marion" Steam Shovel, Model 50, 2 cu. yd. dipper capacity, wt. 60 tons
- 20 "Kilbourne & Jacobs" Standard Double Dump Cars, 6 cu. yd. capacity, steel underframe, standard gauge
- 2 "Davenport" Saddle Tank Locomotives, cyls. 10 in. x 16 in. wt. 18 tons

The above plant was purchased new last May and is in perfect condition. Full particulars and prices upon request.

F. H. Hopkins & Co

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JAMES COOPER

Montreal

The Lethbridge Viaduct on the Canadian Pacific Railway

By J. E. Schwitzer, Assistant Chief Engineer, C.P.R. Western Lines.

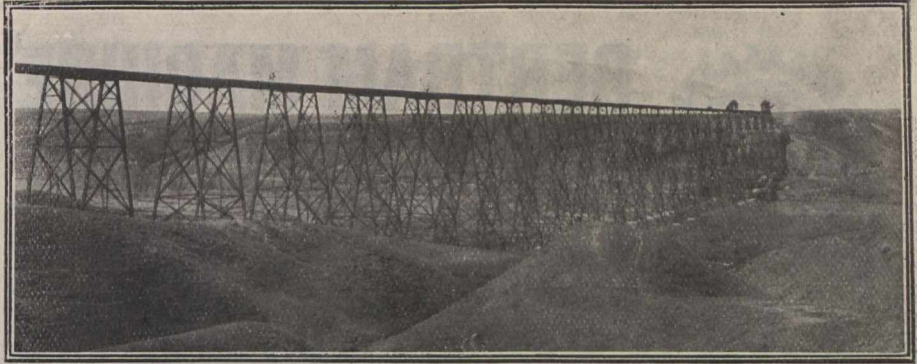
The C.P.R. Crow's Nest Pass line branches off the main trans-continental road at Coleridge, 7.1 miles east of Medicine Hat, Alta., and parallels it through the mountains a hundred miles to the south, to give easy access from the east to the rich mining regions of Southern British Columbia.

The old line between Lethbridge Junction and MacLeod is 37 miles in length, the distance from Lethbridge, which is situated on a spur track, to Lethbridge Junction is 1.5 miles, the total distance from Lethbridge to MacLeod being 38.5 miles. The old line is constructed with curves as sharp as 7 degs. (819 ft. radius) and with a grade of actual 1% (52.8 ft. per mile), no compensation being allowed for curvature, so that in the estimates for new location the ruling gradient on this line was calculated to be equal to a virtual 1.2% grade (63.4 ft. per mile).

On the old line, which was constructed in 1897 and 1898, are the following wooden deck bridges:—

Bridge.	Length.	Height from ground to base of rail.
108.7	406 ft.	110 ft.
112.2	476	105
112.4	420	94
112.8	463	87
113.1	674	67
113.5	503	102
113.8	403	77
114	569	84
114.3	569	74
114.8	473	62
115.2	317	41
115.6	419	39
116	2933	65
117.5	707	117
119.6	449	73
120	567	117
120.2	313	53
121.1	629	113
131.8	755	24
132.5	16	9

A total of 20 bridges, with a total length of 12,063 ft., or 2.8 miles, 1,450 ft. of this length being Howe Truss spans, varying in length from 100 to 150 ft. In the majority of cases these bridges cross streams and ravines with very steep-cut banks, which, on account of the nature of the soil, require constant watching, especially in the spring and during high water. The worst of these crossings are those at St. Mary's and Belly Rivers. On account of the life of these bridges being very nearly expired, they would require, during the present year, heavy repairs, or practically rebuilding. The



PORTION OF LETHBRIDGE VIADUCT, C.P.R. FROM THE NORTHEAST.

estimated cost of permanent bridges to replace these wooden bridges is \$1,065,000. Owing to the necessity of rebuilding these bridges, and to the rapid increase of traffic, and the fact that the original charter for the Crow's Nest branch required the construction of a line to start from Lethbridge, it was therefore decided to have surveys made and ascertain if it were possible to secure a low-grade line with better alignment. With this object in view extensive surveys were made in 1904 and 1905, the line which was finally adopted giving a maximum virtual grade of fourth-tenths of 1% (21.12 ft. per mile) with a maximum curvature of 3 deg. (1910 ft. radius).

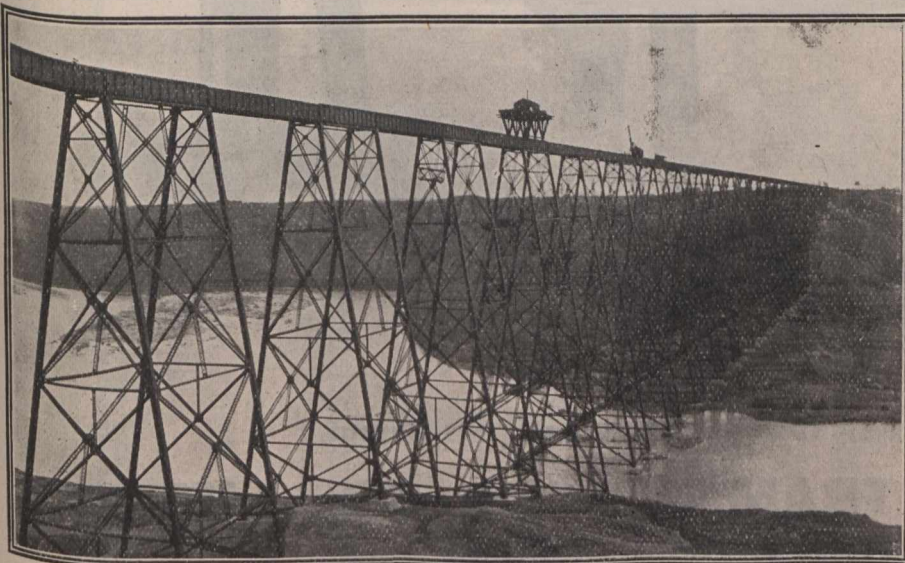
As already noted, the town of Lethbridge is on a spur track of the Crow's Nest Pass Ry., 1.5 miles long, which necessitates practically all trains running into Lethbridge and backing out, being a loss of 3 miles, which will be saved when the new line is placed in operation. The saving effected by the new location as compared with the old is as follows:—5.26 miles of line, 1735 deg. less curvature, 37 fewer curves, and 401.5 ft. less rise and fall, besides securing the 0.4% grade, as compared with a virtual 1.2% on the old line. These changes should so reduce operating expenses that the saving with an increase of 20% in traffic above what it was last year would pay an interest at the rate of 4% on an investment of \$3,625,000, besides which it would cost to replace the old bridges with permanent structures, \$1,065,000. The total capital expenditure which would therefore be justified would be \$4,690,000, while the estimated cost of the change of the line

is \$2,048,700. On this new line there are only two bridges, both large viaducts, one over the Belly River at Lethbridge, 5,327.6 ft long, with a maximum height of 314 ft. from the bed of the river. This viaduct is the subject of this article. The second bridge, over the Old Man River, is 1,900 ft. long and 146 ft. in height from the bed of the river.

The east end of the viaduct is 3,800 ft. west of Lethbridge station, being somewhat west of the centre of the town. Lethbridge is the centre of a large irrigation tract and of an important coal-mining district, is a divisional point of the C.P.R. Crow's Nest branch and the Alberta Railway and Irrigation Co., and has a population of about 6,000. It is located in the province of Alberta, 759 miles west of Winnipeg, 2,174 miles west of Montreal, and is the centre of a rapidly developing territory.

The site of the bridge is the best for a high-level crossing in the immediate vicinity of the town. The slopes are fairly uniform for a distance of 1,000 ft. from the prairie level, then drop more abruptly for 800 ft. to the flat, which is flooded in extreme high water, then runs on an approximate level for a distance of 1,800 ft. to the edge of the river, which is 300 ft. wide. On the west side of the river it rises rapidly to prairie level in a distance of 1,300 ft. On the east bank the soil is clay and gravel for about 6 ft. from the surface, then 50 ft. of hard clay, 12 ft. to 20 ft. of coarse gravel, and below this shale and coal. In the bed of the river there is about 20 ft. of gravel, then 20 ft. of coal-shale, below that 2 ft. of blue clay, then a hard shale for a distance of 16 to 18 ft., below which is hardpan and sandstone. The west side is of somewhat similar formation, but the bank has been eroded, causing it to cave in at several points, which makes it necessary to do extensive work in order to secure proper foundations for the bridge. The alignment of the bridge is a tangent throughout, there being a 1 deg. curve at the east approach of the bridge, and a 3 deg. curve at the west approach; the grade is 0.4% rising to the west for the whole length of the bridge. On the east side of the bridge there are some old mine workings which followed a vein of coal 7 ft. thick which was worked out in 1888 to 1890. This vein of coal was practically horizontal and level with the flat at the river, varying from 25 ft. at bent no. 23 to 150 ft. below the surface at the east end of the bridge.

The work of finally laying out the centre line and locating the position of the pedestals for the viaduct was commenced during the first week of Dec., 1907. The contract for the excavation and substructure of the bridge was awarded to J. Gunn and Sons, of Winnipeg, the work to be completed by March 1, 1908. The excavation work was started in Oct., 1907, and the concreting was commenced in Nov., 1907, and carried



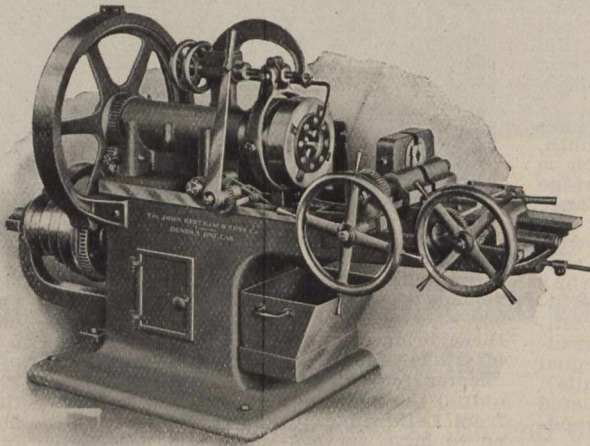
PORTION OF LETHBRIDGE VIADUCT, C.P.R. FROM THE NORTHWEST.



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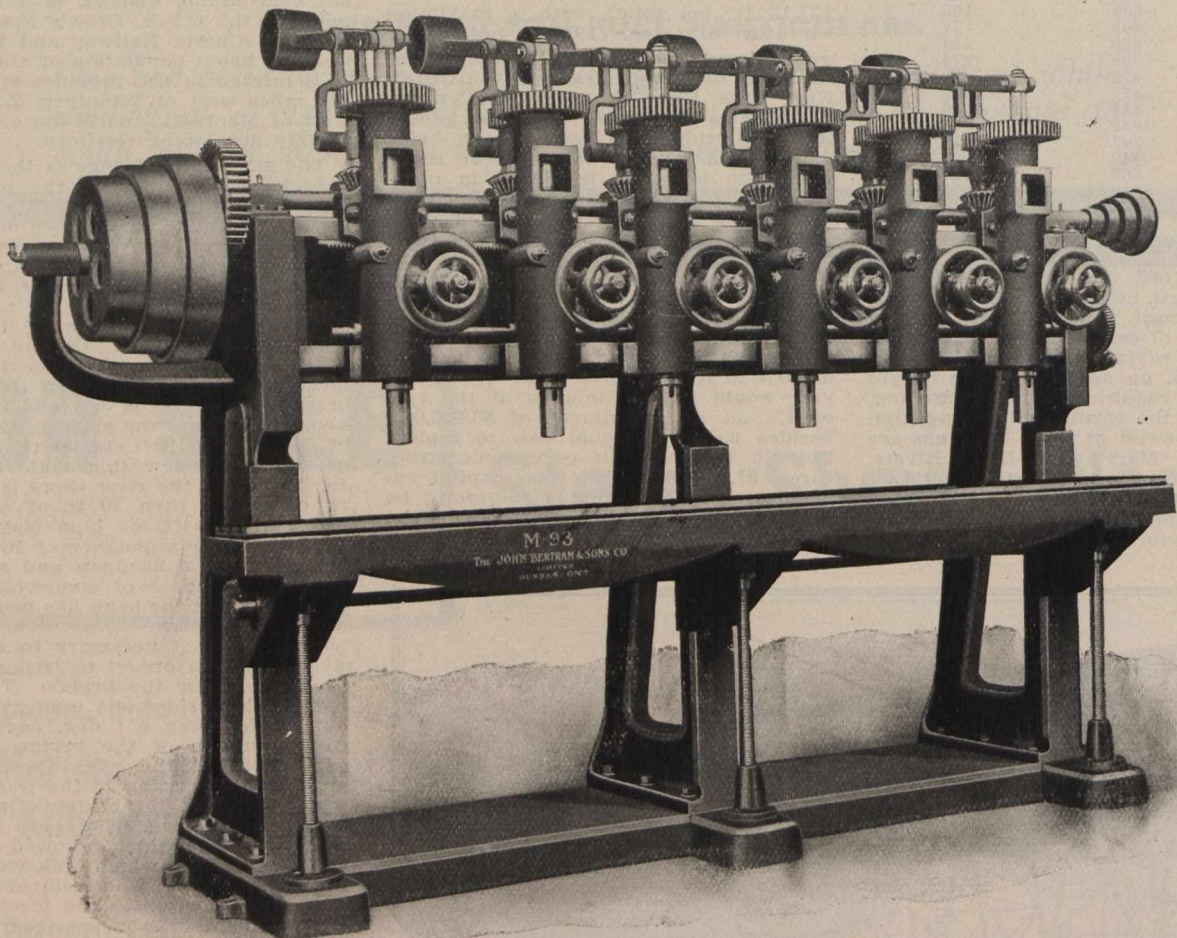


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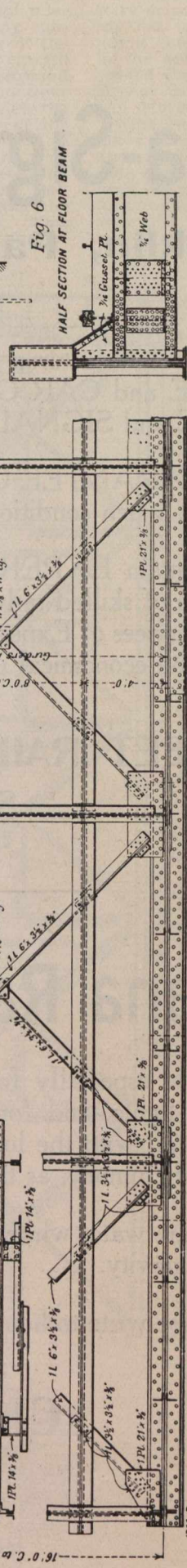
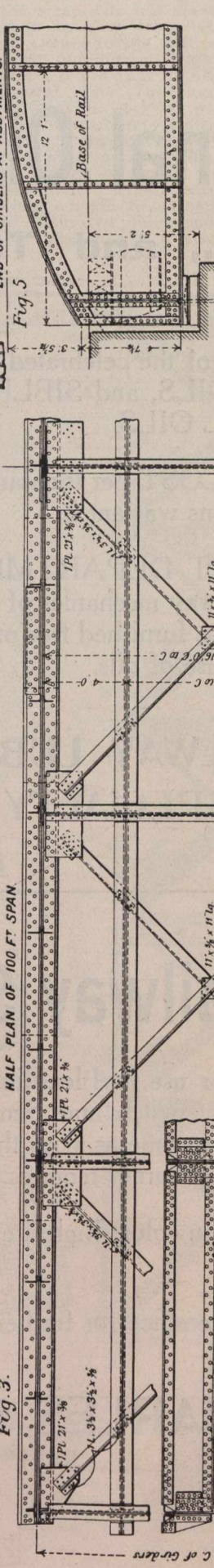
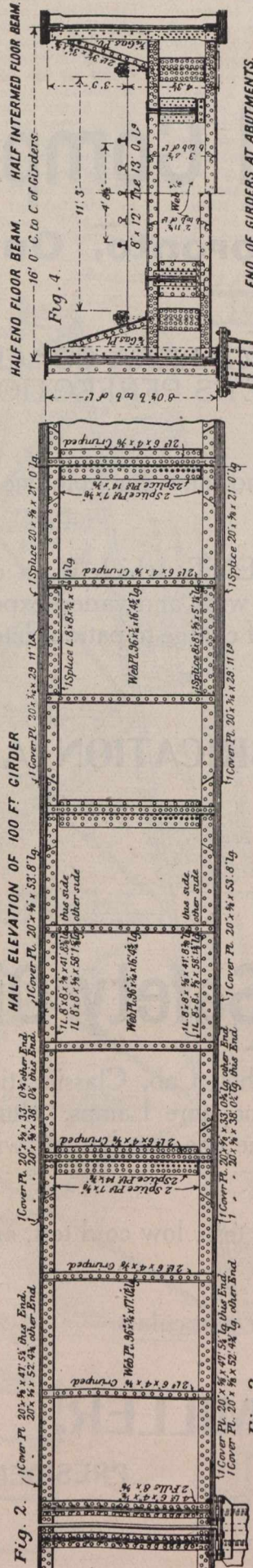
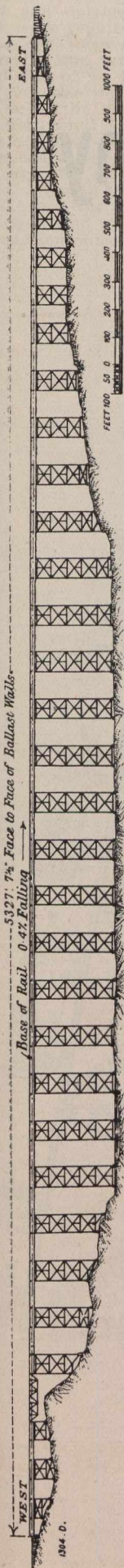
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on continuously, being completed in Feb., 1909. Before excavation was started borings were made at various points along the bridge site. In addition to these several test-pits were sunk and test-piles were driven. These several test-piles consisted of fir piles about 11 in. diameter, and were driven to a depth of 24 ft. to refusal, and were afterwards loaded with a 30-ton load and showed no settlement. In order to make absolutely sure of the foundations near pier 23, a shaft was sunk to the old mine workings. In the sinking of this shaft we met with a couple of fatalities by men going in and being overcome with the accumulation of gas. They went down to rescue a small boy who was playing in the shaft after being repeatedly warned not to go near the place.

Considerable difficulty was experienced with the river piers, as it was found necessary to go down through the gravel and shale, making it very difficult to get tight cofferdams. In June, 1908, before the excavation for these piers was completed, there was a flood, during which the water rose to a higher level than had ever been known at this point, being 1 ft. higher than previous extreme high water, which occurred in June, 1902. This high water completely submerged the cofferdams, carrying enough silt to fill them, besides which it carried away some of the contractors' plant, causing delay in the completion of the work. All the pedestals and foundations on the land were completed by Aug. 31, 1908.

For the foundations of the bridge various estimates were made in connection with the cost of timber piles with concrete pedestals and concrete piles, with the concrete pedestals on top. It was finally decided to adopt concrete piles and concrete pedestals, and a contract was let on this basis. All the land piers, with the exception of six, were built on concrete piles, the excavation for the same averaging 7 ft. deep, but in some cases running as deep as 18 ft. The length of the concrete piles varied from 12 to 20 ft. The greater part of the concrete for piers was mixed with a three-quarter yard Smith mixer, and conveyed from the mixer to the piers in ordinary contractors' dump-cars. The general formation of the river-bed is gravel over hard shale, there being an average of 10 ft. of water, then 10 ft. of gravel. On account of the hard formation of the river-bed no piles were used, the excavation for the piers was made with clam-shell buckets before the caissons were placed. The caissons were made of 10 by 10-in. material, and were floated into place and sunk; sheet-piling made of three pieces 2 by 10 in. nailed together to form tongue and groove was driven outside caisson, a second row of sheet-piling being driven about 3 ft. outside the first to leave space for puddle. These caissons were pumped out with some difficulty, and the excavation finished with pick and

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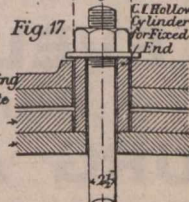
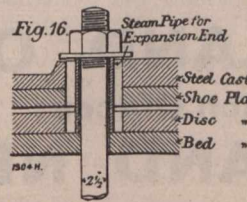
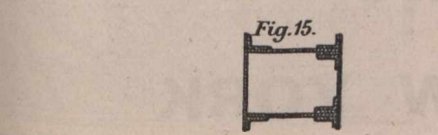
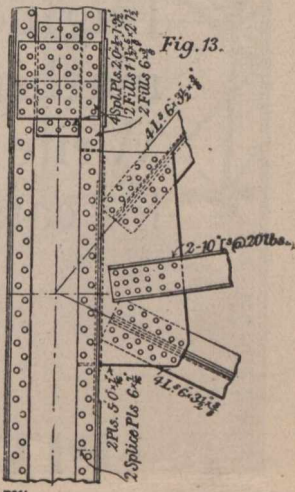
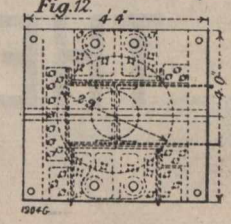
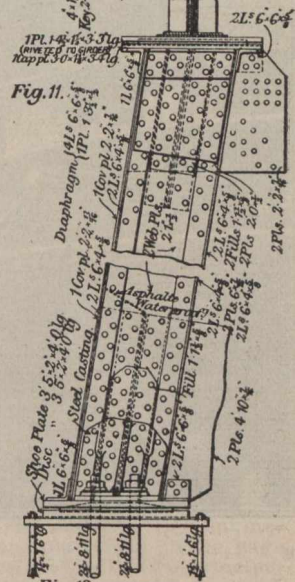
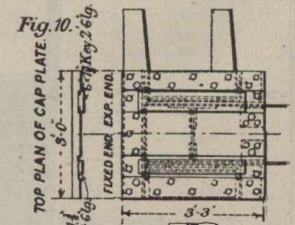
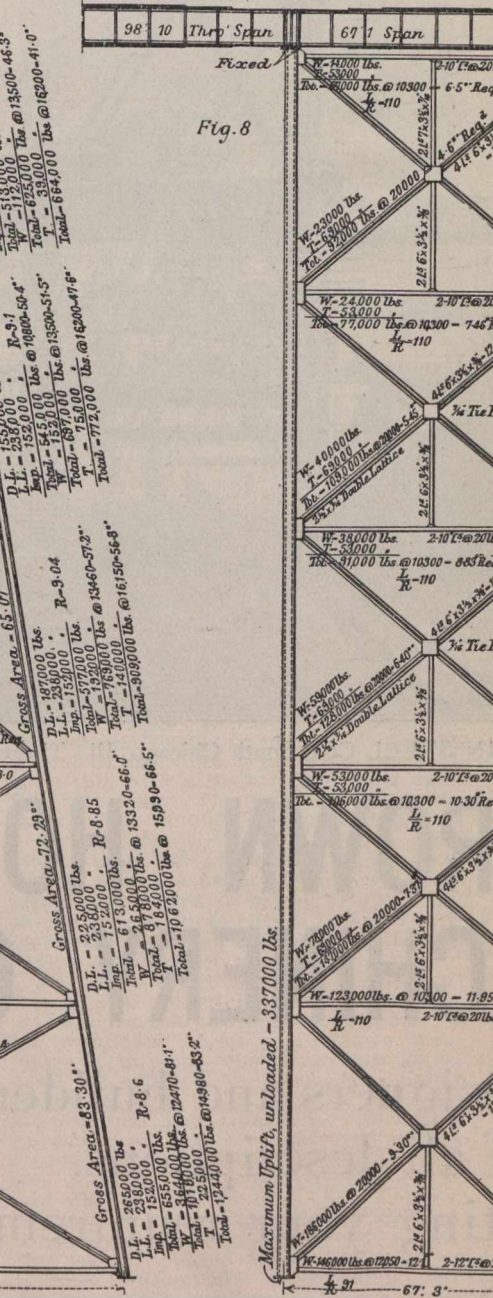
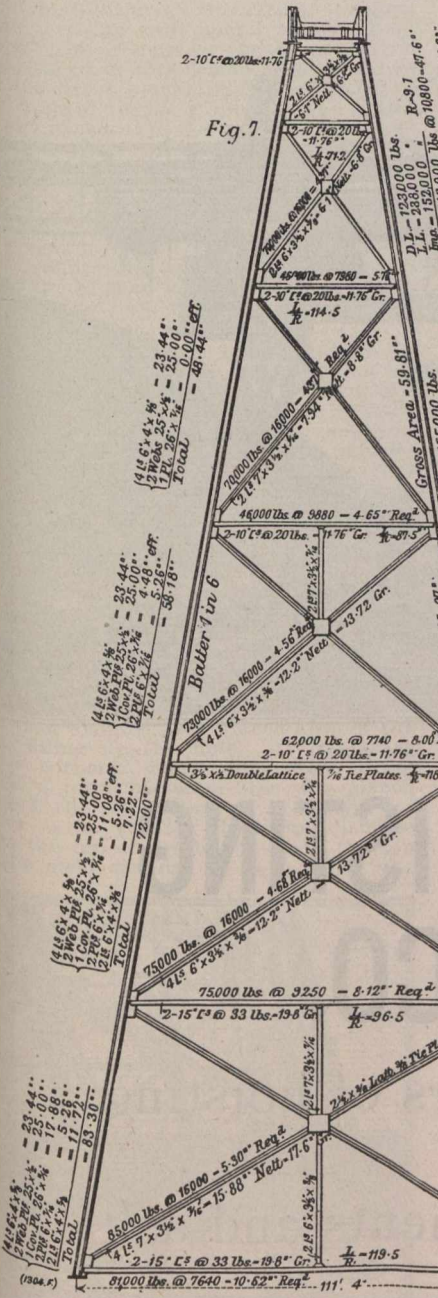
shovel, the material being raised by bucket and derrick. Three centrifugal pumps were required to keep the foundations dry, excavations were made to hard shale, and drillings made to a further depth of at least 20 ft. to make sure there was no change of formation. In three of the piers it was found that the pumps could not hold the water down long enough to erect the forms, and it was therefore necessary to have the bottoms carefully cleaned by divers before concrete was deposited; 4 ft. of concrete was placed in the bottom, the full size of the caisson, and allowed to set. The caisson was then pumped out and the balance

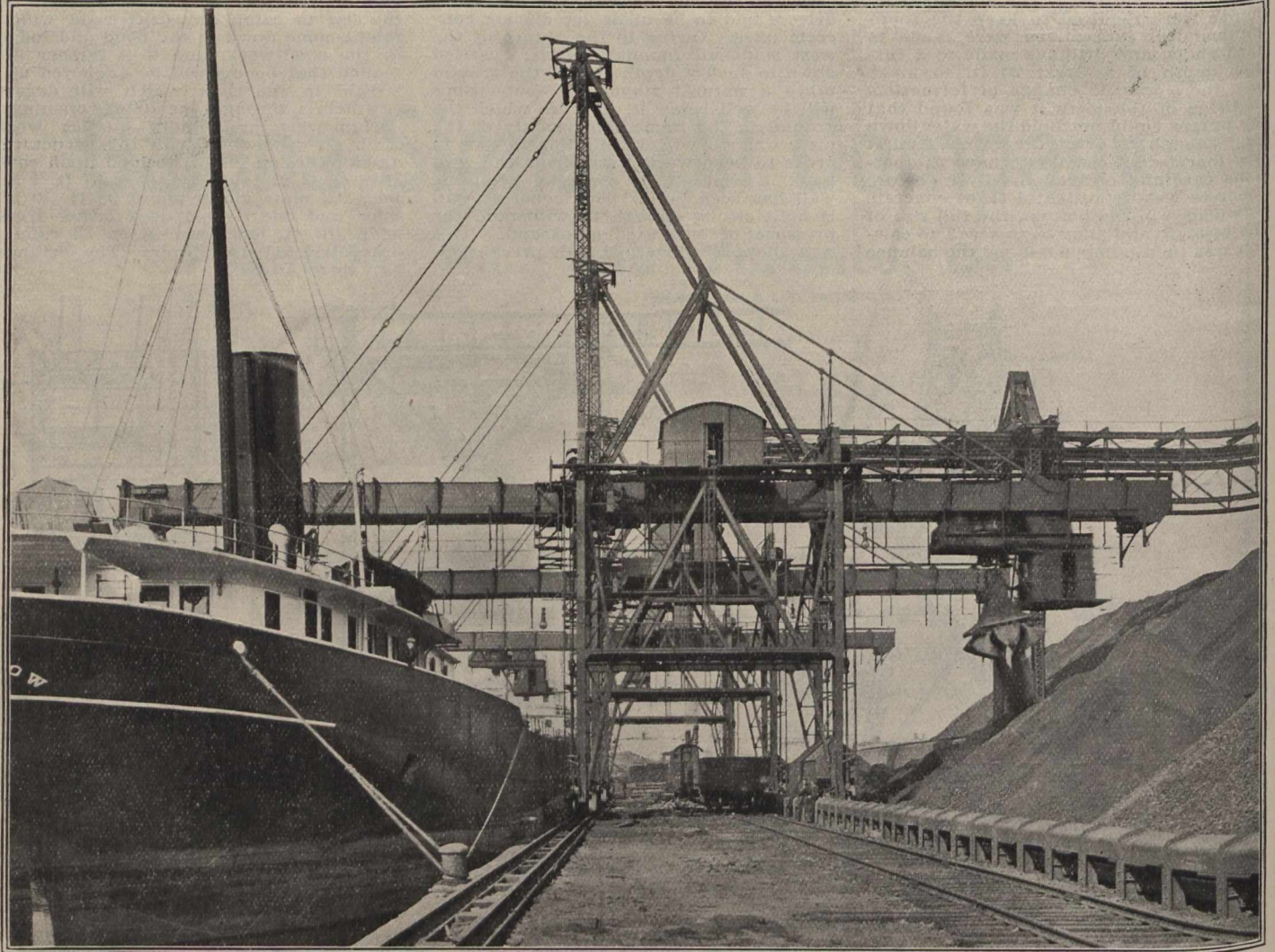
of the pier finished as usual. On account of the steep side hill special pile-drivers had to be made for driving concrete piles. Owing to the nature of the west slope all foundations were carried down to such a depth that if the ground takes a natural slope, the foundations will be well below it, besides which the ground in the immediate vicinity of the piers was sloped. In addition to this, in order to keep water away from the west bank a reinforced concrete retaining wall has been built. This concrete wall is built strong enough to withstand the pressure of saturated quicksand. This was adopted altogether as a precaution-

ary measure. In addition to this piles were driven up-stream from the piers on the flat to catch any drift-wood which might come down in the flood and lodge in the steel-work, and it is further intended that booms will be anchored up-stream in the river which will deflect any debris through the 100-ft. openings.

Numerous preliminary studies were made in connection with this structure, and the design finally decided upon consists of 44 plate girder spans 67 ft. 1 in. long, 22 plate girder spans 98 ft. 10 in. long, and one riveted deck lattice truss span 107 ft. long, carried on 33 rigidly braced riveted steel towers. The distance

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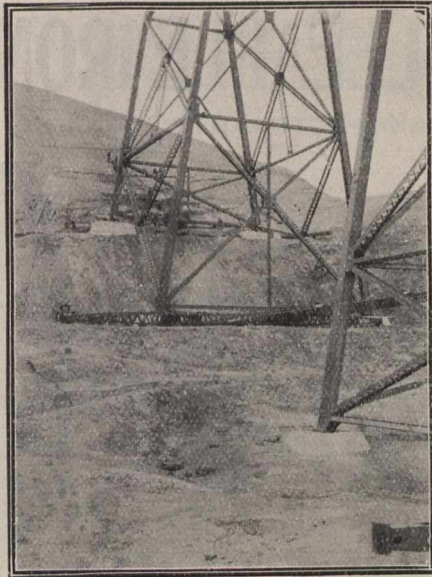
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centre to centre of towers in each column was made 67 ft. 3 in., and the distance centre to centre of columns in adjacent towers 100 ft. The tower spans were made 67 ft. long, in order to give longitudinal stiffness to the towers, and reduce stresses in the tower legs. A batter of 1 in 6 was given to the legs, which, with the spacing of the girders of the spans at 16-ft. centres, gives ample spread at the base of the towers to keep the uplift at the piers within a reasonable amount; 100-ft. intermediate spans between towers were decided on for that portion of the structure over 125 ft. high, these spans being the longest thought feasible to handle, from an erection standpoint, although theoretical economy would call for still longer intermediate spans. On account of the severe winds experienced in this region, and considering the great height of the structure, it was decided to use through plate girder spans instead of decks on this viaduct, so as to render it practically impossible for cars to leave the deck from derailment or wind, and give greater security to the viaduct, since a derailed car might fall, and knock out tower legs and bracing, on account of the great batter of the bents, and cause great delay to traffic. This type of span has since been adopted for a similar high viaduct in New Brunswick.

In order to take care of the uplift from wind the columns were securely anchored to piers by means of four 2½-in. diameter bolts built into the piers to such a depth as to engage a mass of masonry weighing 1½ times the uplift. Special steel castings were designed to secure the bases of these columns to the anchor-bolts, and between the shoe-plate and bed-plate the C.P.R. standard disc-bearing was used, so as to provide for proper bearing in the event of the masonry not being absolutely level. Contraction at the base of the towers was taken care of by fixing one corner and allowing the other three corners to slide on the bed-plates. This was arranged by making 5-in. holes in the steel casting, shoe and disc-plates. At the fixed corner a hollow cast-iron cylinder was placed around the bolt, filling up the hole. At the other three corners, where movement takes place, a piece of steam-pipe was placed around the bolts, having a length of about ½-in. greater than the distance from the top of the bed-plate to the top of the steel casting, so as to allow the



LETHBRIDGE VIADUCT, C.P.R.; SHOWING METHOD OF TRESTLES RISING WEST BANK.

washer of the anchor-bolt to bear tight on this filler, which in turn, bears on the bed-plate, and allows sufficient slack between the underside of the washer-plate and the steel casting for the latter to move. Dry graphite was placed in the recess of the bed-plates in which the disc-plates rested, to act as a lubricant. Tongues were made on the bed-plates at two corners of the towers, and the fourth bed-plate was made without any tongue, with the idea of its moving in a diagonal direction.

At the western end of the bridge a high cut bank of hard clay had to be crossed, and although this bank was cut down to a slope of 1½ to 1, it was considered inadvisable to place pedestals on it, and it therefore became necessary to span this with a deck lattice truss span 167 feet long. The top chords of this span had to be built of special design in order to carry the heavy erection traveller, which will be referred to later on, and to give the effect of through plate-girders as viewed from the bridge floor; the bottom of these chords being at rail-level, while the top is flush with the top flanges of adjacent plate-girder spans.

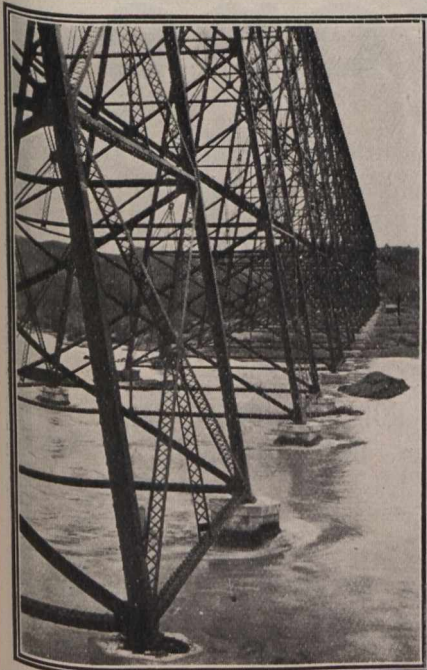
As will be seen from the sheet of typical details, the columns are of very liberal dimensions, the bottom sections being composed of six angles, two web-plates 25 in. wide, one cover-plate 26 in. wide, in addition to two 6-in. plates placed in the inside of the columns. Longitudinal and transverse bracing is composed of angles laced together, the diagonal bracing being figured for tension only, and struts composed of channels placed back to back and latticed, are used to take compression stresses. Long struts are supported in the centre. The use of double triangular type of bracing (without the horizontal struts) was considered, but was not used because of the great length of compression diagonals.

Details are also shown of the bearing of the spans on column caps, consisting of steel keys set in slots in the cap of the column and riveted to the girder shoe. In the fixed end the key is a neat fit in the groove of the column cap, but in the expansion end the key is made narrow so as to provide clearance on either side for movement of key in the slot. The underside of these keys are bevelled at the edges to provide against their binding in the cap-plates. Detail is also shown of the shore end of the

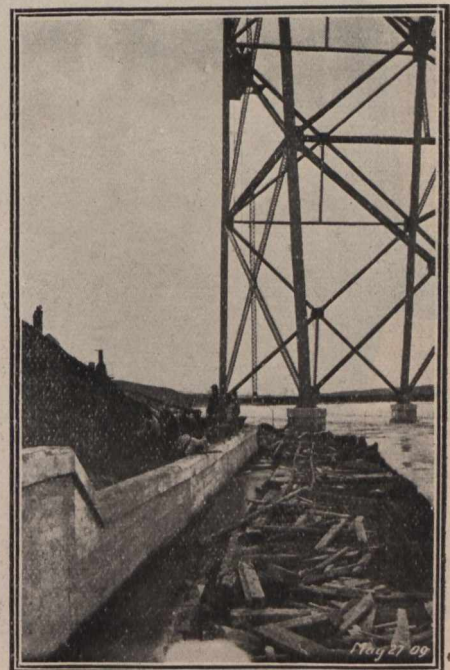
flanking spans which shows how the top flanges are curved.

A material yard was located a short distance east of the eastern end of the bridge, over which was erected a travelling crane, consisting of a standard 125-ft. highway span, provided with end wheels, two of which at each end are connected up by gearing and shafting to standard two-drum hoisting-engine, thus providing for its travelling along the runway. Each end of the crane is provided with a 5-ton 42-ft boom derrick commanding the additional storage area of 40 ft. wide by the length of the runway for the storage of lighter class of material, the main area between the crane and the runways being utilized for the storage of girders and heavy columns. The length of crane runway is 240 ft., and the height 37½ ft. For lifting 100-ft. girders, which weigh about 30 tons each, two sets of three-sheave steel blocks rigged with ⅝-in line were provided, with a capacity of 17 tons each, connected up to a standard double-drum hoisting-engine. Turning of the 100-ft. girders end for end is provided for by hooks and beams arranged to swivel on the centre floor beam of a 125-ft. crane, such arrangement being desirable in the event of girders reaching the work wrong end first. For the purpose of transporting material from the storage yard to the front the contractor is provided with constant use of locomotive and ten flat cars. To facilitate the work of erection a regular programme for the loading of material was arranged. A pair of 100-ft. girders, with their accompanying floor-beams and stringers were loaded on two 80,000-lb. capacity 40-ft. long flat cars, the girders being loaded at a height to suit convenient picking up by the erection traveller. The 67-ft 1-in. girders, weighing about 30,000 lbs. each, were loaded in a similar manner. The columns were loaded on flat cars with corbels of convenient height for lifting off by the erection traveller.

The main traveller for the erection of this viaduct is a very ponderous machine, built entirely of steel, except for some minor parts, such as the engine-house and various platforms. (See page 803.) It was designed with two principal trusses 207 ft. long, spaced 16 ft. apart centre to centre, to suit the spacing of the main girders of the viaduct spans. The cantilever portion of the trusses



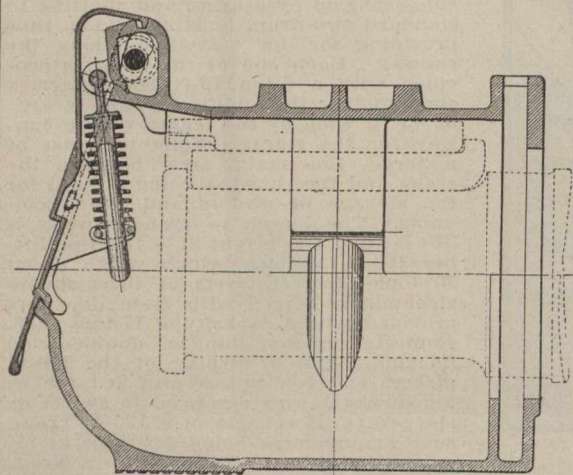
LETHBRIDGE VIADUCT, C.P.R.; RIVER BENTS.



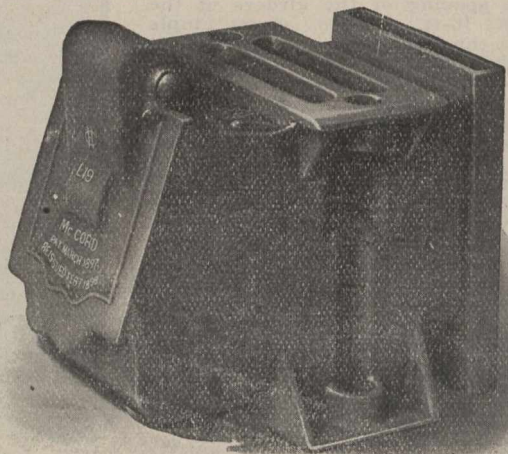
LETHBRIDGE VIADUCT, C.P.R.; RETAINING WALL ALONG WEST BANK OF RIVER.

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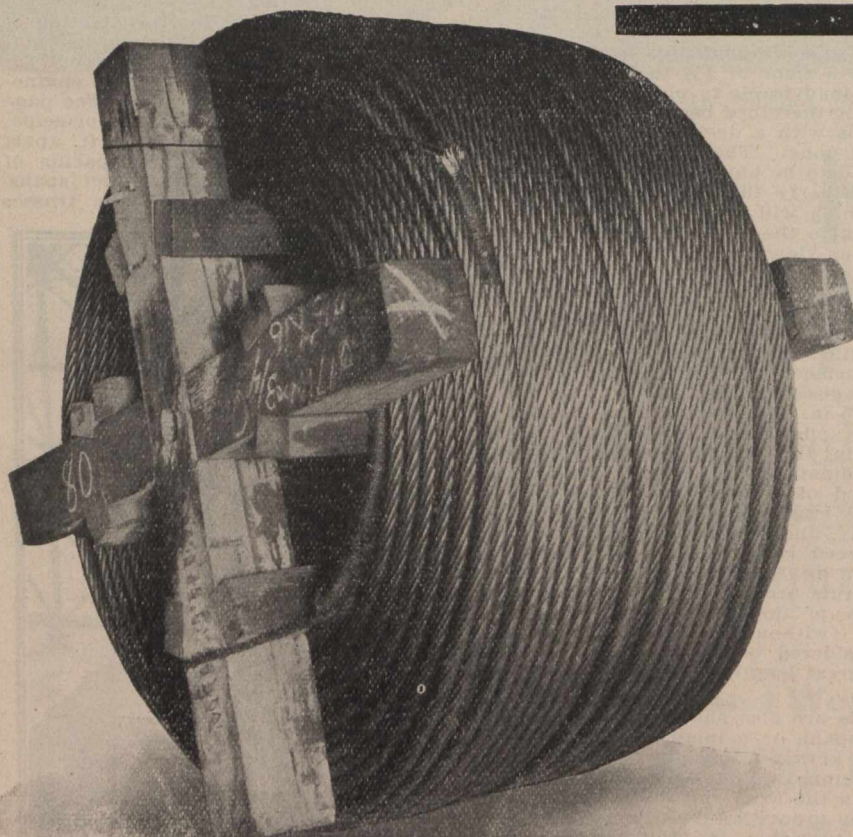


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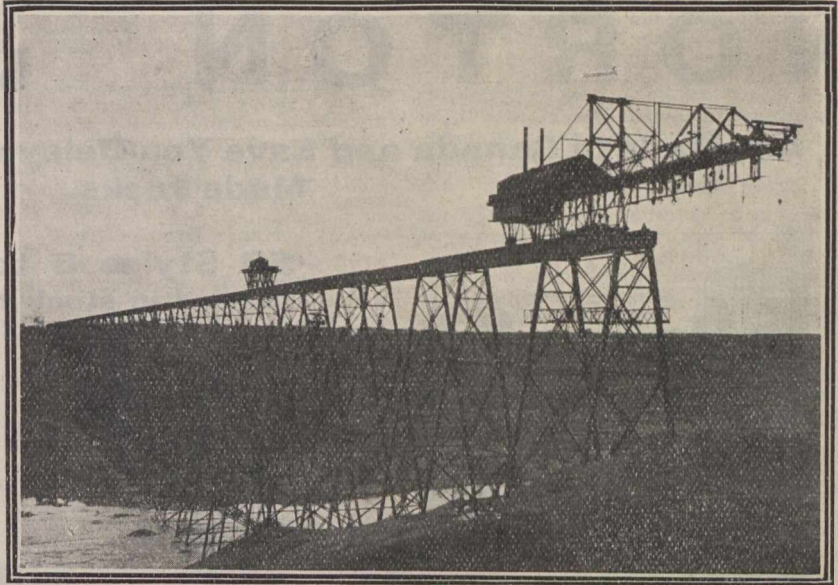
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have a reach of 116 ft., the balancing portion of the trusses being 91 ft. long. The rear end of each balancing truss is carried on a truck with two 24-in. cast-steel wheels, and the forward end is supported on four similar wheels. The rear end of the traveller is counterweighted with 46 tons of steel rails, in addition to the weight of the engine-house, platforms, and hoisting machinery contained thereon. The traveller runs on 80-lb. rails on oak planking along the top flange of the girders, the rails and oak planking being bolted together in sections, so as to facilitate its placing and removal with each movement of the traveller. The weight of the traveller in working condition is 712,000 lbs. The clearance under the deck of the traveller was made sufficient to permit the running of flat cars loaded with girders under it. The strains of the traveller were carefully calculated, special attention being paid to the matter of wind stresses on account of the very high winds certain to occur during the time of erection, which was estimated to be one year. A stress sheet was made up on the expectation that it might be necessary to carry the entire weight of the bottom storey of the bent suspended from the end of the traveller, which would make a total load of 90,000 lbs. at the end of the traveller. This estimation was due to the expectation of assembling such bottom storey flat on the ground and then lifting it vertically into position on the piers. This method was later abandoned in favor of placing each item in the bent directly in its final position. To carry out this latter plan it was found desirable to suspend an assembling cage from the end of the traveller.

The erection traveller is hung with four trolleys hung on two trucks 8 ft. apart centre to centre, which trucks extend the whole length of the traveller arm and about two-thirds of the balancing arm. All the material is taken directly from flat cars run under the rear end of the traveller and handled by these trolleys, each one of which is provided with a 40-ton hydraulic jack of 18-in. stroke, these jacks being used to lift the girders from the cars, as it was undesirable to set the traveller high enough to give head room for block and tackle for this purpose. Girders were run out on flat cars under the traveller, and when transferred to these trolleys they were



LETHBRIDGE VIADUCT, C.P.R.; VIEW FROM NORTHWEST, MAY 27, 1909.

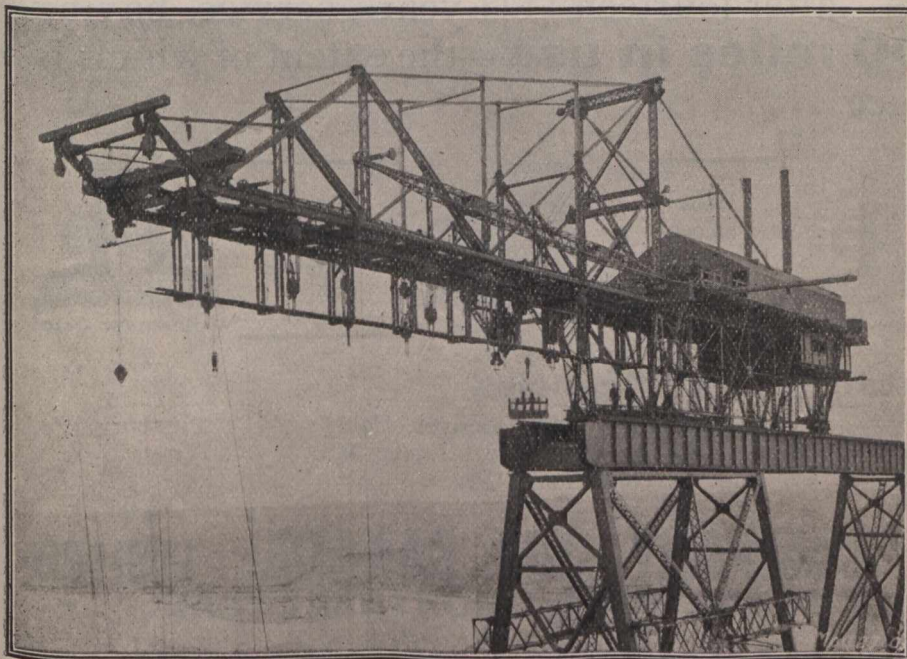
pulled forward on to the cantilever-arm of the traveller until in a proper position for lowering into place. Lighter material, such as longitudinal bracing, was lowered direct to the ground by wire-rope tackles, and raised to position in the structure by special 85-ft. swinging booms of 5 tons capacity each, attached to the traveller. In erecting the bents the traveller was moved to position to bring the hoisting tackle at the end of the traveller directly over the centre line of the bent to be erected, the overhang of the traveller being sufficient to span the maximum space of 100 ft. made by the length of the intermediate girder span.

On completion of the lower storey of a bent supporting 100-ft. spans its top was braced back to previously-completed work by an erection strut, and similar struts were placed at each storey of the bent as it was erected, and when the bent was completed the 100-ft span was put in place, the traveller moved forward, and the remainder of the tower completed, and the tower-span put in place. All of

the transverse connections and splices requiring to be field-bolted were rendered readily accessible to the workmen by means of a cage suspended from the end of the traveller. On this erection traveller were placed six hoisting-engines, and a system of telephones was installed to establish communication between the men engaged in erecting material and those in charge of the hoisting-engines. The riveting of this bridge was carried on as quickly as possible after the material was put in place, and a separate traveller was used for this purpose, moving along the same track as the erection traveller. The riveting traveller was built of timber, and high enough to permit of the passage of loaded flat cars beneath it. Riveting platforms were suspended on the sides from this traveller. All the riveting was done by pneumatic hammers. Compressed air of 100-lb. pressure was piped out on the bridge from an air-compressor plant placed on the ground near the Lethbridge abutment.

The raising of steel began about Aug. 15, 1908, and a good deal of time was lost during the winter months on account of extremely cold weather, and two weeks in Feb. on account of a strike of workmen. During March, 1909, bents 37-46 inclusive were completely erected, comprising a tonnage handled during that month of 2,300 tons and about 735 lineal feet of structure. A serious accident was averted because of the through-girder construction: a heavy derrick-car handling some heavy material was accidentally tipped over, but was restrained from falling by the through girders. The 167-ft. span over the west bank was erected in the usual manner by false-work. The last girder was placed June 22, 1909, the riveting being completed Aug. 9, 1909.

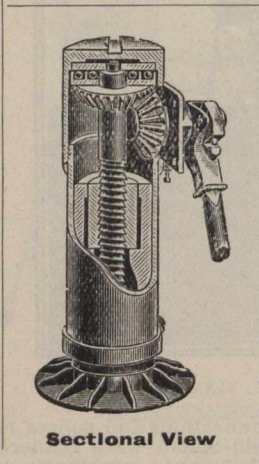
The quantities in the structure are approximately as follows:—dry excavation, 18,110 cubic yards; wet excavation, 4,870 cubic yards; concrete, 17,080 cubic yards; concrete piling, 1,676 piles; riprap, 339 cubic yards; steel, 12,200 tons. It required 645 cars to transport the steel actually used in the erection of the bridge to the bridge site. Contractor's plant amounted about 40 cars, tie and guard rail 53 cars, besides which there would be an additional number of cars for coal used on the work, which would make the total about 900 cars. It is estimated that in order to give the bridge two coats of paint about 7,600 gallons will be required.



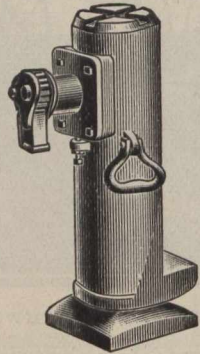
LETHBRIDGE VIADUCT, C.P.R.; NEAR VIEW OF ERECTING TRESTLE.

NORTON JACKS

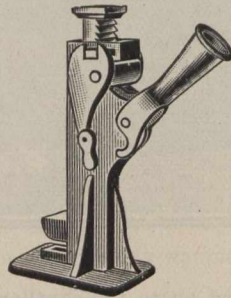
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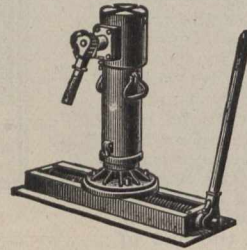
Sectional View



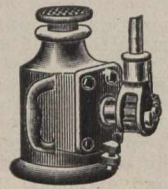
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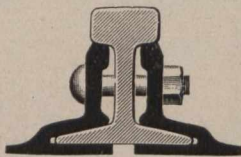
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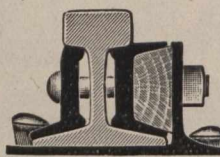
HIGHEST AWARDS

Paris, 1900;
Buffalo, 1901; St. Louis, 1904



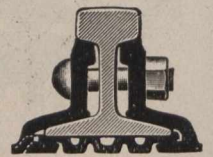
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Throughout the work careful records were kept of all measurements, triangulations, and all other work, the notebooks being carefully indexed. In addition to this, weather records were kept, together with notes as to the wind, as on many occasions the wind was so strong that the men could not work on the erection of the bridge. In addition to this, records were kept showing progress of work. These were sent into the head office twice a month in order that a check might be kept.

During high water a new channel was formed about 300 ft. east of the old one, and considerable gravel was carried down and deposited in the vicinity of the bridge.

The bridge was designed by the C.P.R. bridge department at Montreal, while the field work was carried out under the direction of the Assistant Chief Engineer, Western Lines, Winnipeg.

The manufacture, designing of erection equipment, and erection of the steelwork were carried out in a most efficient manner by the Canadian Bridge Co. of Walkerville, Ont., contractors for superstructure. C. F. Prettie had direct charge for the bridge company in the field, and had a gang of about 100 men.

Locomotive Counterbalancing.

By H. H. Vaughan, Assistant to Vice President C.P.R.

The counterbalancing of locomotive engines is one of the few problems in connection with that apparently simple yet exceedingly complex machine which is capable of an exact theoretical determination. When the weights, locations, and movements of the various parts of an engine are known, it is possible to calculate accurately the forces which they cause at any speed of rotation, and apart from some practical considerations, such as the engine being constricted in its lateral movements by the wheels which support and guide it on the rails, and the fact that it is connected in a more or less imperfect way with a tender the movements which result from the action of these forces can also be exactly ascertained; this subject has consequently been very thoroughly treated by a number of writers, and I shall therefore endeavor to discuss, as shortly as possible, the theoretical principles which underlie it.

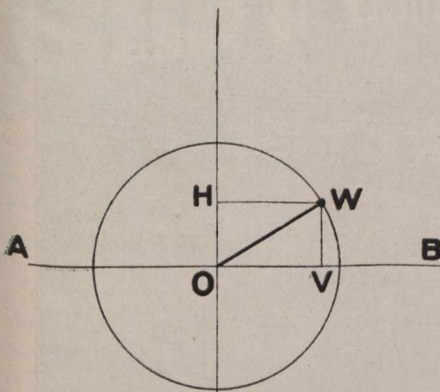


FIG. 1

The disturbing forces which necessitate the counterbalancing of any reciprocating engine are those required to start and stop the mass of the reciprocating parts at each end of the stroke; neglecting the disturbance caused by the obliquity of the connecting rod, which is unnecessary to consider in any existing type of locomotive, these forces are

identical with that caused by a corresponding mass at the crank pin, with the exception that they have no vertical effect.

In fig. 1 let the weight W be rotating round the centre O, at a velocity of V feet per second; then what is known as the centrifugal force, which is really the force that is required to make W move in a curved line instead of in a straight line, as it would do if left to itself, acts along the line W O and equals

$$\frac{W V^2}{32.2r}$$

when r is the radius in feet. This force W O can be resolved into two components W H and W V, the first acting entirely in a horizontal, and the other in a vertical direction; it will be seen that when W is on the vertical diameter W H is nothing, while W V equals W O, and when it is on the horizontal diameter W H equals W O while W V is nothing. Now, if the weight W moved backwards and forwards along the horizontal line A B in such a way that its position on that line was always vertically under or over the position of W when rotating uniformly around the centre O, the force necessary to accelerate or retard it is always W H, or, in other words, equals the horizontal component of the centrifugal force due to an equal weight rotating in a circle. This is what happens in the case of a weight such as a piston and crosshead actuated in a horizontal line by a connecting rod, as in fig. 2; here the distance of the weight P from the centre of the stroke corresponds with the horizontal distance of the crank pin C from the centre O and the force accelerating or retarding it is equal to C H when C O equals the centrifugal force which P would exert if moving on the path of C.

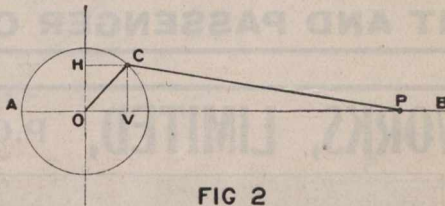


FIG 2

Since P in this case is moving entirely in a horizontal plane, it gives rise to no vertical forces whatever, and it is this fact that introduces all the difficulties in connection with balancing an engine; before, however, discussing that question, the connecting rod must be referred to. It is evident that this has at one end a circular, and at the other a reciprocating movement, while between the ends, the motion of any part is of intermediate nature; the result is the same as though part of its weight were concentrated at the crank pins and had a circular motion, while the remainder was concentrated at the crosshead and had a reciprocating motion.

In a paper read before the Northwest Railway Club, in 1893, I suggested that four-fifths of the weight of the back end should be taken at the crank pin, and the weight of the front end and one-fifth of the back end at the crosshead, figures that were obtained by calculations from two or three types of rod; this question was, however, treated in an exceedingly ingenious and scientific way in a paper read before the New York Railway Club, by R. A. Parke. He developed an accurate method for obtaining the exact division of weights for any rod, and his results showed for modern types of rod that five-sixths of the weight of the back end of the rod should be considered as concentrated at the crank pin with reasonable accuracy. I would refer anyone interested in this subject to his paper, as it is a most interesting example of the application of a really difficult mathematical analysis, by which an absolutely simple method is deduced for obtaining

correct results. I consider however, for practical purposes, that five-sixths of the weight of the back end is sufficiently accurate, and that figure is used on the C.P.R. There is one more elementary statement to make, namely, that a weight of W pounds at a radius 2r has the same effect as a weight of 2W pounds at a radius r; this follows immediately from the value of the centrifugal force

$$\frac{M V^2}{32.2r}$$

for with the same number of revolutions V is proportional to r, so that for equal forces Mr must be a constant. For simplicity, therefore, all balance weights will be assumed to be placed at the same distance from the centre as the crank pin.

With these facts in mind, let fig. 3 represent an ordinary engine, and let all the rotating weights be concentrated at the crank pin W, say 1000 lbs.; let the reciprocating weights be concentrated at the crosshead at P, say 1500 lbs. The rotating weight can be balanced by a weight of 1000 lbs. placed at C, diametrically opposite W on the other side of the centre; evidently, whatever be the position of the crank, the forces caused by the two weights are equal and opposite, and there is no resulting force to disturb the axle at O. When, however, attempting to balance the 1500 lbs. at P, by placing 1500 lbs. at C, the condition is entirely different; the horizontal forces caused by the movement of P are exactly equal and opposite to those caused by the 1500 lbs. at C, but as no vertical forces are caused by P's movement, the vertical forces caused by the movement of the 1500 lbs. at C are left entirely unbalanced, and the effect is the same as though a weight of 1500 lbs. at C were entirely unbalanced vertically. Whatever weight then is introduced at C to balance the horizontal forces caused by P, causes vertical forces equal in amount to the extent by which those due to P are reduced; there is no possible combination by which this can be avoided, except by using crank pins that are not at right angles to each other.

For instance, if there were a crank pin at C and a connecting rod as shown by the dotted line C L, then if the weights at L and P were in substantially the same plane and equal, they would practically balance each other, as is the case with four-cylinder engines, which can be almost perfectly balanced without introducing any vertical forces, while three-cylinder engines can be balanced longitudinally but are, with respect to nosing, almost in the same class as two-cylinder engines. The latter are the engines now under consideration, and in their case the question of counterbalancing is a compromise. If P is left unbalanced the engine is said to be badly balanced, if P is completely balanced

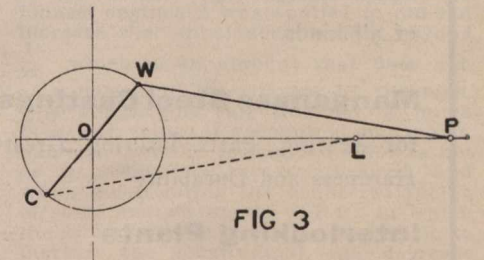


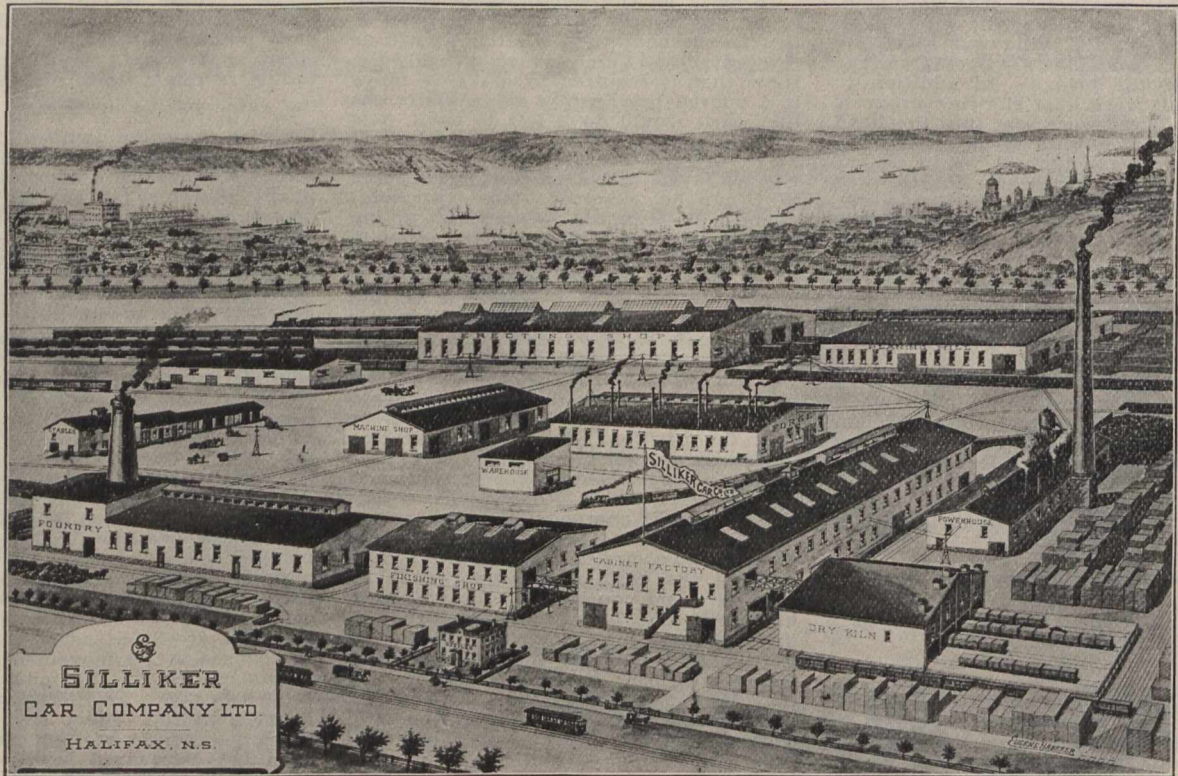
FIG 3

the engine is said to be well balanced, but vertical forces are introduced which certainly may be injurious to track or bridges.

The extent of the force due to any unbalanced weight may be calculated at any speed, but is usually taken at 40 times the weight when the speed in miles per hour is equal to the diameter of drivers in inches; it really varies with the stroke, and the exact figures are 38.5 for a 24" stroke, 41.7 for a 26", and 44.9 for a 28"; taking 40 for an approxi-

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mate figure, 500 lbs. at C above that required to balance the rotating weights, or as it is termed, "as overbalance," means a force of 20,000 lbs. acting upwards and downwards at each revolution, and while this seems a high figure, it is occasionally found. The speed of 69 miles per hour is high for a 69" wheel, but it represents a possible condition, and it must be remembered that while the factor of 40 is not reached until that speed for that size of wheel, that it increases with the square of the speed, so that it is not advisable to consider a lower speed. Evidently, then, it is desirable to keep the overbalance as small as possible, and yet on the other hand the reciprocating parts must be partially balanced for the comfort of the men and the various rules of the counterbalancing have really indicated the nature of the compromise.

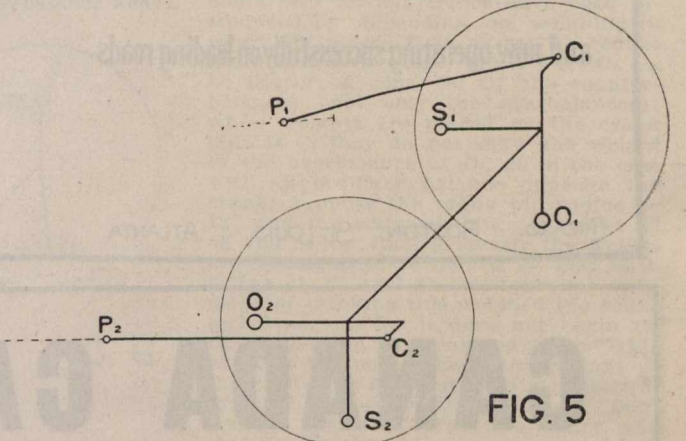
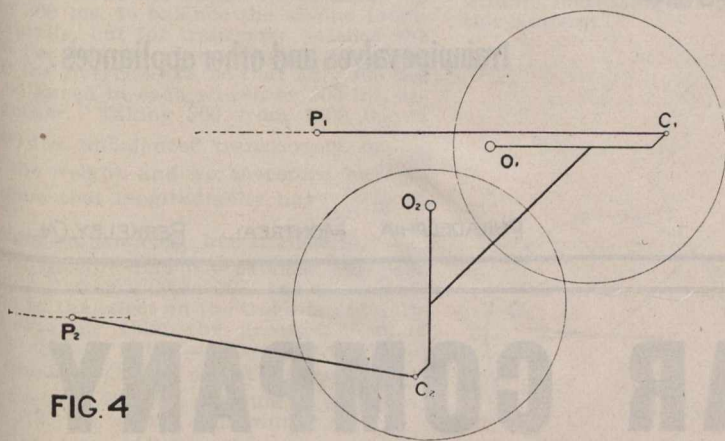
The rule most commonly used in America has been that recommended by the committee on the subject at the M.M. convention in 1882, in which two-thirds of the reciprocating parts are balanced; this compromise has, on the whole, given very satisfactory results, and constituted a great advance on one of the methods given as an answer to the inquiry made by the committee, which was "to figure a little and then guess at it." The two-thirds rule, however, is not necessarily satisfactory; it proves so in the majority of cases, be-

the same weight to remain unbalanced; in other words, both engines would ride equally well, whereas with the old two-thirds rule one engine would have twice as much unbalanced weight as the other.

So far as the action of the engine is concerned, there is, I consider, no criticism possible that can be made of this rule; in other words, an engine balanced by it is certain to ride satisfactorily, but in balancing an engine there is another and very important aspect of the matter which it ignores, namely, the effect of the overbalance on the track. This side of the question has often been referred to, and its effect discussed in a general way, but so far as I am aware, locomotive builders have never really established any rule limiting its amount, although they have recommended balanced compound engines for the utilization of the weight of the tender, which I shall refer to later. On the other hand, no maintenance of way engineer has, I believe, defined the limit of overbalance which he considers permissible although he will cheerfully advocate none being used; neither is he able, except in extreme cases, to show any definite evidence of damage from this cause. Taking, however, the maximum speed before referred to, an overbalance of 500 lbs. in a wheel carrying 20,000 lbs. causes the pressure between that wheel and the rail to vary from 40,000 lbs. when the overbalance is down to nothing when it is

as C_2 and O_2 are in the middle of the stroke they have no horizontal effect, and there is a longitudinal force equal to $P_1 - O_1$ tending to drive the right side of the engine backward; as P_2 comes to the end of its backward stroke there is a similar force tending to draw the left side of the engine backward, and at that time the effect of P_1 and O_1 is nothing. This action is repeated at the other end of the stroke, so that the action of the unbalanced weight is to drive the engine backwards and forwards as a whole, and also to cause the ends of it to vibrate transversely; or, as it is usually called, "make it nose."

There are then two distinct actions of the unbalanced weight in an engine, which I will call the longitudinal and transverse movements; the latter you will agree, I believe, is not generally very noticeable, but on small 8-wheel engines it is objectionable when running at a high rate of speed. Some years ago, when working on this subject, I noticed, as I dare say you have, that on the longer heavier engines, the nosing from unbalanced weights was not noticeable, in a paper before the Northwest Railway Club, in 1896, I advocated a rule in which the unbalanced weight was increased in proportion to the length of the engine as well as to its weight. This rule was defective, as it increased the longitudinal vibrations on a long engine as compared to a shorter one of equal weight, and as



cause the relations between the weight on drivers, weight of engine, and reciprocating parts do not vary greatly in engines of ordinary types but the first great advance was made when G. R. Henderson, in a report made to the Norfolk and Western Ry., in 1895, pointed out that the allowable weight of unbalanced reciprocating parts was a factor of the weight of the engine. Assuming, that the maximum speed is proportional to the diameter of the drivers, and that it is desired to construct engines that will be reasonably comfortable for the men at that speed; in other words, that will vibrate to the same amount, then evidently the disturbing forces, or the weights of the unbalanced parts, may vary in direct proportion to the weight of the engine. Mr. Henderson showed that engines in which $\frac{1}{400}$ of the weight of the engine was unbalanced rode satisfactorily, and that $\frac{1}{360}$ can be left unbalanced without objectionable vibration; we have then in this rule a scientific method of determining the weight of reciprocating parts that may be left unbalanced and yet allow the engine to ride reasonably well, which is applicable to engines of widely varying types; for instance, if two engines were of the same weight, but one had reciprocating parts weighing twice as much as those on the other, this rule would allow

up, and any greater overbalance would tend to lift the wheel from the rail.

Testing plant experiments show that when the calculated effect of the overbalance exceeds the weight on the wheel that it does actually leave the rail, and that there is a definite blow when it strikes again. I have analyzed this action, and have shown that this blow may, in extreme cases, be severe and sufficient to account for the damage that is occasionally met with; on the other hand, I do not believe that any case of repeated bending of rails has occurred in which the vertical effect of the overbalance did not considerably exceed the weight on the wheel. It is, however, only reasonable to acknowledge that a wheel that presses alternately nothing, and 40,000 lbs. on the rail, is going to affect the track more than one which presses down continuously with 20,000 lbs. It will damage more defective rails, cause more injury to tracks, and may, in weather when the rail is unevenly supported, be the cause of rail breakages. From the track point of view, therefore, the less the overbalance the better, and the problem of the locomotive engineer is to determine to what extent it can possibly be reduced. To discuss this I must refer more in detail to the action of the unbalanced weights on the engine.

In fig. 4 let P_1 , P_2 , be the right and left cross heads respectively, C_1 , C_2 , the crank pins, and O_1 , O_2 , the overbalances;

the longitudinal vibrations are those which render an engine rough riding, it could not, and no rule could increase the unbalanced weight beyond a certain amount without being objectionable. It is true that engines balanced by it rode satisfactorily, but that was because it started with a short engine with $\frac{1}{400}$ of the weight unbalanced, and on the longest engines it was applied to did not increase the unbalanced weight beyond $\frac{1}{360}$ which is an amount that does not, as a rule, lead to criticism by the men.

Although this rule was not of much practical value, it recognized one point, namely, that the nosing motion was not as important as the longitudinal, and when investigating the counterbalancing of some engines on the C.P.R., in which the counterbalances were offset so as to increase the longitudinal, and decrease the nosing movement it occurred to me that by allowing an increase in the nosing movement, a decrease in the amount of overbalance could be obtained without increasing the longitudinal movements. This can be done by means of off-set counterbalance weights, but as they have a serious objection, the same result can be obtained by means of supplementary counterbalance weights placed at right angles to the cranks. This arrangement is shown on fig. 5, S_1 , S_2 , indicating the supplementary counterbalances and the

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arrows the direction of the forces. Neglecting the difference in the distances, centre to centre of the balance weights and the pistons, which it is not necessary to consider here, it will be seen that the forces at O_2 and S_1 both tend to drive the engine forwards as against that of P_2 driving it backwards; in place of a force P_2-O_2 driving it backward as in fig. 4, the force is, therefore, reduced to $P_2-(O_2+S_1)$ on the other hand, the force P_2-O_2 still tends to throw the front of the engine to the right, and it is assisted by S_1 . The net result therefore is, an engine that is balanced longitudinally as an engine would be with an overbalance O_2+S_1 and balanced transversely as though its overbalance were O_2-S_1 . To put this into figures, suppose the engine weighs 160,000 lbs., and the reciprocating parts weigh 1300 lbs. a side; the permissible unbalanced weight at $\frac{1}{400}$ of the weight is 400 lbs., leaving 900 lbs. to be balanced, or 300 lbs. per wheel, if the engine has six drivers; if the weight per wheel is 20,000 lbs., this overbalance is 1.5% of the weight on the wheel, and the variation in pressure at the maximum speed is 12,000 lbs. or 60%.

This would not be an unusual case in fact it would be an ordinarily well-balanced engine. Now, if we place a supplementary balance weight of 100 lbs. on the opposite wheel, and reduce the overbalance to 200 lbs., this 200 lbs., and the 100 lbs. from the other wheel, make up the 300 lbs. to balance the engine longitudinally, but for transverse balance the 100 lbs. has to be deducted from the 200 lbs. overbalance, so that only 100 lbs. is balanced in each wheel, or 300 lbs. altogether. Taking 300 from 1300 leaves 1000 lbs. unbalanced transversely, or $\frac{1}{160}$ of the weight, and we, therefore, have an engine that longitudinally has $\frac{1}{400}$ of its weight unbalanced, but transversely $\frac{1}{160}$ unbalanced. The overbalance has been reduced from 300 to 200, but the reduction in the effect on the track is not quite as great as this; the greatest effect of S_1 and O_2 is not when O_2 is vertical, but it equals $\sqrt{(O_2^2+S_2^2)}$ or, for the two weights in question 222 lbs., a reduction of 78 lbs., or 3120 lbs. at the maximum speed.

I am not entirely prepared to say how far this system can be carried, but from the experiments so far, it would appear that an engine having $\frac{1}{400}$ of its weight unbalanced longitudinally, and entirely unbalanced transversely, is entirely satisfactory as far as its riding qualities are concerned. This would mean that the supplementary balance was equal to the overbalance, and in that case the effect on the track would be 71% of that of an ordinary overbalance giving the same longitudinal effect, and this reduction can be accomplished without detriment to the ordinary qualities of the engine, or without introducing any objectionable troubles. It is true that the nosing must be prevented by the pressure on the hubs of the wheels but against this, it must be remembered, that when balance weights are distributed amongst three or four wheels that the effect of the overbalance on the boxes of all except the main wheels is just the same as it is on the track, and that the steadying effect on the engine is obtained at the expense of wear in the boxes. The wheel base on an engine is so long, compared to the distance from the centre of the engine to the centre of the cylinder, that a very small pressure on the hub is able to overcome a nosing motion much better than a balance weight, and probably with less wear.

We are not, however, leaving engines entirely unbalanced transversely except

as an experiment, but are leaving from $\frac{1}{100}$ to $\frac{1}{150}$ of the weight unbalanced transversely, and $\frac{1}{400}$ unbalanced longitudinally with extremely satisfactory results; one passenger engine has been entirely balanced longitudinally and entirely unbalanced transversely. It is reported to be a perfect riding engine, and its balance is exactly the same as a 3-cylinder engine having two outside cranks each at right angles to the inside crank, and otherwise unbalanced, so that it has been shown that an engine of this kind would be entirely satisfactory as far as the balancing is concerned. We are, however, using the system of balancing to reduce the action of the overbalance on the rail, and have adopted a rule to balance the engine so that the overbalance in any one wheel shall not, if possible, exceed 1% of the weight on that wheel and is limited to 1¼%. The latter figure causes a variation of 50% of the weight on the wheel at the maximum speed, and while I have, of course, no accurate information to show that this is the proper limit, it is so much better than on many existing engines, that I feel that it is a sound limit to work to, and we are certain that under no conditions can any hammer blow occur from wheels balanced in this way. So far, no engine has been met with in which it is not possible, by using supplementary balances, to obtain satisfactory results without increasing the overbalance above this amount.

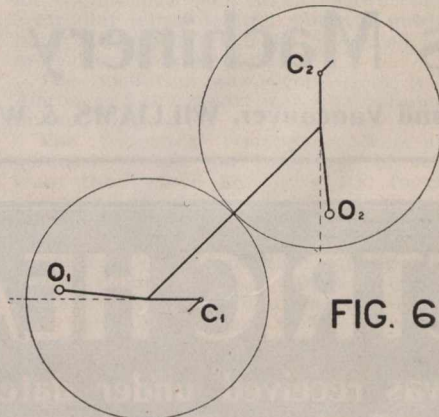


FIG. 6

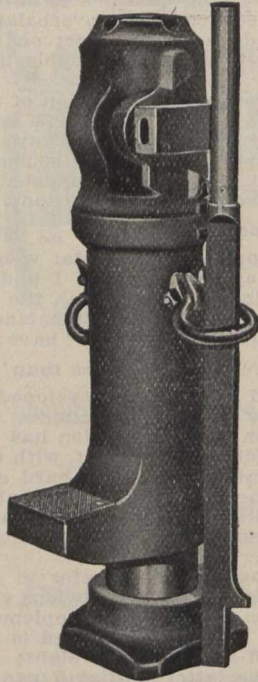
There are also one or two practical advantages in the system of allowing a greater unbalanced weight transversely. It is possible to properly counterbalance consolidations as the supplementary weights can be placed in the wheels at right angles to the crank, thus overcoming the difficulty experienced of not being able to get sufficient balance opposite the crank without an excessive overbalance in the leaders and trailers. It makes the adjustment of the balance very easy. It is only necessary to cast the main balances 75 or 100 lbs. light, and then place 75, 100, or 125 lbs. in the supplementary balance, as is necessary to keep the longitudinal unbalanced weight down to $\frac{1}{400}$ of the weight of the engine. Extreme accuracy is entirely unnecessary, any engine that has less than $\frac{1}{400}$ unbalanced longitudinally will ride well, and apparently, the transverse balancing is very unimportant. The weights should be checked up to see that the effect of the overbalance and supplementary balance is less than 1¼% of the weight on the wheel, but this is fairly well known from corresponding engines and in the types so far gone into, there has been no case where this figure had to be exceeded. These advantages are, of course, incidental, the chief interest is, I consider, the fact that an engine may be unbalanced transversely to a far

greater extent than longitudinally without causing its riding qualities to be objectionable, consequently, the overbalance can be reduced, and its effect on the track maintained within reasonable limits.

I have referred to the utilization of the weight of the tender. This has been done on the Prussian State Railways by coupling the engine with tender so firmly that the weight of the tender assisted in absorbing the longitudinal vibrations. If this could be done the factor of $\frac{1}{400}$ could of course be applied to the total weight of the engine and tender, and I understand that engines have run with the reciprocating parts entirely unbalanced with satisfactory results. We have always found here that when less than $\frac{1}{360}$ was unbalanced, trouble has developed in keeping up the connection between engine and tender, and lost motion has occurred very quickly. I feel that, with our heavy reciprocating parts and hard service, this method is hardly practicable, and it does not afford any hope of being able to avoid some system of balancing for two-cylinder engines.

Before closing, I wish to refer to off-set counterbalances, as it is obvious that the combination of main and supplementary balances I have described is the same as an off-set balance weight; the trouble with the latter is that it cannot be weighed, and must be calculated. Some very serious errors have been introduced by depending on weighing it, especially where it is off-set, to reduce the nosing movement; in fig. 6 let C_1 , C_2 , be the crank pins, O_1 , O_2 , the counterbalances (not only the overbalances); when weights are placed on the crank pins at C_1 they do not show the weight of the overbalance at O_1 , as in the case with an ordinary balance opposite the crank; suppose the crank pin radius be 12" and the counterbalance O_2 is set 4" off the centre line; evidently the weight at C_1 acting at 12" is helped by that at O_2 acting at 4", and the mistake has been made of thinking this weighed the counterbalance at O_1 ; it does not begin to. O_1 in addition to balancing the weights at C_1 is balancing the entire weight of the crank pin and hub, and a numerical example will show what happens. Suppose O_1 is also 12" from the centre, and that the weight of the crank pin and hub at C_1 is 500 lbs., and that the counterbalance desired is 400 lbs. Neglecting the fact that O_1 is not quite 12" from the vertical line, it would require 900 lbs. at O_1 to give a counterbalance of 400 lbs. in addition to balancing the weight of the hub; this 900 lbs. would also act at O_2 at a distance of 4" from the centre line, and consequently the weight required at C_1 to balance would be $\frac{900 \times 12 - 900 \times 4}{12}$ or 600 lbs., of which 500 lbs. is supplied by the crank pins and hub, leaving only 100 lbs. actually necessary to balance an overbalance of 400 lbs. Evidently this might easily be very misleading, and the difficulty is that, from the weight on the crank pin the actual overbalance cannot be calculated except by estimating the weight of the crank pin and hub, and knowing the exact off-set of the centre of gravity of the counterbalance. For this reason the arrangement of counterbalance weights directly opposite the pin is far better as they can accurately be weighed and the supplementary balances of known weight afterwards added.

The case of Dunsmuir v. Dunsmuir was recently brought before a judge in chambers at Victoria, when an order was made nominating Mrs. Henry Croft as plaintiff in place of the late Mrs. Dunsmuir. The action is concerned with the Dunsmuir estate, of which the Esquimalt and Nanaimo Ry., and the Wellington collieries formed a part.

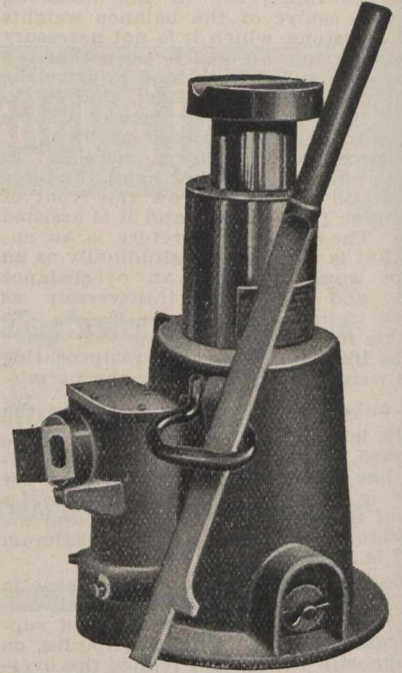


In side Pump Type

Quick Action Hydraulic Jacks

Joyce-Cridland Hydraulic Jacks have a speeding device whereby they can be run quickly up to load, where the speeding device automatically cuts out, leaving only the power pump in action. This device adds no extra pump or complicated parts to the jack. These jacks are so built that they may be used in any position and the filling liquid will not escape. The outside pump type has a short barrel, adapting it for use in cramped quarters.

Full description and explanation of the working parts of the Joyce-Cridland Hydraulic Jacks are given in Bulletin 33.



Outside Pump Type

A. R. Williams Machinery Co., Limited

Toronto, Winnipeg and Vancouver. WILLIAMS & WILSON, Montreal

THE ELECTRIC HEADLIGHT

The following letter was received under date of May 8, 1908, from Mr. J. W. Cleary, Travelling Engineer Pyle-National Electric Headlight Co.:

"I learn from _____ the Master Mechanic here, that an engineer running between _____ and _____ discovered a broken rail with the Pyle-National Electric Headlight and made the stop without ditching his train. One or two pairs of wheels got off, but that was a small affair to what it would have been where a foot of the rail was broken off. Also an engineer running east of here found some cars shoved out on the main line. He saw them with the 'Electric' and made the stop without hitting them."

PYLE-NATIONAL ELECTRIC HEADLIGHT CO.
MONADNOCK, CHICAGO

C.P.R. Annual Meeting.

The 28th annual meeting of shareholders was held in Montreal, Oct. 6, Sir Wm. C. Van Horne, Chairman of the Board, presiding. The President, Sir Thos. G. Shaughnessy, in moving the adoption of the report for the year ended June 30, which was published in our Oct. issue, said:

The gross receipts for the year were quite as large as we had reason to expect, but the working expenses were abnormally heavy, due in part, as explained in the annual report, to the additional mileage included in the traffic returns, and in a greater measure to other conditions that could not well be controlled. However, with the abundant crops harvested in almost every section of the territory served by your lines, and the certainty of a very large westbound merchandise traffic, there is reason to anticipate a substantial increase in the total earnings for the current year as well as an improvement in the ratio of working expenses.

In the Annual Report reference is made to the company's land affairs, but more particularly to the success that has attended the irrigation project in the territory east of Calgary. I am sure that the outcome of this great undertaking is a source of satisfaction to the shareholders, as it is to the directors. In this connection you may be interested in knowing that the cash in hand resulting from the sale of lands and townsites has now reached the considerable sum of \$14,000,000, and that the deferred payments exceed \$18,000,000.

Accompanied by several of the directors I have recently travelled over a considerable portion of the company's lines in Canada and of the subsidiary lines in the U. S., and the information that we gathered, not only as to the physical condition of the properties but as to the progress of settlement and the enlargement of agricultural and business development of every description, was most gratifying. The area of the wheat growing belt served by your lines in Western Canada is steadily increasing and interior elevators for handling grain are now to be found in districts where a few years ago the best informed never expected to see grain produced. The valleys of the Columbia and Kootenay Rivers and the lands tributary to the Okanagan and other lakes in British Columbia are rapidly being converted into orchards, the lumber interests of the mainland and Vancouver Island are becoming of vast importance, and every city and town west of Fort William bears the mark of progress and prosperity. In the commercial and manufacturing centres of Eastern Canada all of this is being reflected in a most pronounced way, as indicated by the business activity and the growth of population in practically all the cities and towns reached by your lines in Ontario, Quebec and the lower provinces. Beyond doubt we are justified in declaring that the agricultural and general business interests of Canada are in splendid shape, and that the outlook for the Company is at this time more reassuring and more promising than ever before.

"The traffic prospects of the Minneapolis, St. Paul & Sault Ste. Marie Ry. are also very satisfactory. Having secured access to Chicago and Milwaukee by the lease of the Wisconsin Central Ry., the Soo Line, in conjunction with this company, has become an important factor in the transcontinental business between these points and the Pacific Coast.

"The sanction of the Governor in Council having been obtained, the shareholders at the special general meeting held a year ago took the necessary action to provide for an increase of the ordinary capital of the company from

\$150,000,000 to \$200,000,000, and the directors were clothed with authority to issue the additional \$50,000,000, in such amounts and on such terms, from time to time, according to the requirements of the company, as they might determine. Thus far the directors have not thought it necessary to deal with the subject, but the same conditions that bring enhanced revenue also compel constant and important expenditures for locomotives and cars, for the acquisition or enlargement of terminal grounds and buildings, and more siding accommodation, not only at the important centres but at hundreds of other places on the system, and for desirable additions and improvements of almost every description on different sections of the railway throughout the country. Anticipating these future general requirements, and to meet them as they arise, the directors think it prudent at this time to make provision for the necessary funds by offering to the holders of the ordinary capital stock a portion of the unissued shares. It is proposed that the issue shall be in the proportion of 20% of the shares registered in the name of each individual holder in the books of the company in London, New York and Montreal, on Nov. 15, and the issue price will be 125, or at a premium of 25% over the face value of the shares. The usual practice of having payments made in instalments at intervals of about 60 days will be allowed, and interest at the rate of 6% per annum will be allowed on such payments. After the requisite formal action has been taken by the board, a circular letter dealing with the subject in greater detail will be prepared and mailed to the shareholders."

The resolution was seconded by R. B. Angus, and the report was adopted unanimously.

The following resolutions were also adopted:—That the indenture of lease from the Orford Mountain Ry. to this company, of which a draft is submitted, endorsed by the Secretary for the purpose of identification, be sanctioned and approved, which indenture, among other things, demises to this company for 999 years, the Orford Mountain Ry. as constructed from Eastman to Windsor Mills, together with the branches heretofore constructed, having a total length of about 58½ miles, and all other railways or branches hereafter constructed by that company, and their appurtenances, at an annual rental of a sum equal to the interest payable on all bonds carrying interest at a rate not exceeding 4% per annum, payable half-yearly, which the lessor may issue at the request of this company expressed in writing under its corporate seal, the payment of such interest being guaranteed by this company and the aggregate of all such bonds outstanding not to exceed at any time the rate of \$15,000 per mile of railway, then either constructed or under contract to be constructed. And further, the President and Secretary be authorized to execute the said indenture on behalf and under the corporate seal of this company, with verbal changes if any, as they may deem proper, not altering the substance as above described.

That by-law 94 prohibiting spitting in passenger stations, waiting rooms, or other premises of the company, passed by the directors June 14, and reading as follows be approved:

"Spitting in passenger stations, waiting rooms, closets or other premises of the company, and in passenger cars, or on platforms, except in receptacles provided for the purpose, is prohibited. Every person violating the provisions of this by-law, in addition to any other liability he may incur, will be liable to a fine not exceeding \$40 for each violation, such penalty to be imposed and collected in the manner prescribed by the Railway Act. Where such violation is at-

tended with damage or annoyance to the public, the company may summarily interfere, using reasonable force if necessary, to prevent such violation or to enforce observance of the provisions of this by-law without incurring any penalty by reason thereof."

That by-law 95 relating to tariffs of the telegraph tolls to be charged by the company passed by the directors Oct. 6, amending by-law 93, and reading as follows be approved:

"That J. Kent, Manager of the Company's Telegraphs be authorized to prepare and issue tariffs of the telegraph tolls to be charged by the company as provided for by the Railway Act as amended by 7-8 Edward VII., chap. 61, being "An Act to amend the Railway Act with respect to Telegraphs and Telephones and the jurisdiction of the Board of Railway Commissioners," and any further amendments of such Railway Act, for all telegraph traffic of the company upon that portion of its railway upon which the telegraph tolls clause of the Act applies, and upon other railways owned or operated by the company."

The retiring directors, D. McNicoll, C. R. Hosmer, Hon. R. Mackay and Hon. J. Dunsmuir, were re-elected for a further term of four years.

At a meeting of directors held immediately after the shareholders' meeting, the following officers were re-elected for the current year:—Chairman of the Board, Sir Wm. C. Van Horne; President, Sir Thos. G. Shaughnessy; Vice President, D. McNicoll; Executive Committee, R. B. Angus, D. McNicoll, E. B. Osler, M.P., Sir Thos. G. Shaughnessy, Lord Strathcona, Sir Wm. C. Van Horne.

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

Bonaventure Terminals.—Reports are again in circulation that plans are in preparation for the reconstruction of the terminals at Bonaventure, Montreal.

Turcot Yards.—Work has been started on the enlargement of the freight yards at Turcot, Que. At present they have a capacity of 4,000 cars, but the company has a site sufficiently large to increase the capacity to 15,000 cars. In view of the present extension, the Montreal Park and Island Ry. Lachine line will be moved 600 ft. towards the Canada Car Co.'s works.

St. Lambert Freight Yards.—Plans are being prepared for the enlargement of the terminals at St. Lambert, Que., for which the company has acquired over 100 acres in the vicinity. No time has been fixed for the starting of the work, but it is expected that everything will be in readiness next year.

The Midland Line.—A survey party started work at Cobourg, Ont., Oct. 1, on surveys in connection with the improvements proposed on the Midland section of the company's line. It is understood that the work will involve the straightening of the line in the town and the erection of a new station.

Bridgeburg Bridge.—The company is carrying out some work on its bridge across the Niagara River, connecting Bridgeburg, Ont., with Buffalo, N.Y. For this some false work has been erected. On the part of New York State it is claimed that the false work interferes with Erie canal navigation, and steps are being taken to prevent the work from proceeding. The company has secured a temporary injunction to prevent interference.

Brantford Improvements.—A conference has been held at Brantford, Ont., between city officials and the G.T.R., with reference to the carrying out of a number of improvements on the railway property there. A number of matters were discussed, and it was arranged that a further conference would be held. (Oct., pg. 721.)

The Hamilton Steel & Iron Co.

HAMILTON, CANADA

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PIG IRON

RR. AXLES
TRACK SPIKES

ANGLE BARS
TIE PLATES

Marine and Railroad

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In Rough, Rough Turned or Smooth Finished

BAR IRON

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Plain, Cold Twisted or Deformed

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With or without Magnet for Storekeeper's yard.

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AMERICAN HOIST & DERRICK CO.

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NEW ORLEANS

American Association G.P. and T.A.

In our last issue we were only able to refer briefly to this Association's meeting at Toledo, and to summarize some of the suggestions made by the retiring President, G. T. Bell, A.P.T.M., Grand Trunk Ry. Mr. Bell said:—"At our convention seven years ago, following the report of a committee, the enlargement of the Association's usefulness, a resolution was introduced by me and adopted requesting the American Association of General Baggage Agents, American Association of Travelling Passenger Agents, International Association of Ticket Agents, and similar passenger organizations each to appoint an official representative to appear before this Association yearly and deliver a short address reviewing the work of his organization and presenting suggestions for the betterment of the passenger service. Many interesting and helpful addresses have since been given and are published in our proceedings. Out of the same resolution has grown valuable addresses from the passenger branch of the Association of American Railway Accounting Officers. Between that association and ours there should always be the closest co-operation, which, I believe, can be made mutually and increasingly beneficial. It is my earnest hope and belief that the joint committee of these two associations will be able shortly to recommend a new system of interline ticketing that will immensely reduce the number of forms now considered necessary, and at the same time greatly simplify the work of the ticket sellers. If coupled with this important improvement, a joint committee from this association, the ticket agents associations, and the transportation section of the American Railway Association, would consider and report upon a plan for securing and retaining by suitable encouragement, especially at leading stations where the ticket business requires the exclusive attention of one or more ticket sellers, the most efficient and experienced men, it would tend to a general betterment of the service, be creditable to the transportation lines, and be appreciated by the public. If left to the initiative of individual lines or territorial passenger associations, reforms in these two directions will be slow and uncertain compared with results likely to follow the well matured recommendations of strong joint committees representing all transportation lines and all interested branches of the passenger service. As a basis for further consideration of these subjects there is much of value in the carefully stated ideas from the International Association of Ticket Agents which appear in the proceedings of our New Orleans Convention, October, 1903, and are renewed in report from the same association in the proceedings of our Old Point Comfort Convention, October, 1904, and which are endorsed and extended in the address from the same Association, also from the Canadian Ticket Agents Association, at our Atlantic City Convention, October, 1906, and on other occasions.

"In closing my term as President I venture to urge upon the new officers of our association earnest attention to these subjects. Our efforts should ever be to advance through our association progressive ideas designed to improve the passenger service of our three countries. Do not rest upon the laurels of the past—press forward towards new victories. Never permit the germ of sectional or territorial ideas to undermine the broad and strong foundation upon which we have built so long and so well."

W. Bunton, G.T.R. ticket agent, Peterborough, Ontario, who represented the Canadian Ticket Agents Association at the convention, was given a very hearty reception. He said:—

"There are some things which need not be said, but which, from consideration of courtesy, must be said. In Peterboro, where I come from, a gentleman of the Hebrew persuasion, conducted two clothing stores. He had occasion to take a business trip, leaving his son in charge of his interests. One night one of the stores was destroyed by fire; the son wired the father these words:—'Store burnt last night, come home at once.' While the operator was counting the number of words of the message, he suggested that the son should add, for the father's information, which store was destroyed. 'Oh, there's no need of that—he'll know.' It went without saying that there was no misunderstanding as to where the fire occurred. It also goes without saying that I am proud and honored with the position I find myself in to-day—received with cordiality and kindness by a distinguished gathering of the foremost representatives of the tremendous transportation interests of this continent. I take this as a high compliment because, aside from the special interests involved in this great gathering, I am a foreigner and a stranger—at least I felt that I was a few minutes ago, but I don't feel that way now—the kindness of my reception seems to me like adoption into the family. I am not surprised at that, for we Canadians know from the past, the broad-minded, liberal, fraternal spirit that moves the American Association of General Passenger and Ticket Agents. You have shown this spirit by honoring Canada in holding your annual convention in Toronto last year. This liberal spirit is further exhibited in your choice of President, G. T. Bell, who you all know from reputation. From both personal and business knowledge, I can confidently say that if he makes as great a success in the capacity of President as he has done as General Passenger and Ticket Agent, and now Assistant Passenger Traffic Manager of the G.T.R., your association made no mistake in the choice of a presiding officer.

I only wish I could speak as confidently of the choice of a representative to your association, made by the Canadian Ticket Agents Association, with which I am honored. Whatever question there may be of the business ability and mental capacity of your humble servant, to fittingly represent the Dominion, you will, perhaps, be inclined to admit that in the matter of physical proportions, I am a worthy representative of the largest country on the western hemisphere. For you all know that Canada is a big country. In the matter of territorial area it is larger than the United States. If Canada could be lifted and planted on the top of Europe it would blot out two-thirds of its area and squelch about 200 millions of population. While Canada bulks big in territory, it has a comparatively small population, but if you will permit me to say so, what it lacks in numbers it makes up in quality, pluck and enterprise. "Little frozen Canada," as some of our Yankee cousins playfully call it, has in the way of enterprise, achieved a record, which for its numerical strength is, perhaps, without a parallel in human history. Before Canada had a population of 5,000,000 it had expended \$100,000,000 in building canals and opening waterways and another \$100,000,000 in building railways, that is, the Government had laid out \$200,000,000 in providing the highest essential of advanced civilization—transportation—\$40 for every man, woman and child of our population. And we are still at it. Sir Wilfrid Laurier, Premier of Canada, who by the way, is a great admirer of your country and people, said in his campaign addresses last election that the 19th century belonged to the United States and the 20th century belongs to Canada—that is while the United States in the 19th

century made its tremendous strides in growth, Canada would do the same in the 20th century. Not that the United States would stand still—by no means—but having practically reached the limit of expansion it would devote its energies to concentrating, solidifying and strengthening the fruits of its progress, while Canada will play the role of conquering and peopling its boundless vacant places and developing its equally inexhaustible natural resources.

Transportation is the key that unlocks the treasure house of national wealth. In this both the great countries of the North American continent are interested. The annual trade exchange between Canada and the U.S. amounts to between \$400,000,000 and \$500,000,000 yearly, and it is bound to increase. Canada has, perhaps, the largest per capita trade of any country in the world. Our total trade, incoming and outgoing, is over \$100 per head of population, while that of the U.S. is about \$30 per head. This discrepancy is not mentioned by way of disparagement—it is simply explained. The U.S. has far greater population and a lesser extent of undeveloped resources, easily converted into trade material. We have a great wealth of natural resources and a small but energetic population alive alike to its opportunities and responsibilities. There seems to be no end of our resources. From the apple orchards of the Annapolis Valley, down by the Atlantic, to the peach belt of the Niagara district, from there to the fruit farms of the Okanagan Valley beside the Pacific ocean, and from there to the golden drift of the Klondike, every square mile of the three million odd square miles of Canada contains resources that invite and will richly repay commercial and industrial exploitation. Less than a dozen years ago, the lands in the Cobalt district, now one of the greatest, if not the greatest silver producing camps in the world, would not sell for a dollar a square mile—to-day some of this territory is worth a dollar a square inch—and the same general conditions in other forms applies to your own Alaska. What a tremendous work is cut out for the iron horse and his steel speed-way, our railway lines and systems!

In the matter of transportation the interests of the two countries are largely common. Our railway systems so overlap, interlace, and dovetail one into the other, as to constitute international systems defying boundary lines. The Canadian Pacific is eating its way into United States territory at different points. A great U.S. railway system, controlled by the way by another Canadian, J. J. Hill, is nosing its way into the Canadian west, and another great Canadian transcontinental, the Grand Trunk Pacific, is throwing out its trade tentacles. The G.T.P. proposes building a spur south from the main line to Emerson on the Red River, the forerunner of an extension to the twin cities, St. Paul and Minneapolis or other points. These conditions indicate the mutual nature of the interests of railways and the wisdom of co-operation for mutual self interest and protection. There is room for infinite expansion. In the matter of U.S. and Canadian railways there are no main lines—they are all, to a great extent, feeders to each other. While they are rivals, they cannot live, to the highest advantage, without each other.

The U.S., having reached the limit of home expansion in the 19th century, did not fold its hands in idleness. With the restless spirit of Yankee enterprise you sighed for more worlds to conquer and you found them in Cuba, in the Philippines, in Hawaii and in Canada. The American invasion of to-day is a big episode in history, like the Israelites, taking possession of the Promised Land. A generation ago Canada lent you a million or so of the very flowers of Canadians, to

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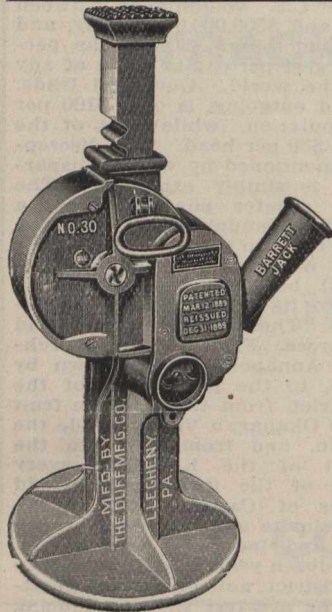
Winnipeg

Toronto

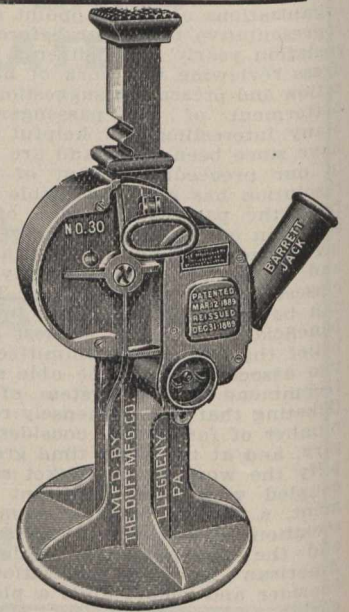
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help to make your country great, and they have done their work and made their mark in every realm of activity—in your senatorial chambers and legislative halls, in your colleges, in your laboratories, in your factories and workshops; and now you are paying us back; you are sending the cream of your western farmers to seize upon the Canadian west. In doing this, you are not only honorably paying a debt, but you are making a gilt edged investment. These good Yankee farmers will help to build up a new empire in the west, and help to develop the gold mine that never peters out, the golden wheat field. This year the Canadian west has reaped 120,000,000 bushels of wheat with only a tenth part of our wheat land gashed by the plough. When we reflect what the present means and foresee what the future holds, we can see the boundless international travel and traffic possibilities. You want no. 1 hard wheat for the mills of Minneapolis and elsewhere, and we shall want your manufactured and other products, and they will come and go, for no line of custom houses can dam the tide of trade, nor any tariff tinkers build a wall that a mogul engine will not flatten.

The railway men of both countries have an interest in taking advantage of these conditions and friendly co-operation (and good-will and friendliness are the cue), and the right spirit is abroad. Your association has hung out friendly signals, by holding your annual meeting last year in Canada. You elected as your president a Canadian (and he is a specimen brick), and you have in other ways practically recognized the obligations arising from a common interest. To show international amity the Canadian Ticket Agents Association has held several of its annual meetings in the U.S. for the promotion of good fellowship and the creation of an esprit de corps, as between the traffic officials of the two countries. This has more than a sentimental interest; it has a real, a substantial and tangible value, represented by facilitated and increased business. And the cordial reception that has been tendered me today, as the delegate of the Canadian Ticket Agents Association, is another proof of the freemasonry of railroading. The more we get together the more we see and know of each other and of the systems over which we route passengers to be handled by the lines under your jurisdiction, the better it will be for all of us and for the vast and closely inter-related interests we represent.

This brings me to a sore, or at least a tender spot in the hearts of the Ticket Agents Association. In our business capacity we can do everything, but one thing. We can send thousands of travelers over your systems, but we can't send ourselves except on the same degrading terms that apply to the common every day public. In the past ticket agents have been given complimentary transportation on your roads. A law—I won't call it any names (only think them)—cut off our commissions, and at present only bona fide ticket agents who make an exclusive business of selling tickets are favored with transportation. Now, a large proportion of ticket agents (and many of them our best) conduct ticket agencies in connection with some other suitable business—this does not make them any worse workers for the railways—the acquisition of railway knowledge which free transportation helps to give is in the interest of the railways themselves. The agent who can give the customer the best information stands to do the best business. The agent who speaks from personal knowledge of what he is talking about will pull in the most and best business, for the public, like the man from Missouri, "want to be shown." A ticket agent who keeps in personal and intimate touch with traffic conditions and

changes is the best man for the business. Free transportation is the best possible means to this, and the legislation I have referred to shuts out many of the best ticket agents, men who, in connection with an honorably connected commercial business, have worked themselves high in the confidence of the public, and who can easily, and with advantage, use that confidence in connection with a ticket agency. With all the extensions you railway gentlemen are making, you might include the extension of free transportation to the now contraband class of our ticket agents. It won't cost the railroads much to carry us—our good company should be enough compensation—and we won't take up much room (with my native modesty, I speak for others and not for myself). It won't hurt the railway companies and will be a great benefit to us—on the same principle of the big hulking Cornish miner, who, on being chaffed for allowing his little wife to thrash him, philosophically answered "It pleases she and it don't hurt Oi."

In conclusion I wish to repeat my acknowledgments of the courtesy of your kind reception, of your patience in listening to my remarks, and to re-assert that the railway interests and the general national interests of both countries are very largely in common. We live under different flags, and though these two flags differ in color-blending and blazonry, they are woven of the same sterling fibre, constitutional liberty and free institutions, they stand for the same principles of enterprise, progress, and the rights of humanity. Although we owe and own different allegiance, we all spring from the same stock, the same blood flows in our veins, and common interests and common ambitions should make us allies and co-workers in all things separate in name, but united in aim. Both in the railway world and in national activities these two countries pulling together will make a team that cannot be beaten—fit to "make the grade" on a double track line, that will carry humanity on this continent to the highest destination of human achievement."

Great Northern Ry. Lines in Canada

Winnipeg Terminals.—It is understood that the Hill interests have recently made offers for the purchase of the amusement park, known as Happyland, to add to the properties already acquired for terminal purposes in Winnipeg. The price offered was said to be insufficient, but the matter has not yet been finally disposed of.

Midland Ry. of Manitoba.—The Manitoba Legislature has passed an act amending sec. 3 of the company's act of incorporation by striking out a number of words defining the route from Winnipeg to Brandon and westerly, and inserting the following words:—"In a generally westerly direction to the city of Brandon, thence in a generally westerly direction." Power was also given to transfer its constructed lines, together with all its franchises and rights to another company. (See Manitoba Great Northern Ry.)

Manitoba Great Northern Ry.—The Manitoba Legislature has incorporated a company with this title for the purpose of acquiring the Midland Ry. of Manitoba, together with all its rights and franchises, subject to the approval of the Lieut.-Governor in Council. The capital is fixed at \$50,000, and it has power to issue bonds to the amount of \$20,000 a mile. The provisional directors are: L. W. Hill, R. I. Farrington, J. Fisher, C. P. Wilson and J. F. Fisher. Notice has been given that all formalities having been complied with, the M.G.N. Ry. has taken over the lines of the Midland Ry. of Manitoba, and has become possessed of all its rights, fran-

chises, and other property. The lines taken over are two in number, namely, one from Gretna, on the International boundary, to Portage la Prairie, and the second from Morden southeasterly to the International boundary. A press report from Morden, Oct. 6, says that one of the first works to be undertaken will be the extension of the Morden line. The proposition under consideration is to extend the line in a northwesterly direction, passing two miles to the east of Miami and about four miles west of Rosebank, then, to near Rathwell, probably touching Carberry.

Saskatchewan.—Surveys are being made for a line running easterly from Regina, to connect with the Brandon, Saskatchewan and Hudson Bay Ry. at Brandon, Man., and also for a line from Regina to the International boundary to connect with one of the G.N.R. branch lines running northerly from near Minot, N.D. It is stated that construction will be started on these two lines by the end of the year.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Preliminary surveys have been completed for the tunnel route for this line in the vicinity of Princeton, B.C. The new route diverges from the old at Otter Flat, following the Tulameen River to the mouth of Eagle Creek, thence along the creek for about a mile, where the tunnel begins and extends for eight miles to the Coquihalla. The tunnel will have a gradient of about 1%. The old route was a circuitous one via the Otter valley and the Coldwater and necessitated a 2% gradient. The tunnel route will reduce the distance between Princeton and Vancouver from 154 to 124 miles. It is estimated that the tunnel will take about five years to construct. While it is under construction a temporary line will be built to meet the pressing need of early connection with the coast. J. H. Kennedy is Chief Engineer of the line.

Nothing yet has been decided with reference to the projected terminals in Vancouver. Plans have been prepared for the erection of a new station at New Westminster, B.C. It will be located immediately to the east of the present station. The building will be two stories high, accommodation being provided on the ground floor for the company's business, while the second floor will comprise agent's quarters. Work will be started immediately. (Oct., pg. 713.)

The Governor in council has confirmed the act passed last session by the Ontario Legislature amending the Ontario Railway Act, 1906, in so far as the statute purports to prohibit or regulate work, business or labor within the legislative authority of the province on Sundays.

The three men who were recently found guilty at Montreal of obtaining money from various Canadian transportation companies by means of claims for bogus accidents, were sentenced to five years, two and a half years, and one year at hard labor, respectively, in St. Vincent de Paul penitentiary.

In the case of Robinson v. C.N.R. at Winnipeg, recently, judgment was delivered in favor of the plaintiffs, who claimed damages for loss suffered by the lack of spur track facilities. The amount of damage sustained is to be enquired into. The spur was laid to plaintiffs' premises by the Northern Pacific Ry. in 1888, and was removed by the C.N.R. in 1904, after the company had leased the N.P.R. lines. The plaintiffs had later petitioned the Board of Railway Commissioners in the matter, and had obtained an order for the restoration of the tracks, the company maintaining that it would be inconvenient to continue such facilities.

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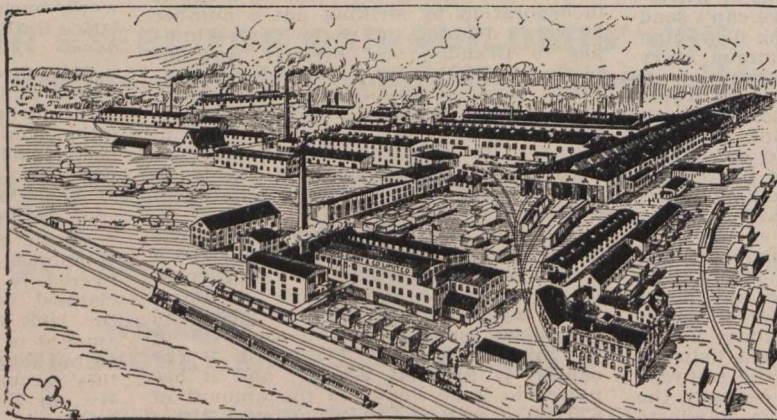
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Orders by the Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them.

8112. Sept. 16.—Authorizing Volcanic Oil & Gas Co. to place wires across P.M.R. in Tilbury East and Romney tps., Ont.

8113. Sept. 15.—Authorizing Saskatchewan Government Telephones to place wires across C.N.R. between secs. 21 and 28, tp. 33, r. 4, west 3rd mer.

8114. Sept. 16.—Authorizing Govan Rural Telephone Co. to place wires across C.P.R. at Valley St., Govan, Sask.

8115. Sept. 15.—Authorizing C.P.R. to construct spur for the Lake Megantic Pulp Wood Co., near McLeod's, Compton county, Que.

8116. Sept. 21.—Authorizing C.P.R. to construct branch line on alley west of Caron Ave., Windsor, Ont.

8117. Sept. 21.—Authorizing C.P.R. to construct bridge 69.8, Moose Jaw section.

8118. Sept. 17.—Authorizing C.P.R. to construct bridge 42.15, Schreiber section, Lake Superior Division.

8119. Sept. 21.—Approving location and plans of C.N.R. stations, Ottawa-Hawkesbury and Gearneau-Quebec Divisions.

8120. Sept. 14.—Dismissing application of G.T.R. for permission to construct spur to Noxon Co.'s premises, near Ingersoll, Ont.

8121. Sept. 21.—Approving location of C.N.R. from mileage 10 to 15, up Fraser River from Yale, B.C.

8122. Sept. 21.—Authorizing Ontario Power Co. to place its transmission line across N. St. C. & T. Ry. between lots 17 and 30, Thorold tp., Ontario.

8123. Sept. 21.—Approving revised location of G.T.P.R. from s.e. ¼ sec. 14 to s.w. ¼ sec. 23, tp. 14, range 27, west 1st mer., Shoal Lake District, Man.

8124 to 8127. Sept. 21.—Authorizing Saskatchewan Government Telephones to place wires across C.P.R. at four points.

8128. Sept. 21.—Authorizing Town of Weyburn, Sask., to lay water main under C.P.R. at Third St.

8129 to 8131. Sept. 21.—Authorizing B.C. Telephone Co. to place wires across Van., Vic. & Eastern Ry at three points in B.C.

8132, 8133. Sept. 21.—Authorizing Bell Telephone Co. to place wires across C.P.R. at West Brome, Que., and across G.T.R. at Clinton, Ont.

8134. Sept. 21.—Authorizing Canadian Machine Telephone Co to cross G.T.R. at Mount Pleasant flag station, Ont.

8135. Sept. 21.—Authorizing Volcanic Oil & Gas Co. to place wires across M.C.R. at lot 9, North Middle road, and lot 9, South Middle road, Ont.

8136. Sept. 17.—Authorizing Town of Milton, Ont., to lay water main under C.P.R. at Court St.

8137. Sept. 14.—Directing that in operation of railway lines where snowfall is such as to require running of snowplows or flangers, the company may remove planks from farm crossings; provided that no such planks shall be removed unless necessary, and shall be replaced by the company in the spring, or as soon as snow is off the ground.

8138. Sept. 21.—Authorizing C.N.Q.R. to open for traffic the portion of its line from its connection with the Quebec & Lake St. John Ry. in Quebec City to Garneau Jct., 78.76 miles.

8139. Sept. 15.—Refusing Toronto Railway Co. leave to appeal order 7813, July 3, authorizing City of Toronto to

construct bridge across its tracks at Queen St. East.

8140. Sept. 14.—Authorizing Nipissing Central Ry. to construct its railway across Temiskaming & Northern Ontario Ry. by an overhead crossing, in town site of Argentite, Ont.

8141. Sept. 22.—Authorizing Macdonald municipality to place wires across C.N.R. near Sanford, Man.

8142. Sept. 14.—Ordering the G.T.R. to clean station at Seguin Falls station Ont., to provide proper station seats and lamps and to construct platforms, etc.

8143. Sept. 22.—Directing that time for completion of work in connection with bridge carrying St. Catharines St., Montreal, over C.P.R. tracks be extended until May 1, 1910.

8144. Sept. 21.—Authorizing G.T.P.R. to operate trains across Winnipeg Elec. St. Ry. at Pembina highway, Winnipeg, without being brought to a stop.

8145. Sept. 14.—Ordering all railways subject to the Board's jurisdiction to equip, before April 1, 1910, their freight vans with coupler-operating levers, and the cupolas of cabooses with air-gauges and air-controlling valves.

8146. Sept. 22.—Recommending to Governor in council for sanction agreement between Canadian Collieries Limited, and United Coal Fields of British Columbia, re sale and transfer of franchise, powers, railway, and undertakings.

8147. Sept. 22.—Approving location plan of C.P.R. station at Mowbray, Man.

8148. Sept. 22.—Authorizing C.P.R. to open for traffic portion of line from Bolton to Bolton Jct., Ont.

8149. Sept. 21.—Directing C.N.R. to construct certain highways in Fort William, Ont.

8150. Sept. 22.—Authorizing Listowel Municipality Electric Light System to place wires across G.T.R.

8151. Sept. 22.—Authorizing C.P.R. to construct spur in Kildonan, Man.

8152. Sept. 22.—Authorizing C.P.R. to construct spur for Empire Elevator Co. Fort William, Ont.

8153. Sept. 22.—Approving plan of iron bridge to be constructed by G.T.R. to replace present bridge near Ailsa Craig, Ont.

8154. Sept. 22.—Authorizing the C.P.R. to construct spur for J. Brodie & Son, mileage 3.79 from Staynerville Jct., Que.

8155, 8156. Sept. 22.—Authorizing Listowel Municipality Electric Light System to place wires across G.T.R. at Mill St.

8157. Sept. 23.—Authorizing Walford Rural Telephone Co. to place its wires across C.P.R. at Irish Creek, Ont.

8158. Sept. 23.—Authorizing Bell Telephone Co. to place wires across M.C.R. near Bridgeburg, Ont.

8159. Sept. 21.—Dismissing application of C.P.R. for leave to cross the G.T.R. with its tracks in Ingersoll, Ont.

8160. Sept. 22.—Dismissing application of C.P.R. to cross the G.T.R. with its track at mileage 5.03 in Oxford county, Ont.

8161. Sept. 24.—Approving location and plans of C.P.R. station at Belle Plain Sask.

8162. Sept. 24.—Authorizing G.T.R. to construct spur to Schultz Bros' premises, Brantford, Ont.

8163. Sept. 24.—Authorizing C.P.R. to construct spur for Redcliffe Realty Co., Redcliffe, Alta.

8164. Sept. 24.—Approving location of G.T.P.R. from Prince Rupert easterly, mileage 150 to 180.74, Coast District, B.C.

8165. Sept. 23.—Authorizing Bell Telephone Co., to place wires across G.T.R. at Howick Jct., Que., and M.C.R. ½ mile west of Charing Cross station, Ont.

8167 to 8171. Sept. 23.—Authorizing Manitoba Government Telephone System to place wires across C.N.R. and C.P.R. at various points.

8172. Sept. 24.—Authorizing the City of Toronto to lay high level intercepting sewer on Don Esplanade, across G.T.R.

8173. Sept. 24.—Authorizing the town of Walkerville, Ont., to lay sewer under G.T.R.

8174. Sept. 25.—Authorizing C.P.R. to construct a line connecting its Pembina branch with G.T.P.R. main line in Winnipeg.

8175. Sept. 24.—Amending order 8087, Sept. 15, authorizing the Mount McKay and Kakabeka Falls Ry. to cross C.N.R. at Yonge St., Fort William, Ont.

8176. Sept. 24.—Authorizing C.N.R. to cross C.P.R., Wetaskiwin branch, at Camrose, Alta.

8177. Sept. 20.—Approving rearrangement of C.P.R. tracks between bents 2, 3, 4 and 5, and elevation and clearances of overhead footbridge at Brown St., West Fort William, Ont.

8178, 8179. Sept. 25.—Authorizing Manitoba Government Telephone System to place wires across C.N.R. at Glenfrossa siding, and at Third St., Belmont.

8180. Sept. 25.—Authorizing C.P.R. to construct spurs for Speitz Fur Co. and Hanover Cement Co., Hanover, Ont.

8181. Sept. 25.—Authorizing G.T.R. to construct branch and three spurs therefrom to Asbestos Mfg. Co.'s premises, Lachine, Que.

8182. Sept. 25.—Authorizing C.P.R. to construct spur for Sydney Brick Co., Sydney, Man.

8183. Sept. 25.—Authorizing the C.P.R. to construct branch line in Calgary, Alta.

8184. Sept. 25.—Approving Supplement 2 to Canadian Freight Classification 14.

8185. Sept. 25.—Authorizing C.P.R. to construct trestle bridge at mileage 63.5, Moose Jaw branch, Sask.

8186. Sept. 25.—Authorizing G.T.R. to construct spur for Sanderson-Harold Co., Paris Jct. station, Ont.

8187. Sept. 25.—Authorizing G.T.R. to construct spur for Bechtells Ltd., Waterloo, Ont.

8188. Sept. 25.—Authorizing C.P.R. to construct spur for Charbonneau, Leroux & Forget, St. Vincent de Paul Parish, Que.

8189. Sept. 25.—Authorizing C.P.R. to construct spur to Asquith ballast pit on its Pheasant Hills branch, Sask.

8190. Sept. 25.—Authorizing G.T.P.R. to operate its trains across C.P.R. Pembina branch at Oak Point Jct., near Winnipeg.

8191. Sept. 25.—Authorizing C.P.R. to construct branch line in parish town of Lachine, Que.

8192. Sept. 29.—Authorizing C.N.Q.R. to place wires and tracks under Bell Telephone Co.'s wires at Charlesbourg Road, Quebec county, Que.

8193 to 8195. Sept. 25.—Authorizing Hydro-Electric Power Commission of Ontario to place wires across G.T.R. at three points.

8196. Sept. 27.—Authorizing C.P.R. to open for traffic the Kenora section of its double track from Busted, mileage 16.0 to Deception, mileage 18.8, Ont.

8197. Sept. 23.—Approving location of C.N.Q.R., Hedleyville Jct. to the Montmorency River, Quebec county, mileage 0 to 7.62.

8198. Sept. 27.—Authorizing G.T.P.R. to operate trains over Pembina highway crossing, Winnipeg, without being brought to a stop.

8199. Sept. 27.—Authorizing Brantford Gas Co. to lay main under G.T.R. at Colborne St., Brantford, Ont.

8200. Sept. 27.—Authorizing Macdonald municipality to place wires across C.N.R. near Brunkild station, Man.

8201. Sept. 28.—Authorizing Northern Colonization Ry. to construct its line across highways between mileage 10 from Nominig, and Rapid le l'Original, Que.

8202 to 8204. Sept. 25.—Authorizing Hydro-Electric Power Commission of Ontario to cross G.T.R. at three points.

8205. Sept. 28.—Authorizing C.P.R. to construct branch line across several streets in Regina, Sask.

8206. Sept. 28.—Authorizing C.N.Q.R.

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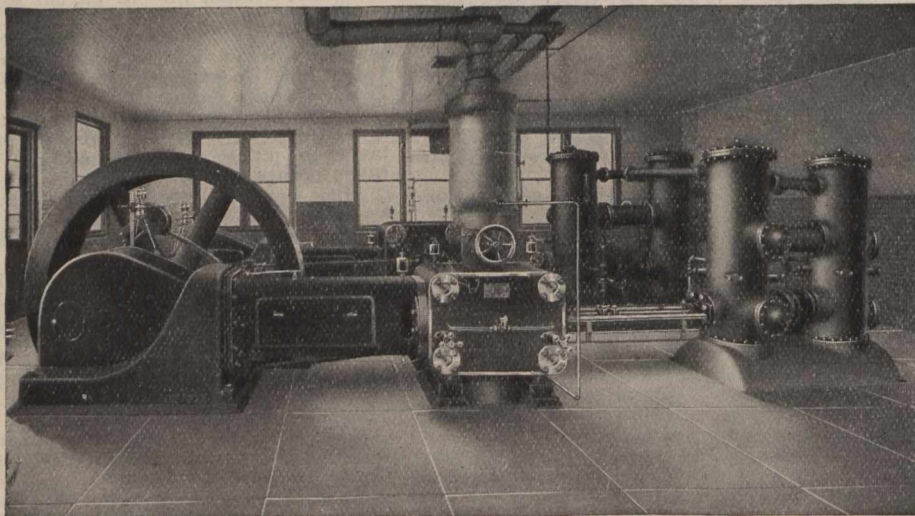
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to reconstruct western trestle approach of Ottawa River bridge, near Hawkesbury, Ont.

8207. Sept. 27.—Dismissing application of Canadian Freight Association for order rescinding order Oct. 10, 1904, fixing rates on fruit, in carloads from Eastern Canada to Winnipeg, Portage la Prairie, and Brandon, Man.

8208. Sept. 14.—Approving plan, profile, and book of reference of Montreal Park & Island Ry., and authorizing deviation of its line from lot 142, to lot 1698, Montreal parish, Que.

8209. Sept. 28.—Authorizing Saskatchewan Government Telephone System to place wires across G.T.P.R. between secs. 32 and 33, tp. 35, r. 4, west 3rd mer.

8210, 8211. Sept. 28.—Authorizing Bell Telephone Co. to place wires across C.N.Q.R. at St. Canute, Que., and ½ mile north of Duncan station, Ont.

8212. Sept. 28.—Authorizing City of Medicine Hat, Alta., to lay water mains under C.P.R. at River St., and at East Road allowance.

8213. Sept. 28.—Authorizing Sarnia Gas and Electric Light Co. to lay mains under G.T.R. at South Christina St., Sarnia, Ont.

8214. Sept. 28.—Authorizing C.P.R. to construct spur for Joliette Sand and Gravel Co., St. Felix de Valois parish, Que.

8215. Sept. 29.—Authorizing the St. James Church vestry, Berthier, Que., to lay sewer under C.P.R.

8216. Sept. 29.—Authorizing Mount McKay and Kakabeka Falls Ry. to cross C.N.R. at Montreal St., Fort William, Ont.

8217. Sept. 30.—Approving the revised location of C.P.R. from McKay Ave. to Victoria Ave., Edmonton, Alta.

8218. Oct. 1.—Authorizing Manitoba Government Telephone System to place wires across C.P.R. at Neepawa.

8219. Sept. 29.—Authorizing C.P.R. to construct spur along lane in blocks 10 and 16, and across 24th St., Saskatoon, Sask.

8220. Sept. 29.—Authorizing C.P.R. to construct bridge 6,7, on its Cascade section, B.C.

8221. Sept. 30.—Authorizing C.P.R. to open for traffic the portion of its double track from St. Lazare to Dalhousie Mills, Smith's Falls section.

8222. Sept. 30.—Authorizing C.P.R. and G.T.R. to operate their trains across interlocker at Brampton, Ont.

8223. Sept. 29.—Authorizing City of Toronto to lay sewer under C.P.R. on Howland Ave.

8224. Sept. 29.—Authorizing Pipestone municipality to place wires across C.P.R. near Ewart, Man.

8225. Sept. 30.—Authorizing City of Winnipeg to construct, for the purpose of patrol road, suitable crossings where its transmission power lines cross C.P.R.

8226. Oct. 1.—Authorizing West Canadian Collieries, Ltd., to construct an overhead crossing over C.P.R. at Bellevue, Alta.

8227. Sept. 29.—Authorizing Arthabaska Water & Power Co., Quebec, to lay water pipe under G.T.R. near Nicolet River bridge, Victoriaville, Que.

8228. Oct. 5.—Approving location of Montreal & Southern Counties Ry. from St. Denis St., St. Lambert, to Chambly road, Longueuil, Que.

8229. Oct. 5.—Authorizing Montreal & Southern Counties Ry. to place power wires across G.T.R. at six points in its Point St. Charles yards, Que.

8230. Oct. 5.—Authorizing Ontario Pipe Line Co. to lay gas pipe under T.H. & B.R., Victoria Ave. South, Hamilton, Ont.

8231. Oct. 6.—Approving location of G.T.P.R. through Fort William, Ont., subject to the condition that the railway shall do as little damage as possible, and shall make full compensation to persons interested for damage by it sustained by reason of the location of the railway

along any street.

8232. Oct. 6.—Approving location of G.T.P.R., Prince Rupert easterly, mileage 180.74 to mileage 235.675, coast district, B.C.

8233. Oct. 4.—Authorizing C.P.R. to use bridges 65.1, 84.4, and 106.1 on its Pacific Division between Kamloops and North Bend, B.C.

8234. Oct. 5.—Approving revised location of G.T.P.R. station grounds, Yorkton branch, from sec. 4, tp. 24, r. 5, to sec. 6, tp. 25, r. 4, west of the 2nd mer., mileage 11 to 18, Assiniboia district, Sask.

8235. Oct. 6.—Recommending to the Governor in council for sanction, by-law passed by M. C. Rd. directors in New York, Sept. 22, 1909.

8236. Oct. 5.—Authorizing C.P.R. to open for traffic that portion of the Port Moody diversion of the Cascade section of its line from mileage 113.76 to 115.68, B.C.

8237. Oct. 5.—Authorizing C.P.R. to construct railway across Main St., Shoal Lake, Man.

8238. Oct. 5.—Temporarily approving tariff of tolls which the Bell Telephone Co. shall be authorized to charge, and agreement between the company and eight other companies located in Ontario.

8239. Sept. 25.—Authorizing C.N.R. to cross G.T.P.R. near Riley, Alta.

8240. Oct. 4.—Authorizing C.P.R. to use bridges on its Central Division, Broadview section, Man.

8241. Oct. 4.—Authorizing C.P.R. to use four bridges on its Shuswap section, Pacific Division, between Revelstoke and Kamloops, B.C.

8242. Oct. 7.—Authorizing C.P.R. to construct railway across 13 highways, on its Sudbury-Kleinburg branch, Ont.

8243. Oct. 7.—Approving location of C.N.R. from mileage 72 to 88, up North Thompson River, from Kamloops, B.C.

8244. Oct. 5.—Authorizing C.P.R. to construct spur for Winnipeg Oil Co., Saskatoon, Sask.

8245. Oct. 5.—Authorizing C.P.R. to construct industrial spur in Blocks 4 and 6 across 26th St., Saskatoon, Sask.

8246. Oct. 5.—Authorizing C.P.R. to construct spur to Kamloops Mines, Ltd., property, on Lot 43, Yale district, B.C.

8247. Oct. 5.—Authorizing G.T.R. to construct iron bridge to replace present structure at farm crossing, at mile post 11.68, 17th district of its line west of St. Catharines, Ont.

8248. Oct. 2.—Authorizing C.P.R. to construct siding to Moore & Co.'s premises, Toronto.

8249. Oct. 7.—Approving C.P.R. station location and detail plans at Redvers, Sask.

8250 to 8252. Oct. 5.—Authorizing city of Peterboro, Ont., to lay water main under G.T.R. at Murray St., McDonnell St. and Ware St.

8253. Oct. 5.—Authorizing city of Hamilton, Ont., to lay water pipe under G.T.R. on Young St.

8254. Oct. 5.—Authorizing city of Winnipeg to lay sewer under C.P.R. where it intersects crossing between Talbot and Carter Sts.

8255, 8256. Oct. 5.—Authorizing Manitoba Government Telephones to erect wires across C.P.R. 3½ miles s.w. Hartney station and 2½ miles south of Selkirk.

8257. Oct. 12.—Authorizing C.N.Q.R. to erect telegraph wires under G.N.W. Telegraph Co.'s wires near Cap Sante, Que.

8258. Oct. 8.—Authorizing C.P.R. to construct bridge 75.1 on its Moose Jaw Northwest branch, Sask.

8259. Oct. 5.—Authorizing the Miniota rural municipality to erect wires across C.P.R. at r.c. one mile west of Arrow River station, Man.

8260. Oct. 5.—Authorizing Harwich tp. council, Ont., to construct drain under Lake Erie & Detroit River Ry.

8261 to 8264. Oct. 5.—Authorizing Bell

Telephone Co. to erect wires across M.C. Rd. and P.M. Rd., Highgate, Ont., Montreal Terminal Ry. at Bout de l'Isle Park, Que., and G.T.R. at Iroindale and Hamilton, Ont., and at Notre Dame St., St. Henri, Montreal.

8265. Oct. 5.—Authorizing Norfolk County Telephone Co. to erect wires across G.T.R. at lots 5 and 6, 14th con., Townsend tp., Ont.

8266. Oct. 5.—Authorizing Dominion Natural Gas Co. to lay main under G.T.R., Talbot Road, Wyndham tp., Ont.

8267. Oct. 4.—Authorizing Kaministiquia Power Co. to erect wires across C.N.R. at Edward St., West Fort William, Ont.

8268. Oct. 4.—Authorizing C.P.R. to construct branch line for Kaufman Lumber Co. at mileage 39.1, on its Sudbury-Kleinburg branch, Ont.

8269. Oct. 7.—Authorizing C.N.Q.R. to maintain its tracks and telegraph wires under G.N.W. and C.P.R. telegraph wires at C.P.R. crossing, Lachevrotiere, Que.

8270. Oct. 7.—Authorizing Man. Government Telephones to erect wires across C.P.R. on Nairn Ave. and Eaton St., Elmwood, Winnipeg.

8271. Oct. 6.—Authorizing Saskatchewan Government Telephone System to erect wires across C.N.R. near Craik.

8272. Oct. 6.—Authorizing United Gas Co. to lay pipe under G.T.R. at Forks Road, 1st range from the river, Moulton tp., Ont.

8273 to 8279. Oct. 7.—Authorizing Bell Telephone to erect wires across P.M. Rd., M.C. Rd., C.P.R. and G.T.R. at various points in Ontario.

8280 to 8285. Oct. 6.—Authorizing the Hydro-Electric Power Commission of Ontario to erect wires across G.T.R. at six points.

8286. Oct. 6.—Authorizing city of Winnipeg to erect transmission lines with telegraph and telephone wires across C.P.R. at lot 82, Kildonan parish.

8287. Oct. 11.—Authorizing C.P.R. to use bridges on its Prince Albert branch, Central Division, Regina, Saskatoon and North Saskatchewan.

8288. Oct. 8.—Approving G.T.P.R. by-law no. 7 authorizing certain officials to prepare and issue tariffs of tolls to be charged for passenger traffic over its lines.

8289 to 8292. Oct. 8.—Authorizing city of Calgary, Alta., to erect power wires across C.P.R. at 17th Avenue E., 14th Street W., 15th Street E. and 11th Street E.

8293. Oct. 8.—Authorizing C.P.R. to construct a bridge of the St. Maurice Valley Ry. over C.N.Q.R. at Grand Mere, Que.

8294 to 8296. Oct. 8.—Authorizing C.P.R. to construct bridges 59.3, 56.7 and 65.0 on its Moose Jaw Northwest branch, Sask.

8297 to 8299. Oct. 8.—Authorizing Bell Telephone Co. to erect wires across M.C. Rd. near Cornell station, Ont.; G.T.R. near Paris Jct., Ont., and C.N.Q.R., lot 222E., Hochelaga county, Que.

8300 to 8302. Oct. 8.—Authorizing Consolidated Telephone Co. to erect wires across C.P.R. near Erin and Hillsburg, Ont.

8303. Oct. 8.—Authorizing Manitoba Government Telephones to erect wires across C.P.R. 1½ miles south of Altona station.

8304 to 8308. Oct. 8.—Authorizing Wroxeter Rural Telephone Co. to erect wires across C.P.R. in Howick and Turnberry tps., Ont.

8309, 8310. Oct. 8.—Authorizing Clinton municipality, Ont., to lay water main under G.T.R. at Matilda St.

8311, 8312. Oct. 8.—Authorizing F. J. Weidenhammer, Hawkesville, Ont., to erect wires across C.P.R. west and southwest of Wallenstein station, Ont.

8313. Oct. 12.—Authorizing C.N.Q.R. to reconstruct trestle approaches of its

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bridge over the St. Maurice River, near Grand Mere, Que.

8314. Oct. 12.—Authorizing G.T.P.R. to construct railway across certain high-ways in West Saskatchewan.

8315. Oct. 6.—Authorizing St. Maurice Valley Ry. to cross C.N.Q.R. at Grand Mere, Que.

8316. Oct. 13.—Approving location of C.N.O.R. through Goulburn and Marlborough tps., Carleton county, mileage 17 to 29.

8317. Oct. 13.—Authorizing C.N.O.R. to connect its Udney-Orillia line with Georgian Bay & Seaboard Ry. at Atherley Jct., Ont.

8318, 8319. Oct. 13.—Authorizing the city of Montreal to lay water main under C.N.Q.R., Nicolet St. and Valois St.

8320. Oct. 12.—Authorizing Consumers' Gas Co., Toronto, to lay main under C.P.R., St. Clair Ave.

8321. Oct. 13.—Authorizing C.N.Q.R. to maintain its tracks and telegraph wires under Bell Telephone Co.'s wires, Cap Rouge, Que.

8322. Oct. 12.—Authorizing city of Peterboro, Ont., to lay water main under C.P.R., Burnham St.

8323 to 8325. Oct. 13.—Authorizing the Saskatchewan Government to cross with wires C.N.R. at one point and C.P.R. at two points.

8326 to 8328. Oct. 13.—Authorizing Miniota rural municipality to erect wires across C.N.R. at three points in Manitoba.

8329. Oct. 13.—Authorizing Canadian Machine Telephone Co. to erect wires across G.T.R., Mount Vernon, Ont.

8330. Oct. 13.—Authorizing Manitoba Government Telephones to erect wires across C.N.R. at p.c. near Argue station.

8331. Oct. 12.—Authorizing town of Walkerville, Ont., to lay sewer under Lake Erie & Detroit River Ry., Argyle Ave.

8332. Oct. 13.—Authorizing Manitoba & Saskatchewan Coal Co. to erect wires across C.P.R. at Bienfait, Sask.

8333. Oct. 11.—Authorizing G.T.R. to cross with its second track the United Counties Ry. at St. Hyacinthe Jct., Que.

8334. Oct. 5.—Ordering that certain streets at St. Henri, Montreal, be protected by watchmen, appointed by the G.T.R.

8335. Oct. 5.—Authorizing C.N.O.R. to construct its line across p.c. on lot 26, con. 1, Gloucester tp., Carleton county, Ont.

8336. Oct. 5.—Dismissing application of C.N.O.R. to connect its tracks with the Manitoulin & North Shore Ry. in Sudbury, Ont.

8337. Oct. 8.—Rescinding order 7343, June 23, by substituting for clause 2 of first part the following clause: "That on cheese shipped from points west of Montreal on separate rail bills of lading to Montreal, and which arrived at Montreal before the close of the St. Lawrence navigation season then current, the railway companies absorb the Montreal wharfage and port warden's fees, provided the said cheese is exported from the port of Montreal not later than May 31 of the following, St. Lawrence navigation season, the said absorption to continue . . . etc."

8338. Oct. 15.—Authorizing G.T.R. to construct certain branch lines in Toronto, extending from its Don yards, east of Trinity St., across River Don and along Cherry St. and certain other properties belonging to the city, to the National Iron Works' premises.

8339. Oct. 14.—Approving deviation in location of portion of the Edmonton & Slave Lake Ry. through tps. 56 to 60, r. 25, w. 4th mer., mileage 21.39 to 46.68, Alta.

8340. Oct. 14.—Authorizing National Transcontinental Ry. Commissioners to carry railway at grade across highway

near mile 3, from the north abutment of the Quebec bridge.

8341. Oct. 14.—Authorizing city of Calgary, Alta., to erect wires used for Calgary Electric Ry. operation across C.P.R. spur line at 2nd Street E.

8342. Oct. 15.—Approving location of G.T.P.R. from mileage 229 to 289, Cariboo district, B.C.

8343. Oct. 15.—Authorizing city of Peterboro, Ont., to lay water main under G.T.R. Lindsay branch, Park St.

8344. Oct. 14.—Authorizing Georgetown village, Ont., to lay water main under G.T.R. spur.

8345, 8346. Oct. 14.—Authorizing Citizens Telephone Co. to erect wires across C.P.R. at first crossing south of Bromo, and second crossing west of West Shefford, Que.

8347. Oct. 14.—Authorizing Sterling Gas Co. to lay pipe under G.T.R. between lots 20 and 21, con. 1, Humberstone tp., Ont.

8348. Oct. 14.—Authorizing United Fuel Supply Co. to lay pipe under G.T.R. on lot 8, front con. of Raleigh tp., Ont.

8349. Oct. 14.—Authorizing Bell Telephone Co. to erect wires across N. St. C. & T. Ry. at p.c. Welland Ave. and Francis St., St. Catharines, Ont.

8350. Oct. 14.—Authorizing Citizens Telephone Co. to erect wires across C.P.R. first crossing west of West Shefford, Que.

8351. Oct. 9.—Authorizing C.P.R. to construct branch line across and along Hardisty St., Fort William, Ont.

8352. Oct. 9.—Authorizing C.P.R. to cross Port Arthur and Fort William Electric St. Ry. at Syndicate Ave. and connect with the Fort William Terminal Ry. and Bridge Co., Fort William, Ont.

8353. Oct. 14.—Authorizing city of Wetaskiwin, Alta., to lay water and sewerage pipes under C.P.R., Pearce St.

8354. Oct. 15.—Authorizing Volcanic Oil & Gas Co. to erect wires under C.P.R. at Walker Rd., Sandwich East tp., Ont.

Railway Commissioners' Sundry Orders.

Summaries of other orders are given on another page under "Orders by Railway Commissioners":—

BRANDON, SASKATCHEWAN & HUDSON BAY RY.

8111. Sept. 15.—In the matter of the Brandon, Saskatchewan & Hudson Bay Ry. sections known as the Boissevain and Minto sections, and as to increase of staff of sectionmen, upon hearing counsel for the company, the report of the Board's Inspector, and its Chief Engineer's recommendation, it is ordered that the Brandon, Saskatchewan & Hudson Bay Ry. Co. be directed to employ forthwith two men and a foreman on each of the sections known as the Boissevain and Minto sections of its line, and that, in case it be found that the said number is not sufficient to keep the road in safe and proper state of repair, the company employs such additional men as may be necessary for the purpose.

PLANKING AT CROSSINGS.

8137. Sept. 14.—In the matter of the practice of certain railway companies of removing the planking at highway and farm crossings during winter months, and in the matter of secs. 2, 30, 235 and 253 of the Railway Act, upon the report and recommendation of the Chief Engineer of the Board, it is ordered: 1. That in the operation of railway lines where the snowfall is such as to require the running of snowplows or flangers, the company may remove the planks from farm crossings, provided that no such planks shall be removed unless necessary, and shall be replaced by the company in the spring, or as soon as the snow is off the ground.

2. That where it is necessary to operate snowplows or flangers over highway crossings upon railway lines, companies

may remove one plank next to the inside of each rail, the same to be replaced in the spring or as soon as the snow is off the ground.

3. That order 6255, Feb. 10, 1909, be rescinded.

EQUIPMENT OF RAILWAY CARS.

8145. Sept. 14.—In the matter of the equipment by railway companies of freight vans with coupler-operating levers and of the cupolas of cabooses with air-gauges and air-controlling valves, upon the report and recommendation of an Inspector of the Board, and upon the hearing of counsel for the G.T.R., C.P.R., N.Y.C. Rd., M.C.R., and Boston & Maine Ry. companies, and what was alleged, it is ordered that railway companies subject to the legislative authority of the Parliament of Canada, operating railways by steam power, each equip, before April 1, 1910, its freight vans with coupler-operating levers, and the cupolas of its cabooses with air-gauges and air-controlling valves; and it is further ordered that every such railway company be liable to a penalty not exceeding \$25 for every failure to comply with the foregoing regulations within the time for their coming into force and thereafter.

A Railway to Hudson Bay.

A party of engineers started from Pas Mission, Sask., Oct. 18, for the purpose of locating a line from that point to some point on Hudson Bay. The party is in charge of W. J. Clifford, and is working on behalf of the Dominion Government. It is expected that other parties will be sent out later. The work will be prosecuted throughout the winter, this season being more favorable for survey work in that region than the summer.

The question of the location of the terminals on Hudson Bay is still under consideration by the engineering staff. A statement was made by one of the staff in Winnipeg, Oct. 8, that Fort Nelson and not Fort Churchill would be chosen as the terminus. The distance is 71 miles less than to Fort Churchill, while the cost is estimated at \$3,000,000 less. The C.N.R. has a branch connecting with The Pas, and this place is also the objective of other projected lines, notably the G.T.P.R. and G.N.R.

A press report states that the Dominion Government will authorize the starting of work on the construction of the line from The Pas at an early date, and that it will be started this fall. This is hardly likely as the full report of the preliminary surveys has not yet been considered. This report is ready for presentation to Parliament. The Minister of Railways, speaking at Athens, Ont., recently, stated that while it had not yet been decided that the railway would be constructed by the Government, it would certainly be constructed. Before deciding on the terminal, he added, it would probably be necessary to approach the harbors from the outside, and make a careful investigation of their approaches, the depth of water available, the season of open water, and the relative cost of developing a harbor of sufficient capacity to accommodate modern vessels. (Sept., pg. 641.)

During Aug., 11 employes were killed, and 22 injured, in the course of their work on Canadian railways. Of the fatalities, four were due to being run over, three to derailments, and one each to being caught between cars, to a fall, to drowning and to sunstroke, while, of the other accidents, five were due to falls, four each to derailments and to falling material, three to being run over, two to an explosion of powder, and one each to tools, to being caught between cars, to a collision, and to an assault in the railway yards by tramps.

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Canadian Ticket Agents' Association.

The 23rd annual meeting was held at Statler's Hotel, Buffalo, N.Y., Oct. 5. Before the business session the members and the ladies accompanying them assembled in one of the hotel meeting rooms, H. Parry, General Agent Passenger Department New York Central Rd., the Chairman-Secretary of the Buffalo local committees, presiding. Mayor Adams welcomed the Association to the city, President R. J. Craig, ticket agent C.P.R., Cobourg, Ont., responding. The business meeting was then proceeded with, President Craig in the chair. After routine proceedings, Secretary de la Hooke presented his report, showing 190 members in good standing against 184 in 1908. The new members outnumbered the withdrawals; nine of the 16 retirements were owing to men moving or giving up agencies and one to death, leaving only six to be accounted for. The financial condition shows signs of improvement. The year's receipts were \$415, which with \$95.41 balance brought forward and a credit of \$69.76 from the Detroit meeting totals \$580.17. The expenses were \$456.35, leaving a balance of \$123.82. Death was unusually busy among the members during the year, Lt. Col. Piche, of Joliette; A. H. Baird, of Paris; and N. Lusher, of Montreal, having passed away. Col. Piche and Mr. Baird were very regular in their attendance at the annual meetings, Mr. Lusher occasionally. The first named was elected First Vice President last year. The report said: "The deceased were so well known to you that it is not necessary to eulogise, beyond saying that they were esteemed as good men and true and they will be much missed at our gatherings. J. N. Bastedo, of the Sante Fe Rd., passed away in February. Though not a member, he rarely missed a meeting. He was much respected, was always cheerful and ever ready to help an agent out of a difficulty. I thing it was Mark Twain who said: 'A man should so live that when he dies even the undertaker will be sorry.' I quite believe that those whose loss we now regret lived such lives. Let us endeavor to do likewise."

W. Bunton, G.T.R. ticket agent, Peterboro, Ont., made a verbal report on his attendance at the American Association of General Passenger and Ticket Agents' meeting at Toledo in September, and expressed his appreciation of the cordial welcome accorded him. He wished it were possible for more of the C.T.A.A. members to attend the A. A. of G. P. and T. A.'s meetings. He had strongly urged the restoration of commission to agents and had pointed out that some of the best ticket agents were those who were engaged in other business. By building up successful businesses in their respective communities they had secured the confidence of their fellow citizens and were in a splendid position to make first-class ticket agents and secure a good volume of business. He urged that Canadian ticket agents should be furnished with transportation on U.S. railways whenever they required it, and he hoped that notwithstanding the existing U.S. laws some way would be found of granting this privilege. He believed that such transportation would be available and also that commissions would be restored. The retiring President of the A. A. of G. P. & T. A. A., G. T. Bell, had expressed himself very strongly in favor of the granting of transportation. Mr. Bunton was accorded a hearty vote of thanks.

President Craig having made a brief address. W. McElroy, C.P.R. Ticket Agent, Peterboro, Ont., gave an interesting talk on "A trip around the world," starting from Peterboro and travelling westward by the C.P.R. to Vancouver, thence by the C.P.R. Empress steamships to Japan and China, or by the Canadian Australian line to Honolulu, Fiji, Bris-

bane, and thence to Sydney. Passengers by either of these routes would meet again at Colombo, Ceylon. Thence the Mediterranean route would be taken to Naples, and the rail route via Antwerp to London.

In the discussion which followed it was decided that at the next meeting Mr. McNamara, of Walkerton, read a paper on a round the world trip without going outside British territory.

Considerable discussion took place in regard to making the business features of the annual meetings more prominent. It was decided that the executive prepare a list of questions to be discussed and also arrange for the reading of papers on matters of common interest.

It was decided to ask the American Association of General Passenger and Ticket Agents and the Travelling Passenger Agents Association to send delegates to the C.T.A.A. annual meetings in future.

Correspondence was read in reference to the resolution adopted by the Association last year urging that supplements to tariffs be restricted. G. T. Bell, A.P.T.M., Grand Trunk Ry., wrote: "I feel sure that all of the lines desire to limit the number of supplements and we will see what can be done to avoid the necessity of having more than two or three supplements to any one passenger tariff, which, unless the circumstances are very exceptional, is entirely reasonable."

W. Stitt, G.P.A., Canadian Pacific Ry., wrote:—"We can appreciate the difficulties under which agents suffer through the large number that are issued. We try to avoid the issuance of too many as much as possible, but it is difficult to control them. Some tariffs will take weeks to prepare and their cost will mean between \$300 and \$400. Slight changes take place which have to be given effect to, and were we to issue new tariffs and confine them to issuance of two or three supplements an army of clerks would be required and the cost, as you can estimate from the figures I have given, would be enormous."

G. H. Webster, Secretary Eastern Canadian Passenger Association, wrote:—"As the tariffs of the lines in the E.C.P.A. are re-issued the lines are working to the idea of not having more than one supplement to the new tariffs in effect at any one time."

W. Phillips, G.P.A., Canadian Northern Ry., wrote:—"The resolution suggesting that supplements to passenger tariffs be restricted to two or three is one that I consider should be acted upon, knowing as I do the difficulties encountered by agents in keeping tariffs in proper shape, owing to the numerous supplements issued."

President Bohrer, of the Travelling Passenger Agents Association, said it would give them great pleasure to send a delegate to the C.T.A.A. meetings, and he hoped the latter association would reciprocate. A resolution to this effect was adopted.

A resolution expressing regret at the absence of G. J. Alexander, G.T.R. ticket agent, Richmond, Que., owing to an attack of typhoid, was adopted.

Officers were elected as follows:—President, J. P. Hanley, G.T.R., Kingston, Ont.; 1st Vice President, S. A. Morris, C.P.R., Rodney, Ont.; 2nd Vice President, J. L. Thomson, P.E.I.R., Charlottetown, P.E.I.; 3rd Vice President, A. Philips, G.T.R., Huntingdon, Que.; Secretary-Treasurer, E. de la Hooke, G.T.R., London, Ont.; Auditor, F. M. Hawley, G.T.R., Cobourg, Ont.; Executive Committee, W. Bunton, G.T.R., Peterboro, Ont.; C. E. Horning, G.T.R., Toronto; W. Jackson, C.P.R., Clinton, Ont.; W. McElroy, Peterboro, Ont.; M. McNamara, Walkerton, Ont.

A number of votes of thanks were passed, including the railway companies

which furnished transportation, the local committees, etc.

A committee of Buffalo transportation officials made splendid arrangements for the entertainment of the members and their wives. The social programme included on Oct. 5 in the morning a ladies' shopping trip under escort of committee, in the afternoon a steamboat trip on the Niagara River around Grand Island for ladies and others not attending the business meeting, in the evening a theatre party of ladies under escort of committee. The Association's Dutch lunch held in the evening was most enjoyable, embracing among other details an excellent musical programme. On Oct. 6 the party went in the morning by special train to East Aurora, N.Y., where a very interesting time was spent visiting the various Roycroft shops. Mrs. Elbert Hubbard spoke a few words of welcome at the Roycroft Inn, where a most charming luncheon was served. F. W. Churchill, C.P.R., Collingwood, Ont., responded for the Association. On returning to Buffalo in the afternoon the party was taken on an automobile tour of the city, and in the evening enjoyed a theatre party. On Oct. 7 a trip was made by electric car over the Niagara Belt Line, through the Niagara Gorge and Victoria Park, and after lunching at the Clifton Hotel, the party dispersed.

About 75 members and 55 ladies were in attendance.

T. Thauburn, C.P.R., Brampton, Ont., distributed to everyone in attendance some beautiful cut flowers from the Brampton nurseries.

The Association presented H. Parry, G.A.P.D., New York Central Rd., and B. P. Fraser, D.P.A., Pennsylvania Rd., with cut glass decanters, and G. B. Wylie, T.P.A., Illinois Central Rd., and W. B. Wheeler, G.A.P.D., Lehigh Valley Rd., with silk umbrellas in acknowledgment of their services on the local committees.

Trade and Supply Notes

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The British Boards of Trade and Admiralty have officially endorsed the low pressure automatic acetylene gas buoy system, manufactured by the International Marine Signal Co., Ottawa, and which has already been adopted by the Canadian Government.

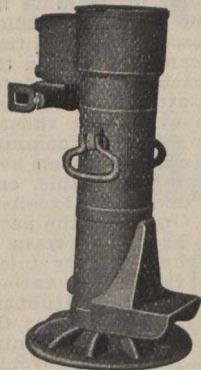
O. F. Bannard, President National Trust Co., who has been selected as the Republican candidate as Mayor for New York City, is Chairman of the Board of Directors of the Herring-Hall-Marvin Safe Co., which is about to erect a large plant in Canada in conjunction with the Canadian Fairbanks Co., its Canadian representatives.

W. R. Toppan, Vice President and General Manager L. M. Booth Co., has closed a contract with the Vandalia Rd. for a Booth water softener, with a treating capacity of 40,000 gallons per hour, and a 350,000 gallon steel storage tank to be installed in connection with the new shops at Terre Haute, Ind. The Booth water softener on the C.R.I. and P. Ry., at Sayre, Okla., has been put into operation.

The Intercolonial Ry., is reported to have made a contract with the North Atlantic Coal Co., Port Morien, N.S., for 500,000 tons of coal.

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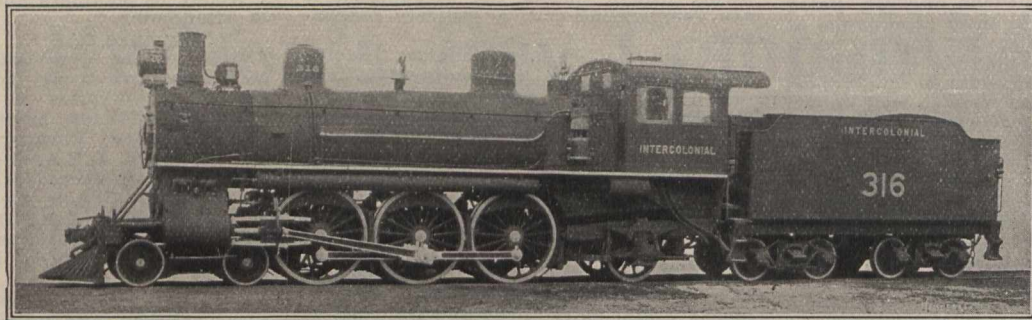


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Richelieu River Bridge.—Work has been started upon the sub-structure for the bridge over the Richelieu River between St. Johns and Iberville, Que. The bridge will be 1,500 ft. long, and will have a lift span in the centre. It will be made of sufficient width for a second track, but this will not be laid at present. The contractors are Quinlan & Robertson, Montreal. The Dominion Government is carrying out some important works at this point in the way of widening the river so as to improve the navigation, the dredging work being already well under way.

Ottawa, Northern and Western Ry.—The Dominion Parliament will be asked next session to extend the time for the construction of the lines authorized.

Campbellford, Lake Ontario and Western Ry.—With reference to the recent press reports that the C.P.R. would, at an early date, start construction of a line eastward from Toronto, in order to reach a number of lakeside towns and agricultural centres in eastern Ontario, J. W. Leonard, General Manager Eastern Lines, stated that whatever the company might do in the future, for the present there was absolutely no truth in the story. The company was too busy with urgent construction in the west to bother much with eastern lines. "Eventually," he added, "we will double-track much of the line between Montreal and Toronto, and build new lines, but not for some time."

Georgian Bay and Seaboard Ry.—The engineers on the surveys for the location of this line between Victoria Harbor and Peterboro, Ont., have been working at the Peterboro end recently. According to the present survey, the line will meet the C.P.R. main line at Kendry siding, five miles west of Peterboro. The engineers state that they have found a satisfactory route, no steep gradients having been met, and the general condition of the country is favorable. The line comes down from Omemece, cutting through Cavan and Manvers townships.

Ashbridge's Bay, Toronto.—In connection with G.T.R. application to the Board of Railway Commissioners, to construct a siding into the site acquired by the National Iron Works, the C.P.R. asks that provision be made for a connection for its lines. The plans have been referred to the Board's engineer for a report.

London to Windsor, Ont.—The relaying of the track between London and Windsor, Ont., with 85-lb. steel has been completed.

Goderich Freight Sheds.—General Superintendent Osborne had a conference with the Mayor relative to the construction of a freight shed at Goderich. Two suggestions were made, the first being that the curve at the commercial dock be straightened by extending the dock to a line which would allow for the sheds, the other being that a slip be cut along the beach at right angles to the south pier. The company thinks the Government or the town should bear the expense. The question is under consideration.

Fort William Union Station.—A conference was recently held at Winnipeg between the C.P.R., the C.N.R., the G.T.P.R., and the Mayor of Fort William, on the subject of the union station in that city. The object was to arrange that the station which the C.P.R. is building in Fort William, which will be completed next year, shall be used by all three lines. It is understood that an arrangement has been arrived at by which this object can be carried out.

Fort William — Winnipeg Second Track.—The completion of construction of the second track between Fort William, Ont., and Winnipeg, was marked

by a special trip over the line made by representatives of the Winnipeg newspapers and others, early in Oct. The contract has been in progress since 1906, a good deal of work of a preliminary character having been done in previous years by the company. The work done includes over 100 miles of rock cuts, 1,069 running feet of tunnels, and 70 miles of diversions. The greatest difficulties met with in the work were the muskegs, some of which took several months to fill. In all, 2,080,000 cubic feet of rock were blasted, and 14,000,000 yards of earth, sand and gravel handled.

Winnipeg Transfer Track.—Work was completed Oct. 15 on a transfer track in St. James, Winnipeg, between the C.P.R. and the G.T.P.R. Up to the present time the exchange of traffic between these two lines has been made at Portage la Prairie, Man.

Manitoba and North Western Ry.—Application will be made next session of the Dominion Parliament for an extension of time for the construction of the line authorized by sec. 1, chap. 126, of the Statutes of 1908. The company will also ask for authority to construct the following additional lines: from near Birtle to near Hamiota, Man., and from near Russel in a northerly or north easterly direction for 150 miles.

Ardal Extension.—Over 70 teams and 100 men are at work on the extension of the Teulon branch to Ardal, Man. It is expected to have the track laid from Komarno, where the track now ends, to Kreutzburg, about 11 miles north, early in Nov.

Schwitzer Junction.—Tenders are under consideration for grading for tracks in the yards at Schwitzer Junction, Man.

Strassburg.—Considerable work is being done in the laying out of yards, etc., at Strassburg, Sask. The company has a number of men engaged in drilling for water, and, it is understood, if a satisfactory supply can be obtained, a divisional point will be established there.

Sheho to Lanigan.—Tracklaying has been completed on the line to connect the old Manitoba and North Western Ry. at Sheho with the Pheasant Hills branch at Lanigan, Sask.

Wilkie to Hardisty.—Tracklaying on the uncompleted portion of the line between these two points, 75 miles, on the line from Saskatoon to Wetaskiwin, has been in progress since Aug. 20. Progress was slow at first on account of the scarcity of labor, but by the middle of Sept. the difficulty was got over and the work went ahead rapidly. Early in Oct. the contractor stated that tracklaying would be completed by Oct. 24. On Oct. 14, it was reported that only 16 miles remained to be laid. It is not expected that the line will be opened for traffic before the end of the year.

Calgary and Edmonton Ry.—The Dominion Parliament will be asked next session to extend the time within which the company may construct its authorized lines. The company will also ask for authority to construct an extension of its Lacombe branch as authorized by sec. 6b, chap. 89, of the Statutes of 1903, to a junction with the C.P.R. Moose Jaw branch at Outlook, Sask., about 200 miles.

Lethbridge-MacLeod Cut-Off.—Ballasting has been completed, and everything is ready for the operation of the line, except the bridge over the Old Man River. This bridge is expected to be ready by Nov. 1.

Lethbridge Northerly.—Tracklaying was commenced at the end of Sept., and it is expected it will be completed into Carmangay by the end of Nov.

Columbia and Western Ry.—Application will be made next session of the Dominion Parliament to extend the time for the construction of the second, fifth and sixth sections of the authorized line.

Nicola, Kamloops and Similkameen

Coal and Ry. Co.—The Dominion Parliament will be asked next session to extend the time within which the company may construct the lines authorized by the B.C. Legislature and the Dominion Parliament.

Esquimalt and Nanaimo Ry.—Application will be made next session of the Dominion Parliament for an extension of time for the construction of the extension of the main line to Comox and branches authorized by chap. 14, B.C. Statutes 1884; and the lines authorized by sec. 2, chap. 92, Statutes of Canada, 1906.

The tender of Jense, McDonnell and Timothy, Calgary, Alta., has been accepted for the construction of the second section of the extension from Nanaimo to Alberni. The contract covers the grading and bridging from the Little Qualicum River to Alberni, and is the most difficult portion of the extension. It involves some heavy cutting at the divide, and a good deal of rock work at other points. On the first section of the extension, grading has been completed from near Wellington to Nanoose, 12 miles, and from near Nanoose to French Creek, 13 miles. Between these two points there is some rock cutting not completed. Some track has already been laid at the Wellington end.

The company has completed the sale of 54,000 acres of timber lands in the Cowichan valley, Vancouver Island, to a U. S. company. In connection with the sale, R. Marpole, Vice President of the E. and N. Ry., stated that the company will undertake the construction of a branch from Cowichan Bay, on the east coast of Vancouver Island, to the foot of Cowichan Lake. This line will be 22 miles, to be used mainly for the development of the lumber trade from these limits.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—The issue of bonds listed on the New York Stock Exchange has been made principally for the purpose of constructing 50 miles of line extending from the Kettle River in Pine county, Minn., northeasterly through Pine, Minnesota, Douglas and Wisconsin counties to Duluth. (Oct., pg. 739.)

Nova Scotia Southern Ry.—In the course of railway construction work in Caledonia, Queen's county, before the acquiring, completing or construction of the New Germany and Caledonia branch by the Halifax and South Western Ry., certain work was done by the N.S.S. Ry. or by R. G. Hervey, beyond the line since acquired by the H. and S. W. Ry. with resulting injury to the lands of several persons. No claims for these injuries were made at the time the commissioner was appointed in 1903 to adjust the claims. Some of the claimants, to whom awards were made, have failed to apply for the money awarded them, and last session of the Nova Scotia Legislature an act was passed authorizing the use of the unclaimed awards for compensating the owners of lands who did not put in claims originally.

The International Railway Fuel Association has decided to hold its second annual meeting at Chicago, Ill., in May, 1910.

In carrying out what are known as No. 1 repairs on a locomotive, the C.P.R. machinists at the Winnipeg shops recently completed same, in about 2½ days, which is claimed to be a record for the continent, the previous best time being seven days.

The British North America Mining Co. will apply next session of the Dominion Parliament for power among other things, so far as it is necessary or useful for its purposes, to construct and operate tramways, telegraph and telephone lines, to acquire steam and other vessels, and to construct wharves, piers, etc.

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TORONTO, CANADA, NOVEMBER, 1909.

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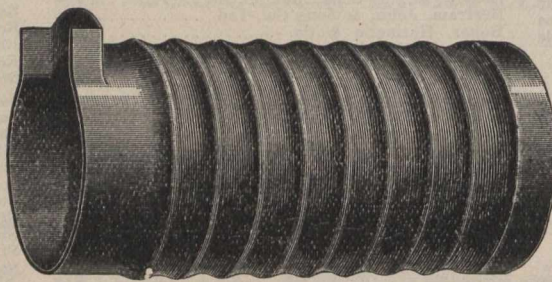
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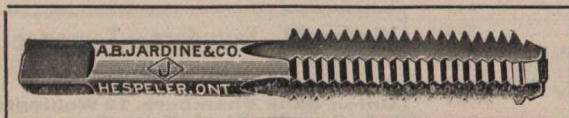
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RAILWAY DEVELOPMENT.

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Alaska Central Ry.—In connection with the reported purchase of this railway by the Sovereign Bank, Toronto, now being wound up, it is stated that the purchaser will fix up the 100 miles already constructed and proceed with the construction of the additional 350 miles necessary to carry it to the copper mining district at the Tanana River. It was to reach these fields that the construction of the line was originally undertaken. (June, pg. 413.)

Alberta and Great Waterways Ry.—C. Goddard, who has completed the surveys for the Canada Western Ry., has opened an office in Edmonton, Alta., and is in charge of the location surveys of this projected railway. An Edmonton dispatch states that over twenty engineers are making surveys for the section of the line between Edmonton and Lac la Biche, Alta.

An Edmonton dispatch of Oct. 8 says there is good reason to believe that financial affiliations have been made between this company and the Canada Western Ry. Co., and that a line will be constructed from Edmonton to Calgary to connect them. (Oct., pg. 743.) (See also Canada Western Ry.)

Algoma Central and Hudson's Bay Ry.—The Superintendent and the Chief Engineer have been engaged recently in looking over the located line to connect the Josephine Mine, where the company's Michipicoten branch now terminates, with the C.P.R. near Grasset station, Ont. A survey party has been out all summer, and the visit is for finally passing upon it. It is expected an announcement will be made at an early date respecting construction, not only of this piece of line, but also of the section of the main line from the present end of track to the junction with the Michipicoten-C.P.R. line. (Sept., pg. 649.)

Canada and Gulf Terminal Ry.—We are advised that construction is proceeding satisfactorily on the first section of 10 miles on this railway. The line starts near St. Flavie, on the Intercolonial Ry., and the 10 miles under construction will bring it to Little Metis, Que. It is expected to have this section completed in time for the tourist traffic of next season. The grading and approaches to the bridge over the Metis River are being finished, and the bridge itself is under construction. (Oct., pg. 743.)

Canada Western Ry.—The surveys for a line from Calgary to the International boundary are reported to have been completed, also surveys for a connecting line from the International boundary to Butte, Mont. The preparation of construction plans is being proceeded with, C. Goddard, Edmonton, Alta., being the engineer in charge. It is understood that tenders for construction will be asked for at an early date. The route as laid out starts at Calgary, runs about 20 miles west and turns due south to The Gap, passing between the Porcupine Hills and the Livingstone range. From The Gap it continues parallel with the C.P.R., crossing the Crow's Nest Pass branch between Cowley and Pincher, to Pincher Creek. From this point it takes a southeasterly direction to the International boundary. It is reported that for the present connection will be made in Montana with the Chicago, Milwaukee and Puget Sound Ry. Among the promoters of the undertaking are F. B. Lynch, O. A. Robertson, and T. E. Kenaston, St. Paul, Mo. These men are interested in a number of land, coal and lumber companies at Taber, Red Deer, Alta.; Nelson, Revelstoke and Fernie, B.C. (Oct., pg. 743.) (See also Alberta and Great Waterways Ry.)

Diamond Ry. Coal Co.—The last spike of the line constructed by the company, from the C.P.R. Crow's Nest branch near Lethbridge, Alta., to the coal fields in tsp. 10, range 21, west 4th p.m., was driven Oct. 14, by the wife of the Lieutenant-Governor. The ceremony took place at Diamond City, which is the name of the mining town at the terminus of the line. The company's mine has been developed, and after the spike driving ceremony the coal tippie was started and a car loaded up for shipment. T. Underwood, Calgary, Alta., is Managing Director. (Oct., 1908, pg. 711.)

Eastern Townships Ry.—The Dominion Parliament will be asked next session to extend the time within which the company may construct the lines authorized by section 8, chap. 84 of the statutes of 1906-07. L. R. Lavergne, Arthabaska, Que., is solicitor for the company. (July, pg. 475.)

Edmonton, Dunvegan and British Columbia Ry.—Application will be made next session of the Dominion Parliament for an extension of time for the construction of lines authorized by section 71, chap. 85 of the statutes of 1907. Pringle and Guthrie, Ottawa, are solicitors for the company. (July, pg. 475.)

Erie, London and Tillsonburg Ry.—Application will be made next session of the Dominion Parliament for an extension of time within which it may construct its authorized line. The notice is signed by J. H. Teall, of Tillsonburg, Ont. (July, pg. 475.)

Kamloops and Yellow Head Pass Ry.—Application will be made next session of the Dominion Parliament for an extension of time for the construction of the lines authorized by section 8, chap. 115 of the statutes of 1906. Tupper and Griffin, Vancouver, B.C., are solicitors for the company. (July, pg. 477.)

Lillooet to Fort George.—Application will be made next session of the B.C. Legislature for the incorporation of a company for the construction of a railway from Lillooet, northerly by way of the Fraser River valley or other feasible route, to Fort George, B.C., together with all necessary powers. A. McEvoy, Vancouver, is solicitor for the applicants.

Nelson River Ry.—Application will be made next session of the Dominion Parliament for the incorporation of a company for the construction of a line from Lake Winnipeg near its outlet into the Nelson River, or near the discharge of the Saskatchewan River, or from a place between, to the Hudson Bay Ry. (so called) to be located by the Dominion Government. The company also asks power to construct or acquire vessels and operate them from Winnipeg and other places on the Red River and Saskatchewan River to Lake Winnipeg to connect with such line; to construct tramways at points on the Nelson and Saskatchewan Rivers where necessary to transport freight and passengers around rapids; to operate vessels on the Nelson River, and from the mouth of the river to any other port. The company also asks for a number of other powers with the object of developing the country through which the proposed line will pass. Bonnar, Trueman and Thornburn, Winnipeg, Man., are solicitors for the applicants.

Northern New Brunswick and Seaboard Ry.—We are advised that the portion of this railway now under construction begins at the Intercolonial Ry., four miles south of Bathurst station, and extends up the valley of the Nipisiguit River, 17 miles, to the Canada Iron Corporation's ore deposits. The gradient is 1% with the load, and the maximum curvature 955 ft. The bridges are of steel, the culverts of reinforced concrete, and the line will be laid with 85-lb steel rails. Ore will be shipped at Bathurst and Newcastle. Some dredging will have to be done at Bathurst before ore shipments can be made. About one mile

below Newcastle, on the Miramichi harbor, the Canada Iron Corporation is constructing ore discharging docks, including trestle approach, a 10,000-ton ore pocket, and an endless bucket conveyor; to reach which a line, one mile long is being constructed from Newcastle station. J. J. Taylor is engineer in charge. (Oct., pg. 745.)

Ottawa, Brockville and St. Lawrence Ry.—Application will be made next session of the Dominion Parliament for an extension of time within which the company may construct the railway authorized by chap. 71 of the Statutes of 1900. (Oct., 1908, pg. 713.)

Owen Sound and Meaford Ry.—At a public meeting in Owen Sound, Oct. 12, a resolution was passed favoring the granting of aid towards the construction of a projected railway from Owen Sound, Ont., easterly, to the extent of \$400,000, either by way of an investment or the guarantee of bonds. An opinion was expressed in favor of making the connection with the G.T.R. at Thornbury instead of at Meaford, on account of the easier gradient. An alternative proposal was to construct a line between the C.P.R. station in Owen Sound and that company's Sudbury branch.

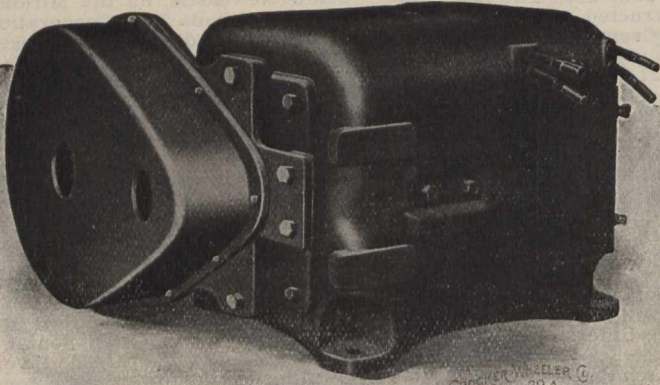
The distance between Owen Sound and Meaford is 25 miles, and the O.S. and M. Ry. has a charter for the construction of such a line. The Manitoulin and North Shore Ry. and the Huron and Ontario Ry. (electric) have charters covering the same route. The Dominion Parliament has voted a subsidy on the usual terms for the construction of a line between Owen Sound and Meaford. (July, pg. 479.)

Pine Pass Ry.—Application will be made next session of the Dominion Parliament for the incorporation of a company to construct a line from Edmonton, Alta., northwesterly to junction of the MacLeod and the Athabaska Rivers, thence to Grande Prairie, and westerly to Pouce Coupe Prairie and continuing through Pine River Pass, thence southwesterly to Fort George on the Fraser River, B.C. The company will also ask for power to construct and navigate steam and other vessels; to construct bridges for railway and general traffic and to charge tolls for their use. Smith and Johnston, Ottawa, are solicitors for the applicants.

Prince Albert and Hudson Bay Ry.—Application will be made next session of the Dominion Parliament for an act amending section 7 of its act of incorporation by striking out the words "thence crossing the Saskatchewan River," and providing for an extension of the line from Prince Albert, Sask., by the most feasible route southerly and westerly to Calgary, Alta., and also for a branch from its authorized line southerly to Melfort, Sask., on the C.N.R. It is also desired to issue bonds to the amount of \$50,000 a mile, to have power to make agreements with other companies, and to have an extension of time within which it may construct its authorized line. Smith and Johnson, Ottawa, are solicitors for the applicants. (Feb., pg. 103.)

Quebec Central Ry.—The annual report presented to the annual meeting in London, Eng., Oct. 13, states that the extension from St. George to Justine was commenced in the spring, and satisfactory progress having been made, it is expected that this portion of the line will be open for traffic early in 1910.

Queen Charlotte Islands Ry.—A syndicate has been formed in Seattle, Wash., with a capital of \$1,000,000 to develop the resources of the Queen Charlotte Islands, B.C. The syndicate owns 20,500 acres of timber lands on the islands, which it is proposed to develop by the immediate construction of a railway. The section of the line which it is proposed to construct at once will be 17 miles and terminate on Lena Island,



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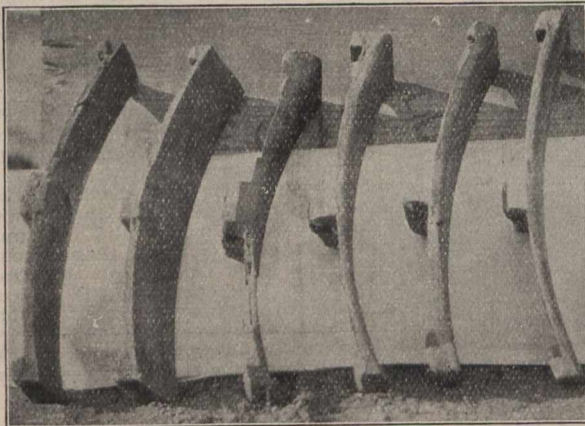
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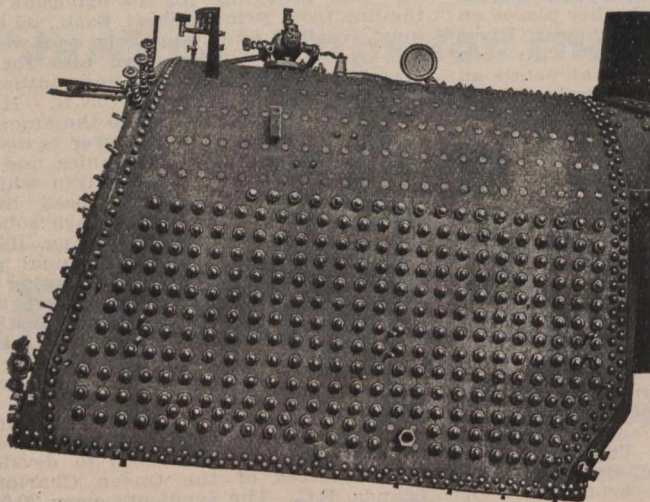


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where wharves, etc., will be constructed. J. A. Moore, Seattle, is one of the leading members of the syndicate. The Queen Charlotte Islands Ry. was incorporated by the B.C. Legislature in 1903. It has power to construct a line from Rennell Sound to Skidegate Harbor, and from any point on the line to Massett Inlet, all on Graham Island, one of the Queen Charlotte Islands. The company obtained extension of time for construction in 1905 and 1907. The original incorporators of the company were M. King and J. Irving, Victoria, B.C. (June, 1907, pg. 409.)

Queens County Ry.—The Nova Scotia Legislature last session incorporated a company with this title, the provisional directors being J. Walker, New Market, N.H.; H. W. Anderson, Exeter, N.H.; and V. J. Paton, Bridgewater, N.S. It is authorised to acquire the Sable Lumber Co.'s railway lines, extending from Wilkins Siding to its timber lands, to extend same, and generally to construct a line or lines from the Halifax and South Western Ry. between Liverpool and Shelbourne to Sable Lumber Co.'s lands. It is also given various other powers with its capital stock fixed at \$100,000, and authority to issue bonds.

Reid Newfoundland Ry.—A survey is being made for the location of a branch line in the Bonavista Bay district. The new line, it is understood, will commence at Shoal Harbor, and run along to Goose Bay, across country to Catalina, and again along the shore to Bonavista, Nfld., about 80 miles. The survey is in charge of J. Powell.

W. D. Reid, together with members of the Government and the Legislature, arrived at Shoal Harbour, Nfld., Oct. 12, and started on a trip of inspection over the route surveyed for the new branch to Bonavista.

St. Lawrence and Ungava Ry.—Application will be made next session of the Dominion Parliament for an act incorporating a company with this title to construct a line from the St. Lawrence River in Berthier county, Que., northerly through Joliette, Berthier, Maskinonge, St. Maurice and Champlain counties to the northern boundary of the province, thence into the Ungava district, north-easterly to Ungava Bay. The company will also ask for power to construct telegraph and telephone lines, to operate steam and other vessels, to construct docks, wharves, etc., and to carry on a number of other businesses. Green-shields, Greenshields and Languedoc, Montreal, are solicitors for the applicants.

Superior and Western Ontario Ry.—We are advised that the line authorized to be constructed by this company is to extend from Velora Jct. on the G.T.P.R. Lake Superior branch to the National Transcontinental Ry., north of Sturgeon Lake, Ont. The line will be about 60 miles long, and will pass through a partially settled district around Sturgeon Lake. The company has this year made a beginning by constructing a portion of the line, from Velora to the south end of Sturgeon Lake, at O'Brien, where it connects with the New Ontario Transportation Co.'s vessels trading to all parts of the lake. The company is now doing a large business, chiefly from railway contractors and prospectors on Sturgeon Lake. The portion of the line opened has been carrying traffic since Aug. 1. Since the opening of the line the name of Velora Jct. has been changed to West Ontario Jct. The officers of the company are:—President, A. McDougall; Vice President, J. J. Whalen; General Manager, J. A. Whalen. (Oct., pg. 745.)

Temiskaming and Northern Ontario Ry.—After considerable delay there is now a prospect of the early construction of the spur line to the wharf at Hailey-

bury. The Commissioners began construction, but a body of citizens objected to the line crossing the water front and the work was stopped. The matter came before the Ontario Railway and Municipal Board Sept. 30, and an order has been made authorizing construction.

The construction of the new station at Cobalt is progressing rapidly. It was announced that half of the structure would be ready for occupation Oct. 30.

Tenders will be asked at an early date for the construction of the spur line to the wharf at New Liskeard. (Oct., pg. 745.)

Thessalon and Northern Ry.—The officers and directors are:—President, D. J. Sandie; Secretary, A. A. Burke; directors, W. H. Taylor, T. Buchanan, H. Appleton, J. B. Dobie, C. A. Keast. The company has constructed a line from Thessalon to the C.P.R., 3.50 miles. This piece of line is being operated by the C.P.R. to and from the town. (Oct., pg. 745.)

Toronto Eastern Ry.—Application will be made to the Dominion Parliament to incorporate a company with this title to construct a line from Toronto, easterly through Whitby, Oshawa and Bowmanville to Cobourg, Ont., with branches from Cobourg to Peterboro, Scarborough to Markham, Stouffville or Uxbridge; from Oshawa northerly, via the eastern side of Lake Scugog, to Lindsay; from Oshawa southerly to Lake Ontario. The company desires that the lines be declared to be for the general advantage of Canada, and that it be authorized to amalgamate with other companies. L. K. Murton, Oshawa, Ont., is solicitor for the applicants.

Railway Rolling Stock Notes.

The C.N.R. has placed an order with Rhodes, Curry Co., Ltd., Amherst, N.S., for five snow plows.

The I.C.R. has ordered 30 Hart-Otis steel dump cars from the Dominion Car and Foundry Co., Montreal.

The Crossen Car Mfg. Co., Cobourg, Ont., has completed delivery of a recent C.N.R. order for 200 box cars and 15 cabooses.

The Montreal Locomotive Works, during the month preceding Oct. 23, delivered locomotives, as follows:—Temiscouata Ry., two; Grand Trunk Pacific Ry., seven; Intercolonial Coal Mining Co., one; New Canadian Co., one; E. and W. Reade Co., one.

The Temiskaming and Northern Ontario Ry. is asking the prices for 12 cinder cars and 50 box cars. Recent additions to rolling stock include five locomotives, nos. 127 to 131, from the Canadian Locomotive Co., Kingston, Ont., and five vans, nos. 63 to 67, from the Silliker Car Co., Halifax, N.S.

The C.N.R., between Sept. 15 and Oct. 15, received the following additions to rolling stock, one first-class coach and eight cabooses from Rhodes, Curry Co., Amherst, N.S.; 20 box cars and 15 cabooses from the Crossen Car Mfg. Co., Cobourg, Ont., and one first-class coach from the Silliker Car Co., Halifax, N.S.

The G.T.P.R., since July 1, has received 25 mogul locomotives from the Canadian Locomotive Co., Kingston, Ont., 25 eight wheel passenger locomotives from the Montreal Locomotive Works; five tourist cars, five colonist cars, 138 box cars, 50 refrigerator cars, 100 stock cars and 50 cabooses from the Canada Car Co., Montreal.

The C.P.R., between Sept. 13 and Oct. 14, placed orders for rolling stock, as follows:—10 consolidation locomotives, three Pacific locomotives, 83 box cars, 48 flat cars, four stock cars, one re-

frigerator car, one pile driver and two second class cars at its Angus shops, Montreal; five vans and one flanger at its Farnham shops, Que.

The C.P.R., between Sept. 13 and Oct. 14, received the following additions to rolling stock: 177 box cars, seven first class and smoking cars, three box baggage cars, three mail and express cars, seven refrigerator cars and one hump switching locomotive from its Angus shops, Montreal; 125 steel frame flat cars from the Dominion Car and Foundry Co., Montreal; and nine D-10 locomotives from the Montreal Locomotive Works.

The Dominion Car and Foundry Co., Montreal, is building two 50-ton flat cars with steel floors for carrying slag for the Hamilton Steel and Iron Co., Hamilton, Ont. Following are the principal dimensions, etc.:

Length	50 ft.
Width	9 ft.
Journal boxes	Cast iron, M.C.B.
Wheels	Cast iron, M.C.B.
Axles	Steel
Couplers, bolsters and brakebeams	Simplex
Brakes	Hand, only

The Dominion Car and Foundry Co., Montreal, has received an order from the Dominion Iron and Steel Co., for 40 all steel hopper ore cars, of which the following are the chief particulars:

Capacity	50 tons
Length inside	28' 0"
Width inside	9' 6"
Centre to centre of trucks	23' 2"
Length inside to inside of coupler knuckles	33' 0"
Top of rail to top of sides	9' 10"
Couplers	Tower
Brakes	Hand only
Trucks	Arch bar M.C.B.
Wheel base	5' 0"
Journal boxes	Cast iron
Bolsters and brake beams	Simplex
Axles	Steel
Brake shoes	Cast Iron

The Esquimalt and Nanaimo Ry. has ordered 20 all steel drop bottom coal cars from the Dominion Car and Foundry Co., Montreal, of which the following are chief particulars:

Length inside	36' 9 1/2"
Width inside	9' 8"
Height inside	5' 0"
Centre to centre of trucks	26' 0"
Length over end sills	38' 10"
Height top of rail to top of side	9' 4 13-16"
Air brakes	Westinghouse K.C. 1012
Couplers	Simplex 5" by 5"
Draft springs	M.C.B. class G
Truck wheel base	5' 6"
Truck bolsters	Simplex
Side bearings	Susemihl frictionless
Brakebeams	Simplex
Wheels	Cast iron
Axles	Steel
Journals	5 1/2" by 10"
Journal boxes	McCord M.I.

The G.T.R., since July 1, has placed orders for 10 Pacific type locomotives, 15 compound consolidation locomotives, with the Montreal Locomotive Works, and 25 mogul locomotives with the Canadian Locomotive Co., Kingston, Ont. Following are chief particulars of the Pacific type locomotives:—

Tractive effort	31,559 lbs.
Weight in working order	210,000 lbs.
Weight on drivers	139,000 lbs.
Weight of engine and tender	353,300 lbs.
Wheel base, driving	13' 4"
Wheel base, engine and tender	62' 9 1/2"
Cylinders	22" x 28"
Wheels, diam. over tires	73"
Journals	9 1/2" x 12"
Truck journals, back	8" x 14"
Truck journals, front	6 1/2" x 10 1/2"
Boiler, type	Extended wagon top
Boiler, pressure	200 lbs.
Firebox	96 7/8" x 75 1/4"
Tubes, no. and diam.	308, 2"
Tubes, length	20' 6"
Heating surface, tubes	3,306 sq. ft.
Heating surface, firebox	169 sq. ft.
Heating surface, total	3,475 sq. ft.
Grate area	50.62 sq. ft.
Tender, tank	Water bottom
Frame	10' channel, steel
Wheels, diam.	34"
Journals	5 1/2" x 10"
Capacity, water	7,000 gals.
Capacity, coal	10 tons

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MAINLY ABOUT PEOPLE.

Jay Gould has been elected a director of the Wabash Rd., succeeding W. B. Sanders retired.

Stewart Gordon, formerly in the C.P.R. hotel system service, is living in North Devon, Eng., where he has leased a place.

W. N. Graham, son of the Minister of Railways and Canals, was married at Cannington, Ont., Oct. 14, to Miss N. Dure.

Miss N. Lewis, granddaughter of Colingwood Schreiber, C.M.G., was married at Ottawa, Oct. 13, to T. F. Ahearn, Ottawa.

F. A. Mills, cashier Great Northern Ry., Brandon, Man., was arrested there recently, charged with embezzling \$350 from the company.

J. W. Lyon, who represents the Guelph City Council, on the board of the Guelph Junction Ry., has occupied that position for over sixteen years.

W. D. Reid, President Reid Newfoundland Co., returned to Newfoundland at the end of Sept., after spending a few weeks in Great Britain.

J. M. Gibbon, C.P.R. Advertising Agent, London, Eng., who has been spending some time in Canada, returned to England at the end of Sept.

F. H. McGuigan, formerly of the G.T.R., and now contractor to the Ontario Hydro Electric Commission, is living at the Prince George Hotel, Toronto.

E. B. Bartlett, one of the engineers engaged on the National Transcontinental Ry., died at Weymontachene, Que., Oct. 8, and was buried at Quebec, Oct. 12.

Lord Strathcona has given his old home farm at Silver Heights to the Selkirk Centennial Exhibition, after which it is to be used as a public park.

R. B. Bennett, Calgary, Alta., stated Oct. 4, that there was no truth in the report that he had been appointed General Solicitor C.P.R. at Montreal.

D. Cummings, G.N.R. ticket agent, Winnipeg, was reported missing, Oct. 15. It was stated that he had been despondent since the recent death of his wife.

W. M. Porteous, C.P.R. Freight Agent, St. Louis, Mo., who recently underwent an operation for the removal of a growth near the spine, has returned to business.

F. H. Phippen, General Counsel Canadian Northern Ry., who removed from Winnipeg to Toronto recently, has leased J. K. Osborne's house, Clover Hill, Toronto.

N. A. Rhodes, one of the founders of the firm of Rhodes, Curry & Co., car builders, Amherst, N.S., died Sept. 30, from the effects of an operation for appendicitis.

F. C. Hammond, of Toronto, eldest son of the late H. C. Hammond, President of the Northern Navigation Co., was married at Kingston, Ont., recently, to Miss K. S. Saunders.

L. R. Thompson, Travelling Freight and Passenger Agent Eastern Steamship Co., St. John, N.B., and Mrs. Thompson, celebrated the twenty-fifth anniversary of their wedding, Sept. 25.

R. Kerr, Passenger Traffic Manager C.P.R., returned to Montreal, Oct. 16, from Chicago, Ill., where he had been attending the meetings of the Transcontinental Passenger Association.

F. B. Nixon, formerly train dispatcher, Central Vermont Ry., St. Albans, Vt., has been appointed train dispatcher for the Colorado Springs and Cripple Creek District Ry., at Cripple Creek, Col.

D. McNicoll, Vice President and General Manager, and J. W. Leonard, General Manager Eastern Lines C.P.R., left

Montreal, Oct. 12, for an inspection trip over the company's lines in Ontario.

R. L. Black was mentioned in our last issue as foreman of the freight car repair shop I.C.R., Moncton, instead of R. L. Blake. The compositor's error was unfortunately overlooked in proof reading.

F. Sturdee, of the C.P.R. Passenger Department, Montreal, was presented with a number of cut glass articles, Oct. 16, by transportation officials of the city, on the occasion of his forthcoming marriage.

C. H. F. Plummer, Manager Canadian Lake Transportation Co., Toronto, who recently underwent an operation for appendicitis, is progressing favorably, and it is expected he will be able to resume business shortly.

E. E. Fisher, who retired from the position of General Superintendent of the Toronto, Hamilton and Buffalo Ry. recently, after fifteen year's service, died in the city hospital, Hamilton, Ont., Oct. 13, from the effects of an operation.

W. Mackenzie, President Canadian Northern Ry., has given \$500 towards the erection of a memorial tower at Halifax, N.S., in connection with the celebration of the 150th anniversary of the establishment of self government in the province.

J. H. Clergue, father of F. H. Clergue and B. J. Clergue, who were associated with the starting of the various industrial and railway enterprises at Sault Ste Marie, Ont., now carried on by the Lake Superior Corporation, died at Sault Ste. Marie, Sept. 25, aged 79.

G. A. Taylor, railway contractor, who died at Brockville, Ont., Oct. 13, was the first Traffic Manager of the Canada Atlantic Ry. In addition to contracts for the C.P.R., G.T.R. and Intercolonial Ry. he constructed the Coteau du Lac section of the Soulanges canal.

S. Harris and C. Burnside, two of the engineers engaged on the construction of the Guelph and Goderich Ry. and now engaged on the construction of a Chinese transcontinental railway, have been called to Toronto to give evidence in the action brought by M. A. Pigott against the G. and G. Ry.

G. Beach, who was recently arrested charged with stealing \$835 from the C.P.R., at Fredericton, N.B., where he was employed as a ticket clerk, was released from custody toward the end of Sept., no evidence being offered against him when the case came up for trial. It was stated that the shortage has been refunded.

D. B. Lindsay, who has been connected with the Temiscouata Ry., for many years, and since Jan., 1901, as Secretary and General Manager, Riviere du Loup, Que., has resigned the position of General Manager, on account of ill health and advancing years, but will retain his connection with the company, holding the position of Secretary.

L. E. Lavoie, who has been appointed General Purchasing Agent Intercolonial Ry., Ottawa, was born June 22, 1879, and entered I.C.R. service Oct., 1894, since when he has been, to Oct., 1902, clerk; Oct., 1902, to Sept., 1904, secretary to General Superintendent; Sept., 1904, to Oct., 1909, chief clerk to General Superintendent.

H. W. Brodie, Assistant General Passenger Agent C.P.R., Winnipeg, has been presented with a gold watch by the members of the British Association attending the recent meetings at Winnipeg. The watch bears the inscription, "H. W. Brodie, in acknowledgement of kind attentions, British Association Western Excursion, 1909."

W. J. Oldham, whose appointment as Supervisor of Bridges, Temiskaming and

Northern Ry., North Bay, Ont., was announced in a recent issue, was born at Ellenburgh, N.Y., Sept. 13, 1868, his record being, June, 1887, to June, 1891, bridge and building carpenter, C.P.R.; June, 1891, to June, 1909, bridge and building foreman, same road.

M. Manion, Prescott, Ont., reputed to be the oldest locomotive engineer in the C.P.R. service, was presented with a silver cup and an address by the Brotherhood of Locomotive Engineers and Firemen recently, in recognition of his honorable record. He entered the St. Lawrence and Ottawa Ry. service in 1863, and remained in the service when that railway was taken over by the C.P.R.

H. Shearer, who has been appointed Superintendent Canadian Division M.C. Rd., St. Thomas, Ont., entered that company's service in 1891, since when he has been successively, Agent at Chicago Heights, Michigan City and Jackson, Travelling Freight Agent, chief clerk in General Freight Department, Chicago, Ill., and latterly secretary to the General Manager, Detroit, Mich.

A. M. Travis, I.C.R. station master at Hampton, N.B., who will shortly be retired on the pension fund, entered the service of the old European and North American Ry., May, 1863, as telegrapher at Rothesay, N.B., and served in that capacity, later, at Salisbury and Anagance, and, until May, 1868, as trackmaster at St. John. Since May, 1868, he has acted as station master at Hampton.

M. Hoar, who has been in the employ of the Intercolonial Ry., and its predecessor, the European and North American Ry., for about 37 years, will, it is reported, be placed on the pension fund, Nov. 1. He was employed in connection with the first survey of the line, in 1853, and subsequently drove the stage coach between St. John and Moncton. He has been connected with the track department the whole of the time, the first three years being spent at Dorchester, and the remainder at Sackville, N.B.

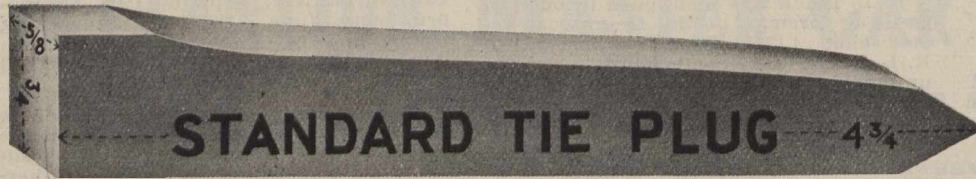
G. H. Anthony, who has been appointed Agent Pere Marquette Rd., Minneapolis, Minn., was entertained to dinner by a number of railway men and shippers of Winnipeg, Sept. 30, on the occasion of his leaving that city, where he had been acting as Agent Wisconsin Central Ry., and who since its acquirement by the Minneapolis, St. Paul and Sault Ste. Marie Ry., had acted for that company. In the course of the evening he was presented with a travelling bag, and Mrs. Anthony with a vase.

N. L. Rand, heretofore Master Mechanic Intercolonial Ry., Moncton, N.B., has retired on the pension fund. He was born at Shediac, N.B., Oct. 28, 1843, and entered railway service in 1859, since when he has been, to 1866, apprentice European and North American Ry., Shediac, N.B.; 1866 to 1875, locomotive engineer same road and its successor the Intercolonial Ry.; 1875 to 1897, round-house foreman, Moncton, N.B.; 1897 to 1902, road foreman of engines; 1902 to 1909, Master Mechanic, Moncton, N.B.

"Cluny" McPherson left for Montreal last night in his private car, in response to a telegram from headquarters. Although he absolutely declined to say anything that would indicate the nature of the business, it is believed that he is slated for the vice presidency of the big concern. It is an open secret that two big transcontinental enterprises have been bidding strong for the aggressive Scotchman's services in connection with the management of their roads. (Ten years hence, Winnipeg Tribune.)

H. H. Adams, who has been appointed General Superintendent Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., was born at Detroit, Mich., Aug. 13, 1876, and entered railway service, July, 1899, as

"Note the Size and Shape"



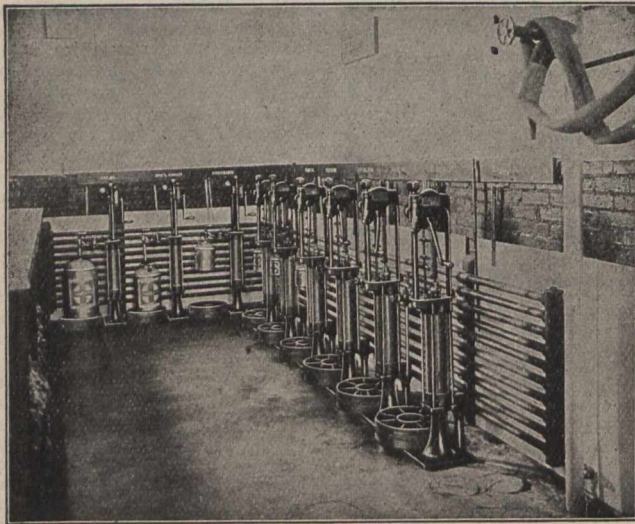
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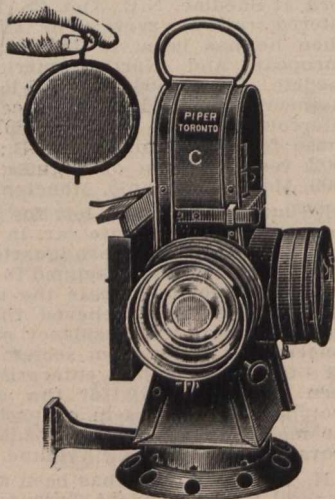
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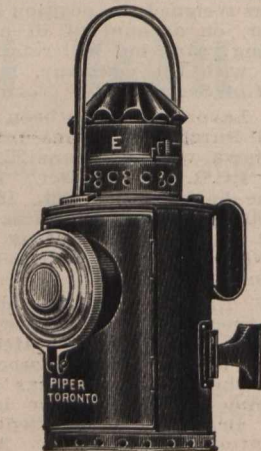
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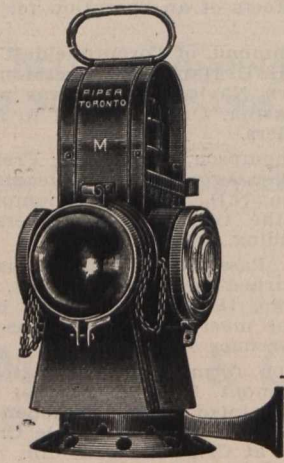
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draughtsman in the M.C. Rd. After serving in various capacities in the engineering department, he was appointed Assistant Chief Engineer, Mar., 1902; Secretary to the General Superintendent, Nov., 1902; Assistant Superintendent, Canadian Division, Jan. 1, 1903, and Superintendent Canadian Division, Jan., 1904.

R. L. Latham, who has been appointed Chief Engineer, Toronto, Hamilton and Buffalo, Ry., Hamilton, Ont., was born at Toronto, Nov. 20, 1876, and graduated in civil engineering from the School of Practical Science in 1889, taking the degree B.A. Sc., in 1901. During portions of 1898, 1899 and 1900 he was engaged in the City Engineer's office, Toronto, and on re-location surveys for C.P.R. Ontario lines, and entered T. H. and B.R. service, May 1, 1901, as Assistant Engineer, which position he held until his present appointment.

C. H. N. Connell, who has been appointed Engineer of Maintenance, Canadian Northern Quebec, and Quebec and Lake St. John Rys., was born at Woodstock, N.B., Aug. 26, 1876, his railway record being, from Aug. to Oct., 1897, chainman, C.P.R. Crow's Nest Pass branch; Oct., 1897, to Nov., 1898, clerk in Division Engineer's office, same road; Nov., 1898, to Aug., 1899, topographer, C.N.R. survey between Port Arthur and Winnipeg; Aug., 1899, to Oct., 1900, Assistant Resident Engineer on construction, same road; Dec., 1900, to Nov., 1902, Resident Engineer on construction, Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont.; May, 1903, to Oct. 1, 1909, Locating and Resident Engineer, Alberta Ry. and Irrigation Co., Lethbridge, Alta.

Miss Muriel Acton Burrows, second daughter of the Managing Director of the Railway and Marine World, sailed from Montreal, Sept. 25, en route to Paris, where she was to spend a few weeks with C. E. M. and Mrs. Hodge, at whose wedding she was the bridesmaid in May, and then return with them to England, and remain with them there for some months. While staying in London, on the way, for a few days, she was attacked with meningitis. Her uncle, A. J. Burrows, went to her from Kent; Mr. and Mrs. Hodge hurried from Paris, and the highest specialist advice was secured, but the case was pronounced hopeless, and her father left Toronto, Oct. 15, to sail by the fastest boat available, in the hope of being able to reach London in time to see her alive, but a cablegram received Oct. 20 announced that death took place on that date.

C. G. Bowker, whose appointment as Assistant Superintendent G.T.R. Middle Division, London, Ont., was announced in our last issue, was born at Medford, N.J., Apr. 21, 1871, and entered railway service in May, 1888, since when he has been, to Oct., 1890, operator, Philadelphia and Reading Rd.; Oct., 1890, to 1893, division operator, New England Division, same road; 1893 to 1897, in charge of telegraph lines and electrical service, Buffalo Division, Lehigh Valley Rd.; 1897 to May, 1900, train dispatcher, Lehigh Valley Rd., Buffalo, N.Y.; May, 1900, to Feb., 1902, train dispatcher, G.T.R., London, Ont.; Feb., 1902, to Nov., 1905, train dispatcher, G.T.R., Durand, Mich.; Nov., 1905, to May, 1907, Chief Train Dispatcher, G.T.R., Stratford, Ont.; May, 1907, to Sept., 1909, Trainmaster, G.T.R., Stratford, Ont.

F. M. Spaidal, General Superintendent Canadian Northern Quebec Ry., and Quebec and Lake St. John Ry., Quebec, whose portrait appears on the first page of this issue, was born at Gananoque, Ont., Nov. 13, 1858, and entered railway service in 1876, since when he has been, to June 1883, operator, agent and dispatcher G.T.R., at various points between Kingston, Ont., and Montreal;

June, 1883, to June, 1885, agent and dispatcher Union Pacific Rd., Butte, Mont., and other points; Aug. to Dec., 1885, operator C.P.R., Ottawa; Dec., 1885, to June, 1893, dispatcher C.P.R., Ottawa; June, 1893, to Sept., 1897, Chief Dispatcher C.P.R., Ottawa; Sept., 1897, to Oct., 1903, Trainmaster C.P.R., Ottawa; Oct., 1903, to Aug., 1906, Superintendent, District 2, C.P.R. Eastern Division and Montreal Terminals, Montreal; Aug., 1906, to Dec., 1907, Superintendent Canadian Northern Ontario Ry., Toronto; Dec., 1907, he was appointed General Superintendent Canadian Northern Quebec Ry., Montreal, and Mar., 1908, his headquarters were moved to Quebec, and on the acquiring of the Quebec and Lake St. John Ry., Mar., 1908, he was also appointed General Superintendent of that railway.

Railway Finance, Meetings, Etc.

Alaska Central Ry.—The judicial sale of this uncompleted railway was made at Valdez, Alaska, Oct. 10, and press reports state that the purchaser was the Sovereign Bank of Canada. The bank holds \$2,400,000 of the \$4,000,000 of bonds issued, and F. G. Jemmett, the present manager of the bank, and D. M. Stewart, the former manager, were present at the sale to protect the interests of the bank. It is stated that the investment of its funds in this and some other railway bonds brought about the difficulties of the Sovereign Bank.

Alberta Ry. and Irrigation Co.—Approximate net profits from all sources, exclusive of land sales, for Aug., \$39,533, against \$33,835 for Aug., 1908. Cumulative net profits for two months ended Aug. 31, \$69,536. Railway traffic receipts for Sept., \$33,567, against \$32,315; and for three months ended Sept. 30, \$88,189.

Canadian Northern Ontario Ry.—A supplementary trust deed, dated Sept. 29, amending the trust deed of June 28, by substituting one-tenth as the proportion of stockholders required to requisition a meeting instead of one-fifth as the original deed required, has been filed with the Secretary of State at Ottawa.

Dominion Atlantic Ry.—Gross earnings for Aug., \$158,300, against \$152,237 for Aug., 1908. Aggregate gross earnings for eight months ended Aug. 31, \$787,150, against \$767,789 for Aug., 1908.

Duluth, South Shore and Atlantic Ry.—The annual report presented at the meeting of shareholders, held at Marquette, Mich., Sept. 16, shows that the company owns 517.44 miles of main lines, 69.28 miles of branch lines, and has trackage rights over 6.66 miles, making a total of 593.38 miles operated. The equipment consists of 82 locomotives, 65 passenger cars, 2,839 freight cars, and 100 miscellaneous cars. For the year ended June 30, the net revenue from operation was \$739,819.79, an increase of \$26,125.26 over the previous year. The net revenue from outside operations was \$7,866.21, a decrease of \$12,610.96; making a total net revenue of \$747,686.00. After deducting taxes accrued there remained an operating income of \$544,068.80, a decrease of \$3,740.16; adding other income of \$146,208.67, an increase of \$115,803.45, the gross corporate income amounted to \$690,294.97, an increase of \$112,063.29. From this there was deducted \$862,000 interest on bonds, \$28,936.81 rents, etc., altogether \$891,741.81, an increase of \$2,517.32. The net loss on the year's operations therefor was \$201,446.84 against \$310,992.81 for the preceding year. The liabilities to stock and bondholders, etc., amount to \$52,046,459.18, including \$5,262,235.18 to the C.P.R. on guaranteed interest account. The general ledger balances show assets of \$48,787,478.96, the balance of loss standing at \$3,258,981.22. The re-

tiring directors were re-elected.

Grand Trunk Pacific Ry.—Following are the directors for the current year: President, C. M. Hays; Vice President and General Manager, E. J. Chamberlin; Second Vice President, W. Wainwright; other directors, Sir C. Rivers Wilson, A. W. Smithers, M. G. Carr Glyn, F. Firebrace, Lord Welby, W. H. Biggar, E. H. Fitzhugh, H. A. Allan, E. B. Green-shields, Hon. G. A. Cox, E. R. Wood and J. R. Booth.

Grand Trunk Ry.—A press report from Boston, Mass., states that the G.T.R. has secured an option on the Rhode Island Rd. as the first step towards establishing a terminal at Providence. An earlier dispatch from Rhode Island stated that the G.T.R. was to apply next session of the Rhode Island Legislature for power to construct a line into Providence. Other dispatches state that the reports are not taken seriously in local railway circles, though it is not said there is no truth in the report that G.T.R. representatives are conducting some negotiations in the territory.

The reports are also being revived that the G.T.R. is trying to arrange a purchase of the Lehigh Valley Rd.

Illinois Central Rd.—The report for the year ended June 30, shows that the income from operation was \$57,145,512.19, a decrease of \$815,215 from those of the previous year; expenses and taxes, \$43,681,282.43, a decrease of \$898,315.78; net income from operation, \$13,464,229.76, an increase of \$47,100.32. The income from investments and other sources was \$3,874,708, making a surplus of \$17,338,937.76. After deducting fixed charges, rentals, etc., the available surplus was \$9,592,023.24, which has been applied as follows: 7% dividend on outstanding capital stock, \$7,650,720; replacement of equipment, \$232,266.92; surplus dividend fund \$1,457,886.92; profit and loss, \$251,149.40.

London and Port Stanley Ry.—At a meeting of the directors held in London, Ont., Oct. 1, it was decided to meet representatives of the Pere Marquette Rd. and discuss what terms that company is willing to offer the city of London for an extension of the lease of the line.

The present lease expires in about five years, but as certain betterments should be carried out at once, the lessee asks that an extension for 20 years be granted before the work is undertaken. There are several other questions involved in the matter which will have to be settled. The principal one has to do with the payment of the cost of reconstructing certain bridges which the lessee carried out, after notifying the city that it would be held liable for same. The city repudiates any liability, and it is urged that no extension be granted unless the P.M. Rd. pays for the bridges. Those who favor this view think the G.T.R., which at one time leased the line, in which it has a small interest, or the C.P.R. will make bids for a lease.

Maritime Coal and Ry. Co.—By an act passed last session of the Nova Scotia Legislature the company was authorized to increase the number of its directors from seven to eleven.

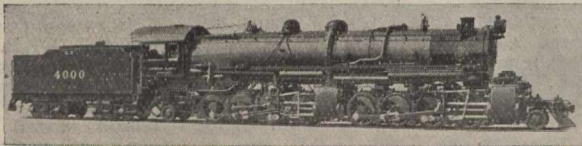
Minneapolis, St. Paul and Sault Ste. Marie Ry.—The New York Exchange has listed \$1,005,000 additional first consolidated 4% bonds due 1938, making a total listed to date \$45,891,000.

Nova Scotia Steel Co.—By an act passed last session of the Nova Scotia Legislature the company was authorized, in addition to the powers already possessed, to secure the payment of any money borrowed or raised by it by the issue of debentures or debenture stock charged upon its property, present or future, including its uncalled capital, and to redeem any such securities. The company owns lines in the vicinity of New Glasgow and North Sydney, N.S., and owns several steamships.

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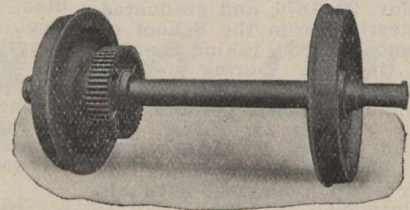
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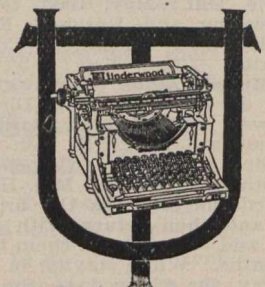


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Orford Mountain Railway—We are officially advised that when the lease of this line to the C.P.R. Co., as announced in that company's annual report published in our last issue, goes into effect, the line will become a part of the C.P.R. system and be so operated.

Pere Marquette Rd.—New York press reports state that arrangements are in progress for the transfer of this railway to the Pennsylvania Rd.

Port Hood Richmond Ry. Coal Co.—Under its act of incorporation the company was authorized to issue mortgage bonds of \$865,000, of which \$585,000 are second mortgage bonds. By an act passed last session of the Nova Scotia Legislature the financial obligations of the company have been rearranged and provision made for additional working capital by the issue of prior lien bonds.

Quebec Central Ry.—The annual meeting was held in London, Eng., Oct. 13. The report shows that the gross earnings for the year ended June 30 were \$1,021,682; expenses, \$724,918; net earnings, \$296,764; interest earned, \$9,176; net income, \$305,940, against \$1,110,724 gross earnings; \$787,293 expenses, \$323,431 net earnings; \$5,334 interest earned; \$328,765 net income for the previous year. During the year, \$25,000 of 4% debenture stock were issued, increasing the amount outstanding on this account to \$529,837.

Quebec and Lake St. John Ry.—Gross receipts for Sept., \$56,919.49, against \$67,639.94 for Sept., 1908. Aggregate gross receipts for nine months ended Sept. 30, \$444,750.21, against \$465,497.43 for same period 1908.

Temiscouata Ry.—Gross earnings for Aug., \$21,239.61, against \$25,374.27 for Aug., 1908. Approximate gross earnings for Sept., \$19,580.73, against \$22,088.45, for Sept., 1908.

Following are the officers and directors for the current year:—President, F. Grundy; Vice President, J. H. Walsh; other directors, A. H. Cook, A. Laurie, A. Steele, W. N. Campbell, F. Murphy; General Manager, G. G. Grundy, Secretary, D. B. Lindsay.

Temiskaming and Northern Ontario Ry.—Gross earnings for Aug., \$143,086; expenses, \$73,728; net earnings, \$69,360; ore royalties, \$19,438. Net earnings for eight months ended Aug. 31, \$449,049, against \$117,258 for same period 1908.

Trans-Niagara Bridge Co.—Following are the officers and directors for the current year:—President, T. Penney, Buffalo, N.Y.; Secretary, A. M. Grier, K.C., Niagara Falls, Ont.; other directors, T. E. Mitten, N. Robinson, Buffalo, N.Y.; E. B. Osler, Toronto.

White Pass and Yukon Ry.—Gross earnings for Aug., \$252,600. Aggregate gross earnings for two months ended Aug. 31, \$476,257.

Wisconsin Central Ry.—The Bank of Montreal in London, Eng., made an issue of \$2,500,000 of 4% bonds of this railway, Oct. 7. The issue price was \$198 per \$1,000 bond.

The members of the conciliation board to deal with the dispute between the Intercolonial Ry. and its fitters and mechanics consists of Judge Barron, Stratford, Ont.; J. O. H. Gilmore, Brockville, Ont., and J. G. O'Donoghue, Toronto.

T. McHattie, Superintendent Motive Power and Car Departments, Central Vermont Ry., St. Albans, Vt., writes:—"I hope the field is enlarging for the Railway & Marine World. My copies of the journal are read over with interest from month to month."

It is understood that the C.P.R. car repairing and building shops at Farnham, Que., will shortly be closed permanently. Since the opening of the Angus shops, Montreal, the Farnham shops have been mainly employed in the building of freight cabooses and vans.

National Transcontinental Railway.

During Sept. there was expended on construction on the six sections of the line in New Brunswick \$476,084.66, making \$7,653,045.01. The returns to the end of Sept. show that the construction is well advanced; 90% of the ballasting has been completed. The foundation for the Upper Salmon River bridge, the largest on the line, has been completed, the steel work will not be gone on with until the spring.

A number of engineers representing bridge building firms have been visiting the site of the bridge across the St. Lawrence River, Quebec, with a view to the collection of information upon which to base tenders for the construction of the new bridge. A. E. Doucet, District Engineer of the National Transcontinental Ry., at Quebec, stated, Oct. 13, that work on the construction of the terminals in that city was to be resumed at once and continued to completion. The work to be done at present would be the rock cut at Point au Pizeau, and the building of a temporary trestle from that point to join with the viaduct construction at Dobell's cove. S. N. Parent, Chairman of the N.T. Ry. Commission, was in Quebec from Oct. 11 to 13, in connection with this matter.

Easterly from Cochrane Jct., Ont., the contractors are making good progress. The only trouble met with is at the crossing of the Abitibi River, where some difficulty is being experienced in getting sufficient hold for the piling for pier foundations. Eight miles of track have been laid up to the river, and on the other side about 50 miles of grading has been done. Westerly from Cochrane track has been laid for 50 miles, and a considerable mileage has been graded. About half the ballasting has been done on this 50 miles. The completion of this section will bring the line to the easterly end of the Davis contract upon which sub-contracts have been let. Fowler and O'Brien have a sub-contract starting at the Opazatica River. The work to be done on this sub-contract is not heavy. Work on the section north of Lake Nipigon is being pushed, and some of the sub-contractors have completed their work. In connection with the work of bringing in supplies, a spur line has been constructed from the western shore of Ombabika Bay, at the north end of Lake Nipigon, to the right of way. The materials are brought to the south shore and carried by steamer and barges to Ombabika Bay, where four warehouses have been erected for storage purposes, pending transfer to the construction camps.

The last spike of the section from St. Boniface, Man., to Lake Superior Jct., Ont., where connection is made with the G.T.P.R. Lake Superior branch, was driven Oct. 12. The section is 244 miles, and has been a most difficult one to construct. In all there have been moved nearly 6,000,000 ft. of solid rock. There are 13 bridges, of which eight are steel. The steel bridges are: Wabigoon River, 190 ft.; McFarlane River, 100 ft.; Winnipeg River, 400 ft.; C.P.R. overhead bridge at Rennie, 180 ft.; Whitemouth River, 180 ft.; East Brokenhead River, 90 ft.; West Brokenhead River, 60 ft.; Red River, in course of construction, 792 ft. The trestle bridges of wood are: Sturgeon River, 600 ft.; English River, 270 ft.; Long Lake, 550 ft.; Cross Lake, 1,100 ft.; Green Lake, 550 ft. The divisional points are at Redditt, 12 miles east of Winnipeg River, and at Pelican Lake, six miles west of Superior Jct. The contract was let May 15, 1906. S. R. Poulin, the district engineer, left Winnipeg Oct. 9, on a trip of inspection over the division.

It is upon this section that differences as to classification have arisen.

G. Grant, Chief Engineer, has been appointed to the arbitration board to settle the matter. The other members of the board are B. B. Kelliher representing the G.T.P. Ry., and C. Schreiber, Government Consulting Engineer. The first two left Winnipeg to go over the section Oct. 4, and will agree on as many points as possible, the unsettled matters being reserved for consideration with the third arbitrator.

We are advised that the contract for the excavation and back filling of the pipe line, from the Red River to the locomotive shops, etc., east of St. Boniface, Man., has been let to the Western Contracting Co., Winnipeg. The work is to be completed by Dec. 31.

GRAND TRUNK PACIFIC RY.

Tracklaying has been completed on the main line into Edmonton, Alta., 755.3 miles. On Oct. 5, the Vice President and General Manager arrived in the city over the line, and construction trains are being regularly operated. H. A. K. Drury, of the Board of Railway Commissioner's engineering staff, left Winnipeg, Oct. 1, on an inspection of the whole line, and particularly of the newly completed portion from Wainwright to Edmonton, about 150 miles.

Construction was started Aug. 29, 1905, near Firdale station, 91.5 miles west of Winnipeg, Man. The general contracts were:—Winnipeg to Portage la Prairie, 54.3 miles, Treat and Johnston; Portage la Prairie to Touchwood Hills, 245 miles, McDonald, McMillan Co., and Treat and Johnston; Touchwood Hills to Saskatoon, 140 miles, Canadian White Co.; Saskatoon to Edmonton, 316 miles, Foley Bros., Larson & Co. The grading did not present any great difficulties, although the work was heavier than is usually the case in prairie construction, on account of the determination of the company to obtain the low uniform gradient set as the standard for the whole line. Six large steel bridges had to be constructed as follows:—Assiniboine River, three spans, 22 ft. above water level, 437 ft. long; Arrow River, 68 ft. long; second crossing of Assiniboine River, one span, 24 ft. above water level, 250 ft. long; South Saskatchewan River, eight spans, 74 ft. above water level, 1,501 ft. long; Battle River, 53 spans, 184 ft. above water level, 2,772 ft. long, and North Saskatchewan River, 19 spans, 136 ft. above water level, 1,665 ft. long. The track is laid with 80-lb. steel, of which 106,000 tons have been used in the main line, and 30,000 tons in the sidings, Stations, roundhouses, and other buildings have been erected along the line at divisional points and elsewhere, and eighty new towns have sprung up, and a good deal of settlement is taking place.

West of Edmonton, 66 miles of track has been laid to the Pembina River crossing, and on the other side of the river the grading is completed to Edson, a further 57 miles. Edson is at the crossing of the McLeod River, where another large bridge has to be constructed. W. E. Mann, Divisional Engineer, reports that the Pembina River bridge will be completed by Nov. 30. The substructure for the bridge at McLeod River is under construction, C. May, Edmonton, being the contractor. The Canadian Bridge Co., Walkerville, Ont., has the contract for the steel superstructures.

At the Prince Rupert end of the line, a contract has been let to Foley, Welch and Stewart for the construction of an extension along the front of the townsite to Seals Cove, 3.5 miles. The work will involve some very heavy rock cutting. Contracts have been let to C. H. Ferguson for the substructures, and to the Canadian Bridge Co., for the superstructures of bridges at points respectively 55, 60, 87 and 91 miles east of Prince Rupert.

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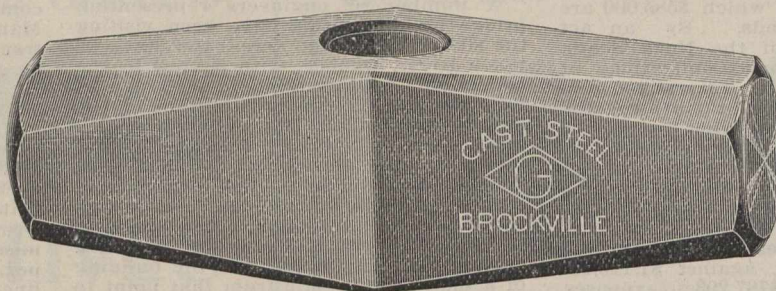
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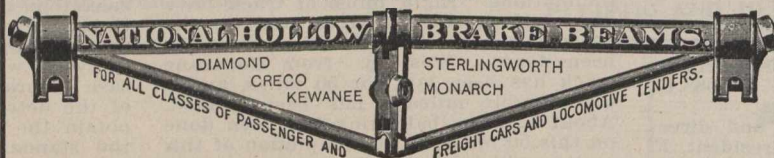
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accomplished on branch line construction. On the branch from Melville to Regina, Sask., track has been laid for 20 miles, and it was expected that steel would be laid to Balcarres by Oct. 31. No grading has been done beyond this point. On the branch from Melville to Yorkton, about six miles of steel had been laid on Sept. 30, and it was expected to have it laid 25 miles out by Oct. 31. The grading of the line from Tofield towards Calgary, Alta., is progressing and it is expected to have the 50 miles to Camrose completed this fall.

Surveys are being made in the Duck Lake district in connection with the location of a line from Watrous to Prince Albert, Sask.

In connection with the surveys for the location of a line to Vancouver, B.C., three parties are in the field running trial lines via the Nicola valley and the Similkameen district. They are working on Campbell creek, south of Kamloops, and at Stump Lake with the object of securing a route into the Nicola valley. It is stated that the line may ascend the Tulameen River and reach the western slope of the Hope Mountains near Hope. (Oct., pg. 733.)

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—The question of terminals for the C.N.Q.R. and its allied line, the Quebec and Lake St. John Ry., in Quebec, is being considered by the officials. Reports state that traffic is increasing to such an extent that a considerable enlargement in the yard space is imperative. The question of the shops is also receiving consideration, but nothing definite will be done until a site has been settled on.

Canadian Northern Ontario Ry.—In reference to the entry of the line from Hawkesbury into Ottawa, the city council approved a plan involving the construction of a level crossing over Hurdman road. When the matter came before the Board of Railway Commissioners for final sanction, it was referred to the Board's engineer. It is understood that this official reported against the crossing being allowed, and recommended that instead of the route approved by the city council, the line enters the city over the Ottawa and New York Ry. and the C.P.R. bridge. The suggested route will necessitate the breaking of the line outside the city and putting in a curve to the C.P.R. about 300 yards south of the present approved route.

The route of the proposed line from Toronto to Ottawa, as far as Trenton, Ont., about 100 miles, was set out in our last issue. For this section a contract has been let to Angus Sinclair, C.E., Toronto, and preparations are being made for the construction. Beyond Trenton, the located line keeps along the lake shore line for some miles east of Belleville, and bears away northeasterly before passing out of Thurlow tp. The route is northeasterly through Tyendinaga and Richmond tps., until it crosses one of the old surveys in the middle of Campden tp. The Bay of Quinte Ry. is crossed south of Enterprise, and the Kingston and Pembroke Ry. a short distance north of Verona. Continuing easterly it passes north of Desert Lake and Mud Lake, crossing the Brockville, Westport and Northwestern Ry. at Newboro. Still proceeding easterly, Portland is reached, where the direction again becomes northeasterly, the route surveyed in 1906, being followed through Smith's Falls, and Richmond to Ottawa, where connection will be made with the Ottawa-Hawkesbury line, now practically completed. It is understood that there will be a branch line from some convenient point into Lanark. We are advised that some residents of Perth have surveyed a line for a branch to connect with

the Toronto-Ottawa line at Newboro, crossing Rideau Lake at the Narrows. It is not at all certain that this line will be followed, as it involves a very elevated crossing of the Rideau Lake. Residents in Port Hope, Bowmanville, and other points are not satisfied with the route, and have made representations to the company with a view to some changes being made. At Cobourg, the people are asking that arrangements be made with the G.T.R. for the erection of a union station.

The Toronto board of control has approved a proposition by the company to purchase about half an acre on the Don Esplanade, south of Queen St., at a price to be fixed by the Assessment Commissioner. A condition of the sale is that any other railway can have running rights over the tracks to be laid on the land.

The Minister of Railways, Oct. 6, approved the location of the projected line from the Niagara River to Toronto, so far as it is located through Saltfleet and Barton tps. This portion of the line will start at Fruitland and following the route of the Toronto, Hamilton and Buffalo Ry. a short distance, through Stony Creek and Bartonville, entering Hamilton at practically the same point. It is reported that the surveys from Burlington into Hamilton have been completed. The route from Toronto follows the power line right of way to Burlington, and then branches off along the north shore of Burlington Bay to Carrol's Point, crosses over a trestle at the Desjardin's canal, under the high level bridge, and the G.T.R. to Coot's Paradise, and then runs southerly and joins the T.H. & B.R. at Garth St.

Canadian Northern Ry.—Application will be made next session of the Dominion Parliament for an extension of time for the construction of the following lines: from Strathcona, southerly, to Calgary; from Regina, southerly, to the international boundary; between Winnipeg and Ste. Annes, southerly, to the international boundary; from Regina to Humboldt and via the Carrot River to the Pas Mission, and between Humboldt and the South Saskatchewan River, crossing the same south of Prince Albert; from Prince Albert to Edmonton; from Swan River, westerly, to the main line at the crossing of the Saskatchewan River; from the authorized line of the Morden and Northwestern Ry. between Neepawa and the west boundary of Manitoba, northwesterly to the main line between Grand View and Battleford; from Regina, westerly, to the Red Deer River, with a branch to Carleton; from Gladstone to Fort Nelson or Fort Churchill; from Oak Point to the Grand Rapids on the Saskatchewan River; from Edmonton to the Pacific via the Pine River Pass or other feasible pass; from McCreary via Cartwright, southerly, to the international boundary; from Russell, westerly, via Yorkton to the Saskatoon-Calgary line.

The company will also ask for power to construct the following additional lines: Dundee, northerly and easterly, to the Winnipeg River; Portage la Prairie, southerly and easterly, to tp. 2, r. 7, e.p.m.; Hartney, westerly, to tp. 5, r. 7, w. 2 m.; Moose Jaw, southerly and easterly, to Bienfait, with a branch from near Estevan to Roche Percee. Between Davidson and Disley on the Qu'Appelle, Long Lake and Saskatchewan Ry., westerly and northwesterly, to the Saskatoon-Calgary line; Lashburn, westerly, to between Camrose and Edmonton; Saskatoon-Calgary line near tp. 28, r. 6, w. 4 m. to Rocky Mountain House; Saskatoon-Calgary line near the crossing of Red Deer River, northwesterly, through or near Innisfail and Rocky Mountain House to head waters of Brazeau and McLeod Rivers and to Yellowhead Pass;

Winnipegosis, southerly, to constructed line near south end of Lake Manitoba; from authorized line between Prince Albert and Battleford near tp. 49, r. 3, w. 3 m., northwesterly and northerly to Great Slave Lake; from authorized line east of Lake Manitoba, westerly, via the Narrows to its constructed line between Grandview and Roblin.

The company proposes to spend \$10,000 in improving the yards at Brandon, Man. The new freight sheds at the same point, costing about \$10,000, have been practically completed.

Tracklaying was expected to be completed on the branch line from Maryfield, Sask., by Nov. 1. This line, it is proposed, will ultimately be extended to Lethbridge Alta., but at present only about 125 miles have been graded.

A water tank is being constructed at Hudson Bay Jct., near Etoimami, Sask. As soon as this is completed an 8-stall roundhouse will be erected. A yard is being laid out.

A deputation from Yorkton, Sask., was authorized, Oct. 5, to interview the C.N.R. management with a view to securing an extension of the Rosthern branch to Yorkton, Willowbrook and Beaverdale, Sask.

Survey parties are locating a route for a branch line into the Brazeau coal fields. It will be about 75 miles long, and it is expected the surveys will be completed this fall.

Plans have been filed showing the route of about 54 miles northerly from Kamloops, B.C., towards the Yellowhead Pass. A gradient of less than one-fifth of 1% has been secured. C. F. Hannington left Kamloops, Oct. 11, to complete location surveys for a further distance northerly. Another party has completed the location of the route from Kamloops to Agassiz on the south side of the river, about 60 miles east of Vancouver.

A number of reports are in circulation as to the location of the terminals in the vicinity of Vancouver and New Westminster. Every large sale of property there is stated to have something to do with the company's intentions. Among these unfounded reports is one that the company has purchased Anacis Island at the mouth of the Fraser River. The island has an area of 900 acres, and the report set out that it was proposed to lay out terminal yards, and to erect elevators, ships, etc., there.

D. D. Mann, Vice President, arrived in Victoria, Oct. 15, to confer with the Premier on the matter of aid for the proposed extension to the coast. It is understood that a definite understanding has been arrived at, and that a proposal will be submitted by the Government to the new Legislature as soon as it meets.

The B.C. Premier said, Oct. 21, that the Government had entered into a contract with the C.N.R. for the construction of a line from the Yellowhead Pass to Kamloops, by way of North Thompson River; from Kamloops to New Westminster and Vancouver, and from Vancouver to English Bluffs. From this point the company is to make a first-class connection with Victoria, for passengers and freight, and to construct a line from Victoria to Barclay Sound. The distance in all will be about 600 miles. To assist the company in the construction of the line the Government will ask the Legislature next session to guarantee interest at 4% upon bonds to the amount of \$35,000 a mile. For security the Government will hold a first mortgage on the line in British Columbia, and a general covenant from the C.N.R. indemnifying it against any loss that may occur. It is stated that the understanding with the company is that at a future date it will construct a line from Victoria along the whole length of Vancouver Island to Quatsino Sound, where ocean terminals will be constructed. (Oct., pg. 763.)

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\$9.50

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Cost per rivet with riveter. .	.0168

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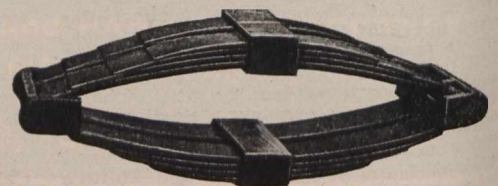


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TRANSPORTATION APPOINTMENTS.

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

Alberta Central Ry.—J. G. MacGregor has been appointed Chief Engineer of this projected railway. Office, Red Deer, Alta.

Boston and Albany Rd.—F. B. Freeman has been appointed Chief Engineer, vice E. E. Stone resigned. Office, South Station, Boston, Mass.

Canadian Northern Quebec Ry., Quebec and Lake St. John Ry.—C. H. N. Connell, heretofore Locating and Resident Engineer Alberta Ry. and Irrigation Co., Lethbridge Alta., has been appointed Engineer of Maintenance in charge of Maintenance of Way, Bridges and Buildings, and any other duties required of him in the Engineering Department, reporting to the General Manager, vice S. S. Oliver, assigned to other duties. Office, Quebec.

E. G. Roussin, formerly Travelling Freight Agent C.P.R., Lowell, Mass., has been appointed Travelling Freight Agent, Quebec.

Canadian Northern Ry.—R. Creelman, heretofore Commercial Agent, St. Paul, Minn., has been appointed Assistant General Passenger Agent, vice C. W. Cooper, General Passenger Agent, resigned. Office, Winnipeg.

Canadian Pacific Ry.—L. M. McTavish has been appointed Travelling Freight Agent Eastern and Lake Superior Divisions, vice W. S. Elliot, promoted. Headquarters, Montreal.

A. Mitchell, heretofore depot master G.T.R., Union station, Toronto, has been appointed platform inspector Sleeping, Dining and Parlor Car Service, C.P.R., Toronto.

W. S. Elliott, heretofore Travelling Freight Agent Eastern and Lake Superior Divisions, has been appointed District Freight Agent, with jurisdiction over the territory Mattawa and west to Sault Ste. Marie and Port Arthur, including the Temiskaming and Kipawa branches, reporting to the General Freight Agent. Office, North Bay, Ont.

W. J. Singleton, whose appointment as Trainmaster at North Bay, Ont., was announced in our last issue, was formerly in the Company's service as Superintendent at Montreal.

J. M. Mack has been appointed Locomotive Foreman, Arcola, Sask., vice S. M. Miller, who has been given employment in the Souris shop, Man.

J. S. Rugg has been appointed Locomotive Foreman at Neudorf, Sask., vice H. A. Keswick, transferred.

H. A. Keswick, heretofore Locomotive Foreman, Neudorf, Sask., has been appointed Locomotive Foreman at Field, B.C., vice A. E. Bennetts.

F. Walker has been appointed Acting Superintendent District 3, Pacific Division, vice A. Purvis, resigned. Office, Nelson, B.C.

W. H. Gardiner, heretofore Contracting Freight Agent, Vancouver, B.C., has been appointed City Freight Agent, Victoria, vice F. H. Clendenning, promoted.

Chicago Great Western Rd.—A. C. Gillespie, has been appointed City Freight and Passenger Agent, Winnipeg, reporting to the General Agent there.

Esquimalt and Nanaimo Ry.—W. H. Gardiner, City Freight Agent, C.P.R., Victoria, has also been appointed District Freight Agent E. and N. R., vice F. H. Clendenning, promoted.

Government Railways.—In continuance of the system of reorganization, being carried out in connection with the Intercolonial and P.E.I. Rys., as mentioned in our Sept. issue, L. Lavoie, heretofore on the Moncton staff, has been appointed Purchasing Agent. Office, Ottawa.

It is also intended to select a staff of three clerks from the Moncton office, for transfer to Ottawa. In this connection, we were advised, Oct. 15, that they had not then been decided on.

Grand Trunk Ry.—At the recent half-yearly meeting, in London, Eng., announcement was made of the resignation of the President, Sir C. Rivers Wilson, which will take effect at the end of the current half-year. C. M. Hays, Second Vice President and General Manager, will become President and General Manager, with office at Montreal, and A. W. Smithers, Vice President, will also be Chairman of the Board, with office at London, Eng.

W. P. Corking, heretofore clerk in General Baggage Agent's office, Toronto, has been appointed Baggage Inspector, vice W. J. Cockburn, deceased.

W. J. Dawson has been appointed Car Inspector at Brantford, Ont., vice A. Reid, transferred to Sarnia Tunnel.

A. Reid, heretofore Car Inspector, Brantford, Ont., has been appointed Car Foreman at Sarnia Tunnel, vice J. Morrison, acting Car Foreman, assigned to other duties.

The following Agents have been appointed: Vaudreuil, Que., P. Gibson; Goodwood, Ont., D. H. Thompson, Haliburton, Ont.; H. M. Bray (temp.), St. Pauls, Ont.; W. B. Rife, Port Robinson, Ont.; W. L. Colling, Nelles Corners, Ont.; J. A. Pollock, Lawrence, Ont.; J. A. Murray, Stevensville, Ont.; A. D. Johnson, Onondaga, Ont.; G. G. Skelton, Lucknow, Ont.; O. Martin, Brucefield, Ont.; B. Stobs, Caldwell, Ont.; M. G. Walsh, Whitney, Ont.; F. A. Bamber.

Intercolonial Ry.—E. S. Smiley has been appointed Division Freight Agent at Halifax, N.S., vice A. T. Weldon, resigned.

John Stewart, heretofore locomotive engineer, has been appointed Acting Master Mechanic Eastern Division, vice N. L. Rand, Master Mechanic, placed on the pension list. Office, Moncton, N.B.

See also Government Railways.

Michigan Central Rd.—H. Shearer, heretofore secretary to the General Manager, Detroit, Mich., has been appointed Superintendent Canadian Division, vice H. H. Adams, resigned to enter T. H. and B. R. service. Office, St. Thomas, Ont.

J. D. Curtis and A. C. Campbell have been appointed Chief and Assistant Surgeons respectively, at St. Thomas, Ont.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—Since the acquirement of the Wisconsin Central Ry., and its operation as the Chicago Division of the M. St. P. and S.S.M.R., its interests in Winnipeg will be represented there by the General Agent, J. C. Peterson, G. H. Anthony, General Agent W. C. Ry., having resigned to enter railway service in the U.S.

National Transcontinental Railway Commission.—W. S. Calvert, heretofore member of the Dominion Parliament for West Middlesex, Ont., has been appointed to the Commission, vice R. Reid, deceased.

Pere Marquette-Lehigh Valley Line.—G. H. Anthony, heretofore General Agent, Chicago Division M. St. P. and S.S.M.R., Winnipeg, Man., has been appointed General Agent P.M.-L.V. Line, with offices at St. Paul and Minneapolis, Minn. He has charge of Northwestern Territory, covering Minnesota, the Dakotas and the Canadian Northwest, also Superior and Ashland, Wis.

Pere Marquette Rd.—S. L. Merriam has been appointed General Solicitor, in charge of the Legal Department and land and tax matters. Office, Detroit, Mich.

The position of General Counsel is vacant. Angell, Boynton, McMillan and Bodman, Acting General Counsel, having resigned.

A. E. Plumer, heretofore in the Passenger Department, St. Thomas, Ont., has been appointed General Baggage Agent. Offices, Detroit, Mich.

Prince Edward Island Ry.—See Government Railways.

Quebec, Montreal and Southern Ry., Napierville Jct. Ry.—With reference to the appointment of G. H. Burgess as Chief Engineer Delaware and Hudson Co.'s lines, we are officially advised he is Consulting Engineer Q.M. and S.R. and N.J.R.

Temiscouata Ry.—G. G. Grundy, heretofore Superintendent, has been appointed General Manager, vice D. B. Lindsay, General Manager and Secretary, who retains the latter position only. Office, Riviere du Loup, Que. The position of Superintendent has been abolished.

F. X. Belanger, heretofore General Freight Agent, has been appointed General Freight and Passenger Agent. Office, Riviere du Loup, Que. The Passenger Department was formerly under the jurisdiction of the Superintendent.

C. A. Stewart, heretofore in the company's general office, has been appointed Accountant, and J. T. Lavoie has been appointed Cashier. These are new positions.

Toronto, Hamilton and Buffalo Ry.—H. H. Adams, heretofore Superintendent M. C. Rd. Canadian Division, St. Thomas, Ont., has been appointed General Superintendent T. H. and B. R., vice E. Fisher, General Superintendent and Chief Engineer, resigned. Office, Hamilton, Ont.

R. L. Latham, heretofore Assistant Engineer, has been appointed Chief Engineer. Office, Hamilton, Ont.

Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses, net profits, increases or decreases from 1908-09, from July 1, 1909:

	Earnings.	Expenses.	Net Increase or Decrease.	Net Increase or Decrease.
July	\$ 843,500	\$613,900	\$229,600	\$26,700+
Aug.	807,100	602,700	204,400	18,300+
Sept.	1,076,800	765,300	311,500	60,400+
	\$2,727,400	\$1,981,900	\$745,500	\$105,400+
Inc. or Dec.	\$ 349,800	\$244,400	105,400	.....

Approximate gross earnings for two weeks ended Oct. 14th, \$598,800, against \$511,700 for the same period 1908.

C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1908-9, from July 1, 1909:

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease.
July	7,140,029.93	4,660,159.20	2,479,870.73	205,297.48+
Aug.	7,426,984.62	4,462,926.75	2,964,057.87	885,159.16+
	\$14,567,014.55	\$9,123,085.95	\$5,443,928.60	\$590,456.64+
Inc. or Dec.	\$1,888,177.04	\$1,297,720.40	\$590,456.64	.....

Approximate gross earnings for Sept., \$8,148,000, and for 3 weeks ended Oct. 21, \$6,460,000; against \$6,307,000 and \$4,903,000 for same periods 1908.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Approximate gross earnings for Sept., \$321,405, and for two weeks ended Oct. 14, \$147,043, against \$250,884 and \$115,340 for same periods 1908.

MINERAL RANGE RD.—Approximate gross earnings for Sept., \$75,866, and for two weeks ended Oct. 14, \$31,548, against \$73,253 and \$31,272 for same periods 1908.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Gross earnings for Aug., \$1,204,104.17; expenses, \$714,493.84; net earnings, \$489,610.33; against \$961,360.27 gross earnings, \$668,580.18 expenses, \$292,780.09 net earnings for Aug., 1908. Aggregate gross earnings for two months ended Aug. 31, \$2,348,625.99; expenses, \$1,451,658.42; net earnings, \$896,967.57, against \$1,911,469.25 gross earnings, \$1,287,145.28 expenses, \$624,323.97 net earnings for same period 1908. Approximate gross earnings for Sept., \$2,504,701, and for two weeks ended Oct. 14, \$1,169,176, against \$2,183,601 and \$1,031,580 for same periods 1908.

Grand Trunk Ry. Earnings, Expenses Etc.

The following figures give the earnings of the G.T.R., the C.A.R., the U.T. Western Ry., and the

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Map No. 2—South-Eastern Saskatchewan, 2nd to 3rd Meridians.....	10.00 to	25.00 per acre.
Map No. 3—Main Line, 3rd Meridian to Range 10, W. 4th Meridian (generally).....	8.00 to	per acre.
Map No. 5—South-Western Alberta.....	8.00 to	15.00 per acre.
Map No. 6—Part of Alberta, Edmonton, Battle and Saskatchewan Rivers Districts—4th Meridian to Range 7, West 5th Meridian.....	10.00 to	25.00 per acre.
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" " 9.00 " " " " " " " " " " " "	213.70	" " " " " " " " " " " "	73.46	" " " " " "
" " 10.00 " " " " " " " " " " " "	239.70	" " " " " " " " " " " "	81.62	" " " " " "
" " 11.00 " " " " " " " " " " " "	263.60	" " " " " " " " " " " "	89.78	" " " " " "
" " 12.00 " " " " " " " " " " " "	287.60	" " " " " " " " " " " "	97.96	" " " " " "
" " 13.00 " " " " " " " " " " " "	311.55	" " " " " " " " " " " "	106.10	" " " " " "
" " 14.00 " " " " " " " " " " " "	335.60	" " " " " " " " " " " "	114.32	" " " " " "
" " 15.00 " " " " " " " " " " " "	359.50	" " " " " " " " " " " "	122.44	" " " " " "

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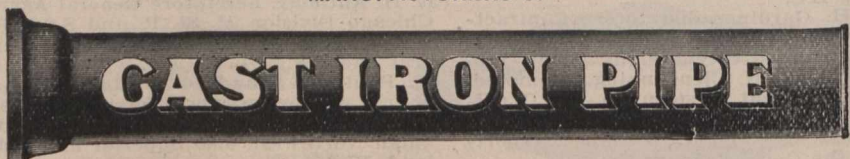
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D.G.H. & M. Ry., separately, for Aug., as compared with Aug., 1908:

GRAND TRUNK RAILWAY.		1909.	1908.
Earnings	.....	\$2,939,400	\$2,624,930
Expenses	.....	2,092,800	1,816,510
Net earnings	.....	\$ 846,600	\$ 808,420
CANADA ATLANTIC RAILWAY.		1909.	1908.
Earnings	.....	\$ 190,300	\$ 192,365
Expenses	.....	168,700	169,963
Net earnings	.....	\$ 21,600	\$ 22,402
GRAND TRUNK WESTERN RAILWAY.		1909.	1908.
Earnings	.....	\$ 576,700	\$ 517,681
Expenses	.....	370,300	322,881
Net earnings	.....	\$ 206,400	\$ 194,800
DETROIT, GRAND HAVEN & MILWAUKEE RAILWAY.		1909.	1908.
Earnings	.....	\$ 172,900	\$ 150,970
Expenses	.....	130,900	112,984
Net earnings	.....	\$ 42,000	\$ 37,986

TRAFFIC RECEIPTS OF THE SYSTEM
Aggregate from July 1 to Sept. 30:

	1909	1908	Inc.	Decr.
Grand Trunk	£1,791,456	£1,622,464	£168,992	.....
Canada Atlantic	108,744	107,176	1,568	.....
G. T. Western	322,331	301,360	20,971	.....
D.G.H. & M.	103,414	93,394	10,020	.....
Total	£2,325,945	£2,124,394	£201,551	.....

Telegraph and Cable Matters.

M. T. Quigley, Local Manager C.P.R. Telegraphs, Vancouver, B.C., died there, Oct. 7.

J. G. Davies, Manager G.N.W. Telegraph Co.'s office at Ottawa, has been transferred to Vancouver, B.C., vice J. P. Masters resigned.

J. Kent, Manager C.P.R. Telegraphs, left Montreal, Oct. 5, on an inspection tour of the company's telegraph lines in the Maritime Provinces.

J. Kent, Manager, and W. J. Clapp, Electrical Engineer C.P.R. Telegraphs, returned to Montreal recently after completing an inspection of the lines west of Montreal.

C. E. Davies, heretofore chief operator, has been appointed Manager G.N.W. Telegraph Co.'s Ottawa office, vice J. G. Davies transferred to Vancouver, B.C.

The C.P.R. has recently opened telegraph offices at Durban, Headingly, Kelwood, Moore Park, McAuley and Treesbank, Man.; Cavan, Midhurst and York, Ont., and Duval and Hume, Sask.

A. B. Smith, Manager G.T.P.R. Telegraphs, left Winnipeg, Oct. 5, for Prince Rupert, B.C., on a trip of inspection of the work in progress in that neighborhood, proceeding eastward along the Skeena River to Hazelton.

The Peré Marquette Rd. telegraph operators were placed on a new schedule Oct. 1, the chief item in which is an advance of \$5 a month on wages, bringing the minimum up to \$50 a month. Other items provide for an increase of 5c. an hour for overtime and Sunday work, and extra allowances for special work.

The erection of the new Marconi wireless telegraph station at Glace Bay, N.S., is proceeding rapidly. W. Marconi stated recently that it was hoped to have the towers in readiness for the transaction of business about the middle of Dec. The foundations and buildings are of ferro-concrete and steel, and the entire plant is fireproof. The contractors are Rhodes, Curry Co., Ltd.

The Great North Western Telegraph Co.'s annual meeting was held at Toronto, Sept. 29. The accounts showed that the revenue for the past year was considerably in excess of that for the previous year. Following are the directors for the current year:—President, H. P. Dwight; Vice President, Adam Brown; Vice President and General Manager, I. McMichaël; other directors,

H. N. Baird, J. Hedley, Hon. J. K. Kerr, W. C. Matthews, Toronto; L. C. Clowry, J. B. Vanevery, New York.

The Dominion Government will shortly have eight wireless telegraph stations completed along the Pacific coast, these being situated at Point Grey, Cape Lazo, Gonzales Hill, Estevan, Pachena, Skeeda Point, Triangle Island and Prince Rupert, B.C. The first five mentioned are already in operation, and it is anticipated that the chain will be completed by the end of the year. It is stated that when completed, a commercial business will be transacted, in addition to giving a marine signal service. The stations are equipped with the latest improvements of the Marconi system.

The Pacific Cable Board's report for the year ended Mar. 31 gives the total receipts as £113,093 3s 7d, and the expenditure as £96,435 15s 5d, leaving £16,657 8s 2d available for the reduction of the amount contributed annually for interest and sinking fund on capital advanced. The receipts exceeded those of the previous year by £2,933. Throughout the year the cable worked without interruption and no repairs were necessary, but the Canadian land line was interrupted on several occasions, and the Board's interests were in consequence adversely affected by the diversion of traffic to the eastern route. The number of messages dealt with was 243,922, of which 232,394 were ordinary, 9,086 Government and 2,532 press messages. The total number represented 2,739,544 words.

Press dispatches from London, Eng., state that the British Government has taken over all the Marconi wireless telegraph stations in Great Britain and Ireland, excepting the long distance stations at Poldhu, Eng., and Clifden, Ireland, which the company retains in connection with its trans-Atlantic service. It is stated that the price paid for the coast stations is \$75,000, with the right to use all existing patents and all improvements made during the next 14 years. It is the intention to place these stations under the control of the Post Office Department, and they will be operated for communication with all vessels suitably equipped, regardless of the system adopted by each. It is said that the Government has also taken over all the coast wireless telegraph stations operated by Lloyds.

Among the Express Companies.

An ex-employee of the Northern Ex. Co., Butte, Mont., is reported to be passing forged money orders at various points, chiefly, so far as has yet been ascertained, in the U. S. The Canadian Ex. Co., among others, has been victimized.

The Canadian Northern Ex. Co., has opened offices at Barwick, Ont., Cremer, Lorette, and Oakburn, Man.; Candiac, Fairlight, Howell, Odessa, Vibank and Vandura, Sask., and has closed its offices at Vanscoy, Sask., and at Lake Joseph, Ont., the latter for the season only.

R. Ford, a former Canadian Ex. Co.'s employe, recently sued the company for \$5,000 for false arrest in connection with a theft of express order blanks and forgery, at Toronto. He was awarded \$1,500 for the arrest, \$250 for subsequent detention, and \$750 on the theft charge. The company has intimated that it will appeal.

The Express Traffic Association of Canada, recently filed with the Board of Railway Commissioners its tariffs of rates between U. S. points and Canada. The Chairman of the Board announced that though he had allowed the tariff to be filed, it would be subject to the forthcoming general enquiry into express rates in Canada.

Grain Elevator Notes.

The Security Elevator Co., Ltd., with head office at Winnipeg, has been registered at Edmonton, Alta., under the North West Territories Ordinance respecting foreign companies.

The Minister of Public Works while in St. John, N.B., recently, stated that he had some conversation with D. McNicoll, Vice President C.P.R., regarding additional elevator facilities at the port, Mr. McNicoll agreeing that some additional facilities were required, and that some steps would be taken in that direction very soon.

The Saskatchewan Premier, in response to the Secretary of the Saskatchewan Grain Growers' Association, on the subject of the Government ownership of elevators, recently wrote to the effect that after communications with the Premiers of Manitoba and Alberta, they were of the opinion that unless and until constitutional amendments are guaranteed to enable the provinces to undertake the grain growers' scheme on a safe basis, no end would be gained by any further conference on the subject.

The Canadian Northern Ry. elevator at Quebec was destroyed by fire, together with the contents, Oct. 16. The elevator which had a capacity of 1,000,000 bush., was built for the Great Northern Ry., of Canada, now forming part of the C.N.Q.R., in 1900. It was situated on the Louise dock, and equipped with conveyors for loading ocean-going vessels. The shipment of grain through Quebec for ocean-going vessels ceased in 1902, and since then the elevator has been leased to local storage concerns. An estimate of the damage to the structure and contents has been given at \$450,000.

Land has been purchased in the east end of Vancouver, by L. P. Strong, acting for the Alberta Pacific Elevator Co., on which it is proposed to erect an elevator of 1,000,000 bush. capacity. The property is on the C.P.R., and has water frontage sufficiently large to accommodate several elevators. Tenders are reported to have been invited for the construction which it is anticipated will be ready for handling next season's crop. The elevator will be built up on the unit system, each with 250,000 bush. capacity. It is also announced that sites have been inspected at Victoria, but no statement has been made as to the company's intentions there.

In regard to the question of grain handling facilities on the Pacific coast, and the accusation of bad faith against the C.P.R. as to such provision, one of the company's officials is reported to have said recently that there was no change in the company's policy in regard to encouraging the movement of grain from Alberta through Vancouver, nor had the Second Vice President expressed any two views on the question. Last year, Alberta produced slightly over 7,000,000 bush. of wheat, and the estimate for this year's crop was slightly under that figure. Of last year's crop, only 215,000 bush. was exported through Vancouver, and though last year was regarded in the nature of an experiment, it was not anticipated, taking into consideration the large seeding and other local requirements, that any large quantity would move westward this year. Facilities would doubtless be provided in time, but not until there was sufficient volume to justify the expense, hence the policy of the C.P.R., to meet the conditions as they are, and to provide suitable sacking plants at Vancouver. This will be done in time to take care of any portion of this year's crop that will be moved for export through Vancouver, so that grain can go to the seaboard in bulk and be sacked at the lowest possible expense.

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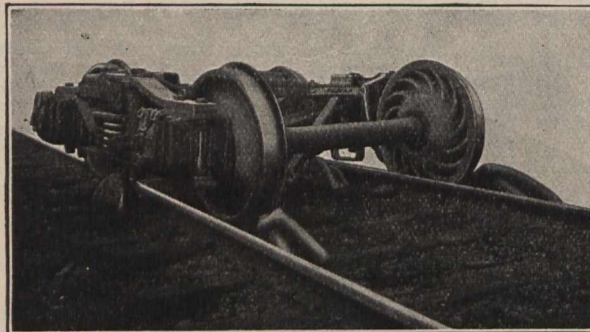
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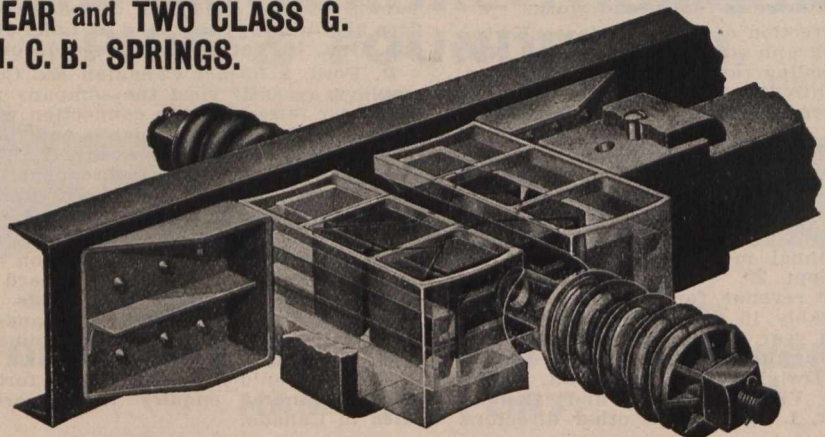
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PRESIDENT, D. McDonald, Manager, Montreal St. Ry.; VICE-PRESIDENT, J. Anderson, Manager, Sandwich, Windsor and Amherstburg Ry.; SECRETARY-TREASURER, Acton Burrows, Managing Director, Railway and Marine World.

ASSOCIATION'S OFFICE, 157 Bay St., Toronto.

EXECUTIVE COMMITTEE:—P. Dube, Secretary, Montreal St. Ry.; E. A. Evans, General Manager, Quebec Ry., Light and Power Co.; H. M. Hopper, Secretary-Treasurer, St. John Ry.; J. E. Hutcheson, Superintendent and Purchasing Agent, Ottawa Electric Ry.; C. B. King, Manager, London St. Ry.

ASSISTANT SECRETARY, Aubrey Acton Burrows, Secretary and Business Manager, Railway and Marine World.

The B. C. Electric Railway Co.'s Fraser Valley Branch.

By Robert Howes, Electrical Engineer.

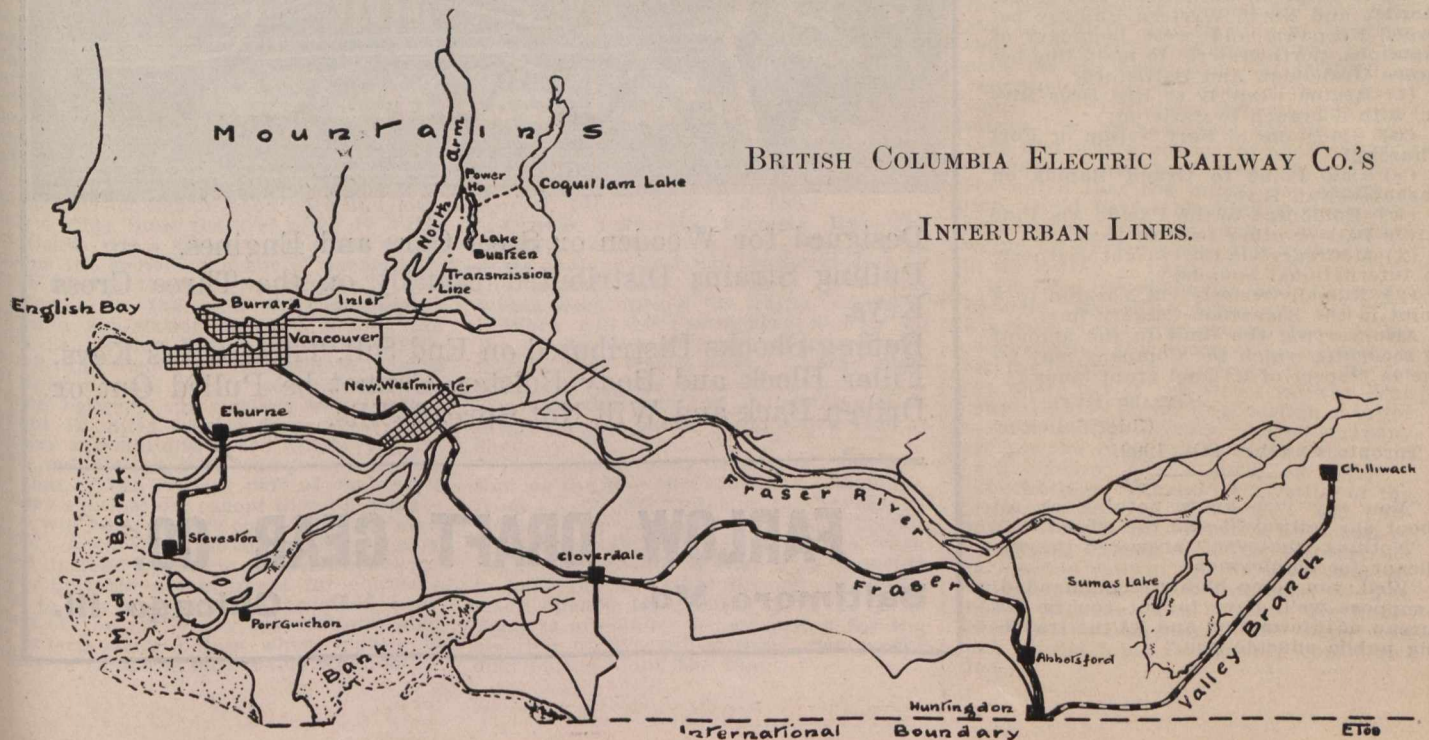
By natural location the southwest corner of British Columbia is the commercial outlet of a vast area. To the north, for hundreds of miles, a series of rugged mountain ranges forbid easy communication with the coast. On the south, the International Boundary line presents its limits. To the east and north in the foreground lies a vast mountainous area with virgin forests—already an important factor in the world's timber markets—and a mineral wealth as yet slightly explored, but of certain greatness; while in the distance stretch the great resources of the eastern provinces. To the west and south lies the Pacific Ocean, and the markets of the world. In the pioneer days, fur-trading, placer mining and salmon fisheries caused small towns to spring up on the banks of the Fraser River along the natural line of communication. Later, the more distant traffic coming over the railway required a terminal city located at a point where excellent salt water harbors could be obtained, hence the City of Vancouver. These conditions have caused the leading United States railroads to seek and obtain railway connections with this young city, and far sighted people have flocked in, until now the population is estimated at more than 80,000 persons, and the growth is at the rate of 20% per year. The older

city of New Westminster, and lesser towns in the neighborhood, swell the present total of city population in the vicinity to a round figure of 100,000. The cultivated farm land immediately surrounding the city is entirely inadequate for supplying the local demand, and supplies of all kinds are shipped in from the east and from the United States. As a result, cultivated land is very valuable, provided ready communication with the city is supplied. Between the Fraser River and the International Boundary lies a strip of land measuring some 60 miles in an east and west direction, and averaging 10 miles in width. This could, if developed, supply all the farm products required by a large city. At present three lines of steam roads pass through portions of this region; but infrequent trains and the great distance between stations afford, to even the favorably located farms, entirely inadequate means of communication with the city. Communication along the river by steamboat has done something to develop the region, but this means is also entirely inadequate.

The B.C. Electric Ry. Co. operates a system of electric roads covering the territory in and around the cities of Vancouver and New Westminster. Realizing the possibilities of the tract mentioned above this company is building an entirely modern interurban electric road over 60 miles long and reaching from the City of New Westminster to the town of Chilliwack. This road is an extension of the older system, and passes lengthwise through the centre of the tract. It is designed for high speed operation and will carry passengers, express, baggage and freight, in fact carry everything to supply the needs of the region. The overhead trolley system with direct current at 600 volts will be used. A trip along the right of way shows a succession of partially developed farms and large tracts of virgin forests. For miles the clearing appears as a street between high buildings. The trees, 200 ft. high, and straight as an arrow, give the appearance of a southern cane break on a magnified scale. Pine, fir, cedar, spruce, hemlock and alder are the principal woods. In the open ground and where persistent farmers have made a clearing, the rich black soil shows that the wealth in the forest timber is only the begin-

ning. The present scattered population might appear insufficient to justify the expenditure entailed, were passenger traffic the only consideration. But the forest timber thus made so accessible to the terminal point should produce a remunerative freight traffic, and long before this source of business is exhausted, the fertile soil will undoubtedly attract a large population. The materialization of the latter assumption is made doubly certain by the scarcity of other suitable farm locations in the region, and the existence of sufficient open land along the new line to permit a rapid agricultural development without awaiting the removal of timber and clearing away of stumps. The farms around the town of Chilliwack are already noted for their productiveness. From this, and other points, a fair amount of dairy and other farm products will require the operation of an express car from the start. The road has a ninety nine year franchise, and there is little doubt but that it will in a short time prove to be remunerative.

The B.C. Electric Ry. Co. and its subsidiary corporations, aside from operating electric railways as mentioned above, is engaged in a general electric light and power business, covering the territory occupied by its railway systems. Small towns, lumber and shingle mills and other prospective users of electric power and light are sufficiently numerous, so that the company decided to extend this branch of its business along with the railway and be prepared to supply a general light and power business throughout the territory. To this end, a set of three phase power mains extending between substations and delivering current at 2300 volts will be installed. To minimize the likelihood of serious shut-downs, duplicate high tension lines will be used, the poles being placed on either side of the track. As good cedar poles can be economically obtained in the vicinity a normal spacing of 100 ft. and the use of span wire construction to support the trolley wire has been adopted. The wires being light and the poles very strong, the first wires are all arranged on the track side of the poles, leaving the outside entirely free for additions. This arrangement precludes the use of equilateral triangular spacing of the wires, but presents



BRITISH COLUMBIA ELECTRIC RAILWAY CO.'S
INTERURBAN LINES.

Canadian Northern Railway Co.

Notice is hereby given that application will be made to the Parliament of Canada at its next session for an act authorizing the construction of the following lines, from:

- (a) Dundee northerly and easterly to a point on Winnipeg River;
- (b) Portage la Prairie southerly and easterly to a point in or near Twp. 2, Rg. 7, E.P.M.;
- (c) Hartney westerly to a point in or near Twp. 5, Rg. 7, W. 2 M.;
- (d) Moose Jaw southerly and easterly to Bienfait, with a branch from a point thereon near Estevan to Roche Percee;
- (e) Between Davidson and Disley on the Q.L.L. and Sask. Ry. westerly and northwesterly to a point on the Saskatoon-Calgary line;
- (f) Lashburn westerly to a point between Camrose and Edmonton;
- (g) A point on Saskatoon-Calgary line near Twp. 2S, Rg. 6, W. 4 M. to Rocky Mountain House;
- (h) A point on Saskatoon-Calgary line near crossing of Red Deer River northwesterly through or near Innisfail and Rocky Mountain House to head waters of Brazeau and McLeod Rivers and to Yellowhead Pass;
- (i) Winnipegosis southerly to constructed line near south end of Lake Manitoba;
- (j) A point on authorized line between Prince Albert and Battleford near Twp. 49, Rg. 3, W. 3 M. northwesterly and northerly to Great Slave Lake;
- (k) A point on its authorized line east of Lake Manitoba westerly via the Narrows to its constructed line between Grandview and Roblin;

And extending the time for commencement and completion of the following lines, from:

- (l) Strathcona southerly to Calgary;
- (m) Regina southwesterly to the International boundary between Rgs. 1 and 5. W. 3 M.;
- (n) Between Winnipeg and Ste. Anne, southerly to International boundary;
- (o) Battleford westerly to Brazeau River;
- (p) Regina to Humboldt and via Carrot River to Pas Mission, and between Humboldt and South Saskatchewan River to crossing of same river south of Prince Albert;
- (q) Prince Albert to Edmonton;
- (r) Swan River westerly to main line crossing of Saskatchewan River;
- (s) A point on authorized line of the Morden and North Western Railway between Neepawa and west boundary of Manitoba, northwesterly to main line between Grandview and Battleford;
- (t) Regina westerly to Red Deer River, with a branch to Carleton;
- (u) Gladstone to Fort Nelson or Fort Churchill.
- (v) Oak Point to Grand Rapids on Saskatchewan River;
- (w) Edmonton to the Pacific, via Pine River Pass or other feasible pass;
- (x) McCreary via Cartwright southerly to International boundary;
- (y) Russell westerly via Yorkton to a point in the Saskatoon-Calgary line;

Also varying the limit to the amount of securities which the Company may issue in respect of its land grant lands.

GERARD RUEL,

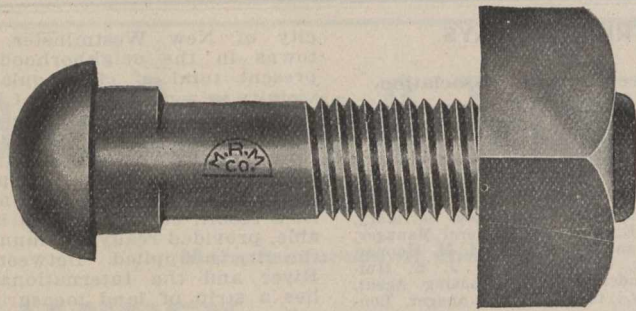
Chief Solicitor.

Toronto, October 8th, 1909.

"You say you know nothing at all about our railway?" said the official.

"Nothing whatever," answered the applicant for employment.

"Well, you come highly recommended. I suppose we'll have to put you in the bureau of information and let the travelling public educate you."



Track Bolts

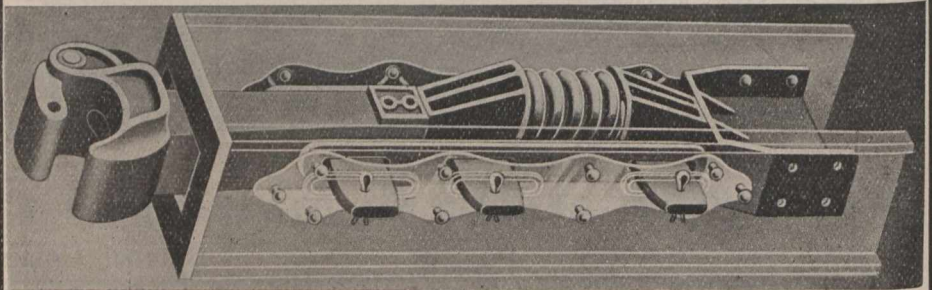
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several advantages for the conditions. A careful analysis of the inductive effects and transposition requirements have led to the conclusion that triangular spacing would have no particular advantage in the case under consideration, providing the transpositions are correctly made; while the construction adopted permits the use of wide spacing with short cross arms, and the running on one set of poles of two high tension lines, either of which is accessible for repairs without shutting down the other, and from both of which taps can easily be lead off for branch connections.

Because of a considerable saving in price, stranded aluminum has been adopted for the high tension lines. The high tension insulators are of the three part porcelain type, each being subjected to a factory test of 100,000 volts, and besides this, each individual part must stand a test of 30,000 volts. The following tests have been reported from the factory: Tops, 60,000 volts; second shells, 45,000 volts; centres, 55,000 volts; for the final proof test of assembled insulators 100,000 volts, which is well above the specified requirements. Besides the above, the porcelain base makes a further addition to the safety factor, hence no insulator troubles are anticipated excepting from actual breakage.

The power used by the company for all purposes on the main land is obtained from a hydro-electric plant located on the north arm of Burrard Inlet, 18 miles by transmission line from the centre of Vancouver. The power is transmitted from this source to the various substations through four transmission lines, at present delivering a line voltage of 20,000 volts with transformers connected in delta. As this voltage would be uneconomical for use with the lines required in connection with the extension here described and the voltage loss in the transmission to the City of Vancouver has also become considerable, it has been decided to re-insulate the old lines and increase the delivered voltage to 34,600 by connecting the transformers in Y. Nearly all of the high tension transformers in use are of the air blast type, and at some of the new substations there might be difficulty in obtaining an entirely satisfactory water supply for cooling purposes. For this reason and for the sake of uniformity, air blast transformers have been ordered for the new stationary substations. The factory insulation test guarantee is 88,000 volts from primary to secondary, and to core, and a spare transformer is supplied with each bank of three, hence the safety factor at these points will correspond approximately to that of the line. The high tension current in each case will be controlled by 45,000 volt oil switches, those in the substation being hand operated. Any bank of transformers may be operated from either line. Series tripping coils located in each wire and having a time limit feature, serve to automatically trip a spring mechanism which opens the switch in event of excess current flowing through the wires.

Power for the road will be supplied from a sub-station at each end of the line, i.e., at New Westminster and Chilliwack, and also from four others located at intermediate points so that the distance between sub-stations will average about 12 miles. Aside from these stationary sub-stations, there will be a portable sub-station with equipment similar to that of the railway part of each stationary sub-station, except that the apparatus will be of the air cooled oil insulated type. A three phase transformer being used instead of single phase transformers. Suitable arrangement for connecting to the lines will be provided near each of the stationary sub-stations, also at intermediate points where power is likely to be of the most value when spec-

ial occasions require an excessive amount of power on a certain section.

In deciding which system of electrification to adopt, consideration was given to the following requirements: 1. The power will be obtained from an existing transmission system supplying three phase alternating current at 60 cycles. 2. Light and power will on occasions be supplied from the same transmission lines as the railway, although in normal operation one line will be used for railway purposes and the other for light and power purposes. 3. The rolling stock must operate over existing 500 volt d. c. systems. 4. Passenger and express cars will run at fairly high speed and make frequent stops. 5. Fifty ton electric locomotives hauling freight trains will be operated. 6. M.C.B. freight cars will be used in connection with the locomotives. After careful consideration the 600 volt d. c. system was adopted with rotary converters at the sub-stations which will deliver continuous current at 630 volts. The motors on all rolling stock are wound for 600 volts. As the 500 volt system is within the city or along the populous districts, these equipments will automatically operate at a slower speed when they enter the populous districts without the necessity of, running all the time on the resistances, which is a desirable feature.

The passenger and express car electric equipments ordered are of the four motor type, each motor having a rated capacity of 75 h.p., and the cars equipped with multiple unit control. Three 50 ton electric locomotives, each equipped with four 160 h.p. 600 volt motors are being constructed in England. In order to collect sufficient current from the trolley wire for these locomotives each will be supplied with two trolley poles and special retrieving arrangements. As the curves will all be very easy, and the maximum grade will be only 2.7% for a short distance; these locomotives will handle freight trains of ample length, at excellent speed. Terminal arrangements are being provided to accommodate passenger trains of three cars, the policy being to divide the trains when more cars than three are required. A two hour schedule will probably be sufficient at the start, leaving the track relatively free for freight operation.

It is anticipated that the first 20 miles will be in full operation before the close of the present year, and work well progressed on the remainder of the line.

Projects, Construction, Betterments, Etc.

Brantford St. Ry.—The Brantford, Ont., city council has given the company a further extension of time for the reconstruction of its lines. A certain amount of work has been done, and the arrangement now is that the Colborne St., Market St. and Brant Ave. lines will be completed this year, and the remainder by Aug. 1, 1910. (Sept., pg. 683.)

British Columbia Electric Ry.—The condition of the lines in the eastern parts of Vancouver has been remedied by the construction of some extensions, which were opened for traffic Oct. 15.

Work will be commenced shortly on the construction of a new passenger station at New Westminster. Large additions will also be made to the car shops. The company has also in contemplation a large stores building and a new freight shed.

It was announced that the first section of the line to Chilliwack, extending from New Westminster to Cloverdale, would be opened for traffic early in November. Beyond this point the work has so far advanced that it is expected to have the line right through to Chilliwack opened for traffic by May, 1910. Tenders are under consideration for the erection of five sub-stations for power distribution along the line.

Negotiations are in progress for the extension of the Vancouver lines to Burnaby. The question whether the proposed line should go north or south of Burnaby Lake is at present under consideration.

The proposed agreement between the company and the Point Grey municipality is still under consideration. The municipality has offered a counter proposal to the terms suggested by the company, and these are now being discussed. (Oct., pg. 769.)

Cape Breton Electric Ry.—The Sydney, N. S., city council has asked the company to make several extensions in the city. (Dec., 1908, pg. 891.)

Chatham, Wallaceburg and Lake Erie Electric Ry.—Owing to the action of a farmer in Dover Tp., Ont., who refuses to allow the company to enter upon his property to continue construction work on the extension to Pain Court is held up. The company is appealing to the Board of Railway Commissioners. (July, pg. 522.)

The Chicoutimi Pulp Co. proposes to construct an electric railway from its mills to the timber limits in the River Du Moulin district, Que. The line will be for lumbering purposes only. Later it may be continued to River a Mars district connecting Alphonse with Chicoutimi, and give connection with the Quebec and Lake St. John Ry.

Grand Valley Ry.—The company has in view the making of a considerable extension of its line. This will consist of the connecting of the various pieces of line owned so as to make one continuous line to London. It will be undertaken in two sections, one starting at Brantford and running through Burford and Eastwood, connecting with the Woodstock, Thames Valley and Ingersoll Ry., at Woodstock; and the other will start at Ingersoll and run to London. The completion of these two pieces of line will make a continuous line from Galt via Paris, Brantford, Woodstock and Ingersoll to London. It is stated that the work will be proceeded with next year. (April, pg. 281.)

Guelph Radial Ry.—The Guelph city council is considering a by-law providing for an extension of the railway from Guelph to Puslinch Lake and Hespeler, Ont. The extension will be 11 miles long, and will connect with the two lines running into Hespeler. (Oct., pg. 769.)

Hamilton, Waterloo and Guelph Electric Ry.—Application is being made by J. Patterson, on behalf of the company, to the Hamilton city council for an extension of time for the starting of construction of this projected line. The by-law calls for the expenditure of \$100,000 on construction by the end of the current year. Mr. Patterson informed the committee that he had spent \$40,000 on surveys and was prepared to spend \$35,000 on right of way by the end of the year. He stated that the money for construction would be forthcoming if the extension were granted, and construction would be started either this fall or early in the spring. (Aug., pg. 609.)

Kingston, Portsmouth and Cataract Electric Ry.—The company and the Kingston, Ont. city council have under consideration the terms of an agreement for the supply of power by the city for the operation of the street railway. The council offers power at a certain rate for a term of three years. The company accepts the rate, but asks that the term be five years. (Oct., 1908, pg. 666.)

Lethbridge, Alta.—At a meeting of the town council, Oct. 4, a letter was submitted from L. M. Johnston, on behalf of a company having a charter to construct an electric railway in the town and vicinity, asking for a franchise. The mayor and the town solicitor are interested in the company. The letter was laid on the table for further consideration.

London and Northwestern Ry.—Surveys have been made over a considerable portion of this projected railway. The company has authority to construct a line from London westerly, via Lobo Junction, to Sarnia, Ont., about 65 miles, with a branch from Lobo northwesterly to Grand Bend, 30 miles, and other branches, in all totalling 115 miles. Some of the right of way has been secured. W. G. Swan, London, Ont., is chief engineer. (Sept., pg. 684.)

Montreal and Southern Counties Ry.—It was expected that the first section of this electric railway would be opened for traffic by the end of October. Objection is being taken to the by-law recently passed by Montreal South, Que. A number of the objections made are of a technical character, and are to be submitted to the Governor in Council when it comes up for ratification. (Oct. pg. 769.)

Morrisburg, Ont.—The taxpayers passed a by-law recently, granting a right of way through the principal streets for an electric railway. (May, pg. 367.)

The Mount McKay & Kakabeka Falls Ry. Co. two years ago constructed 2.5 miles of line and graded an additional 2.5 miles. Further work has been delayed pending the settlement of the crossing of the C.N.R., C.P.R., and G.T. P.R. The Board of Railway Commissioners has now authorized this crossing so that the Mount McKay & Kakabeka Falls Ry. may connect with the Port Arthur & Fort William Electric Ry., at the city limits. It is not expected that any work beyond this will be done this year, except erecting transmission poles, but we are advised that it is hoped to resume construction in the spring, when track will be laid on the 2.5 miles of grading above referred to and the first 5 miles will then be put in operation. The company's cars will enter Fort William over the Port Arthur & Fort William Electric Ry. (June, pg. 449.)

Niagara, St. Catharines and Toronto Ry.—All arrangements have been completed for the extension of this line from Welland to Port Colborne, Ont., five miles. Preliminary work was started on the extension, Oct. 5. The construction work involves the placing of a lift bridge over the Welland Canal feeder. The rails for the track have already been delivered, and it is expected that the extension will be completed by the end of the year. (Oct., pg. 771.)

Nipissing Central Ry.—Grading from Cobalt to Haileybury has been completed, and the bridge over the T. & N.O.R., was expected to be completed by Oct. 30. Rails have been delivered, and much of the track laying has been done. The by-law granting the right to operate over Haileybury streets, has been passed. (Sept., pg. 684.)

Okanagan Valley, B. C.—The Coteau Power Co. is preparing plans for the construction of a tram line 25 miles eastward from Vernon, B.C., through an extensive fruit growing district. The company proposes to develop power from the Shuswap River falls, 25 miles from Vernon. Work on the power plant will be started at once.

Ontario West Shore Ry.—The Ontario Railway and Municipal Board has granted the company permission to cross the

Edmonton and Slave Lake Railway Company.

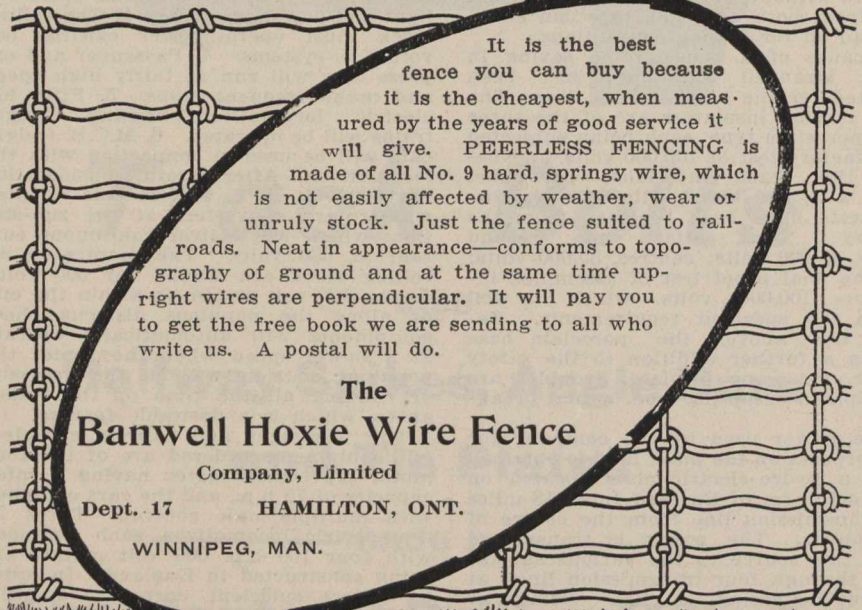
Notice is hereby given that application will be made to the Parliament of Canada, at its next session, for an Act authorizing the amalgamation of the company with the Canadian Northern Railway Company, and the extension of time for the completion of its line of railway from Edmonton to the Peace River.

GERARD RUEL,
Chief Solicitor.

Toronto, 8th October, 1909.

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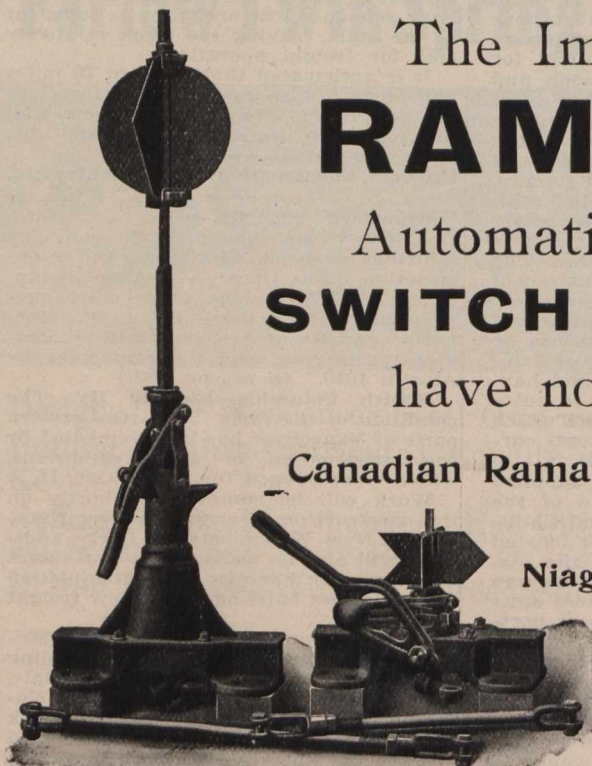
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highway in Dunlop village. Seven car-loads of track material have been unloaded at Menesetung station, and additional supplies are coming forward. The right of way through Colborne and Ashfield Tps. is practically ready for track-laying, and it is expected a start will be made at an early date. (July, pg. 523.)

Ottawa and St. Lawrence Electric Ry.—We are advised that an option has been given to a British syndicate on the company's charter and franchises, to expire Nov. 15. Representatives of the company are sanguine that the deal will go through. In that event it is expected that surveys will be gone on with this fall. A. H. N. Bruce, Ottawa, is Chief Engineer. (Oct., pg. 771.)

People's Ry.—A. N. Warfield, Chief Engineer, states that a good route has been secured for the line between Berlin and Stratford, Ont., and also on the proposed Wellesley and New Dundee branches. Surveys are being made for the line between Berlin and Guelph. As soon as they are completed the company will proceed with the securing of the passing of by-laws in the various municipalities for franchises and financial aid. The aid asked will be, that the municipalities take preference stock to the amount of \$3,000 a mile of road. Negotiations are stated to be in a forward condition with Stratford, and it is expected to have the by-law ready for submission to the ratepayers at an early date. If it passes it is hoped to have the lines in the city in operation by Sept., 1910, and to New Hamburg by Nov., 1911. (Sept., pg. 685.)

Port Arthur and Fort William Electric Ry.—The extension of the lines on Arthur street, Port Arthur, is well advanced. Track has been laid from Algoma street to Court street. The conduits for the wires have been laid between Water street and Algoma street. (April, pg. 281.)

Quebec Ry., Light and Power Co.—Work is practically completed on the switches at the top of Palace Hill, for the line which it is proposed to run in continuation of the former transfer line. An extension to Cap Rouge is also contemplated. An engineer is now going over the route and his report is expected to be made at an early date. (Oct. pg. 771.)

Sydney and East Bay Ry.—The Nova Scotia Legislature has incorporated a company with this title, for the purpose of constructing an electric or other railway, from the Sydney city limits to the head waters of East Bay, with power to extend through districts 8 and 13, and to construct branch lines. The company is also given powers to generate electricity. The provisional directors are: T. Cozzolino, J. C. Larder and J. B. McCormack, of Sydney, N. S. (May, pg. 367.)

Toronto and York Radial Ry.—A proposition has been submitted to the Toronto city council for the admission of the company's lines into the city. The proposition is that the company will send its cars into the city if it is allowed to make running arrangements with the Toronto Ry., and is guaranteed that at the expiry of the Toronto Ry. franchise, a similar arrangement will be continued. The Toronto Ry. franchise expires in 1921, and the position which the city has always taken up is that no rights can be given to the Radial company which will run longer than that period. (Sept., pg. 685.)

Toronto Ry.—A permit has been granted by the Toronto city council for the erection of a car barn on Lansdowne Avenue, near Lappin Ave. The new building is to be of brick, and is estimated to cost \$50,000.

Permission has been granted for the relaying of the tracks on Shaw St., along the centre of the street instead of at the side as at present. (Oct., pg. 771.)

Winnipeg Electric Ry.—Permission has

been granted for the construction of a second track from the north end car barns to the city limits. The city council has also decided to ask for an extension of the Selkirk Avenue line for a couple of blocks, and then westerly to McPhillips' street.

Winnipeg, Selkirk and Lake Winnipeg Ry.—The Winnipeg city council has granted permission to the company to run its cars from the new city limits to the old city limits. This permission is given subject to it not being considered as giving any rights to operate in the city on the Winnipeg Electric Ry. tracks. (Oct., pg. 771.)

Yarmouth and Digby Electric Ry.—The Nova Scotia Legislature has incorporated a company with this title, for the purpose of constructing an electric railway from the northerly limit of Yarmouth, through Yarmouth county to Bear River Village, Digby county, together with all necessary powers. The provisional directors are: B. G. Burrill, B. B. Bowman, I. M. Lovett, I. A. Lovett, Yarmouth; J. A. Dickey, F. B. McCurdy, B. F. Pearson, Halifax; A. H. Comeau, Meteghan River; W. C. Clarke, Bear River; A. Bourneuf, W. Bourneuf, Haverhill, Mass., and the offices of the company are at Yarmouth. (May, pg. 369.)

Yarmouth and Eastern Ry.—The Nova Scotia Legislature has incorporated B. G. Burrill, B. B. Law, Yarmouth; J. A. Dickey, Halifax, with power to construct a railway, to be operated by electricity or other motive power, from Yarmouth to Tusket Wedge, and such branch lines as may be necessary. The company is authorized to enter into agreements with other companies and to carry on a number of allied businesses. (May, pg. 369.)

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for Aug., \$242,016; operating expenses, \$128,442; net operating earnings, \$113,574; renewal funds, \$16,894; net earnings, \$97,180; approximate income from investments, \$16,500; net income, \$113,600; against \$180,945 gross earnings; \$93,485 operating expenses; \$97,460 net operating earnings; \$14,962 renewal fund; \$72,948 net earnings; \$13,550 approximate income from investments; \$86,048 net income for Aug. 1908. Aggregate gross earnings for two months ended Aug. 31, \$462,681; net earnings, \$211,698, against \$355,355 gross and \$168,020 net for same period 1907-08.

Calgary St. Ry.—Gross receipts for Aug., \$9,265; sinking fund and interest, \$3,996.33; operating expenses, \$2,505; surplus, \$2,754. Gross receipts for Sept., \$10,179.

Halifax Electric Tramway.—Traffic receipts for Sept., \$21,020.91, and for two weeks ended Oct. 14, \$9,389.61, against \$21,084.64 and \$6,650.88 for same periods 1908.

Montreal St. Ry.—The usual quarterly dividend of 2½% for the quarter ended Sept. 30, has been declared, payable Nov. 2, to shareholders of record, Oct. 13.

Port Arthur and Fort William Electric Ry.—Gross earnings for Aug., \$12,951.66; expenses, \$6,426.98; net earnings, \$6,524.68.

Regina St. Ry.—The Regina, Sask., city council is applying to the Board of Railway Commissioners for authority to construct a street railway. We are advised that the construction and operation of the line will be undertaken entirely by the city.

St. Thomas St. Ry.—Total receipts for Sept., \$1,387.47, against \$1,463.98 for Sept., 1908. The decrease is chiefly due to the price of tickets which are now sold at 8 for 25c., against 7 for 25c. last year. The number of passengers carried in Sept. was 39,748, against 38,649 in Sept., 1908.

South-Western Traction Co.—At the sale, Oct. 20, the line was sold to

J. E. McDougall, of the London Stock Co. The amount realized was \$455,000, exclusive of lien, or a total of \$535,067.

Toronto Ry.—Gross earnings for Sept., \$379,981.08; net earnings, \$199,146.97, against \$354,095.42 gross earnings; \$193,152.33 net earnings for Sept., 1908. Aggregate gross earnings for nine months ended Sept. 30, \$2,857,291.30; net earnings, \$1,407,655.21, against \$2,629,222.04 gross earnings; \$1,232,478.72 net earnings for same period 1908.

Winnipeg Electric Ry.—Gross earnings for Aug., \$197,800; expenses, \$100,800; net earnings, \$97,000, against \$155,800 gross earnings; \$80,100 expenses; \$75,700 net earnings for Aug., 1908. Aggregate gross earnings for eight months ended Aug. 31, \$1,622,800; net earnings, \$812,500, against \$1,353,800 gross and \$674,700 net for same period 1908.

Electric Railway Notes.

Four cars for the Nipissing Central Ry. have been delivered at Halleybury, Ont., and an order has been placed for four trailers for delivery next summer.

Two cars have been added to the rolling stock of the Winnipeg Electric Ry., making 25 cars added during the year. All these cars have been built at the company's shops.

The Winnipeg Electric Ry. has adopted a new transfer system, modelled on the same lines as that adopted some time ago by the Toronto Ry. The system went into operation Oct. 1.

The Quebec Ry. Light and Power Co., recently asked for tenders for the supply of 10 open cars, six closed cars and three additional sleepers for its City Division, two large cars and a 500 k. w. motor generator set for its Montmorency Division.

T. C. Taylor, formerly a motorman in the employ of the Winnipeg Electric Ry., who was recently admitted to bail in connection with a charge respecting the death of two pedestrians who were crushed between two cars in Winnipeg, July 26, has been committed to an asylum as insane. It is said that the nature of the charge has so preyed on him that his reason has given away.

Allan Purvis, who has been appointed Local Manager, British Columbia Electric Ry. Fraser Valley Branch, Vancouver, was born at Batavia, Java, June 29, 1878, and educated in Liverpool, Eng. He entered railway service at 12 years of age, being successively, Aug., 1890, to Feb., 1891, messenger Stores Department; Feb. to Nov., 1891, storesman; Nov., 1891, to Sept., 1892, junior clerk at Vancouver, B.C.; Sept., 1892, to Aug., 1893, timekeeper Donald, B.C.; Aug., 1893, to Oct., 1894, clerk, Vancouver, B.C.; Oct., 1894, to Mar., 1895, assistant storekeeper, North Bend and Kamloops, B.C.; Mar., 1895, to Sept., 1896, clerk and operator, Car Service and Fuel Department, Vancouver, B.C.; Sept., 1896, to Jan., 1899, chief clerk, Fuel Department, Vancouver, B.C.; Jan., 1899, to Feb., 1908, chief clerk to General Superintendent, Vancouver, B.C.; Feb. to Nov., 1908, Superintendent District 4, Central Division, Souris, Man.; Nov., 1908, to Oct., 1909, Superintendent District 3, Pacific Division, Nelson, B.C.; all service with the C.P.R.

A press dispatch dated Oct. 22, states that the present lease of the G.T.R. air line division by the Wabash Rd. will expire in a few months, and it is also reported that an arrangement will be concluded with the M.C. Rd. to use its tracks from Detroit to Buffalo. G.T.R. officials, in denying the recent reports that it was considering the construction of a tunnel under the Detroit River, stated it was very likely that the Wabash Rd. would make an arrangement with the M.C. Rd. to use its tunnel, now nearly completed.

Notice.—The Canadian Pacific Railway Company will apply to the Parliament of Canada at its next session for an Act:—

(1) Extending the time within which it may construct the following lines of railway:—

a. From a point at or near Osborne to a point between Cartwright and Bois-sevain, Manitoba.

b. From Otterbourne to Stuartburn, Manitoba.

c. From Killam or some other point in Township 44, Ranges 13 and 14 West 4th to Strathcona, Alberta, with power to commence from a point in Range 12.

d. From a point at or near Napinka, westerly to a junction with the north-west extension of the Souris Branch.

(2) Authorizing it to construct a line from a point in Township 22, Range 2 East of the Principal Meridian in a northerly or north-westerly direction to a point in Township 34, Ranges 5, 6 or 7, west of the Principal Meridian, Manitoba, a distance of about 100 miles.

(3) Empowering the Directors to enact by-laws for the election or appointment of two or more Vice-Presidents of the company and defining their powers, duties, qualifications and terms of office.

(4) Amending the Company's Acts relating to the election of directors.

(5) To further interpret or define the meaning of the Company's Act relating to the issue of Preferred Stock and for other purposes.

W. R. BAKER,

ANDREW T. THOMPSON,
Ottawa Agent.

Dated at Montreal, 20th October, 1909

Notice.—The Esquimalt and Nanaimo Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may construct the extension of its main line to Comox and the branches which it was authorized to construct by its Act of incorporation, chapter 14 of the Statutes of British Columbia, 1884, and the railways which it was authorized to construct by section 2 of chapter 92 of the Statutes of Canada of 1906, and for other purposes.

W. F. SALSURY,

ANDREW T. THOMPSON,
Ottawa Agent, Secretary.

Dated at Vancouver, the 30th September, 1909.

Notice.—The Manitoba and North Western Railway Company will apply to the Parliament of Canada, at its next session, for an Act authorizing it to construct and operate the following lines of railway:—

(a) From a point at or near Birtle, to a point at or near Hamiota, in the Province of Manitoba.

(b) From a point at or near Russel in the said Province of Manitoba in a northerly or north-easterly direction, a distance of about 150 miles, and for other purposes.

H. C. OSWALD,

ANDREW T. THOMPSON,
Ottawa Agent, Secretary.

Dated at Montreal, the 30th September, 1909.

NOTICE.

Pursuant to section 361 of The Railway Act, notice is hereby given that one month after the first publication of this notice application will be made to the Board of Railway Commissioners for Canada by The Canadian Northern Railway Company and The Northern Extension Railway Company for a recommendation to the Governor in council for the sanction of an agreement amalgamating the two companies.

GERARD RUEL,

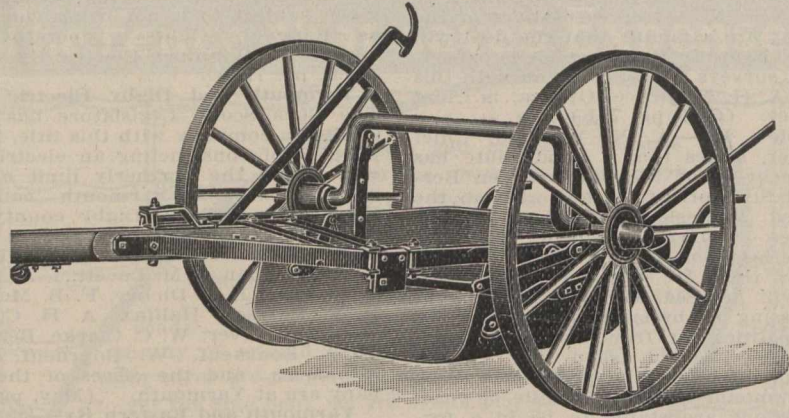
Chief Solicitor for the companies.

Dated at Toronto, 6th October, 1909.

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IN NOVA SCOTIA the Halifax and Southwestern Railway, from Halifax to Yarmouth, serves seven hundred miles of ocean shore; two score generous trout streams and the famous Rossignol lake system.

IN CAPE BRETON, sixty miles of the Gulf of St. Lawrence shore is skirted by the Inverness Railway, which gives easy access to the Margaree valley—far-famed for its salmon fishing.

IN QUEBEC, the Canadian Northern, Quebec and Quebec, and Lake St. John Railways give easy access to the Saguenay, Upper St. Maurice, the Batiscan, the La Tuque game and fish preserve, and the valleys of the St. Lawrence and Ottawa. All good fishing waters, abounding with ouaniche, trout and bass.

IN ONTARIO, the entire range of the Muskokas, the Georgian Bay hinterland, the French, Pickerel, Still and Maganetawan rivers—well stocked with bass, mascalonge, and pickerel, are best reached by the Canadian Northern Ontario Railway.

IN WESTERN ONTARIO and the prairie provinces, the Canadian Northern Railway serves over three thousand miles of splendid territory. The Rainy River section follows the old Dawson fur trail, which is the finest canoe trip on the continent. There is an amplitude of sporting opportunities for the camera hunter, the fisherman and canoeist.

For literature and general or special information inquire of the information Bureau, Canadian Northern Railway System, Toronto.

MARINE DEPARTMENT.

The Shipping Federation of Canada.

PRESIDENT, H. A. Allan, Montreal; MANAGER AND SECRETARY, T. Robb, 526 Board of Trade, Montreal.

Dominion Marine Association.

PRESIDENT, C. J. Smith, Montreal; COUNSEL, F. King, Kingston, Ont.

Canadian Association of Masters and Mates.

GRAND MASTER, Capt. F. Scott, Collingwood, Ont.; GRAND SECRETARY-TREASURER, Capt. H. O. Jackson, 376 Huron St., Toronto.

Salving the s.s. Turret Bell.

The recent salving of the s.s. Turret Bell, which has been mentioned in earlier issues, after having lain stranded at Cable Head, P.E.I., for almost three years, has some interesting points, the following description of which has been adapted from a recent issue of Shipping Illustrated. The underwriters, after paying a total loss, awarded the contract for the salvage work to S. M. Brookfield, Halifax, N.S., by whom it was subsequently surrendered to the Reid Wrecking Co., Sarnia, Ont., who carried out the work successfully. The vessel was thrown up on the beach during a heavy northeast gale and at low water during ordinary spring tides in May, she had only 3 ft. of water at her stem and 6 ft. at her stern post. The conditions governing the tides were carefully studied, and after a fair analysis the conclusion was arrived at that no reliance could be placed on the tides along the north shore of the island. It was also discovered that after the spring tides of the early part of June each year, the water shrank very rapidly, so that the high water spring tides of July were 15 ins. less than at the corresponding tides in May and June, and at the high water tides of Aug. there was 9 ins. less water than at the corresponding tides of July. The situation was carefully studied, and it was considered possible to float the vessel and deliver it in a dry dock. It was estimated that the work could be accomplished within three weeks from the time the plant was placed aboard the vessel, and had not a number of delays and disappointments occurred, this would have been done. During the course of the operations, the closing of the Welland canal in 1908, the loss of a car on the I.C.R., the failure of contractors to deliver certain equipment, and a fire and boiler explosion on board the wrecking steamer, were some of the troubles which were experienced, so that, with the exception of a few weeks work in Aug. and Sept., 1908, the actual work of floating the stranded vessel, was not commenced until July 1909. At that time it was discovered that the work which had been accomplished was altogether undone, and the vessel forced back about 100 ft. on to the point forming Cable Head. She had then to be literally carried by hydraulic jacks about 1,000 ft., until a sufficient depth of water was reached, when she was floated by means of compressed air and taken to Charlottetown, P.E.I., where temporary repairs were made, and subsequently to Quebec, where she was docked for examination and later berthed at Levis, where she now lies for sale. During the work, every care was taken of the machinery, and it is notable that the engines, boilers and auxiliary machinery were worked continuously without a hitch from the time she was floated until she reached Quebec. The vessel is a steel steamer of 2,211 tons gross, 1,376 tons net, built in 1894, and carrying 3,900 tons deadweight on a mean draft of 10 ft. 7 ins.

The Otonabee-Rainbow Collision.

An investigation was held at Peterboro, Ont., recently, by Capt. L. A. Demers, acting Dominion Wreck Commissioner, assisted by Capt. R. Jones and F. Nash, into the causes which led to the collision between the s.s. Otonabee and s.s. Rainbow. The Rainbow is a wood steam vessel of 34 tons, which was rebuilt in 1909, propelled by a left handed propeller, and manned by a master, mate, engineer and deckhand, the master and mate holding certificates, and the engineer having a permit. The vessel is owned by F. Burnett, of Birdsall, Ont. The Otonabee is a twin screw boat of 87 tons, owned by the Otonabee Navigation Co. The master and mate have certificates. On Aug. 11, about 10.30 a.m., weather being clear, the Otonabee left the wharf, a short distance above Hale's bridge, after having given the whistle for the opening of the bridge, proceeded to follow the course usually adopted, that is the left hand side of the channel, which is done owing to the fact that immediately below the bridge the river forms a sharp bend. On opening up the river ahead of the bend, it was seen that the Rainbow was coming from the opposite direction following the right hand side of the channel. Upon seeing the Otonabee, the master of the Rainbow, immediately hard ported the helm, but in the evolution, a link of the rudder chain parted, the rudder then returned to midship, and the current threw her head to starboard. Seeing that, the master of the Otonabee stopped the port engine and starboarded the helm, with the result that a glancing blow was made into the port side amidship of the Rainbow.

In the Court's point of view, the evolution performed was permissible under the circumstances, though the Otonabee acted contrary to the rules of the road, and yet at such close quarters, or in the moment of danger, the above rule says: "To act as judgment says is proper," which was done in this case by both captains, in view of which the Court finds that Capt. Burnett of the Rainbow, and Capt. Harris of the Otonabee, under the circumstances and to avoid a collision, performed the only evolution permissible when at close range. Therefore, the Court exonerates the masters and officers of both vessels from all blame, and recommends that a suggestion be made to the proper authorities, to cause the overhanging foliage which partly intercepts the view at the bend of the Otonabee River, below the bridge, to be cut down.

The Stigstad-Siraine Collision.

The enquiry into the circumstances attending the collision of the s.s. Stigstad and the schooner Siraine, near St. Lawrence Point, in the River St. Lawrence, Sept. 11, took place before Capt. L. A. Demers, acting Wreck Commissioner, assisted by Capt. A. Reid, Port Warden, Montreal, and R. Paquet, President Corporation of Pilots, Quebec, and the following judgment was delivered, Oct. 4, R. Paquet dissenting:—

The Court having carefully enquired into the circumstances attending the collision, finds Pilot C. Normand in default for not exercising necessary and adequate precaution to avoid collision, and holds that he acted in contravention to articles 20 and 28 of the Rules of the Road, and in consequence thereof, and in view of the facts as adduced, C. Normand, Pilot, C. Wahlquiss, second mate and Capt. O. Ellifsen, incur the Court's severe censure, and are held responsible for the collision, and as the Court is empowered with jurisdiction as to imposition of costs, it is ordered that the costs of this investigation be defrayed by the s.s. Stigstad.

Stranding of the s.s. Urania.

Capt. L. A. Demers, acting Dominion Wreck Commissioner, with R. Paquet and Jas. Bain, assessors, held an investigation recently into the grounding of the s.s. Urania, of the Norwegian register, which occurred on Aug. 7, on a reef extending from White Island, the vessel being engaged in the St. Lawrence coal trade, under charter to the Nova Scotia Steel and Coal Co. Following is the judgment:—

The Court after carefully reviewing the evidence which was of a somewhat contradictory character, finds that Pilot Jos. Dupil is not to blame for the grounding of the vessel, owing to the fact that the Captain, C. H. F. Jensen, was primarily responsible for the stranding through his interference with the pilot's intention of anchoring the ship, when it was deemed advisable in the pilot's opinion to come to an anchor. The pilot is, in consequence exonerated from the responsibility of the stranding, and Capt. Jensen is severely censured for interfering without cause.

Vessels Removed from the Register.

The following vessels were removed from the register during Sept., for the reasons assigned:—Steam: Columbus, Sault Ste. Marie, Ont., 230 tons, destroyed by fire; Going, Windsor, Ont., 31 tons, burnt; Kathleen, Lindsay, Ont., 26 tons, burnt; Prescott, Montreal, 648 tons, burnt; Rupert, Quebec, 292 tons, broken up. Sailing: C.P.N. no. 1, Victoria, 91 tons, wrecked; Emily B. Maxwell, Port Hope, Ont., 327 tons, wrecked; Grace D. Day, Shelburne, N.S., 39 tons, transferred to Newfoundland; Laura C. Zwicker, Lunenburg, N.S., 85 tons, foundered; Ledee Adele, Charlottetown, P.E.I., 50 tons, wrecked; Letitia, St. Andrews, N.B., 10 tons, foundered; Oriole, Toronto, 50 tons, broken up.

Notices to Mariners

The Department of Marine has issued the following:—

No. 86. Sept. 30. 236.—Quebec, River St. Lawrence, ship channel between Quebec and Montreal, Lotbiniere, daymarks at range lighthouses.

No. 87. Sept. 30. 237.—British Columbia, Vancouver Island, west coast, Carmanah, change in fog alarm. 238.—British Columbia, Jervis Inlet, Nelson Island, Vanguard Bay uncharted rock.

No. 88. Sept. 30. 239.—Ontario, Great Lakes and St. Lawrence River, dates to which lights will be kept in operation. 240.—Ontario, River St. Lawrence, Iroquois to Prescott, changes in buoyage.

No. 89. Sept. 30. 241.—British Columbia, Vancouver Island, west coast, Quatsino Sound, Entrance Island, new lighthouse.

No. 90. Oct. 1. 242.—Quebec, River St. Lawrence, chart Montreal to Sorel issued. 243.—Quebec, River St. Lawrence, chart Sorel to Batiscan issued. 244.—Quebec, River St. Lawrence, chart Batiscan to Quebec issued.

No. 91. Oct. 4. 245.—Ontario, Lake Superior, Caribou Island, change in fog alarm.

No. 92. Oct. 6. 246.—Ontario, Lake Ontario, west end, Burlington channel, front range lighthouse rebuilt.

No. 93. Oct. 7. 245.—Quebec, River St. Lawrence, Cape Dogs light station, fog alarm established, corrections.

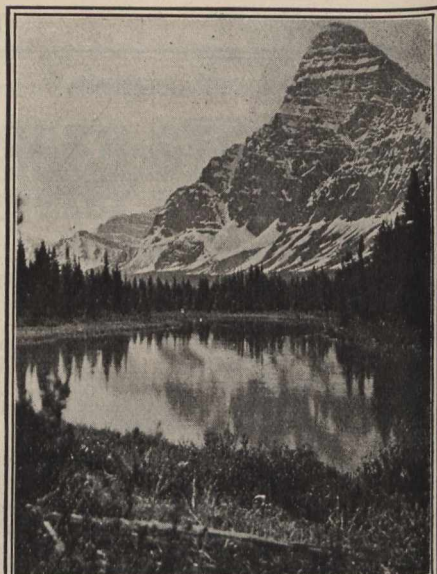
No. 94. Oct. 12. 246.—British Columbia, Vancouver Island, Quatsino Sound, west arm, and Bight Cove, uncharted rocks. 247.—British Columbia, Burrard Inlet, Vancouver harbor, Brockton Point, change in light. 248.—British Columbia, Finlayson channel, Heikish narrows, rock located, wreck. 249.—British Co-

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lumbia, Chatham Sound, Lucy Island, arc of visibility of light. 250.—Alaska, Prince William Sound entrance, Cape Hinchinbrook, lighthouse constructing, temporary light to be established.

No. 95. Oct. 14. 251.—Ontario, Lake Ontario, west of Toronto, Long Branch rifle ranges, caution. 252.—Ontario, Lake Huron, Goderich, lights on south pier.

No. 96. Oct. 14. 253.—Quebec, Gulf of St. Lawrence, Magdalen Islands, Pleasant Bay, Amherst Island, position of wharf. 254.—Quebec, River St. Lawrence, mouth of Saguenay River, Prince shoal, Lightship no. 7 replaced by Lightship no. 17. 256.—Quebec, River St. Lawrence, Cap Brule or Montee du Lac, character of light.

No. 97. Oct. 15. 257.—Nova Scotia, south coast, Halifax Harbor, George Island, buoys marking and reserved for submarine mining purposes withdrawn. 258.—Nova Scotia, Cape Breton Island, west coast, Port Hood, intended change in character of light. 259.—Newfoundland, Labrador, Belle Isle, south end, use of explosive fog signals discontinued. 260.—Ireland, north coast, Lough Swilly, Fanod Head light, character altered. 261.—England, west coast, Bristol Channel, North Lundy lighthouse, alteration in fog signal. 262.—England, west coast, Morecambe Bay, Lune Deep, light buoy replaced by light boat.

No. 98. Oct. 16. 263.—Ontario, Lake Erie, Port Burwell, hydrographic information, aids to navigation.

An act passed last session of the Nova Scotia Legislature, authorized the town of Yarmouth to exempt from taxation for 20 years, property of the New Burrill-Johnson Iron Co. under certain conditions. The company is engaged in the construction and engineering of vessels.

The Great Lakes and St. Lawrence Navigation and Improvement Association.

H. W. Richardson, President, has recently issued a circular letter to all organizations and municipalities in any way interested in the project for the general improvement of the waterway from the Great Lakes to the seaboard, as follows:—

"The time seems appropriate to press upon the attention of the Government the urgent need for a new Welland canal. The Northwest is demonstrating its possibilities, and we should not hesitate to increase and cheapen our transportation facilities. There is no easier or cheaper way to do this than to modernize this 26 miles of canal, so that the large freight steamers of the Upper Lakes may proceed to the foot of Lake Ontario. A reduction of two or three cents a bushel could thus be made in the freight rate on wheat, and the saving to the northwestern farmer on the present crop would thus be not less than \$3,000,000, while in a few years the saving would be three or four times as great. The lake freight and the lake and rail freight from Fort William to Montreal, for the last half of Oct., is 6½c. a bush. One and one-half cents is the rate from Fort William to the foot of Lake Erie, either Buffalo or the head of the Welland canal. To load, proceed to Buffalo, discharge, and return, a large steamer takes nine days to earn this 1½c. With a new Welland canal she could proceed to Kingston, Prescott or Brockville, and only add two days to her voyage. One-half cent would thus be a fair return for this extra time, and accordingly 2c. would bring the grain from Fort William to the head of the St. Lawrence. The rate by barge down the river to Montreal is 1½c. at present, and would doubtless be

reduced with increase in the traffic. The total cost from Fort William to Montreal would thus be at the most somewhere between 3 and 4c. a bushel, instead of 6½c. as at present. It goes without saying that while the total rate from Fort William or any Lake Superior port to New York, via Buffalo, approximates or exceeds the present rate to Montreal, a new Welland canal and the new freight rates possible would not fail to attract a large part of the export wheat now destined for Buffalo, and especially so as facilities for ocean transportation from Montreal are increased. Lake Ontario, instead of being sealed to the immense fleets of the Upper Lakes, would be able to share their traffic, every port on Lake Ontario would enjoy corresponding advantages, and the St. Lawrence River, the natural outlet from the lakes, would, as it should, become the highway for the freight of the lakes to the ocean. The Government is giving the matter consideration. Some surveys and estimates have already been made, and the practicability and moderate cost of the work have been demonstrated. Delay gives just so much advantage to the competitive route through New York State, and the expenditure of the \$101,000,000 voted for the new Erie canal is being rapidly carried out. The Great Lakes and St. Lawrence Navigation and Improvement Association has been formed primarily to bring about the improvement advocated in this circular. At a meeting in Toronto recently it was decided to interview the Government at the earliest date possible, and at this interview the attendance of everyone interested is desired."

She—"Whoever started the habit of calling a boat 'she' "

He—"Probably the first man who tried to steer one."

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING SEPTEMBER, 1909.

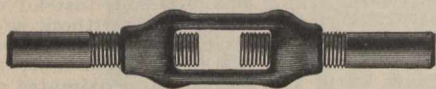
Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
†Alfred Clarke	126,193	Saugatuck, Mich., 1887	Screw 10 n. h. p.	110.0	22.2	8.6	229	148	Windsor, Ontario	Pelee & Lake Erie Navigation Co., Pelee Island, Ont.
Amelia C.	126,505	Kelowna, B.C., 1909	" 1 "	33.0	8.0	3.0	4	3	Victoria	J. T. Campbell Sunnyside Ranche, B.C.
Asahimaru	126,623	Vancouver, B.C., 1907	" 30 "	37.5	9.4	2.9	9	6	Vancouver, B.C.	Northern Canning Co., Vancouver, B.C.
De Los	126,225	Sombra, Ont., 1900	" 1 "	16.7	4.6	1.5	1	1	Sarnia, Ont.	T. W. Whiteley, Sombra, Ont.
*Donnacona	110,363	Bill Quay, Scotland, 1900	" 150 "	245.0	42.6	20.8	1906	1222	Hamilton, Ont.	Donnacona Ltd., Hamilton, Ont.
*Dundee	112,208	Dundee, " 1906	" 146 "	250.0	43.2	23.5	2278	1431	"	Dundee Steamship Co., Hamilton, Ont.
*Glenallah	112,205	" " 1905	" 146 "	250.0	43.2	23.5	2272	1454	"	Union Steamship Co., Hamilton, Ont.
Grainer	126,506	Victoria, 1909	" 18 "	100.5	23.0	8.0	144	88	Victoria	Butler Freighting & Towing Co., Victoria
Hoo Hoo	126,560	Vancouver, B.C., 1909	" 2 "	28.5	9.8	4.0	11	7	Vancouver, B.C.	J. H. Garden, Vancouver, B.C.
M. J. O'Brien	126,050	Sturgeon Lake, Ont., 1909	Paddle 6 "	100.0	24.5	4.0	253	194	Port Arthur, Ont.	New Ontario Transportation Co., Port Arthur, Ont.
*Neepawah	102,579	Greenock, Scotland, 1903	Screw 207 "	244.5	40.0	21.8	1799	1190	Hamilton, Ont.	New Ontario Steamship Co., Hamilton, Ont.
Pathmaker	126,624	Vancouver, B.C., 1908	" 3 "	28.5	7.4	3.5	4	3	Vancouver, B.C.	P. and E. Easthope, J. O., Vancouver B.C.
Picnic	126,622	" " 1909	" 1 "	28.0	8.4	3.6	4	3	"	E. Easthope, Vancouver, B.C.
Silverland	126,410	Haileybury, Ont., 1909	" 13 "	85.4	17.0	6.7	92	53	Ottawa	Haileybury Navigation Co., Haileybury, Ont.
*Strathcona	110,354	Dundee, Scotland, 1900	" 120 "	249.0	41.9	21.0	1881	1465	Hamilton, Ont.	Strathcona, Ltd., Hamilton, Ont.
Tekla	126,416	New York, N.Y., 1902	" 13 "	102.0	21.0	13.0	83	36	Toronto	J. C. Eaton, Toronto
Vera T.	126,384	Levis, Que., 1908	" 3 "	47.9	12.4	7.9	36	22	Quebec	J. S. Thom, Quebec Que.
*Wahcondah	102,577	Port Glasgow, Scotland, 1903	" 148 "	230.4	37.1	21.8	1554	996	Hamilton, Ont.	New Ontario Steamship Co., Hamilton, Ont.
Westham	126,276	New Westminster, B.C., 1909	" 10 "	85.3	22.0	8.3	199	126	New Westminster, B.C.	L. Rogers, M.O., Vancouver, B.C.
*Winona	122,851	Wallsend on Tyne, Eng., 1908	" 225 "	252.0	43.5	21.3	2085	1327	Hamilton, Ont.	Winona Steamship Co., Hamilton, Ont.

†Formerly Saugatuck. *Transferred from Great Britain.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING SEPTEMBER, 1909.

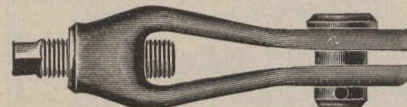
Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
British Yeoman	81,391	Woolston, Eng., 1880	Bark	269.2	39.8	24.2	1862	Victoria	Ship British Yeoman Co., Victoria
Clare Lass	121,820	Church Point, N.S., 1908	Sloop	36.0	13.2	5.7	13	Digby, N.S.	W. S. Melanson, Church Point, N.S.
Drummuir	86,233	Liverpool, Eng., 1882	Ship	270.5	39.2	24.0	1798	Victoria	Ship Drummuir Co., Victoria
F. D.	126,385	Isle aux Coudres, Que., 1908	Schr.	50.0	15.0	5.4	28	Quebec	F. Degagne, M.O., Isle aux Coudres, Que.
Hawley Brothers	126,562	Ingonish, N.S., 1909	"	37.7	12.3	6.0	11	Sydney, N.S.	J. T. Hawley, Ingonish, N.S.
Katie Margaret	126,563	" " 1909	"	39.5	11.6	5.6	15	"	P. Dickson, M.O., South Harbour, N.S.
Lawson	125,970	Port Greville, N.S., 1909	"	128.8	31.0	10.8	274	Parrsboro, N.S.	J. W. Cochrane, Fox River, N.S.
Lulu S.	126,188	Shelburne, N.S., 1909	"	53.6	16.1	6.1	23	Shelburne, N.S.	H. R. Swim, M.O., Lockport, N.S.
Maggie Julia	126,564	Cape North, N.S., 1909	"	35.4	12.2	5.9	13	Sydney, N.S.	J. Fitzgerald, Cape North, N.S.
North Bend	126,621	Coos Bay, Ore., 1877	"	152.6	32.0	11.0	392	Vancouver, B.C.	S. F. MacKenzie, Vancouver, B.C.
P. L. S. No. 1	126,497	Montreal, 1905	Scow	98.5	30.6	6.6	174	Montreal	T. Lyall, M.O., Montreal, Que.
P. L. S. No. 2	126,498	" 1905	"	88.5	26.5	6.6	134	"	"
P. L. S. No. 3	126,499	" 1905	"	79.2	20.6	5.0	72	"	"
P. L. S. No. 4	126,500	" 1904	"	78.8	20.8	5.0	72	"	"
Rosalie Bellevue	122,035	Belleveau's Cove, N.S., 1909	Schr.	114.0	29.0	10.0	197	Weymouth, N.S.	B. Bellevue, M.O., Bellevue's Cove, N.S.

TURNBUCKLES



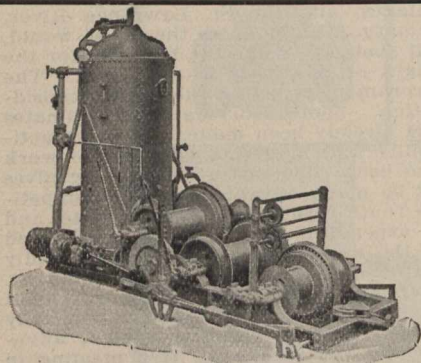
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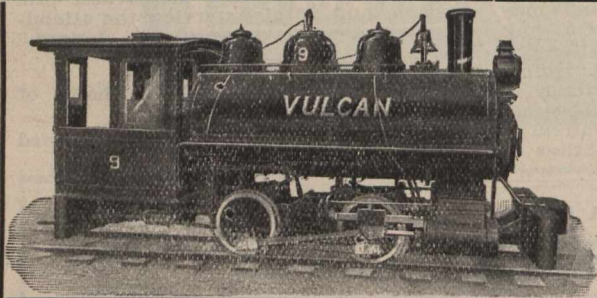
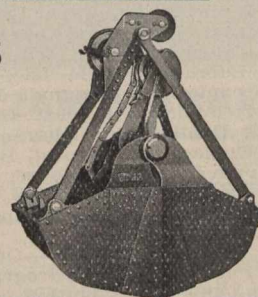


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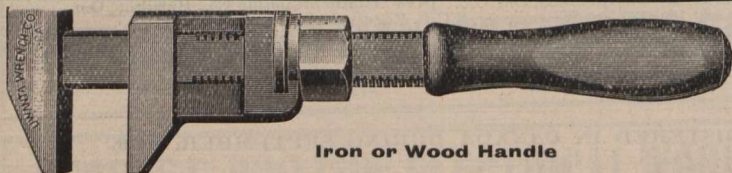
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A company with the above title has been incorporated under the Dominion Companies Act, with a capital of \$2,000,000, and office at Toronto, to construct, purchase, or otherwise acquire, operate and manage: (a) Steamships and boats of every description; (b) Buildings, hotels, stores, works appliances, mills, machinery, plant and equipment of every kind whatsoever, on land or water deemed necessary in connection with the construction, maintenance, navigation, renewal or repair of the company's vessels, works, or equipment, or in connection with the accommodation, care or conveyance of passenger traffic or the handling, forwarding, warehousing, elevation, storage, or care of freight, mails, express or other traffic; (c) Lands, water lots, docks, wharves, basins, slips, harbor and port works and terminal and other facilities, and privileges of every description; to carry on any business incidental to the full use of the work and facilities authorized or which may seem capable of being conveniently carried on in connection therewith or calculated to enhance the value of, and render profitable any of the company's properties or rights; to make traffic or other arrangements with any railway, steamboat or navigation company whose line of railway or undertaking communicates with or is contiguous to that of the company, or may be conveniently operated therewith, and to enter into agreements with such other companies for the conveying or leasing to it the undertakings or works of the company in whole or in part, or for amalgamation upon such terms and conditions as may be agreed upon; to acquire and undertake the whole or any part of the business, property and liabilities of any person or company carrying on any business which this company is authorized to carry on, or possessed of property suitable for the purposes of the company; to use any of the funds of the company to purchase or otherwise acquire, and hold shares, or other securities of any other company, and to promote any company having objects similar to those of this company, or carrying on any business capable of being carried on so as to benefit this company, and while holding the same to exercise all the rights and powers of ownership, including the voting powers; to amalgamate with any other company having objects similar to those of this company; to dispose of any of the assets or undertakings of the company by sale, lease or otherwise; to do all or any of the above things in Canada or elsewhere, and as principals, agents or attorneys. The operations of the company to be carried on throughout the Dominion of Canada and elsewhere.

The provisional directors are, F. H. Phippen, K.C., G. G. Ruel, G. F. Macdonnel, R. H. M. Temple and A. J. Reid, Toronto, all of whom are connected with the Canadian Northern Ry. Co.

Atlantic and Pacific Ocean Marine.

W. Watson, Chairman Cunard Steamship Co., died in London, Eng., Oct. 4, aged 66.

The C.P.R. has announced the cancellation of the sailings of the s.s. Lake Erie, from St. John, N.B., Nov. 4, and from Liverpool, Eng., Nov. 10.

The Government s.s. Arctic arrived home Oct. 4, after a 14 months' trip to the Arctic regions. Capt. Bernier, who was in charge, states that about 24,000 miles was covered without accident.

It is reported that the Government will grant a subsidy for a new steamship line between St. John, N.B., and a Mexican port to be selected, with calling places at British West Indies ports.

It is reported that Manchester Liners,

Ltd., intends to operate a weekly service between Canada and England, during the coming winter, instead of fortnightly, if berth accommodation can be arranged at St. John.

The St. John, Boston and Cuba Steamship Co., recently organized to operate a steamship service between St. John, N.B., Boston, Mass., and Havana, Cuba, commenced its service Oct. 5 with the sailing of the s.s. Karen from St. John.

The Allan Line announces that its first winter sailing from St. John, N.B., will take place Nov. 26, and the first from Halifax, N.S., Nov. 27. The first sailing of the winter season will be on Nov. 12, when the s.s. Virginian will leave Liverpool for St. John.

D. D. Mann, Vice President Canadian Northern Ry., is reported to have stated, Oct. 26, that as soon as the railway was completed and linked up from coast to coast, it was the intention to place lines of vessels on both the Atlantic and Pacific Oceans.

The C.P.R. is reported to have made arrangements with the Allan Line, whereby a number of its winter sailings from St. John have been cancelled, these being taken up by the Allan Line steamships Grampian, Corsican, Hesperian and Tunisian.

The Donaldson Line s.s. Alcides, which several years ago was on the St. Lawrence route, has been sold for breaking up. She was built at Glasgow, Scotland, in 1886, her dimensions, etc., being: length, 340 ft.; breadth, 42.1 ft.; depth, 30 ft.; tonnage, 3,421 tons gross, 2,181 tons register.

The White Star-Dominion steamships Laurentic and Megantic, which have been running on the St. Lawrence route between Montreal and Liverpool, Eng., during the summer, will be placed on the Liverpool-New York service during the winter, replacing the steamships Cedric and Celtic.

Montreal papers have printed recently what purports to be a balance sheet of the Allan Line, dated Aug. 21. The company being more or less of a private one, its balance sheet has never been made public, and it is claimed that the recent publication of the figures is the first made.

The following C.P.R. steamships are now equipped with Marconi wireless telegraph apparatus: Lake Champlain, Lake Erie, Lake Manitoba, Lake Michigan, Milwaukee, Montezuma, Mount Temple, Monmouth, Montrose, Montcalm, Montreal, Montfort and Mount Royal, in addition to the Empress of Britain and Empress of Ireland.

A movement has been started by the captains of the C.P.R. Atlantic fleet, for the supply of newspapers and periodicals to the isolated wireless telegraph operators at various points along the St. Lawrence route, during the season when navigation is open. The papers are packed in barrels, to which a flag is attached, and thrown overboard near the stations.

The C.P.R. s.s. Empress of Ireland, while inward bound, Oct. 14, struck what is presumed to be a submerged wreck between Cape Chatte and Matane, and damaged her hull considerably. She was examined at Quebec, where the damage was not considered to be serious, and eventually sailed for Liverpool, where she will be thoroughly examined and overhauled.

The British owned s.s. Paradox is reported to have been picked up by the Hudson Bay Co.'s s.s. Pelican in the Bay and taken to Fort Churchill. The vessel is reported to have been badly crushed by ice last spring and to have been drifting since she was abandoned by the crew, all of whom were rescued by Revillon Bros.' s.s. Adventure and sent back to England early in the fall.

The Canadian-Mexican Pacific Steam-

ship Co., in conjunction with the Jepsen Line, are giving a fortnightly service between Victoria and Vancouver, and Salina Cruz, Mexico, sailing on the 21st and 7th of the month respectively, making connections at the last mentioned port with the Tehuantepec National Ry., for transport across the isthmus to Puerto Mexico, for transshipment to Atlantic vessels.

Press reports emanating from the U.S. state that cable dispatches have been received to the effect that a conference of steamship owners operating between European and U.S. ports, held in London, Eng., has decided unanimously to increase ocean freight rates from U.S. ports. It is stated that the opinion prevailed at the conference that present rates are inadequate, and that agents and other representatives at U.S. ports must advance tariffs and improve their position generally.

The Allan Line s.s. Laurentian, which was wrecked on Mistaken Point, Nfld., Sept. 6, has been declared a total wreck, which is in accordance with the first reports as to her condition, though, at one time it was thought possible she might have been saved. Salvage operations on the cargo have been undertaken, but she is reported to be breaking up. We understand that she has been sold for \$5,000, subject to the right of the underwriters to deal with any cargo that might be left, should opportunity arise for its salvage.

With reference to the recent acquirement of the steamships Cairo and Heliopolis, which have been engaged in the Mediterranean service, mentioned in our last issue, and which were reported to have been purchased by interests representing Mackenzie, Mann and Co., reports from the Pacific coast state that negotiations are in progress for their acquirement by the G.T.P.R., and also state that that company already has one vessel under construction, and one about to be commenced for the Pacific coast trade.

The Donaldson Line s.s. Hestia was wrecked in the Bay of Fundy, Oct. 25, and lies a total loss on the ledges about five miles from Grand Manan, N.B. In rescuing those on board, one of the boats was upset and 30 of the crew and four passengers were drowned. The Hestia was built at Sunderland, Eng., in 1890, her dimensions being: length, 365 ft.; breadth, 44.2 ft.; depth, 27.3 ft.; tonnage, 3790 gross, 2434 register. She was equipped with engines having cylinders 27", 44" and 72" diam., by 48" stroke, developing 390 n.h.p., driving twin screws.

Notwithstanding the Allan Steamship Line's official statement regarding the future management of the company, which was given in our last issue, rumors continue current as to the sale of the company's vessels, and the complete change of control. The C.P.R. has now been added to the list of those credited with the purchase of the company, but the statement was promptly denied by the President. A Montreal paper states that it has definite knowledge that a sale of the property has taken place, the consideration being \$12,000,000, but that the name of the purchaser is not known.

H. and A. Allan, Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$300,000, and office at Montreal, to build, purchase and sell shares in, acquire, own and operate steam and other vessels, and to carry on the business of shipowners and shippers, steamship and forwarding agents, master porters, ship brokers, warehousemen, wharfingers, storekeepers, harbor masters, importers and exporters, and to employ such vessels for profit. The provisional directors are: Sir H. Montagu Allan, Hugh A. Allan, A. A. Allan, G. W. MacDougall, Montreal, and B. J. Allan, Boston, Mass.

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In discussing the position of the proposed "all-red" route between Great Britain and the Antipodes, via Canada, the New Zealand Premier is reported to have said, in Wellington, N.Z., recently, that the original idea of securing a fast service on both oceans had been practically abandoned. The old difficulty of the present service between Canada and Australia, namely, that of Brisbane being a port of call, which prevented vessels calling at Wellington, still stood in the way. New Zealand must therefore either subsidize a fast connection with Australia and the Fiji Islands, or arrange with Canada for a fast service direct or from Sydney.

Maritime Provinces and Newfoundland

The final accounts of the liquidator of the Grand Lake Steamship Co., were submitted to a meeting of shareholders, at St. John's, Nfld., Oct. 26.

The Black Diamond Steamship Line, operated by the Dominion Coal Co., is reported to be about to add another steamer to its fleet, for service next year between Montreal and Newfoundland.

Lord Northcliffe, who is intimately associated with the Anglo-Newfoundland Development Co., stated while in Montreal recently, that a direct steamship line between Newfoundland and England would be established.

The Atlantic Shipping Co., Port Maitland, N.S., has sold its bark Kate F. Troop to an Argentine firm. She was built at Tynemouth, Eng., in 1881, her dimensions being: length, 187 ft.; breadth, 37.5 ft.; depth, 22.1 ft.; 1,097 tons register.

C. J. Stuart, Halifax, N.S., first officer of the cruiser Canada, J. A. Nicholson, Lunenburg, N.S., first officer of the cruiser Petrel, and H. P. Cousins, St. Andrews, N.B., first officer of the cruiser Curlew, have been appointed to the Fisheries Protection Service.

The Minister of Marine stated Oct. 18, that the icebreaking steamship Earl Grey, which recently arrived in Canada, and has been taken over by the Government from the firm who built her, will be operated this winter across the Northumberland Strait, replacing the s.s. Stanley, which will be used in the Bay of Fundy buoy and lighthouse service, etc.

A delegation from the Halifax and Dartmouth Boards of Trade waited on the Provincial Government, Oct. 14, to call the Government's attention to the suitability of Halifax for the construction of a shipbuilding plant, and to ask the Premier to make representations to the Dominion Government on the subject. Halifax and Dartmouth have each voted \$100,000 in aid of such a project.

The Valley Steamship Co.'s s.s. Granville, some details of which we gave in our Oct. issue, is equipped with fore and aft surface condensing marine engine, 12" and 24" by 18", with horizontal two-furnace boiler 8' 6" by 9', and with all the auxiliary pumps, tanks, steam steering gear, etc. The hull was built at Shelburne, N.S., and the machinery and fittings installed and completed at Yarmouth.

The Edgett-Grady Co., Ltd., has been incorporated under the Prince Edward Island Joint Stock Companies Act, with a capital of \$20,000, and office at Summerside, P.E.I., to carry on a general wholesale and retail mercantile business, and in connection therewith to own and operate steam and other vessels, and to conduct agencies for insurance, marine and mining companies, railway corporations, etc. W. H., J. F., and J. C. Edgett, Moncton, N.B., and J. Grady, Summerside, P.E.I., are provisional directors.

Bowring Bros. have sold their sealing

steamer Terra Nova, to be used in connection with the Antarctic expedition which is being organized in England, under Capt. Scott, and which is to be undertaken next year. The vessel was sold subject to inspection, and on her return from the south, the original owners have the option of re-purchasing her. The Terra Nova was similarly sold and re-purchased a few years ago, in connection with the relief expedition which followed up the first Scott voyage to the Antarctic in the s.s. Discovery, which vessel is now owned by the Hudson Bay Co.

Province of Quebec Marine

T. Beland has been appointed Agent for the Marine Department and Shipping Master for the port of Quebec.

J. N. Beaudry, a former Secretary-Treasurer of the Richelieu and Ontario Navigation Co., died at Montreal recently.

The Richelieu and Ontario Navigation Co.'s steamboats Montreal and Quebec have been berthed at Montreal for the winter.

The Richelieu and Ontario Navigation Co.'s steamboat Rapids Queen, which went aground near Vaudreuil, recently, and was re-floated, is being overhauled and repaired at Sorel.

The Government steamboat Montmagny, recently launched from the Government Dockyards, Sorel, and which is being constructed and fit up for work in the lower St. Lawrence, will, it is anticipated, be ready for the opening of navigation next spring.

Recent press reports to the effect that the Government proposed to ask Parliament to authorize a Government guarantee of bonds to the extent of \$18,000,000 to enable the Montreal Harbor Commission to carry out a number of extensions and improvements, has been officially denied.

Capt. Daveluy, one of the oldest officers in the Richelieu and Ontario Navigation Co.'s employ, died at Montreal recently, aged 87. He had been engaged on the St. Lawrence since boyhood, and in 1837 he was left in charge of the vessel he was employed on, owing to the arrest of the captain during the war.

A delegation from the Quebec Board of Trade waited on the Minister of Marine, Oct. 14, to protest against the levying of a portage charge on local import freight, as it was claimed that local import freight was being discriminated against by the imposition of a master porter's charge. The Minister promised to give the matter his careful consideration.

The Quebec Harbor Commission is about to undertake a number of improvements along the front. It is intended to extend the new wharf into the river about 65 ft., and bring it in line with the Point a Carce wharf, and along the river front for 500 ft. Freight sheds will also be built, thus providing all the facilities for the berthing and accommodation of large ocean going vessels.

At a meeting of the Quebec Board of Trade, Oct. 12, it was agreed that the Board's proposal to organize a company for the purpose of constructing and operating dry and wet docks, etc., be abandoned, as the result of an interview, which a deputation had had with the promoters of a similar organization, in which it was assured that there was every prospect of the object being achieved in the near future.

A considerable amount of valuable property was destroyed by fire, which swept the Quebec harbor, Oct. 16. In addition to the C.N.R. elevator, there were also destroyed, either wholly or partially, several of the sheds and contents, bonded warehouse, custom house,

and some rolling stock, while some of the larger ocean vessels, including the Empress of Ireland, had to be moved from their berths to places of safety. The damage is only partially covered by insurance.

It is reported that a company recently organized in Canada, in which M. J. and J. A. O'Brien and J. E. Roy, Montreal, are interested, for the construction of dry docks, etc., in Canada, has made certain proposals to Vickers Son and Maxim of England, with a view to that firm establishing a branch shipbuilding yard and docks on this side. Vickers Son and Maxim have built several vessels for the Government, the most recent one being the icebreaking steamship Earl Grey.

The dispute between the Montreal Parks Committee and the Harbor Commissioners as to the rights of each, in connection with the proposed construction of a wharf at St. Helen's Island, is to be laid before the Government. The city desire to build a wharf there, and as it has purchased the island from the Government, claims to have sole control of it, but the Harbor Commission claims that it owns the shore rights, and offers to build a wharf, at a cost of \$25,000, provided the city lease it, for 20 years, paying 6% on the cost.

An application will be made at the next session of the Dominion Parliament for the incorporation of the Dominion Dry Dock and Ship Building Co., with power to carry out its operations throughout Canada and elsewhere, with a capital of \$1,000,000, and office at Montreal; to carry on the business of ship building, ship repairing and salvaging; to construct, repair, acquire, own and operate dry and wet docks, harbors, slips, piers, wharves, elevators, steam and other vessels, and other similar constructions; and for other purposes. L. A. Cannon, Quebec, is acting for the company.

The franchise for the operation of the ferry service between Quebec and Levis was sold recently, to a new company, organized for the purpose, of which J. F. Demers is Manager. The price paid is given as \$5,250 a year for 15 years, in addition to which the holder must pay \$350 to each of the municipalities for rent of waiting rooms, and \$1,500 wharfage charges. It is stated that some new boats will be built at Levis next year. The company which formerly had the franchise is now operating a railway car ferry service between the two points, but it is stated that the new company may enter a protest against this, as it claims to have the sole privilege to operate such service.

The Richelieu and Ontario Navigation Co. will apply at the next session of the Dominion Parliament to amend its act of incorporation, and for the following purposes: to increase its capital stock and add to its powers of owning real estate in Canada and elsewhere; to amalgamate with, control and manage other companies incorporated for any similar purposes; to obtain further powers to pass bylaws; to construct and establish terminals and obtain the necessary powers in connection therewith; to carry on the general business of common carriers by land and water; to purchase, build and operate dry docks, graving docks and to carry on the business of shipbuilders, and for other purposes.

Considerable speculation is rife throughout the Maritime Provinces and Quebec, as to the location of drydocks and shipbuilding plant, which Harland and Wolff of Belfast, Ireland, are reported to be about to establish in Canada. No definite proposals have, as yet, been made public, but it is understood that that firm has a representative in Canada for the purpose of settling on a likely site, or sites, for the construction of dry docks and shipbuilding yards. It is

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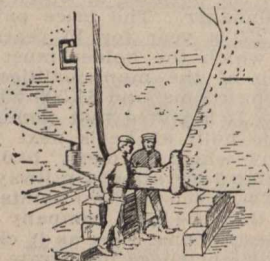
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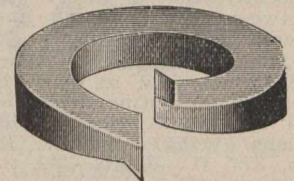
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stated that there is every likelihood of their constructing duplicate plants at Levis and St. John, N.B. It was also stated that the C.P.R. was interested in the proposals being made, to a considerable financial extent, but Sir Thos. G. Shaughnessy, while recently denying that the company was financially interested, said that the company being shipowners, was naturally interested in any proposition of the nature mentioned.

Ontario and the Great Lakes.

W. H. Hacker has been appointed measuring surveyor of shipping for the port of Midland.

The name of the steamboat Saugatuck, no. 126193, registered at Windsor, has been changed by order in council to Alfred Clarke.

The captain of the Argyle Steamship Co.'s steamboat Argyle was fined \$100 at Toronto, Oct. 2, for having sold liquor on his vessel.

The Otonabee Navigation Co. was fined \$100 at Peterboro, recently, for carrying passengers in excess of the number allowed by its certificate.

A Welland deputation waited on the Minister of Inland Revenue, Oct. 12, with the request for a renewal of the ferry service between Fort Erie, Ont., and Buffalo, N.Y.

Plans are reported to have been prepared for the construction of a steamboat, similar to the Britannia, for the Detroit, Belle Isle and Windsor Ferry Co.

The steamboat Rideau King ran aground on White Hall island in Mud Lake, Oct. 15, during a storm. She was floated and taken to Kingston for examination and repairs.

A committee of the Arnprior Board of Trade was recently appointed to interview the town council on the question of granting aid for the construction of the proposed Georgian Bay canal.

The Niagara Navigation Co.'s steamboat Corona made the final trip for the season, Oct. 16. This is the last of the company's vessels operating up the Niagara River to be berthed for the winter.

The Merchants' Steamship Co.'s steamboat Mapleton struck the stone abutment between locks 24 and 25 in the Welland Canal, Oct. 9, and sustained slight damage. She was able to proceed on her voyage to Kingston.

Capt. P. C. Robinson and C. O. Macdonald, Port Stanley, first officer of the cruiser Vigilant, have been appointed to the Fisheries Protection Service, the former with the rank of master mariner.

The Northern Navigation Co.'s steamboats Hamonic and Huronic appear to be the only Canadian vessels operating on the Great Lakes, which have, as yet, been equipped with wireless telegraph apparatus.

The Argyle Steamship Co. is reported to be negotiating for the purchase of a steamboat in England to run next summer between Toronto and Olcott Beach, N.Y., in conjunction with its steamboat Argyle.

The vessels carrying package freight on the Great Lakes ceased accepting such freight at Fort William and Port Arthur, consigned to Brockville, Court-right, Kingston, Montreal, Sarnia and Windsor, Oct. 23; to Sault Ste. Marie and Georgian Bay ports, Nov. 20.

The Farrar Transportation Co.'s steamboat Collingwood, which was wrecked in the Detroit River about two months ago, was floated early in Oct. and taken to Detroit, where she was docked for repairs, which, it is stated, will be considerable.

Work on the Trent Valley canal con-

tinues to make good progress. The construction of lock 2 is completed, and the forces are being concentrated on dams 2 and 3, and lock 3. Lock 2 is 33 ft. by 175 ft., with a depth of 9 ft. over sills.

The Dominion Government is about to establish a life saving station at the Toronto harbor western entrance, which it is said will be a thoroughly up to date one, provided with a permanent and well trained crew, a lifeboat, and the most modern life-saving appliances.

It has been announced that immediately on the completion of the works of the Western Dry Dock and Shipbuilding Co., Port Arthur, probably about July 1, 1910, keels will be laid for the construction of two large lake freight vessels. These, it is stated, will be the largest built in Canada, each being 600 ft. long.

A deputation from Port Arthur waited on the Minister of Public Works, Oct. 8, to urge the carrying out of a number of harbor improvements there. The Minister assured the deputation that the Thunder Bay harbors would receive full attention, and that they would be deepened to 25 ft., and three sections of the breakwater at Port Arthur constructed.

The St. Clair and Erie Ship Canal Co. will apply at the next session of the Dominion Parliament to amend its Act of incorporation and acts amending same, to increase its bonding or borrowing powers, to authorize the substitution of other persons as provisional directors, and to extend the time for the construction of the authorized works.

The Dominion Marine Association has recently made strong representations to the Department of Trade and Commerce as to the advisability of stopping the Government issue of certificates of lading at Fort William and Port Arthur, on account of the difficulties arising in connection with alleged shortages between the head of the lakes and Georgian Bay and other ports.

Various U.S. vessel owners have registered strenuous objections to the tonnage tax, which is being levied at the rate of two cents a gross ton on vessels arriving from foreign ports. All U.S. vessels which in the course of their voyage may have touched at a Canadian port are subject to the tax. It is stated that the matter is to be brought to the attention of the Washington authorities.

Press reports state that the positions of Deputy Minister of Marine and Wreck Commissioner, which have been vacant

for some time, will be filled shortly. It is anticipated that G. J. Desbarats, Acting Deputy Minister of Marine, and formerly Director of the Government Shipyards at Sorel, Que., and Capt. L. A. Demers, Acting Wreck Commissioner and Chief Examiner of Masters and Mates, will be appointed, respectively, to the positions.

An estimate of the cost of constructing a dry dock was submitted to the Owen Sound town council, Oct. 18. The figure has been placed at \$225,000, and the plans and estimates are to be forwarded to Ottawa, with a view to the proposed application for a subsidy in aid of construction and operation. The Polson Iron Works, Ltd., Toronto, has offered to enter into a working agreement in connection with the dock, and it is understood that the town will vote financial aid.

The Great Lakes and St. Lawrence Navigation and Improvement Association has issued a pamphlet concerning the proposals of the Association for the improvement of the Welland canal and the St. Lawrence waterway generally. It has been decided to get up a deputation representing all the various municipalities and organizations interested in the matter, for the purpose of waiting on the Government to urge the adoption of the proposals.

The Montreal, Ottawa and Georgian Bay Canal Co. will apply at the next session of the Dominion Parliament for an extension of time within which it may construct the canals authorized by sec. 8, cap. 103 of the Statutes of 1894, and to repeal paragraph (a), substituting a new paragraph therefor, and to amend sec. 1, cap. 106 of the Statutes of 1900, by substituting the word "nine" for the word "eight," and the words "twenty-five" for the word "fifteen" in the eighth line, and for other purposes.

Capt. A. J. Tymon, one of the best known lake captains in Toronto, died there, Oct. 4, aged 66. He originated, and for many years operated the Island Park Ferry Co., and in 1885 several of his boats were destroyed by fire. The property was subsequently acquired by the Doty Ferry Co., and later by the Toronto Ferry Co., by which it is at present operated. Capt. Tymon was step-father of S. J. Murphy, Travelling Passenger Agent, Niagara Navigation Co., Toronto.

A decision in the cross suits of the Parry Sound Lumber Co., Toronto, and the Pittsburg Steamship Co., Detroit,

SAULT STE. MARIE CANALS TRAFFIC.

The following commerce passed through the Sault Ste. Marie Canals during Sept.

ARTICLES.	CANADIAN CANAL	U. S. CANAL	TOTAL
Copper..... Eastbound..... Net tons	517	13,875	14,392
Grain..... "..... Bushels	2,286,062	2,166,732	4,452,794
Building stone..... "..... Net tons		4	4
Flour..... "..... Barrels	206,858	652,600	859,458
Iron ore..... "..... Net tons	3,979,624	2,807,949	6,787,573
Pig iron..... "..... "..... "	1,809	2,053	3,862
Lumber..... "..... M. ft. B. M.	2,001	77,843	79,844
Wheat..... "..... Bushels	9,695,295	6,087,199	15,782,494
General merchandise..... "..... Net tons	7,636	10,739	18,375
Passengers..... "..... Number	1,976	2,426	4,402
Coal, hard..... Westbound..... Net tons	59,100	59,095	118,195
Coal, soft..... "..... "..... "	298,827	1,021,073	1,319,900
Flour..... "..... Barrels	550		550
Grain..... "..... Bushels			
Manufactured iron..... "..... Net tons	15,985	34,986	50,971
Iron ore..... "..... "..... "	4,895		4,895
Salt..... "..... Barrels	9,117	30,446	39,563
General merchandise..... "..... Net tons	54,795	57,097	111,892
Passengers..... "..... Number	2,354	1,336	3,690
Vessel passages..... Number	948	1,975	2,918
Registered tonnage..... Net	2,332,539	4,603,230	7,435,769
Freight—Eastbound..... Net tons	4,355,230	3,260,186	7,615,416
—Westbound..... "..... "	434,958	1,176,818	1,611,776
Total freight..... "..... "	4,790,188	4,437,004	9,227,192

Mich., for damages sustained by their vessels, the Seguin and the Sir Isaac Lothian Bell, respectively, in a collision which occurred in the St. Clair River, Nov. 14, 1906, was delivered at Detroit, Oct. 6. The judgment states that the Seguin was at fault, and to blame for the collision, and provides that the amount of damages shall be computed with the costs.

The U. S. Lake Survey reports the stages of the Great Lakes in feet above tidewater, for Sept., as follows:—Superior, 602.39; Michigan and Huron, 580.82; Erie, 572.38; Ontario, 246.28. Compared with the average stages for 10 years, Superior is nine inches lower, Michigan and Huron, 2½ ins. lower, Erie is equal, and Ontario three inches higher. During Oct., it was anticipated that Superior would fall a quarter of an inch, Michigan and Huron, 2¾ ins., Erie, three ins. and Ontario 4¼ ins.

The steamboat Newona, which recently arrived in Montreal, was specially built for the Canadian lake and canal traffic. Her dimensions are: length, 258 ft. over all; breadth, 42 ft. 6 ins.; depth, moulded, 25 ft., and she is estimated to be capable of carrying 3,350 tons deadweight on a draft of 18 ft. The machinery consists of tri-compound screw engines, with cylinders 21½", 34" and 55" diam., by 36" stroke, supplied with steam at 190 lbs. There are six large cargo hatchways, each 12 by 29 ft., and the hull is divided into three cargo holds by steel bulkheads.

The C.P.R. steamboat Athabasca ran aground on the Flower Pot Island, near Owen Sound, Oct. 14, and after having her cargo transferred to another vessel, was floated off, and taken to Owen Sound, where temporary repairs were made prior to her proceeding to Collingwood, where she will be thoroughly examined and overhauled. The cause of the accident is stated to be the wrong carrying out of an order by the wheelman. There was a heavy snowstorm at the time and the vessel was running in close for shelter. It is also said that the fog horn was not sounding.

Upon reference to the list of vessels registered in Canada during Sept., given on another page, it will be seen that the steamboats Donnacona, Dundee, Glenelagh, Neepawah, Strathcona, Wahcondah and Winona have been transferred from the British register. These vessels, all

NOTICE—The Nicola, Kamloops and Similkameen Coal and Railway Company will apply to the Parliament of Canada at its next session for an Act extending the time within which it may construct the railways which it has been authorized to construct by Section 3 of Chapter 47 of the Statutes of British Columbia, 1891, and by Section 1 of Chapter 134 of the Statutes of Canada, 1905, and for other purposes.

H. C. OSWALD,
Secretary.

ANDREW T. THOMPSON,
Ottawa Agent.

Dated at Montreal the 30th September, 1909.

NOTICE—The Manitoba and North Western Railway Company will apply to the Parliament of Canada at its next session for an Act extending the time within which it may construct the railway which it has been authorized to construct by Section 1 of Chapter 126 of the Statutes of Canada, 1908, and for other purposes.

H. C. OSWALD,
Secretary.

ANDREW T. THOMPSON,
Ottawa Agent.

Dated at Montreal the 30th September, 1909.

NOTICE—The Calgary and Edmonton Railway Company will apply to the Parliament of Canada at its next session for an Act extending the time within which it may construct the railways which it was authorized to construct by section 6 of chapter 89 of the Statutes of Canada of 1903, and for other purposes.

H. C. OSWALD,
Secretary.

ANDREW T. THOMPSON,
Ottawa Agent.

Dated at Montreal the 30th September, 1909.

NOTICE—The Columbia and Western Railway Company will apply to the Parliament of Canada at its next session for an Act extending the time within which it may construct the second, fifth and sixth sections of the railways which it has been authorized to construct by Section 16 of Chapter 54 of the Statutes of British Columbia, 1896, and for other purposes.

H. C. OSWALD,
Secretary.

ANDREW T. THOMPSON,
Ottawa Agent.

Dated at Montreal the 30th September, 1909.



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of which were built in Great Britain, have a register tonnage of 9,085 tons, and comprise a portion of the fleet of the Inland Navigation Co., Hamilton. The remainder of the vessels controlled by this company are on the Canadian register, with the exception of the Stadacona, built in Detroit, Mich., which it is understood will be registered in the U.S.

The Freeland property, of which the Yonge St. wharf forms a part, has been sold to E. B. Osler, M.P., for \$270,000. A lease has also been secured of a water frontage of 92 ft., from the city at \$12 a foot, which gives the purchaser control of the docks and wharves from the west side of Scott St., to the east side of Yonge St., a total water frontage of 312 ft. 4 ins. It is reported that the future management of the wharf may be by means of a combination of those at present using the wharf, with the possible addition of the Toronto Ferry Co., but in the meantime it will be controlled by the Niagara Navigation Co., and the Richelieu and Ontario Navigation Co.

The steamboat Port Colborne which recently arrived in Montreal with a general cargo, has been built with a view to her operation in the Canadian lake trade, and is similar in type to the Keyport Transportation Co.'s steamboats Keyport and Key West. Her dimensions are: length, 260 ft.; breadth, 42 ft. 6 ins.; and she has been built with the object of carrying the greatest possible cargo within the limitations of the canal locks. This is estimated at 85,000 bush. There are five hatchways, each 12 by 29 ft., and a sixth one 28 by 29 ft., with high coaming for trimming purposes. She is equipped with engines having cylinders 15", 25" and 42" diam., by 30" stroke, supplied with steam at 190 lbs. She is also fitted with forced draught and extra steering gear above the wheel house.

The Marine Department has issued a notice that all Canadian lights and fog alarms in Lake Superior will be kept in operation until Dec. 10, with the exception of those at Caribou Island, which may not be kept in operation after Dec. 5, subject to weather conditions or the early closing of navigation. It is also announced that all Canadian lights and fog alarms in Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie, Lake Ontario and connecting waters will be kept in operation until Dec. 15, excepting those at Lonely Island, Western islands and Red Rock lights in Georgian Bay, which may be closed Dec. 10, if navigation closes early. All Canadian lights on the St. Lawrence River will be kept in operation as long as navigation is open, and all gas buoys will be kept at their stations as long as ice conditions permit, and when it is necessary to remove the buoys before the close of navigation, spar markers will be laid down where possible.

The Richelieu and Ontario Navigation Co., Ltd., is applying to the Dominion Parliament for an act amending its act of incorporation, for the following purposes; to increase its capital stock and to add to its powers for owning real estate in Canada and elsewhere; to amalgamate with, control and manage other companies incorporated for any similar purposes; to obtain further powers to pass by-laws; to construct and establish terminals and obtain the necessary powers in connection therewith; to carry on a general business of common carriers on land and water; to have power to do all and everything necessary for the accomplishment of any or more of the objects incidental to the powers of the company, either as holders or interested in any property or otherwise and for other purposes, and to purchase, build and operate dry docks and graving docks, and to carry on the business of shipbuilders.

Manitoba, Saskatchewan and Alberta.

The Hyland Navigation and Trading Co.'s steamboat Winnitoba was withdrawn from service for the season, at the end of Sept., owing to low water in the Red River.

The Stewart Lumber Co.'s steam tug Majestic, while running under full steam from Lake Winnipeg to the Selkirk docks, ran on the north end of the Point and sank. She was built at Bad Throat, Man., in 1904, and is equipped with engine of 4 n.h.p., driving a screw. Her dimensions are: length, 78 ft.; breadth, 16 ft.; depth, 7 ft.; tonnage, 64 gross, 44 register.

The Winnipeg and Western Transportation Co.'s steamboat Marquis was destroyed by fire at Prince Albert, Sask., Sept. 29. The Marquis was built at Grand Rapids, Sask., in 1882, and was a paddle wheel steamer, with engine of 84 n.h.p. Her dimensions were: length, 201 ft.; breadth, 33.5 ft.; depth, 5.3 ft.; tonnage, 754 gross, 475 register. She was utilized for the conveyance of troops from Battleford, Sask., in 1885, at the time of the Red River rebellion.

The Peace River Trade and Navigation Co., the incorporation of which was announced in a recent issue, has offered for public subscription 2,500 shares of 7% preference stock at par, with a bonus of one share of common stock for each two shares of preference stock. The lists were closed Oct. 27. The object of the company is the development of the Peace River district, and for this purpose steamboats will be built and operated on the connecting waterways; grain elevators will be erected at suitable points and other transportation facilities provided as necessity arises. F. S. Lawrence is General Manager.

B.C. and Pacific Coast Marine.

The last vessel for this year, conveying all classes of mail matter for the Yukon, left Vancouver, early in Oct.

The G.T.P.R. is reported to be making a survey and taking soundings for the construction of a wharf in the inner harbor at Victoria.

Mackenzie Bros.' steam tug Mystery, with a barge in tow, which were wrecked on Gossip Island, Sept. 30, were floated and taken to Vancouver Oct. 4.

The North Vancouver Board of Trade entertained the officers of the Canadian-Mexican Steamship Co.'s s.s. Lonsdale, recently, on the occasion of the opening of that port.

The Boscowitz Steamship Co. has placed an order for an additional vessel for its coast service, in Glasgow, Scotland. The chief engineer of the company's s.s. St. Denis left recently, to superintend the construction.

The existence is reported of a small boulder shoal in the Vancouver Narrows, in the channel for small craft. The shoal is covered with 15 ft. of water at low tide. It is stated to be a short one, but it verges on the course of the deep water vessels.

The B.C. Packers Association is reported to be negotiating for the purchase of the Canadian Fishing Co.'s steamboats Celestial Empire and Flamingo. Both vessels were specially built for deep sea fishing, and were brought to the coast from England, round Cape Horn, about ten years ago.

The work of the extension of the market wharf at New Westminster was commenced at the end of Sept. The new wharf will be 300 ft. long by 10 ft. wide, and there will be ample accommodation for ocean going vessels. Other wharves along the water front are also being extended and improved.

The steamboat R. J. Skinner, built in Vancouver, and engined from New Westminster, for the B.C. Government Crown Lands Department, arrived at New Westminster from Vancouver recently and went through a successful trial trip on the Fraser River. The vessel is to be used as a patrol boat to see to the carrying out of regulations in the timber limits along B.C. waters. Her dimensions are: length, 55 ft.; breadth, 11 ft. 6 ins.

The C.P.R. is reported to be planning the construction of a steamboat for the freight service between Victoria and New Westminster. At a recent meeting of the Victoria Board of Trade, the question of additional steamship service was discussed with Sir Thomas Shaughnessy, President C.P.R., who is reported to have promised that a new steamer would be put on the Victoria-Comox run and that the construction of a steamer to ply between Victoria and New Westminster would be dealt with at once.

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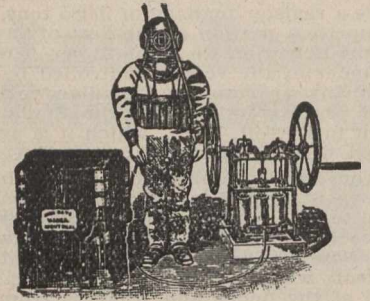
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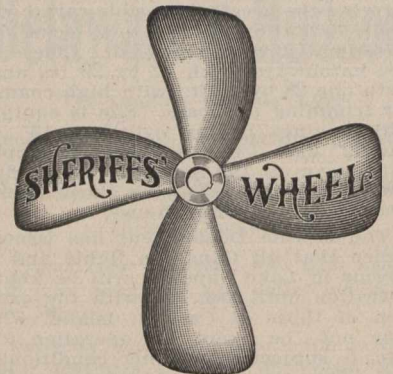
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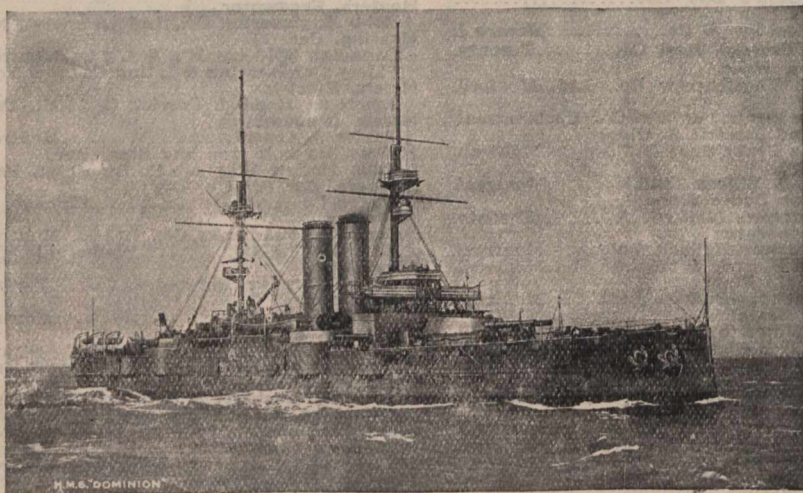
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 Canada Iron Corporation, Ltd. Montreal.
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 Ontario Wind Engine & Pump Co. Toronto.
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 Saxby and Farmer, Ltd. Montreal.
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- Iron, Pig**
 Hamilton Steel & Iron Co., Ltd. Hamilton.
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- Locomotives (Steam)**
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Canadian Locomotive Co. Kingston, Ont.
J. T. Gardner. Chicago, Ill.
Hicks Locomotive & Car Works. Chicago.
Montreal Locomotive W'ks. Montreal.
Vulcan Iron Works. Wilkesbarre, Pa.
- Lorries, Tracklaying**
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Taylor & Arnold. Montreal.
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J. T. Gardner. Chicago, Ill.
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