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An Experimental Mallet Articulated Locomotive.

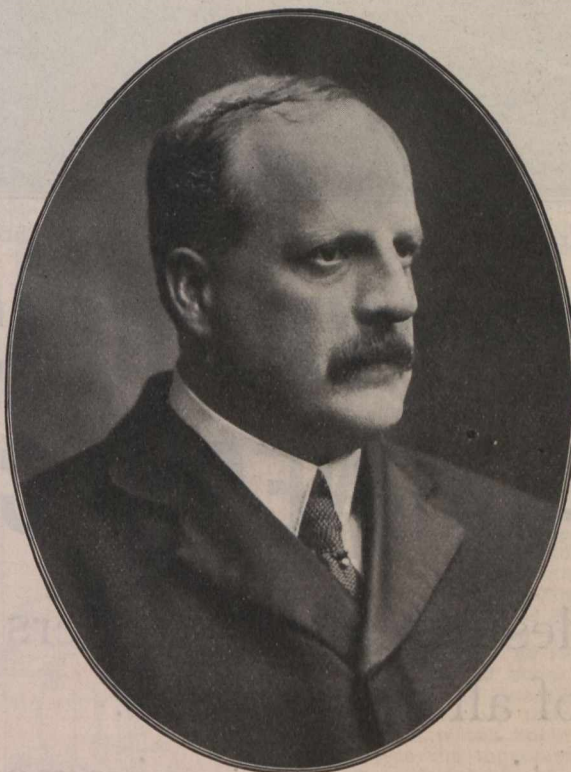
By G. I. Evans, Chief Draughtsman, Locomotive Department, C.P.R., Montreal.

A Mallet articulated locomotive was designed and constructed by the C.P.R. during 1909, and embodied some original features which, in addition to its being the first of its kind on this road, made it an experimental locomotive. The object of this paper is to describe briefly some of its details, tests made on it, and finally what it is doing in regular service. For the benefit of those who have not had a very close acquaintance with the Mallet articulated, it may be said that a Frenchman named Mallet was the first to successfully design and construct a jointed or articulated locomotive, that is, one which is so arranged as to permit of part of the wheel base moving sideways independently of the remainder, thus enabling a locomotive with a long wheel base to better adapt itself to sharp curves. As the locomotive was to be used in pushing service in the Rocky Mountains, it was necessary that it should traverse curves of at least 15 degrees and have comparatively high tractive power. The following table gives the general dimensions:

Type	0-6-6-0
Gauge	4' 8 1/2"
Service	Pusher
Fuel	Bituminous Coal
Tractive power	57,400
Weight on drivers, working order	262,000
Weight, total in working order	262,000
Weight of engine and tender, working order	391,000
Wheel base, front engine	10' 4"
Wheel base, rear engine	10' 4"
Wheel base, total engine	35' 2"
Wheel base, engine and tender	60' 7"
Weight on drivers ÷ tractive effort	4.57
Tractive effort × dia. drivers ÷ equivalent heating surface	.975
Equivalent heating surface ÷ grate area	.59
Weight on drivers ÷ equivalent heating surface	.77
Cylinders, dia. and stroke h.p.	23 1/4" x 26"
Cylinders, dia. and stroke l.p.	34" x 26"
Valves, dia. and kind h.p.	11" Piston
Valves, dia. and kind l.p.	12" Piston
ving wheels, dia.	58"
Driving axles, size, Main	9 1/2" x 12, others 9 x 12
Boiler, kind	Radial stayed, wagon top
Pressure	200 lbs.
Firebox, length and width	120" x 69 1/2"
Firebox, thickness of sheets	5-16", 3/8", 1/2", 7-16"
Firebox, water spaces	Sides, 4 1/2"; throat, 5"; back, 3 1/2"
Tubes, number and dia. in front section	281, 2" O.D., and 12, 2 1/4" O.D.
Tubes, length in front section	.96"
Tubes, number and diameter in rear section	289, 2" O.D.
Tubes, length in rear section	.109"
Heating surface, tubes	2,605 sq. ft.
Heating surface, firebox	180 sq. ft.
Heating surface, total	2,785 sq. ft.
Superheating surface	420 sq. ft.
Equivalent heating surface*	3,415 sq. ft.
Grate area	58 sq. ft.
Tender tank, kind	Semi-water bottom
Tender frame sills	Centre, 13"; sides, 10"
Tender trucks, kind	Equalizer
Tender wheels, size	34" dia.

Tender axles 5 1/2" x 10"
Water capacity 5,000 Imp. Gals.
Coal 12 tons
*Equals total heating surface + superheating surface × 1.5.

CONSTRUCTION, GENERAL.—The outline of the locomotive is shown by the line drawing, fig. 1, and the half-tone engraving, and reference to these shows that there is considerable difference between this design and other locomotives recently put into service on American railways. For convenience of comparison, a line drawing of a Mallet locomotive, designed and built by the Baldwin Locomotive Works, is reproduced in



GEORGE McL. BROWN
European Manager, Canadian Pacific Railway.

fig. 2. The most striking difference between the two designs is in the arrangement of the cylinders, the shortness of the front bumper or footplate, and the position of the superheater. The absence of front and back guiding trucks is also noticed, but these are not in general use, being advocated by practically only the Baldwin Locomotive Works. This arrangement of cylinders, whereby the two pairs are brought together near the centre of the locomotive, permits of an extremely simple pipe arrangement, cutting out a number of packed expansion joints, everyone of which is a continual source of trouble through leakage. The removal of the cylinders from the front

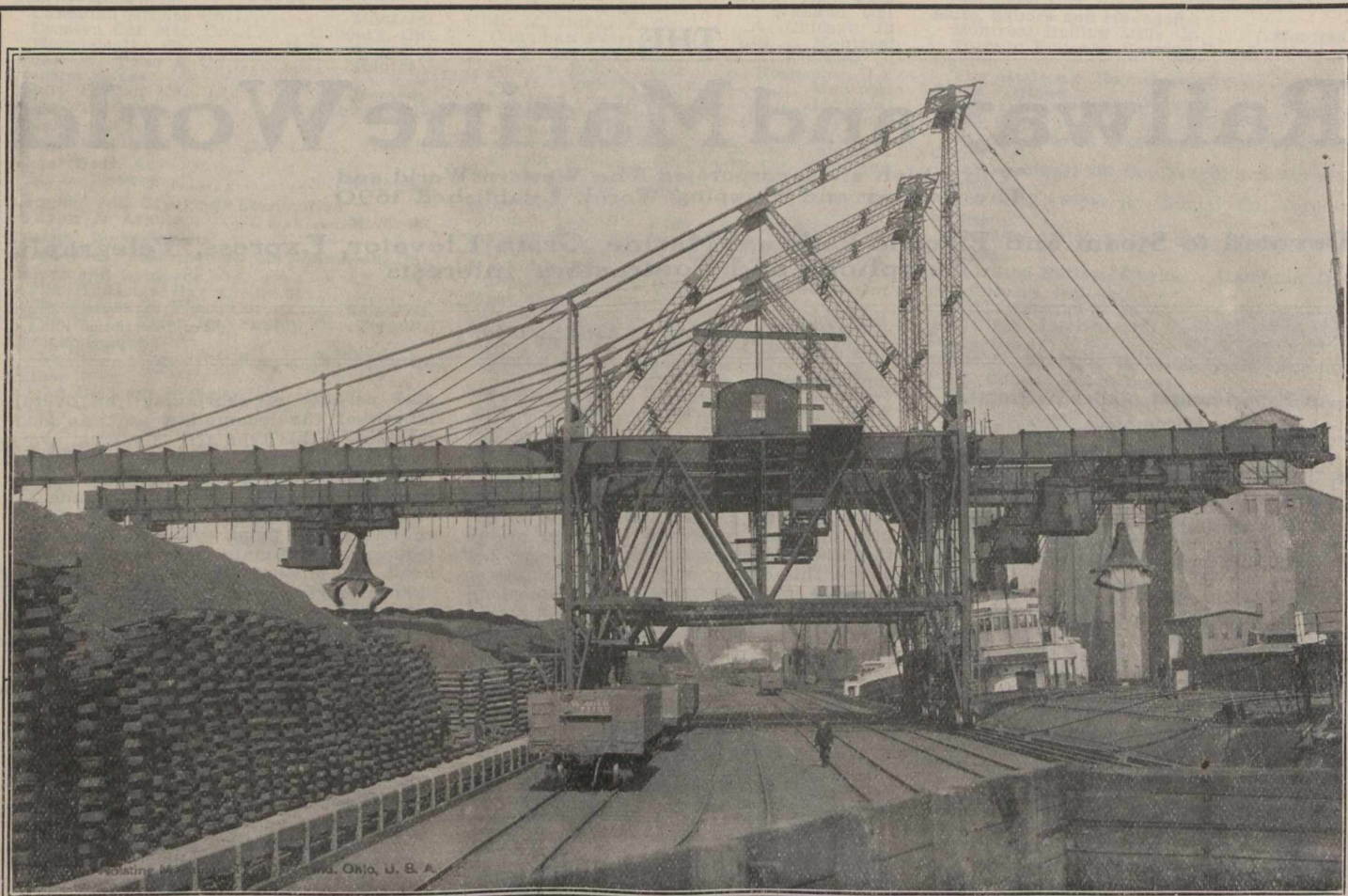
also permits of shortening the overall length of the locomotive, and, as locomotives of this type are very long, every foot possible must be saved to permit of their being taken into existing round-houses. Provision has been made for changing piston packing rings by simply removing the front cylinder heads, disconnecting the main rod from the cross-head, and pushing the piston out into the space between the two cylinders. The piston valves have also been taken care of in a similar manner, so there can be no objection to this arrangement on account of inaccessibility.

BOILER AND SUPERHEATER.—This is of the wagon top type, as shown by fig. 3, is radially stayed, and has an unusually small front ring and smokebox. There are three separate compartments in the barrel, the front of which is practically a feed-water heater, and, owing to its small diameter, is full of water all the time. The injectors discharge into this compartment, which is connected to the boiler proper by two equalizing pipes 4" in diameter, one of which is located on the side centre line and the other on the top.

The second or middle compartment is for the superheater, which consists of double loops of 1 1/4" seamless steel tubing dropped down into the path of the hot gases from the firebox. There are 69 of these superheater elements. One end of each connects to the saturated header, which takes steam from the boiler, and the other connects to and discharges into the superheated header, which is connected direct to the h.p. cylinders. When the locomotive was first turned out the superheater was connected to the l.p. cylinders, but, from tests made subsequently, it was changed as described. The reasons for this are explained further on. Two 3/4" blower pipes having nozzles are so located as to blow jets of steam diagonally across the superheater compartment, through the tubes, to bring down any soot which may collect.

There is no steam in the superheater pipes when the throttle is closed, but no cases of burning out have developed after about four months' service, nor is any trouble anticipated, as this condition applies, although to a lesser degree, to other types of superheaters which are giving good service. The superheater pipes are secured to the headers by union nuts, and are readily removable for repairs, one element at a time, through the opening at the top of the boiler, which is closed by a flanged steel door. If necessary, the complete superheater, header, and tubes may be lifted out bodily.

The back compartment is the boiler proper or steam generating section, and the construction is similar to ordinary boilers, except that the radii on the cor-



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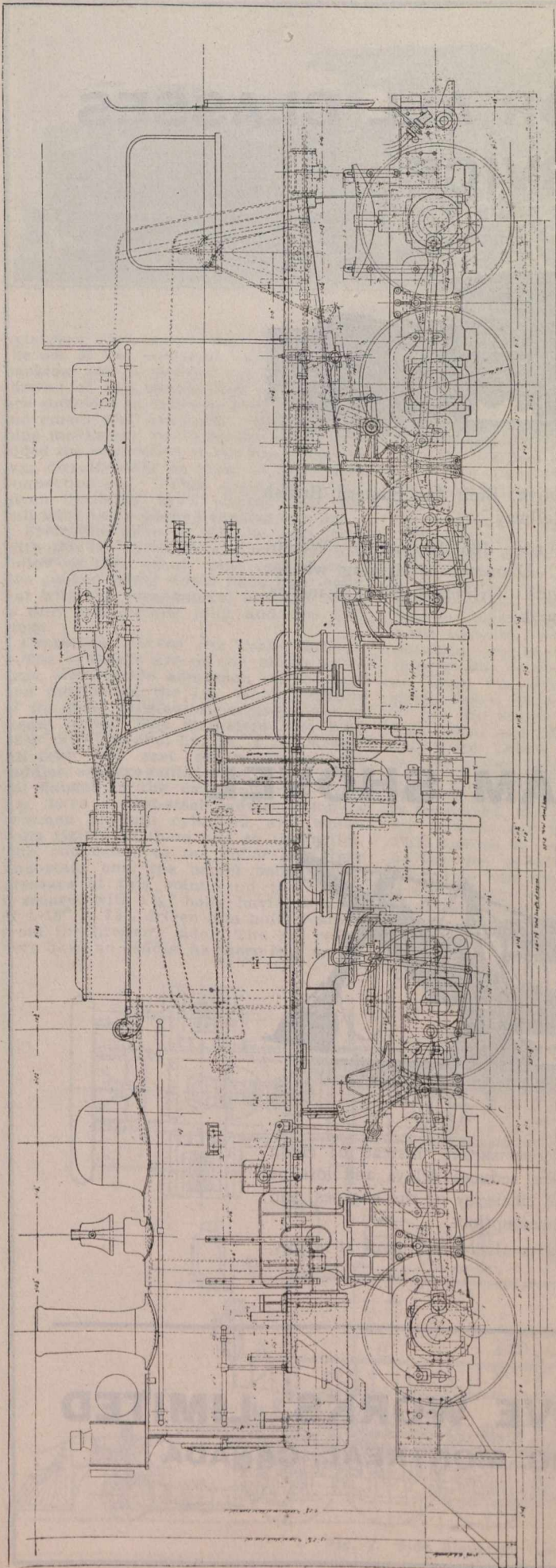


Fig. 1. Outline C.P.R. Mallet Articulated Locomotive.

ners of the firebox, both inside and outside, are larger than usual. This has been done to increase the rigidity of the sheets, which, it is believed, is largely responsible for staybolt breakage on the end rows.

There are four flue sheets in the boiler and two sets of flues. The front set is 96" long and the back 109", with a 63" superheater compartment between, and although cleaning holes have been applied underneath, it is seldom found necessary to use them, all cinders being carried through by the action of the draft.

As already stated, the front section of the boiler is really a feed-water heater, and has 281 tubes 2" O.D. and 12 tubes 2 1/4" O.D., giving 1,230 sq. ft. of heating surface, leaving 1,555 sq. ft. in the steam generating section (tubes and firebox).

The measure of steaming capacity of this locomotive, as expressed by the formula $\frac{T.P. (max.)}{H.S. (Total)} \times \text{dia. drivers}$, is shown

in comparison with others of a similar type in the following table, and, as the C.P.R. locomotive has a superheater, the equivalent heating surface has been used:

Road	Builder	T.P. (max.)	H.S. (total)	x dia. drivers
C.P.R.	C.P.R.	975	975	
B. & O.	A. L. Co.	715	715	
Gr. Nor. (road) ...	B. L. Co.	813	813	
Gr. Nor. (pusher) ..	B. L. Co.	690	690	
Erie	A. L. Co.	910	910	
D.N.W. & P.	A. L. Co.	775	775	
Gen. Brazil.	A. L. Co.	915	915	

In using this factor in comparisons, it must be borne in mind that the lower its value the greater will be the capacity of the boiler as a steam generator, and from the above table it might seem that the C.P.R. locomotive would not steam satisfactorily. This, however, is not the case, as an inspection of the boiler pressures in figs. 10 and 12 will show.

The injector check valve is located on the top centre line of the boiler, and consists of a cast-iron body, with connections for the right and left-hand injectors, and a third connection suitable for a pipe or hose coupling, which is used for filling or blowing off the boiler.

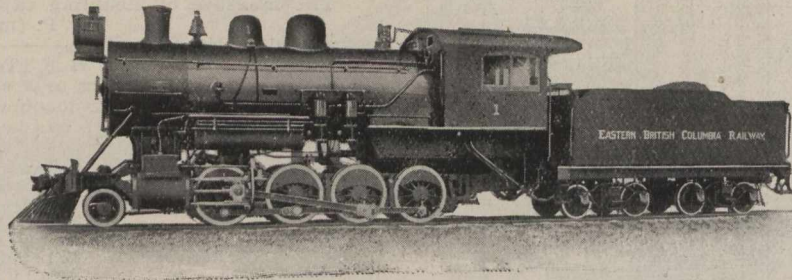
THROTTLE, STEAM AND EXHAUST PIPES.—The throttle valve is located on the top of the boiler outside, and consists of an iron casting, having two 5" steam-pipe connections, one on either side. The joint to the boiler is made by a brass ball ring, having an opening 12 3/4" in diameter. The throttle casting extends down through this, and connects to a cast-iron dry pipe, which takes steam from a dome set further forward on the same course. The arrangement of this is shown clearly on the boiler drawing, fig. 3.

Outside steam pipes lead from the throttle to the saturated header of the superheater, and steam, after passing through it, goes directly to the h.p. cylinders, also through outside pipes, which are heavily lagged to prevent condensation, as are also the pipes from the throttle. This portion of the piping is of course all high pressure, but no special importance attaches to it, as there is no movement in the pipes, the h.p. engine being attached rigidly to the boiler. There is therefore no chance of leakage if the joints are properly made.

The steam exhausts from both h.p. cylinders into a common header or receiver bolted over the ends of the steam chests, and this header connects by a 7" pipe to a similar one on the l.p. cylinders, which connection, however, must be flexible, as the movement of the front truck begins to affect the piping at this point, and, to minimize its effect, the connection has been placed directly over the pivot point of the front truck. The receiver pipe between the two headers extends upward about 6 ft., which was done to give sufficient volume; and this pipe, down to the point where it enters the l.p. header, is braced solidly to the boiler, and the connection which bolts to the l.p. steam chest rotates about it, due to the movement of the front engine. This rotation is about 5 degrees on a 20 degree curve, which is the greatest the locomotive will be called on to traverse. The joint is packed with alternate cast-iron and babbitt packing rings, and is the only one in the pipe system in which packing is used.

The exhaust pipe connects to the cylinder and under side of the smokebox by ball joints, and both ends have a small rotary movement, but as the angular movement is only 2' 34" on a 20 degree curve, the extension between the connections is only 3/8", which is taken up by the sliding of the pipe flanges on the flat faces of the ball rings. The flanges are held to their seats on the ball rings by 10 springs of 200 lbs. capacity each, or a total of 2,000 lbs. The extension due to the truck movement being provided for in this way, the use of the packed expansion joint is unnecessary. The arrangement of this portion of the piping, which may be called the low pressure system, is shown by fig. 4. The dotted line shows the movements of the pipes on a 20 degree curve, and the diagram underneath shows the movements of the pipes as they would have been if the l.p. cylinders were at the front of the engine. A comparison of the two arrangements shows that, with the cylinders at the front, the angular movement of the exhaust pipes would be 15 deg. 19' and its

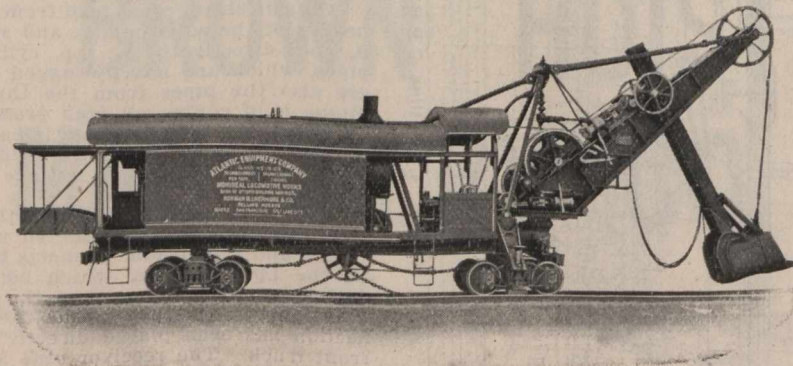
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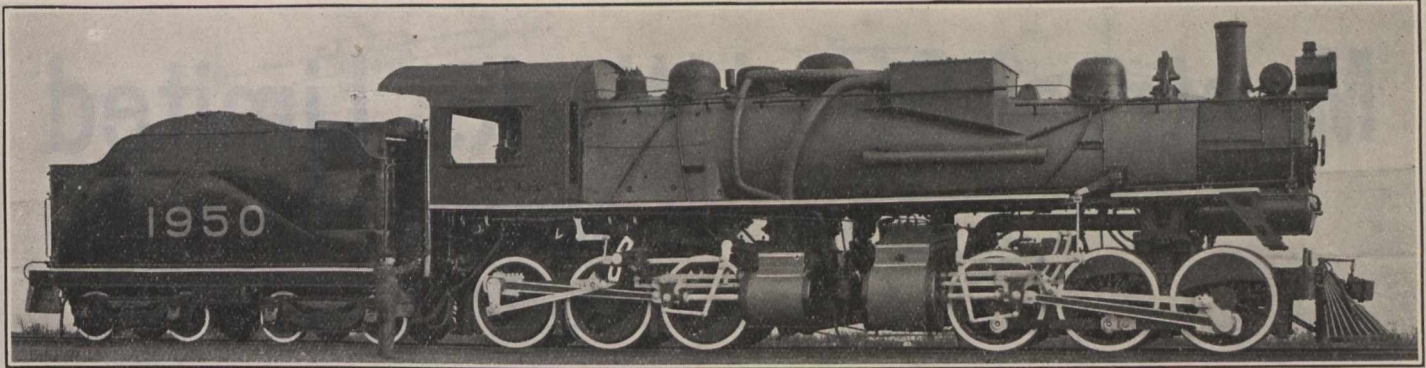
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Canadian Pacific Railway Mallet Articulated Locomotive.

extension $1\frac{1}{8}$ " which would necessitate the use of two universal ball joints with packing and a packed expansion joint instead of two simple ball rings, which are sufficient to take up both the rotary movement and extension. The receiver pipe movement would be the same, provided the connection to the h.p. cylinders was directly over or close to the frame connection pin. This pipe is usually given flexibility by a packed universal ball joint and a packed expansion joint.

From the above it will be seen that, with the l.p. cylinders at the front, and following the usual pipe construction, five packed joints would have been used, but with the arrangement adopted there is only one packed joint and two ball rings.

CYLINDERS, VALVES AND VALVE MOTION.
—The cylinders are of the piston valve type, with inside admission on the h.p. and outside on the l.p., which permits of the most satisfactory arrangement of steam pipes. The diameters are: h.p., $23\frac{1}{4}$ " x 26" stroke; l.p., 34" x 26" stroke. All four are cast separately, without saddles, and are bolted together by vertical flanges in the usual manner. The h.p. have a cast-steel saddle which is common to both cylinders, and which bolts rigidly to them and to the boiler. This connection to the boiler is a very important one, the barrel being under pressure at this point, and the saddle is secured with $1\frac{1}{4}$ " bolts, having a taper of 1-16" in 12", driven into holes reamed from the pressure side. The l.p. cylinders have no saddle, as there is a move-

ment between the boiler and truck at this point. A small steadying casting has, however, been applied, which slides across the flat surface on the top of the cylinders, but no weight is transmitted to the truck by it. The main frames are slabbed to a section 15" deep x 3" wide at the cylinder fits, and are braced laterally by the frame connection castings which join the two engines together. The arrangement of the cylinders and their fastening is shown by fig. 5.

Walschaert's valve motion is used. The design varies but slightly from that used on other C.P.R. locomotives, except in the radius bar lifting link on the l.p. engine, which, of course, must have flexible connections to permit of movement between the boiler, to which the reversing arm is attached, and the truck. It must also be made as long as possible, as, when the locomotive is rounding a sharp curve, the boiler will swing about 9" off the centre line of the truck at this point, and the angle taken by the lifting link causes the radius bar to raise in the radius link, thus shortening the travel of the valve when the engine is in forward gear and lengthening it when in backward, the radius bar being down for forward and up for backward gear. This applies to all Mallet locomotives having the radius bar suspension arranged in this manner, but is comparatively unimportant if sufficient clearance is allowed between the radius link and block at the top.

Provision has also been made for varying the cut-off in the l.p. cylinders inde-

pendently of the h.p. That is, the l.p. cut-off may be lengthened without affecting the h.p.

Reference to fig. 1 shows that the h.p. reverse shaft has two arms on the right-hand side. One of these is $11\frac{1}{2}$ " long, and is connected to the power reverse cylinder, the stroke of which is 12", and as the h.p. radius bar lifting arm is forged to the same shaft, the lift or fall of the radius bar is always proportional to the travel of the power cylinder piston. The arm on this shaft, to which the l.p. reach rod connects, has a slotted upper end with a sliding block, to which the reach rod pin connects. This block is held in any desired position by means of a screw adjustment. The shortest length of the arm is $12\frac{1}{2}$ ", and with the longest power piston travel of 12", the

movement of the reach rod is $\frac{12}{11.5} \times 12.5$,

or 13" nearly. If, by means of the screw, the reach rod block is moved up to 14" from the shaft, the movement of the

reach rod becomes $\frac{12}{11.5} \times 14$, or 14.6",

with a consequent increase in the rise or fall of the l.p. radius bar, which will increase the travel of the valve.

A simple form of power reverse gear is used, consisting of a 6" steam cylinder, with its piston rod connected to the reach rod shaft as described above. Rapid movement is prevented by an oil dash pot, the piston of which is connect-

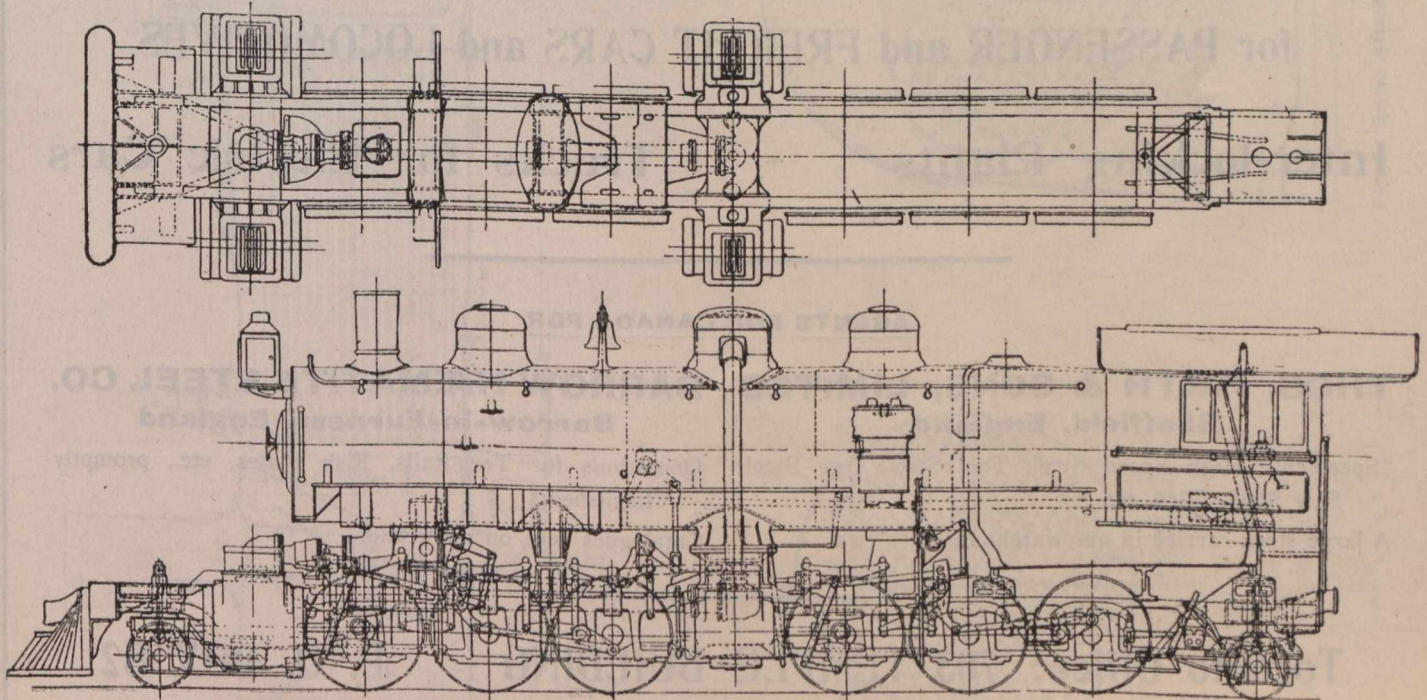


Fig. 2. Side Elevation C.P.R. Mallet Articulated Locomotive.

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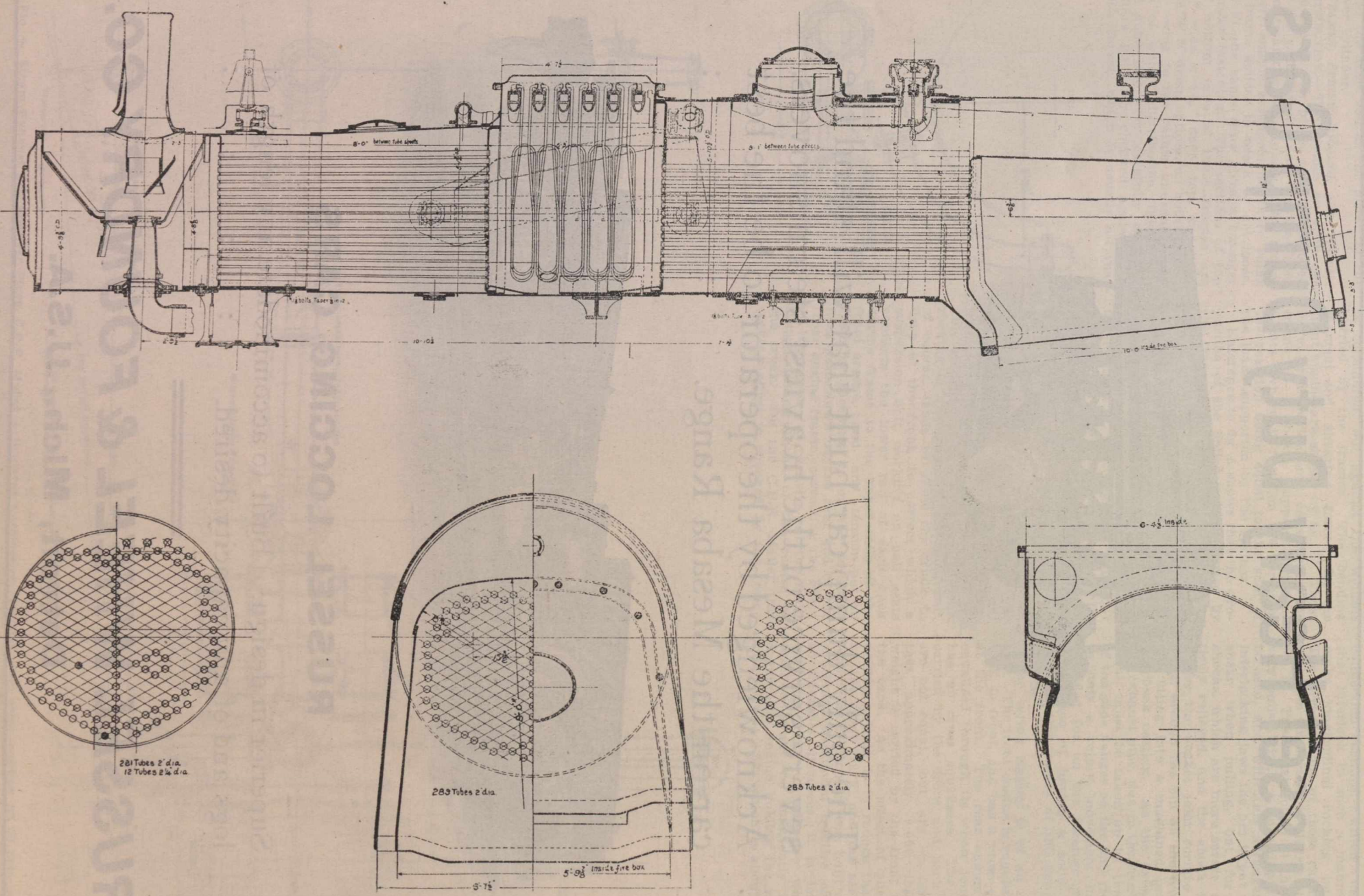
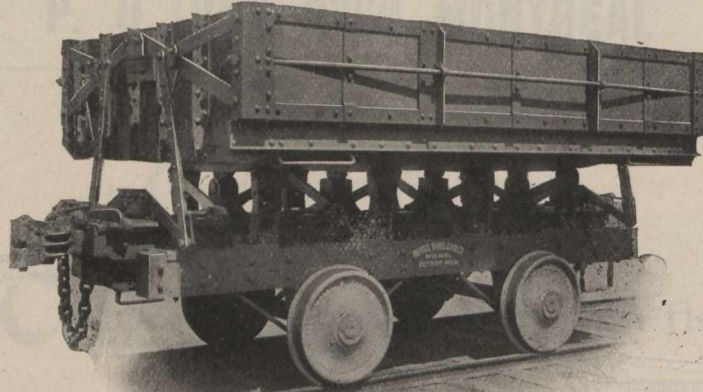
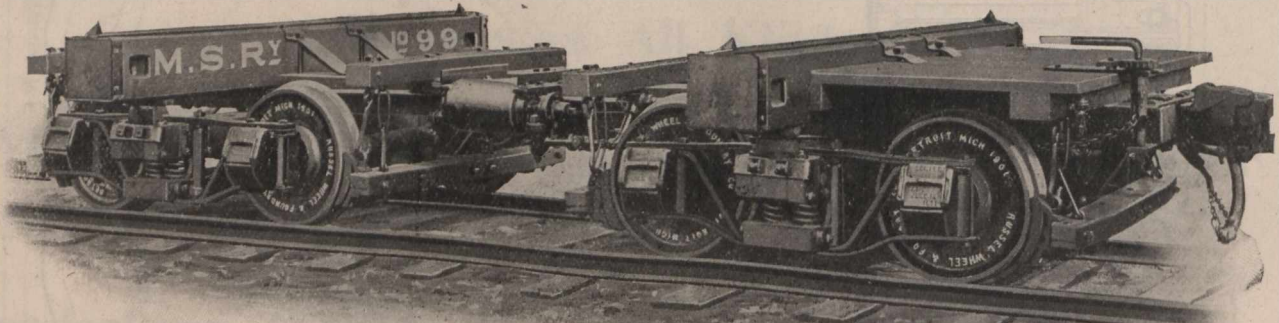


Fig. 3. Boiler Attachment and Superheater, C.P.R. Mallet Articulated Locomotive.

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ed to the same rod as the piston of the power cylinder.

FRAMES, SPRING RIGGING, AND WEIGHT DISTRIBUTION.—The frames on each engine are in one piece, and are slabbed for the cylinder fits and for the front bumper and back footplate, which makes a very simple arrangement, there being no frame splices to break or get loose, and at the same time gives a stronger cylinder fastening. The sections of top and bottom rails of these frames are 4½" wide x 4½" deep, top, and 4½" wide by 3" deep, bottom, on both frames, and owing to the rather unusual condition of weight distribution, the design was gone into very carefully and the sections not only checked against the piston thrust, which is usually all that

is considered, but against the weights carried by the frames. The bending moment and shearing forces for the front engine are shown by fig. 6. These have been worked out considering the frame as a beam supported at four points (where it rests on the springs), the reaction being equal to the sum of the loads supported by the springs.

Reference to fig. 6 shows that the proportion of the boiler weight carried by the front engine is concentrated midway between the first and second wheels, or 31" ahead of the middle wheel, and as this is the only point on the front truck at which the boiler is supported, the weight must be such that its moment about the centre of the truck will equal the moment of the weight of the front truck itself acting at the distance. Its centre of gravity is located in rear of the centre of the truck. On most Mallet locomotives now in service the above is not the case. The actual point of support of the boiler on the frames is set forward (considering a truck with the cylinders at the front) of the virtual point sufficiently far to make the moment of the truck weight considerably greater. This is done to prevent rocking in a longitudinal direction, and, of course, tends to allow the truck to drop at the front, to correct which a suspension bolt working on ball seats connects the lower rail of each back engine frame to the upper rails of the front engine, and any tension put on them by screwing up on the adjusting nuts pulls down on the rear end of the front engine frame, correcting the effect of the centre of gravity of the front system falling ahead of the centre of the truck. On the C.P.R. Mallet this rocking effect is checked by the frame

connection castings, which have jaws that interlock in such a manner as to make longitudinal rocking impossible. The arrangement of these castings and their pin connection is clearly shown by fig. 5. The construction at the joint is very substantial. A turned pin 4" dia. is used, and with this arrangement of interlocking jaws the pin is put in triple shear when pulling, but for buffing shocks, which are more severe, it is entirely relieved, and the shock is taken up by the socket joint formed by the metal around the pin on the front casting fitting into a machined pocket on the back casting. As the extension of the exhaust pipe, due to the truck movement, must be taken up by the sliding of the pipe flanges on the ball rings, and as only a rotary movement has been provided for on the receiver pipe, the importance of having a solid connection for the frames of the two engines is seen.

The spring rigging is of an ordinary type. The front engine is equalized from back to front, and has a cross equalizer at the front. The rear engine is also equalized through its whole length, but has no cross equalizers. The weights carried by the front and back engines are not equal, but are so distributed that approximately 9,000 lbs. more weight is carried by the front than by the back. As the effect of pushing or pulling a train is to reduce the weight on the front truck, and the service for which the locomotive was built calls for continued maximum tractive effort for considerable distances, it is important that the ratio of adhesive weight to tractive power be sufficiently high to ensure the engine holding the rail. As this ratio is 4.57, which is about as low

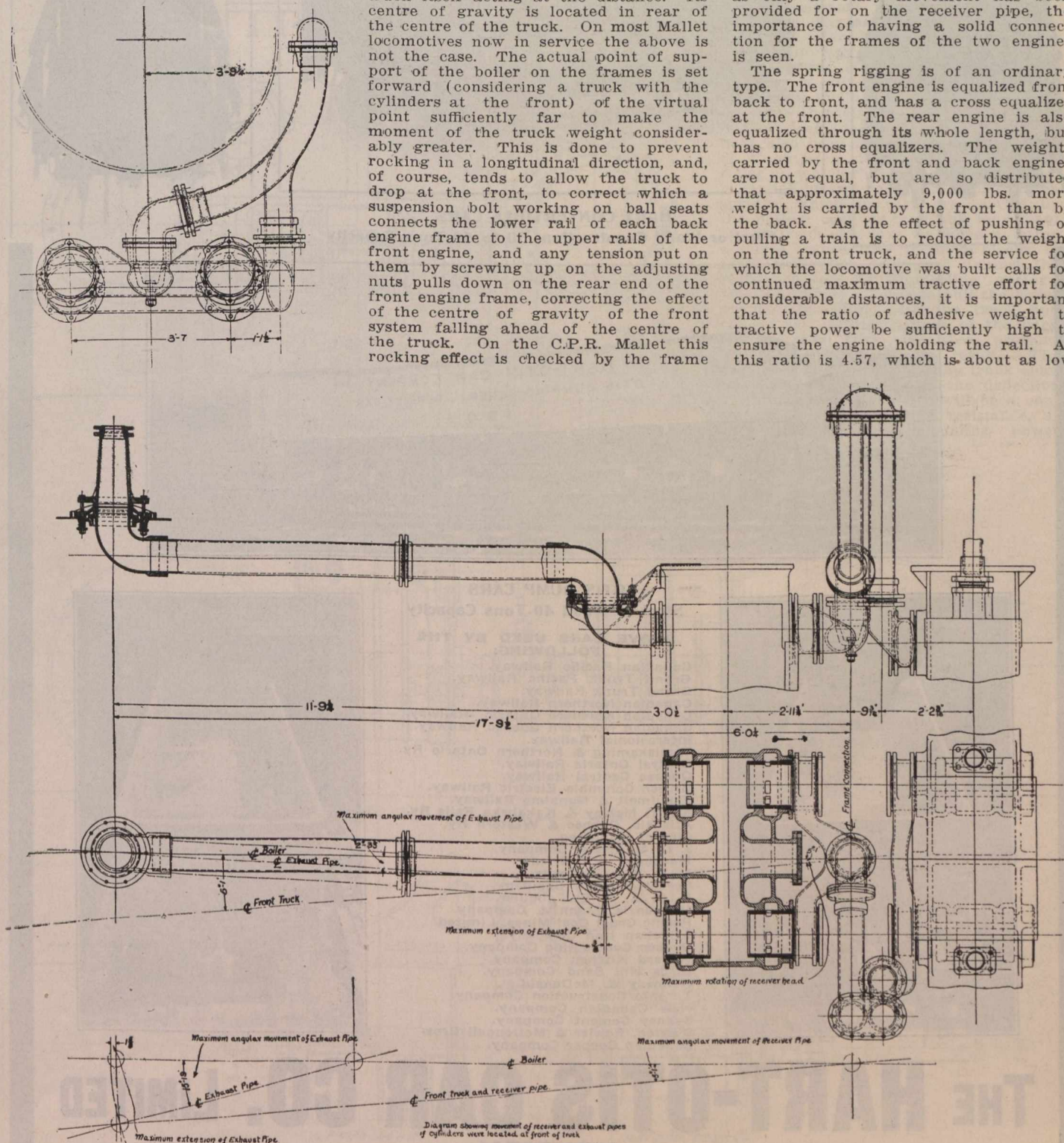
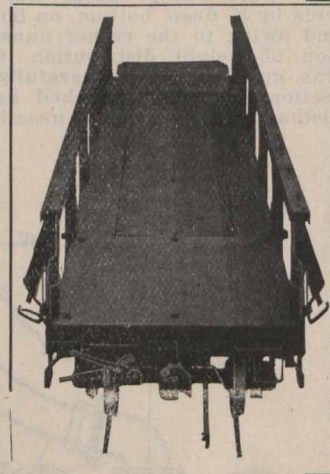
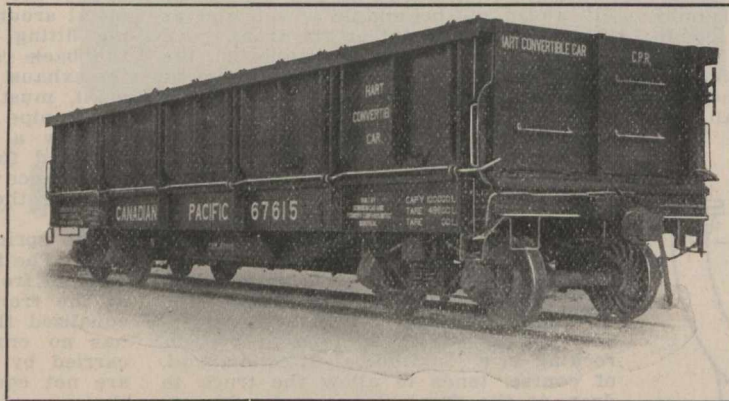
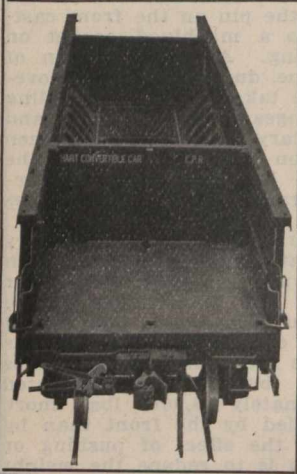


Fig. 4. Steam Exhaust and Receiver Pipes, C.P.R. Mallet Articulated Locomotive. (Dotted lines show position on 20 deg. curve.)

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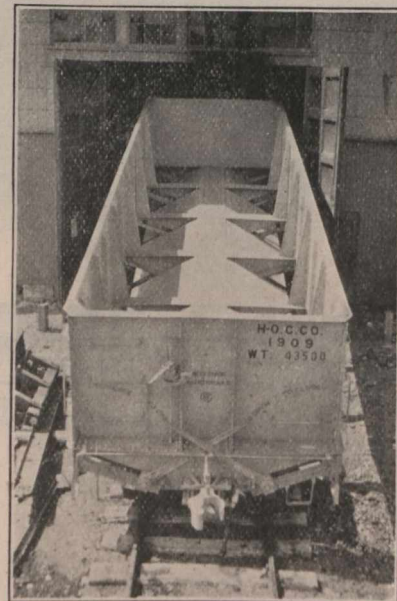
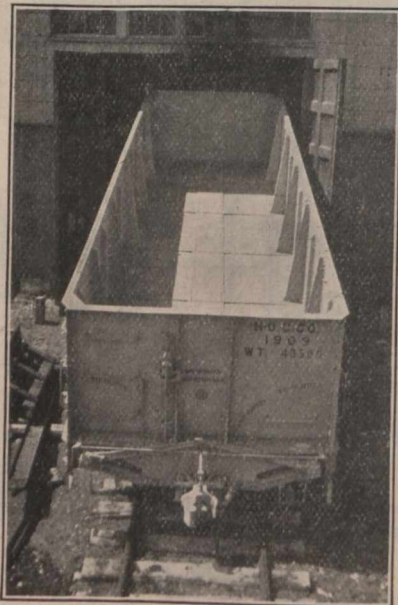
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as is desirable, it will be seen that any transfer of weight from the front truck would further reduce the adhesion factor and tend to make the front engine slip.

GUIDING POWER OF THE FRONT ENGINE.
 —Mallet articulated locomotives are built both without and with guiding trucks, and in most cases, where leading trucks are used, a truck is also placed at the rear end, back of the last pair of drivers. The theory advanced for admitting these trucks is that, in going ahead, the front engine is in itself a truck, and the front drivers are able to enter a curve against the resistance of the boiler without causing undue flange pressure or danger of derailing. On the

other hand, those who advocate the use of trucks do not believe as safe an engine can be obtained without as with them. In any case, more advantages and better arguments can be advanced for eliminating the truck, such as the decrease in the total length of the engine, saving in weight, etc., and it can also be shown that the flange pressure is sufficiently low to ensure perfect safety.

On the C.P.R. locomotive trucks are not used, and the weight of the boiler, which offers the principal resistance to curving, as the truck must swing laterally underneath it, is supported partly by friction plates and partly by a spring suspended roller. The arrangement of

this device is shown by fig. 7, and its construction and action is as follows. There are two main castings, one of which is mounted on the frames, and the other bolted solidly to the boiler moved with it, across the frame casting. The weight of the boiler and attachments resting on the front truck at this point is 40,000 lbs., and one-half of this, or 20,000 lbs., is carried on friction plates, four of which are set on each casting, forming two approximately radial paths, with an $8\frac{3}{4}$ " space between them. The total area of these plates is 834 sq. in., and provision has been made for lubrication, each plate having oil grooves connecting with an oil box on the top casting. Under these conditions the coefficient of friction may be taken as .08, which gives 1,600 lbs. at starting as the resistance due to friction. This resistance decreases slightly, as will be explained later. In the $8\frac{3}{4}$ " space between the two friction paths on the upper casting is the roller path, which consists of two wedge-shaped blocks, having an incline of $\frac{3}{4}$ " in 12. These are set with their thin ends at the centre line between the frames, and these ends have also been made flat for a distance of 2" on each side of the centre. The roller on which the inclined blocks travel is carried by two equalizers supported on springs, which in turn are carried by the bottom castings, and any movement of the truck sideways, as when entering a curve, causes the inclined blocks to force the roller downward against the resistance of its supporting springs, which produces a force to pull the boiler around the curve with the truck and relieve the leading flanges of the back engine from the excessive pressure which would otherwise result. The greater the movement of the truck sideways, the greater will be the deflection of the springs, and there will be a constantly increasing rolling resistance, as shown by the truck-guiding power

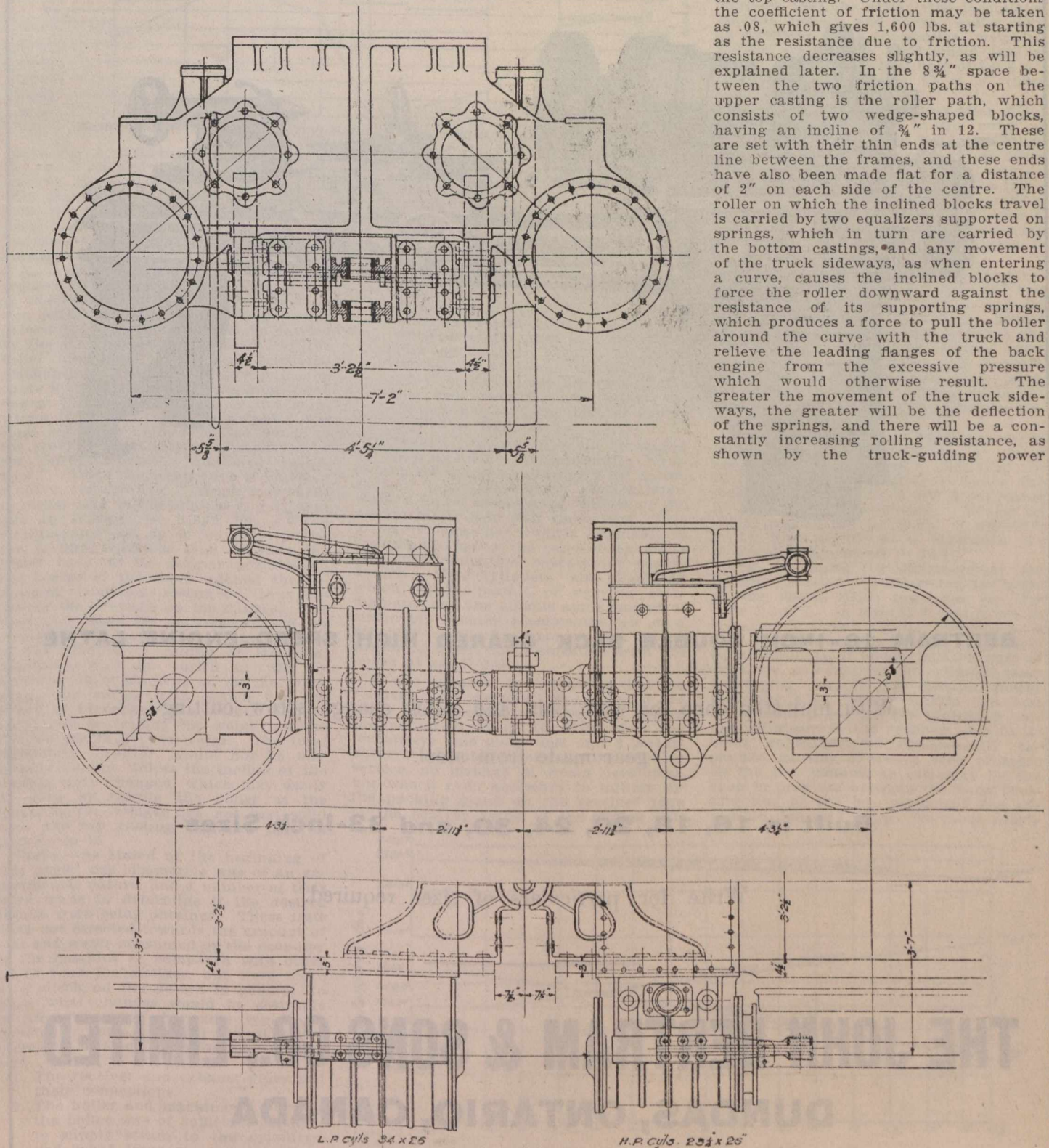
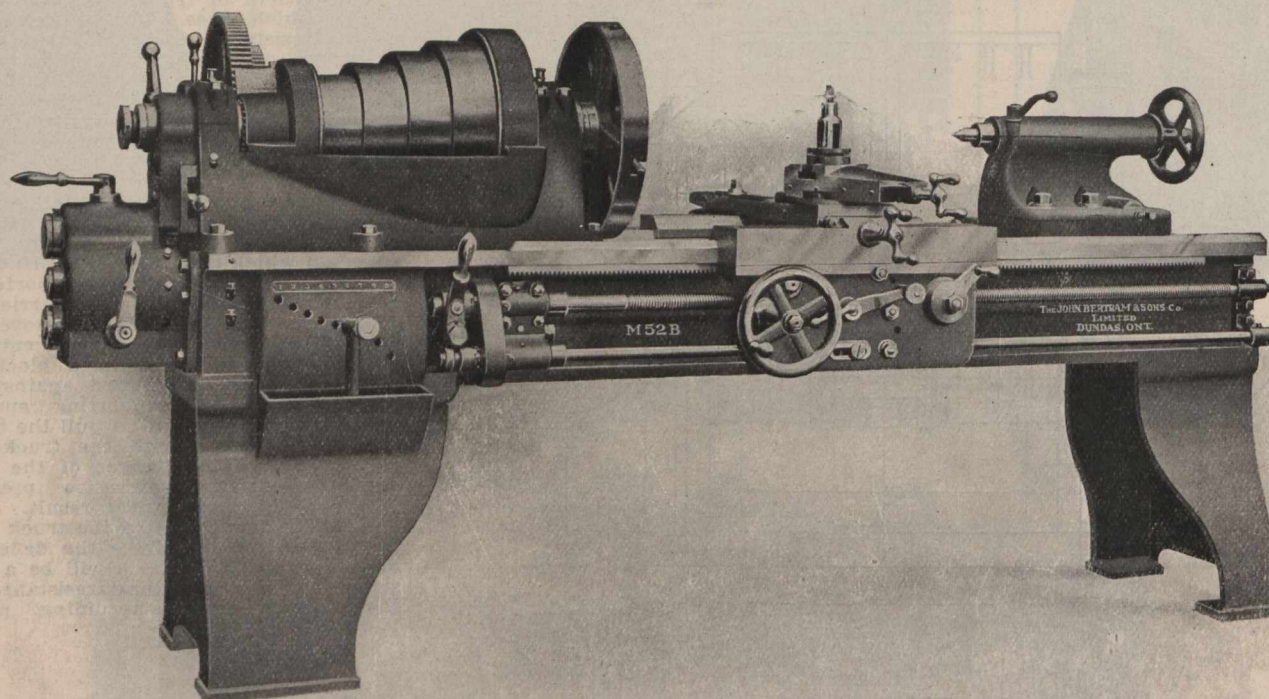


Fig. 5. Arrangement of Cylinders and Frame Connections, C.P.R. Mallet Articulated Locomotive.



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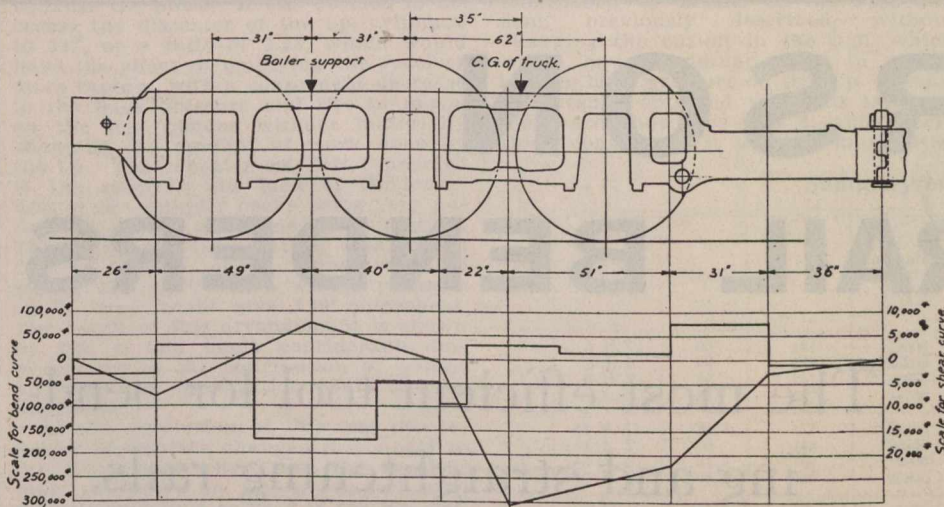


Fig. 6. Bending Movement and Shearing Forces, C.P.R. Mallet Articulated Locomotive.

rings on the exhaust pipe. Owing to its length, the exhaust pipe has considerable capacity as a receiver, and the exhaust is very mild, but this may be considered as an advantage, as no difficulty is experienced in maintaining full steam pressure. Some leakage developed around the taper bolts which hold the h.p. cylinder saddle to the boiler, and on future locomotives other systems of fastenings will be considered.

All curves were traversed freely, both heading and backing on, and from observations made on a Y on which the rails were light and the curvature about 18° at one point, it was proved conclusively that the articulated locomotive did less damage and curved easier than an ordinary 2-8-0 locomotive, weighing 185,000 lbs., with a rigid wheel base of 15' 10" and a total wheel base of 24' 4 1/2", the pony truck having 5" x 8" three point hangers.

The amount of flange wear after about 4,000 miles was 3-64" at the point of contact between the rail head and flange on the leading wheels, and 1-32" on other wheels, which is satisfactory service, considering the crookedness of the track on which the locomotive is operating, there being a large number of 10° curves. This amount of wear also compares very favorably with that on other locomotives in the same service.

The size of the cylinders on the locomotive, as first turned out, were 22" and 32 1/2" x 26", or a ratio of 2.18, and the exhaust from the h.p. pair passed through the reheater before entering the low pressure steam chest. Three other combinations of cylinders and position of reheater or superheater were tried, and altogether six tests were made before the final size of cylinders was determined.

A large number of indicator cards were taken, and those shown by fig. 9 are fairly representative of each test. In the Summary of Indicator Cards the measure of steam at cut-off is expressed in terms of the following: "Steam at cut-off = (T.P. per lb. m.e.p. x cut-off % + t.p. per lb. m.e.p. x clearance %) x pressure at cut-off + 14.7."

Fig. 10 shows the dynamometer car record, indicated and dynamometer horse powers, speed, boiler pressures, etc., for tests 4 and 5. In tests 1, 2, and 3, which were made under similar conditions, it was found that there was practically equal amounts of steam in each pair of cylinders, and that the l.p. cylinders were developing considerably greater power than the h.p. This condition can best be accounted for by the increased volume of steam in the receiver, due to its being reheated and consequently expanded, causing excessive back pressure on the h.p. pistons, as indicated by the drop in pressure between the back pressure line on the h.p. cards and the admission line on the l.p. To more nearly

chart, fig. 8, reference to which shows the curve marked "rolling resistance" as starting at a point which corresponds with the beginning of the incline, or 2" from the centre. The resistance at this point rises immediately to 1,250 lbs. and increases to 1,965 lbs. at 15 3/4", or the maximum movement sideways.

As mentioned above, the frictional resistance decreases slightly. This is due to the reduction of weight on the friction paths as the truck moves sideways, caused by the additional weight carried by the springs and, consequently, by the roller also. The decreasing frictional resistance is shown by the drop in the curve marked "frictional resistance," and begins 2" from the centre or the point where the roller picks up weight. The total resistance offered by the boiler to the truck moving sideways is shown by the curve marked "combined resistance." When the locomotive is entering a curve, for the first 2" truck movement to either side the resistance is only that due to friction, or 1,600 lbs. When straightening out, as on leaving a curve, the inclined surfaces tend to slide the boiler back to its normal position on the centre of the truck against the increasing frictional resistance, thus relieving the pressure on the flanges. The resistance may be entirely altered by changing the inclination of the wedges, or the amount of rolling or frictional resistance may be varied at will by screwing up or slacking off on the roller supporting spring nuts, which has the effect of increasing the weight on the roller and decreasing the weight on the friction plates or vice versa. The total resistance, however, would not be materially altered, unless the incline of the wedges were changed, which may easily be done by raising the boiler at the front, as the wedges are not cast solid with the top casting, but are held in pockets in it.

TESTS.—As stated at the beginning of this paper, the locomotive was of an experimental nature, and a number of tests were made to determine if the desired results were being obtained. These tests were not directed towards the amount of coal and water consumed or the economy of the machine as compared with other heavy road locomotives, but were more as a check on the design in general, to show what changes would be desirable in locomotives of the same type constructed in future. Special attention was therefore directed towards the following:

1. The receiver and exhaust pipes and their connections.
2. The boiler and machinery; whether the boiler was of sufficient capacity to supply steam to the cylinders, and what improvements could be made in the details of the latter.

3. The ability of the locomotive to curve freely, that is, traverse curves having a radius as short as any on which it would have to operate, and to do this at ordinary speeds, both heading and backing on, without danger of derailing or excessive flange wear.
4. The ability of the locomotive to develop her calculated tractive power.
5. The most satisfactory size of cylinders and arrangement of reheater or superheater, that is, what diameter of cylinder within the limits of 22" to 23 1/4" on the H.P. and 32 1/2" to 34" on the L.P. would give the best results, using either reheated steam in the L.P. or superheated in the H.P.

Of these, 1, 2, and 3 could be settled by observation of the locomotive when pulling the test trains and on a 20° curve, as well as in the regular service later, while 4 and 5 necessitated the use of the dynamometer car and indicators. The locomotive was particularly adaptable to experiment as to the size of cylinders and arrangement of reheater or superheater. The cylinders and bushings which would permit of varying their diameter and the outside arrangement of steam pipes made possible the use of a reheater for the h.p. exhaust or a superheater in direct communication with the boiler at small cost.

It was apparent from the first that the receiver and exhaust pipes would do what was expected of them, and during the period of about 10 days when the locomotive was under test and 3 weeks' observation subsequently during regular service, no leakage of steam developed, nor was it even necessary to tighten up the packing gland on the receiver pipe or the bearing plates of the sliding ball

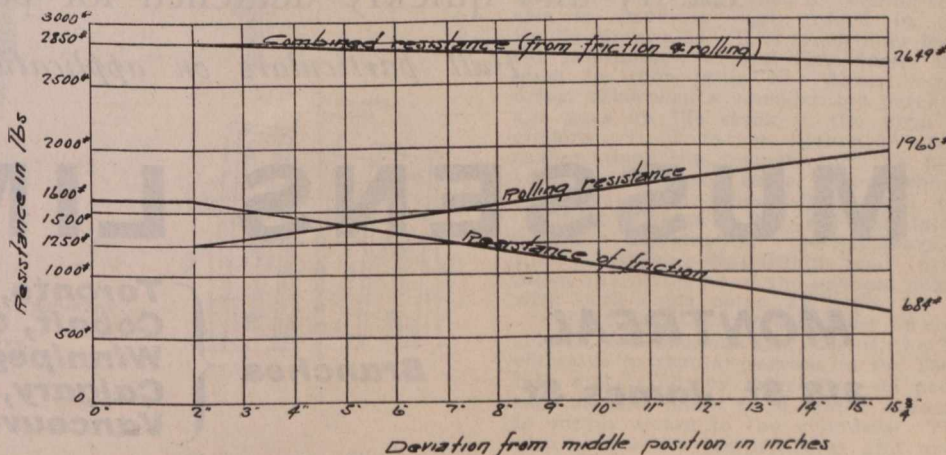
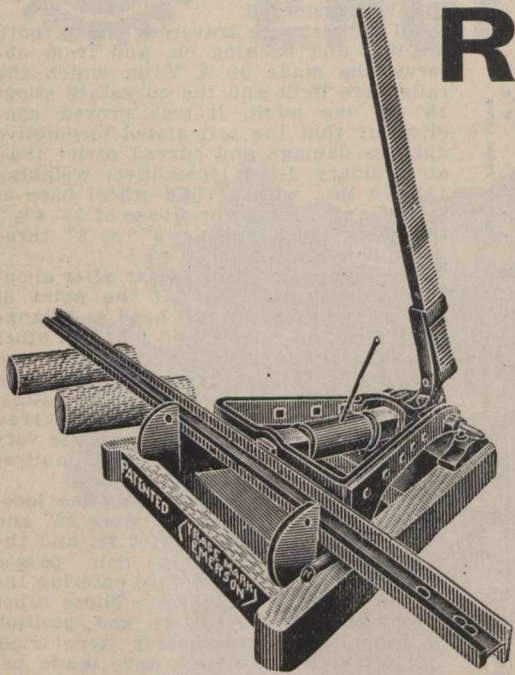


Fig. 8. Guiding Power of Front Truck, C.P.R. Mallet Articulated Locomotive.

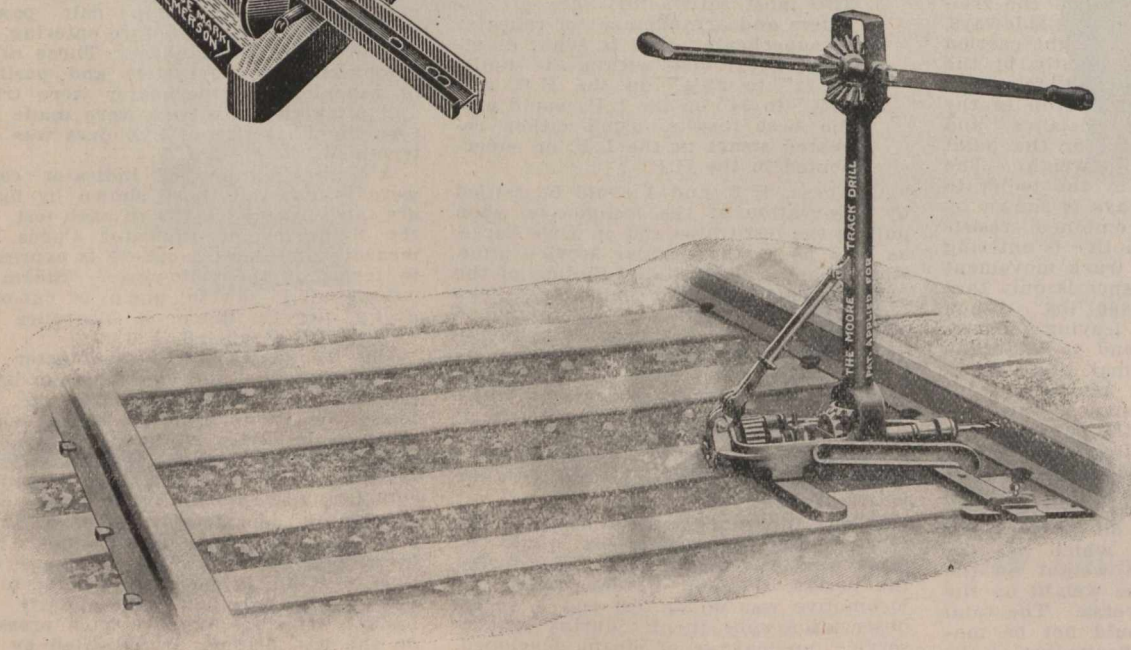
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equalize the power, it was decided to increase the diameter of the l.p. cylinders to 34", or a ratio of 2.38, which would have the effect of emptying the receiver more rapidly, with a consequent decrease in the back pressure and rise in m.e.p. on the h.p. pistons without materially changing the amount of work done by the l.p. The reheater was left connected to the receiver, the lack of condensation at the cylinder cocks being very noticeable, which was a desirable feature. The maximum temperature obtained in the l.p. steam chest, using reheated steam, was 440°, which with a pressure of 75 lbs., would give 120° superheat. The result of this arrangement is shown by test 4, and made considerable improvement in the distribution of power, although the equalization could still be improved.

At the conclusion of this test the reheater pipes were changed to connect to the h.p. steam chest and the receiver pipe, as shown in fig. 4. Superheated steam would thus be used in the h.p. cylinders and the exhaust would pass direct to the l.p. steam chest. The amount of steam shown by the l.p. indicator cards in test 5 now averaged about 87% of that shown by the h.p. cards, and the total amount of power as calculated from the series of indicator cards was approximately equal between the two engines.

It was next decided to try and increase the total power of the locomotive, which could still be done, as the factor of adhesion could be reduced without going below safe limits. The most satisfactory ratio, as indicated by the previous tests, would have been 2.38, as shown by test 5, but as the bushing had been removed from the l.p. cylinder its diameter could not be further increased, and the h.p. only was changed, its diameter being increased to 23 1/4", or a ratio of 2.14. Although the l.p. cylinder diameter could not be increased, its cut-off could be

lengthened by means of the adjusting arm, previously described, without changing the cut-off in the h.p., which would have a similar effect in reducing the back pressure on the h.p. pistons. The results obtained with this arrangement are shown by test 6, and everything considered, it was the most satis-

comparing it with no. 1, in which the amounts were very nearly equal. As the tests just described indicated that the best results would be obtained with cylinders 23 1/4" x 26" on the high pressure engine and 34" x 26" on the low, and with the high pressure cylinders taking steam from the superheater, the

Summary of Indicator Cards.

Test No.	Card No.	M.E.P.	H. P.	Indicated Tractive Power	Steam at Cut-off		Work in Cylinders %	Tractive Power Total	Horse Power Total
					Measure	%			
1	5 H.P.	90	164	19500	37700	99 1/2	41	48000	804
	5 L.P.	60	238	28500	37600				
	6 H.P.	56	157	18650	33800				
	6 L.P.	52	207	24700	32320				
4	44 H. P.	98.5	117	21300	41000	95	45	47300	518
	44 L. P.	50	142	26000	38750				
	46 H. P.	91.5	109	19800	40950				
	46 L. P.	48.5	139	25200	38600				
5	2 H. P.	111.5	124	24200	42500	87 1/2	48	50500	516
	2 L. P.	50.5	134	26300	37300				
	3 H. P.	117.5	116	25550	44250				
	3 L. P.	54.5	128	28200	39100				
6	9 H.P.	100	194	24300	48000	83 1/2	46	52900	846
	9 L.P.	55	229	28600	40100				
	10 H.P.	99.5	193	24150	47400				
	10 L.P.	57	236	29000	40750				

For "Steam at cut-off %" the largest measure in each pair of cards is taken as 100%

Test No.	Cylrs.	Ratio	Reheater	connected to	L. P.
1	22" & 32 1/2" x 23"	2.18			
2	22" & 32 1/2" x 23"	2.18			
3	22" & 32 1/2" x 23"	2.18			
4	22" & 34" x 26"	2.38			
5	22" & 34" x 26"	2.38	Superheated		H.P.
6	23 1/4" & 34" x 23"	2.14			

factory which had been tried. The power had been increased, and the amounts developed by each engine were reasonably well balanced. The decrease in the measure of steam in the l.p. cylinders, due to the position of the superheater, is well illustrated in this test by

locomotive was therefore put into regular service in the Rocky Mountains, pushing on the grade eastward from Field to Stephen. The profile of this section is shown by fig. 11. The maximum grade is 2.2% and there are two spiral tunnels of 2,890 ft. and 3,200 ft. long, having a radius of 573' 0". The regular locomotives working on this and similar grades in the Rocky Mountains have general dimensions as follows:

Type	2-8-0
Class (Ry. Co.'s)	M-4
Cylinders	21" x 28"
Driving wheels, diameter	58"
Boiler pressure	200 lbs.
Weight on drivers	168,000 lbs.
Weight, total	185,000 lbs.
Tractive power	36,200 lbs.
Factor of adhesion	4.65

Their full rating in summer is 424 tons, and on the same basis the Mallet locomotive should handle 660 tons, which it does without trouble, and has also taken up 700 tons, which may be considered the maximum tonnage for this grade.

Dominion coal was used on the tests made at Montreal. This is a friable, rather fine coal, and an average of the analysis of 25 samples gives the fixed carbon as 55.71%, and the heat value 13729 b.t.u.'s. That used in regular service is Canmore coal, mined in the Rocky Mountains. It is much finer than the Dominion coal and very dusty, and must be thoroughly wet down before firing, otherwise a considerable percentage goes up the stack in the form of cinders. It is rather higher in fixed carbon than the former, but the heat value is about the same. The locomotive steamed as successfully with the Canmore coal as it did with Dominion, although adjustments were necessary in the smokebox diaphragm and draft pipes, the diameter of the exhaust nozzle with both coals being 4 1/4".

Fig. 12 is the log of what may be considered a representative trip of the locomotive in regular service on the Field hill, and is chiefly interesting as proving that the boiler is of ample capacity to supply steam to the cylinders. This also shows the temperatures and pressures in the high and low pressure steam chests. The maximum temperature

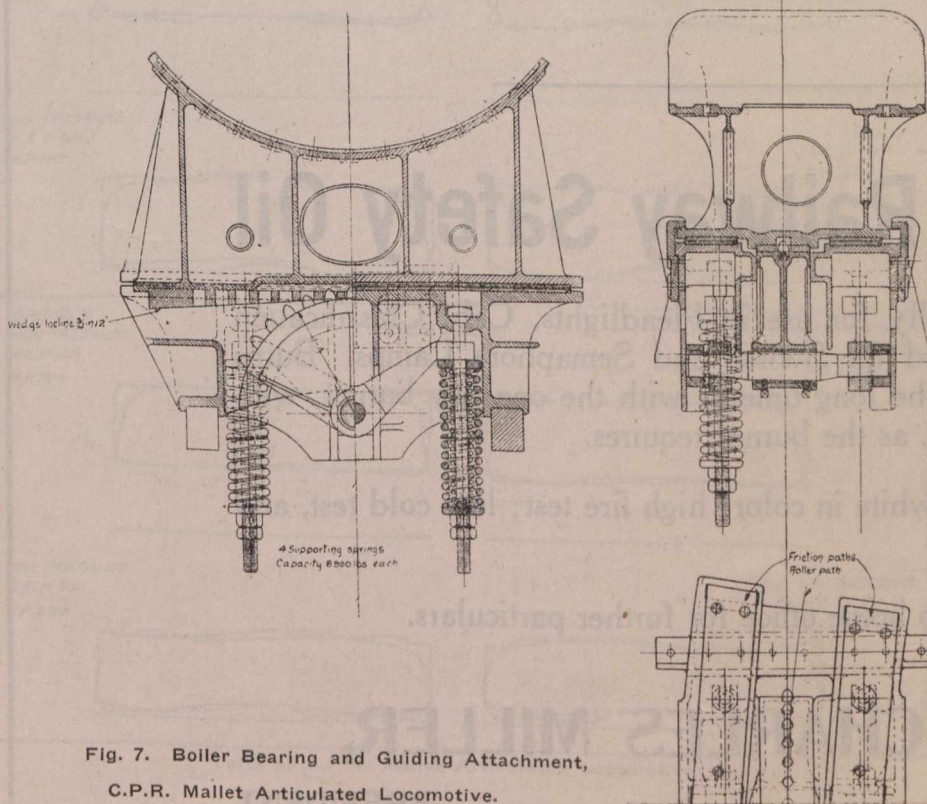


Fig. 7. Boiler Bearing and Guiding Attachment, C.P.R. Mallet Articulated Locomotive.

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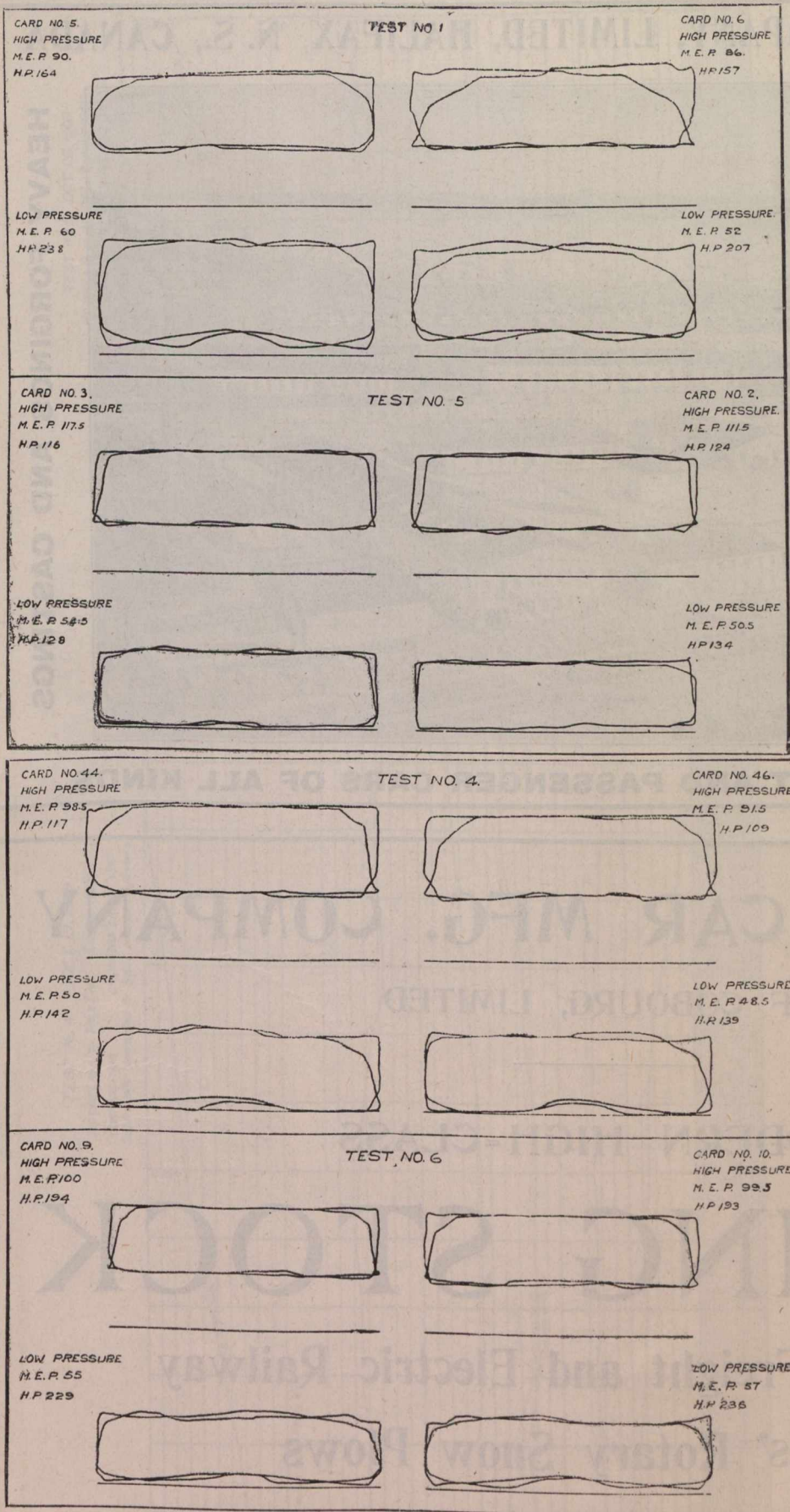
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PRESIDENT



Tests of C.P.R. Mallet Articulatd Locomotive.

shown in the h.p. steam chest was 540°, or 153° superheat. An average of a number of trips shows a temperature of 535°, or 148° of superheat, which is reached soon after a train is started, and remains practically constant, irrespective of boiler

pressure, cut-off, throttle position, or speed. The maximum temperature shown in the receiver pipe was 350°, and the average was about 345°. As the pressures ranged from 60 lbs. to 75 lbs., this would give from 38° to

25° superheat in the receiver. The amount of condensation in the l.p. cylinders is very small, and the cylinder cocks are closed after a few revolutions, which, of course, tends to decrease the water consumption.

As the locomotive has not been in service sufficiently long, no figures are available as to cost of maintenance, but it is to be expected that, as there is practically double the amount of machinery, this will be somewhat higher than on the consolidation locomotives in the same service. The operating costs will be slightly higher when considered on a locomotive mile basis. The same crews do the work for the same wages, but more lubricant, waste, and sand must of necessity be used, and the cost of wiping and cleaning will also be higher. On a ton mile basis, which is the fairest comparison for operating cost, it will be lower, due to the greater tonnage hauled, which, it is considered, together with the saving in fuel, will show considerable economy in favor of the Mallet locomotive.

The foregoing was read before the Canadian Railway Club recently.

Per Diem Rates for Freight Cars.

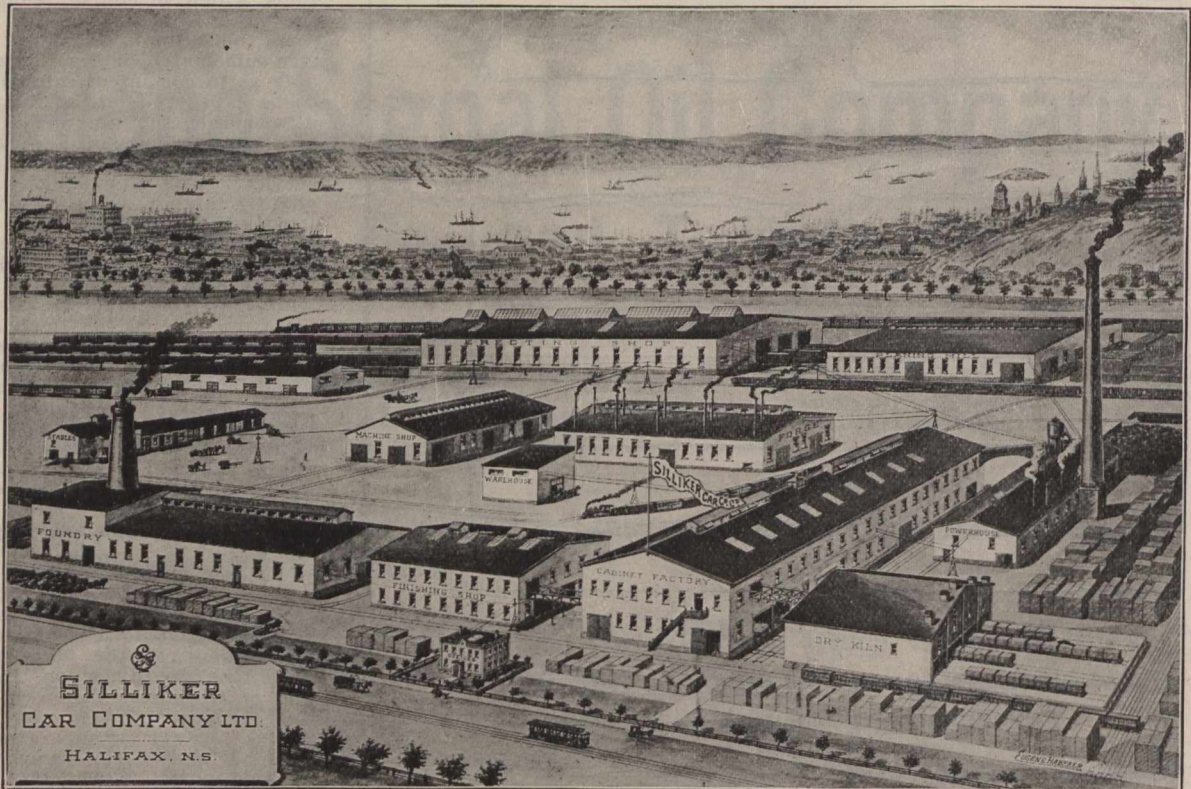
On Jan. 3, the American Railway Association submitted to its members throughout the United States and Canada a letter ballot on the question of the amendment of the code of per diem rules by the insertion in rule 1 of one of the three following rates:—40c. per car per day; 35c. per car per day, or 30c. per car per day, also as a recommended method for securing the return of equipment on demand the enforcement of Car Service Rules 1, 2, and 3 by the imposition of a penalty of \$5 a car to be paid to the owner of the car by the road violating the rules. It was provided that a majority of the members, representing two-thirds of the freight cars owned or controlled by members of the Association should be required for the adoption of the proposition submitted. The results of the voting showed that a majority of the members as provided above were not in favor of any of the proposed per diem rates, and all the propositions were lost. The proposition for a penalty of \$5 a car as mentioned above was defeated.

At a special meeting of the Association in New York, Jan. 27, it was decided to take a letter ballot on the question of the adoption of 30c. as the per diem rate on freight cars for the five months of Mar., April, May, June and July of each year, and 35c. for the remaining seven months: Jan., Feb., Aug., Sept., Oct., Nov. and Dec.; and that these rates be incorporated as an amendment in Per Diem Rule 1. It was decided to close the ballot on Feb. 19, and if the proposition was adopted by a majority of the members owning or controlling two-thirds of the cars owned or controlled by members, it was to go into effect on the first of the month following the amendments that it had been so carried. The voting resulted as follows: Yes—224 memberships, representing 1,767,162 cars owned or controlled. No—87 memberships, representing 419,851 cars owned or controlled. Not voting—29 memberships, representing 62,994 cars owned or controlled. The total membership of the Association is 340, and the cars owned or controlled by the members 2,250,007. The majority requisite for approval is 171 memberships and 1,500,005 cars. The amendment therefore went into effect on Mar. 1, and the amended rule now reads as follows:—

"1. The rate for the use of freight cars shall be 30c per car per day for the five months of March, April, May, June and July of each year, and 35c per car per day for the remaining seven months, viz., Jan., Feb., Aug., Sept., Oct., Nov. and Dec., which shall be paid for every calendar day and shall be known as the per diem rate."

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TEST No 4 OCT. 19, 1909
HOCHELAGA TO MILE END ENGINE 1950
TONNAGE-1139 CYLINDERS 22" x 34" x 26"
Super-heater connected to low pressure cylinders

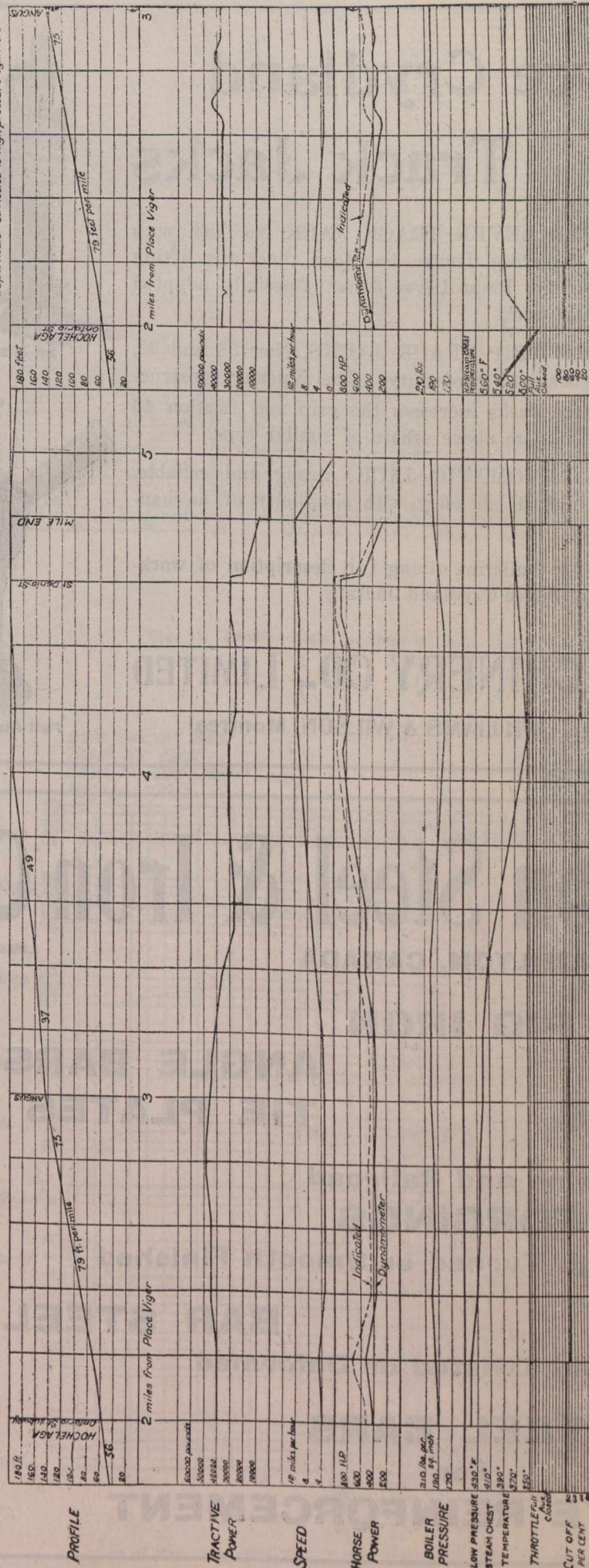
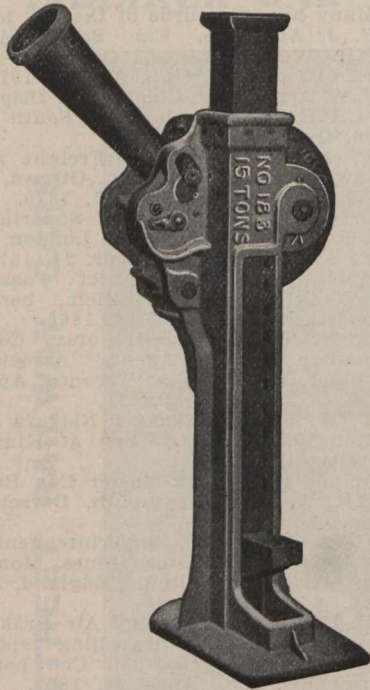


Fig. 10. Dynamometer Car Record, etc., C.P.R. Mallet Articulated Locomotive.

April Birthdays.

- Many happy returns of the day to—
- F. J. Anderson, Car Service Agent, C.P.R. Western Lines, Calgary, Alta., born at Lambeth, Ont., April 1, 1878.
 - J. A. Armstrong, Chief Train Dispatcher C.P.R., Ottawa, born at South Durham, Que., April 6, 1863.
 - F. J. Balch, General Freight Agent Ottawa and New York Ry., Ottawa, born at Massena, N.Y., April 15, 1870.
 - C. G. Bowker, Assistant Superintendent G.T.R. Middle Division, London, Ont., born at Medford, N.J., Apr. 21, 1871.
 - A. E. Edmonds, District Passenger Agent C.P.R., Detroit, Mich., born at Woodstock, Ont., April 8, 1866.
 - J. H. Flock, K.C., Honorary Counsel Canadian Ticket Agents' Association, London, Ont., born at Toronto, April 6, 1834.
 - B. W. Folger, Manager Niagara Navigation Co., Toronto, born at Kingston, Ont., April 8, 1872.
 - W. E. Fowler, ex-Master Car Builder C.P.R., born at Weymouth, Dorsetshire, Eng., April 27, 1856.
 - F. A. Gascoigne, Superintendent Car Service, C.P.R. Eastern Lines, Montreal, born at Gosport, Hants, England, April, 1866.
 - B. C. Gesner, formerly Air Brake Inspector I.C.R., now travelling representative Galena Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.
 - J. Murray Gibbon, Advertising Agent C.P.R., London, Eng., born at Udewella, Ceylon, April 12, 1875.
 - V. A. Harshaw, Acting Superintendent, District 1, Ontario Division C.P.R., Toronto, born at Mono, Ont., April 26, 1865.
 - J. M. Horn, District Freight Agent Canadian Northern Ry., Edmonton, Alta., born at Allanton Mills, Lanarkshire, Scotland, April 12, 1880.
 - B. S. Jenkins, General Superintendent C.P.R. Telegraphs, Winnipeg, born April 8, 1859.
 - J. Kyle, Assistant Master Mechanic Canadian Northern Ry., Edmonton, Alta., born at Toronto, April 11, 1877.
 - J. B. Lambkin, Assistant General Passenger Agent Intercolonial Ry., Halifax, N.S., born at Quebec City, April 5, 1858.
 - D. McNicoll, Vice President C.P.R., Montreal, born at Arbroath, Scotland, April 7, 1852.
 - P. Mooney, General Freight and Passenger Agent Halifax and Southwestern Ry., Halifax, N.S., born at St. Catherines, Que., April 19, 1871.
 - R. S. Richardson, Assistant Superintendent C.N.Q.R., Montreal, born at Napanee, Ont., April 9, 1865.
 - W. A. Ritchie, District Superintendent Pullman Co., Montreal, born at Edinburgh, Scotland, April 13, 1854.
 - E. W. Smith, Superintendent Dining and Parlor Car Service G.T.R., Toronto, born at North Bridge, Mass., April 21, 1869.
 - W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., April 14, 1877.
 - W. Wainwright, Second Vice President G.T.R., Montreal, born at Manchester, Eng., April 30, 1840.
 - W. Woollatt, ex-General Superintendent Buffalo Division Pere Marquette Rd., Walkerville, Ont., born at Weedon, Hertfordshire, Eng., April 2, 1855.

Alberta Railway Commissioners.—A bill was laid before the Alberta Legislature Mar. 8, providing for the appointment of a Board of Railway Commissioners for the province, such board to have the same powers as the Lieut.-Governor-in-Council under the Railway Act. The bill provided that the board shall consist of the Hon. A. Rutherford, the Premier; J. Stocks, Deputy Minister of Public Works; and R. W. Jones, the Provincial Engineer. Mr. Stocks has declined to act as a member of the Board, and another name is to be substituted.



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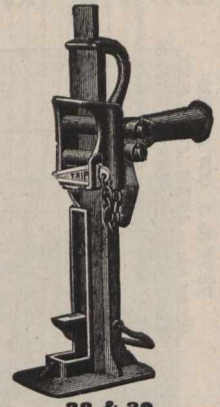
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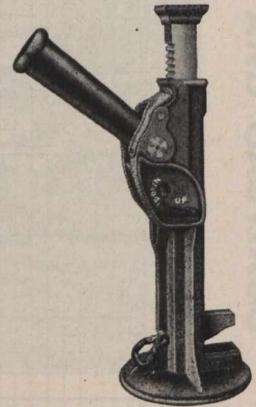
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For

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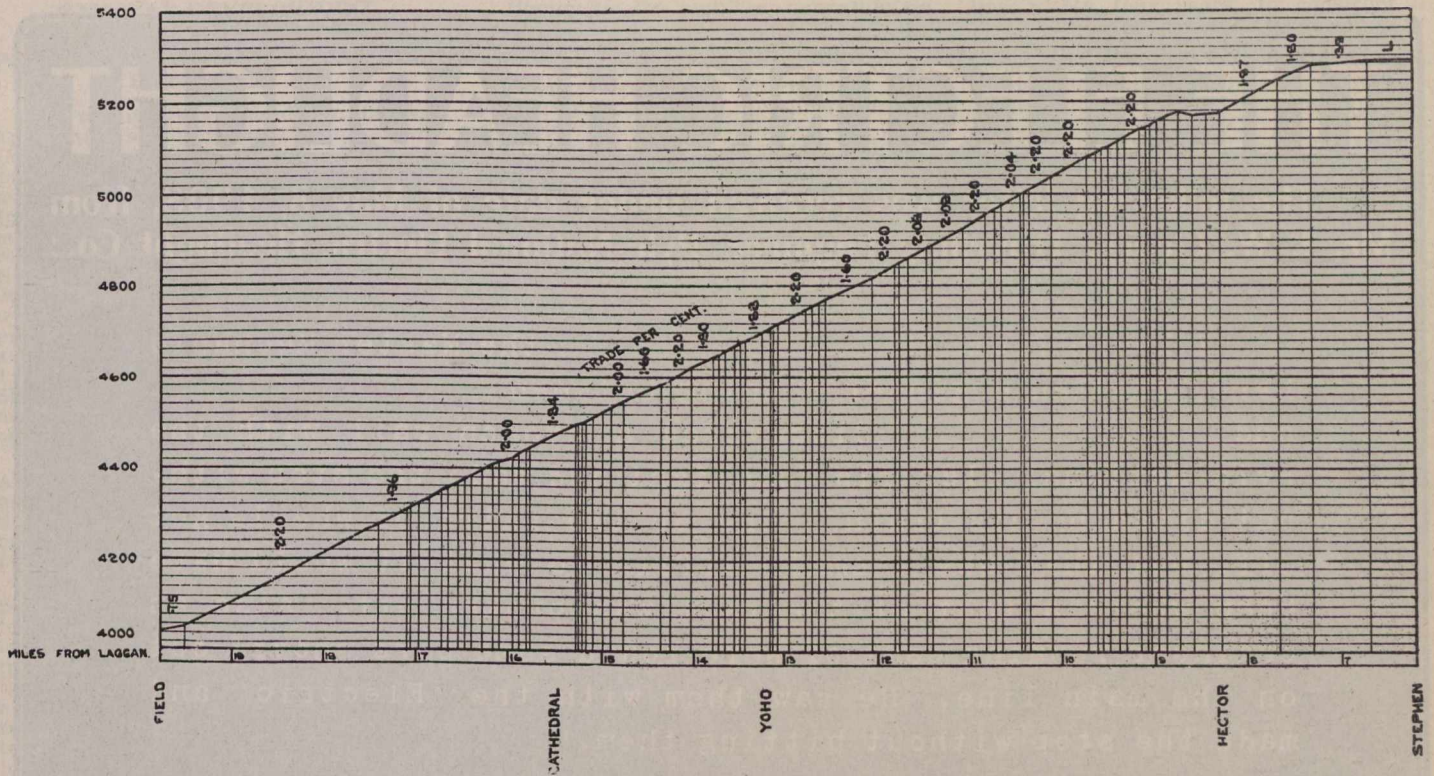


Fig. 11. Profile, Field to Stephen, B.C., Canadian Pacific Ry.

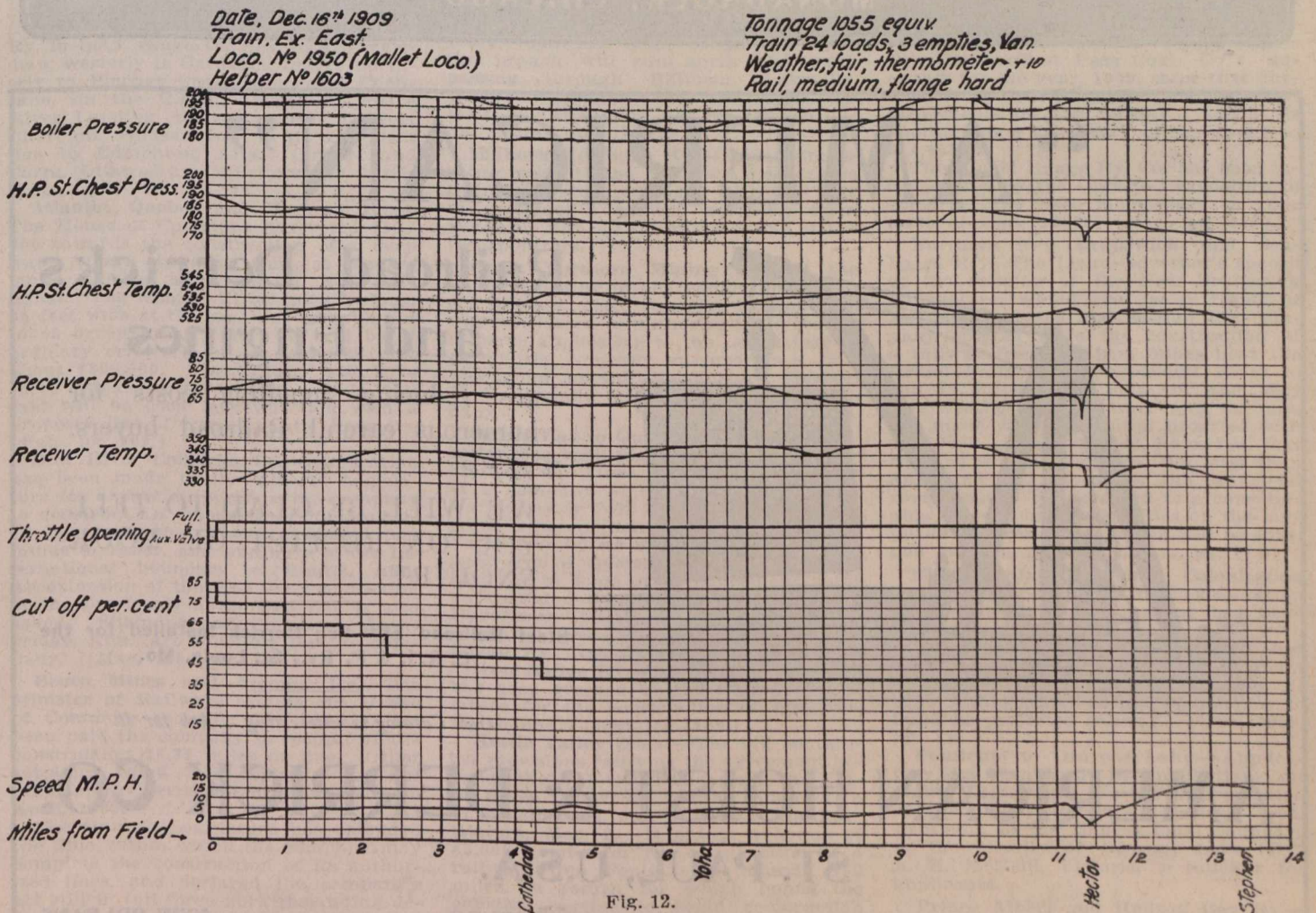


Fig. 12.

Log of Representative Trip, C.P.R. Mallet Articulated Locomotive on the Field Hill.

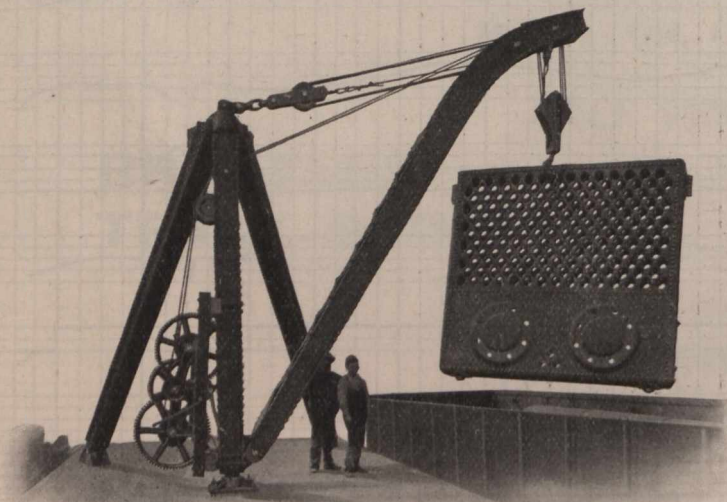
THE ELECTRIC HEADLIGHT

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

"AMERICAN"



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are reducing handling costs for numerous careful Railroad buyers.

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NEW ORLEANS

RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta and Bow Island Ry. Lines.—Application has been made to the Alberta Legislature for the incorporation of a company with this title to build the following lines:—from near Coutts, on the International boundary to near Bow Island, thence northeasterly to tp. 15, range 10, west 4th meridian; from near Bow Island northeasterly to Calgary, with a branch line to tp. 12, range 29, west 4th meridian; from points on the previously mentioned lines to Lethbridge, and from Lethbridge southwesterly to tp. 1, range 24 and 26, west 4th meridian. Short, Biggar, Cowan and Collisson, Edmonton, Alta., are solicitors for applicants.

Alberta and British Columbia Ry.—Application is being made to the Dominion Parliament for an extension of time within which the company may build its authorized railway. (July, 1909, pg. 473.)

Alberta and Saskatchewan Central Ry. Lines.—Application has been made to the Alberta Legislature for the incorporation of a company with this title to build the following lines:—from tp. 30, range 1, west of the 4th meridian, northwesterly to tp. 45, ranges 26 or 27, thence northerly and easterly to Edmonton; from tp. 45, ranges 26 or 27, to the junction of the Saskatchewan and Brazeau Rivers, Alta. Short, Biggar, Cowan and Collison, Edmonton, Alta., are solicitors for applicants.

Alberta, Peace River and Eastern Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from the Alberta Ry. and Irrigation Co.'s Ry. in tp. 3, range 16, west of 4th meridian, westerly to Cardston, thence northerly to Pincher Creek, thence to Cochrane, on the C.P.R., thence to Peace River Landing, thence easterly to Fort Churchill, Hudson Bay, with a branch line to Edmonton, Alta. Culbert and Carrs, Ottawa, are solicitors for applicants.

Atlantic, Quebec and Western Ry.—The House of Commons has voted \$50,000 towards the construction of a deep water wharf at Gaspé, Que., at the Atlantic, Quebec and Western Ry.'s terminal. The wharf will be 1,000 ft. long, 95 feet wide at the top, and will run out to 45 or 50 ft. of water. It will be of ordinary cribwork faced, and will cost about \$300,000. The railway will have three tracks on the wharf, which it is said will be used in connection with a proposed line of trans-Atlantic steamers. (Feb., pg. 109.)

Bow River Collieries Co.—Application has been made to the Alberta Legislature for an act authorizing the company to construct an extension of its projected line from the present proposed terminus to Taber, and southerly to the International boundary at Coutts, Alta. An extension of time for the construction of the previously authorized line is also asked. Simmons and Shepherd, Lethbridge, Alta., are solicitors for the company. (May, 1908, pg. 329.)

Bruce Mines and Algoma Ry.—The Minister of Railways said in the House of Commons recently that \$53,920 had been paid the company in respect of the construction 16.85 miles of line. Other subsidies voted had expired. An application to revive them was made in April, 1909.

The Ontario Legislature has extended the time within which the company may complete the construction of its authorized lines, and declared the company's act still in full force notwithstanding defaults in certain directions. (Mar., pg. 185.)

Buctouche Ry. and Transportation Co.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway between Buctouche and Richibucto, N.B., and from West Point to Colman, P.E.I., on the Prince Edward Island Ry. main line, with power to construct wharves and docks at terminal points in New Brunswick and P.E.I., and to operate vessels and car ferries between Richibucto and West Point. Barnhill, Ewing and Sandford, Buctouche, N.B., are solicitors for applicants.

Central Ontario Ry.—We are advised that work has been restarted on the extension of the line from Maynooth to Whitney, Ont., on which a start was made last year. A gang is engaged clearing the right of way. The company is doing the work itself. It is expected to construct 10 miles this year. (Feb., pg. 109.)

Chicago, Milwaukee and Puget Sound Ry.—A Winnipeg press report dated Mar. 14, states that the company has secured right of way for a railway through North Dakota, to Neche, on the International boundary line, and that agents are working through Southern Manitoba, securing options on right of way from the boundary into Winnipeg. The points at which the agents are operating, the dispatch states, show a route from the boundary to Gretna, northwesterly to Sperling, thence westerly into Winnipeg between Canadian Northern Ry.'s Brandon line and the C.P.R. Glenboro branch. (Dec., 1909, pg. 881.)

Dominion Atlantic Ry.—A press report states that the company is arranging for the immediate starting of construction on the proposed North Mountain branch. The report states that it is the company's intention to complete three miles this year and the whole line in three years. Starting from Centreville, N.S., the branch will run north and west, passing through Billtown, Lakeville, Woodville and Grafton, and rejoin the main line at a point not yet decided upon. (Mar., pg. 185.)

Elkhorn Northern Ry.—Application is being made to the Manitoba Legislature to incorporate a company with this title to construct a railway northerly from Elkhorn, Man. J. F. Miller is one of the incorporators.

Great Northern Mining Co.—At the annual meeting of shareholders at Eastern Harbor, N.S., recently, a resolution was considered to authorize the directors to make application to the Legislature to permit the company to construct a railway from its mill to Eastern Harbor. M. V. Grandin is Secretary of the company.

Hardy Bay to Quatsino Sound.—Application has been made to the British Columbia Legislature for the incorporation of a company to build a railway from Hardy Bay or Port McNeil, or some other point between them to the east coast of Vancouver Island to Coal Harbor on the west arm of Quatsino Sound, or Rupert Arm, or to some other convenient point on Quatsino Sound, B.C. Barnard and Robertson, Victoria, are solicitors for applicants. (See Hardy Bay and Quatsino Sound Ry., Aug., 1909, pg. 573.)

Iron Range Ry.—An extension of time has been granted by the Ontario Legislature for the construction of this projected line. (Feb., pg. 109.)

Kettle Valley Lines.—The bill containing provisions ratifying the agreement between the B.C. Government and the Kettle River Valley Ry., for the construction of certain lines, was laid before the Legislature, Mar. 2. It grants a bonus of \$5,000 a mile for the construction of a railway from Penticton to Merrit, 150 miles, in return for which bonus the company agrees to begin construction within four months after the ratification of the agreement, and to complete the

line within four years; to construct a line from Grand Forks up the north fork of the Kettle River, and a line from Midway to Penticton; such lines to be completed also within four years.

The Dominion Parliament has authorized the K.R.V. Ry. Co. to build the extension to Penticton and to Merrit, mentioned in the agreement with the B.C. Government, and has granted an extension of time for the construction of its other other uncompleted lines. (Mar., pg. 185.)

Lac Seul, Rat Portage and Keewatin Ry.—An extension of two years has been granted by the Ontario Legislature for the commencement of this projected line. (Feb., pg. 111.)

London and Port Stanley Ry.—It has been decided to construct a switch at St. Thomas, Ont., for the Hydro-Electric Power Commission. Further consideration of the plan to electrify the line to Port Stanley has been postponed pending receipt of additional information. It has been decided to sell the freight house at Port Stanley. (Feb., pg. 111.)

Michigan Central Rd.—We are advised that there is no truth in recent press reports that the company is about to construct a third track between Buffalo, N.Y., and Windsor, Ont.

The new roundhouse at St. Thomas, Ont., will contain 40 stalls. It will have an outside diameter of 428 ft., there will be 95 ft. between the walls, except at the drop pits where the distance will be increased to 113½ ft., and there will be an 85 ft. turn-table. The building will be heated by steam, and a modern washout system will be installed. Brick and concrete will be used with wooden posts and timber roof. (Mar., pg. 187.)

Montreal Underground and Elevated Ry.—See under Electric Railway Projects, etc.

Morrissey, Fernie and Michel Ry.—The Crow's Nest Pass Coal Co.'s accounts for the year, 1909, show that during the year there was expended in improvements on the railway, which is operated as a subsidiary of the Coal Co., \$14,451.55.

The Nickel Range Ry. Co. has been incorporated by the Ontario Legislature to construct the lines mentioned in our issue of Dec., 1909. (Mar., pg. 187.)

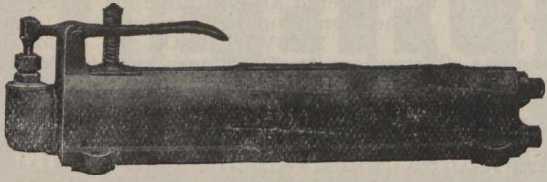
Northern New Brunswick and Seaboard Ry.—The Lieut.-Governor's speech at the opening of the New Brunswick Legislature, stated that as a result of legislation passed last session the company entered upon the construction of a railway from the iron mines near the Grand Falls of the Nipisquit River to the I.C.R., and in spite of the very wet weather last summer and autumn, has made very substantial progress with the work. It is expected, he added, that the line will be completed not later than July, and that thereafter the provincial revenues will be increased to a considerable amount by the royalties on the output of the iron mines which will be shipped over the railway. (Jan., pg. 21.)

The Northern Quebec Colonization Ry.'s Co.'s application for incorporation by the Dominion Parliament has been passed. (Mar., pg. 211.)

Pacific and Atlantic Ry.—An act has been passed by the Dominion Parliament granting the company an extension of time within which it may commence to build its projected railway. (Dec., 1909, pg. 885.)

Penticton to Osoyoos Lake.—Application has been made to the British Columbia Legislature for the incorporation of a company to build a railway from Penticton to the International boundary in the vicinity of Osoyoos Lake, B.C. A. H. McNeill, Victoria, is solicitor for applicants.

Prince Albert and Hudson Bay Ry.—By the first section of the amendment to the Dominion act incorporating the com-

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is a simple, practical trap, with few working parts to get out of order. It works equally well with either high or low pressure steam. Its simplicity and few working parts will commend this trap to every engineer. Send for Catalogue.

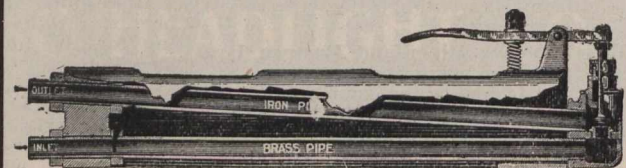
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Fairbanks Scales, Fairbanks-Morse
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ALL SIZES BAR STEEL FOR CAR-BUILDERS' USE. Spring, Machinery, Tire, Angles, and Merchant Bar Steel. Heavy Forgings of all Descriptions.

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pany, assented to May 17, the words, "thence crossing the Saskatchewan River and" are struck out of sec. 7, chap. 122 of the statutes of 1909. The company is authorized to construct an extension of its projected railway from its westerly terminus near Prince Albert, Sask., southerly and westerly to Calgary, Alta., and a branch southerly from its previously authorized line to Melfort, Sask. Its bonding powers are increased from \$25,000 to \$40,000 a mile, and it is given an extension of time for construction. (Mar., pg. 187).

Prince Edward Island Ry.—We are advised that work on the construction on the Harmony-Elmira branch will be resumed at an early date. When work was suspended at the end of the construction season of 1909 the contractor had completed the clearing of the right of way for its entire length, 9.9 miles, and had practically completed the culvert work. These culverts were all of concrete. Grading will be the first work taken in hand this spring. Whitehead Brothers, Grand Falls, N.B., are the contractors. (Feb., pg. 111).

Newfoundland Ry.—The Legislature has given a second reading to the branch railways bill, which confirms a contract with the company for the construction of a number of branch lines. The agreement provided for the immediate construction of the branch to Bonavista. This line commences at Shoal Harbor, on the main line, and extends to Bonavista, passing Goose Bay, Southern Bay, Trinity and Cortalina, providing railway accommodation for over 2,000 families. The construction of the branch was undertaken last year, at the solicitation of the Government, in order to provide work for the people of the district on account of the failure of the fisheries. It is expected that the branch will be completed this year. The contract provides for a payment of a cash bonus of \$15,000 a mile, with a proviso that the laborers are to receive \$1.50 a day. The other branch lines are to be completed within five years, the points between which they are to be constructed are:—Broad Cove to Heart's Content and Grete's Cove, 62 miles; Ransford Bridge to Trepassy, 70 miles; Country Channel to Fortune Bay, 48 miles; Bay of Islands to Bonne Bay, 42 miles. (Mar., pg. 187).

Rocky Mountain Collieries.—Application has been made to the Alberta Legislature for the incorporation of a company with this title, among other things, to build a railway from the coal fields within Rocky Mountain Park, Alta., northerly or northeasterly to the Canadian Northern Ry. or some of its branches, or southerly or easterly to the C.P.R. or some of its branches, or to connect with both lines. Short, Biggar, Cowan & Collisson, Edmonton, Alta., are solicitors for applicants.

Rural Ry. of Manitoba.—Application has been made to the Manitoba Legislature for the incorporation of a company with this title to build a railway to be operated by steam or electricity from St. Boniface, southerly, and on the east side of the Red River to the International boundary at Emerson; and from Winnipeg on the west side of the Red River to Emerson, and along the St. Boniface streets, with power to acquire running rights over existing lines. Power to operate steamboats on the Red River is also asked. The provisional directors are: A. Galliot, Notre Dame des Lourdes; P. Gevaert, J. E. Beaupre, N. Bernier, St. Boniface; F. Deniest, Winnipeg. (Feb., pg. 111).

St. John Valley Ry.—For many years past, said the Lieut.-Governor at the opening of the New Brunswick Legislature recently, there has existed a strong desire among the residents of the St. John River Valley for the construction

of a railway which will, it is believed, add in a very great measure to their prosperity and be of general benefit to the province. All legislation heretofore passed for aiding such a work, has proved ineffective in accomplishing the purpose desired. A bill will be introduced at the present session, which, it is hoped, will result in the accomplishment of this long desired and desirable work at no far distant day.

F. B. Carvell, M.P., writing the Premier of N.B., Feb. 28, said he was satisfied that if the Legislature would give a guarantee of bonds to the extent of \$25,000 a mile the Dominion Government would provide for the granting of a subsidy on the usual terms, towards the construction of this line. (Mar., pg. 211).

Temiskaming and Northern Ontario Ry.—The Ontario Legislature has amended the Commission's powers by authorizing it, subject to the approval of the Government, to construct an extension from the main line between mileage 205 and 228 westerly or south westerly to the Mettagami River in Mountjoy tp., a distance of about 40 miles. This extension would give an entrance into the Porcupine country in which there is a large mining population.

A contract has been let for the erection of several steel bridges over the Wabis River north of New Liskeard. (Mar., pg. 211).

The Toronto, Haliburton and Pembroke Ry. Co. has been incorporated by the Ontario Legislature to build a railway from Barry's Bay to Haliburton, Ont., or alternatively from the Canada Atlantic Ry. to Haliburton. (Mar., pg. 211).

Yellowhead Coal Co.—Application has been made to the Alberta Legislature for the incorporation of a company with this title, or to empower the joint stock company with the same title to construct a railway from Lacombe, on the C.P.R. Calgary-Edmonton line, to the Brazeau River, and along the river to its headquarters. Short, Biggar, Cowan and Collisson, Edmonton, Alta., are solicitors for applicants. A press report states that 50 miles of line will be built this year, and that M. J. O'Brien, Renfrew, Ont., is interested.

Telephone Dispatching on the C. P. R.

The following telephone dispatching circuits have already been installed on the C.P.R. as announced in the Railway and Marine World from time to time, and are in good working order:—
 Montreal, Que. to Newport, Vt. 114 miles.
 White River to Fort William, Ont. 251 "
 Winnipeg to Brandon, Man. 133 "
 Swift Current, Sask., to Medicine Hat, Alta. 147 "

The following additional circuits are to be installed immediately:—
 Chalk River to Cartier, Ont. 232 miles.
 Sudbury to Muskoka, Ont. 129 "
 Sudbury to Sault Ste. Marie, Ont. 183 "
 Cartier to White River, Ont. 269 "
 Brandon, Man., to Broadview, Sask. 132 "
 Broadview to Moose Jaw, Sask. 135 "
 Moose Jaw to Swift Current, Sask. 111 "

The new circuits, with those already completed, will make a total of 1,836 miles which will be in operation in a few months. The additional circuits authorized will provide for complete equipment of the main line from Chalk River, Ont., to Medicine Hat, Alta., 1,829 miles, except between Fort William and Winnipeg, 419 miles, which is double track, besides the Muskoka, Sault Ste. Marie and Montreal—Newport branches.

The Grand Trunk, B.C. Coal Co., has been incorporated under the British Columbia Companies' Act, with a capital of \$1,000,000 to carry on a general mining business.

Recent Dominion Legislation.

Among the first batch of acts to be assented to at the current session of the Dominion Parliament, Mar. 17, were the following affecting transportation interests:—

Calgary and Edmonton Ry.—Extending time for construction of branch lines, and authorizing extension of branch lines.

Campbellford, Lake Ontario and Western Ry.—Extending time for construction.

Canadian Pacific Ry.—Authorizing construction of additional lines, and extending time for construction.

Central Ontario Ry.—Authorizing making of agreements with certain other railways.

Columbia and Western Ry.—Extending time for construction.

Eastern Townships Ry.—Extending time for construction.

Edmonton and Slave Lake Ry.—Extending time for construction.

Edmonton, Dunvegan and British Columbia Ry.—Extending time for construction.

Esquimalt and Nanaimo Ry.—Extending time for construction.

Grand Trunk Pacific Branch Lines.—Authorizing construction of additional lines.

Kamloops and Yellowhead Pass Ry.—Extending time for construction.

Kettle River Valley Ry.—Authorizing construction of additional lines, and extending time for construction.

London and Lake Erie Ry. and Transportation Co.—Act of incorporation, and authorizing it to take over property and franchises of South Western Traction Co.

Manitoba and Northwestern Ry.—Extending time for construction.

Manitoulin and North Shore Ry.—Extending time for construction.

Montreal, Ottawa and Georgian Bay Canal Co.—Extending time for construction.

Nicola, Kamloops and Similkameen Coal and Ry. Co.—Extending time for construction.

Ottawa, Northern and Western Ry.—Extending time for construction.

Pacific and Atlantic Ry.—Extending time for construction.

St. Clair and Erie Ship Canal Co.—Extending time for construction.

St. Maurice Valley Ry.—Extending time for construction.

South Ontario Pacific Ry.—Extending time for construction.

Vancouver and Coast Kootenay Ry.—Act of incorporation.

Vancouver, Westminster and Yukon Ry.—Extending time for construction.

Walkerton and Lucknow Ry.—Granting extension of time for construction.

Western Canada Power Co.—Authorizing construction of a railway.

West Ontario Pacific Ry.—Extending time for construction.

Nova Scotia Steel and Coal Co., Ltd.

Following are statistics of the company's business last year:—

Coal shipped	809,341 g. tons.
Ore shipped	460,387 "
Coke made	87,816 net tons
Limestone quarried	75,407 "
Pig iron made	58,676 "
Steel ingots made	64,240 "
Steel billets cogged	52,931 "
Bars and plate made	45,090 "
Car axles made	27,703 pieces.
Freight carried by its Sydney Mines Ry.	1,629,400 tons.
Freight carried by steamers owned and chartered by the Co.	925,000 "
Freight paid to I.C.R. as follows:	
Outward from New Glasgow	\$153,000
Inward from New Glasgow	64,200
Outward from Sydney Mines	51,774
Inward from Sydney Mines	32,257

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Cast Steel Double Body Bolsters for
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Cast Steel Side Frames and End Sills

TAYLOR & ARNOLD

Selling Agents, = = = = Montreal

Foundry: Welland, Ont.

Canadian Northern Ry. Earnings, Etc.

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

	1909.		Net Increase	
	Earnings.	Expenses.	Earnings.	Net Increase
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+
Oct.	1,384,200	909,500	480,700	60,600+
Nov.	1,517,600	970,100	547,500	134,000+
Dec.	1,160,300	825,900	334,400	49,300+
Jan.	792,200	669,700	122,500	22,200+
	\$7,581,600	\$5,351,100	\$2,230,500	\$372,300+
Inc.	\$1,420,300	\$1,048,000	\$372,300

Approximate earnings for Feb. \$398,900, and for two weeks ended Mar. 14, \$885,700, against \$502,600 and and \$289,100 for same periods 1909.

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

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

	1909.		Net Increase	
	Earnings.	Expenses.	Net Profits.	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	385,159.16+
Sept.	8,323,178.03	4,891,288.86	3,431,889.17	1,317,281.40+
Oct.	9,744,596.87	5,358,209.68	4,386,297.19	1,731,030.48+
Nov.	9,075,963.93	5,388,625.98	3,692,337.95	1,471,258.60+
Dec.	8,214,758.04	5,099,334.94	3,115,423.10	918,671.53+
Jan.	6,104,426.90	4,787,830.51	1,316,596.39	926,846.56+

\$56,029,938.32 \$34,643,465.92 \$21,386,472.40 \$6,955,545.21 + Inc. \$10,556,420.68 \$3,600,875.47 \$6,955,545.21

Approximate gross earnings for Feb., \$5,813,000, and for two weeks ended Mar. 14, \$3,212,000, against \$4,819,000 and \$2,841,000 for same periods 1909.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—

Operating revenue for Jan., \$211,326.74; expenses, \$165,778.20; net revenue, \$45,548.54, against \$196,966.91 operating revenue; \$162,358.35 expenses, \$34,608.56 net revenue for Jan., 1909. Aggregate operating revenue for seven months ended Jan. 31, \$1,931,069.45; expenses, \$1,314,960.87; net revenue, \$616,108.58, against \$1,580,825.03 aggregate operating revenue; \$1,149,620.09 expenses; \$431,204.94 net revenue for same period 1908-09. Approximate earnings for Feb., \$219,473, and for two weeks ended March 14, \$119,346 against \$193,014 and \$93,051 for same periods 1909.

MINERAL RANGE RD.—

Operating revenue for Jan., \$69,176.20; expenses, \$61,767.71; net revenue, \$7,408.49, against \$62,666.03 operating revenue; \$58,785.17 expenses; \$3,880.86 net revenue for Jan., 1909. Aggregate operating revenue for seven months ended Jan. 31, \$508,462.22; expenses, \$428,419.96; net revenue, \$80,042.26, against \$490,512.66 aggregate operating revenue; \$398,692.08 expenses; \$91,820.58 net revenue for same period 1908-09. Approximate earnings for Feb., \$64,148, and for two weeks ended March 14, \$31,346 against \$59,621 and \$29,673 for same periods 1909.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—

Operating revenue for Jan., \$1,213,323.38; expenses and taxes, \$694,082.28; operating income, \$519,241.10, against \$762,640.67 operating revenue, \$596,475.43 expenses and taxes; \$166,165.24 operating revenue for Jan., 1909. Total operating revenue for seven months ended Jan. 31, \$9,805,527.02; expenses and taxes, \$5,254,995.49; operating income, \$4,550,531.53, against \$7,801,440.83 total operating revenue; \$4,733,239.16 expenses and taxes; \$3,068,201.67 operating income for same period 1908-09. Approximate earnings for Feb., \$1,479,199, and for two weeks ended March 14, \$804,577, against \$1,302,252 and \$700,015 for same periods 1909.

CHICAGO DIVISION.—

Operating revenue for Jan., \$723,049.14; expenses and taxes, \$533,270.07; operating income, \$189,79.07, against \$555,631.79 operating revenue; \$462,320.16 expenses and taxes; \$93,311.63 operating income for Jan., 1909. Total operating revenue for seven months ended Jan. 31, \$5,000,509.28; expenses and taxes, \$3,527,314.50; operating income, \$1,473,194.78, against \$4,466,965.72 total operating revenue; \$3,162,692.31 expenses and taxes; \$1,304,273.41 operating income for same period 1908-09.

Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings of the G.T.R., C.A.R., G.T. Western Ry., and D.G.H. and M. Ry., separately, for Jan., as compared with Jan, 1909:—

	GRAND TRUNK RAILWAY.		CANADA ATLANTIC RAILWAY.	
	1910.	1909.	1910.	1909.
Earnings	\$2,385,700	\$1,990,200	\$142,900	\$113,000
Expenses	2,063,000	1,745,900	129,900	123,400
	\$322,700	\$244,300		
Earnings	\$142,900	\$113,000		
Expenses	129,900	123,400		
	\$13,000	*\$10,400		

GRAND TRUNK WESTERN RAILWAY.

	1910.	1909.
Earnings	\$465,500	\$416,400
Expenses	381,200	334,200

	1910.	1909.
Earnings	\$158,700	\$120,800
Expenses	134,600	101,700

\$24,100 \$19,100

*Deficit.

TRAFFIC RECEIPTS FOR THE SYSTEM.

	Aggregate from Jan. 1 to Feb. 28:—		Inc.
	1910	1909	
Grand Trunk	£952,123	£812,691	£139,432
Canada Atlantic	53,253	45,150	8,103
G.T. Western	190,437	157,873	32,564
D.G.H. & M.	61,458	46,591	14,867

Totals £1,257,271 £1,062,305 £194,966

Approximate gross earnings for Feb., \$2,965,729, and for the two weeks ended Mar. 14, \$1,601,797, against \$2,529,471 and \$1,334,192 for same periods 1909.

Great Northern Ry. Lines in Canada.

Winnipeg Entrance.—L. C. Gilman, Assistant to the President G.N.R., and T. Cooper, Assistant to the President Northern Pacific Rd., attended a joint meeting of the Board of Works and the Railway Committee of the Winnipeg City Council, Mar. 8, to discuss the plan, prepared by the companies, for the entry into the city. The plans produced showed a line coming into the city from the west and passing from McPhillips St., on a line between Ross and Pacific Avenues, west of Paulin St., together with numerous shunting tracks and a freight station. The plans include the closing of Ellen St. for the width of the yards and also the closing of Leonard St. It is proposed to make a subway at Nena, between Ross and Pacific, by lowering the street 5 ft. and raising the track 10 ft. Objections were made by citizens on the ground that the company's charter contemplated an entrance from the south-east, and not from the west, and it was urged that the proper route should have been between Henry and Higgins Sts., where the streets had blind ends. The meeting was adjourned to enable the companies' representatives to submit their proposals in writing.

As a result of the adjourned meeting of the committee held Mar. 18, it was unanimously decided not to accede to the request to construct freight and shunting yards in the block bounded by Ross and Pacific Avenues and Isabel and Nena Streets. The plan as outlined by L. C. Gilman provides for a subway at Nena Street sunk 6 ft. below the level of the street and an elevation of 10 ft. above the street level for the tracks, these tracks to stop at Isabel St. From Isabel to Paulin Street a spur track would be constructed. Shunting along this track would only be done at night over a level crossing at Isabel Street, where gates would probably be placed. The application to the committee was made in the name of the Midland Ry. of Manitoba.

Brandon, Saskatchewan and Hudson Bay Ry.—The Dominion Parliament is being asked to extend the time within which the company may construct its authorized lines.

Penticton Ry.—Application is being made to the British Columbia Legislature to incorporate a company with this title to construct a railway from Penticton, to the lower end of Okanagan Lake, and southerly from that lake to the International boundary, where connection will be made with a spur northerly from Oroville, Wash. The provisional directors are:—A. H. MacNeill, solicitor for the Great Northern Ry., Vancouver, B.C., and J. H. Kennedy, Chief Engineer, Vancouver, Victoria and Eastern Ry., Grand Forks, B.C. Oroville is a station at the International boundary between B.C. and Washington, on the V.V. and E. Ry.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—The House of Commons has granted the company an extension of time within which it may construct its authorized lines. A proviso is added that if the extensions west of Princeton, are not constructed wholly within British Columbia, the powers of construction conferred upon the company shall be wholly void.

Business Opportunities in the West.

F. W. Peters, Assistant to the Second Vice President C.P.R., has charge of the work of the Industrial Department, which is engaged in the locating of settlers, the development of enterprises and manufacturing at all points along the Western lines. He has compiled a 93 page publication, in which is given descriptive particulars of 424 towns on the company's lines from Port Arthur, to the West Coast of Vancouver Island, whither a line is now under construction. The greater part of the statistical information given is brought down to Dec. 31, 1909, and where these figures were not available the figures are to Dec. 31, 1908. The important point about the information is that indications are given of the openings which exist for the investment of capital in starting flour mills, and many other industries, or for lawyers, doctors, dentists, storekeepers, blacksmiths, carpenters, etc. An index is given to the stations, and another to the "industrial requirements." In this latter is shown under the provincial headings a list of the "wants" of the different places classified under the various trades, occupations, etc. Great care has been taken in collecting the information, but, as Mr. Peters says, the conditions change so rapidly in the West, that many of the openings noted may be gone when an enquiry is made. Hence he recommends enquirers to keep in touch with the Department so that they may have accurate and up-to-date information. It is proposed to reissue the publication at the end of the year, revised and brought up-to-date.

News for G. T. R. Officials.

Our esteemed contemporary, Canada, "an illustrated weekly journal for all interested in the Dominion," published in London, Eng., had the following in a recent issue:—

"CHANGES IN GRAND TRUNK RAILWAY STAFF. "Mr. H. E. Byram has been appointed Assistant to the first vice-president of the Grand Trunk Railway, and will have jurisdiction over the operating departments. Mr. C. G. Burnham will continue to act as assistant to the first vice-president, and will have jurisdiction over the traffic departments. Mr. D. Miller, first vice-president, will, in addition to his present duties, assume charge of the operating departments. These changes have been brought about as a result of the appointment of Mr. D. Willard as president of the B. & O. R.R."

Comment is unnecessary, further than to remark that none of the persons mentioned are or have ever been in the G.T.R. service.

A Railway to Hudson Bay.

J. Armstrong, Chief Engineer of the Dominion surveys for the projected railway to Hudson Bay, returned to Winnipeg, Mar. 20, from Pas Mission, Sask., where he had a consultation with W. J. Clifford, who had been in charge of the surveys carried on during the winter. Mr. Armstrong states that the result of the winter's work shows that there will be no heavy construction upon the first portion of the projected line. The location work will be continued by Mr. Clifford during the summer, and in June, another party will be sent north for the purpose of making surveys along the Nelson River. (Mar., pg. 179).

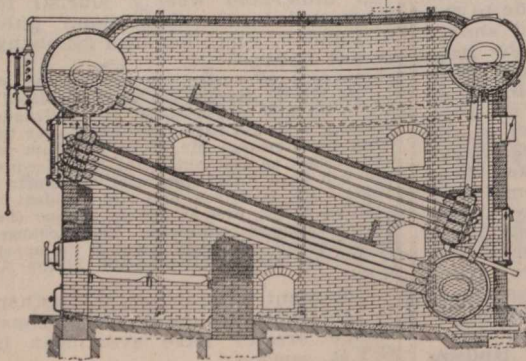
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Orders by the Railway Commissioners.

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.

9595 to 9598, Feb. 16.—Authorizing Nipissing Power Co. to place wires across Bell Telephone Co.'s wires at four points in Ontario.

9599 to 9609, Feb. 17.—Authorizing Seymour Power and Electric Co., to place wires across North American Telegraph Co.'s wires, at 11 points.

9610, Feb. 17.—Authorizing C.P.R. and Ottawa and New York Ry. to operate trains over crossing at Finch, Ont., without stopping.

9611, Feb. 17.—Authorizing C.N.O.R. to divert Kingston and side roads in Hamilton tp., and to cross same overhead.

9612, Feb. 17.—Amending order 8575, Oct. 27, 1909, which authorizes V.V. & E.R. to connect with B.C. Electric Ry. over Front and Columbia Sts., Vancouver, B.C., by striking out "B.C. Electric Ry. Co.," and substituting "Vancouver & Lulu Island Ry. Co."

9613, Feb. 7.—Adding Montreal Park & Island Ry., Town of St. Pierre, Lachine parish, and Turnpike Trust as parties to question of protection to be provided at G.T.R. crossing, Lachine Road, Rockfield, Que.

9614, Feb. 17.—Authorizing G.T.R. to build sidings to Northumberland Paper and Electric Co. and Northumberland Pulp Co.'s premises, Campbellford, Ont.

9615, Feb. 7.—Dismissing application of W. Duquette, Mile End, Que., alleging C.P.R. failure to remove snow from private sidings.

9616, Feb. 7.—Ordering that G.T.R. crossing at Eighteenth St., Lachine, Que., be protected by signal bell, 20% to be paid out of the Railway Grade Crossing Fund, and balance by the company.

9617, Feb. 7.—Refusing T. Laferriere's application for order directing C.P.R. to construct suitable farm crossing in St. Cuthbert parish, Que.

9618, Feb. 7.—On application of town of Maisonneuve, Que., prohibiting all unreasonable and unnecessary whistling by those in charge of any locomotive operating within the town, and providing that any person offending shall be liable to a penalty of \$50.

9619, Feb. 7.—Authorizing Saraguay Electric and Water Co. to place cable under Montreal Terminal Co. at Rue St. Pierre, Tetreaultville, Que.

9620, Feb. 7.—Adding Montreal Terminal Ry. as a party to application of residents of Pointe Aux Trembles, Que., for order directing C.N.Q.R. to stop its trains at Pointe Aux Trembles for accommodation of public.

9621, Feb. 7.—Ordering C.N.Q.R. to raise tracks between First and Bennett Aves., Maisonneuve, to grade by June 1.

9622, Feb. 7.—Dismissing complaint of L. Lamontagne, of St. Malachie, Que., that National Transcontinental Ry. has taken 100 ft. of his land, and in order to cross same has made a cut at right angles instead of putting in a bridge, thereby allowing snow to accumulate causing damage to his land.

9623, Feb. 7.—Dismissing complaint of W. Ryan, Montreal, as to Bell Telephone rates for house telephone.

9624, Feb. 18.—Authorizing C.P.R. to use bridge 51.3 on its Montreal and Ottawa section.

9625, Feb. 18.—Authorizing C.N.O.R. to build across road between lots 30 and 31, con. 1, Hamilton tp.

9626, Feb. 17.—Extending until Apr. 1 time within which semaphores required under order 8850, Dec. 2, 1909, shall be installed, at G.T.R. and Galt, Preston & Hespeler St. Ry. crossings, Hespeler, Ont.

9627 to 9629, Feb. 18.—Authorizing Ontario Hydro-Electric Power Commission to place wires across C.P.R. at three points.

9630 to 9632, Feb. 18.—Authorizing Sidney Bell Telephone Association to place wires across G.T.R. at three points in Quebec province.

9633, Feb. 18.—Authorizing Walkerville Light and Power Co. to place wires across Pere Marquette Rd., at Walkerville, Ont.

9634, Feb. 18.—Authorizing town of Penetanguishene, Ont., to lay pipe under G.T.R. at Queen and Main Sts.

9635, Feb. 17.—Authorizing C.N.O.R. to place C.N.O.R. and C.P.R. joint tracks under Bell Telephone Co.'s wires at mileage 0.5, from junction with main line, Parry Sound, Ont.

9637, Feb. 19.—Authorizing Alberta Government to place wires across G.T.P.R. near Stony Plain.

9638 to 9643, Feb. 19.—Authorizing C.N.O.R. to build across six highways in Hope, Hamilton and Clarke tps.

9644, Feb. 1.—Declaring that T. J. O'Neill, Montreal, is entitled to be charged for Bell Telephone at private house, and not business rate.

9645, Feb. 17.—Authorizing C.N.O.R. to take lands in Scarborough tp. for diverting two highways.

9646, Feb. 17.—Authorizing G.T.R. to install full interlocking plant where it crosses N. St. C. & T. Ky., between Clifton Jct. and Stamford, Ont.

9647, Feb. 21.—Authorizing C.P.R. to construct its Wetaskiwin east branch across highways in Alberta.

9648, Feb. 17.—Extending until May 15, time within which C.P.R. may complete work required by order 9067, Dec. 28, 1909.

9649, Feb. 21.—Recommending to Governor in council for sanction C.P.R. lease of Orford Mountain Ry. for 999 years.

9650, Feb. 7.—Ordering G.T.R. to install gates at King St. crossing, Sherbrooke, Que., and to reduce shunting across the street to a minimum.

9651, Feb. 16.—Approving Atlantic, Quebec and Western Ry. Standard Freight Mileage Tariff C.R.C. 1, and Standard Passenger Tariff 1, subject to certain conditions.

9652, Feb. 21.—Authorizing C.N.O.R. to build across public road between lots 2 and 3, con. 4, Clarke tp., Ont.

9653, 9654, Feb. 21.—Temporarily approving, pending final determination by Board, Bell Telephone Co.'s tariffs of tolls; as per agreements entered into by it with Laird tp., Dec. 13, and Mount Albert Telephone Co., Dec. 2, 1909, for interchange of messages.

9655, Feb. 21.—Authorizing Hamilton Cataract Power, Light and Traction Co. to place wires across T. H. & B. R. at lot 2, con. 4, Barton tp., Ont.

9656, 9657, Feb. 21.—Authorizing Ontario Hydro-Electric Power Commission to place wires across T. H. and B. R. in Gainsboro and Ancaster tps.

9658, Feb. 21.—Authorizing Oak Bank Telephone Co. to place wires across C.P.R. between sec. 21 and 28, tp. 11, r. 5, e., Man.

9659, 9660, Feb. 22.—Authorizing Bell Telephone Co. to place wires across P.M. Rd. at Kingsville, Ont., and across St. Lawrence & Adirondack Ry. at Woodlands, Que.

9661 to 9673, Feb. 21, 22.—Authorizing C.N.O.R. to build across 13 highways in Clarke, Scarborough, Hope and Pickering tps.

9674, Feb. 21.—Authorizing G.T.R. to construct a branch between its main line east of Port Hope viaduct and its Northern Division at Port Hope, Ont., and directing that Jacob's Ladder, so-called, be placed underneath the tracks, to be at least 6 ft. wide and 7 ft. high; to be operated by and at the expense of the town.

9675, Feb. 21.—Ordering that, in connection with the protection of G.T.R. crossing at John St., Port Hope, Ont., the company have the option of installing an electric bell or limiting the speed of its trains to 10 miles an hour.

9676, Feb. 22.—Approving C.N.O.R. plan showing bridge over Goforth's Creek, on its Toronto-Ottawa Division.

9677 to 9679, Feb. 22.—Authorizing Manitoba Government Telephones to place wires over C.N.R. and C.P.R. at three points.

9680 to 9682, Feb. 22.—Authorizing W. Y. Cannon to erect telephone wires across Kingston & Pembroke Ry. at Clarendon, Oso and Sharbot Lake Jct., Ont.

9683, 9684, Feb. 22.—Authorizing Bell Telephone Co. to place wires across G.T.R. at two points in Richmond, Que.

9685, Feb. 22.—Authorizing People's Telephone Co. to place wires across G.T.R. in Plympton tp., Ont.

9686, Feb. 22.—Authorizing C.N.O.R. to build across road, at lot 21, con. 3, Darlington tp.

9687, Feb. 22.—Authorizing C.N.O.R. to build bridge over Gages Creek, Hamilton tp.

9688, Feb. 24.—Authorizing C.N.O.R. to build across public road between lots 5 and 6, con. 3, and lot 4, con. 3, East Whitby tp.

9689, Feb. 24.—Rescinding order 9591, Feb. 17, authorizing C.N.O.R. to build across public road between cons. 1 and A, Hamilton tp.

9690, Feb. 21.—Ordering G.T.R., pending hearing, to provide watchman at crossings just east of its station in Beachville, Ont., the watchman to be on duty between 7 a.m. and 8 p.m. daily.

9691, Feb. 23.—Amending order 9613, Feb. 7, re G.T.R. crossing at Lachine Road, Rockfield, Que.

9692, Feb. 23.—Authorizing C.P.R. to build spur for Hamilton Powder Co. near Barnett station, New Westminster District, B.C.

9693, 9694, Feb. 23.—Authorizing C.N.O.R. to place its tracks and telegraph wires under G.N.W. Telegraph Co.'s wires at stations 2991-67 and 2990-17, west from Hawkesbury.

9695, Feb. 23.—Authorizing Bell Telephone Co. to place wires across G.T.R. telegraph wires at Main St., Richmond, Que.

9696, Feb. 23.—Authorizing Pipestone rural municipality to place wires across C.P.K. near Reston Station, Man.

9697, Feb. 23.—Authorizing Lincoln Electric Light and Power Co. to place wires across G.T.R. at Niagara St., St. Catharines, Ont.

9698, Feb. 23.—Authorizing Seymour Power and Electric Co. to place wires across G.T.R. at Madoc, Ont.

9699, Feb. 23.—Authorizing Consumers' Gas Co. to lay main under G.T.R. at Woodbine Ave., Toronto.

9700, Feb. 23.—Approving C.N.R. location through tps. 53-52 and r. 15, w. 5 m., and unsurveyed tps. 51-45, r. 15-18, w. 5 m., mileage 0 to 60.45, from junction with main line at mileage 124.48, Alta.

9701, Feb. 24.—Authorizing Canada Atlantic Ry. to build bridge over St. Lawrence river at Coteau, Que.

9702, Feb. 22.—Approving G.N.R. rules governing the operation of trains in Canada.

9703, Feb. 23.—Authorizing King Independent Telephone Co. to place wires across G.T.R. near King station, Ont.

9704, Feb. 24.—Authorizing C.N.O.R. to build across public road south of Hammer station, Capreol tp.

9705, Feb. 25.—Authorizing Alke Telephone Lines to place wires across G.T.R. in Phelps-ton village, Ont.

9706, Feb. 25.—Approving G.T.P.R. location, Prince Rupert, B.C., easterly, mileage 359 to 408.69.

9707, Feb. 24.—Authorizing C.N.O.R. to build across public road between lot 11, con. 2, and lot 11, con. 1, Capreol tp.

9708, Feb. 24.—Authorizing C.P.R. to build spur connection with Winnipeg Electric Ry.'s gas works spur, running northeasterly and crossing Sutherland ave., Winnipeg.

9709, 9710, Feb. 25.—Authorizing C.N.O.R. to build across public roads in Capreol and Sutton tps.

9711, Feb. 25.—Approving C.N.R. location through tps. 38 to 29, r. 19 to 21, w. 4 m., mileage 104.73 to 171.66, Alta.

9712, Feb. 25.—Interpreting order 9226, Jan. 8, in connection with Western Associated Press application, respecting telegraphic tolls. This order is given in full on another page.

9713 to 9715, Feb. 26.—Authorizing Pipestone municipality to place wires across C.N.R. at three points, in Manitoba.

9716 to 9718, Feb. 26.—Authorizing Sutton village, Que., to place wires across C.P.R. at three points.

9719, Feb. 22.—Ordering G.T.R. to keep view at first public crossing west of Longwood station, Ont., free from obstruction, and authorizing it, subject to this condition, to operate trains over the crossing without speed limitation.

9720, Feb. 24.—Authorizing V. & E. Ry. and Nav. Co. to construct spurs across B.C. Electric Ry. and certain streets and lanes in Vancouver, B.C.

9721, Feb. 25.—Approving plans of drain to be constructed by Raleigh tp. under G.T.R.

9722, Feb. 25.—Authorizing C.P.R. to build spur for Standard White Lime Co., Beachville, Ont.

9723, Feb. 26.—Approving C.N.R. location through tps. 45 to 39, r. 18 to 20 w. 4th m., mileage 56.17 to 104.17, Alta.

9724, Feb. 26.—Approving C.N.O.R. location through unsurveyed territory in Sudbury Mining Division, mileage 120 to 140 from Sudbury Jct.

9725, Feb. 24.—Ordering that, until further ordered, G.T.R. crossings at Trafalgar road and Hale st., in London tp., just east of London, Ont., be protected by electric bell to be installed within three months.

9726, Feb. 25.—Authorizing city of Brantford, Ont., to construct bridge on South Market st. over Western Counties Electric Co.'s canal and Toronto, Niagara & Western, Grand Trunk Rys., and Brantford & Hamilton Electric Ry.

9727, Feb. 28.—Approving G.T.P.R. location, Yorkton-Canora branch, from mileage 25 to 54.70, Sask.

9728, Feb. 28.—Approving Supplement 3 to C.N.R. Standard Freight Tariff C.R.C. 38, giving maximum freight tolls on Pas Mission branch between Hudson Bay Jct., Sask., and Pas Mission, Keewatin; also between stations on said branch and stations on C.N.R. lines west of and including Port Arthur, Ont., and on Qu'Appelle, Long Lake & Saskatchewan Rd. and Steamboat Co.'s lines.

9729, Feb. 28.—Approving C.P.R. standard plans for highway and farm crossings.

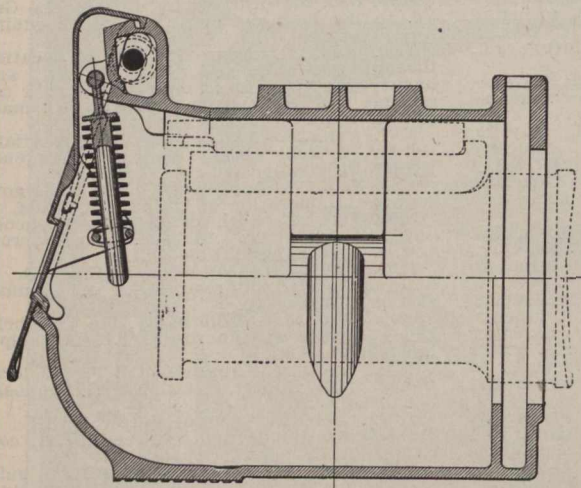
9730, Feb. 28.—Authorizing C.N.R. to open for traffic its line from Etoimami, Sask., to Pas Mission, Keewatin, and ordering it to provide a mixed train service once a week each way; speed not to exceed 18 miles an hour.

9731, Feb. 22.—Authorizing C.N.R. to open for traffic its line from Dalmeny to Laird, Sask.

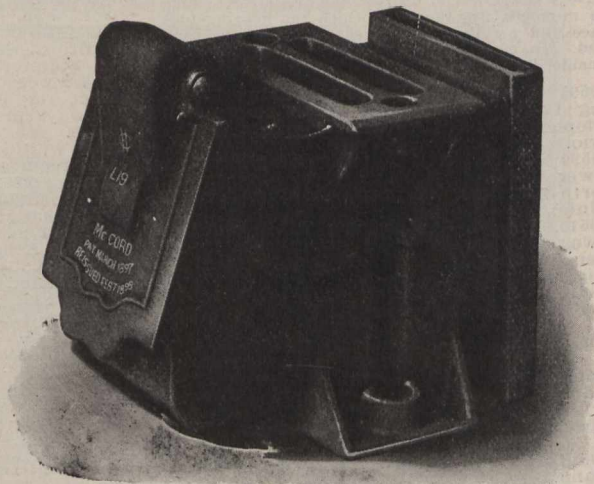
9732, 9733, Feb. 25.—Ordering that M.C.R. crossings immediately west of Woodslee station and immediately west of Wyndham station, Ont., be protected by standard electric bells.

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9734. Feb. 28.—Approving Canada Atlantic Ry. plans of proposed station at Henrysburg, Que.

9735, 9736. Feb. 28.—Authorizing C.P.R. to build sidings into Canada Furniture Company's premises, Woodstock, Ont., and Colonial Wood Products Co.'s premises, Thorold, Ont.

9737. Feb. 28.—Authorizing Bell Telephone Co. to place wires across G.T.R. near Richmond, Que.

9738. Feb. 28.—Authorizing Manitoba Government Telephones to place wires across C.P.R. near Bradwardine.

9739. Feb. 28.—Authorizing Bell Telephone Co. to place wires across G.T.R. at Laprairie, Que.

9740. Feb. 28.—Authorizing Montreal & Southern Counties Ry. to place wires across G.T.R. on Common st. and at Three Diamond crossing, near Riverside st., Montreal.

9741. Feb. 28.—Authorizing city of Montreal to lay sewers under C.P.R. at Papineau ave.

9742. Mar. 2.—Authorizing G.T.R. to build spurs to Doolittle and Wilcox's premises, Dundas, Ont.

9743 to 9750. Mar. 1.—Ordering that G.T.R. be relieved, for the present, from providing further protection at crossing at first highway west of Kingscourt Jct., Ont.; and M.C. Rd. from providing further protection at crossings, one mile east of Taylor second crossing east of Attercliffe; first highway west of Buxton; second highway east of West Lorne; highway east of Charing Cross; four miles west of Ridgetown and highway west of Dufferin, Ont., it appearing from inspections made by the Board's Engineer and Operating Department that views from both directions are excellent, and crossing boards and whistling posts provided.

9751. Feb. 28.—Authorizing C.P.R. to carry party of McGill University mining students at special rate of \$40 each from Montreal to Rossland, Phenix and Greenwood, B.C., and return, or of \$50 each from Montreal to Vancouver, B.C., and return, including side trips to Rossland, Phenix, and Greenwood, B.C.

9752. Feb. 21.—Approving C.N.Q.R. plan of revised crossing of St. Michel road, mileage 5.05, and rescinding order 8746, Nov. 19, 1909, in so far as it approves of crossing as shown on plan on file with the Board.

9753. Feb. 21.—Ordering M.C.R. to construct track for interchange of traffic with P.M.R. at Leamington, Ont.; the Leamington Canning Co. to furnish necessary land; plans to be approved by the Board's Engineer.

9754. Mar. 2.—Authorizing C.N.O.R. to build across public road between Ontario and Durham counties at station 1862-87.

9755. Feb. 26.—Ordering that M.C.R. crossing just west of Comber station, Ont., be protected by gates to be installed not later than May 1, and operated daily between 7 a.m. and 7 p.m.

9756, 9757. Mar. 2.—Authorizing Argyle municipality to place wires across C.N.R. at two points near Neelin station, Man.

9758. Feb. 26.—Authorizing Ontario Hydro-Electric Power Commission to place wires across Lake Erie and Detroit River Ry. in Yarmouth tp.

9759. Feb. 17.—Ordering that on and after Mar. 15 use by C.P.R. and G.T.R. of Lachine Canal Bank branch and sidings shall be subject to the terms of the agreement, and varied to provide that cost of operation be divided equally, and cost of maintenance be divided on a mileage basis.

9760. Feb. 23. Amending order 3245 in so far as it applies to operation by Boston and Maine Rd. in Canada, so as to permit the use upon engines with extension smoke boxes of perforated spark plates made from steel plate, No. 8 gauge, with staggered perforations 3-16" x 1 1/2"; width of bridges between sides of perforations 1/2", and between ends of perforations 3-16", in place of No. 10 B.W.G. netting mesh.

9761. Mar. 1.—Dismissing National Transcontinental Ry. applications under secs. 227 and 256, for leave to cross overhead the C.N.R. terminal tracks and spurs in Winnipeg.

9762, 9763. Mar. 2.—Authorizing Seymour Power & Electric Co. to place wires across North American Telegraph Co.'s wires at Campbellford, and across Bay of Quinte Ry. at Stoco, Ont.

9764 to 9773. Mar. 2.—Authorizing Manitoba Government Telephones to place wires across C.N.R. at 10 points.

9774. Mar. 4.—Authorizing G.T.R. to build cross-over track on Ferguson ave., Hamilton, Ont.

9775. Mar. 3.—Authorizing C.P.R. to build two spurs for the Alberta Clay Products Co., Medicine Hat, Alta.

9776. Mar. 4.—Amending order 9047, Dec. 24, 1909, by substituting Twenty-fourth st. for Twenty-third st.

9777. Mar. 3.—Ordering that all telegraph companies doing business in Canada file with the Board, on or before April 1, copies of all forms used in transmitting and receiving messages.

9778. Mar. 1.—Ordering C.P.R. to carry out certain improvements along its right of way in Medonte tp., Ont., and that it install an electric bell at crossing at mileage 162.95, by May 1.

9779. Mar. 3.—Ordering that M.C.R. crossing just west of Ruscombe station, Ont., be protected by standard automatic electric bell.

9780. Mar. 3.—Dismissing application of St. Jacques des Piles parish, Que., for an order directing C.P.R. to construct a crossing where it intersects street I.

9781. Mar. 3.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. and C.P.R. to operate trains over crossing on line from Sapperton to Fraser River Lumber Co.'s mills, New Westminster, B.C., without first being brought to a stop.

9782. Feb. 21.—Ordering Bell Telephone Co. to provide connection with West Williams Telephone Co., Parkhill, Ont., upon terms to be agreed upon.

9783. Mar. 5.—Approving Esquimalt & Nanaimo Ry. location from mileage 0 at Parksville on its Wellington-Alberni branch to mileage 34.79, at Union Bay, Vancouver Island, B.C.

9784. Mar. 5.—Authorizing C.N.O.R. to divert road between lots 20 and 21, con. 4, Whitby tp.

9785 to 9789. Mar. 4.—Authorizing Bell Telephone Co. to place wires across G.T.R. at five points in Ontario.

9790. Mar. 7.—Authorizing Essex Terminal Ry. to build second track and a spur across MacDougall st., Sandwich West tp., Ont.

9791. Mar. 4.—Authorizing C.P.R. to build across highways in Etobicoke tp., Ont.

9792. Mar. 7.—Authorizing C.P.R. to operate 24 bridges on its Mountain, Edmonton, Shuswap, Medicine Hat and Laggan sections.

9793. Mar. 4.—Authorizing C.P.R. to build extension to spur to Brandon Brewing Co.'s premises, Brandon, Man.

9794. Mar. 3.—Ordering M.C.R. to install standard automatic electric bell between Medora and Thomas st. crossings, west of Essex station, Ont.

9795. Mar. 7.—Authorizing C.P.R. to use subways at First st. west and Second st. east, Calgary, Alta.

9796. Mar. 7.—Authorizing C.P.R. to use bridge over ferry slip, Vancouver, B.C.

9797. Mar. 7.—Authorizing C.P.R. to use bridges 8.2 and 38.3, on its Macleod section, Alta.

9798. Mar. 7.—Authorizing C.P.R. to use four bridges on its Swift Current section, Sask.

9799. Mar. 8.—Authorizing G.T.R. to build passing track across road between lots 5 and 6, in concession fronting on Great Catarqui River, Kingston tp., Ont.

9800. Mar. 8.—Authorizing Goderich Elevator and Transit Co. to build bridge for pedestrians across G.T.R. to C.P.R. at Goderich, Ont.

9801. Mar. 8.—Ordering V. V. & E. Ry. & Nav. Co. to grade and put in good order before July 1, within its right of way limits, approaches to undergrade crossing on Anderson's farm, New Westminster District, B.C.

9802. Mar. 1.—Ordering G.T.R. to protect crossings at Main st., Ottawa East, by gates to be installed not later than June 1, and to be operated by day and night watchmen.

9803. Mar. 7.—Authorizing Essex Terminal Ry. to build second track across Dougall road, Sandwich West Tp., Ont.

9804. Mar. 7.—Authorizing C.P.R. to use bridge at mileage 31.2, on its Cascade section, B.C.

9805. Mar. 1.—Ordering G.T.R. to install electric bell at Main st. crossing, Carp village, Ont.

9806. Mar. 8.—Rescinding order 9157, Jan. 5, authorizing C.N.O.R. to cross and divert G.T.R. near Brighton, Ont.

9807. Mar. 8.—Amending order 9736, Feb. 28, authorizing building of a branch line in Thorold, Ont.

9808. Mar. 8.—Authorizing Seymour Power & Electric Co. to place wires across C.P.R. at Sulphide, Ont.

9809. Mar. 1.—Ordering that bridge-tender at present employed day and night by G.T.R. at Echo Drive, Ottawa East, shall act as flagman there.

9810. Mar. 8.—Ordering that New York Central Rd. crossing near Beauharnois, Que., be protected by electric bell to be installed and maintained by the company.

9811, 9812. Mar. 8.—Approving G.T.R. plans and specifications of bridges over Moisson and Duck Creeks, Rochester tp., Ont.

9813. Mar. 9.—Ordering that rate to be charged by express companies for carriage of daily newspapers from Winnipeg, shall be the same as charged by the Dominion Express Co. in Eastern Canada, namely, 1/4c. per lb. on aggregate weight per month, to points reached by the companies within 300 miles of Winnipeg, exclusive of wagon service.

9814, 9815. Mar. 9.—Authorizing Manitoba Government Telephones to place wires across Brandon, Saskatchewan & Hudson Bay Ry. at two points.

9816, 9817. Mar. 9.—Authorizing Farmers' Rural Telephone Co. to place wires across C.P.R. at two points, in B.C.

9818 to 9828. Mar. 9.—Authorizing Hamilton Cataract Power, Light and Traction Co. to place wires across Bell Telephone Co.'s wires at 10 points, and across Hamilton, Grimsby and Beamsville Electric Ry. at one point in Ontario.

9829. Mar. 9.—Ordering that C.P.R. crossing at Merry st., Magog, Que., be protected by an automatic electric bell; the town to do certain filling and fencing at bridge approach.

9830. Feb. 7.—Authorizing Dominion Light, Heat and Power Co. to place wires under Montreal Terminal Ry. at Aird st., Maisonneuve, Que.

9831 to 9838. Mar. 7.—Ordering that G.T.R. be relieved from providing further protection at crossings, south of Milton station; north of Maple; first highway east of York station; between cons. 4 and 5, Tecumseh tp.; south of Beeton station; first highway south of Bradford, and first highway west of Manilla Jct., Ont.; and that M.C.R. be relieved from further protection of crossing at second highway west of Milton, Ont.; it appearing from inspections made by the Board's Engineer and Operating Department that the views are clear and necessary signboards and whistling posts provided.

9839 to 9847. Mar. 10.—Authorizing Esquimalt and Nanaimo Ry. to build across nine highways on its Comox extension, from mileage 0 at Parksville to mileage 34.79 at Union Bay, B.C.

9848 to 9851. Mar. 9.—Authorizing city of Cranbrook, B.C., to lay water mains under C.P.R.

9852. Mar. 10.—Authorizing Esquimalt and Nanaimo Ry. to build Wellington to Alberni extension across Jones' cross-road at mileage 100.4.

9853 to 9857. Mar. 11.—Ordering that G.T.R. be relieved from providing further protection at crossings one mile south of Craigleith; one mile south of Caldwell; immediately west of Grass Hill station, and just east of Tanner's station; and that C.P.R. be similarly relieved respecting crossing on Guelph and Goderich branch at mileage 82.6, Hullett tp., Ont., it appearing from inspections by the Board's Engineer and Operating Department that the views are clear and proper signboards and whistling posts provided.

9858. March 11.—Authorizing E. & N. Ry. to build Wellington to Alberni extension across Alberni main road, at mileage 104.8.

9859. Mar. 9.—Authorizing G.T.R. to construct spur to Terminal Warehouse & Cartage Co.'s premises, Montreal.

9860. Mar. 11.—Authorizing E. & N.R. to build Wellington to Alberni extension across Hellier's crossroad at mileage 102.9.

9861, 9862. Mar. 11.—Ordering that G.T.R. be relieved from providing further protection at crossing three miles east of Shakespear, and that C.P.R. be similarly relieved respecting crossing between cons. 2 and 3, Sandwich East tp., Ont., it appearing from inspections by the Board's Engineer and Operating Department that the views are clear and proper signboards and whistling posts provided.

9863 to 9865. Mar. 11.—Authorizing E. & N. Ry. to build across highway at mileage 2.52 of its Comox extension from mileage 0 at Parksville; and across Alberni main road at mileages 104.1, and 104.7.

9866, 9867. Mar. 11.—Adding the town of Lindsay and Ops tp. as parties to application in connection with question of protection to be provided by G.T.R. at O'Halloran's crossing on concession road between cons. 4 and 5 Ops tp., Ont.

9868, 9869. Mar. 10.—Ordering that C.P.R. be relieved from providing further protection at crossings at Boulding's crossing between lots 9 and 10, Luther tp., and over concession road, between cons. 2 and 3, Caledon tp., Ont., it appearing from inspections by the Board's Engineer and Operating Department, that the views are clear and that proper signboards and whistling posts are provided.

9870. Mar. 9.—Approving C.P.R. plans of shelters to be erected at flag stations.

9871. Mar. 11.—Ordering G.T.P.R. to carry highway over its railway about 2 miles west of Ardrossan Sta., Alta., and that it file plans of overcrossing within 30 days from date.

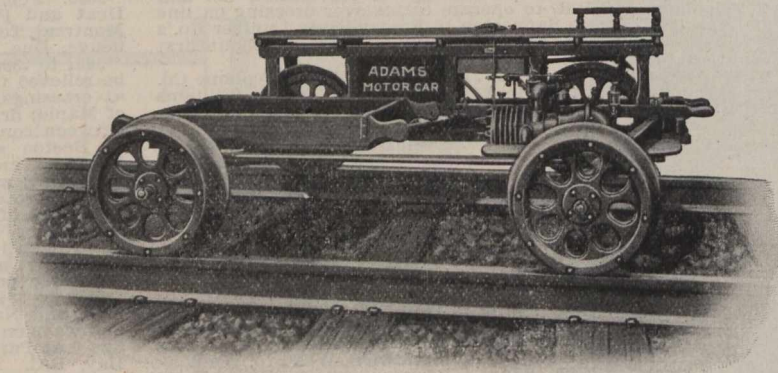
9872. Mar. 14.—Approving drainage work of Tilbury East tp., Ont., crossing C.P.R. on lot 15, con. 3.

9873. Mar. 14.—Ordering that G.T.R. be relieved from providing further protection at crossing one mile north of Mount Forest, Ont., it appearing from inspection by Board's Engineer and Operating Department that the views are clear and that proper signboards and whistling posts are provided.

9874. Mar. 14.—Approving proposed deviation of Central Ontario Ry., Whitney extension, between stations 1382 and 1461.

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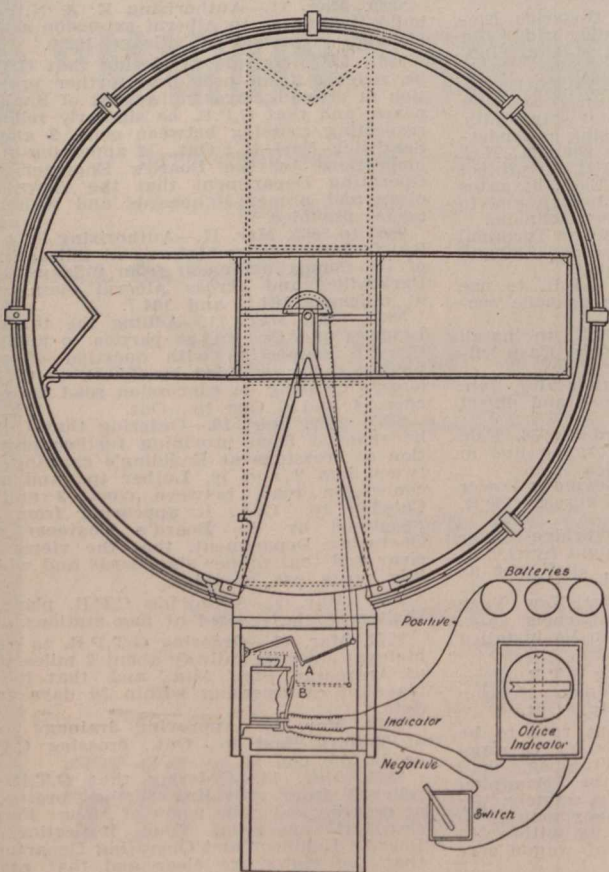
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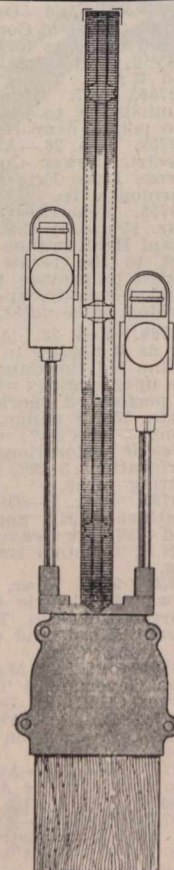
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9875. Mar. 14.—Ordering G.N.R. to erect fences for 1½ miles north, and two miles south of station in Fruitvale townsite, B.C., work to be completed by May 15.

9876. Mar. 14.—Authorizing C.P.R. to use bridge 63.08 on its Broadview section, Central Division.

9877. Mar. 14.—Approving plans of C.P.R. and G.T.R. interchange switch at Brampton, Ont.

9878. Mar. 14.—Authorizing C.P.R. to use bridges 3.8 and 127.4 on its Moose Jaw section, Western Division.

9879. Mar. 11.—Authorizing town of Berlin, Ont., to lay water main under G.T.R. at Albert St.

9880. Mar. 15.—Authorizing C.P.R. to construct spur to Western Tent and Mattress Co.'s premises at Calgary Jct., Alta.

9881. Mar. 14.—Authorizing C.N.O.R. to build across concession road between cons. 1 and 2, Hope tp.

9882. Mar. 16.—Authorizing C.P.R. to open for traffic portion of its second track between Dalhousie Mills and Avonmore, Ont., mileage 48.6 to 48.8.

9883. Mar. 16.—Adding town of North Oxford as party in matter of protection to be provided by G.T.R. at highway crossing just east of Beachville station, Ont.

9884. Mar. 15.—Authorizing C.P.R. to construct spur to Fonseca Roofing Co.'s premises St. Boniface, Man.

9885. Mar. 15.—Authorizing C.P.R. to construct spur to Summit Lake Lumber Co.'s premises at mileage 12.26 east of Nakusp, B.C.

9886 to 9888. Mar. 15.—Ordering that C.P.R. be relieved from providing further protection at crossings, at Donlands station; at milepost 54.4, Toronto section, Ont., and at mileage 117, Shefford station, Que., it appearing from inspections by Board's Engineer and Operating Department that views are clear and that proper signboards and whistling posts are provided.

9889. Mar. 15.—Limiting advertisement of notice of C.N.R. application for approval of amalgamation agreement with Saskatchewan Midland Ry.

9890. Mar. 15.—Approving proposed changes of G.T.R. and C.P.R. interchange track at Jacques Cartier Jct., on certain condition as to interlocking, derails, semaphores, etc.

9891. Mar. 16.—Authorizing Hamilton Cataract Power, Light and Traction Co. to place wires across C.P.R. at lot 2, con. 4, Barton tp., Ont.

9892. Mar. 16.—Authorizing Bell Telephone Co. to place wires across C.P.R. at Queen St. near Chatham station, Ont.

9893. Mar. 17.—Authorizing C.N.O.R. to construct bridge over Stephens' Pond, Darlington tp.

9894. Mar. 16.—Approving G.T.P.R. Standard Freight Tariff C.R.C. 6, between stations in Manitoba, Saskatchewan and Alberta (east of Wolf Creek).

9895, 9896. Mar. 16.—Ordering that C.P.R. be relieved from providing further protection at crossings at mileage 94.85 and 12.2, Ontario Division, Havelock section, Ont., it appearing from inspection made by Board's Engineering and Operating Departments, that the views are excellent and crossing signboards and whistling posts properly placed.

9897. Mar. 17.—Authorizing Calgary Natural Gas Co., to lay pipe under C.P.R. at Ninth Ave., Calgary, Alta.

9898. Mar. 17.—Authorizing Ontario Hydro-Electric Power Commission to carry wires across G.T.R. at lot 20, con. 2, Brantford tp.

9899. Mar. 17.—Authorizing Bell Telephone Co. to carry wires across C.P.R. at Petite Cote Road, near Vaudreuil, Que.

9900. Mar. 17.—Authorizing C.P.R. to open for traffic its Langdon North branch, Alta., mileage 0 to 38.88 under certain conditions.

9901. Mar. 14.—Ordering that Etobicoke tp. be made a party in protection of C.P.R. crossing at Dundas St., at mileage 7.76, Etobicoke tp., Ont.

9902. Mar. 19.—Approving strain sheet of west end approach to C.N.Q.R. St. Maurice River bridge, near Grand Mere.

9903 to 9906. Mar. 18.—Ordering that G.T.R. be relieved from providing further protection at the crossings at first highway west of St. Hubert station, and first highway north of Laprairie station, Que.; and that C.P.R. be similarly relieved in respect of crossing at mileage 18.8 and mileage 20.6, Newport section, Que., it appearing from inspections made by Board's Engineering and Operating Departments, that the views are excellent and that signboards and whistling posts are properly placed.

9907, 9908. Mar. 18.—Ordering that St. Lawrence & Adirondack Ry. install electric bells at crossings at Chateaugay, and Huntingdon, Que.

9909. Mar. 18.—Approving C.N.R. revised location across Rainy Lake, Rainy River

district, Ont., the openings to be as required by Public Works Department.

9910. Mar. 18.—Approving plan of G.T.R. shelter to be erected at Tecumseh Road crossing, in Rochester tp., Ont.

9911. Mar. 18.—Ordering that C.P.R. provide highway crossing over its Shuswap and Okanagan branch, about two miles north of Enderby, B.C.

9912 to 9918. Mar. 18.—Ordering that C.P.R. be relieved from providing further protection at crossing at mileage 23.6, Ontario Division, Lindsay branch; and that G.T.R. be similarly relieved in respect of crossings, 2½ miles east of Stouffville; west of Mosborough station; about 1¾ miles east of Shakespear, Ont.; at first highway north of Lacadie; first highway south of St. Remi; first highway south of St. Lambert, Que., it appearing from inspections made by Board's Engineering and Operating Departments that the views are excellent and that signboards and whistling posts are properly placed.

9919. Mar. 18.—Authorizing Wright & Co., to lay sewer under C.P.R. at Jessie St., Hull, Que.

9920. Mar. 18.—Authorizing Montreal Light, Heat and Power Co. to carry conduit under G.T.R. at St. Ambrose St.

9921. Mar. 18.—Authorizing A. C. Beatty, Garden Hill, Ont., to carry wires across G.T.R.

9922. Mar. 18.—Authorizing Gloucester tp. Telephone Association to carry wires across Canada Atlantic Ry. at Carlsbad Springs, Ont.

9923, 9924. Mar. 16.—Authorizing Bell Telephone Co. to carry wires across G.T.R. at Pottersburg, and at McMurray and Lawrence Sts., Brantford, Ont.

9925. Mar. 18.—Authorizing Manitoba Government Telephones to carry wires across Brandon, Saskatchewan and Hudson Bay Ry., near Minto station.

9926. Mar. 18.—Authorizing Municipal Telephone Co. of Oakbank, Man., to carry wires across C.P.R.

9927, 9928. Mar. 21.—Authorizing Ontario Power Company to carry wires across G.T.R. at two points in Port Colborne, Ont.

9929. Mar. 21.—Authorizing Trenton Electric and Water Co. to carry wires across Bell Telephone Co.'s wires at Belleville, Ont.

9930. Mar. 21.—Authorizing Manitoba Government Telephones to carry wires across C.P.R., near Brandon.

9931 to 9944. Mar. 8.—Ordering that C.P.R. be relieved from providing further protection at the crossings at Irwin St., Perth, and at mileage 11.05, Drummond tp., Ont., and that G.T.R. be similarly relieved in respect of crossings, one mile east of Trenton, Ont.; at first highway east of Valois; first highway east of River Beaudette; first crossing east of Beaconsfield, Que.; about one mile west of Lancaster; public road at mileage 190 about 2 miles west of Ernestown; first crossing east of Lansdowne; crossing of Kingston Road about 3¼ miles west of Trenton; three miles east of Brighton; crossing of Kingston Road, 2 miles east of Cobourg; crossing of Wharf Road at Bowmanville; crossing of Shipman Road, 1 mile east of Oshawa, Ont.; it appearing from inspections by Board's Engineering and Operating Departments that the views are excellent, that signboards and whistling posts are properly placed.

9945, 9946. Mar. 11.—Ordering that Central Vermont Ry. be added as a party in protection of C.P.R. crossing at Main St. and Louis St., Farnham, Que.

9947. Mar. 10.—Approving C.N.R. location through tps. 20-29, r. 5-8, w. p. m., mileage 69.05 to 127.92, Man.

9948. Mar. 11.—Ordering that G.T.R. within 50 days install electric bell at first highway crossing east of Waterdown station, Ont.

9949. Mar. 21.—Approving C.N.O.R. revised location in Hope tp., mileage 180.63 to 182.45, from Ottawa.

9950. Mar. 21.—Approving C.N.R. Crooked Lake branch location through tps. 49-50, r. 3-4, w. 3 m., and unsubdivided tps. 50-56, r. 5-7, w. 3 m., mileage 0 to 56.58, Sask.

9951. Mar. 19.—Approving Essex Terminal Ry. by-law authorizing W. Wollatt to prepare tariffs of tolls.

9952. Mar. 19.—Extending until June 1, time within which G.N.R. shall put its V.V. & E.R. and N. Co.'s line, between Cloverdale and Point Guichon, and its New Westminster Southern line, between Hazelmere and New Westminster, B.C., in such condition that trains can be run with safety at not less than 30 miles an hour.

9953. Mar. 18.—Authorizing C.P.R. to construct spur from its Phoenix branch, 7.7 miles south of Eholt, to lot 1762, Yale District, B.C.

9954. Mar. 18.—Authorizing C.P.R. to construct spur to the L.W.W. Plewes' premises, Toronto.

9955. Mar. 19.—Authorizing G.T.R. to con-

struct spur to Canadian National Carbon Co.'s premises, Toronto.

9956 to 9962. Mar. 21.—Ordering that G.T.R. be relieved from providing further protection at crossings, at second highway west of Iroquois; Kennedy Road, ¾ mile west of Scarborough Jct., Ont.; first public road west of River Beaudette, Que.; 1½ miles south of Huntsville; first highway west of Mille Roches; immediately north of Sundridge; Danforth Road, first crossing north of Scarboro Jct., Ont., it appearing from inspections made by Board's Engineering and Operating Departments, that the views are excellent and that signboards and whistling posts are properly placed.

9963. Mar. 18.—Dismissing complaint of Jas. Richardson & Sons, Ltd., of Kingston, Ont., against rate of 7c. per 100 lbs. from Kingston to Montreal, on western grain arriving at Kingston by vessel, destined to points in Ontario and Maritime Provinces.

9964, 9965. Mar. 21.—Authorizing Seymour Power & Electric Co. to carry wires across North American Telegraph Co.'s wires between Rawdon and Sidney, and at Stoco Road, Hungerford, Ont.

9966. Mar. 21.—Authorizing Ontario Power Co. to carry wires across Government spur to elevator, Port Colborne, Ont.

9967 to 9969. Mar. 21.—Authorizing Bell Telephone Co. to carry alarm wires across G.T.R. at three points in Ontario.

9970, 9971. Mar. 22.—Authorizing Kaministiquia Power Co. to carry wires across G.T.R. at two points in Fort William, Ont.

Recent Ontario Legislation.

Among the Acts passed at the Ontario Legislature's recent session were the following relating to transportation interests:—

Bruce Mines and Algoma Ry.—Amendments.

Buffalo and Fort Erie Ferry Ry.—Consolidation and amendments.

Dunnville, Wellandport and Beamsville Electric Ry.—Extending time for construction.

Huronario Ry.—Incorporation.

Iron Range Ry.—Amendments.

Lac Seul, Rat Portage and Keewatin Ry.—Amendments.

Monarch Ry.—Incorporation.

Morrisburg Electric Ry.—Amendments.

Niagara Falls, Welland and Dunnville Electric Ry.—Incorporation.

Nickel Range Ry.—Incorporation.

North Midland Ry.—Extending time for construction.

Ontario Railway Act, 1906.—Amendments.

Ontario Railway and Municipal Board Act, 1906.—Amendments (two acts).

People's Ry.—Amendments.

St. Thomas Street Ry.—Amendments.

Simcoe Ry. and Power Co.—Amendments.

Stratford City and G.T.R.—Confirming agreement.

Tay tp. and G.T.R.—Confirming agreement.

Temiskaming and Northern Ontario Ry.—Amending act.

Toronto, Haliburton and Pembroke Ry.—Incorporation.

Toronto Suburban Ry.—Amendments.

Wahnapietay Ry.—Incorporation.

Western Central Ry.—Amendments.

Simplified Mechanical Perspective is the title of a treatise by F. F. Frederick, of the School of Industrial Arts, Trenton, N.J., planned for students of High School age, who have already received some training in mechanical drawing. The notes and problems, the author states, have been used by him in his teaching, in substantially their published form for more than 20 years. In the teaching given the endeavor is made to consider the essentials that will develop the perspective sense and enable the student to apply his knowledge to practical problems. The problems set are admirably calculated to do this, and when they are worked out in conjunction with freehand perspective, the student will secure a much better appreciation of the subject. The volume is published at 75 cents by the Manual Arts Press, Peoria, Ill.

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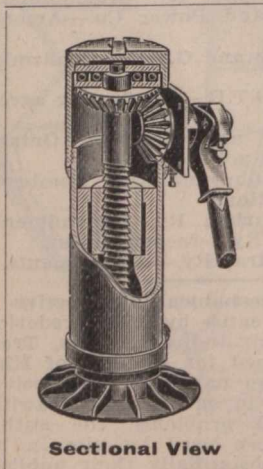
W. E. DAVIS, Passenger Traffic Manager, Montreal.

G. T. BELL, Asst. Pass. Traffic Manager, MONTREAL.

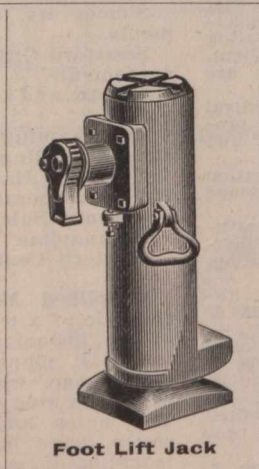
G. W. VAUX, Gen. Passenger Agent, MONTREAL.

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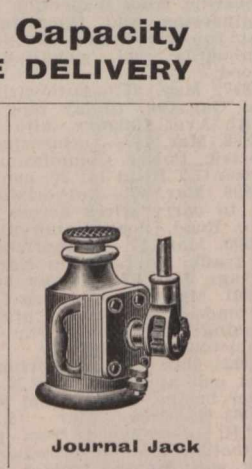
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American Association G. P. & T. A.

W. E. Rispin, Ticket Agent, G.T.R., Chatham, Ont., read the following paper at the American Association of General Passenger and Ticket Agents' meeting in Havana, Mar. 28:—

I have been requested by the Canadian Ticket Agents' Association to represent them at this meeting on an invitation extended by your body with a view of giving you some idea of our progress since your last annual meeting, and to offer suggestions for the good of the passenger service, which may be acted upon by your Association should you find them worthy of your attention. The first is rather difficult, as in an association such as the Canadian Ticket Agents, progress by some may be marked only by our numerical gain in numbers, whereas to my mind progress would be more marked by the evidence of something accomplished by us as a body which would be some tangible evidence that we were the means of doing some good to our members and that they were reaping some benefit from membership. Our last annual meeting was held at Buffalo, N.Y., in Oct., 1909, when matters pertaining to our business were discussed and papers of an educational nature read by some of our members appointed for the purpose, which proved of a very entertaining and instructive nature and I am sure were a great benefit to the members assembled some of whom expressed themselves as very much edified by what they had heard and learned. One subject taken up was an illustrated tour around the world, presented by one of our members appointed for the purpose, and in a very able manner. With the aid of a large map, he took us with him on his trip explaining the different routes in their order, describing the points where changes were necessary and altogether making his address very entertaining to his hearers. Another subject taken up was the best method of handling tourist business so as to prove most satisfactory to the people directly interested, meaning of course the travellers, and insuring a continuance of their patronage. Subjects of this nature prove very interesting to the members, as well as instructive, and I am sure give evidence that membership in our association is beneficial both to the members themselves and the railway companies.

Among other business transacted the Association passed a resolution requesting that the American Association of General Passenger and Ticket Agents appoint a representative from their membership to attend our annual meetings with a view of giving an address to our assembled members on some subject pertaining to passenger work, which we feel sure would be a very strong factor in making our meetings still more attractive and I assure you that should you accede to this request your action will be thoroughly appreciated by us and your representative made thoroughly welcome. We had the pleasure of a visit from one of your members at our last annual gathering in Buffalo and were indeed pleased to see him there and derived much benefit from his address. I refer to Mr. C. A. Cairns, G.P. & T.A., C. & N.W. Ry., who, needless to say, is always welcome.

In the very excellent address delivered to your meeting at Atlantic City by Mr. Bryne he said among other things that 50% of your passenger traffic was for pleasure, 10% for health and 40% for business. Therefore 50% of the passenger traffic of the American Continent is created traffic. Did it ever strike you what an influence the ticket agent has on this created traffic and did it ever strike you how much the traveller for pleasure depends on the ticket agent for

information as to where he will go and how he will go? It is a common thing for clients of my own to depend entirely on my judgment as to places I may select for them to spend a holiday, the principle requisite being that I shall be familiar with the place and its surroundings and in a position to direct them and arrange so that they shall reach their destination with the least trouble possible and a ticket agent that is thoroughly conversant with the pleasure resorts of the country is a valuable man to his employers. A great many of the members of the Canadian Ticket Agents' Association who occupy positions as city and town agents for the Canadian railways are engaged in other business as well as routing passengers, a great majority of them being among the most influential of the citizens of their respective municipalities, and therefore in a very good position to control the traffic from their territory which your travelling passenger agents will tell you they do. Until the last few years our Association has always enjoyed the courtesies of the United States railways when our meetings were held in that country, but on account of the fact that all our members are not exclusively engaged in railway work you are debarred from granting us transportation as an Association on account of the rulings of the Interstate Commerce Commission but as you are well aware we do a great deal for your different railways and are constantly routing passengers over your different railway lines and through your different gateways and would do so a great deal more intelligently were we familiar ourselves with the routes and terminals. I am sure you will all agree with us that there is no educator for a ticket agent like travel and our Association would esteem it a great favor if you could represent this matter to the I.C.C. in such a favorable light that the bar against granting transportation to members of our associations would be removed, as I feel sure that should you succeed in doing so the result would be favorable to the U.S. railways.

Some of the United States and Canadian statesmen have recently met with a view of arranging a new tariff between the two countries. It is to be hoped their efforts will result in a tariff that will be satisfactory to the people of both countries so that traffic will not be hampered, as anything that tends to put a damper on the transportation of merchandise to, and between the United States and Canada will also have an adverse effect on passenger traffic.

The annual influx of farmers from the Western and North-western States into our Canadian North-west has already started and this movement is assuming very large proportions. The settlement of so many people from these states in Canada will cause a continual tide of travel to and fro between the two countries and materially assist in building up the revenues of the railways leading to and from both countries.

On behalf of the Canadian Ticket Agents' Association I thank you for the privilege of being represented at the meeting and for your patient hearing.

Esquimalt and Nanaimo Ry.

In connection with the extension of the line to Alberni, B.C., we are advised that the section now under construction from Parkersville to Alberni, crosses the mountain range which forms the backbone of Vancouver Island, with a summit of about 1,300 ft. above sea level. For 10 miles on either side of this summit there are gradients of 1.50%, with heavy rock work along the mountain side, and a liberal allowance of 10° curves, with a good deal of trestle work. There is only one stream

of any importance to be crossed—the little Qualicum River—at the outlet of Cameron Lake, which requires a 120 ft. steel span on masonry abutments. At certain points the line passes through very fine timber lands, certain areas carrying 100,000 ft. b.m., an acre. The line will also open up a large tract of fine farming land in the Alberni Valley, and at Port Alberni will connect with the trade of the west coast of Vancouver Island, which is rich in timber, minerals and fisheries, including halibut banks, and a rich whale fishery.

We were advised, Mar. 17, that the location of the proposed extension to Comox and Campbell River was under consideration. This line has been located from Parksville to Black Creek, 47 miles, and the company is about to let a contract for clearing the right of way to Black Creek, 14 miles. The clearing of the right of way between Parksville and Union Bay will be taken in hand later on. It is expected that the location as far as Campbell River, 79 miles from Parksville, will be completed this summer.

Nothing has been decided as to the construction of the Cowichan Lake branch, the matter being held up pending the result of negotiations with the American Finance and Securities Co., which is desirous of purchasing the Cowichan Lake timber limits.

H. E. Beasley, Superintendent, was quoted as saying, Mar. 9, that the most important work to be carried out on the Victoria-Nanaimo line this year will be the replacing of the wooden trestle over the Niagara canyon with a steel one. The preliminary operations are in progress, and it is expected to have everything in readiness for the installation of the steel structure by May 1. It is the intention to replace the wooden bridge at Arbutus Canyon with a steel bridge at a future date. The general policy of betterment which has been carried on ever since the company took over the line, will be continued, it being intended this year to add a number of additional sidings.

Press reports state that C.P.R. and G.T.R. trainmen have made formal demands for 20% and 40% increases of pay, respectively.

The Ontario Legislature has passed a resolution providing that the Chairman of the Temiskaming and Northern Ontario Ry. Commission shall receive an honorarium of \$5,000 a year. Heretofore he has received \$3,500 a year.

Tenders for Construction of Irrigation Canals and Earth Dams.

THE CANADIAN PACIFIC RAILWAY COMPANY, IRRIGATION DEPARTMENT.

Calgary, Alberta, Canada,
March 15th, 1910.

Sealed Tenders will be received up to noon of May First, Nineteen Hundred and Ten, addressed to the undersigned, for all Excavation required to complete the Canal System in the Eastern Section of the Canadian Pacific Railway Company's Irrigation Block, Alberta, amounting to upwards of Twenty-five million cubic yards of material.

Plans, Specifications, and all other information may be seen at the office of the Assistant Chief Engineer, Calgary, Alberta.

Proposals will only be accepted for the work as a whole, and must be accompanied by a certified cheque for twenty-five thousand dollars (\$25,000), payable to J. S. Dennis, as a guarantee that the party awarded the contract will execute the same. Cheques of unsuccessful bidders will be returned to them immediately after the awarding of the contract.

J. S. DENNIS,
Assistant to Second Vice-President,
Canadian Pacific Railway Co.

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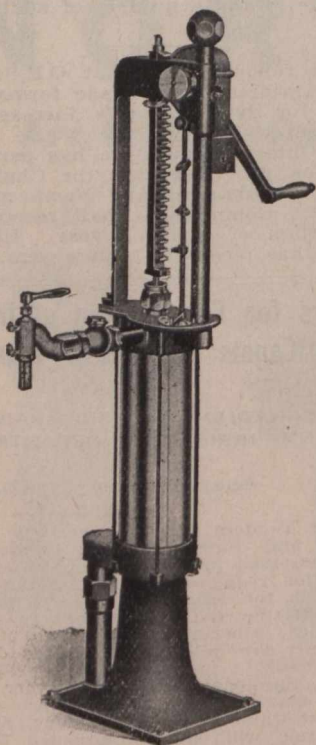
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Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—The Montmorency branch connects with the main line half-a-mile north of Hedleyville Jct., Que., and extends to the Montmorency Lumber Mills, about 1.5 miles above the falls. The branch is approximately 7.5 miles and it has been constructed particularly for the handling of pulpwood for the lumber company. About 3,000 cords have been shipped since the line was opened, and it is expected to ship about 20,000 cords a year.

Plans are said to be under consideration for the construction of a terminal station in Montreal. Three or four schemes are spoken of, one of them being for the purchase of the old jail at the corner of Notre Dame St. and Dolorimier Ave., and its utilization, and another for an uptown site. The advantage of the old jail site is its proximity to the river front.

Canadian Northern Ontario Ry.—An Ottawa dispatch states that the difficulties in the way of securing an entrance into Ottawa beyond Hurdman's bridge are in a fair way of being adjusted, and that the new plan will involve a bridge over the C.P.R. and the G.T.R. tracks.

The Supreme Court has affirmed the Board of Railway Commissioners' order granting the company permission to construct sidings from the G.T.R. main line in Scarboro tp., near Toronto, to the C.N.R. right-of-way between Toronto and Ottawa, for the purpose of transferring construction material.

In the Ontario Legislature Mar. 10, the Minister of Public Works stated that the company had built and placed in operation 30 miles of line northerly from Sellwood Jct., to Hutton tp., and that four survey parties were in the field between the latter point and Port Arthur, locating a route for further construction.

J. M. Campbell, is in charge of a staff of engineers, going over the route of the Toronto-Ottawa line, easterly from Trenton, Ont. On the western section of the line between Toronto and Trenton rapid progress is being made with construction.

Wabnapitac Ry.—The Ontario Legislature incorporated a company with this title for the purpose of constructing the railway mentioned in our last issue.

Canadian Northern Ry.—M. H. McLeod, General Manager, spent some time in Toronto in March in consultation with the President and Vice President, when most of the construction to be done this year was decided on. It is probable that between 400 and 500 miles of new track will be added to the company's mileage this year.

The Oak Point branch, which is now operated from Oak Point Jct., near Winnipeg, to Oak Point, 60.4 miles, has been graded for about 30 miles further northwesterly. This will be laid with track this year and considerable more grading will be done. This branch will serve the district east of Lake Manitoba and will ultimately reach the gypsum deposits there.

On the branch from Maryfield, on the Brandon-Regina line, running south-west and westerly and crossing the C.P.R. Pasqua-Portal branch south of Midale, track was laid in 1909 for 68.39 miles and about 80 further has been graded. Track will be laid on this early this year.

On the branch from Hallboro, Man., westerly via Rapid City, 69.28 miles of track were laid in 1909 and about 6 miles more grading has been done. This may be laid with track this year.

The Rosburn branch from Neepawa, Man., which is intended to connect with the main line at Dauphin, Sask., is now being operated to Russell, Man., 104.2 miles from Neepawa. A further extension will probably be built this year.

On the Thunder Hill extension from

Thunder Hill Jct., Man., near Swan River on the Dauphin-Prince Albert line, track has been laid for over 40 miles and about 13 miles more have been graded, on which track will be laid this year. Some further grading is also likely to be done.

On the Goose Lake branch from Saskatchewan, Sask., towards Calgary, Alta., track has been laid to Kindersley, the first division point, 127 miles, and grading has been done for 45 miles further into Alberta. Track will be laid on this grading this year.

The Prince Albert-North Battleford branch is now built to Shellbrook, 30 miles from Prince Albert, Sask. About 40 miles further will be built this year.

From the present end of track on the Prince Albert-North Battleford line via Shellbrook, 45 miles of the Crooked Lake branch has been graded. The remaining 15 miles will be graded this year and track laid on the whole 60 miles.

From North Battleford, Sask., via Jackfish Lake towards Athabasca Landing, 40 miles have been graded and will be laid with track this year.

On the branch from Vegreville, Alta., southerly via Camrose and Stettler toward Calgary, about 130 miles have been graded and 19.47 miles of track were laid in 1909. Track will be laid on the balance of the 130 miles of grading this year.

On the branch from Edmonton, Alta., towards Athabasca Landing 21.5 miles are being operated to Morinville and about 23 miles more have been graded. This will be laid with track this year.

The main line is in operation from Edmonton 21 miles west to Stony Plains and is graded for about 12 miles further. Track will be laid on this grading this year. The grading will probably be extended to the McLeod River, about 80 miles further, this year, and a portion of the new grading will also be laid with track. At the crossing of the Pembina River a large bridge will have to be built which will occupy considerable time.

Among the principal betterments to be made this year will be considerable ballasting on most of the lines. Between Port Arthur and Winnipeg a number of bridges will be filled in, and between Kakabeka and Slate River there will be a diversion of about nine miles to improve the alignment and reduce the gradient from 1% to 4/10 of 1%. There will also be another diversion of about two miles, 78 miles west of Port Arthur in connection with grade reduction. On the 438 miles between Port Arthur and Winnipeg 80-lb. steel rails have been laid on 240 miles and the relaying will be continued this year on the remaining 198 miles, replacing the present 56 and 60 lbs. rails. Yard facilities will be increased at a number of points and the locomotive houses at Port Arthur and Winnipeg will probably be extended. A number of additional sidings will be built between Port Arthur and Winnipeg and on the main line west of Winnipeg. Additional wires will be strung on some of the telegraph lines.

A proposition is said to be under consideration for the alteration of the C.N.R. route across the north-west arm of Rainy Lake, near Fort Frances, Ont. The Resident Engineer of the Department of Public Works at Winnipeg, has inspected the route, with a view of ensuring the freedom of navigation. The plan shows a new bridge to leave the mainland south of the present crossing, thence south-east to the islands south of Island no. 1, and sweeping in a semi-circle to the Lobstick, where it joins the present main line. The piers would be of cement with steel super-structure, which would form the first section. Later on, the remainder would be filled and strengthened. The navigation interests ask that three drawbridges be provided one at Island no. 1; another at

Rocky Inlet, and a third at Bears Pass, as well as two larger openings at the present opening west of Island no. 1, for the running of logs.

On the Fort Garry Station building at Winnipeg about 85% of the work has been done and it is expected to complete the structure by the end of the summer. Work on the yard is well under way. The tracks through the portion of the city between the Red and Assiniboine Rivers will be elevated, all level crossings being eliminated, the tracks being carried on embankment with retaining walls and steel bridges across the streets. A steel viaduct is provided at the rear of the station with room underneath for baggage, express, etc.

Replying to a delegation of farmers from the district north of Teulon, Man., recently, the Manitoba Minister of Public Works stated that the Government was prepared to give the C.N.R. a guarantee of bonds towards the extension of the line to the Eli sand pits northerly and westerly into the Brant and Argyle districts.

A cable from London, Eng., reports W. Mackenzie, President, as saying that he expected the railway to Hudson Bay to be in operation within three years. It remained to be seen whether the line would be constructed by the C.N.R. or by the Dominion Government.

The contract let to T. Kelly & Son, in connection with the new bridge across the Assiniboine River at Winnipeg, referred to in our Mar. issue, covers the construction of the piers only. The details of the superstructure have not been definitely settled. It has however been decided that one of the spans will be a rolling lift. The bridge will be double track. T. Kelly & Son also have the contract for the Pembina St. subway.

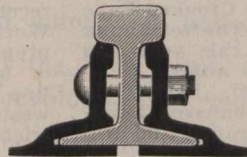
Canadian Northern Pacific Railway.—The British Columbia Legislature has confirmed the agreement with Mackenzie, Mann & Co. (Ltd.) for the construction of a railway from Yellowhead Pass to Vancouver, and 80 miles on Vancouver Island, upon a guarantee of bonds, and a second act incorporating the C.N. Pacific Ry. Co. for the purpose of carrying out the agreement. The agreement guarantees the company's bonds for \$35,000 a mile, the company to construct a line from English Bluff near Vancouver easterly to connect with the C.N.R. at the eastern boundary of the province, and a line from Victoria to Barkley Sound, and to maintain a car ferry service between Vancouver and Victoria. Car shops are to be constructed at Victoria. The company agrees never to seek Dominion incorporation, and places the control of rates forever in the hands of the Provincial Government without appeal to the Board of Railway Commissioners. The money raised by the sale of bonds is to remain at the credit of the Provincial Government and to be paid out upon certificate as work on the different sections is proceeded with. A deposit of \$500,000 is made by the company. Work on the mainland railway is to be started at or near New Westminster not later than July, 1910, and a minimum of the cost equivalent of at least 50 miles of line shall be expended thereon, during the first year, 75 miles during the second year, the line to be completed on July 1, 1914. The length of the mainland line is approximately 500 miles. It will run from the Yellowhead Pass, by the North Thompson River, touching Kamloops, if possible, or constructing a branch to that place, thence by the South Thompson River to New Westminster and Vancouver, with a line to English Bluff, south of the Fraser River, near the International boundary. The standard of the line is to be equal to that of the C.N.R. between Winnipeg and Edmonton; the gradients and curvature are to be kept as low as possible; the wages paid on

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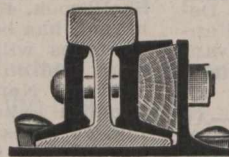
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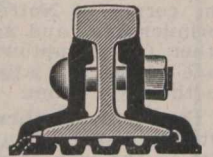
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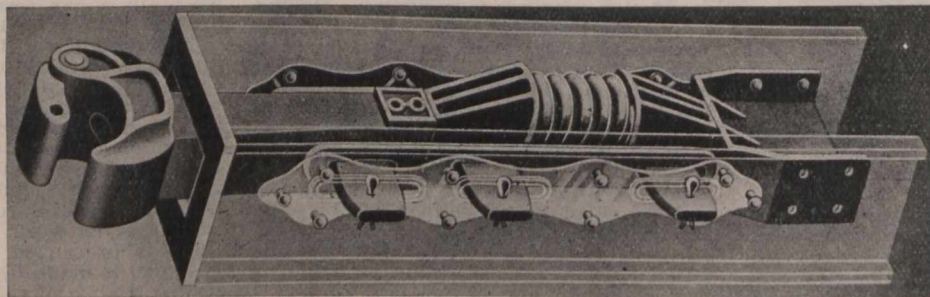
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construction are to be such as are current in the districts and supplies are to be procured as far as possible locally.

The company is reported to have acquired 1,500 to 2,000 acres of land on the south bank of the Fraser River, near New Westminster, from the end of the Government railway bridge upwards, for

According to a statement made by the B.C. Premier, Mar. 15, construction will be started on the Victoria-Barkley Sound section of the C.N. Pacific Ry. this spring, simultaneously with construction on the mainland.

(Mar., pg. 183).

Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—Traffic receipts for Feb., \$25,851, against \$19,420 for Feb., 1909. Aggregate traffic receipts for eight months ended Feb. 28, \$251,279.

Canadian Northern Ry.—A London, Eng., cable dated Mar. 10, states that the recent bond issue has been fully subscribed by the public.

Central Ontario Ry.—The Dominion Parliament has been asked to grant the company authority to enter into agreements with the G.T.R., the C.P.R., the Brockville, Westport and North-Western Ry., the Irondale, Bancroft and Ottawa Ry., the Canadian Northern Ontario Ry., the Ontario and Ottawa Ry., and the Marmora Ry. and Mining Co.

Dominion Atlantic Ry.—Gross earnings for Jan., \$79,400, against \$72,657 for Jan., 1909. Aggregate earnings for seven months ended Jan. 31, \$806,250, against \$774,492 for same period 1908-09.

Esquimalt and Nanaimo Ry.—The British Columbia Legislature has ratified an agreement between the Government and the company settling the long standing differences as to the company's land grant. The company in return for discontinuing all actions and proceedings arising out of the grants made under the Vancouver Island Settlers' Rights Act of 1904, and quit-claiming all its right and title, the company receives the right to locate 20,000 acres of Crown lands on the Island within three years of the act being assented to.

Georgian Bay and Seaboard Ry.—Application is being made to the Board of Railway Commissioners to recommend the sanctioning of a lease of the company's line to the C.P.R. Co. for 99 years, from Jan. 10, 1910. The line as projected is to extend from Victoria Harbor, Georgian Bay, to some point on the C.P.R. Toronto-Montreal line, various places between Peterboro and Smiths Falls having been mentioned. Of this line there has been constructed to date the section from Victoria Harbor to Coldwater Jet., on the C.P.R. Toronto-Sudbury line, 11.5 miles.

Grand Trunk Ry.—The Michigan State Railway Commission has undertaken the investigation of the ownership of the Pontiac, Oxford and Northern Ry., and evidence was given Mar. 10 in reference thereto by officials of the G.T. Western Ry., which is the title under which the G.T.R. carries on business in Michigan and adjoining States. The evidence given showed that C. M. Hays, E. H. Fitzhugh, J. W. Loud, M. M. Reynolds, A. B. Atwater and L. C. Stanley owned one share of the stock of the Pontiac, Oxford and Northern Ry., and that the remainder was held by C. M. Hays, in trust for the G.T. Western Ry. The railway is operated as the Pontiac, Oxford and Northern Division G.T.W. Ry.

An act has been passed by the Dominion Parliament providing that the G.T.R. may acquire and dispose of shares in the Ottawa Terminal Ry., the Lachine, Jacques Cartier and Maisonneuve Ry., and the G.T. Pacific Terminal Elevator Co.

A special meeting of the shareholders will be held in London, Eng., after the half-yearly meeting, April 14, for the purpose of discussing a resolution authorizing the company to acquire, guarantee, hold, pledge and dispose of stocks and securities of the Lachine, Jacques Cartier and Maisonneuve Ry. Co., the Ottawa Terminals Ry. Co., and the G.T. Pacific Terminal Elevator Co.

Guelph Junction Ry.—Application is being made to the Dominion Parliament to facilitate the acquisition by the City of Guelph, Ont., of the shares of the company's stock not now held by it, and to make other provisions to secure to the city full rights in the company and railway, to change the mode of electing or appointing directors, and to reduce their number.

Orford Mountain Ry.—All formalities in connection with the leasing of this line to the C.P.R. have been completed and the line was taken over Mar. 1. It is being operated as Orford Branch, District 1, Eastern Division, C.P.R.

An indenture of lease, dated Oct. 6, 1909, between the O.M.R. Co., Sir Wm. C. Van Horne and other holders of the capital stock of the O.M.R., and the C.P.R. Co., has been deposited with the Secretary of State at Ottawa.

Quebec and Lake St. John Ry.—Gross earnings for Feb., \$32,339.17, against \$37,071.19 for Feb., 1909. Aggregate earnings for two months ended Feb. 28, \$69,994.01, against \$83,320.24 for same period 1909. Mileage operated, 280 against 285.4 during the same period 1909.

A meeting of the holders of the various classes of bonds of the company was held in London, Eng., Feb. 21. It was stated that three reports were being prepared on the property, and that these would be completed during March. Authority was given to add three additional members to the committee, from among the holders of prior lien bonds. The meeting was adjourned for a month.

At a meeting of the 4% prior lien bondholders in London, Eng., Mar. 22, a resolution was passed appointing a committee to watch their interests during the continuance of the receivership.

Reid Newfoundland Ry.—The Premier stated recently in the Legislature, that in 1904 the Reid Newfoundland Co. made a claim on the Colony for the cost of additional rolling stock, equipment and accommodation alleged to have been supplied under the Railway Operating Contract of 1893, between 1901 and 1904 the Government was advised that the Colony was not liable, and that the claim should be resisted. A case for the opinion of English counsel, was subsequently prepared and the advice given to the Government was confirmed. Beyond serving a notice of its intention to apply to the court for the appointment of an arbitrator nothing further had been done by the company, at least as far as the records show.

Thousand Islands Ry.—We are advised that the press report to the effect that the line has been sold to the G.T.R. is incorrect. Some members of the G.T.R. auditing staff were engaged recently going over the company's books in conjunction with J. H. Robitoulle, of the Rathbun Co., which owns the line. This, we are advised, is an annual occurrence.

White Pass and Yukon Ry.—Gross earnings for seven months ended Jan. 31, \$853,428.

The Montreal Warehousing Co.'s annual meeting was held at Montreal, Mar. 3. Following are the officers and directors for the current year:—President, C. M. Hays; Vice-President, E. H. Fitzhugh; other directors, W. M. Ramsay, J. W. Loud and W. Wainwright.

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 Northern Engineering Works, Detroit, Mich., has sold the Miami Copper Co., for its Globe plant, three 15-ton cranes, electric and hand power, also one 5-ton crane.

G. T. Merwin, heretofore on the Canadian Car & Foundry Co.'s sales staff in Montreal, has been appointed Assistant Manager of Sales, Southwestern District, for the Pressed Steel Car Co., with headquarters at St. Louis, Mo.

Bruce, Peebles & Co., Ltd., Edinburgh, Scotland, who are represented in Canada by Vandeleur & Nichols, Toronto, have issued a pamphlet, "Peebles' Alternating Current Generators, sizes AD. 18 to AD. 70 inclusive," which contains a large amount of interesting information.

The American Vanadium Co., Pittsburg, Pa., has issued in both French and German, translations of its booklet on vanadium steels, their classification of heat treatments, with directions for application of vanadium to steel and iron, by J. Kent Smith. Copies in either of the three languages will be sent on request.

Burton W. Mudge & Co., 400 Commercial Bank Building, Chicago, advise that they have assumed the exclusive handling of the Garland ventilator, for both passenger and freight equipment, as well as the Garland heating and refrigerating appliances on the latter. Information in regard to ventilation and refrigeration of all kinds of equipment will be gladly furnished by them on application.

Babcock & Wilcox boilers of 12,000 h.p. have been ordered for the North Vancouver Ferries, Ltd., ferry now under construction, and also for H.M.S. Orion, Conqueror and Thunderer of 27,000 s.h.p. each. In two battleships for the Argentine Government, they are being installed for 35,000 h.p. each, and their White Forster boilers of 18,000 h.p. each are being placed in light torpedo destroyers for the Argentine Government.

B. J. Coghlin Co., Ltd., has been incorporated under the Dominion Companies Act with an authorized capital of \$200,000 and head office at Montreal, and has taken over the business of B. J. Coghlin & Co., wholesale hardware merchants, spring and axle works, of which B. J. Coghlin, who died a short time ago, was the founder. It is intended to considerably enlarge the factory this year to provide for increased business.

Transfer Railway for Brandon, Man.—A joint meeting of the Brandon City Council and the Brandon Board of Trade was held Mar. 2, to discuss the feasibility of constructing a transfer railway to connect all the railways entering the city. The idea is that such a railway should be constructed by the city, and the City Engineer was asked to prepare a plan for consideration. The C.P.R., the C.N.R. and the Great Northern Ry., will then be approached with a view of obtaining such concessions from them as will make the construction of the line practicable and profitable.

G.T. Pacific Ry., St. John, N.B., Terminals.—It was stated in St. John, N.B., that the G.T. Pacific Ry. had purchased a large area of land around the head of Courtenay Bay, St. John harbor, for terminal and dock purposes.

F. E. RICHARDSON, Pres. and Treas.

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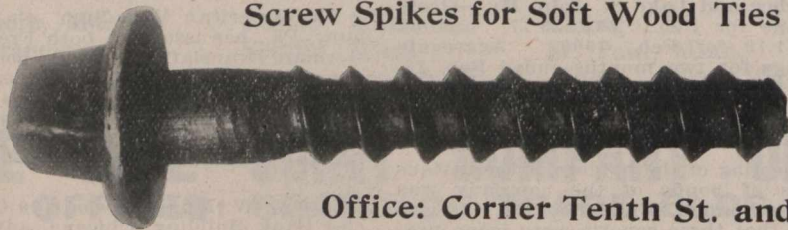


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PHILADELPHIA. MONTREAL. BERKELEY, CAL.

National Transcontinental Railway.

Tenders have been received by the Commission for the supply of 24,733 gross tons of 80 lb. steel rails, together with the necessary splice bars, track spikes, bolts and nuts, nutlocks and tie plates. Tenders have also been received for the erection of a pump house at the locomotive shops near Winnipeg, the building to be completed by July 1; for the necessary pumping plant to equip the same, such plant to be installed by Aug. 1, and also for the construction of a 2,000,000 gall. reservoir, to be completed by Aug. 1, adjoining the locomotive shops. Tenders will be received by the Commission to April 12, for the supply of the plant for the equipment of the locomotive shops near east of Winnipeg, as follows:—Machines and tools; leather belting; shafting, hangers, steel frame work, etc.; miscellaneous equipment; industrial track and lockers; motors; furnaces and forges; cranes; air compressors; grey iron foundry equipment and brass foundry equipment.

GRAND TRUNK PACIFIC RAILWAY.

We were officially advised Mar. 16, as to the present position of the work on the G.T.P.R., and the construction in hand for the present season as follows: The end of the main line track is at present at the east bank of Wolf Creek, 915 miles from Winnipeg. At this point there is a large steel bridge to erect across Wolf Creek and a half a mile beyond another large steel structure across the McLeod River. The substructures of these bridges have been under construction simultaneously for several months and are now reaching completion, and it is expected that the erection of the steel superstructures will commence in the early part of April, and as soon as it is possible to cross them, the track will be pushed forward as rapidly as the grading work will permit. The grading of the line is now under contract from Wolf Creek to Tete Jaune Cache, approximately 179 miles. This work will be pushed as rapidly as possible and it is expected to have track laid this year from the east to within 20 or 30 miles of Yellow Head Pass.

The grading of the main line from Prince Rupert easterly to Aldermere, approximately 235 miles, is well under way. There is under construction a steel bridge $7\frac{1}{2}$ miles east from Prince Rupert, crossing from Kai-en Island to the mainland. The work on this structure is being pushed forward as rapidly as possible and as soon as completed, track laying will be commenced easterly from Prince Rupert, and it is expected there will be about 180 miles laid easterly from Prince Rupert by the close of this year. It is the intention to place the balance of the main line between Aldermere and Tete Jaune Cache, approximately 400 miles, under construction this year.

During 1909 twenty-three stations were erected between Winnipeg and Edmonton, and an 18 stall locomotive house and shop at Edmonton. It is the intention this year to erect a 12-stall locomotive house at Edson, the first divisional point west of Edmonton, a 12-stall locomotive house and shop at Prince Rupert, and stations at various points along the line where conditions warrant.

GRAND TRUNK PACIFIC BRANCH LINES.

The following branch lines have recently been placed under contract:

From 50 miles south of the main line at Tofield, Alta., to Calgary, approximately 135 miles; the J. D. McArthur Co., Winnipeg, general contractor.

From Balcarres, the end of the present construction of the branch line from the main line at Melville, to Regina, approximately 60 miles; the J. D. Mc-

Arthur Co., Winnipeg, general contractor.

From Yorkton, the extension of the branch line from Melville to Yorkton, to Canora, approximately 30 miles; Rigby, Hyland & Plummer, Winnipeg, general contractors.

Contracts will be awarded in the near future for the construction of a branch line from the main line at Oban to Battleford, about 50 miles; from Regina southerly, about 80 miles; and from the main line at Young to Prince Albert, about 130 miles. The grading of these branches will be pushed forward as rapidly as possible with the object of having track laid on all of them during this year.

The Melville-Regina line referred to above is one of the lines which the company is constructing under the subsidy contract with the Saskatchewan Government. The subsidy contract also covers the construction of an extension from Regina to the International boundary line, near Sherwood, Mont., terminus of a branch of the Great Northern Ry. A press report states that these branch lines will be connected, and that the G.N.R. will obtain an entrance to Regina by that route, and thence to other points on the G.T.P.R. Another report states that engineering parties are in the field between Regina and Moose Jaw, Sask., making surveys for a line to Calgary. The first camp was pitched at Grand Conlee. It is said the line will run almost directly to Moose Jaw, then bend north-westerly to the elbow of the South Saskatchewan River, and then on to Calgary. (Mar., pg. 181).

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

Southern New England Rd.—E. H. Fitzhugh, First Vice President G.T. Ry., and Central Vermont Ry., appeared before the committee of the Rhode Island Legislature, Mar. 11, when the bill for the extension of the S.N.E.R. to Providence was considered. The bill is being promoted in the Central Vermont Ry. interests to secure an additional outlet to the seaboard, and is being met with considerable opposition from the New York, New Haven and Hartford Rd., and the Boston and Maine Rd.

Lachine, Jacques Cartier and Maisonneuve Ry.—The Montreal City Council is asking the Quebec Legislature to ratify an agreement for the closing of certain streets. The company is also making application to the Legislature for an act confirming the same agreement.

Toronto Belt Line.—U. S. Gillen, Superintendent Middle Division G.T.R., in an interview Mar. 22, said there was no immediate intention on the part of the G.T.R. to re-open the old belt line for freight or passenger traffic. When reopened it would be from Yonge St. easterly and not westerly as was generally reported.

London Track Elevation.—It was reported Mar. 10 that G.T.R. engineers were making surveys in the vicinity of Wharncliffe Rd. East, London, Ont., in connection with the proposed rearrangement of the tracks in the city so as to do away with the existing level crossing.

Stratford Yards, Stations and Shops.—The Mayor of Stratford, Ont., received a letter from E. H. Fitzhugh, First Vice President, recently, stating that the various matters relating to the extension of the shops would be settled shortly, and that the whole question would then be dealt with in a definite manner.

The Ontario Legislature has passed an act confirming an agreement providing for the continuance of a further period of 10 years from 1910, the assessment of \$8,000 a year, agreed upon in 1900.

The company is reported to be purchasing additional land along the line in the city, in connection with the plans to rearrange the yards, and to build a new station.

Port Huron Station and Shops.—A deputation from the Port Huron, Mich., City Council waited on E. H. Fitzhugh, First Vice President, at Montreal, recently in connection with the proposed new station. Mr. Fitzhugh stated that a new station will be built on the site of the present one, but it would be impossible to provide for a station down town.

We are advised, in connection with the proposal to enlarge the shops—that it is intended to make some re-arrangement there, but that nothing will be done until some understanding has been reached with the city concerning the use of the end of one of the streets.

Bay City, Mich., Terminals.—Press reports state that the company is arranging to expend \$500,000 in connection with the proposal to secure a terminal in Bay City, Mich. Most of the right-of-way, it is said, has been secured. (Mar., pg. 191).

C. N. R. Freight Earnings.

In the table of steam railway statistics for the year ended June 30, 1909, published in our March issue, the Canadian Northern Ry.'s freight earnings per train mile were stated as 24c., on information issued by the Department of Railways statistical branch. Our attention having been called to the fact that a serious mistake had been made, investigation showed that the actual figures given by the Department of Railways were .246189. Enquiry of Canadian Northern officials shows that the actual freight earnings per train mile for the period in question were \$2.46189, in other words slightly over \$2.46, instead of slightly over 24c., and that the correct figures were reported to the Department of Railways.

The Comptroller of Railway Statistics contends that the Government Printing Bureau is responsible for the mistake and that a displacement took place while the page containing the figures was being printed. On looking into the matter we do not see how this could have occurred. But no matter who is responsible the fact remains that a very serious mistake occurred and the Comptroller should take whatever steps may be necessary to prevent such inaccuracy in future. The value of statistical information depends altogether on its accuracy and the system of proofreading and checking should be such as to prevent such mistakes as the one pointed out.

Brampton, Ont., citizens passed a resolution at a public meeting Mar. 22, asking that the railway companies be asked to grant commutation rates between that town and Toronto. At present the C.P.R. issues commutation tickets from Toronto to Streetsville, and the G.T.R. to Weston, Ont., on the lines reaching Brampton.

Hon. W. J. Hanna and Hon. J. J. Foy, representing the Ontario Government met the Secretary of State at Ottawa, Mar. 30, to discuss the question of Provincial and Dominion Legislation with a view of doing away with the friction at present caused owing to the granting of charters by the Dominion which overlap those granted by the Province.

A. W. Smithers, Chairman of the Board G.T.R., speaking as Chairman of the English Association of American Bond and Shareholders, London, Eng., recently said he believed there was imminent a long series of big enterprises for which adequate capital would be forthcoming if Canada maintained her present proud position respecting credit.

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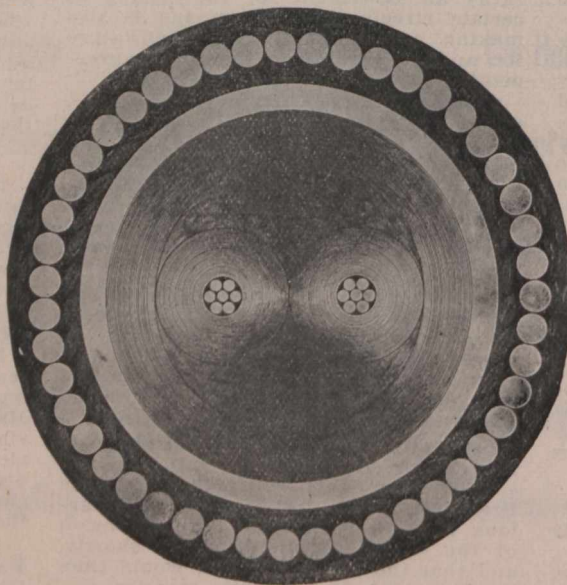
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ADVERTISING RATES furnished on application. ADVERTISING COPY must reach the publishers by the 10th of the month preceding the date of publication, if proof is required, or by the 15th if proof is not required.

TORONTO, CANADA, APRIL, 1910.

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Table listing advertisers and their page numbers, starting with A (Abbott, W.) and ending with I (Illinois Central Railroad).

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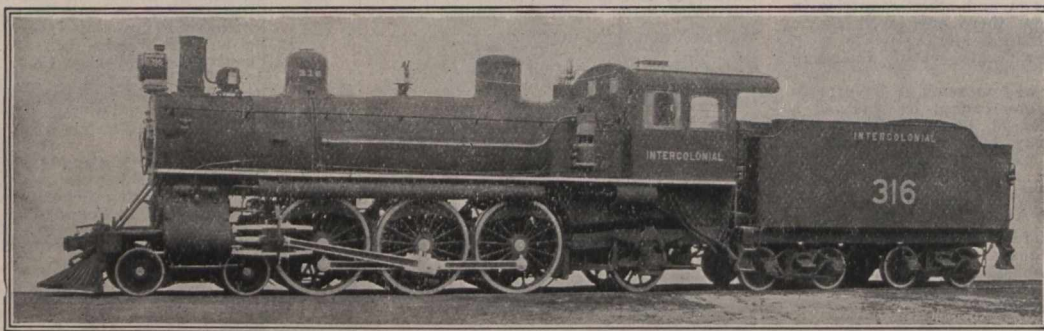


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St. John Harbor.—A resolution has been passed by the St. John, N.B., Harbor Board, recommending the city council to transfer the harbor property on the west side to the C.P.R., in exchange for the 1,600 ft. strip and wharves thereon, on condition that development of the 40 acre tract be begun within five years.

Lachine Canal Banks.—The arbitration proceedings which have been in progress for nearly three years arising out of the expropriation by the C.P.R. of certain lands on the Lachine canal banks owned by the St. Paul Land and Hydraulic Co., have come to a termination the arbitrators handing in their award Mar. 14. The company asked \$150,000 for the land and the C.P.R. offered \$8,000. The arbitrators allowed \$35,000.

Windsor St. Station, Montreal.—The contract for putting in the pier foundations, which includes 300 open type caissons from 6 to 9 ft. diameter, is to be completed by April 20. Tenders for the four track viaduct which will be built

changes have been made and we have been furnished with official information of the construction to be undertaken as follows, a total of 434 miles:—

The line from Lauder, Man., which is built to Tillston, on the Manitoba-Saskatchewan boundary, will be extended west 24 miles into Saskatchewan.

The branch from Weyburn, Sask., to Forward, will be extended about 25 miles west by south.

From Regina south and south-east to Griffin, Sask., a station midway between Stoughton and Weyburn, a branch of about 79 miles.

The first 18 miles of the Craven-Bulyea (Sask.) line, extending the Regina-Craven line to connect at Bulyea with the Kirkella-Lanigan line.

On the Regina-Prince Albert branch from Craven, Sask., to Colonsay, on the Portage la Prairie-Saskatoon-Wetaskiwin line, 110.3 miles.

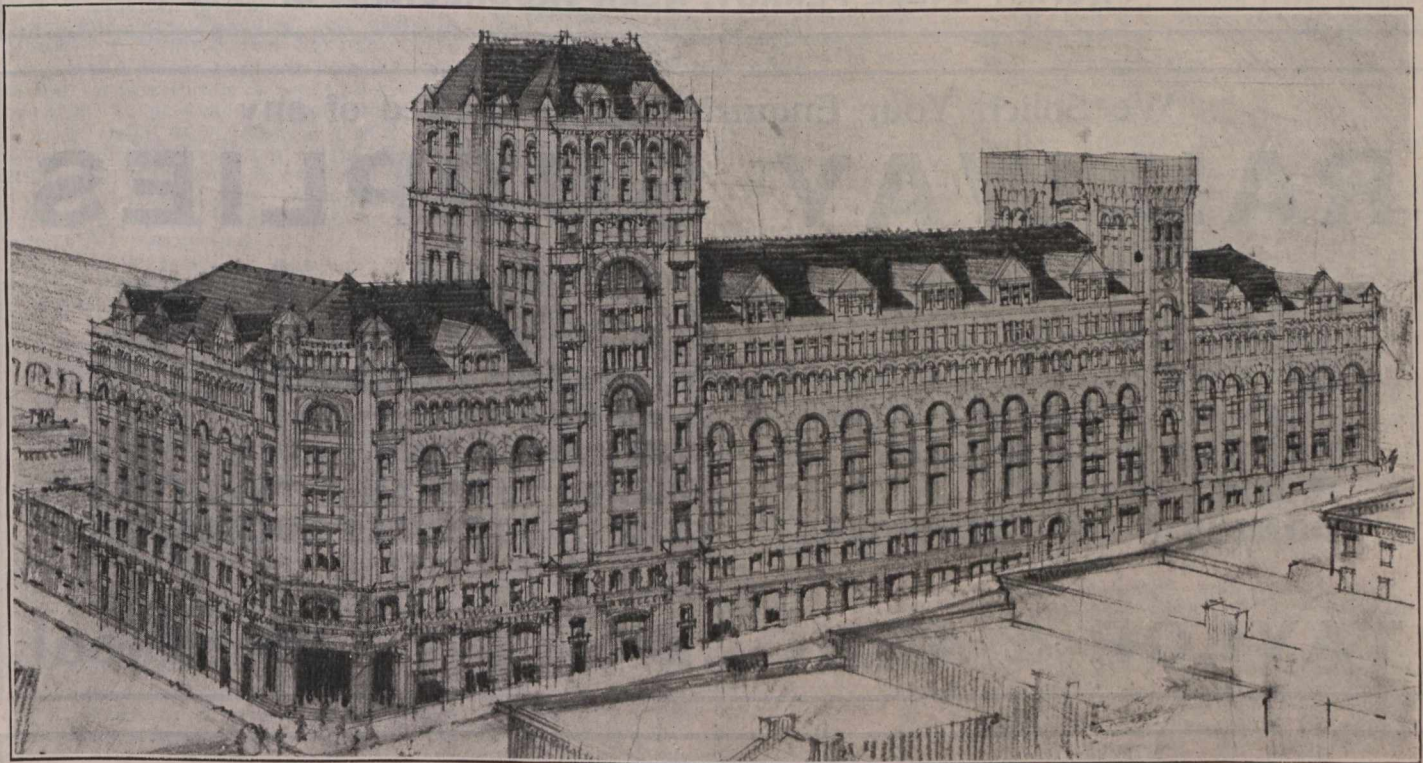
From Outlook, Sask., the present terminus of the branch north-west from Moose Jaw, an extension of 93.5 miles northwest in the direction of Castor, the

25 miles, is under consideration, but it has not been decided whether it can be gone on with this year.

A dispatch from Winnipeg dated Mar. 22, states that the company's construction department has placed contracts for extensions and improvements to be carried out during the coming season. The works include over 20 new stations of standard designs, in addition to larger buildings at Red Deer, Banff and Lagan; a brick freight shed at Regina, 450 ft. long; an addition of 200 ft. to the existing freight shed at Moose Jaw; and three new buildings at Calgary, in addition to many small erections at various points along the line.

Edmonton, Alta.—Application is being made to the Alberta Legislature to confirm certain by-laws of the city of Edmonton containing an agreement between the city and the C.P.R. and the Calgary and Edmonton Ry.

Cranbrook, Y.M.C.A.—A Winnipeg press report, states that a contract has been let by the C.P.R. Construction Department for the erection of a Y.M.C.A. building at Cranbrook, B.C., on the same



The Canadian Pacific Company's Windsor Street Station, Montreal

as it will appear when the additions now under way are completed. The left portion of the illustration shows the St. Antoine Street front, the larger portion to the right being the Windsor Street front.

between the present station tracks and St. Antoine St. will be let in the near future. The illustration on this page shows the approved design for the extended building.

Georgian Bay and Seaboard Ry.—A survey party was reported Mar. 11, to be working from Bathurst, Ont., a station 19 miles westerly from Smith's Falls, northerly and westerly with a view of securing a suitable location for the easterly end of this line.

St. Mary's and Western Ontario Ry.—The Ontario courts have quashed a by-law passed by Blanshard tp., authorizing the issue of \$20,000 of debentures in aid of the construction of this railway. This is the second time that the by-law has been passed by the township and quashed by the courts.

Western Lines Construction.—In our last issue we gave particulars of new lines to be built this year. Some slight

present eastern terminus of the branch east from Lacombe, Alta.

From Macklin, Sask., on the Saskatoon-Wetaskiwin line, south-east 54.2 miles to a point on the Moose Jaw-Lacombe line.

An extension of 30 miles northwesterly from Carmangay, Alta., of the present line of 28 miles from Kipp to Carman-gay.

In addition to the above, 434 miles for which appropriations were made during Second Vice President Whyte's visit to Montreal in Feb., a branch of 15 miles east from Irricana, Alta., on the Langdon-Red Deer line, which was authorized in 1909 will be completed this season.

A second branch will be built between Winnipeg and Portage la Prairie 55.6 miles this year.

The Kootenay Central Ry. is projected to start from or near Elko, B.C., on the Crow's Nest Pass line. The question of building first section to Fort Steel, about

lines as the one at Kenora, Ont.

Midway to Hope, B.C.—A Vancouver, B.C., press dispatch states that surveys were completed Mar. 4, by C.P.R. engineers for a line through the Hope Mountains. The present westerly terminus of the company's Crows' Nest Pass line is at Midway, and the route now surveyed extends from that place, via Penticton, to Hope on the main transcontinental line 89 miles east of Vancouver. From Midway the route, reported to be gone over, proceeds via the west fork of the Kettle River, and crossing a summit reaches Penticton, at the foot of Okanagan Lake; thence through the Similkameen district to Otter Creek, across a low divide into the valley of the Coldwater River, on to the Coquihalla summit of the Hope Mountains, and down the western slope of the mountains to Hope in the Fraser River Valley.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—Press reports state that the

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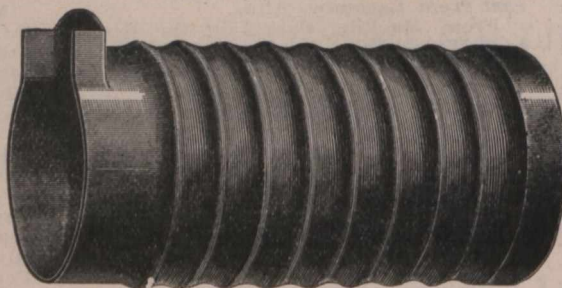
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company has appropriated \$8,000,000 for construction and betterments for the current year, of which \$3,000,000 will be expended on the old Wisconsin Central Ry. The principal new construction will be the completion of the line into Duluth. (Mar., pg. 215).

MAINLY ABOUT PEOPLE.

Lady Shaughnessy and Miss Shaughnessy sailed for England, Mar. 18.

G. H. Ham of the C.P.R. headquarters staff, attended the Old Timers' dinner in Winnipeg, Mar. 10.

H. R. Miles, C.P.R. Resident Engineer, North Bay, Ont., has been elected to the town council.

Jas. Woods, Secretary-Treasurer Quebec Harbor Commission, died suddenly at Quebec, Mar. 1.

J. A. Blair, for many years G.T.R. agent at Port Dalhousie, Ont., died at Spokane, Wash., Mar. 1.

C. S. Maharg, Superintendent C.P.R., Moose Jaw, Sask., was married to Miss Staples, Mar. 2, at Teeswater, Ont.

G. Fauquier, railway contractor, Ottawa, and Mrs. Fauquier, left early in March for Virginia Hot Springs.

Lord Strathcona has contributed \$7,000 to the Toronto Public School Cadet Corps towards the provision of uniforms.

E. B. Osler, M.P., director C.P.R., has been re-elected President of the Ontario Rifle Association for the current year.

E. B. Osler, M.P., recently gave \$25,000 for a site and equipment for a supervised playground in West Toronto.

Hon. W. C. Edwards, President Temiskaming Navigation Co., has been elected President of the Canada Cement Co., Ltd.

Sir H. Montagu Allan of Montreal, was presented to the King by Lord Strathcona, at a levee held in London, Eng., Mar. 2.

Lord Strathcona has been appointed by the British Government a member of the Advisory Committee on Commercial Intelligence.

F. Barlow Cumberland, Vice President Niagara Navigation Co., addressed the Berlin, Ont., Canadian Club, Mar. 3, on the Union Jack.

W. F. Wilson, Assistant Manager, New York Central Fast Freight Lines, Buffalo, N.Y., died suddenly on a train at Utica, N.Y., Mar. 16.

A. Price, General Superintendent C.P.R. Western Division, addressed a committee of the Y.M.C.A., at Lethbridge, Alta., Mar. 14.

Lady Reid, widow of Sir Robt. G. Reid, of the Reid Newfoundland Co., and Miss Reid, are spending about three months on the Mediterranean.

Sibthorp Wells, G.T.R. Claims Agent (Personal Injuries), Montreal, died there, Mar. 3. He had been in the company's service for several years.

G. M. Bosworth, Fourth Vice President C.P.R., and Capt. J. W. Troup, Manager C.P.R. Pacific Coast Steamship Service, returned to Canada Mar. 6, from Europe.

W. R. and Mrs. Baker, Hayter, and Mrs. Reed, F. W. Morse and R. Bickerdike, M.P., were among the Governor General's guests at dinner in Montreal, Mar. 19.

G. W. Caye, Assistant to the Vice President and General Manager G.T.P.R., who was recently married at New York, has returned to Winnipeg from his wedding trip.

G. A. S. Potts, a Winnipeg lawyer, who was claiming \$25,000 from the C.P.R. for alleged services in connection with the recent strike of employes in the west, died at Field, B.C., Mar. 8.

Mrs. G. M. and Miss Bosworth return-

ed to Montreal, Mar. 17, after a short visit to Great Britain. The marriage of Miss Bosworth to D. Seely is announced to take place in Montreal, Apr. 21.

A. K. McNair, a Toronto contractor, engaged on the construction of a dam on the Temiskaming Lake, at the head of the Ottawa River, died suddenly at Temiskaming, Que., Mar. 1, aged 59.

Hon. G. P. Graham, Minister of Railways and Canals, addressed the Ontario Club, Toronto, Mar. 3, and spoke generally on the expansion and prospects of the Dominion railways and waterways.

The marriage of Miss D. Fletcher, granddaughter of Collingwood Schreiber, C.M.G., General Consulting Engineer, Dominion Department of Railways, to R. Lake, M.P., is announced to take place Apr. 4.

Mrs. Thos. Malcolm, of Campbellton, N.B., wife of the President of the International Ry. of New Brunswick, is convalescing satisfactorily after an operation for appendicitis which was performed in Montreal.

Hon. L. P. Brodeur, Minister of Marine, who went south at the end of Feb. to recuperate after his serious illness, is reported to be recovering, and it is expected will return to Canada in a few weeks.

Miss Marjorie Blair, youngest daughter of the late Hon. A. G. Blair, at one time Minister of Railways and Canals and afterwards Chief Railway Commissioner, is to be married in April in Ottawa to Sutherland Gilmour.

H. R. Charlton, General Advertising Agent G.T.R. and G.T.P.R., gave an address with cinematograph illustrations to the Chicago Press Club, Mar. 4, on a hunting and fishing trip in the Timagami district of Ontario.

C. Clarke, Division Freight Agent, G.T.R., Detroit, Mich., left there Mar. 4, and sailed from San Francisco on the s.s. Tenyo Maru on Mar. 15, for Japan via Honolulu. He is expected back in Detroit about the end of May.

John Phillips, who died at Toronto, Feb. 28, aged 66, was in G.T.R. employ for nearly 50 years. He had been agent at Brantford, Fort Erie and Ingersoll, Ont., and for the last 11 years of his service was inspector of elevators.

Capt. C. H. Nicholson, Manager G.T.P.R. Pacific Coast Steamship Service, Vancouver, returned to Canada, Mar. 16, from Great Britain, where he has been in connection with the construction of vessels for the service.

Among the subscribers to the endowment fund of Queen's University, Kingston, Ont., which has now reached \$400,000, are W. Harty, M.P., and C. Birmingham, of the Canadian Locomotive Works, Kingston, who each gave \$5,000.

R. P. Fairbairn, Chief Engineer Ontario Public Works Department, has been appointed acting Deputy Minister of Public Works for Ontario, since the appointment of A. W. Campbell as Deputy Minister of Railways and Canals for the Dominion.

Probate of the will of the late Archer Baker, European Manager C.P.R., London, Eng., has been granted to his widow, to whom he left the whole of his property. The gross value of the estate was sworn at £12,552 18s 4d, and net personalty at £11,131 8s 5d.

The Hon. Angus MacDonnell, head of the firm of Angus MacDonnell & Co., which has the contract for the construction of the Alberni extension of the Esquimalt and Nanaimo Ry., is a nephew of the Countess Grey, wife of the Governor General of Canada.

The King has appointed Lord Strathcona and Sir Thos. G. Shaughnessy to be Knights of Grace of the Order of the Hospital of St. John of Jerusalem, and

D. McNicoll, Vice President, and W. R. Baker, Secretary and Assistant to the President C.P.R., to be Esquires of the same order.

Lord Mount Stephen has deposited securities to the value of \$300,000, with a trust, the income to be utilized to foster desirable British emigration to Canada. The trustees are R. Meighen and J. Turnbull, Montreal, and the work will be carried on through the medium of Dr. Barnado's Homes.

Major J. E. Hutcheson, Superintendent and Purchasing Agent Ottawa Electric Ry., has been mentioned as the probable commandant of the Canadian team which will go to England this year for the annual Bisley shooting competitions, but it is not expected that he will accept the position.

C. B. Foster, Assistant General Passenger Agent C.P.R., Vancouver, who visited Toronto in March for the first time since his promotion from the District Passenger Agency there to the Pacific Coast, was warmly welcomed and entertained at luncheon and dinner by a number of transportation officers and others.

W. Whyte, Second Vice-President C.P.R., and G. J. Bury, General Manager Western Lines, are patrons, and Grant Hall, Superintendent of Motive Power and Car Department Western Lines, is honorary president of a troop of boy scouts which has been formed in connection with the C.P.R. Winnipeg shops.

Hon. W. R. Motherwell, Minister of Agriculture for Saskatchewan, is reported as a likely appointment to the Board of Railway Commissioners. Since the death of T. Greenway, who was appointed to the Board when the number constituting it was increased from three to six, but who never took up the duties, the work has been done with five members.

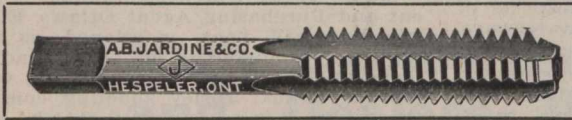
F. R. Haney, who has been appointed Assistant Tax and Insurance Commissioner and Claims Adjuster for C.P.R. Lines East of Fort William, Ont., entered the C.P.R. Law Department at Toronto in 1897, and moved to Montreal in 1901 as chief clerk of the Tax and Insurance Department, which position he held to Feb. 1, the date of his present appointment.

E. W. Bateman, who was recently appointed Local Right of Way and Lease Agent C.P.R. Pacific Division, Vancouver, B.C., was born near Crewe, Eng., July 24, 1859. He came to Manitoba in 1882, and was for a number of years engaged in private business, and from 1900 to 1905 was in the Manitoba Government Land Titles office. He entered C.P.R. service in 1905 as chief clerk in the Right of Way Department, Winnipeg, which position he held to Jan. 16, 1910.

R. Patterson, Master Mechanic G.T.R., Stratford, Ont., read a paper on technical education for the modern mechanic before the Canadian Institute in Toronto recently, in which he outlined the G.T.R. apprentice system and made a powerful plea for Government assistance for technical education. President Falconer of Toronto University and Dean Galbraith of the Faculty of Applied Science spoke in warm commendation of the paper.

During Feb., six railway employes were killed and 31 injured in the course of their work on Canadian railways. Of the fatalities, three each were due to derailments and to being run over, while of the other accidents, seven were due to derailments, five to falls, four each to being run over, and to falling material, three each being struck by an object in passing, and to being struck by a locomotive, two each to being caught between cars and to machinery, and one to an explosion of steam.

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"Jardine" Taps for all Purposes

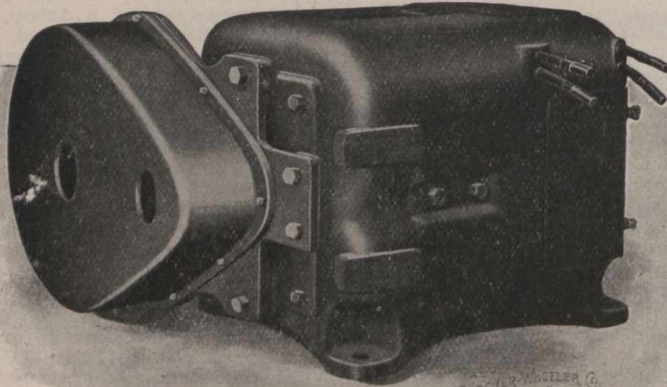


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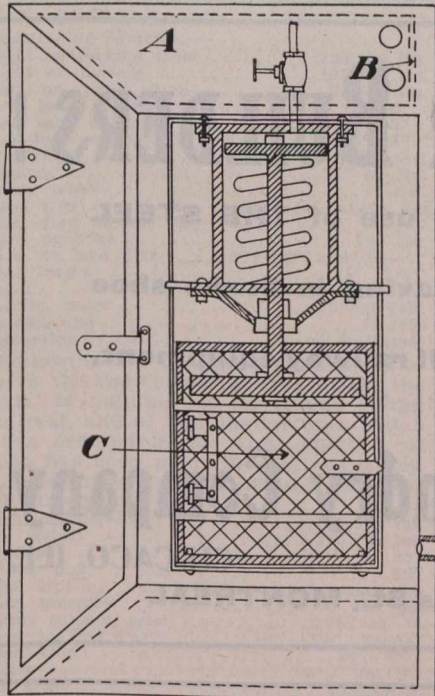
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Address Nearest Office

A Waste Press to Save Oil.

By H. J. Varlow, General Foreman C.P.R., Fort William, Ont.

The consumption of oil on railways is a serious one, not only as to what is used but what is wasted, therefore it is wise to prevent unnecessary waste where ever possible. A large quantity of oil is used in connection with packing journal boxes. The waste packing after being removed from the oil box contains a quantity of oil which could be used over again if proper precaution be taken. The oil after being extracted from the waste can be filtered, and by proper filtering can be used over and over again. The accompanying sketch shows a simple arrangement which can be made in any railway shop. "A" is a tank 4 1/2 ft. long, 3 ft. high and 2 1/2 ft. wide. There is a cavity "B" of 2 ins. round the sides and bottom. This is fed with steam from a steam pipe. "C" is a round cage made out of strong smoke box netting with one blank end and three bands round, 2 ins. by 1/2 in. to strengthen it. On the top side is a door where the waste is put in and when full the door is closed. At the front end is attached an air



brake cylinder, one off a box car will do. The cage and the air brake cylinder are coupled together with a band of iron round one end of the cage and round the end of the cylinder making this rigid and therefore no strain on the tank whatever. The cage and air brake cylinder stand in the tank on feet about 8 ins. clear from the bottom. The air is coupled on to the air line to the cylinder head. When the tank is heated with steam the waste becomes hot and the oil is made to run more freely. The piston head is forced into the cage to squeeze the waste, the oil dropping in the tank. The waste can be taken out in a short time quite dry. By using this arrangement the oil wasted in packing for oil box journals is reduced to a minimum. The cost is small considering the results obtained. This arrangement can be placed in the oil house.

The Canadian Society of Civil Engineers has awarded the Sir Casimer Gzowski silver medal for the best paper read before the Society during the past year, to Prof. Brown, of McGill University.

Railway Rolling Stock Notes.

The Mineral Range Rd. has ordered 100 ore cars.

The G.T.R. is building 10 Pacific type passenger locomotives at its Point St. Charles shops, Montreal.

The G.T.R. has received five mogul locomotives from the Canadian Locomotive Co., Kingston, Ont.

The Intercolonial Ry. has received one yard crane from F. H. Hopkins & Co., Montreal, and two coal cranes from the U.S.

The Anglo-Newfoundland Development Co. has the following rolling stock on its line from Grand Falls to Botwood, Nfld.:—four locomotives, 28 box cars, 40 flat cars, one passenger car and one caboose.

The C.P.R., between Feb. 15 and Mar. 15, received the following additions to rolling stock:—19 flat cars, 59 box cars and six vans from its Angus shops, Montreal, and four D-10 locomotives from the Montreal Locomotive Works.

The C.P.R., between Feb. 15 and Mar. 15, ordered the following rolling stock:—11 locomotives D-10, 40 box cars, 23 flat cars, two vans, one ballast car, at its Angus shops, Montreal, and 10 locomotives N-3, from the Montreal Locomotive Works.

The G.T.P.R., between Feb. 15 and Mar. 17, received the following additions to rolling stock:—483 box cars, nos. 310615 to 310824 and 311052 to 311325; 100 flat cars, nos. 361000 to 361099; and four first class coaches, nos. 2031 to 2035, from the Canadian Car and Foundry Co., Montreal.

The G.T.P.R. has ordered 20 ten wheel locomotives from the Montreal Locomotive Works, and 10 from the Canadian Locomotive Co., Kingston, Ont., details of which were given in our March issue. The statement then made that the 20 locomotives ordered from the Montreal Locomotive Works were for the G.T.R. was an error.

The two superintendent's cars which the G.T.P.R. is having built by the Canadian Car and Foundry Co., will have an observation room, 9' 8" long, bedroom 10' 6", and the usual kitchen, lavatory and porters' accommodation. Following are the chief dimensions:—

Length over end sills	42' 0"
Length over buffer beams	48' 6"
Width over side sills	9' 8"
Width overall at eaves	10' 0 1/4"
Width between deck sills	5' 0 1/2"
Height overall	14' 2"

The Canadian Northern Ry. between Feb. 15 and Mar. 15, ordered the following rolling stock:—600 box cars, 50 automobile box cars, two baggage and second class cars, three dining cars, and five baggage cars from the Canadian Car and Foundry Co., Montreal; 250 Hart convertible cars from the Hart-Otis Car Co., Montreal; and 500 flat cars and 50 refrigerator cars from the Crossen Car Manufacturing Co., Cobourg, Ont.

The Canadian Copper Co., Copper Cliff, Ont., has ordered from the Hart-Otis Car Co., Montreal, 25 fifty ton Otis type steel ore cars. Following are the chief dimensions:—

Length over end sills	25' 0 1/2"
Length inside	23' 0"
Width inside	9' 6"
Height inside	3' 1"
Height top of rail to top of side	7' 5 13-16"
Height from rail to floor	4' 4 13-16"

M. P. & J. T. Davis, National Transcontinental Ry. contractors, have ordered from the Hart-Otis Car Co., Montreal, 45 Hart convertible cars, 1910 design. Following are the chief dimensions:—

Length over end sills	36' 8"
Length inside as gondola	34' 8"
Length inside as hopper	20' 10"
Width inside	8' 8"
Height inside	3' 9 1/4"
Height from rail to top	8' 1 3/8"
Height from rail to floor	4' 4 1/8"

The Dominion Nickel Copper Co. has ordered from the Montreal Locomotive Works one mogul locomotive, of which the following are the chief details:—

Weight in working order	131,000 lbs.
Weight on drivers	112,500 lbs.
Weight on engine truck	17,500 lbs.
Wheel base, driving	12' 6"
Wheel base, engine	20' 6 1/2"
Wheel base, engine and tender	50' 0"
Cylinders	19" by 26"
Driving wheels	50"
Boiler, type	Extended wagon top
Boiler, diar. at first ring	62"
Boiler, pressure	180 lbs.
Tubes, no. and diar.	240—2"
Tubes, length	10' 5 1/4"
Brakes	Westinghouse American
Capacity, water	4,500 gals.
Capacity, coal	9 tons

The Canadian Northern Ry. has ordered 12 six-wheel and 10 ten-wheel locomotives from the Montreal Locomotive Works. Following are the chief details:—

	6-wheel.	10-wheel.
Weight in working order	124,500 lbs.	164,500 lbs.
Weight on drivers	126,500 lbs.	126,500 lbs.
Weight on engine truck	38,000 lbs.	38,000 lbs.
Wheel base, driving	11' 6"	14' 6"
Wheel base, engine	24' 10"	24' 10"
Wheel base, engine and tender	40' 0"	53' 6"
Cylinders	19" by 26"	20" by 26"
Driving wheels	50"	63"
Boiler, type	Straight top	Ext. wagon top
Boiler, diar. first ring	64 1/4"	66"
Boiler pressure	180 lbs.	200 lbs.
Tubes, no. and diar.	259—2"	308—2"
Tubes, length	11' 0"	13' 2 1/4"
Brakes	Westinghouse American	Westinghouse American
Capacity, water	3,500 gals.	5,000 gals.
Capacity coal	5 tons	10 tons

The Canada Iron Corporation, Ltd., Montreal, has ordered one consolidation locomotive from the Canadian Locomotive Co., Kingston, Ont., for the Northern New Brunswick and Seaboard Ry. Following are the chief details:—

Weight on drivers	148,800 lbs.
Weight, total	164,850 lbs.
Wheel base of engine, rigid	15' 3"
Wheel base, total	23' 6"
Wheel base of engine and tender	54' 5"
Length overall, engine and tender	65' 1"
Width overall	10' 2"
Height overall	14' 6 3/4"
Heating surface, firebox	162 sq. ft.
Heating surface, tubes	1,934 sq. ft.
Heating surface, total	2,096 sq. ft.
Driving wheels diar.	56"

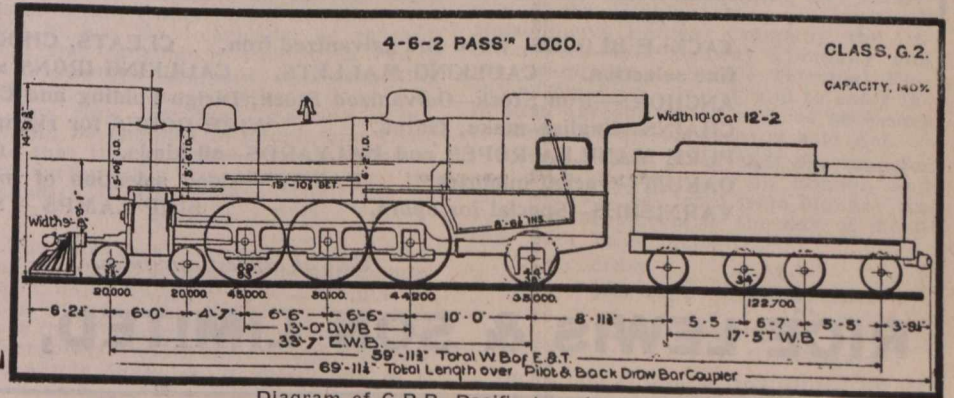
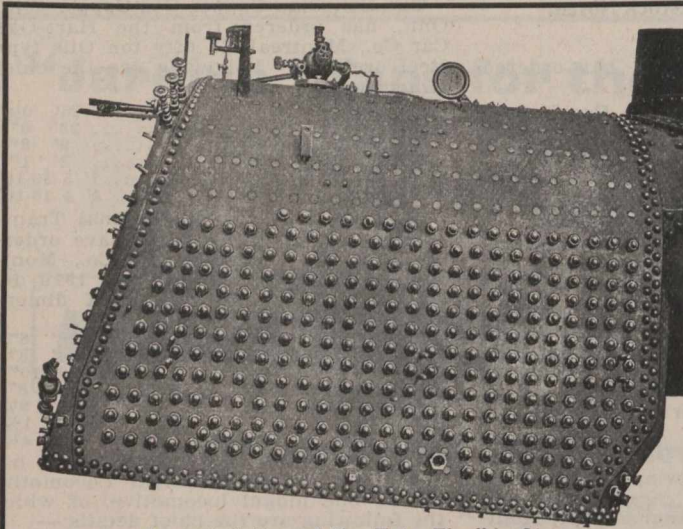


Diagram of C.P.R. Pacific type locomotive.



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Call at earliest convenience.

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Driving wheels centres	Cast iron
Driving journals	8" by 12"
Cylinders	21" by 28"
Boiler, type	Radial stayed
Boiler pressure	200 lbs.
Tubes, no. and diar.	236—2 1/4"
Tubes, length	114"
Injectors and safety valves	Locomotive type
Brakes	Westinghouse
Weight of tender loaded	120,000 lbs.
Tank	U-shaped, sloping coal well
Capacity, water	5,000 gals.
Capacity, coal	10 tons
Truck	Diamond, all steel
Wheel, diar.	33"
Wheel, style	Chilled cast iron
Journal	5 1/2" by 10"
Brake beam	Steel

Following are some additional details of the two superintendent's private cars which the G.T.P.R. has ordered from the Canadian Car and Foundry Co., Montreal:—

Platforms, steel, special design	Standard Coupler Co.
Couplers	Tower
Heating System	Safety Car Heating and Lighting Co.
Lighting	One car, oil; other, Commercial Acetylene Co. system
Air brakes	Westinghouse P1412
Trucks	4 wheel passenger type
Wheels	Cast iron 33", 625 lbs.
Axles	Steel, 4 1/4" by 8"
Brake beams	Simplex

Following are the chief details of the 10 consolidation locomotives which the C.P.R. is having built at the Montreal Locomotive Works:—

Weight in working order	220,000 lbs.
Weight on drivers	195,000 lbs.
Weight on engine truck	25,000 lbs.
Wheel base, driving	16' 6"
Wheel base, engine	25' 5"
Wheel base, engine and tender	55' 8"
Valve gear	Walschaert
Cylinders	24" by 32"
Driving wheel	63"
Boiler, type	Extended wagon top
Boiler, diar, at first ring	72"
Boiler, pressure	180 lbs.
Tubes, no. and diar.	272—2" and 24—5"
Tubes, length	15' 2 3/4"
Brakes	Westinghouse American
Capacity, water	5,000 gals.
Capacity, coal	12 tons
Superheater	Vaughan-Horsley

Following are the chief particulars of the 10 G2 Pacific locomotives which the C.P.R. is building at its Angus shops, Montreal, and of two similar ones which it has ordered in the U.S., mention of which has been made in previous issues. A diagram on pg. 297 shows the general dimensions.

Weight on drivers	136,000 lbs.
Total weight	215,000 lbs.
Cylinders	21" by 28"
Drivers, diar.	69"
Boiler, type	Radial stayed, wagon top
Boiler, pressure	200 lbs.
Heating surface, total	2,952 sq. ft.
Tubes, no. and diar.	193—2 1/4", 22—5"
Tubes, length	19' 6"
Firebox	94 1/2" by 70"
Grate area	45.6 sq. ft.
Capacity, water	5,000 gals.
Capacity, coal	10 tons
Air brakes	Westinghouse ET6
Axles	Krupp steel
Brake beams	Simplex trussed
Brake shoes	C.P.R. standard
Couplers	Tower
Headlight	Pyle National Electric
Journal bearings	Canadian Bronze Co.
Sight feed lubricators	Detroit
Springs	Crucible
Steam gauges	Star
Steam heat equipment	Gold system
Wheel tires	Krupp crucible
Wheel centres	Cast steel
Superheater	Vaughan and Horsley

Canadian Ticket Agents' Association.—G. A. Cullen, G.P.A., Delaware, Lackawana & Western Rd., has been selected to represent the American Association of General Passenger and Ticket Agents at the next meeting of the C.T.A.A. in Quebec, Oct. 5 to 7. T. J. Trueman, C.P.R., Midland, Ont., has recently joined the C.T.A.A.

The Crossen Car Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$1,000,000 and office at Cobourg, Ont., to carry on the business of manufacturers and dealers in all kinds of vehicles for the carriage of passengers and freight.

Recent British Columbia Legislation.

At the recent session of the B.C. Legislature acts were passed affecting transportation interests as follows:—

British Columbia and Alaska Ry.—Incorporation.

British Columbia Central Ry.—Incorporation.

British Columbia Electric Ry.—Confirming agreement between company and city of Victoria.

British Columbia Mainland and Coast Industrial Co.—Authorizing company to construct railways and tramways.

Cariboo, Barkerville and Willow River Ry.—Incorporation.

Comox Logging and Ry.—Incorporation.

Canadian Northern Pacific Ry.—Incorporation.

Canadian Northern Ry.—Confirming agreement between company and Government for construction of C.N. Pacific Ry.

Electrical Energy.—Providing for inspection of premises, works, wires and appliances generating, supplying or transmitting electrical energy.

Esquimalt and Nanaimo Ry.—Ratifying agreement between company and Government.

Graham Island Ry.—Reviving act of incorporation.

Howe Sound, Pemberton Valley and Northern Ry.—Authorizing company to extend its projected railway.

Island Valley Ry.—Incorporation.

Kettle River Valley Ry.—Confirming agreement between company and Government for construction of a railway.

Menzie's Bay Ry.—Incorporation.

Midway and Vernon Ry.—Amending act granting subsidy for construction.

Nelson.—Validating city by-law respecting street railway.

North Vancouver.—Confirming agreement of Council granting aid to North Vancouver City Ferries.

North Vancouver Island Ry.—Incorporation.

Pacific and Alaska Ry.—Incorporation.

Penticton Ry.—Incorporation.

Port Moody, Indian River and Northern Ry.—Incorporation.

Queen Charlotte Ry.—Incorporation.

Railway Subsidy Lands.—Authorizing repurchase by Government of lands granted in aid of construction of railways.

Vancouver and Nicola Valley Ry.—Incorporation.

Railway Commissioners' Traffic Orders.

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

CLASSIFICATION OF AUTOMOBILES.

9494. Feb. 4.—Re objection of Canadian Manufacturers' Association to classification of automobiles proposed by Canadian Freight Association. It is ordered that application of Canadian Freight Association for variation in the Canadian Classification rating of automobiles, "set up," in less than carloads, be refused. That the Canadian Classification rating of automobiles and other self-propelling vehicles, taken apart (wheels detached), in box cars, less than carloads, actual weight, be changed to double-first class; and that this change be incorporated in the forthcoming amendments to the Canadian Classification.

The Northern Construction Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$200,000 and office at Winnipeg, to take over the Northern Construction Co., Ltd., incorporated under the Ontario Companies Act in 1904. A. R. Mann and A. C. McKenzie are those chiefly interested.

C. P. R. Construction Contracts.

The following contracts have been let for construction on C.P.R. western lines, already referred to under the heading of C.P.R. Betterments, Construction, Etc., on another page:—

From Forward, Sask., westerly for 25 miles, to McArthur and Dutton;

From Craven, Sask., to Colonsay, 110 miles, to J. Bradley;

From Outlook, Sask., northwesterly for 93 miles, to McArthur and Dutton;

From Macklin, Sask., southeasterly to a junction with the line from Outlook, 54 miles, to Janse, McDonald and Timothy;

From Carmangay, Alta., northwesterly for 30 miles to Foley, Welch and Stewart;

From Irricana, Alta., easterly for 15 miles, to Foley, Welch and Stewart.

Modern Lettering, Artistic and Practical,

is the title of a book of instruction in the art of lettering, valuable not only to the beginner, but useful also to the experienced workman. The author, W. Heyney, is a man of experience, and gives in clear and simple language a useful course of instruction in lettering suitable for architectural, sign writing, decorative and artistic work. The instructions are illustrated by 35 plates of alphabets drawn by the author and suitable for adaptation to any class of work. In the first part the author describes the drawing materials and explains how they are to be used; in the second part, the mechanical construction of letters and numerals, and gives general rules for the construction of letters; in the third the alphabets, their history, description and proper use are treated of; the fifth, treats of the proper and artistic employment of lettering, the arrangement of letters, composition, spacing, grouping, designing, etc. The price of the volume is \$2, and the publisher is W. T. Comstock, 23 Warren St., New York.

THE GRAND TRUNK RAILWAY COMPANY OF CANADA.

NOTICE is hereby given that the Ordinary General Half-yearly Meeting of the Grand Trunk Railway Company of Canada, will be held at the City Terminus Hotel, Cannon Street, London, E.C., on Thursday the 14th day of April, 1910, at twelve o'clock noon precisely, for the purpose of receiving a Report from the Directors, for the election of Directors and Auditors, and for the transaction of other business of the company.

Notice is also given that at such meeting a resolution will be submitted, approving of the provisions of an Act of the Parliament of Canada, authorizing this company to acquire, guarantee, hold, pledge and dispose of stocks and securities of the Lachine, Jacques Cartier & Maisonneuve Railway Company, the Ottawa Terminals Railway Company and the Grand Trunk Pacific Terminal Elevator Company, Limited, and to enter into such agreements as may be necessary to carry out the purposes of said Act.

Notice is also given that the transfer books of the company in London and Montreal will be closed from Monday the 14th day of March, to the day of meeting, both days inclusive.

By order,
ALFRED W. SMITHERS,
Chairman.
H. H. NORMAN,
Secretary.

Dashwood House, 9 New Broad Street, London, E.C., 4th March, 1910.

THE ALGOMA STEEL CO., LIMITED

SAULT STE. MARIE, ONTARIO

IS NOW BOOKING
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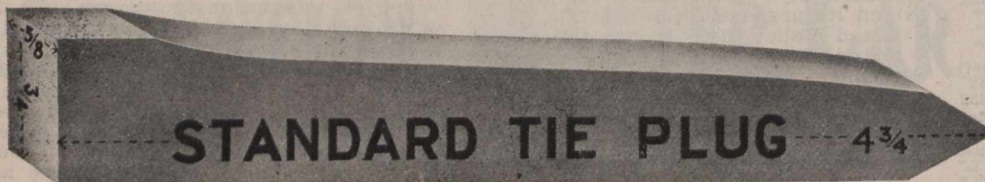
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THE SEASON OF 1910

Parties intending purchasing will find it to their interest to let us have their specifications at an early date so as to insure desired deliveries.

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In bags of 1000 each
Write for prices
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OWEN SOUND, ONT.

These plugs are giving good satisfaction. We are also large dealers in Ties, Posts, Timbers, Lumber, Sash, Doors, Interior Finish, and with the plant we have here should be able to supply you.

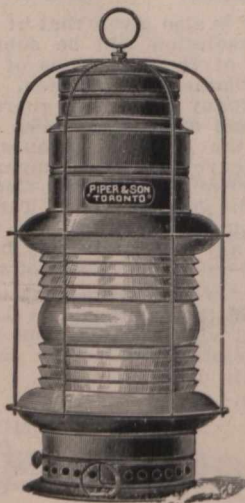
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SIDE LIGHTS

SHIP
LAMPS
ETC

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.

Canadian Lake Line.—J. M. Maver has been appointed Soliciting Freight Agent, Montreal.

L. J. Burns has been appointed Soliciting Freight Agent, Hamilton, Ont.

F. P. Welch has been appointed General Agent, Fort William and Port Arthur, Ont.

Canadian Northern Ry.—Osborne Scott, heretofore chief clerk advertising and general baggage offices, Winnipeg, has been appointed Travelling Passenger Agent, with headquarters in Toronto.

E. H. Williams, heretofore Locomotive Foreman at Kipling, Sask., has been appointed Locomotive Foreman at Brandon, Man., not General Foreman as stated in our last issue.

H. J. Cowie, heretofore Freight Agent at Liverpool, Eng., has been appointed European Traffic Manager, and will also have charge of Canadian Northern Steamships, Ltd., traffic business there.

Canadian Northern Steamships, Ltd.—H. C. Bourlier, heretofore of the Allan Steamship Co.'s Toronto office, has been appointed General Agent Passenger Department, Ontario Division, Canadian Northern Steamships, Ltd. Office, Toronto.

Canadian Pacific Ry.—A. C. Lytle, heretofore General Superintendent and Freight and Passenger Agent Orford Mountain Ry., has been appointed Assistant Superintendent District 1, Eastern Division, with jurisdiction over Orford Branch, reporting to the Superintendent District 1. Office, Eastman, Que.

E. W. Beatty, heretofore Assistant Solicitor, has been appointed General Solicitor. Office, Montreal.

F. R. Haney, heretofore chief clerk to Tax and Insurance Commissioner, Montreal, has been appointed Assistant to Tax and Insurance Commissioner, and Claims Adjuster for Lines East of Fort William, Ont. Office, Montreal.

P. A. Crysler, heretofore General Car Inspector Eastern Lines, has been appointed assistant general foreman of passenger car repair work at Angus shops, Montreal.

C. Lott, heretofore a train dispatcher at Smith's Falls, Ont., has been appointed temporarily a Train Rules Instructor and Examiner for the Eastern Division.

S. J. Sharp, until recently General Agent Passenger Department Atlantic Steamships, Toronto, who was transferred to a similar position at Winnipeg, as announced in our last issue, has resigned, and will go into the general steamship agency and real estate business in Toronto.

W. E. Woodhouse, heretofore Master Mechanic Western Division, Calgary, Alta., has been appointed Superintendent Winnipeg shops, vice S. J. Hungerford, resigned to enter Canadian Northern Ry. service.

E. A. Bradley has been appointed chief clerk Right of Way Department, Winnipeg, vice E. W. Bateman promoted.

R. Tidmus, heretofore in city ticket office, Nelson, B.C., has been appointed city ticket agent at Winnipeg, vice D. J. Rochon deceased.

J. Robertson, heretofore transitman, Moose Jaw, Sask., has been appointed Resident Engineer there, vice F. S. Rosseter resigned.

R. Anthony, heretofore Locomotive Foreman, Moose Jaw, Sask., has been appointed General Foreman there, vice J. H. Wilson transferred to Kenora, Ont., as stated in our Jan. issue.

R. A. Pyne, heretofore District Master Mechanic, Nelson, B.C., has been appointed Master Mechanic Western Divi-

sion, vice W. E. Woodhouse transferred. Office, Calgary, Alta.

T. J. Brown, heretofore transitman, Calgary, Alta., has been appointed Resident Engineer there, vice H. W. MacLeod transferred to the operating department.

W. H. McConnell, heretofore Trainmaster District 1, Western Division, Moose Jaw, Sask., has been appointed General Yardmaster, Calgary, Alta., vice W. A. Whited, who has left the service.

L. E. W. Bailey, who was recently appointed road foreman of locomotives, District 4, Western Division, has his headquarters at Macleod, Alta., not at Cranbrook, B.C., as stated in our last issue.

R. Brown, heretofore assistant boiler foreman, Winnipeg shops, has been appointed Locomotive Foreman, Cranbrook, B.C., vice D. T. Main promoted.

W. O. Miller, formerly Superintendent District 2, Pacific Division, Vancouver, B.C., has been appointed Superintendent District 3, Pacific Division, Nelson B.C.

D. T. Main, heretofore Locomotive Foreman, Cranbrook, B.C., has been appointed District Master Mechanic, Nelson, B.C., vice R. A. Pyne promoted.

H. W. MacLeod, heretofore Resident Engineer, Calgary, Alta., has been appointed Trainmaster, District 3, Pacific Division, Nelson, B.C., vice T. H. Crump, Trainmaster, Grand Forks, who has been transferred to Field, B.C.

The position of European Manager's Assistant has been abolished, E. Edwards, who held the position, has left the service.

T. J. Smith, heretofore Freight Agent at Liverpool, Eng., has been appointed General Freight Agent, vice H. D. Annable. Office, 62-65 Charing Cross, London, Eng.

F. W. Forster, heretofore Agent at Bristol, Eng., has been appointed Agent at Liverpool, Eng., vice J. J. Gilbertson resigned. He has also assumed the duties of Freight Agent there, vice T. J. Smith promoted.

A. S. Ray has been appointed Agent at Bristol, Eng., vice F. W. Forster transferred to Liverpool.

Grand Trunk Pacific Ry.—The following agents have been appointed:—G.T.P. Junction, Man., W. A. L. Armstrong; Firdale, Man., W. A. Taylor; Gregg, Man., W. W. Barr; Lazare, Man., J. A. Jacques; Fenwood, Sask., J. O. Deshayé; Raymore, Sask., F. O'Flynn; Venn, Sask., A. M. Demings; Watrous, Sask., R. M. Sutherland; Leney, Sask., J. H. Lewis; Ardrossan, Alta., A. Hughes.

Grand Trunk Ry.—Sir Wm. H. White, K.C.B., has been elected a director, vice Sir C. Rivers Wilson resigned.

C. H. Storey, heretofore foreman Brockville yards, has been appointed acting Roadmaster, Districts 5 and 6, between Vaudreuil, Que., and Kingston Jct., Ont., vice J. Henderson resigned. Office, Brockville, Ont.

H. E. Rice has been appointed Road Foreman of Locomotives, districts 25, C.S.M., 27, 28, 29 and P.O.N., vice J. R. Bunce assigned to other duties. Headquarters, Durand, Mich.

The following agents have been appointed:—Norton Mills, Que., H. A. Dunn; Danville, Que., F. Eastman; Jeanette's Creek, Ont., F. D. Ellis; Drumbo, Ont., F. Newman; Wiarton, Ont., C. W. Hinchy; Newton, Ont., J. Baxter; Ravensworth, Ont., J. G. Blanchfield.

Michigan Central Rd.—B. J. Coulson, heretofore yardmaster, Montrose, Ont., has been appointed General Yardmaster there, with jurisdiction over Montrose yard and interchange of traffic at Suspension Bridge.

J. J. O'Neill, heretofore night yardmaster, Windsor, Ont., has been appointed General Yardmaster at Victoria yards, Ont., with jurisdiction over Victoria and Welland yards, and interchange of traffic at Black Rock yard, Ont.

J. Handley, heretofore conductor, has been appointed acting Assistant Trainmaster, St. Thomas, Ont.

New York Central and Hudson River Rd.—The Mohawk and Malone, and St. Lawrence and Adirondack Rys. are now being operated as the Adirondack Division, J. W. Eber is Superintendent with office at Utica, N.Y.

Northern Navigation Co.—B. Patten, heretofore Travelling Freight Agent, has been appointed General Agent at Port Arthur, Ont., vice R. Beaumont, who is reported to have been appointed Agent G.T.P.R. Pacific Coast Steamship Service, Vancouver, B.C.

Pere Marquette Rd.—J. W. Kearns, heretofore Travelling Passenger Agent, London, Ont., has been appointed District Passenger Agent, Detroit, Mich., vice H. W. Jameson, who has left railway service for commercial work.

W. M. Hood has been appointed Travelling Passenger Agent, London, Ont., vice J. W. Kearns promoted.

Quebec Central Ry.—Jos. Fortin, heretofore acting Superintendent, has been appointed Superintendent. Office, Sherbrooke, Que.

Jno. Farquhar, heretofore Roadmaster, has been appointed General Roadmaster and Superintendent of Bridges and Buildings. Office, Sherbrooke, Que.

Too Late for Classification.

Alberta Central Ry.—Sir Thos. G. Shaughnessy, President C.P.R., is reported as stating Mar. 18, that there was no information to give with reference to reports from Calgary, that the company had acquired the A.C. Ry. charter. The report was to the effect that the charter had been sold to the C.P.R., which company intended to begin the construction of a line from Red Deer, through the Rocky Mountains to the Pacific Coast. (Dec., 1909, pg. 881).

G.T. Pacific Ry. on Vancouver Island.—W. Wainwright, Second Vice President, in reply to a delegation representing the Board of Trade of Victoria, B.C., is reported as having stated that the company proposed to start the construction of its line to Vancouver, early next year. That ferry service would be operated across Bute Inlet and that a subsidiary line would give connection with various points on Vancouver Island.

G.T.R. Track Relaying.—The company has completed the relaying of its double track between Montreal and Napanee, Ont., 198.9 miles, with 100 lb. rails, and rails have been bought for the relaying of the 133 miles between Napanee and Toronto, which will be done this year.

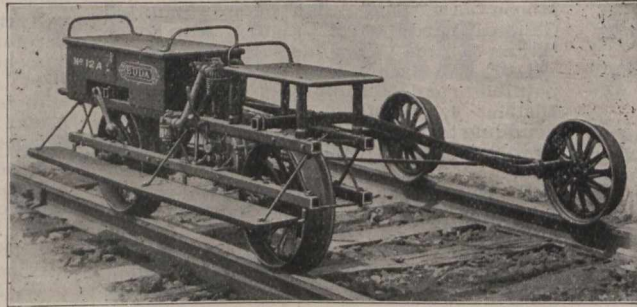
Morrissey, Fernie and Michel Ry.—The officers and directors for the current year are:—President and Treasurer, E. Rogers, Toronto; Vice President, E. C. Whitney, Ottawa; other directors, H. B. McGiverin, Ottawa; A. E. Stovel, Toronto, and W. P. Clough, New York.

Point St. Charles Burying Ground.—There is a plot of ground at the foot of St. Etienne St., Point St. Charles, Que., which was used as a burying ground for the 6,000 victims of the ship-fever in 1847-48, to whose memory a monument was erected by the employes of Peto, Brassey and Betts, which firm had the original contract for the construction of the G.T.R. This plot of ground lies between the G.T.R., its car siding and the main land opposite the guard pier, and the company is desirous of expropriating it for yard extension. The proposal is being opposed by the Irish residents of the city.

Prince Albert and Hudson Bay Ry.—An unconfirmed press report states that a contract has been let to A. J. Taylor, New York, for the construction of the first portion of this projected railway,

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and that a staff of engineers had arrived in New York from England Mar. 4, en route for Prince Albert, Sask. Dr. R. S. Reid, arrived in St. John, N.B., from Scotland, Mar. 11, and proceeded to Prince Albert, stating that he would have charge of the camps, etc., for the company. He said the surveys would be completed from Prince Albert to Edmonton, and Prince Albert to Fort Churchill on Hudson Bay as fast as possible and that it was hoped to complete 1,000 miles of line within two years.

A Prince Albert dispatch, dated Mar. 4, says, G. Atwood, the company's Chief Engineer, arrived there on the previous evening, and announced that the final location surveys would be proceeded with at once, and that construction would be started as soon as the frost was out of the ground. W. H. May, who is said to have been in charge of the preliminary survey work, will it is said remain as Assistant Engineer. A. J. Taylor was reported as being expected from New York by Mar. 30, to complete arrangements for starting work. A. B. Spicer, the principal shareholder, is reported as being expected from Great Britain at an early date, to represent the company. (Mar., pg. 187).

Quebec Central Ry.—Gross earnings for Jan., \$61,025.09; expenses, \$55,207.80; net earnings, \$5,817.29, against \$54,086.31 gross earnings; \$50,654.12 expenses; \$3,432.19 net earnings for Jan., 1909. Aggregate gross earnings for seven months ended Jan. 31, \$641,795.18; expenses, \$441,647.28; net earnings, \$200,147.90, against \$606,777.55 aggregate gross earnings; \$428,233.92 expenses; \$178,543.63 net earnings for same period 1908-09.

Temiskaming and Northern Ontario Ry.—Total revenue for Jan., \$154,428.43; operating expenses, \$97,091.34; net earnings, \$57,337.09; ore royalties, \$3,520.91; total, \$60,858.00; less hire of equipment, \$6,445.61; net result, \$54,412.39; expenses per cent. of earnings, 62.2.

White Pass and Yukon Ry.—It is reported from Vancouver that an extension of five miles will be built to the Pueblo mine this season.

Telegraph and Cable Matters.

T. J. McKavanagh, Chief Electrician of the cable steamer Minia, read a paper on submarine cables at a meeting of the Nova Scotia Society of Engineers at Halifax, Mar. 10.

It is reported that the Commercial Cable Co. will, shortly, lay another cable between this continent and Europe, thus making the sixth cable controlled by the company.

D. Adams, who entered the Montreal Telegraph Co.'s service in 1869, has been appointed local manager G.N.W. Telegraph Co., at London, Ont., succeeding the late W. C. Furness.

The C.P.R. telegraph operators are reported to be considering the question of asking an increase of pay, and for the abolition of Sunday work, except where absolutely necessary, when double pay is suggested.

The Board of Railway Commissioners issued an order Mar. 3, directing that all telegraph companies doing business in Canada, file with the Board, by Apr. 1, copies of all forms used in receiving and transmitting messages.

The Board of Railway Commissioners took up the question of telegraph rates Mar. 21, when the Western Associated Press stated the objections of the western press to the schedules filed by the telegraph companies, Mar. 1, in accordance with the Board's order.

Press reports state that the G.T.P.R. has applied to the Dominion Government for authority to erect a system of wire-

less telegraph stations across the Rocky Mountains, to connect Edmonton with Prince Rupert, for its own, as well as for commercial purposes.

In reply to questions in the Newfoundland Legislature recently, the Minister of Justice said that a copy of the evidence in the enquiry into the use of railway telegraphs for purposes other than those contemplated by the Railway Act, would be laid on the table at an early date.

The Newfoundland Minister of Finance in a budget statement, Mar. 8, stated that with four months of the fiscal year to elapse, the telegraph receipts to Feb. 28, were \$37,899.21, against \$33,046.65 for a similar period 1908-09. He also stated that since 1890, about 2,500 miles of telegraph line had been erected.

E. W. Humphreys, who was at one time interested in the Dominion Deforest Wireless Telegraph Co., and the Northern Commercial Telegraph Co., has entered a suit in the Superior Court, to recover about \$2,500,000 from the Northern Commercial Telegraph Co., Roebinger Sons & Co., F. C. Dixon, and S. Carsley, of Montreal, and for the annulment of certain loans and contracts.

The bill to incorporate the Maritime Telephone and Telegraph Co., was considered by the Nova Scotia Legislature, Mar. 15, an amendment being put forward by the applicants defining that the powers sought were to conduct a telephone and telegraph business solely, and that the clause relating to water rights was intended to give power only for the crossing of streams or lakes with wires and poles.

The proposal to adopt a system of telegraph letters similar to one recently inaugurated in the U.S., is under consideration by the telegraph companies. The idea is that letters of 50 words should be sent at night at the same rate as 10 words in the daytime. J. Kent, Manager C.P.R. Telegraphs was reported to have said recently that should such a system be adopted in the U.S., it would also be introduced in Canada.

The Board of Conciliation appointed to investigate the grievances of the G.T.R. telegraphers, on the lines east of the Detroit and St. Clair Rivers, in reporting, state that they agree that the schedule which became effective Jan. 1, 1908, should remain in force with certain exceptions, and should become effective on the Canada Atlantic Ry., which should be classed as a branch line except from Swanton to Ottawa, which should be dealt with as a main line, the 1907 schedule in force on the C.A.R. to be cancelled. The schedule should also be altered so that the monthly pay of operators on branch lines should be from \$46 to \$75, and on main line, \$50 to \$75, with extra allowances for reliefs away from home, Sunday work, and extra service. W. Nesbitt, K.C., for the company objected to extra pay for Sunday work.

The application of eastern and western newspaper publishers against the telegraph rates on Press Association matter, came before the Board of Railway Commissioners, Mar. 22. As a result of a conference, the C.P.R. announced that it would give a rate for the eastern zone, which would be open to any association of publishers on the same terms as to the volume and number of words, as to the Press Association, and stated that a sliding scale of rates would be drawn up and filed by Apr. 12, under which the morning paper rate would remain in force and evening papers would pay an increase of 20%. The press representatives in reply said that until a per word tariff was filed for the western business, they would not be in a position to say whether the new rate would be satisfactory. The Board intimated that after the amended tariff was submitted for

approval a sitting would be arranged in Winnipeg, when objections would be heard.

C. P. R. Telegraph Extensions.

In addition to the telephone train dispatching circuits to be installed on the C.P.R. this year, particulars of which are given on another page, a 210 lb. copper wire will be strung from Montreal to Vancouver, to be used entirely for British Pacific cable's Trans-Canada traffic. It will be operated with the Wheatstone automatic system duplexed. It is expected that only one relay office will be necessary between Montreal and the Pacific cable.

An additional copper wire will be strung between Cranbrook and Sirdar, B.C., also two iron wires between Nanaimo and Victoria, B.C., which will be continued on to Vancouver through a new 3-core cable which is now being manufactured and will be laid about June next between Vancouver and Nanaimo. This will provide an alternate cable connecting the main line with Vancouver Island, and has been found necessary on account of the increased traffic on the Island. There will also probably be wires strung between Amherst and Truro, N.S., Montreal, Que., and Ottawa, Ont., Stanbridge and St. Guillaume, Que., and Farnham and Drummondville, Que. In addition to the above there will be a large amount of re-building and general repairs requiring about 400 men during the summer.

Among the Express Companies.

The Board of Railway Commissioners has notified express companies operating in Canada that its final sitting in connection with its enquiry into express changes will be held at Ottawa, Apr. 6.

The Board of Railway Commissioners has extended until June 1, the time during which the tariffs of tolls of the various express companies operating in Canada, have been temporarily approved.

The Board of Railway Commissioners passed the following order 9813, Mar. 9.—Re complaint of Manitoba Free Press, Telegram Printing Co., and Tribune Publishing Co., of Winnipeg, complaining against the rate charged by the Dominion Express Co. for carrying newspapers out of Winnipeg. Upon its appearing that at one time newspapers were carried by the respondent company from Winnipeg to points in Western Canada at a special rate of ¼ c. per lb., which rate was advanced to ½ c. per lb., and that later, on Mar. 2, 1907, this rate was restricted to a radius of 300 miles from Winnipeg. And its also appearing that the special rate of the respondent company in eastern Canada is ¼ c. per lb. within a radius of 300 miles of the office of publication, and that the application for a rate in western Canada equal to that charged in eastern Canada, having regard to the former rate of ¼ c. per lb. from Winnipeg, is reasonable. It is ordered, That the rate to be charged by the express companies for the carriage of daily newspapers from Winnipeg, shall be the same as charged by the respondent company in eastern Canada, namely, ¼ c. per lb. on the aggregate weight per month, to points reached by the said companies within 300 miles of Winnipeg exclusive of wagon service. It is further ordered, That order 9156, dated Jan. 3, 1910, be rescinded.

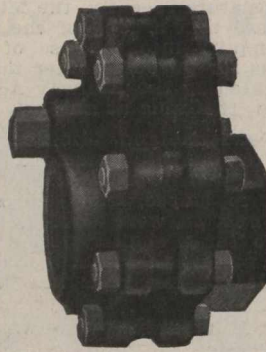
A Sharbot Lake, Ont., liquor dealer, has been fined \$50 and costs for selling intoxicating liquor to a C.P.R. locomotive engineer who was on duty. The engineer was dismissed from the service.

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Grain Elevator Notes.

The Great West Elevator Co., Ltd., has been incorporated under the North West Territories Ordinance, with office at Edmonton, Alta.

The Montreal Harbor Commission will erect an elevator of about 2,000,000 bush. capacity, near the Victoria pier, as a part of its scheme of harbor improvement, which will be carried out during the next few years.

A bill seeking to extend the powers of the Dominion Millers' Association was on Mar. 4, referred by the Private Bills Committee of the House of Commons to a sub-committee for consideration. The Association is seeking power to construct elevators and to operate steamships in addition to other powers.

The Saskatchewan Government has appointed a commission to consider the grain growers' proposals in connection with the suggested Government ownership of elevators. The commission consists of Prof. McGill, Dalhousie University, Halifax, N.S., G. Langley, M.L.A., and F. W. Green, Secretary Saskatchewan Grain Growers' Association.

The contract for the erection of the addition to the Goderich Elevator and Transit Co.'s elevator at Goderich, has been let, and it is stated that the work will be commenced as soon as the ice clears sufficiently to allow of the necessary dredging being done. The structure will be of concrete, supported on iron and wooden piles driven to rock, and of the square bin type reinforced with steel bars.

The Manitoba Government bill to establish a Government system of grain elevators in the province, provides that elevators will be erected in any part of the province on a petition from 60% of the farmers in the vicinity, who must agree to use the Government elevators exclusively. The expropriation of existing elevators is also covered, but it is believed that this clause involves the Dominion Government, and some difficulty may arise in such connection. A commission will be appointed by the Government for the operation of the elevators, and the right to select and remove members of the commission is reserved by the Government.

Quebec Public Utilities Commission.

The Quebec Government, Mar. 4, appointed Col. Hibbard, Montreal; Sir J. G. Garneau, Quebec; and C. Laberge, Professor in the Polytechnical School, Montreal, members of the Quebec Public Utilities' Commission, the formation of which was authorized by the Legislature, in 1909. Colonel Hibbard has been named President.

The act of the Legislature authorizing the formation of the commission is chap. 16, and was assented to May 29, 1909. It authorizes the Lieut-Governor in council to appoint a commission of three members, (to hold office for ten years, unless removed previously for cause) which commission shall be a court of record, to be called the Quebec Public Utilities Commission. One of the commissioners is to be appointed President, and another Acting President, any two of whom shall form a quorum; but a single commissioner may act in cases where there is no opposing party, and no notice to be given to any interested party; or where the commission or the President may authorize any one of its members to make a report. The President's opinion on points of law shall prevail, and the commissioners shall continue to act though there be a vacancy. No commissioner shall act in any matter in which he may be interested, and his place may be temporarily filled by

the nomination of some disinterested person, by the Lieut.-Governor in council. Provision is made for the appointment of a Secretary, and for the appointment of officials having expert or technical knowledge to assist the commissioners. The salary of the President is \$4,000 a year, and that of the commissioners is \$3,000 each, and the Lieut.-Governor in council is authorized to grant them in addition a sum not exceeding \$10 a day for each day's sitting of the Commission attended. The salary of the Secretary is fixed at \$1,800 a year, and the salary of other employes and the remuneration of experts is to be fixed at the time of their appointment. The interpretation clause defines the word "public utility as meaning every corporation (other than a municipal corporation), firm, person or association of persons, the business and operations whereof are subject to the legislative authority of the province, now or hereafter operating telegraph or telephone lines, any railway, street railway or tramway, or for the production and delivery of heat, light or power, either directly or indirectly to the public.

The Commission is given jurisdiction in all matters heretofore within the jurisdiction of the Railway Committee of the Executive Council; in all questions relating to the transportation of goods by tramway companies; in all matters mentioned in articles 5165 to 5169 of the Revised Statutes of the Province; in all contestations as to tolls of public utilities, subject as to electric railways to paragraphs 6a and 6b article 5172 of the Revised Statutes of the Province; in the placing of rails, etc., on public roads in certain cases; in the placing of rails, etc., on public roads in order to reach other places, and certain contestation between public utilities and municipalities. In connection with the construction of telephone, telegraph and transmission lines, section 24 of the act specifies the conditions which shall be performed over and above those which may be prescribed in each case by the Commission. The Commission has no jurisdiction in cases for damage.

The Commission may make rules of practice regulating its procedure, and sections 29 to 45 inclusive, cover the powers possessed by the Commission as to the making of orders and for enforcing them. An appeal against an order may be made to the Court of Appeal upon questions of jurisdiction and law by permission of a judge, and sections 46 to 51 inclusive, cover all the procedure in connection with appeals.

The Commission is to report to the Government annually in July on the work done for the year ended June 30. The powers of the Railway Committee of the Executive Council and of the Minister of Public Works in respect to all matters coming under the jurisdiction of the Commission, are suspended from the time of the appointment of the Commission, and "so long as the Commission shall continue to exist."

Toronto Railway Judgment.

The Judicial Committee of the Privy Council delivered judgment in London, Eng., Mar. 18, on the appeal of the city of Toronto from the judgment of the Ontario Court of Appeal in favor of the order of the Ontario Railway and Municipal Board, regarding the right of the Toronto Ry. to lay tracks on certain streets in the city. In delivering the judgment, Lord Macnaghten said:—"This is a singular appeal, and in their Lordships' opinion a very idle one. In form it is an appeal from an order of the Court of Appeal for Ontario dismissing an appeal from the order of the Ontario Railway and Municipal Board. In sub-

stance it is an attempt to avoid or impugn an order of his Majesty in council and to reopen a question finally determined in litigation between the parties to the present controversy, the city of Toronto and the Toronto Ry. Co."

After reciting the history of the street railway agreement and the disputes that arose between the company and the city, he continued:—"On May 17, 1907, on application by the city against the company in the case commonly called the 'overcrowding case,' the Ontario Railway and Municipal Board ordered the company to construct between 10 and 15 additional miles of single track. Proceeding to comply with the order the company selected certain streets. These streets, as appears from the finding of the board, had at one time been approved by the city engineer. The city, however, did not approve the recommendations of its own engineer, taking up the position that the company had no right to build on streets, even when recommended by the city engineer, unless those streets were also approved by the city council."

The decision then refers to the clause in the act promoted by the city and passed in 1908, and says:—"The preamble of the act contains recitals with reference to other matters dealt with in the act, but it is silent as to the object of clause 1. It is difficult to understand the purpose of that clause. At first sight it looks as if it were aimed at His Majesty's order, and the advice tendered by this board on the occasion of former litigation. If that were indeed the aim of the bolt, it is very wide of the mark. In effect, it seems to be nothing more than an affirmation of a proposition, with which the railway company was never concerned to quarrel, and with which it now professes to be in complete accord."

The application of the company to the Ontario Railway and Municipal Board for power to lay tracks upon the streets it had selected was then recited, and the judgment says:—"On the appeal to the Ontario Court of Appeal, and on hearing this appeal, some reliance was placed on behalf of the city on the enactment contained in the 1908 act. The argument on the part of the appellants appears to be mainly founded on the shorthand note of some extracts from speeches delivered by counsel on the hearing of the former case, a line of argument which their Lordships are not prepared to follow nor disposed to countenance. The judgment in the former case seems to be perfectly clear, and the order of His Majesty unaffected by the legislation of 1908. Their Lordships will, therefore, advise His Majesty that the appeal must be dismissed. The appellants will bear the costs of the appeal."

Railway Lands Patented.—Letters patent were issued during Jan., covering the following railway lands in Manitoba, Saskatchewan, Alberta and British Columbia:—

	Acres.
Canadian Northern Ry.	21.43
Canadian Pacific Ry.	3,871.77
Canadian Pacific Ry., Souris branch..	7,608.30
C.P.R. roadbed and station grounds ..	152.02
Manitoba Southwestern Col. Ry.	2,840.25
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	160.00
Total	14,653.77

The Dominion Parliament has voted \$38,700 for new machinery for the Intercolonial Ry. locomotive and machine shops at Moncton, N.B.

The U.S. Government has cancelled the privilege of bonding Chinese through Canada to the States at Pacific points. The C.P.R., it is stated, will overcome the difficulty by carrying the Chinese across the continent to Halifax, and transporting them thence to Boston or New York.

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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. Dubee, Secretary, Montreal St. Ry.; E. A. Evans, General Manager, Quebec Ry. Light and Power Co.; R. J. Fleming, General Manager, Toronto Ry.; 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.
OFFICIAL ORGAN, THE RAILWAY AND MARINE WORLD.

Winnipeg Electric Ry. Co.'s Report.

The report for the year ended Dec. 31, 1909, shows net earnings of \$863,405.62 after providing for all operating expenses, taxes, the city's proportion of earnings, and other fixed charges. Out of net earnings the directors declared four quarterly dividends amounting to \$600,000, leaving a surplus of \$263,405.62, which has been transferred to profit and loss account, making a total credit to this account of \$861,430.03.

The hydraulic works at Pinawa channel, Winnipeg River, were very satisfactory up to Nov. 23, when one of the penstocks burst, which resulted in the closing down of the whole plant for six days. While the hydraulic plant was closed down, the steam plant was put in operation and a partial service maintained in all departments. All expense in connection with this breakdown has been charged against operating expenses.

In accordance with the plan of extensions adopted at the last annual meeting, the following improvements and additions to the equipment and system have been made in the various departments: 4.995 miles of track was laid; 4.037 miles of which was track with concrete foundation and asphalt pavement—the balance being surface track with ballast. 30 large double truck closed cars, equipped with air brakes, electric heaters both in the body of the car and motorman's vestibule, and many other modern appliances to ensure the safety and comfort of passengers and operators, were constructed in the company's shops and put into service. 749 new poles were erected and 120,141 lbs. of wire, with 129 transformers, put up, in extension of the lighting and power distribution system. 26,914 ft. of new gas main were laid and 747 new gas services installed in extension of the gas distribution system.

ASSETS.

Cost of property: street railway, electric lighting, electric power, gas, water power	\$13,499,020.36
Stores	192,693.33
Accounts receivable	124,321.51
Cash on hand	9,286.46
Conductors' working fund	7,261.35
Subsidiary companies	295,091.14
	\$14,127,674.15

LIABILITIES.

Capital stock	\$6,000,000.00
Bonds 5% payable Jan. 1, 1927	\$1,000,000.00
Bonds 5% payable Jan. 2, 1935	4,000,000.00
	5,000,000.00
Debenture stock, 4½% perpetual	£300,000-0-0
	1,458,000.00
Accounts payable	\$235,758.00
Dividend paid Jan. 3	150,000.00
Wages for Dec.	31,971.90
Interest on bonds paid Jan. 3	125,000.00
Accrued interest on debenture stock.	16,410.00
	559,139.90
Car license, due Feb. 1	4,080.00
City percentage, due Feb. 1	53,489.14
	57,569.14
Unredeemed tickets	3,074.89
Bank of Montreal	157,396.77
Suspense	31,063.42

Surplus	\$13,266,244.12
	861,430.03
	\$14,127,674.15

CONTINGENT LIABILITY.

Suburban Rapid Transit Co.'s bonds	\$500,000.00
Winnipeg, Selkirk & Lake Winnipeg Ry. bonds	400,000.00
	\$900,000.00

REVENUE AND EXPENDITURE.

Gross earnings	\$2,623,731.41
Gross expenses	1,320,665.09
	\$1,303,066.32

PROFIT AND LOSS ACCOUNT.

Balance at credit, Dec. 31, 1908	\$598,024.41
Net earnings	263,405.62
	\$861,430.03

WINNIPEG, SELKIRK & LAKE WINNIPEG RY. CO.

ASSETS.

Cost of property	\$824,479.61
Stores	291.75
Cash in bank	\$7,406.57
Cash on hand	515.65
	7,922.22

AGENTS' BALANCES:

Winnipeg	\$224.45
Selkirk	58.25
	282.70

Accounts receivable	645.32
Suspense	3,428.56
	\$837,050.16

LIABILITIES.

Capital stock	\$500,000
Less unpaid	388,500
	\$111,500.00
Bonds	400,000.00
Accounts payable	314,309.17
	\$825,809.17

Surplus	\$11,240.99
	\$837,050.16

REVENUE AND EXPENDITURE.

Gross earnings	\$67,419.84
Gross expenses	31,147.78
	\$36,272.06

FIXED CHARGES:

Interest on bonds	\$20,000.00
Taxes, etc.	2,698.32
	22,698.32

Surplus	\$13,573.74
---------------	-------------

ASSETS.

Cost of property	\$404,408.00
Cash on hand	79.70
Cash in bank	557.51
W. E. R. Co. loan	212,082.45
Accounts receivable	347.55
	\$617,475.21

LIABILITIES.

Capital stock	\$100,000.00
Bonds	500,000.00
Accounts payable	15,576.56
Ticket account	251.28
Suspense	41.15
	\$615,868.99

Surplus	1,606.22
	\$617,475.21

REVENUE AND EXPENDITURE.

Gross earnings	\$46,293.86
Gross expenses	29,038.87
	\$17,254.99

FIXED CHARGES:

Interest on bonds	\$25,000.00
Taxes, etc.	1,890.61
	26,890.61

Deficit	\$2,635.62
---------------	------------

The following increases were made during 1909 over 1908: gross earnings, \$417,636.53 or 18.93%; expenses, \$231,792.59 or 21.29%; net earnings, \$185,843.94 or 16.63%. Expenses were 50.34% of earnings, against 49.35% in 1908. The number of passengers carried was 26,382,773 against 22,019,507 in 1908; transfers issued 8,925,849 against 7,777,315 in 1908, and the earnings per capita, 10.03c. against 9.80c. in 1908.

The officers and directors for the current year are as follows:
Winnipeg Electric Ry.—President, W. Mackenzie; Vice-President, W. Whyte; Secretary-Treasurer, F. M. Morse; other directors, Sir Wm. C. Van Horne, D. D. Mann, D. B. Hanna, A. M. Nanton, H. Sutherland, R. J. Mackenzie.

Winnipeg, Selkirk and Lake Winnipeg Ry.—President, F. M. Morse; Vice President, D. H. Laird; other directors, W. Whyte, A. M. Nanton, J. H. Munson, L. J. Loader, H. Sutherland.
Suburban Rapid Transit Co.—President, A. M. Nanton; Secretary, F. M. Morse; other directors, W. Whyte, D. B. Hanna, H. Sutherland.

Calgary Street Railway Earnings, Etc.

Following is a statement of the revenue and expenditure for the six months' ended Dec. 31, 1909, of this railway, which is owned and operated by the City of Calgary, Alta., the Chairman of the Commission being R. R. Jamieson, formerly General Superintendent C.P.R. Central Division:—

REVENUE.

Passenger earnings	\$56,580.35
Miscellaneous earnings	925.33
	\$57,505.68

OPERATING EXPENSES.

General expense	\$ 3,931.25
Maintenance of way and structures	1,523.91
Maintenance of equipment	3,060.90
Power for operation	13,361.26
Transportation expenses	14,137.19
	\$36,014.51

Balance revenue over operating expenses

	\$21,491.17
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Interest and fixed charges

	11,489.80
--	-----------

Net revenue

	\$10,001.37
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DISPOSITION OF NET REVENUE.

Material purchased for maintenance and operation, 1910	\$ 1,280.72
Insurance prepaid for 1910	1,213.15
Carried forward to contingent account	7,507.50
	\$10,001.37

PASSENGERS CARRIED.

July	101,273 or 3,751 per day, operating 2 cars
Aug.	194,721 or 6,491 per day, operating 4 cars
Sept.	239,839 or 7,994 per day, operating 9 cars
Oct.	229,576 or 7,654 per day, operating 10 cars
Nov.	229,938 or 7,665 per day, operating 11 cars
Dec.	279,581 or 9,010 per day, operating 11 cars

Following is a statement of gross revenue and operating expenses for Jan., 1910.

REVENUE.

Passenger earnings	\$11,375.60
Miscellaneous earnings	189.00
	\$11,564.60

OPERATING EXPENSES.

Maintenance of way and structures—	
Track and roadway	\$321.90
Electric lines	81.00
Buildings and fixtures	11.25
	\$414.15

MAINTENANCE OF EQUIPMENT.

Cars	349.21
Electric equipment of cars	298.43
Shop expenses	68.45
	716.09

TRANSPORTATION.

Power for operation	\$3,617.50
Superintendence of transportation	39.00
Wages of conductors and motormen	3,069.10
Car service supplies	19.35
Miscellaneous car service expenses	211.14
Cleaning and sanding track	33.01
	9,989.10

GENERAL EXPENSES.

Salaries, general offices	\$380.00
Salaries, clerks	50.00
Printing and stationery	109.30
Miscellaneous office expenses	22.63
Miscellaneous general expenses	45.75
Rent of land and buildings	35.00
	642.68

Revenue balance

	\$8,762.02
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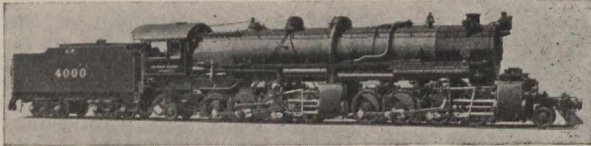
Revenue, 23.163 cents per car mile; operating expenses, 17.550 cents; net earnings, 5.613 cents; passengers carried, 276,752.
There are now 15½ miles of track operated. Tracklaying was commenced in May, 1909, and completed in September. It is expected to lay some more track this year.

The British Columbia Legislature has under consideration a bill providing for the appointment by the government of a tramway inspector whose duty it shall be to inspect all tramways or street railways constructed, in course of construction, or that may hereafter be constructed in the province.

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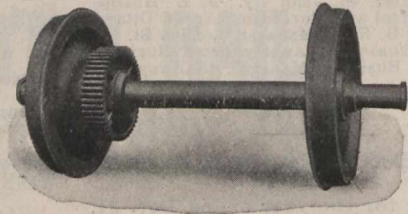
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Ontario Electric Railway Legislation.

In the closing days of the recent session of the Ontario Legislature, Sir James Whitney introduced two bills, one to amend the Ontario Railway Act, 1906, the other to amend the Ontario Railway and Municipal Board Act, 1906, one of their avowed objects being to render nugatory any decision which the Imperial Privy Council might give in the appeal pending between the city of Toronto and the Toronto Railway Company, should such decision be favorable to the company. Many of the other provisions of the bills were also of a most drastic nature and applied to other electric railway companies, Section 5, of the bill to amend the Ontario Railway and Municipal Board Act as introduced read as follows:—

"The powers conferred by this Act upon the Board shall be in addition to the powers now possessed by it, but shall not interfere with or take away the rights of any municipal corporation under any agreement between the corporation and the company and, unless with the consent of the corporation, shall be exercised subject to such rights."

While this clause provided that no rights enjoyed by a municipality under an agreement could be taken away, Section 9 provided that the Board could make an order against a company, notwithstanding any agreement or the provisions of any other act. On behalf of the Canadian Street Railway Association, strong objection was taken to this one-sided proposal, and as will be seen by the copy of the bill as passed, which is given further on, the portion of section 5 which was objected to was withdrawn, but other representatives met with scant consideration, except that section 10 was added, which limits certain powers given to the Board to cities having a population of 100,000 or over, in other words to Toronto.

The two bills as forced through the House by the Premier are confiscatory legislation of the most pronounced type, showing an absolute disregard of vested rights. Added to previous legislation, they will effectually prevent the investment of capital in electric railway construction and render it impossible to secure the construction of interurban systems which are so necessary through the rural districts of the older portions of the province. The acts are given in full below:—

AN ACT TO AMEND THE ONTARIO RAILWAY AND MUNICIPAL BOARD ACT, 1906.

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. This Act may be cited as "The Ontario Railway and Municipal Board of Amendment Act, 1910."

2. Whenever the Board is of opinion after hearing had upon its own motion or after complaint that the regulations, practices, equipment, appliances or service of any railway company in respect to transportation of persons, freight or property are unjust, unreasonable, unsafe, improper or inadequate, the Board shall determine the just, reasonable, safe, proper and adequate regulations, practices, equipment, appliances or service thereafter to be in force, to be observed and to be used in such transportation of persons, freight, and property and so fix and prescribe the same by order to be served upon the railway company to be bound thereby, and it shall be the duty of the railway company to observe and obey every requirement of every such order and to do everything necessary or proper in order to secure absolute compliance with and observance of every such order by its officers, agents and employees.

3. Whenever in the opinion of the Board repairs or improvements to or changes in any tracks, switches, terminals or terminal facilities, motive power

or any other property or device used by any railway company in or in connection with the transportation of passengers, freight or property ought reasonably to be made thereto in order to promote the security or convenience of the public or of the employees of the company or to secure adequate service or facilities for the transportation of passengers, freight or property, the Board, after a hearing had either upon its own motion or after complaint, shall make and serve an order directing such repairs, improvements, changes, or additions to be made within a reasonable time and in a manner to be specified therein, and every railway company shall make all repairs, improvements, changes and additions required of it by any such order within the time and in the manner specified in the order.

4. Whenever in the opinion of the Board a street railway company

(a) Does not run cars enough or possess or operate motive power enough reasonably to accommodate the passengers transported or offered for transportation to it, or

(b) Does not run its cars with sufficient frequency or at a reasonably proper time, or

(c) Does not run any car upon a reasonable time schedule for the run, or

(d) Does not provide reasonable routes and services for the accommodation of the public, or

(e) Does not provide for stopping its cars to take on and discharge its passengers at convenient points or at a sufficient number of points, or

(f) Does not sufficiently or properly heat and light any of its cars or keep the same clean, or

(g) Operates any car which is not in proper repair and condition,

the Board shall have power after a hearing had either on its own motion, or after complaint to make an order directing the company to increase the number of its cars or its motive power, to change the time for starting any car, to change the time schedule for the run of any car, to require the company to run cars and provide a sufficient service upon any route that the Board may deem necessary for the accommodation of the public, to sufficiently light and heat its cars and keep them clean, to stop its cars to take on and discharge passengers at such points as the Board may deem proper, and to make any other order which the Board may deem necessary to accommodate and transport the passengers transported or offered for transportation, and the company shall be bound to obey every such order according to the exigency thereof.

5. The powers conferred by this Act upon the Board shall be in addition to the powers now possessed by it.

6. The Board shall have the like power and authority for the enforcement of any order made by it under the provisions of this Act as it now possesses for the enforcement of its orders, and especially the power and authority conferred by sections 20 and 63 of The Ontario Railway and Municipal Board Act, 1906.

7. This Act shall be read with and as part of The Ontario Railway and Municipal Board Act, 1906, and sections 2, 3, 5 and 6 of this Act shall apply to street railways as well as other railways.

8. Section 65 of the Act mentioned in the next preceding section is hereby repealed.

9. The provisions of this Act shall apply notwithstanding any agreement between the company and a municipal corporation or the provisions of any general or special Act relating to the agreement or to the company.

10. The powers conferred by this Act in the case of street railways wholly or partly in cities having a population of One Hundred Thousand or over shall

include, but in the case of other street railways shall not include, the power to require the company owning or operating the street railway to construct, maintain and operate additional lines and extensions of existing lines, in, along and upon any street or highway or part of a street or highway upon which the company has authority to construct, maintain and operate its railway.

AN ACT TO AMEND THE ONTARIO RAILWAY ACT, 1906.

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1. This Act may be cited as "The Ontario Railway Amendment Act, 1910," and shall be read with and as part of The Ontario Railway Act, 1906.

2. Where under the provisions of an agreement between a municipal corporation and a street railway company or any person from whom a street railway company has derived its title, the corporation has become or shall hereafter become entitled to grant to another company or person the right to construct and operate a street railway on any street or part of a street upon which such first mentioned company was authorized or empowered to construct or operate its railway or any part of it, by reason of the failure of such company to construct and operate or to operate its railway thereon, such corporation, instead of granting such right to another company or person, may itself construct, operate and maintain a railway thereon either as a separate and distinct line of railway or as part of any other railway which such corporation owns or operates or has power to construct or operate.

3. (1) A railway company shall not, without having first obtained the permission and approval of the Ontario Railway and Municipal Board, begin the construction of its railway or of any extension of it upon any highway or part of a highway upon which it has authority to construct or extend its railway, and the Board shall have power to withhold its permission and approval whenever it is of opinion that it has not been made to appear that the construction or extension upon such highway or part of a highway is necessary or convenient for the public service, or whenever in the opinion of the Board it is not in the public interest that the railway should be constructed or extended upon such highway or part of a highway.

(2) This section shall apply to a street railway.

4. The proviso to subsection 1 of section 569 of The Consolidated Municipal Act, 1903, is hereby repealed and the following substituted for it:—

Provided that the powers conferred by this section shall not be exercised in respect of any street or part of a street in, along, or upon which a street railway company is entitled under an agreement with the municipality to construct and operate its railway, so long as such right shall continue to exist, and any question or dispute as to whether a street railway company is so entitled, shall be determined by the Ontario Railway and Municipal Board.

5. Section 2 shall not come into force until a day to be named by the Lieutenant-Governor by Proclamation.

At a meeting of mayors and representatives of the larger Canadian cities, held at Ottawa, Mar. 9, a resolution was passed declaring that in order to prevent confusion of plans of operation, federal, provincial and civic, and to prevent injury to local franchises, it is essential that all plans of railway or telegraph companies should be subject to the consent of the municipalities expressed by by-law, before any rights are granted by Parliament.

Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—It is expected that the line from New Westminster to Cloverdale will be completed and placed in operation by April 1. It is now being ballasted by gangs working from both ends. The gravel for the ballast is being obtained from a pit at Sullivan's, eight miles from New Westminster, to which point the company has constructed a spur line. The grading between Abbotsford and Chilliwack, has been practically completed, the unfinished portions, including some heavy work between Abbotsford and Sumas, along Sumas Lake. The bridges are being erected, and it is expected that tracklaying will be started April 1, at Abbotsford, 36 miles from New Westminster. The sub-power station at Cloverdale is nearing completion, and those at Abbotsford and Chilliwack are under construction.

A contract has been let to the International Contract Co., of Seattle Wash., for the construction of two towers, to carry the high power transmission wires across the Fraser River at New Westminster. The towers are to be 190 ft. above high water mark. (Mar., pg. 231.)

Cape Breton Electric Co.—The question of the extension of the electric lines in Sydney, N.S., was considered by the City Council, Mar. 15, representatives of the company being present. Mr. Pratt, representing the Stone and Webster Management Association, Boston, Mass., the managers of the company, said nothing would be done this year, probably nothing next year, but it might be that some extensions could be arranged for in 1912, provided it could be shown that they would be a source of profit. (Dec., 1909, pg. 929.)

The Dominion Ry. and Plaster Co. owns a large deposit of gypsum in the vicinity of East Bay, N.S., which is being opened up, and for the purpose of providing adequate shipping facilities, it is proposed to construct an electric railway from the pits to Sydney, about 14 miles. A free right-of-way has been secured through the county of Cape Breton, and a cash bonus of \$35,000 is promised on completion of the line. The route will be along the main highway, through a well-settled district, and the terminals at East Bay will be on the Bras d'Or Lakes, which have an inland shore line of about 500 miles, and are connected with the sea by the St. Peter Canal, and the Big Bras d'Or cut. (Mar., pg. 231.)

Dunnville, Wellandport and Beamsville Ry.—Meetings were held in Beamsville and St. Catharines, Ont., Mar. 15, when the matter of bonusing the construction of this projected railway from Beamsville into St. Catharines was considered. It was explained that the extension would cost \$500,000 and the city was asked to join with Beamsville village and Louth and Clinton townships in guaranteeing the company's bonds upon half of this amount. No action was taken at either meeting.

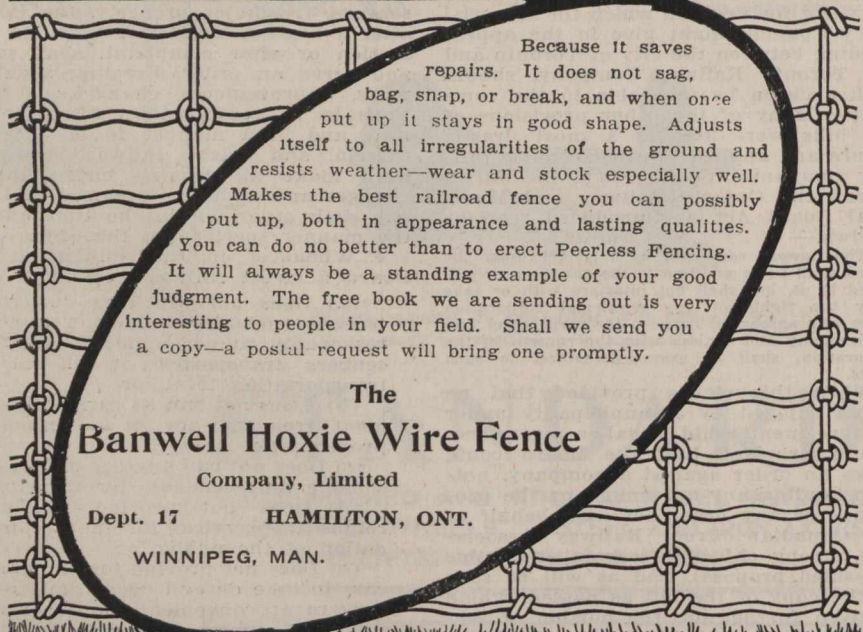
The Ontario Legislature last session passed an act extending the time within which the company may construct its projected railway. (Mar., pg. 231.)

Fort Erie Ferry Ry. Co.—The power asked for the extension of time for the construction of the company's projected branch lines was struck out of the company's bill before the Ontario Legislature recently on the ground that proper notice had not been given. (Feb., pg. 147.)

Fredericton Street Ry. Co.—Application is being made for the incorporation of a company with this title to build a street railway in Fredericton, N.B., and in the County of York, upon such streets and highways as shall be agreed upon between the company and the various municipalities. The provisional directors are:—F. B. Edgecombe, C. F. Seide, J. S. Neill, A. S. Phillips, A. S. Shute, R. B. Hanson. (Mar., pg. 231.)

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Grand Valley Ry.—The lines owned by this company include the Brantford Street Ry. in Brantford, Ont., the G.V. Ry. from Brantford via Paris to Galt, and the Woodstock, Thames Valley and Ingersoll Ry. connecting Woodstock and Ingersoll. The interests controlling this company also control the London and Lake Erie Ry. and Transportation Co., which is the title under which the South Western Traction Co. is being reorganized by the purchasers at the recent sale. The plans of the company include the connection of all these lines and the construction of other lines which the charters of the several companies authorize. The principal officers of the G.V.R. are: President, M. A. Verner, Brantford; General Manager, W. P. Kellett.

The plans for immediate construction for the G.V.R. include 13 miles of lines in Brantford, and a new line from Brantford to Port Dover, 33.6 miles long, and passing through Mount Pleasant, Waterford and Simcoe. The maximum gradient will be 1%, and the line will be operated on the A.C.D.C. system. Freight and passenger business will be operated over it, and there will be physical connections for the interchange of traffic with the G.T.R., the Michigan Central Rd., and the Toronto, Hamilton and Buffalo Ry. The points at which connection may be made with the steam railways are at Brantford with the G.T.R., and the T.H. & B., at Waterford with the M.C.R., and the T.H. & B., at Simcoe with the G.T.R. (over which the Wabash Rd. has running rights), and at Port Dover with the G.T.R. The construction of the lines in Brantford will be carried out by the company itself, and a contract has been let to Joseph Gianinni, of Pittsburg, Pa., for the construction of the line to Port Dover. (Mar., pg. 231.)

Guelph Radial Ry.—An act has been passed by the Ontario Legislature providing for the construction by the city of Guelph, which owns the line, of a branch to the new central prison, which the Ontario Government proposes to erect near the city, and other branches of less than five miles in length. (Jan., pg. 57.)

Hamilton, Waterloo and Guelph Ry.—The Railway Committee of the House of Commons devoted a great deal of time during March to the consideration of this bill. The company is asking for authority to extend its line from Hamilton to Toronto, and this proposal is being opposed by the Toronto City Council. On Mar. 10, the committee approved of a clause giving the company power to make frequent stops within the city. Subsequently what is known as clause 3 was agreed on between the city and the company, and approved by the committee. On Mar. 22 when the bill, as amended, came up for consideration, this clause had been omitted from the printed copy. N. Guthrie, M.P., stated that the bill as reprinted was as the promoters desired that it should be passed. After a lengthened discussion, a sub-committee was appointed to try and bring about an understanding between the parties. (Mar., pg. 231.)

Monarch Radial Ry.—In the act of incorporation passed by the Ontario Legislature last session, it is provided that the southerly terminals shall be in the county of York near, but not in the city of Toronto. (Mar., pg. 231.)

Montreal Central Terminal Ry.—The House of Commons has passed the bill granting an extension of time within which to complete the projected lines, and authorizing the company to enter into agreements with all railway companies whose lines enter Montreal. The including clause of sec. 1 provides that the company shall not construct its line on any highway, street or public place without first having obtained the consent of the municipality. It was claimed in

committee that the company was being promoted for the purpose of amalgamating all the street railway lines in and around the city, and the House inserted in the bill clauses providing that no amalgamation shall be made without the approval of the municipality if the line is to be operated on a street or highway.

Application is also being made to the Quebec Legislature to authorize the company to enter into agreements with any company having similar powers. The notice is signed by J. M. Shanly, President. (Jan., pg. 21.)

The Montreal Street Ry. is applying to the Quebec Legislature for power to construct underground railways throughout the city of Montreal, and to perform all the necessary works in connection therewith. It is also asked that in case of any disagreement between the company and the city in connection with the carrying out of the construction of such lines, the matter be disposed of by the Quebec Public Utilities Commission. W. G. Ross, Managing Director, was in Quebec, Mar. 16, in connection with the introduction of the bill. He is quoted as stating in an interview, Mar. 20, that the first underground railway to be built will be under St. James Street, from St. Lambert Hill to Victoria Square, the most congested route in the city, and that construction would be started as soon as the necessary rights were secured from the Legislature. He took the ground that no other than the Street Railway Company should be allowed to put in the subways, as the service would be a natural corollary to the surface roads. (See also Suburban Tramways Co., Mar., pg. 231.)

The company is applying to the city Board of Control for permission to lay lines on the following streets: Cote des Neiges Rd., from Trafalgar Ave. to Cote St. Luc Rd.; Cote St. Paul Rd., a double track where it is now single, from Notre Dame St. to the canal bridge; St. Patrick St., from Wellington and St. Etienne Sts., to the G.T.R.; a loop line at Britannia, Riverside and Forfar Sts.; Wellington St., a double track from Gallery Sq. to McGill St.; St. Michael Lane, Jurur and Vitre Sts., from Victoria Sq. to City Hall Ave.; St. Urbain St., from Craig to Ontario St.; St. Luke Burnside and Berthelet Sts., from Atwater Ave. to Bleury St.; Sherbrooke St., from the western city limits to the eastern divisions; Dorchester St., from Guy St. to University St.; Pine Ave., from Royal Victoria Hospital to St. Denis St.; Roy St., from St. Denis St. to Lafontaine Park; St. Gabriel St., from Notre Dame St. to St. James St.; St. James St., from St. Gabriel St. to S. Lawrence St.; Cadieux St., from Ontario St. to Sherbrooke St., and from Duluth St. to Rachael St.

Montreal Underground and Elevated Ry.—Application has been made for the incorporation of a company with this title, and with authorized capital of \$20,000,000, to build a railway to be operated by steam, electricity or other motive power, through the city and island of Montreal; and to construct tunnels, viaducts, subways, bridges and other works required for the advantage of the company. Power is also asked to construct transmission lines, and to supply electricity for lighting, heating, power and other purposes. T. P. Butler, Montreal, is solicitor for applicants.

Moose Jaw, Sask.—The city council has received proposals from an Ottawa company, for the construction and operation of a street railway, and has decided, subject to conditions being satisfactory, to make a draft franchise the basis of a by-law to be submitted to the ratepayers at an early date. It is stated that at present, the arrangement is that three miles be constructed this year and a similar amount next year, the city to control the line of route and the time schedule, and to have the right to take over the property after 20 years.

Morrisburg and Ottawa Electric Ry.—The company at present known as the Morrisburg Electric Ry. has been authorized by the Ontario Legislature to change its name as above, to increase its capital stock to \$500,000 and its bonding powers to \$20,000 a mile, and to make a contract with any existing railway for trackage rights into Ottawa. The company was incorporated in 1898 to construct a line in Morrisburg, and in 1909 was given power to extend to Ottawa. An extension of time for the construction of these lines has also been given. (Feb., pg. 147.)

Niagara Falls, Welland and Dunnville Electric Ry.—The Ontario Legislature has incorporated a company with this title to build an electric railway from Niagara Falls to Welland and Dunnville, with a branch to Fenwick, Ont. The provisional directors are:—F. R. Lalor, Dunnville, Ont.; F. Buell, Buffalo, N.Y.; J. C. Gardner, Niagara Falls, Ont.; G. Arnold, Ridgeville, Ont.; F. E. Misner, Wainfleet tp., Ont.; G. H. Burgar and H. A. Rose, Welland, Ont. (Jan., pg. 59.)

Nipissing Central Ry.—Superintendent P. J. Uttley stated in Haileybury, Ont., Mar. 17, that the company was in a position to run its cars, but did not wish to send them out until everything was arranged so as to give a half-hourly service. An arrangement has been made for the supply of power from the Mines Power Co. (Nov., 1909, pg. 848.)

Port Arthur-Fort William Electric Ry.—N. C. Pilcher, General Manager, presented a report as to the state of the line to the commissioners, Mar. 7, showing that although there were certain sections in which considerable repairs were necessary, the general condition was good. (Mar., pg. 233.)

The Quebec and Isle of Orleans Ry. is applying for an act to extend the time for the construction of its authorized railway, and for authority to build it on the monorail type. P. Corriveau, Quebec, is solicitor for applicants.

Regina, Sask.—The Mayor of Regina was in Winnipeg, Mar. 10, regarding arrangements for the construction of a street railway in Regina. He is reported to have stated that eight miles of track would be laid this year, and routes laid out for a number of suburban lines, the construction of which would be undertaken later. A franchise is being prepared, and the necessary capital for the work is being subscribed in Winnipeg.

Toronto.—Among the provisions of the "act respecting the city of Toronto," passed last session of the Ontario Legislature, are sections authorizing the construction of tube railways within the city limits; but without a right to construct surface lines in certain parts of the city. The sections asking authority to expropriate the Toronto Ry. were struck out.

At a meeting of the city railway committee, Mar. 22, the Board of Control was asked to secure special legal and engineering assistance for the carrying out of the powers conferred by the act. J. W. Moyes, who had previously reported on the tube railway plans has withdrawn from further connection with the matter. (Feb., pg. 147.)

Toronto and York Radial Ry.—The Toronto Board of Control, Mar. 22, discussed the question of the "third rail" on the Metropolitan division of the T. and Y.R. Ry. within the city, so as to permit of the operation of the city cars over it. The matter is now under the consideration of the city's legal department. (Nov., 1909, pg. 849.)

Toronto Suburban Ry.—The Ontario Legislature has given the company an extension of time for the construction of its authorized lines, and power to construct a line from Brampton, the projected terminal of the extension of one of its existing lines to Guelph. (Feb., pg. 147.)

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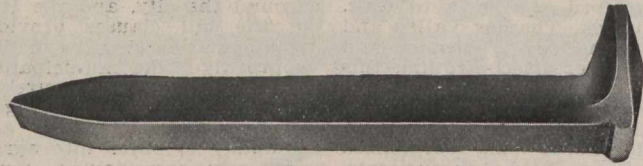
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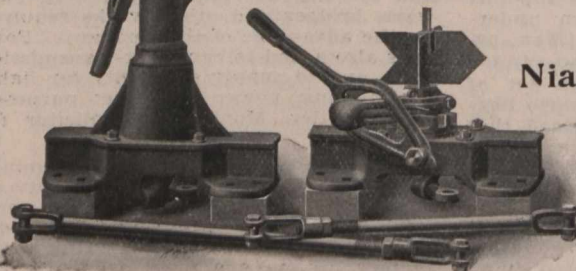
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Welland, Ont.—Application has been made to the town council for a 20-year franchise, for the operation of a street railway in the town. C. J. Laughlin, Hartford, Conn., is interested in the scheme, and is reported to have said that he has made all arrangements for the underwriting of the bonds, that construction will be commenced within three months of the granting of the franchise, and that the railway will be in operation within eight months thereafter.

Winnipeg Electric St. Ry.—Application was recently made to the Manitoba Legislature to ratify an agreement between the company and the rural municipality of Kildonan. (Mar., pg. 233.)

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—A London, Eng., cable states that a private underwriting prospectus has been issued offering holders of preferred and deferred stock of the company £530,000 of 4½% perpetual consolidated debenture stock, ranking pari passu form Mar. 31, with the existing £800,000 of 4¼% perpetual consolidated debenture stock.

Calgary St. Ry.—Passenger earnings for Feb., \$11,140.05; miscellaneous earnings, \$213; total earnings, \$11,353.50; operating expenses, way and structures, \$471.74, maintenance of equipment, \$753.09, power and operation, \$3,452.50, superintendence, wages, car service, supplies, etc., \$6,813.30; general earnings, \$358.10.

Halifax Electric Tramway.—Traffic receipts for Feb., \$14,018.69, and for three weeks ended Mar. 21, \$10,736.97, against \$12,536.02 and \$9,127.39 for same periods 1909.

Hamilton, Grimsby and Beamsville Electric Ry.—Following are the officers and directors for the current year:—President, J. Dixon; Vice President, J. Dickenson, Treasurer, J. Knox; other directors, J. W. Sutherland, S. O. Greening, W. C. Hawkins and J. R. Moodie.

London and Lake Erie Ry. and Transportation Co.—A meeting of the shareholders is to be held in London, Ont., April 7, to receive a report of the provisional directors, to organize the company and transact other business.

London St. Ry.—Gross earnings for Feb., \$17,349.23; expenses, \$13,126.91; net earnings, \$4,222.32; deductions, \$2,205.55; net income, \$2,016.77, against \$16,497 gross earnings; \$12,724.38 expenses; \$3,772.62 net earnings for Feb., 1909. Aggregate gross earnings for two months ended Feb. 28, \$35,712.94; expenses, \$26,705.13; net earnings, \$9,007.81; deductions, \$4,647.30; net income, \$4,360.51, against \$34,234.83; net income, \$4,360.51, against \$34,234.83 aggregate gross earnings; \$25,709.49 expenses; \$8,525.34 net earnings for same period 1909.

Montreal St. Ry.—Passenger earnings for Feb., \$300,029.83; miscellaneous earnings, \$3,947.43; total earnings, \$303,977.26; operating expenses, \$204,255.58; net earnings, \$99,721.68; city percentage on earnings, \$20,487.50; interest on bonds and loans, \$14,834.90; rent leased lines, \$552.89; taxes, \$4,000; total charges, \$39,875.29; surplus, \$59,846.39, against \$280,989.21 passenger earnings; \$3,101 miscellaneous earnings; \$284,090.21 total earnings; \$196,912.17 operating expenses; \$87,178.04 net earnings; \$16,373.83 city percentage on earnings; \$15,164.36 interest on bonds and loans; \$498.67 rent leased lines; \$3,000 taxes; \$35,936.86 total charges; \$2,141.18 surplus for Feb., 1909. The percentage of expenses to earnings for the month were 67.19 against 69.31 for Feb., 1909. Total earnings for five months ended Feb. 28, \$1,656,039.62; operating expenses, \$995,194.29; net earnings, \$659,845.33; total charges,

\$171,910.57; surplus, \$467,934.76, against \$1,514,614.68 total earnings; \$945,751.64 operating expenses; \$568,863.04 net earnings; \$159,141.74 total charges; \$409,721.30 surplus for same period 1908-09. The percentage of expenses to earnings for the same periods, were 60.16 and 62.44.

Port Arthur and Fort William, Ont.—An act passed last session of the Ontario Legislature, on the application of the Port Arthur City Council, provided, among other things, for the confirmation of a by-law authorizing the payment of \$1,733.02, costs incurred in the appeal against the decision of the Ontario Railway and Municipal Board respecting the municipal street railway.

The Legislature also passed an act on the application of the Fort William City Council, providing, among other things for the confirmation of a by-law to raise \$137,000 for the improvement and extension of the street railway within the city. The preamble of the act set out that the existing debenture debt of the city was \$2,089,056, of which \$222,000 represented the amount of indebtedness on account of the street railway.

Quebec Ry., Light, Heat and Power Co.—The organization of this company, which is an amalgamation of the Quebec Ry., Light and Power Co., the Jacques Cartier Power Co., the Quebec Gas Co., the Frontenac Gas Co., and the Canadian Electric Co., was completed Mar. 14. Following are the officers and directors for the current year:—President, R. Forget, M.P.; Vice President, L. C. Webster, Quebec; Chairman of Executive, N. Belleau, Quebec; other directors, Hon. R. Mackay, Hon. J. P. B. Casgrain, J. N. Greenshields, P. Galibert, J. W. McConnell, A. H. Sims, S. H. Ewing and W. G. Ross, Montreal; Hon. E. B. Garneau, Hon. C. E. Hubord, Hon. L. P. Pelletier and W. A. Marsh, Quebec.

Sherbrooke Street Ry.—An option has been secured upon the property and franchises of the company, with a view to its reorganization. Ross and Holgate, engineers, Montreal, were engaged in reporting upon the property for the syndicate, which is applying to the Quebec Legislature for an act changing the company's name, increasing its borrowing powers, and amending its powers in various ways.

South-Western Traction Co.—Judgment was given Mar. 14, by the Master-in-Chancery at London, Ont., in the case of the South-Western Traction Co., which was recently sold to J. E. MacDougall, in trust for a company now being organized as the London and Lake Erie Ry. and Transportation Co. The decision grants the amount claimed under the issued bonds of the company. Coupons were justified, but no payment was recommended on a third schedule amounting to \$104,932, pending further evidence as to the justice of these claims. Claims for \$877,269.55 were filed. Of this amount \$772,337.50 has been allowed, and claims amounting to \$104,932.05 have still to be proved. The local master states that in his opinion it is proper that liberty should be given to pay an interim dividend of 50c. on the dollar, amounting in all to \$886,168.75, to the persons and corporations whose claims have been allowed.

Toronto Ry.—Gross earnings for Feb., \$305,557; expenses \$166,497; net earnings \$139,060, against \$275,245 gross earnings; \$148,860 expenses; \$126,385 net earnings for Feb., 1909. Aggregate gross earnings for two months ended Feb. 28, \$632,265; expenses \$342,100; net earnings \$290,165, against \$563,626 aggregate gross earnings; \$301,001 expenses; \$262,625 net earnings for same period 1909.

Winnipeg Electric Ry.—Application is being made for an act ratifying the amalgamation of the Winnipeg Power

Co., and the Winnipeg Electric Ry., and between the Winnipeg Electric Ry., the Manitoba Electric and Gas Light Co., the North-West Electric Co., and other companies, and vesting the franchises and assets of these various companies in the Winnipeg Electric Ry. Co.

Electric Railway Notes.

The British Columbia Electric Ry., has ordered 10 cars from the Preston Car and Coach Co., Preston, Ont.

The Nipissing Central Ry. has ordered two additional cars, the delivery of which will enable it to give a half-hourly service on its line between Haileybury and Cobalt, Ont.

The Grand Valley Ry. is in the market, for its Brantford lines, for 10 single truck city cars, 21 ft. car bodies, inside dimensions; and will shortly order two 60-ton electric locomotives.

The Port Arthur and Fort William Electric Ry. has recently installed a 300 k.w. motor generator set made by Allis-Chalmers-Bullock, Ltd., Montreal, and has purchased an 800 amp. hr. battery and booster.

The Montreal St. Ry.'s right to operate freight cars over the street routes, will come up before the Montreal Board of Control shortly, and it is stated that propositions will be made to secure from the company, in return for the franchise, an increased percentage of earnings, or a general reduction of passenger fares.

The Galt, Preston and Hespeler Ry., has ordered two interurban cars from the Preston Car and Coach Co., Preston, Ont. They will be 55 ft. long, finished in inlaid Cuban mahogany, and supplied with Westinghouse 93 A quadruple motor equipment with multiple unit control, and combination straight and automatic Westinghouse air brakes.

It is reported that application will shortly be made to the Board of Railway Commissioners on behalf of the Lord's Day Alliance, in connection with the operation of cars on Sundays on the electric railway, formerly owned by the South Western Traction Co., such operation being authorized by the act of incorporation of the London and Lake Erie Ry. and Transportation Co., which has taken over the property.

A number of contracts between the Post Office Department and electric railway companies for the conveyance of postmen have expired recently or are about to expire. Heretofore a merely nominal rate has been paid by the Department in many cases and as many of the companies have lost on the contracts, carrying the postmen for less than the cost of the service, higher rates of compensation are now being asked.

The B.C. Electric Ry., is testing a new fare box on its pay-as-you-enter cars. It is built of iron, and about 3 ft. high. The fare is deposited in a receptacle, and on the operation of a lever by the conductor, it is passed to the bottom of the box. At the end of his shift, the conductor operates another lever, which passes the takings of his shift into a separate receptacle this obviating delays at the end of each shift caused by the handing over of the single farebox.

The Recorder of Montreal has dismissed the action of the city to compel the Montreal St. Ry. to give a car service to the Mount Royal ward, recently annexed to the city. He is reported to have said, in giving judgment, that the company could be compelled to give the service, under sec. 34 of by-law 20, and he gave such judgment on a similar case a year ago, which was overruled by the Superior Court. He was still of the same opinion but was compelled to conform to the interpretation of the Superior Court.

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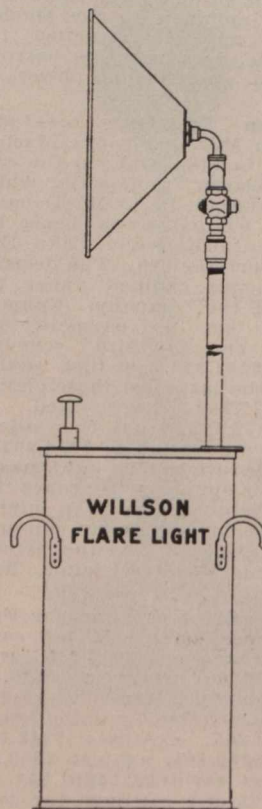
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Coast Lake and River Officers for 1910.

The following appointments have been made by the principal navigation companies engaged in Canadian navigation for their various steam vessels and tugs for the current year. In the first column is given the name of the vessel; in the second, that of the captain, and in the third, that of the chief engineer.

ALGOMA CENTRAL STEAMSHIP LINE, SAULT STE. MARIE, ONT.

Table listing ship names and officers for Algoma Central Steamship Line, Sault Ste. Marie, Ont. Includes Agawa, John J. Barlum, Leaffield, Paliki, T. J. Drummond, Boscowitz Steamship Co., St. Denis, Vadso, Lady of Gaspe, Bras d'Or Steamboat Co., Marion, Mary Jane, Robie M., Chieftain, Frontenac, India, Johnston, Parthia, Prince Rupert, Simla, Canada Atlantic Transit Co., Arthur Orr, Geo. N. Orr, Kearsarge, Newona, Canadian Lake and Ocean Navigation Co., A. E. Ames, H. M. Pellatt, J. H. Plummer, Scottish Hero, Turret Cape, Turret Chief, Turret Court, Arabian, Corunna, Kenora, Nevada, Regina, Tagona, Neebing, Charles Lyon, Amur, Beaver, City of Nanaimo, Czar, Joan, Nanoose, Otter, Princess Beatrice, Princess Charlotte, Princess Ena, Princess May, Princess Royal, Princess Victoria, Queen City, Tees.


Table listing ship names and officers for various companies including C.P.R. British Columbia Lake and River Service, Collingwood, Frasersville, Canada, Soo City, Aurora, Great Western, Huron, Lansdowne, A. D. Davidson, Geo. C. Howe, H. G. Dalton, J. S. Keeffe, John Crear, John Lambert, John Sharples, Robert Wallace, Scotia, Strathlorne, Carleton, Iona, R. T. Holcomb, J. Weeks, J. Dougal, F. Orr, L. McKinnon, L. Fraser, W. Seaman, A. Forslund, G. Robertson, W. Wright, G. Estabrooks, J. Fitzsimmons, A. Forslund, M. P. Reid, W. Kirby, O. Alfsmo, J. Dougal, J. Ferguson, J. Weeks, J. Carney, I. Watts, R. Brown, H. Farrow, C.P.R. Upper Lake Service, Alberta, Assiniboia, Athabasca, Keewatin, Manitoba, John L. Cann, Malcolm Cann, Percy Cann, Mace Breton, Hygeia, Pawnee, Peerless, Samuel Marshall, Empress, Northumberland, Chatham Navigation Co., Ossifrage, Celtic, Clansman, Fingal, Collingwood Shipping Co., Wasaga, Colonial Transportation Co., Saskatoon, Crystal Stream Steamship Co., Sincennes, Deseronto Navigation Co., Whenhow, Dominion Atlantic Ry., Boston, Prince Albert, Prince Arthur, Prince George, Prince Rupert, Caribou, Manitou, Eastern Manitoulin Royal Mail Steamship Line, Agnes Smith, Bon Ami, Emp. of Midland, Mount Stephen, Farrar Transportation Co., Collingwood, Meaford, Frasersville Navigation Co., Canada, Georgian Bay Navigation Co., Soo City, Grand Manan Steamship Co., Aurora, G.T.R. Detroit River Car Ferries, Great Western, Huron, Lansdowne, Great Lakes and St. Lawrence Transportation Co., A. D. Davidson, A. M. Marshall, Geo. C. Howe, H. G. Dalton, J. S. Keeffe, John Crear, John Lambert, John Sharples, Robert Wallace, S. N. Parent, Halifax and Inverness Steamship Co., Strathlorne, Carleton, Iona, R. T. Holcomb, J. W. Anderson, J. Russell, W. Jacobs, D. Biggam, T. McKechnie, J. Cameron, J. Fyfe, D. McLeod, J. Walker, J. Gray, P. Pearse, J. Fyfe, W. Liver, H. Colbeck, T. C. I'Anson, J. Russell, K. Hale, S. Peterson, A. McDonald, F. Merrill, Owen Sound, C. Butterworth, A. Cameron, W. Lockerbie, T. Lewis, J. Gregg, H. Cann & Son, Mulgrave, N.S., W. E. Morris, J. R. Durkee, E. Smith, Electric Co., A. McLeod, J. Brown, I. H. Lewis, E. W. Maloney, A. Cameron, J. A. Rowe, C. Cuming, J. T. Stockwell, G. Caister, G. Foellmer, W. Maclaren, N. S. Nilson, H. Nissen, D. McDonald, M. McCormick, H. J. Stephens, A. E. Leitch, F. Mabee, B. Evans, W. J. Daly, T. Timlin, A. Sims, J. Ross, D. W. Holmes, A. McInnis, E. Kinney, L. C. Newall, A. W. MacKinnon, D. Ferguson, A. G. Potter, J. Pendrigh, A. A. Patten, R. H. Grierson, N. J. McCoy, W. A. McLaren, S. Smith, J. W. Needler, E. Mackie, A. J. Scobie, I. Woolner, A. Abbey, W. Cunningham, J. Murphy, F. A. Bassett, D. McLeod, F. Scott, J. Smith, S. Belanger, J. J. Gillis, H. Cleland, W. Wright, J. A. Ingersoll, W. Gray, M. Bausette, W. Jamieson, A. Baillargeon, J. Ladds, J. Jackson, W. Belson, J. C. Sloan, M. Sutliff, T. B. Greenway, C. B. Sutliff, G. E. Talbot, J. A. Dillon, H. L. Jones, G. H. Doyle, D. Barry, G. Squier, J. B. Rinn, J. H. Elliott, G. Rinn, J. A. Gallarno, G. R. Longley, J. R. Jones, J. A. Connelly, J. Young, F. H. Johnson, R. S. Mott, J. B. Scott, J. G. Clark, W. Murphy, J. B. Weeks, F. E. Hall & Co., L'Orignal, J. A. Smith, N. Lazure, B. Bowen, D. Vezina, E. Groulx, E. Scott.

Table listing ship names and officers for various companies including Hamilton Ferry Co., Home Steamship Co., Interlake Transit Co., Island Tug Co., Fred. M. Batt, Harland, Islander, Kelowna, Kennebecasis Steamship Co., Hampton, Keystone Transportation Co., Keyport, Keystorm, Keywest, Kilkeel, Kootenay Ry. and Navigation Co., Kaslo, La Have Steamship Co., Samson, Trusty, Lake Erie Navigation Co., Marquette and Bessemer No. 1, Lake Ontario and Bay of Quinte Steamboat Co., Aletha, Caspian, North King, Cascade, Forager, Leebro, Oscar, Lemcke Tug Co., Charles Lemcke, Lady Sybil, Maritime Steamboat Co., Connors Bros., Mathews Steamship Co., Edmonton, Haddington, Merchants Steamship Co., Beaverton, Mapleton, Detroit, Michigan Central, Transfer, Transport, Midland Navigation Co., Midland King, Midland Prince, Midland Queen, Midland Towing and Wrecking Co., Magnolia, Reliance, Traveler, Bickerdike, City of Hamilton, City of Montreal, City of Ottawa, Advance, Bartlett, Bothnia, D. G. Thomson, Emerson, Fairmount, Glenmount, Glide, H. F. Bronson, Kinmount, Mary, Mary P. Hall, Rosemount, Stormount, Westmount, Windsor, Acadian, Canadian, Natashquan, Cayuga, H. Firth, A. Forbs, O. Flumerfelt, W. Noonan, J. J. McCulley, S. N. Lambert, W. Board, W. Hawthorne, J. Duguid, L. A. Hayman, H. Barnes, C. M. Burchell, R. Lawson, J. Woolner, A. E. Kennedy, J. T. McIsaac, W. A. McEachern, D. A. McLaine, R. A. McPherson, D. Jones, Kelowna, B.C., J. Fletcher, N.B., A. T. Mabee, F. Bourne, J. Murray, J. Miller, W. Collins, G. Udaal, H. Esford, J. Waller, J. T. Elworthy, Kaslo, B.C., J. E. Moore, J. Donaldson, G. D. Ross, W. Morgan, J. Crouse, A. Zwicker, M. M. Rowan, R. Leitch, M. Palmatier, J. Toppings, W. Bloomfield, W. A. Black, J. Jarrell, D. B. Leslie, H. Bilton, D. Webster, E. J. Parsons, Dahl, J. Hunter, A. Lees, A. McDonald, Laisan, L. Martindale, W. Meneray, R. D. Burns, H. Webster, E. H. Warnock, C. H. Bissett, H. Maitland, J. G. Fisher, J. Cavanagh, M. Johnson, J. Delaney, J. T. Myler, A. E. Stinson, R. Tait, R. Aiken, D. A. Black, F. A. Huntoon, J. R. Innes, G. D. Horn, A. Pirie, A. J. Huntoon, J. C. Craig, W. Coor, H. L. Innes, J. Tindall, J. Pickard, G. W. Pearson, G. Smith, W. Levigne, J. McGregor, A. Cuff, G. Wilson, J. W. Darling, F. Wilson, R. Burke, J. Murphy, O. Patenaude, J. E. Lunan, J. V. Trowell, W. Kennedy, A. Patenaude, F. Hamelin, C. Leriche, M. Olsen, R. W. Hepburn, L. Mallan, G. Dennison, G. O'Brien, G. Boyd, T. O'Connor, M. J. Sherman, A. Lepine, G. Henderson, P. C. Telfer, J. W. Taylor, H. Peters, T. G. Bishop, M. Murphy, J. B. Lappan, J. Wood, R. Taylor, D. J. Pritchard, G. Fitzpatrick, W. J. Murphy, C. A. Stillson, J. Reoch, W. S. Greenhill, H. N. McMaster, H. McClymont, C. Milligan, W. C. Spencer, J. Doyle, G. Fleming, J. Whiteside, R. Duguid, N. Morrison, R. McLaren, J. Boucher, J. Ruel, J. McGiffin, G. M. Arnold.


Table listing ship names and officers for various companies including Hamilton Ferry Co., Home Steamship Co., Interlake Transit Co., Island Tug Co., Fred. M. Batt, Harland, Islander, Kelowna, Kennebecasis Steamship Co., Hampton, Keystone Transportation Co., Keyport, Keystorm, Keywest, Kilkeel, Kootenay Ry. and Navigation Co., Kaslo, La Have Steamship Co., Samson, Trusty, Lake Erie Navigation Co., Marquette and Bessemer No. 1, Lake Ontario and Bay of Quinte Steamboat Co., Aletha, Caspian, North King, Cascade, Forager, Leebro, Oscar, Lemcke Tug Co., Charles Lemcke, Lady Sybil, Maritime Steamboat Co., Connors Bros., Mathews Steamship Co., Edmonton, Haddington, Merchants Steamship Co., Beaverton, Mapleton, Detroit, Michigan Central, Transfer, Transport, Midland Navigation Co., Midland King, Midland Prince, Midland Queen, Midland Towing and Wrecking Co., Magnolia, Reliance, Traveler, Bickerdike, City of Hamilton, City of Montreal, City of Ottawa, Advance, Bartlett, Bothnia, D. G. Thomson, Emerson, Fairmount, Glenmount, Glide, H. F. Bronson, Kinmount, Mary, Mary P. Hall, Rosemount, Stormount, Westmount, Windsor, Acadian, Canadian, Natashquan, Cayuga, H. Firth, A. Forbs, O. Flumerfelt, W. Noonan, J. J. McCulley, S. N. Lambert, W. Board, W. Hawthorne, J. Duguid, L. A. Hayman, H. Barnes, C. M. Burchell, R. Lawson, J. Woolner, A. E. Kennedy, J. T. McIsaac, W. A. McEachern, D. A. McLaine, R. A. McPherson, D. Jones, Kelowna, B.C., J. Fletcher, N.B., A. T. Mabee, F. Bourne, J. Murray, J. Miller, W. Collins, G. Udaal, H. Esford, J. Waller, J. T. Elworthy, Kaslo, B.C., J. E. Moore, J. Donaldson, G. D. Ross, W. Morgan, J. Crouse, A. Zwicker, M. M. Rowan, R. Leitch, M. Palmatier, J. Toppings, W. Bloomfield, W. A. Black, J. Jarrell, D. B. Leslie, H. Bilton, D. Webster, E. J. Parsons, Dahl, J. Hunter, A. Lees, A. McDonald, Laisan, L. Martindale, W. Meneray, R. D. Burns, H. Webster, E. H. Warnock, C. H. Bissett, H. Maitland, J. G. Fisher, J. Cavanagh, M. Johnson, J. Delaney, J. T. Myler, A. E. Stinson, R. Tait, R. Aiken, D. A. Black, F. A. Huntoon, J. R. Innes, G. D. Horn, A. Pirie, A. J. Huntoon, J. C. Craig, W. Coor, H. L. Innes, J. Tindall, J. Pickard, G. W. Pearson, G. Smith, W. Levigne, J. McGregor, A. Cuff, G. Wilson, J. W. Darling, F. Wilson, R. Burke, J. Murphy, O. Patenaude, J. E. Lunan, J. V. Trowell, W. Kennedy, A. Patenaude, F. Hamelin, C. Leriche, M. Olsen, R. W. Hepburn, L. Mallan, G. Dennison, G. O'Brien, G. Boyd, T. O'Connor, M. J. Sherman, A. Lepine, G. Henderson, P. C. Telfer, J. W. Taylor, H. Peters, T. G. Bishop, M. Murphy, J. B. Lappan, J. Wood, R. Taylor, D. J. Pritchard, G. Fitzpatrick, W. J. Murphy, C. A. Stillson, J. Reoch, W. S. Greenhill, H. N. McMaster, H. McClymont, C. Milligan, W. C. Spencer, J. Doyle, G. Fleming, J. Whiteside, R. Duguid, N. Morrison, R. McLaren, J. Boucher, J. Ruel, J. McGiffin, G. M. Arnold.

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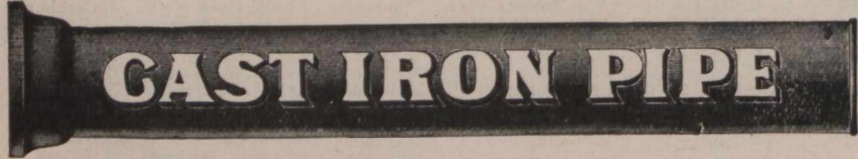
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Notices to Mariners.

The Department of Marine has issued the following:—

1. Jan. 7, 1.—Nova Scotia, Bay of Fundy, Chignecto channel, Eatonville, position of lighthouse, correction. 2.—Nova Scotia, south coast, Rugged island harbor, off Lockport, Laurier rock, bell buoy established.
2. Jan. 8, 3.—Quebec, River St. Lawrence, Lake St. Louis, Lachine, arc of visibility of front range light increased, gas buoy withdrawn.
3. Jan. 8, 5.—British Columbia, Kootenay Lake, south end, Kootenay Landing, light established.
4. Jan. 19, 6.—Nova Scotia, Bay of Fundy, Minas Basin, Kingsport, hand fog horn at light station. 7.—Canadian list of lights, abolition of duplicate names of light stations.
5. Jan. 21, 8.—Ontario, Lake Ontario, Weller Bay, light discontinued. 9.—Ontario, Georgian Bay, Owen Sound, Presqu'île, light discontinued. 10.—Ontario, Canadian list of lights, abolition of duplicate names of light stations.
6. Jan. 25, 11.—British Columbia, Vancouver Island, west coast, Kyuquot Sound, Blind entrance, and approaches, rocks. 12.—British Columbia, Vancouver Island, Discovery passage, Chatham point, fog bell discontinued.
7. Jan. 27, 13.—New Brunswick, Northumberland Strait, Richibucto harbor entrance, life saving station established on north beach. 14.—Ireland, southwest coast, Great Skellig light, alteration in character. 15.—Ireland, south coast, Ballycotton island, alteration in fog signal. 16.—Scotland, west coast, Skerryvore light, alteration in character.
8. Feb. 2, 17.—British Columbia, Vancouver Island, east coast, Baynes Sound, Port Augusta, Goose spit, gas lighted beacon established. 18.—British Columbia, Cardero channel, Stuart island, non-existence of rock off Steep Point.
9. Feb. 2, 19.—Quebec, Chaleur Bay, Anse aux Gascons, hand fog horn at light station. 20.—Quebec, River St. Lawrence, mouth of Saguenay River, Vache patch, change in position of buoy.
10. Feb. 5, 21.—New Brunswick, south coast, Bay of Fundy, St. John harbor, intended change in character of the beacon light. 22.—New Brunswick, east coast, Northumberland Strait, Cape Tormentine, fog bell discontinued. 23.—Nova Scotia, south coast, Isaac harbor, change in character of light.
11. Feb. 8, 24.—Quebec, Chaleur Bay, Bonaventure River, light established.
12. Feb. 11, 25.—Ontario, Georgian Bay, Midland Bay, Tiffin, dredging not completed, caution. 26.—Ontario, River St. Mary, Sault Ste. Marie Canadian canal, back range lighthouse at lower entrance rebuilt. 27.—Ontario, River St. Mary, Sault Ste. Marie Canadian canal, new back range lighthouse at upper entrance.
13. Feb. 12, 28.—British Columbia, Burrard Inlet, Vancouver harbor, Brockton point, light improved. 29.—Pacific Ocean, Juan de Fuca Strait approach, Swiftsure bank, submarine fog bell established at lightship.
14. Feb. 18, 30.—Nova Scotia, southeast coast, Cranberry island, lighthouse, lower light to be discontinued. 31.—United States of America, St. Croix River, Whitlock Mill light station, intensity of light increased, light established in new structure.
15. Feb. 22, 32.—Nova Scotia, south coast, off entrance to Rugged island harbor, Gull rock, intended change in character of light. 33.—New Brunswick, Shippigan Sound, Petite Lameque bay, position of buoy, correction. 34.—New Brunswick, Chaleur Bay, Restigouche River, Dalhousie harbor, lighthouse established on Government wharf.
16. Feb. 24, 35.—Information on cur-

The name of the steamer Bermuda has been changed by order in council to Senator Derbyshire.

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RAILWAY CONSTRUCTION TENDERS

will be received up to 12 o'clock noon, April 15, 1910, for the clearing, grading and bridge work on the 31 mile (more or less) section of the **ALGOMA CENTRAL & HUDSON BAY RAILWAY** between Hawk Lake Junction, Algoma Central & Hudson Bay Railway, and Hobon, Canadian Pacific Railway.

For plans, specifications and details apply to C. N. Coburn, Chief Engineer, Algoma Central & Hudson Bay Railway, Sault Ste. Marie, Ont., to whom all tenders should be addressed. The lowest or any tender not necessarily accepted.

Profile, specifications and form of tender may be seen at the offices of the Canadian Engineer, 62 Church St., Toronto; B33, Board of Trade Bldg. Montreal; 315 Nanton Bldg., Winnipeg.

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The Canadian Pacific Railway Company have 9,000,000 acres of selected lands for sale in Manitoba, Saskatchewan and Alberta.

Maps, as enumerated below, showing these lands in detail, will be sent free on application.
Map No. 1—Winnipeg to Second Meridian..... \$ 8.00 to \$15.00 per acre.
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.
Map No. 7—Part of Western Saskatchewan, 3rd to 4th Meridians..... 10.00 to 25.00 per acre.
All prices are subject to change without notice.

TERMS OF PAYMENT

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

160 Acres at \$ 8.00 per acre, cash payment \$191.70 first year's interest \$ 65.28 and nine instalments of \$160.00									
" " 9.00 " " " 213.70 " " " 73.46 " " " 180.00									
" " 10.00 " " " 239.70 " " " 81.62 " " " 200.00									
" " 11.00 " " " 263.60 " " " 89.78 " " " 220.00									
" " 12.00 " " " 287.60 " " " 97.96 " " " 240.00									
" " 13.00 " " " 311.55 " " " 106.10 " " " 260.00									
" " 14.00 " " " 335.60 " " " 114.32 " " " 280.00									
" " 15.00 " " " 359.50 " " " 122.44 " " " 300.00									

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

F. T. GRIFFIN, Land Commissioner, Winnipeg.

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This Company has 525,000 acres of selected lands in Manitoba and Saskatchewan which offer excellent opportunities to settlers and investors who desire to secure good lands in well-selected districts. These lands are on sale at the Company's Office at Winnipeg, and at the various land agencies of the Canadian Pacific Railway Company.

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rents and tidal streams in Eastern Canada.

17. Feb. 28. 36.—New Brunswick, Petitcodiac River, McFarlane Point, lighthouse established. 37.—New Brunswick, Petitcodiac River, Outhouse point, lighthouse established. 38.—England, west coast, Milford Haven, St. Anne's Head, alteration in lighting.

18. March 2. 39.—New Brunswick, Musquash island, Hendry Farm, and Newcastle, lights to be improved. 40.—Nova Scotia, Stoddart island, Pomquet island, and Kidston island, lights to be improved. 41.—Nova Scotia, Canso harbor, life saving station established.

19. March 2. 42.—Ontario, Lake Ontario, Toronto harbor, change in location of life saving station.

20. March 2. 43.—British Columbia, Vancouver Island, east coast, Stuart channel, Oyster harbor, Ladysmith, buoys established.

21. March 14. 44.—British Columbia, Vancouver Island, west coast, Estevan point, lighthouse established. 45.—British Columbia, Queen Charlotte Islands, Skidegate Inlet, information.

22. Mar. 16. 46.—British Columbia, Strait of Georgia, Vancouver Island, east coast, Oyster bay, gas and bell buoy established. 47.—British Columbia, Queen Charlotte Islands, danger south-eastward of Cape St. James. 48.—Alaska, dangers westward of Quadra island.

Inspection of Steamboats.

An order in council has been passed repealing sec. 11 of part VIII. of the Rules for the Inspection of Steamboats, and substituting the following rule, which has been approved by the Board of Steamboat Inspection:—

Sec. 11.—Every steamboat not employed in the carriage of passengers, and every steamboat to which the foregoing provisions of the preceding sections do not apply, shall at all times, when the crew thereof is on board, be provided with and have on board or attached to such steamboat in some convenient place, a good, suitable and sufficient boat, or good suitable and sufficient boats, in good condition and properly equipped, and provided with oars in sufficient number and other necessary tackle, and of sufficient capacity to carry all the crew of such steamboat, and with sufficient means for lowering such boat or boats from on board safely and expeditiously,—provided,

(a) That any steamboat not employed in the carriage of passengers when less than 50 tons gross may be equipped with life rafts when boats cannot be utilized, if, in the opinion of the inspector such life rafts would in case of disaster be sufficient to secure the safety of all on board, and

(b) Tug boats 50 tons gross and upwards while engaged exclusively in harbor or canal towing may be likewise equipped.

C. P. R. Steamships for B. C. Coast.

The C.P.R. has ordered two more steamships for service on the B.C. coast. One, which will be built at Glasgow, Scotland, will be 290 ft. long between perpendiculars, 46 ft. beam and 17 ft. deep; she will be built of steel with cellular double bottom, seven transverse bulkheads, two watertight flats, and otherwise made as nearly unsinkable as possible, and will be driven by a single screw. She will have four boilers 15 1/4 ft. in diameter by 12 ft. long, with forced draught on the closed stokehold system. Her engine will be of the four cylinder triple expansion type, balanced. The cylinders will be 27, 42, 48 1/2, 48 1/2 by 39 ins. stroke. Steam pressure will be 180 lbs., and the auxiliaries, in the way of pumps, heaters, etc., will be of the very latest type. She will be lighted throughout by electricity. The dynamos will be capable of furnishing current for 1,500 sixteen candle power lamps. She will be steam heated throughout, and the matter of ventilation will be well attended to. There will be 118 staterooms for passengers, a large number of which will be supplied with running water, both hot and cold. Her social halls will be finished in mahogany, and her dining saloon will be beautifully done in figured walnut. In addition to the dining saloon, which will seat over 100, there will be a combined grill room and restaurant which will seat 100. The conveniences, fittings, and style of finish of this vessel will be superior to anything previously designed for the B.C. coast service. Her extreme draught of water will be about 15 ft. and her speed on service will be 16 knots. She will have ample cargo capacity for any of the company's local or northern services, and will be a very useful addition to its fleet on the coast.

The second and smaller steamer will be built at Paisley, Scotland. She will

be 210 ft. long, 40 ft. beam at the deck, 37 ft. beam at the water line; with a depth of 16 ft. She will be well subdivided and have steel deck-houses and decks throughout. There will be 66 staterooms for passengers, and a nice dining saloon finished in mahogany and satinwood. The social halls, smoke rooms, etc., will all be beautifully done in hardwood, and she will have all modern conveniences, including running water in the staterooms. The motive power will consist of two boilers 16 ft. in diameter by 12 ft. long, with forced draught on closed stokehold system. She will be driven by twin screws, actuated by two sets of engines, 16, 27, 44, by 30. Her mean draught will be about 11 ft. and her speed 14 knots on service. She is being built to class 100A1 at Lloyds, and will be used in the company's various services on the B.C. coast.

The contracts require that both vessels be finished before Nov. 1. Upon completion they will proceed to Victoria under their own steam.

Vessels Removed from the Register.

The following vessels were removed from the register during Jan. and Feb., for the reasons assigned:—Steam—Albatross, Vancouver, 26 tons, wrecked; Emulator, Toronto, 17 tons, broken up; Enterprise, Vancouver, 8 tons, wrecked; Halifax, Halifax, 169 tons, burnt; Maud S., Collingwood, 11 tons, broken up; Odessa, Collingwood, 8 tons, broken up; Ottawa, Sarnia, 420 tons, burnt; Rothesay, Vancouver, 348 tons, broken up; Shawatlans, Vancouver, 8 tons, burnt; Surrey, 8 tons, broken up; Sailing—Acacia, Barrington, 99 tons, wrecked; Caledonia, Liverpool, 188 tons, transferred to West Indies; Canada, Vancouver, 304 tons, lost; Cartagena, Liverpool, 199 tons, condemned; Emperor, Lunenburg, 51 tons, broken up; Florence R. Hewson, Annapolis Royal, 289 tons, abandoned at sea; Gladys F., Lunenburg, 72 tons, transferred to Newfoundland; Hector, St. John, 498 tons, transferred to Newfoundland; James W. Cousins, Digby, 87 tons, wrecked; Lion, Lunenburg, 40 tons, broken up; Mariner, Halifax, 56 tons, broken up; Mary Hendry, Liverpool, 249 tons, transferred to West Indies; Mersey, Liverpool, 191 tons, transferred to West Indies; Montrose, Shelburne, 198 tons, stranded; Zoulou, Weymouth, 12 tons, wrecked "25 years ago."

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING JAN. AND FEB., 1910.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Arthur B....	126,735	Port Townsend, Wash., 1897	Screw 7 n. h. p.,	69.0	25.0	6.5	135	92	Vancouver, B. C.....	H. Weeks, Vancouver, B.C.
Aspy.....	122,588	Shelburne, N. S., 1910.....	" 42 " " "	113.0	25.0	8.6	215	99	Yarmouth, N. S.	North Shore Steamship Co., Sydney, N.S.
Chidori.....	126,732	Steveston, B. C., 1909.....	" 1 " " "	34.7	8.5	3.9	8	5	Vancouver, B. C.....	O. Mori, Vancouver, B.C.
Chilco.....	126,512	Quesnel, B. C., 1909.....	Paddle 12 " " "	80.0	16.4	3.2	129	75	Victoria.....	Fort George Lumber & Nav. Co., Vancouver, B. C.
Daisy.....	88,375	Comox, B. C., 1885.....	Screw 11 " " "	71.0	14.4	5.6	47	25	".....	A. Berquist, Sidney, B. C.
Fishmaid....	126,278	Steveston, B. C., 1909.....	" 5 " " "	39.8	10.3	4.2	13	10	New Westminster B.C.	G. MacKie, M. O., New Westminster, B. C.
Helen M. Scanlon..	126,731	Vancouver, B. C., 1909.....	Paddle 9 " " "	124.0	27.2	5.0	358	209	Vancouver, B.C.....	Brooks-Scanlon Lumber Co., Vancouver, B. C.
Kingpin.....	126,733	" " " " 1910.....	Screw " " " "	33.0	8.5	4.3	11	7	".....	J. S. Gall, Vancouver, B. C.
L. C. L. V....	126,510	Victoria, B.C., 1909.....	" 24 " " "	27.6	8.8	3.8	9	6	Victoria.....	J. T. Adams and J. J. Young, Victoria
Nattose.....	126,640	Seattle, Wash., 1899.....	" 4 " " "	52.0	17.6	6.6	37	25	Vancouver, B.C.....	G. P. Ashe, Coutts, Alta.
Quascilla....	126,639	" " " " 1906.....	" 2 " " "	33.0	11.8	4.0	13	9	".....	J. and W. L. Ford, Hornby Island, B. C.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING JAN. AND FEB., 1910.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners	
Amorita.....	126,638	Seattle, Wash., 1906.....	Sloop ..	31.0	10.3	4.3	8	5	Vancouver, B.C.....	J. A. Richardson, Vancouver, B.C.
Annie L. Spindler	126,585	Lunenburg, N.S., 1910.....	Schr....	108.4	25.8	10.8	954	102	Lunenburg, N.S.....	E. Spindler, M. O., Lunenburg, N. S.
Kirk I.....	126,734	Vancouver, B. C., 1894.....	Scow....	69.0	24.4	6.4	146	146	Vancouver, B.C.....	A. R. Bissett, Vancouver, B.C.
Mule.....	122,589	Belliveau's Cove, N. S., 1910.....	Sloop ..	93.3	30.0	7.2	154	154	Yarmouth, N.S.....	H. B. McCann, M. O., Yarmouth N.S.
P. S. B. Co., No. 1	126,637	Vancouver, B. C., 1910.....	Scow....	74.0	30.2	7.2	154	154	Vancouver, B.C.....	Progressive Steamboat Co., Vancouver, B.C.



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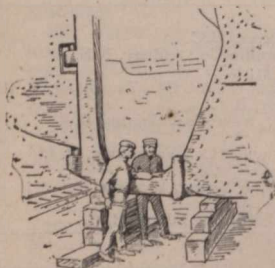
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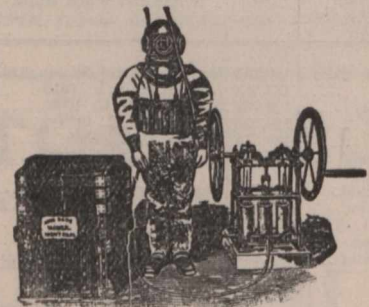
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Canadian Northern Steamships Ltd.

The Royal Edward and the Royal George are the names selected for the two triple turbine steamships Heliopolis and Cairo, which were purchased a short time ago by the Canadian Northern Steamships, Ltd., as mentioned in our Jan. issue. D. B. Hanna, Third Vice President C.N.R. has been in England for some weeks making arrangements for the inauguration of the company's Atlantic steamship service. The two vessels are now at Glasgow undergoing extensive alterations to adapt them for the Atlantic trade.

Captain G. Gregory has been appointed Marine Superintendent with headquarters at Bristol, and H. J. Cowie, heretofore the company's freight agent at Liverpool, has been appointed European Traffic Manager. In addition to the Bristol and Liverpool and London offices one will be opened in Birmingham. H. C. Bourlier, formerly with the Allan S.S. Line in Toronto, has been appointed General Agent Passenger Department, Ontario Division, with headquarters in Toronto.

Avonmouth, the port of Bristol, has been selected as the English terminus of the line. Modern docks have recently been constructed there at a cost of £3,000,000, with a special station for steamship service and the Great Western Ry. has built a cut-off connecting Avonmouth directly with the main line to London beyond Bristol, so as to shorten distance and time. From Avonmouth to London is 112 miles which ordinary express trains make in two hours and the steamship specials which will be run will do it in a little less. Montreal will be the Canadian summer port.

The Royal Edward is scheduled to leave Avonmouth May 12 and to leave Montreal May 26. The Royal George will leave Avonmouth May 26 and Montreal June 9. Sailings will be fortnightly from both Avonmouth and Montreal. The Volturno, principally for freight and third class passengers will also be in the fleet.

The Royal Edward and the Royal George are constructed of steel the main dimensions being: length, 545 ft.; breadth, 60 ft. 3 ins.; depth to shelter deck, 38 ft. They are built to Lloyds' requirements of the highest class, subdivided into 10 compartments by watertight bulkheads, and fitted with a cellular double bottom from stem to stern. They have a straight stem, and are schooner rigged, with two pole masts, and in addition to an auxiliary rudder carried, are fitted with a balance rudder. Bilge keels are fitted for a third length amidships. There are a total of seven decks rising in succession, viz:—lower, main, upper, shelter, bridge and forecastle, promenade and boat decks.

BOAT DECK.—The navigating officers are accommodated at the fore end of this deck. Aft their quarters a steel deck house forms the cafe for first class passengers. This room is designed in Regence and panelled in oak. The tables are arranged in drawing room style and accommodate small companies. The flying bridge is situated on the roof of the cafe upon which is also placed the chart and wheel houses. A large steel house is placed aft on this deck for the wireless telegraph.

PROMENADE DECK.—A steel deck house is erected in island fashion covering almost the entire length of this deck, forming a broad, spacious and covered in promenade around it. Amidships and at the centre of this deck is the music room 45 by 30 ft., designed and furnished in Louis XVI. style and finished in white. A large shaft passes through this room to the library, dining saloon and decks below, conveying an abundance of natural light to the various public rooms. A

great portion of this deck is given up to cabins de luxe and first class cabins which are most luxuriously furnished. There are also a number of bath rooms and lavatories on this deck.

The **BRIDGE DECK** extends for four-fifths of the vessels' length and is arranged similarly to the promenade deck, having spacious alleyways alongside the steel deck house forming very comfortable and sheltered promenades. The fore end is fitted with cabins de luxe, or en suite rooms. Immediately abaft these sets of rooms the grand staircase is situated providing easy access from deck to deck, and convenience to public and private rooms. Ample natural light is reflected down this stairway from a handsomely designed skylight overhead. Additional first class staterooms separate the stairway from the library. This room is designed and furnished in Louis XV. style and its dimensions are similar to that of the music room which is directly overhead. The library is richly carved and panelled in oak of a rich natural shade with tapestries and hangings to match. Fifty by forty feet of the aft end of this deck is occupied by a first class smoking room; commodious and neatly arranged with numerous bays all around. Oak panels cover the walls and ceiling, and the floor is enhanced by a covering of interlocking rubber tiles which form a neat design. Bath rooms and lavatories occupy the remaining space on this deck.

FORECASTLE DECK.—The construction of this deck is at the same elevation as that of the bridge deck and has a length of 75 ft. It is fitted with a strong breakwater and is equipped with the most approved apparatus for manoeuvring the vessel.

The **SHELTER DECK** is perhaps the most important one in the ship, most of the space being taken up by public rooms. The extreme fore end is devoted to seamen and is fully equipped with galley, scullery, lavatories and all necessities appertaining to their various requirements. A children's saloon is placed forward on this deck and is fitted with the same care and design which characterizes other public rooms. A number of first class cabins separate this saloon from the first class dining saloon which is a magnificent hall about 60 by 77 ft. The design is of the Georgian period and a wonderful unison in design is maintained producing a harmonious effect throughout. Tables accommodating eight, 12 and 16 persons are arranged in the centre, and along the sides alcoves adapted for five persons are fitted. A total of 256 passengers can dine at one time. Numerous large ports, in addition to a spacious well leading straight down from the weather deck, allows of ample daylight in this saloon. An upright grand piano is placed at the fore end of the apartment, and aft is a magnificent inlaid sideboard. The entire saloon is finished in white and upholstered in Genoa velvet. Wilton runners cover the floor, which is of polished teak. The first class dining saloon is separated from the second class dining saloon by the various offices necessary for the working of both these saloons, such as, galleys, pantries, sculleries, larders, bakery, etc., each office being fitted with the very latest apparatus for its purpose. A large light and air shaft overhead in this space extends right up to the weather deck, affording abundance of light and cool air. The second class dining saloon is handsomely designed and capable of seating 150 at once. It is panelled in mahogany while the upper frame is finished natural, the whole being finished in a dark color. Tables in the centre of the apartment are laid fore and aft, with small tables each seating eight arranged along the side. Further aft on this deck is placed a second class lounge fitted and furnish-

ed in a dark shade and containing an overstrung upright piano. There is also a large bookcase in this room. Adjacent to this apartment is a second class smoking room panelled in mahogany and upholstered in a rich maroon leather the whole effect being very harmonious. Still further aft a steel deck house is erected and is partitioned off to form a third class lounge and a third class smoking room. Both these apartments are spacious and airy and afford third class passengers comfortable saloons for recreation. These rooms are well upholstered and fitted in dark mahogany. Aft these saloons there are fitted male and female hospitals, with bathrooms and all other accessories necessary. The remaining space on this deck is cleared for a third class promenade.

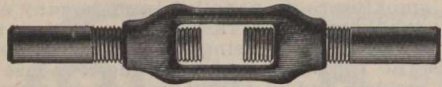
The **UPPER DECK** from stem to stern is covered in, and may be designated the working deck. On the port side accommodation is made for the crew, engineers, stewards and firemen. Fruit and vegetables are stowed in cold stores on this side of the vessel. Along the centre of this deck funnel casings, turbine hatches, etc., are placed occupying almost the total length. Forward a spacious and airy third class dining saloon has been erected with small tables arranged to seat from seven to 14 people, in all seating at one time 119. Aft on the same deck there is another third class saloon with tables seating 14 to 18 people, in all accommodating 142 people at once. Both these saloons are fitted in a very superior third class fashion, and ample light is afforded by the many large ports. The remainder of this deck is occupied by well equipped second class cabins, lavatories and bathrooms.

MAIN DECK.—The entire breadth of the ship for 200 ft. amidships is taken up by the turbine room, funnel hatches, coal bunkers and store rooms. Forward and aft cabins for third class passengers are fitted bath rooms, lavatories, etc., occupy the remaining space.

The **LOWER DECK** contains no cabins but is devoted to a cold chamber with a capacity of 15,000 cubic feet, a mail and specie room, and a large baggage room. The remaining portion of the lower deck in addition to the holds below, will be used for cargo.

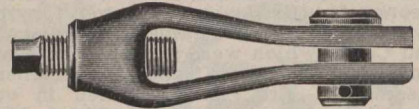
These steamships have so many special features that it is difficult to deal with them all in detail, but there are some worthy of special note. The thermotank system of ventilation is fitted throughout the ships with the exception of the machinery and cargo spaces. The installation consists of numerous thermotanks distributed over the various decks, which assimilate air from the open, and when charged can reduce or raise the temperature of the air to any degree desired. When this is done the air is discharged by centrifugal fans through trunks leading to various parts of the vessel. These tanks can maintain a temperature of 65 deg. Fahr. with a surrounding atmosphere at zero, and are capable of renewing the air 10 times in an hour. Electric exhaust fans are also fitted in the smoking rooms and first class dining saloon, as also in various other sections of the ship, in addition to the thermotank system of ventilation. An electric passenger hoist is another feature, to take passengers from deck to deck with a maximum of ease. Goods hoists are fitted for the conveyance of stores from the galley below to the shelter and boat decks. A complete installation of refrigerating plant is fitted for the preservation of fresh provisions as well as for the transportation of meat and dairy produce. A safe margin of power is provided and the engines are arranged for interchangeable working. The plant is also capable of producing a large quantity of ice daily for use of passengers. The cooling appliances are designed to

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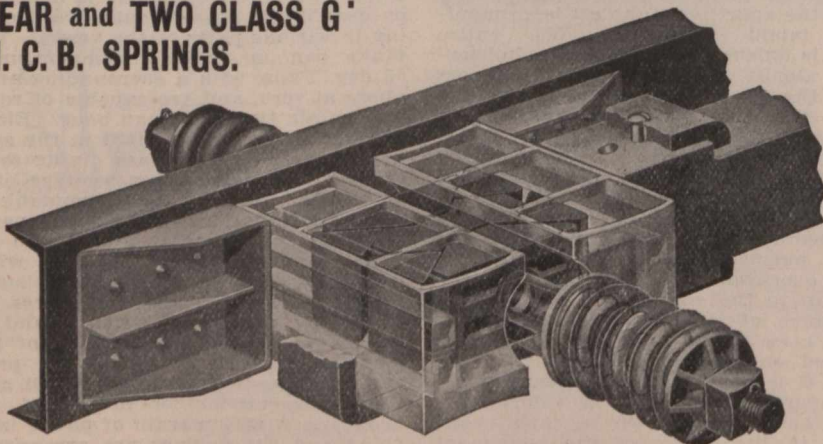
85% Magnesia Locomotive lagging. : : :

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enable different classes of goods to be carried as may be required, at almost any temperature. Electric light is installed all over the vessels and the fittings are of the most elaborate and substantial character. The installation consists of three sets of combined engines and dynamos of the compound type, any two of which are capable of generating and supplying light equal to 28,800 candle power, also supplying the necessary current for a large number of cargo cluster lamps of 200 c.p. each, and to all signal lamps, thermotanks, motors, fans, etc. The current is transmitted by insulated cables of high conductivity, all wiring being done on the double wire distribution box system. The main switchboards are fitted with ammeters, voltmeters, and switch, pilot lamps and switches, double pole switches and fuses for each of the generators, and change-over switches and double pole fuses for each of the main circuits. The instruments are of the moving coil type, and the whole switchboard is arranged for easy and convenient handling, each switch being distinctly marked by the name of the circuit which it controls. Two-way switches are fitted for the electric lights, convenient to the berths in the cabins, also two separate electric bell pushes, and in addition plugs are fitted to each first class cabin. The latest tele-motor principles place the steering wheel on the navigating bridge in direct touch with the steering engine aft. Hand steering gear is also fitted on bridge aft. Telegraphs, telephones and voice pipes enable the officer on duty to transmit instructions to all necessary parts of the ship. Three separate systems of piping are installed throughout the ship; for supplying steam to the winches, windlass, steering gear, etc., supplying all thermotanks and heaters, supplying steam to the galleys, pantries, etc. A distinctly new feature in the way of fire extinguishing apparatus has been adopted in a machine capable of rapid generating and delivering to any part of the ship, upwards of 25,000 cubic feet of fire extinguishing gas per hour, by means of pipes leading to each compartment, simultaneously delivering sulphur dioxide into it. When the fire is extinguished the sulphur dioxide is withdrawn by suction. By the same machine fresh air can be simultaneously injected into the compartment, and it will thus be seen that the usefulness of this mechanism is not confined to fire extinguishing purposes, but may be used either for ventilation by extracting foul air and injecting fresh air, or to disinfect any infected compartment in the ship. A complete system of hot and cold fresh water and hot and cold salt water distribution throughout the ships is arranged for, not only to the sanitary quarters but also to the various galleys, pantries, sculleries, etc. The ships throughout are replete in everything that makes for comfort in travelling. Each vessel has accommodation for 350 first class, 200 second class, 572 third class passengers, and the crew will number well ahead of 300. The gross tonnage is 12,000.

MACHINERY.—The vessels are propelled by compound steam turbines working on three shafts, arranged with the high pressure turbine in the centre driving the centre shaft and propeller. The two low pressure turbines are arranged on either side of the high pressure turbine and drive the wing shafts and propellers. Astern turbines are placed on the wing shafts. The machinery embodies all the latest improvements and special attention has been given to the maintenance of high efficiency under service conditions.

There are about half a million blades of hard drawn brass in the turbines, and if these were placed in one line they would extend nearly 30 miles. The three propellers, with three blades on each,

are made of manganese bronze. They are accurately machined and balanced and the blades are carefully polished to reduce to a minimum the frictional resistance incidental to the high velocity at which they pass through the water, and which at the tips, exceeds 100 miles an hour. The turbines exhaust direct into two steel plate condensers, fitted with solid drawn brass tubes, and placed alongside the low pressure turbines. The cooling water for condensing the exhaust steam is circulated through the condensers by four large centrifugal pumps, two for each condenser, and the condensed steam is withdrawn from the condensers by two single acting twin air pumps. Special attention has been given to the efficiency of the main condensing plant with a view to the best possible vacuum being maintained on the service. There is a large auxiliary condenser for conserving fresh water derived from the exhaust steam of the electric engines, the refrigerating engines, donkey pumps, and other auxiliaries, and this condenser is provided with an independent circulating pump and an auxiliary air pump. The engine room is fully equipped with the most modern appliances and includes three large electric engines and dynamos, three refrigerating machines, pumps for supplying hot and cold salt water for the baths, also pumps for sanitary purposes, washing decks, for extinguishing fire and fresh water for passengers' use. There are also bilge and ballast pumps, and these can, in the event of accident to the ship, be supplemented by the large circulating pumps being connected to discharge water from the vessel, the total capacity of these pumps being equal to fully 2,000 tons per hour. The distilling plant consists of two large evaporators together capable of producing from sea water 100 tons of fresh water per 24 hours and two distilling condensers having a combined output of 12,000 gallons of pure fresh drinking water per day. In the engine room there are also arranged four large main and auxiliary feed pumps for the boilers, and one smaller feed pump for use when the vessel is in port. In connection with them there is fitted a large surface heater for extracting the waste heat in the exhaust steam from the pumps and other auxiliary machinery and utilizing it to heat the feed water for the boilers. Two gravitation feed filters are fitted for removing grease and other impurities from the feed water. Steam is supplied by four double-ended and four single-ended boilers of the cylindrical return tube type arranged in two boiler rooms and fitted with forced draught; air for the furnaces being supplied by eight large fans driven by electricity. There are about 7,000 tubes in the boilers, and in addition about 4,300 tubes for heating the air for the furnaces. There are two large double funnels each rising to about 100 ft. above the keel. The spaces between the inner and outer funnels being utilized for ventilating the boiler rooms and stokeholds.

The Heliopolis and the Cairo were taken to Glasgow at the end of last year where extensive alterations are being made to fit them for the Atlantic service. The whole of the first and second class accommodation on the main deck is being diverted to third class. No change is being made to the cabins themselves and with the exception of one or two minor alterations to the internal fittings, they will be left as before. On the upper deck, where previously were first class cabins, there are being constructed two third class dining saloons (referred to in the general description above) one forward and one aft. These will be spacious and airy rooms, capable of accommodating 261 persons at once. Promenading space previously for the use of second class passengers will be placed at the disposal of third class passengers.

These vessels were designed and built for first and second class passengers only, but after the alterations third class passengers will be also provided for. The draft of the ships is being materially increased. Refrigerated as well as other cargo will be carried. The boat deck which was formerly used to accommodate boats, and other gear, is being cleared of all superfluous fittings and will form an additional excellent promenade for first class passengers. The masts are being unshipped and shortened by several feet, as also the funnels which are to be round and less in diameter and also less in height.

The twin screw s.s. Volturno which has also been bought by the Canadian Northern Steamships, Ltd., is built of steel. Her principle dimensions are: length, 340 ft.; breadth, 43 ft.; depth, 20.7 ft.; tonnage, 3,581 gross. She has two spacious decks extending the whole length of the ship where passengers have every accommodation in accordance with their class. Each deck is fitted to accommodate 700 and 600 passengers respectively, chiefly third class. She has accommodation, however, for 24 first class passengers. She has been trading between Rotterdam, Halifax and New York and maintaining a fairly regular service. She was built at Glasgow in 1906.

R. & O. N. Co.'s Steamboat Rochester.

The steamboat Rochester which is being built in the United States for the Richelieu & Ontario Navigation Co. to run between Youngstown and Ogdensburg, N.Y., will have the following dimensions:—Length over all, 256 ft.; length over stem and stern posts, 246½ ft.; breadth of beam, moulded at frame, 42 ft.; breadth of beam over wales, 43 ft. 7-½ ins.; depth of hull, moulded at main deck, 14¾ ft.; draught, 9½ ft.

The propelling machinery will be of the twin screw, triple expansion, inverted surface condensing type, having four cylinders working on four cranks. The size of the engines will be 16, 25, 31 and 31 x 22 ins. stroke running at 180 maximum number of revolutions per minute, the two engines to develop 2,000 h.p. The air pumps will be attached to the main engine but the feed pump, bilge pump and cooler pump will be independent of the main engines. In order to reduce the vibration in the ship due to the engines they will be balanced. Each engine will have its own condenser having each 1,500 sq. ft. of tube cooling surface.

The auxiliary machinery is as follows: Two duplex pumps for boiler feed, donkey and fire pump service; one bilge pump; one duplex tank pump for fresh water supply for drinking purposes and kitchen supply; one duplex tank pump for use as cooler pump for main engines; one duplex tank sanitary pump for flushing plumbing service; two steam fans for use in connection with the forced draft installation; two centrifugal pumps in connection with the surface condensers; two ash ejectors of hydraulic type; two injectors for boiler feeding; a refrigerating plant of five tons ice capacity with machinery part located in engine room; two 20 kilowatt generators operating at a voltage of 120 will be placed in the lower engine room on a special partial deck. A switchboard will be placed in the after end of engine room on main deck; wiring in exposed places will be in conduit and the whole wiring and plant will be particularly installed with reference to freedom from danger of causing fire; an intercommunicating telephone system will be installed connecting pilot house, engine room, engineer's room and captain's room.

There will be four boilers in two fire holds with coal bunkers between. They will be of the cylindrical return tubular

BRASS

SCIENTIFICALLY AND MECHANICALLY PERFECT

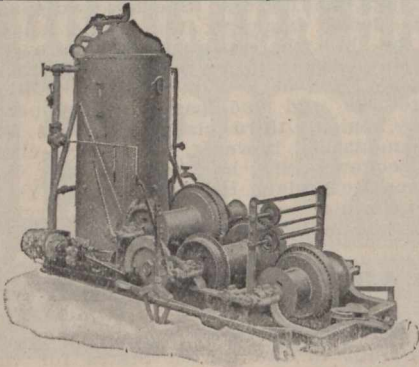
BRONZE

CASTINGS

ALUMINUM

MANGANESE

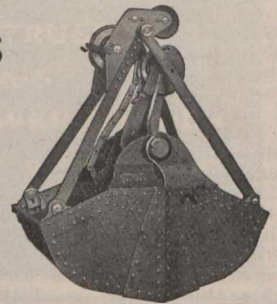
LUMEN BEARING COMPANY, WEST TORONTO



M. Beatty & Sons, Limited Welland, Ont.

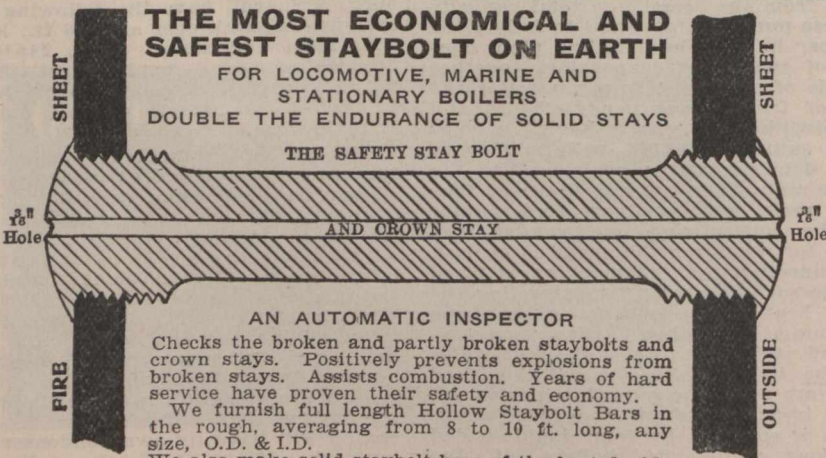
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type 11½ ft. mean diameter and 11 ft. over heads, each having two 42 ins. inside diameter corrugated furnaces of the removable type and with heating surface of best proportion for grates 5½ ft. long. The boilers will be fitted with hot draft. They must pass the Canadian and U. S. Government inspection for 165 lbs. working pressure of steam.

The dining room will be on main deck aft and panelled in mahogany. The entrance hall will be also finished in mahogany. The buffet, on the main deck will be finished in quartered oak. There will be 120 staterooms and 16 parlors on the promenade and gallery decks. The staterooms will all be outside rooms, the parlors will be equipped with brass bedsteads and decoratively finished and each will have a connecting bathroom. On the observation deck there will be a music room finished in white enamel, a smoking room finished in quartered oak, a lunch counter and news stand. The pilot house and texas will be on the hurricane deck.

This vessel when completed will be a thoroughly modern, twin screw passenger and freight steamer of the Canadian lake and river type, guaranteed to run 17% statute miles an hour.

Atlantic and Pacific Ocean Marine.

C.P.R. officials have denied that there is any intention to change its chief British port, from Liverpool to Fishguard.

The Allan Line s.s. *Ionian* collided with a derelict vessel, Mar. 3, near the west coast of Scotland. On arrival at Glasgow, Mar. 5, it was found that about 40 plates on the port side were damaged, all being above the water line.

The C.P.R. s.s. *Empress of Britain*, which is booked to sail from Liverpool, Eng., Apr. 22, for St. John, will, it is announced, sail instead to Quebec, thus inaugurating the St. Lawrence season for the company.

The Australian Government has extended the mail contract held by the Union Steamship Co., between Canada and Australia, for one year from July 31, and is calling for tenders for a faster service.

In response to a question in the British House of Commons, Mar. 22, it was stated that the question of establishing an all British service to the Antipodes, via Canada, was still under consideration but nothing could be said as to when a decision would be arrived at.

With reference to the recent press reports as to the establishment of an Austrian steamship service, G. M. Bosworth, Fourth Vice President C.P.R., on his return from Europe, Mar. 6, is reported to have said that the matter was not specially a C.P.R. affair. It has been discussed with several of the Austrian steamship companies, with the idea of making arrangements with lines now running out of Trieste, for regular sailings to Canadian ports.

The question as to whether or not the Canadian Northern Steamships, Ltd., will join the Canadian Atlantic Westbound Freight Conference is the subject of contradictory dispatches from England. One dispatch states that the company has made formal application for membership, while another is to the effect that D. B. Hanna, Third Vice President C.N.R., has stated that the company would not join the conference, and that though it would not cut rates, it preferred to conduct its business in its own way.

The Shipping Federation of Canada has decided to abolish the portage charge of 25c. a ton charged on goods landed at Montreal and Quebec, and handed at the local wharves. The Montreal Harbor Commission recently refus-

ed to rent sheds to shipping companies unless this charge was dropped. The C.P.R. announced its intention to abolish the charge, Mar. 15, and the Federation followed on the next day, as a result of a meeting of the Canadian North Atlantic Westbound Freight Conference in London, Eng.

The steamship companies utilizing the port of Montreal during the St. Lawrence navigation season, in reply to the recent demand of the longshoremen for the abolition of the bonus system, and for increased pay, have decided unanimously that they will adhere to the bonus system, as it is the only way by which a sufficient number of longshoremen can be retained through the season to handle cargoes. The longshoremen recently applied to the Department of Labor for the appointment of a Board to enquire into their grievances, and the companies have responded that they fail to see how an investigation between themselves and the longshoremen can be held, as they have no longshoremen in their employ.

The New Zealand Shipping Co., has arranged to run a service between Eastern Canada and the Antipodes, utilizing five steamships for the purpose. These are named *Rakai*, *Whakatane*, *Waimate*, *Papanui* and *Wakanui*. The first sailing from Canada is scheduled to take place May 15 from Montreal, which is to be the summer port, and monthly sailings will be made. During the winter season, sailings will take place from St. John, N.B. The company was inaugurated in New Zealand in 1873, and has its headquarters at Christchurch, N.Z., and London, Eng. It owns 17 first class steamships, operating in various parts of the world. The Canadian and New Zealand Governments have granted subsidies in aid of the enterprise, the Canadian subsidy being \$10,000 a month. The C.P.R. is reported to be interested in the service.

Maritime Provinces and Newfoundland.

The Nfld. Legislature has been petitioned to inaugurate a ferry service on St. Margaret's Bay.

The G.T.P.R. is reported to be purchasing property along Courtenay Bay, St. John, N.B., for dock purposes.

An order in council has been passed providing regulations for the governance of a ferry across the Restigouche River between Crosspoint, Que., and Campbellton, N.B.

The St. John, N.B., city council is seeking legislation as regards the renewal of a grant of \$50,000 a year for 20 years to the Imperial Dry Dock Co., for the construction of a dry dock at St. John.

The Maritime Fish Corporation, Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$1,000,000 and office at Montreal, to carry on a general fishing business, and to deal generally in fish products, and in connection therewith to own and operate steam and other vessels.

The steamer *Aspy*, owned by the North Shore Steamship Co., Sydney, N.S., was built at Shelburne, N.S., and her machinery installed at Yarmouth. She is 124 ft. long, 25 ft. beam, and has 9 ft. depth of hold. Her machinery consists of a fore and aft compound surface condensing engine with cylinders 15 and 22 ins. diam. by 24 ins. stroke, supplied with steam at 135 lbs., by a boiler 11 ft. 3 ins. by 10 ft., and the usual auxiliary pumps and electric lighting plant.

Province of Quebec Marine.

J. H. Fontaine, has been appointed Inspector of Boilers and Machinery of Steamboats at Levis, Que.

Notice has been given that the water

will be drawn off from the Lachine canal Apr. 1, and re-admitted Apr. 30.

The Governor General in council has approved the Montreal Harbor Commissioners' by-law giving them power to allot the wharf at sections 71 and 72, for a period not exceeding 10 years.

It is reported that R. Forget, M.P., who is interested in the proposed Quebec and Saguenay Ry., is considering the possibility of establishing a winter port on the lower St. Lawrence, at Bale St. Catherine near the mouth of the Saguenay River.

The Postmaster General, while in Quebec, Mar. 14, is reported to have said that the Government had decided to facilitate the construction of a dry dock at Quebec or Levis, and that aid towards the project would be voted in the near future.

The Minister of Finance gave notice of a resolution, Mar. 14, authorizing the loan of an additional \$6,000,000 for the Montreal Harbor Commission, for the carrying out of an extensive scheme of improvements, with a view to making the handling facilities at Montreal the best on the continent. The loan will be secured by the Commission's bonds, repayable within 25 years, with interest payable half-yearly at 3½% per annum. Previous loans for similar purposes amount to about \$9,000,000, the interest being met out of revenue.

Levis Ferry, Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$500,000 and office at Levis, Que., to carry on island navigation on the River St. Lawrence and its tributaries; to own and operate steam and other vessels; to do everything connected with inland navigation, and in particular to carry out a contract made with Quebec city, by A. Bernier, dated Sept. 27, 1909, for the exclusive privilege of ferrying passengers and freight between Quebec and Levis, from May 1, 1910, to Apr. 30, 1925. The provisional directors are: G. Demers, J. Gosselin, J. F. Deemers, A. Bernier, Levis, Que., and G. S. Marceau, Quebec.

Ontario and the Great Lakes.

The Toronto Ferry Co.'s service across Toronto bay, between the main land and the island, was opened Mar. 19.

The Hamilton Steamboat Co.'s steamboat *Macassa* arrived at Toronto from Hamilton, Mar. 28, being the first vessel to enter the harbor from an outside port this season.

The name of the steamboat *Japan*, recently purchased in the U.S., by the Montreal and Lake Erie Steamship Co., has been changed by order in council to *City of Hamilton*.

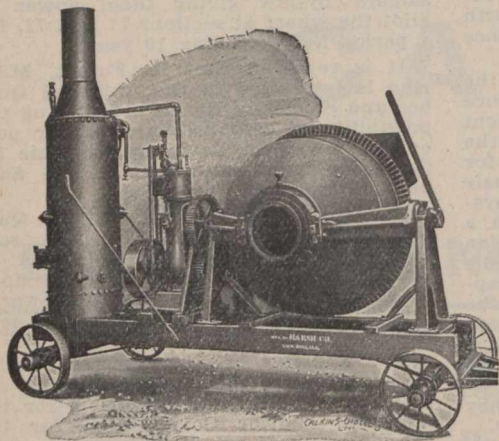
James Richardson & Sons, Ltd., incorporated under the Dominion Companies Act, has been licensed to carry on business in Ontario, with G. T. Richardson, Kingston, as its attorney.

The St. Clair and Erie Ship Canal Co., has been given by the Dominion Parliament an extension of time within which it may start and complete its projected canal from the St. Clair River to Lake Ontario.

The Montreal, Ottawa and Georgian Bay Canal Co., has been granted an extension of time by the Dominion Parliament for the construction of the proposed canal along the Ottawa River Valley, through the divide to Lake Nipissing, and thence by the French River to Georgian Bay.

The Sarnia-Toledo Transit Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of \$25,000 and office at Toronto, to own and operate steam and other vessels, and to carry on a general navigation business. The provisional directors are:—S. Johnston,

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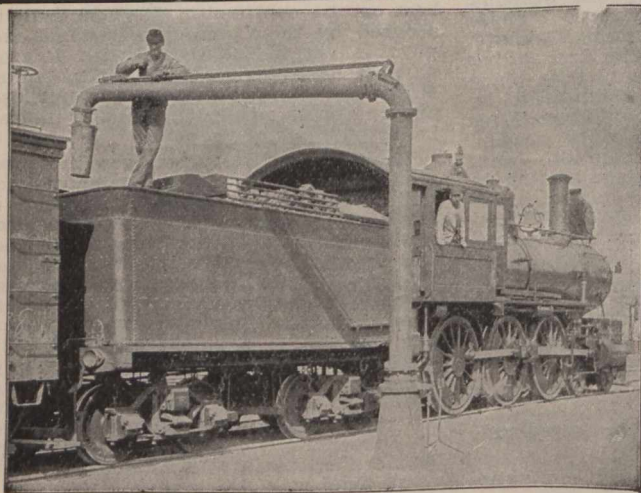
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The U.S. Lake Survey reports the levels of the Great Lakes, in feet above tide-water, for Feb., as follows:—Superior, 601.73; Michigan and Huron, 579.96; Erie, 571.19; Ontario, 245.03. Compared with the average Feb. levels for the past ten years, Superior was 0.40 ft. below; Michigan and Huron, 0.19 ft. below; Erie, 0.38 ft. below; and Ontario, 0.40 ft. below.

The Severn River and Lake Couchiching Navigation Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of \$100,000 and office at Orillia, to carry on business as ship-owners and shipping agents, and to conduct a general shipping business. The provisional directors are:—T. W. Wood, Orillia; L. Sinclair, M. R. Edgar, A. G. Robertson and J. A. French, Toronto.

The Niagara and Ontario Steamship Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of \$150,000 and office at Toronto, to own and operate steam and other vessels, and to carry on a general transportation business. The provisional directors are:—F. T. Hutchison, H. W. Crawford, C. Moller, W. E. Davis, F. J. Dunbar, E. M. Fitzsimmons and M. A. Ball, Toronto.

Mr. Justice J. T. Garrow, a Judge of Appeal of the Supreme Court of Judicature for Ontario, has been appointed Local Judge in Admiralty of the Exchequer Court for the Toronto Admiralty District. Judge O'Leary of the Thunder Bay, Ont., District Court has been appointed Surrogate Judge in Admiralty of the Exchequer Court for that portion of the Toronto Admiralty District comprised in the territorial districts of Thunder Bay and Rainy River.

R. Forget, M.P., President of the Richelieu and Ontario Navigation Co., is reported to have confirmed the recent report that the company is negotiating for a working alliance or possibly the control of the Hamilton Steamboat Co., operating the steamboats Mocassa and

Modjeska, and the Turbine Steamship Co., operating the steamboat Turbinia. Both of these companies are controlled by the T. Eaton Co., Toronto.

A deputation of laborers was received by the Dominion Premier, Mar. 4, when a petition was presented, asking that the deepening of the Welland canal be proceeded with, on the ground that in addition to the benefit to navigation, it would give employment to a large number of men. The Premier stated that the Government was fully alive to the advantages of the work, which was now engaging its attention.

The Dominion Marine Association has made an arrangement with the grain trimmers at Fort William and Port Arthur, by which the vessel owners forming the Association will pay a flat rate to trimmers on all grain leaving the dual ports during the forthcoming season. On the large bulk cargo vessels a rate of 50c. per 1,000 bush. will be levied, and on packet freight boats, an increase of 15c. will be paid.

A deputation representing the Port Arthur Board of Trade, waited on the Dominion Government, Mar. 18, to urge that something be done in order that steel plates and other material for the building of steel vessels in Canada, may be made in this country. The questions of the lighting of the harbor approach, the extension of the present breakwater, dredging, and the establishment of a wireless telegraph station were also taken up.

The Mayor of Goderich and a representative of the Goderich Elevator and Transit Co., visited Ottawa, Mar. 15, when they had an interview with the Minister of Public Works relative to some proposed harbor works at Goderich. They were informed that no appropriation could be made this year as the supplementary estimates had already been dealt with, but a report on the desirability of carrying out the work would be asked for, and due consideration given to the proposals.

The Morrisburg Ferry and Dock Co., is the title of a company which has been incorporated by the Dominion Parliament. It authorizes the company, subject to the provisions of the Railway Act, to construct and operate a ferry for railway cars across the St. Lawrence River, between Morrisburg, Ont., and the south side of the river in New York State; to construct and operate other steamships; to construct wharves, and to construct railway tracks on the same to be con-

nected with the tracks of the G.T.R. or any other railway in Morrisburg. The capital of the company is fixed at \$500,000, and it is authorized to issue bonds for \$300,000. The provisional directors are:—B. B. Tucker, H. H. Bradfield, L. E. Murphy, W. H. McGannon, Morrisburg, Ont.

The question of the rights of Canadian vessels in the New York State canals, was brought before the House of Commons, Mar. 11, and in reply to questions, the Premier recalled the fact that this question was discussed several years ago and he inclined to the opinion that although the New York statutes accorded the same privileges to Canadian vessels, as were enjoyed by U.S. vessels, departmental regulations discriminated against them.

The Richelieu and Ontario Navigation Co. is applying to the Dominion Parliament for authority to acquire real estate for the construction of offices, and for other necessary purposes, to own hotels, dwellings and places of amusement; to carry on the business of warehousemen, wharfingers and forwarders; to construct freight and passenger stations, elevators, and general freight and passenger terminal facilities in Canada; to carry on the general business of common carriers by land and water; to acquire, hold shares in or guarantee the securities of other similar companies, and to construct and to repair steam and other vessels. The number of directors is to be not less than three nor more than 15. Certain sections of the company's existing acts are to be repealed, the new powers given being in lieu of those given in the repealed sections. The bill has passed the House of Commons and is before the Senate.

At the recent annual meeting of the British Corporation for the Survey and Registry of Shipping, the President said:—"While we have been doing our utmost to advance the interests of the Registry in other European countries, we have not been neglectful of the same interests elsewhere, and I should like

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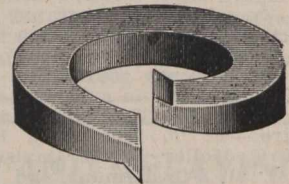
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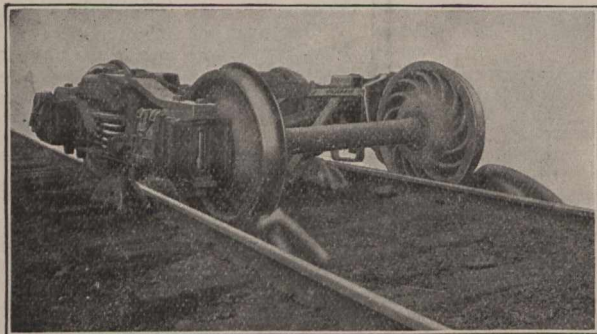
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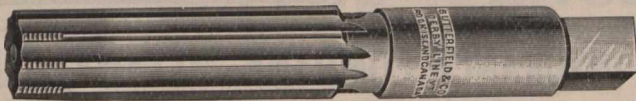
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particularly to refer to the growth in recent years of our association with Canada, through the construction to our class, for Canadian owners, of vessels specially designed for service on the Great Lakes. During the past two years, by far the largest proportion of these vessels, which were built in this country, have been constructed under the supervision of the British Corporation. The Technical Committee have taken great pains to inform themselves as to the conditions of traffic on the Great Lakes, and our assistant chief surveyor spent some time there last year in order to become personally familiar with what was known to be very trying work. The results of our experience and attention to detail, in conjunction with the specialization of the structural design so required for the peculiar circumstances of the trade have been uniformly recognized as having contributed materially to secure for British shipbuilders the very large amount of work they have recently done for Canadian lake ship-owners."

Manitoba, Saskatchewan and Alberta.

The Winnipeg Board of Trade has endorsed a petition to the Department of Marine for the lighting and buoying of Lake Winnipeg and the Red River. It is anticipated that traffic will be large during the coming season.

The Appeal Court, Mar. 7, dismissed the Dominion Fish Co.'s appeal against the award of \$4,000 damages to a nurse who was injured when the company's steamboat Premier was destroyed by fire on Lake Winnipeg in 1908.

The Corona Lumber Co., Ltd., has been incorporated under the Manitoba Companies Act, with a capital of \$100,000 and office at Winnipeg, to carry on a general lumbering business, and in connection therewith to own and operate steam and other vessels, for its own purpose and for the carrying of passengers and freight.

The Winnipeg Board of Control has decided to petition the Dominion Government to erect a wharf at an estimated cost of \$250,000. Two possible sites have been mentioned, one being on the Red River at the foot of Rupert St., and the other at the foot of McFarlane St., north

of the Louise bridge. If neither of these sites is suitable, one will be purchased.

A. R. Dufresne, Dominion Government District Engineer, has communicated with the Winnipeg Board of Control, pointing out that the St. Andrews lock will be ready for the opening of navigation, and suggesting that in view of the expected increase in traffic, the draw spans on all bridges under the city's control be inspected and placed in good working order.

The vessel which was reported in our last issue as being under construction for H. Sutherland, Winnipeg, for operation on Lake Winnipeg and the Red River, is stated to be the first of a number which will be operated in the transportation of building materials. It will be of suitable size for passing the St. Andrews lock, and propelled by twin screws driven by compound engines of 600 h.p. Its length will be 180 ft., by 40 ft. beam, and the construction is of steel throughout, with a carrying capacity of 1,000 tons. The equipment will include a powerful centrifugal pump for loading sand and gravel, and a series of hydraulic hoists for building stone. In addition, a certain amount of passenger accommodation will be provided.

B.C. and Pacific Coast Marine.

Work was commenced early in March on the construction of the G.T.P. docks in the inner harbor at Victoria.

The Boscowitz Steamship Co.'s new vessel, which has been named Venture, is expected to be in service about June 1.

The Canadian Fishing Co.'s s.s. Celestial Empire, struck a rock during a storm early in March, in Squally channel, while northbound, and put back to Vancouver for repairs.

The barkentine, Everett G. Griggs, owned by the Everett G. Griggs Ship Co., Ltd., Victoria, B.C., is reported to have been sold to Capt. E. R. Sterling for \$27,500. She was built in Belfast, Ireland, in 1883, and is an iron, six-masted barkentine, with dimensions:—length, 308.2 ft.; breadth, 42.9 ft.; depth, 25.1 ft.; tonnage, 2,351 register. She was formerly known under the names Lord Wolsley and Columbia.

The officers of the recently organized Grand Trunk Pacific Dock Co., which has

been formed for the construction and operation of docks at Prince Rupert, Victoria, Seattle, Wash., and other places on the Pacific coast, in the interests of the G.T.P.R., are:—President, C. M. Hays; Vice President, J. S. Gibson; Secretary-Treasurer, H. Phillips; Assistant Secretary, S. H. Smith; and the trustees are C. M. Hays, E. J. Chamberlin, J. S. Gibson, S. H. Smith and L. V. Druce.

Huntly and Brewster, who operate the steamboat Sonoma, on the Ladner-Steveston run, will probably build or purchase a larger vessel for this route this spring, owing to increased business. The new vessel will probably be about 70 ft. long, with 15 ft. beam, capable of 12 knots an hour, and with capacity for about 75 passengers. If it is decided to replace the Sonoma, she will be sold. She was built at Vancouver in 1905, her dimensions being:—length, 46.5 ft.; breadth, 11 ft.; depth, 4.6 ft.; tonnage, 19 gross, 13 register, and she is equipped with engine of 3 n.h.p. driving a screw.

Capt. C. H. Nicholson, Manager G.T.P.R. Pacific Coast Steamship Service, on his return from Great Britain, Mar. 16, said that the s.s. Prince Rupert was ready to start on her outward trip to Vancouver, by way of the Horn and that the s.s. Prince George would start about May 1. The first named would be operated in passenger and freight service between Prince Rupert, Vancouver, Victoria and Seattle, but it had not been decided whether the Prince George would also be placed on the same route, or on the Vancouver-Victoria-Seattle run. The s.s. Bruno would be operated between Vancouver, Queen Charlotte Islands and Portland Canal.

The G.T.P.R. steamship Prince George was launched at Wallsend-on-Tyne, Eng., Mar. 10, the christening ceremony being performed by Miss Hays, daughter of C. M. Hays, President G.T.R. and G.T.P.R., who in speaking on the occasion, said that faster boats with greater tonnage, between Great Britain and Canada must undoubtedly come as a result of an increased demand for Canadian grain in Great Britain, but unless there was a possibility of some attraction, some advantage or reason why such grain should come to England as against foreign grown grain, it would probably be some time before such vessels were needed.

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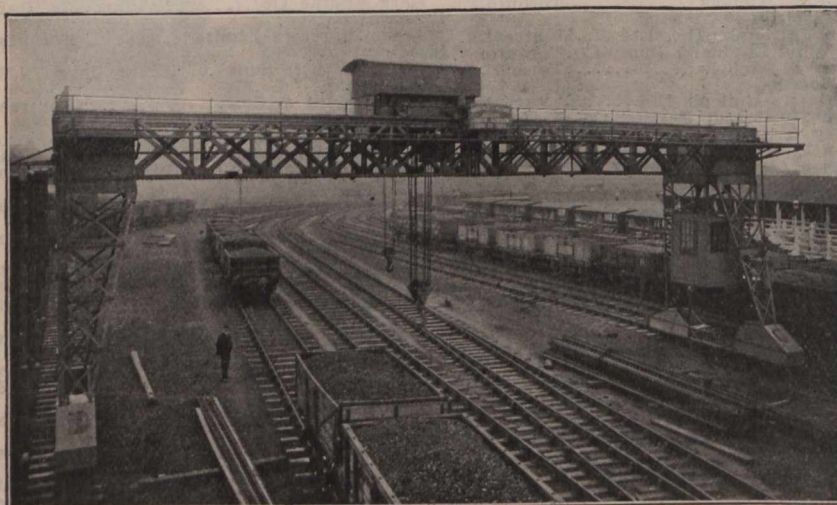
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Owen Sound Wire Fence Co., Owen Sound.
- Ferro-vanadium**
American Vanadium Co. Pittsburg, Pa.
- Fire Appliances**
Miller Chemical Engine Co., Chicago, Ill.
- Fire Brick**
Mussens Limited. Montreal.
- Flags**
The Hudson's Bay Co. Montreal.
- Flour**
The Hudson's Bay Co. Montreal.
- Forgings**
American Vanadium Co. Pittsburg, Pa.
Canadian Car and Foundry Co. Montreal.
Cleveland City Forge & Iron Co., Cleveland.
Crossen Car Mfg. Co. Cobourg, Ont.
Hamilton Steel & Iron Co., Ltd., Hamilton.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Pittsburg Forge & Iron Co., Pittsburg, Pa.
Standard Steel Works Co., Philadelphia, Pa.
- Foundry Appliances**
Goldschmidt Thermit Co. Toronto.
Ont. Wind Eng. & Pump Co., Ltd., Toronto.
- Frogs**
Canadian Ramapo Iron Wks., Niagara Falls.
- Furnaces, Corrugated**
Continental Iron Works. Brooklyn, N.Y.
- Fuse Batteries**
Standard Explosives Limited. Montreal.
- Fuse Detonators**
Standard Explosives Limited. Montreal.
- Fuses, Electric**
Standard Explosives Limited. Montreal.
- Gaskets**
The Holden Co., Ltd. Montreal.
McCord & Co. Chicago, Ill.
- Gates**
New Brunswick Wire Fence Co., Moncton.
Owen Sound Wire Fence Co., Owen Sound.
- Gates, Crossing**
General Railway Signal Co. Rochester, N.Y.
The N. L. Piper Ry. Supply Co. Toronto.
- Gauges, Locomotive**
Taylor & Arnold. Montreal.
- Gears**
American Vanadium Co. Pittsburg, Pa.
Northern Electric & Mfg. Co. Montreal.
- Grates, Shaking**
Babcock & Wilcox, Ltd. Montreal.
Polson Iron Works, Ltd. Toronto.
Vandeleur & Nichols. Toronto.
- Groceries**
The Hudson's Bay Company. Montreal.
- Guides and Outfitters**
Otto Bros. Field, B.C.
- Hammers, Cast Steel**
American Brake Shoe & Fdry Co. Mahwah.
James Smart Mfg. Co. Brockville, Ont.
- Handcars**
Canadian Fairbanks Co., Ltd. Montreal.
Crossen Car Mfg. Co. Cobourg, Ont.
Dominion Equip't & Supply Co., Winnipeg.
F. H. Hopkins & Co. Montreal.
Mussens Limited. Montreal.
Rice Lewis & Son. Toronto.
- Hardware**
The Hudson's Bay Co. Montreal.
Rice Lewis & Son. Toronto.
- Hats**
W. H. Coddington Hamilton, Ont.
- Headlights**
Commercial Acetylene Co. Toronto.
The N. L. Piper Ry. Supply Co. Toronto.
Pyle National Elec. Headlight Co. Chicago.
- Headlinings**
Crossen Car Mfg. Co. Cobourg, Ont.
- Heaters, Feedwater**
Robb Engineering Co., Ltd. Amherst, N.S.
- Heating, Car**
Canadian Gold Car H'g & L'g Co. Montreal.
Safety Car Heating & L'ting Co. New York.
- Hoists, Electric**
American Hoist & Derrick Co. St. Paul.
- Hoists (Pneumatic)**
Taylor & Arnold. Montreal.
- Hollow Staybolt Iron and Steel Bars**
Falls Hollow Staybolt Co. Cuyahoga Falls.
- Hoppers, Car (Wet or Dry)**
Duner Co. Chicago, Ill.
- Hydrants**
Canadian Fairbanks Co., Ltd. Montreal.
Kerr Engine Co. Walkerville, Ont.
- Illustrations**
Acton Burrows Limited. Toronto.
- Injectors**
T. McAvity & Sons. St. John, N.B.
- Inspections**
R. W. Hunt & Co. Montreal.
- Insurance, Accident**
Can. Casualty & Boiler Ins. Co., Toronto.
Canadian Ry. Accident Ins. Co. Ottawa.
Imp. Guarantee & Acc. Ins. Co., Toronto.
- Insurance, Boiler**
Canadian Casualty & Boll. Ins. Co. Toronto.
- Insurance, Vessel**
Burnett, Ormsby & Clapp, Ltd., Toronto.
- Interlocking Plant and Signals**
General Railway Signal Co. Rochester, N.Y.
Montreal Steel Works. Montreal.
Saxby and Farmer, Ltd. Montreal.
- Iron and Steel Bars**
Hamilton Steel & Iron Co., Ltd. Hamilton.
- Iron, Pig**
Hamilton Steel & Iron Co., Ltd. Hamilton.
Nova Scotia S. & C. Co., New Glasgow, N.S.
- Iron Signs**
Acton Burrows Limited. Toronto.
Falls Hollow Staybolt Co. Cuyahoga Falls.
- Jacks**
Canadian Fairbanks Co., Ltd. Montreal.
Dominion Equip't & Supply Co., Winnipeg.
H and E Lifting Jack Co. Waterville, Que.
F. H. Hopkins & Co. Ltd. Montreal.
Montreal Steel Works, Ltd. Montreal.
Mussens Limited. Montreal.
A. O. Norton. Coatcook, Que.
James Smart Mfg. Co. Brockville, Ont.
A. R. Williams Mchy. Co., Ltd. Toronto.

- Japans**
The Dougal Varnish Co. Ltd....Montreal.
- Journal Bearings**
Canadian Bronze Co.....Montreal.
Crossen Car Mfg. Co.....Cobourg, Ont.
Kerr Engine Co.....Walkerville, Ont.
Jas. W. Pyke & Co.....Montreal.
- Journal Boxes**
The Holden Co., Ltd.....Montreal.
McCord & Co.....Chicago, Ill.
- Journal Jacks**
A. R. Williams Mchy. Co., Ltd.... Toronto.
Lager Beer, &c.
E. L. Drewry.....Winnipeg.
- Lagging and Covering, Locomotive**
Taylor & Arnold.....Montreal.
- Lamps, Arc**
Northern Electric & Mfg. Co.....Montreal.
- Lamps, Incandescent**
Canadian Westinghouse Co..Hamilton, Ont.
- Lamps and Lanterns**
The Hudson's Bay Company.....
The Hiram L. Piper Co.....Montreal.
The N. L. Piper Ry. Supply Co..Toronto.
- Lamps, Switch**
The N. L. Piper Ry. Supply Co..Toronto.
- Lathes**
John Bertram & Sons Co....Dundas, Ont.
- Laths**
J. Harrison & Sons Co..Owen Sound, Ont.
- Lighting, Car**
Canadian Gold Car H'g & L'g Co.Montreal.
Safety Car H't'g & L't'g Co..New York.
- Lights, Contractors' and Wrecking**
F. H. Hopkins & Co.....Montreal.
International Marine Signal Co. .Ottawa.
Mussens Limited.....Montreal.
- Locomotives (Compressed Air)**
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co...Kingston, Ont.
Montreal Locomotive W'ks (Ltd.)..Montreal.
- Locomotives (Electric)**
Baldwin Locomotive Works..Philadelphia.
Montreal Locomotive W'ks (Ltd.)..Montreal.
- Locomotives (Logging)**
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co...Kingston, Ont.
- Locomotives (Rack)**
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co...Kingston, Ont.
Montreal Locomotive Works.....Montreal.
- Locomotives (Steam)**
American Car & Equip. Co...Chicago, Ill.
Baldwin Locomotive Works..Philadelphia.
R. M. Burns & Co.....Chicago, Ill.
Canadian Fairbanks Co., Ltd.....Montreal.
Canadian Locomotive Co...Kingston, Ont.
Dominion Equip't & Supply Co., Winnipeg.
J. T. Gardner.....Chicago, Ill.
Hicks Locomotive & Car Works..Chicago.
Montreal Locomotive W'ks.Montreal.
Vulcan Iron Works.....Wilkesbarre, Pa.
- Lorries, Tracklaying**
Crossen Car Mfg. Co.....Cobourg, Ont.
F. H. Hopkins & Co.....Montreal.
- Lubricators**
McCord & Co.....Chicago, Ill.
Taylor & Arnold.....Montreal.
- Lumber**
Parry Sound Lumber Co.....Toronto.
J. Harrison & Sons Co., Owen Sound, Ont.
- Machinery, Cement**
Jas. W. Pyke & Co.....Montreal.
- Machinery and Plant, Contractors'**
American Hoist & Derrick Co....St. Paul.
M. Beatty & Sons.....Welland, Ont.
R. M. Burns & Co.....Chicago, Ill.
Canadian Fairbanks Co., Ltd.....Montreal.
J. T. Gardner.....Chicago, Ill.
General Railway Signal Co., Rochester, N.Y.
F. H. Hopkins & Co.....Montreal.
Mussens Limited.....Montreal.
Toronto Pressed Steel Co.....Toronto.
- Machinery, Hoisting**
American Hoist & Derrick Co....St. Paul.
Brown Hoisting Machinery Co..Cleveland.
Machinery, Tracklaying
F. H. Hopkins & Co.....Montreal.
- Machinery, Logging**
Russel Wheel & Fdry, Co....Detroit, Mich.
- Machinery, Wood and Iron Working**
Canadian Fairbanks Co., Ltd.....Montreal.
- Machines, Boring and Turning**
John Bertram & Sons Co....Dundas, Ont.
- Machines, Drilling**
John Bertram & Sons Co....Dundas, Ont.
- Machines, Milling**
John Bertram & Sons Co....Dundas, Ont.
- Machines, Planing and Shaping**
John Bertram & Sons Co....Dundas, Ont.
- Machines, Radial Drilling**
John Bertram & Sons Co....Dundas, Ont.
- Machines, Shaping**
John Bertram & Sons Co....Dundas, Ont.
- Machines, Slotting**
John Bertram & Sons Co....Dundas, Ont.
- Machine Tools**
John Bertram & Sons Co....Dundas, Ont.
Pratt & Whitney Co.Dundas, Ont.
- Manhole Frames and Covers**
American Brake Shoe & F'dry Co.Mahwah.
Canada Iron Corporation, Ltd....Montreal.
- Marine Repairs**
Goldschmidt Thermit Co.....Toronto.
- Marine Supplies**
Rice Lewis & Son.....Toronto.
- Metal, Anti-friction**
W. Abbott.....Montreal.
- Metal, Babbit**
Tallman Brass & Metal Mfg. Co.Hamilton.
- Metals**
Goldschmidt Thermit Co.....Toronto.
- Metal Work, Structural**
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.....Montreal.
Montreal Locomotive W'ks (Ltd.)..Montreal.
Jas. W. Pyke & Co.....Montreal.
- Milepost Numbers**
Acton Burrows Limited.....Toronto.
- Motors**
Canadian Fairbanks Co., Ltd....Montreal.
McCord & Co.....Chicago, Ill.
- Motors, Electric**
Allis-Chalmers-Bullock Ltd.....Montreal.
Canadian Crocker Wheeler Co., Montreal.
Chapman & Walker, Ltd.....Toronto.
Northern Electric & Mfg. Co.....Montreal.
Vandeleur and Nichols.....Toronto.
- Motor Generator Sets**
Allis-Chalmers-Bullock Ltd.....Montreal.
Chapman & Walker, Ltd.....Toronto.
Vandeleur and Nichols.....Toronto.
- Motors, Turntable**
Taylor & Arnold.....Montreal.
- Nickel**
The Orford Copper Co.....New York.
- Nickel for Nickel Steel**
The Orford Copper Co.....New York.
- Numbers**
Acton Burrows Limited.....Toronto.
- Nut Locks**
Positive Lock Washer Co....Newark, N.J.
- Nuts, Clevis**
Cleveland City Forge & Iron Co., Cleveland.
- Nuts, Square and Hexagon**
Montreal Rolling Mills Co.....Montreal.
Toronto Bolt and Forging Co.....Toronto.
- Oakum**
The Hudson's Bay Company.....
- Office Fittings**
Can. Office & Sch'l Furniture Co..Preston.
- Office Signs**
Acton Burrows Limited.....Toronto.
- Oils**
Galena Signal Oil Co..Franklin & Toronto.
- Packing**
The N. L. Piper Ry. Supply Co..Toronto.
- Paints**
Standard Paint & Var. Co., Windsor, Ont.
- Patterns**
Hamilton Pattern Works....Hamilton, Ont.
- Pile Drivers, Railway**
F. H. Hopkins & Co.....Montreal.
Mussens Limited.....Montreal.
- Pinch Bars**
The N. L. Piper Ry. Supply Co..Toronto.
- Pipe, Culvert (Cast Iron)**
Gartshore-Thompson Pipe Co...Hamilton.
- Pipe, Gas (Cast Iron)**
Gartshore-Thompson Pipe Co...Hamilton.
- Pipe, Sewer (Cast Iron)**
Gartshore-Thompson Pipe Co...Hamilton.
- Pipe Stocks**
Butterfield & Co.....Rock Island, Que.
A. B. Jardine & Co.....Hespeler, Ont.
- Pipe, Water (Cast Iron)**
Gartshore-Thompson Pipe Co...Hamilton.
- Planers**
John Bertram & Sons Co....Dundas, Ont.
- Platforms, Steel**
Standard Coupler Co.....New York City.
- Ploughs, Contractors'**
Mussens Limited.....Montreal.
- Poles**
J. Harrison & Sons Co., Owen Sound, Ont.
- Porter**
E. L. Drewry.....Winnipeg.
- Posts**
J. Harrison & Sons Co., Owen Sound, Ont.
- Powder, Blasting**
Standard Explosives Limited....Montreal.
- Printing**
Southam Press.....Toronto.
- Pumps**
Canadian Fairbanks Co., Ltd....Montreal.
S. F. Bowser & Co., Limited.....Toronto.
Ontario Wind Engine & Pump Co..Toronto.
James Smart Mfg. Co.....Brockville, Ont.
Vandeleur and Nichols.....Toronto.
- Pumps (Centrifugal)**
M. Beatty & SonsWelland, Ont.
- Rail Benders, Roller**
Dominion Equip't & Supply Co., Winnipeg.
F. H. Hopkins & Co.....Montreal.
Montreal Steel Works.....Montreal.
- Rail Drilling Machines**
A. B. Jardine & Co.....Hespeler, Ont.
- Rails (new)**
Dominion Iron & Steel Co...Sydney, N.S.
Drummond, McCall & Co.Montreal.
J. T. Gardner.....Chicago, Ill.
J. J. Gartshore.....Toronto.
F. H. Hopkins & Co.....Montreal.



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