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THE BULLDOZER IN THE CAR REPAIR SHOP.

By FREDERICK H. MOODY, B.A.Sc.

The bulldozer occupies a practically indispensable position in the railway shop, particularly in the car department, where so much bar stock must be bent into various shapes to form the car members. A few of these are the car coupler pockets, car step, brake stand, truck frame and many other parts that are of a uniform shape, or which on cars of similar types, are practically the same in size and shape. Were it not for the question of multiple production, and that all parts for the same purpose are alike, it would, of course, be more profitable to produce the shapes by the standard old-time methods on the hand forge, or possibly under the steam hammer. But where similar parts are to be produced in quantities, even though those quantities be comparatively small, it is more economical to make dies for the purpose.

Another factor must be considered in this matter; that is the matter of how many different kinds of parts are to be produced, for, if the number of different kinds were not sufficiently great, it would naturally be an unprofitable proposition to instal a bulldozer even though several entirely different pieces had to be produced in more or less large quantities. This is a question which local conditions alone can determine, and a comprehensive study of the situation must be made to decide if such an installation would be warranted.

In a repair shop, the chances of a bulldozer being used are much less than in the main construction works of a railway. In the larger repair centres, however, it has been found an economical proposition to make an installation. Such is the case with the Michigan Central Rd. in its St. Thomas shops. There all the repairs on the Canadian division of the line are handled. These shops, in charge of W. H. Flynn, Master Mechanic, are quite extensive and are equipped to handle all kinds of repairs to rolling stock. The Canada Southern division of the M.C.R. passes through a fairly productive territory, producing considerable freight and passenger traffic, but the major portion is through traffic, the through-freight from the western states to the main lines of the New York Central and Hudson River Rd. being particularly heavy. Added to this, there is a heavy through-passenger service between Chicago and New York. These heavy conditions have made necessary extensive and well-equipped shops to handle the repairs incidental to a great volume of traffic, especially as it is necessary for all the repairs of the Canadian division to be made in Canada. As a typical repair shop where good examples of work might be obtained, these shops were selected to be first class, so were selected for obtaining the necessary data on the use of a bulldozer in a general railway car repair shop.

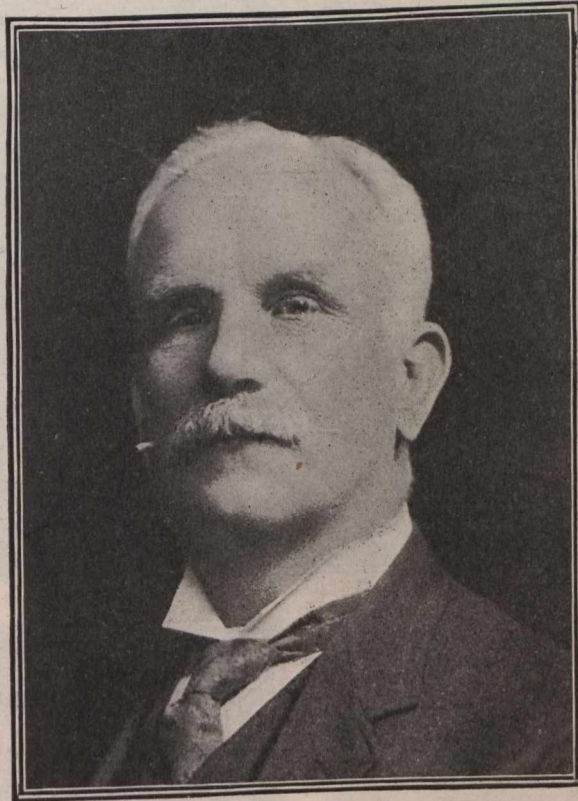
The car shops at St. Thomas, under Neil Marple, General Foreman, are well equipped from a repair-shop standpoint, and many ingenious methods have been developed for producing work where standard equipment was lacking. Also, many devices for use with standard equipment have been produced. Prominent among these are the dies for use with the bulldozer in the blacksmith shop, of which Henry Batiste is foreman. The dies to be described in this article are for the most part quite ingeniously designed, and, in common with most of the dies used, contain features quite different from those found in similar shops under like conditions.

are illustrated in fig. 2, and as they are all produced in an interesting manner, the dies and successive steps of production will be described in some detail. A is the standard size of rounded-end car-coupler pockets as made for freight car use; B, a freight brake-rod stand, the lower arms of which are bent at a right angle and attached under the end of the car, the brake rod fitting down into the hole shown in the rounded section; and C and D are freight car steps, the former being straight, while the latter is offset to accommodate the different types of construction followed by builders in standard freight cars.

The production of the part A of fig. 2, will be described first. This piece needs seven strokes of the machine, the bulldozer requiring two different settings for the purpose. These operations are: bending inward the two big ends of the bar stock; trimming these lugs to size; punching the two end bolt holes adjacent to the lugs; and finally bending to a U-shape. All operations but the last are performed in one setting, with a final setting for the U-bend.

The set of dies illustrated in figs. 3 and 4, are set up in one battery on the bulldozer. The first operation, which is performed on the two ends, is that of bending the lugs to form the inwardly projecting lugs E, fig. 2. The bar stock of the required section, is cut off a little longer than the finished length of the coupler to allow for trimming in the second operation. The stock, with the end heated to a working heat, is secured in the clamp A, fig. 3; this clamp is bolted to the platen of the bulldozer. The vise feature of the clamp consists of concentric cam sleeve B, which, when the attached lever is depressed, mounts on the corresponding stationary projections, clamping the stock. The stock is allowed to project a distance slightly in excess of the lug depth beyond the face of the inserted piece C, around which the lug is bent. The part D, with the projecting lug E, is attached to the ram of the bulldozer. This part D is so arranged that the nearer face of the lug F, passes down alongside the inserted piece, C, leaving an intervening space equal to the thickness of the stock. This operation bends the lug, but leaves the projecting face rough requiring trimming.

As before mentioned, the dies in fig. 4, are attached alongside those in fig. 3, making a rapid sequence of operations possible, so that the three operations may be completed in one heat. The second one of the three, is the trimming of the inwardly projecting lug. The end, still hot, is placed on top of the stationary part A, as indicated, and the lug brought back against the inserted shear knife B. The moving part C with a corresponding inserted shear blade D, on moving forward in its stroke, trims the lug, the blade D being so placed as to just pass under the blade B. This



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These features are for the most part, improvements on existing methods, and contain points which will undoubtedly appeal to the reader, especially if he is interested in car shop production.

Fig. 1. shows the bulldozer used in these shops. In this view, it is shown set up with the necessary dies for producing small car-coupler pockets. The female part is attached to the ram, the arms of the coupler pocket bar stock being bent around the male section which is stationary attached to the platen of the machine. The action of the bulldozer being familiar to all, it is unnecessary to describe its operation.

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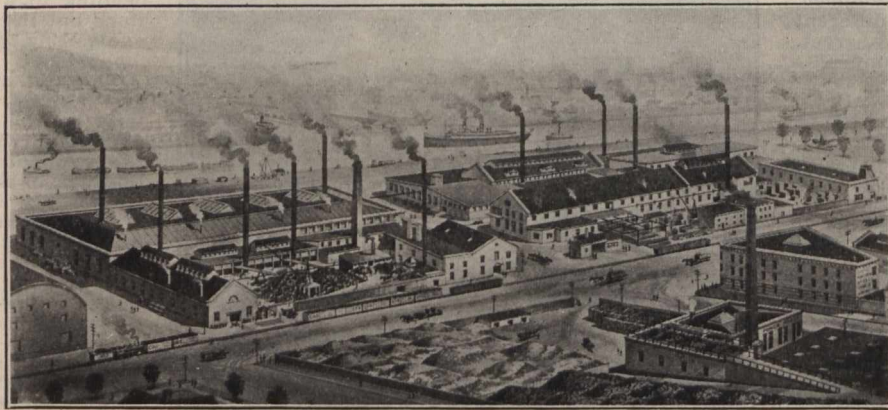
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shearing operation has a tendency to lift the front end of the stationary part A on account of the long overhang of the latter, so to avoid this, the latter is bolted down to the bulldozer platen by

that the holes to be punched, F, are close up to the inwardly projecting lug. This precludes the possibility of using the edge of the lug as a guide against the edge of the die, for if such a course

the punch. The loops K serve as strippers for clearing the punches for the work after the operation. This operation completes the work on the one end, the three steps having been made suc-

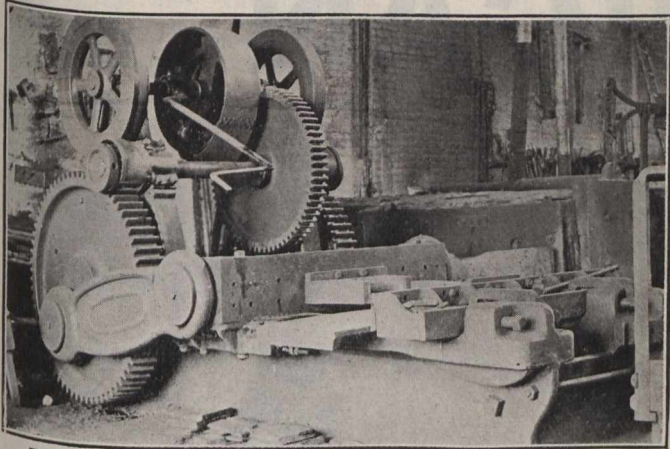


Fig. 1—Typical Bulldozer Installation with Dies attached.

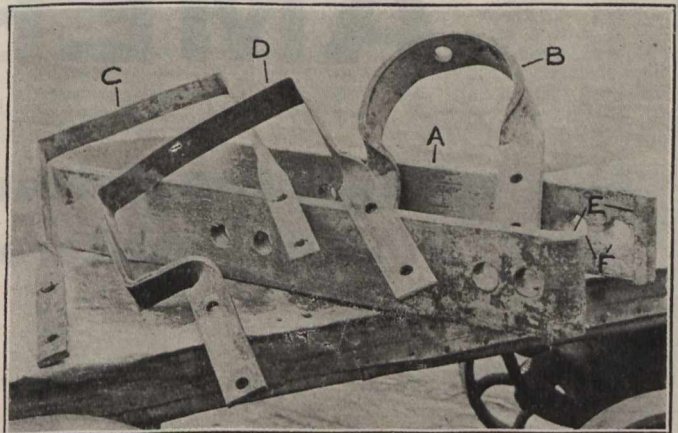


Fig. 2—Four Good Examples of Bulldozer Work.

bolts through the bolt holes shown. Following this end trimming operation, the coupler has its cross bolt holes punched, the dies for the purpose being shown in fig. 4, behind those just des-

were followed but little metal would be left along one side of the nearer die hole—not more than about 1/2 inch—in this case, which is insufficient. Some other means of locating these holes is

cessively in one heat. The other end is then heated and the three operations repeated on that end.

The final operation of bending the coupler pocket to the U-shape is per-

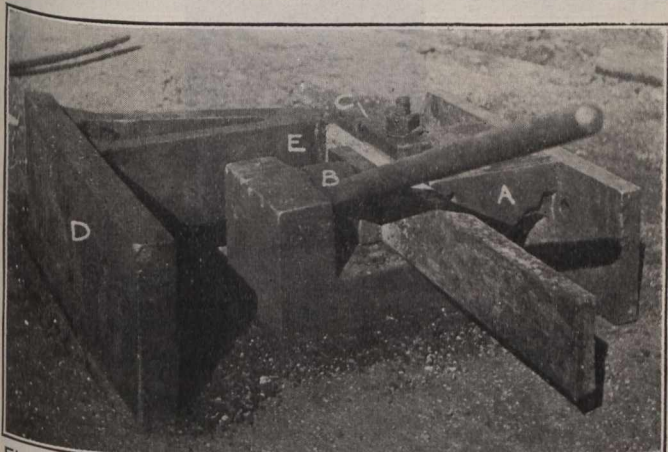


Fig. 3—First Operation of Bending the Lugs on a Car-coupler Pocket.

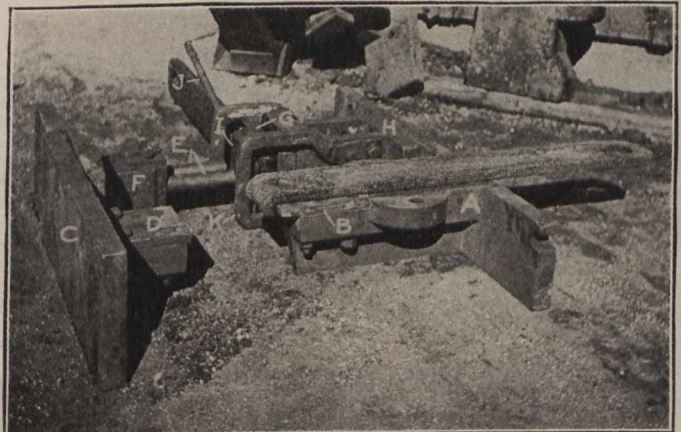


Fig. 4—Second and Third Operations of Trimming and Punching the Ends of the Car-coupler Pocket.

cribed. Two punches E are attached, as indicated, to a head F bolted to the bulldozer ram. Corresponding dies in a die-plate G on the bolster H are secured to the stationary plate of the ma-

thus required. A guide piece I, with a handle J has two holes located in it the same distance from its outer end as the holes of the coupler pocket are from the lugs. This piece then can be used as a

formed by the dies shown in fig. 5. A small hole is punched in the straight stock, midway between the lugged ends. The central portion that is to be bent, is then heated to a working heat, and

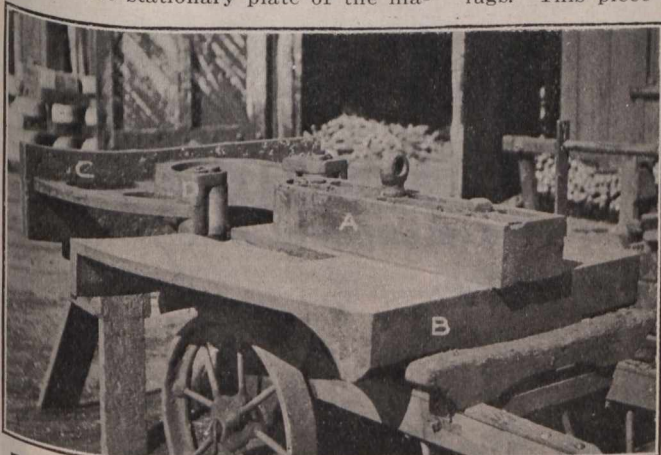


Fig. 5—Final Operation of Bending Car-coupler Pocket to a U-shape.

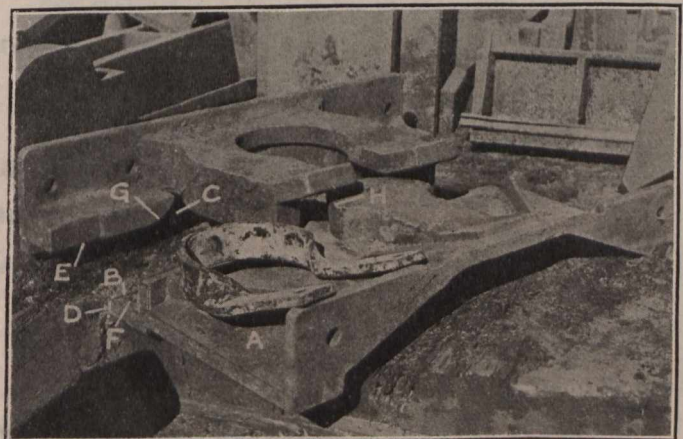


Fig. 6—Bulldozer Dies for Brake-rod Stands.

chine. This die plate is provided with plenty of stock around the punch holes so that there will be no tendency for that part to break under the spreading strain. Reference to fig. 2 will show

guide, placing it in front of the stock to be punched, holding against the shoulder formed by the lug. The stock and guide can then be located in their proper position by the operator in front of

placed in the bulldozer against the end of the part A of the die, a tit on this outer end fitting into a hole in the coupler strip, thereby locating centrally. This part A, has its base B, bolted sta-

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tionary to the platen of the bulldozer. The part C bolted to the bulldozer ram, has projecting roller arms D, which force the ends around the die A, the rollers being so located as to just pass over the stock as it forces up against the body of the die. This operation completes the coupler pocket, only seven strokes of the bulldozer and two die settings being necessary for its completion.

The brake rod stand shown resting on its forming punch in fig. 6, is another interesting bulldozer operation,

slightly to the vertical to form the horizontal face when in position on the car.

The bending dies in figs. 7 and 8 are similar, with the exception that the former is for a plain car step, while the latter is for an offset one; samples of each are shown at A alongside each die. The same lettering applies to both. The previously punched and heated stock is placed in position in the space between blocks B and C and clamped there by the eccentric pin D bearing on the back of B. These blocks, B and C, may be changed at will for varying drops of

Method of Making Driving Wheel Brasses at the Pere Marquette St. Thomas Shops.

The customary method of making new thrust brasses for locomotive driving-wheels, is, as all railway mechanical men know, to machine a thin brass disc of the required dimensions, saw in two, rivet in position on the drivers, and finally finish off the thrust face in the lathe when the tires are being turned down. This method, while almost uni-

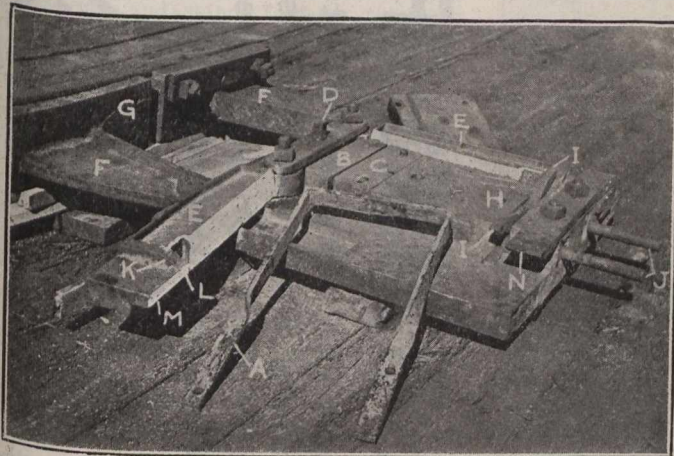


Fig. 7—Bulldozer Dies for Plain Car Step.

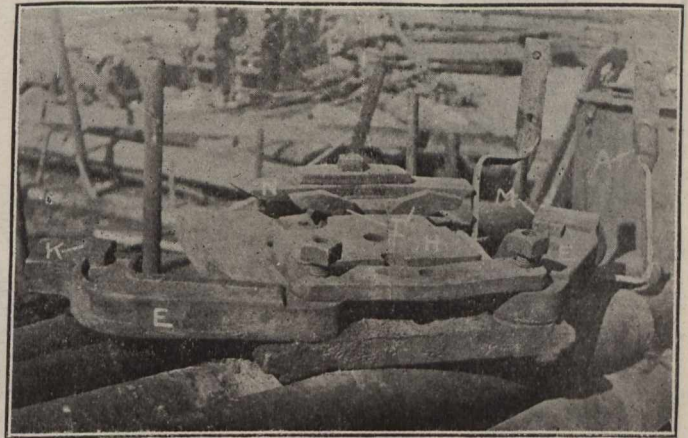


Fig. 8—Bulldozer Dies for Offset Car Step.

requiring but two strokes and one setting to complete. The flat stock, cut to the required length, has the central and two end holes punched previous to the bulldozer operations. The heated stock is then located centrally by its centre hole on a dowel in the front face of the stationary member A. The strip rests on its edge on the bulldozer platen. The height of the edge is so designed that the amount the stock projects above it is equal to the stock thickness. The lower portion of the moveable jaw is cut out as at C, so that when the stock stands on its edge against the

car steps; the one pair of blocks will accommodate three different drops by changing their relative locations. Two arms E, actuated by roller projections F on plate G, which is bolted to the bulldozer ram, force the stock around the shape on the body H, which is bolted to the platen. (In the case of the offset step, the swinging arm is also shaped to give the offset). Near the rear of the stationary part, there are two U-shaped pieces I, pivoted at the lower part of the U on the projecting pins J in a slot in the body H. The outer end of the swinging arm has a wedge shaped rise

versally used, is very expensive and at the same time has inherent disadvantages which, in such a construction, cannot be overcome.

The method adopted by the Pere Marquette in its shops at St. Thomas, Ont.—a method used in other shops on the same road—is to cast the bearing into place in a manner similar to that of casting bearings. Fig. 1 shows the method used for that purpose. The bearing face of the driving wheel is dovetailed by taking a rough hogging cut, undercutting at the outer edge. A depth of $\frac{3}{8}$ inch is claimed to be all that is



Fig. 1. Driving Wheels on End, ready for pouring.

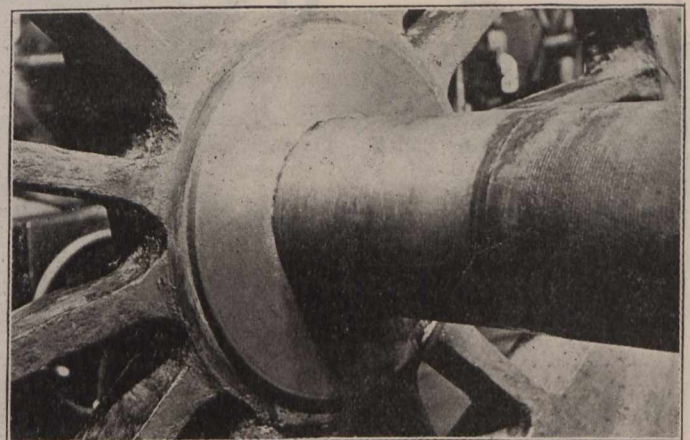


Fig. 2. Finished Brasses on Driving Wheels.

face D of the stationary die, the edge E of the moveable one folds the ends over this on to the horizontal ledge F, the curved portion G of the moveable die forming the bent section. This leaves the central portion in its original position with the ends twisted through little more than a right angle. The twisted stock is then turned upside down and placed in front of the curved face H. A corresponding form on the moveable die closing over the stock in this position bends the stock to the shape shown, only two strokes of the ram being required, changing from the lower to the upper position between strokes. To add to the complexity of the piece, the front face of the curved portion H is inclined

at K, so that as the arms swing around into their final position when the lower point L of the rise strikes the underside of the pieces I, the latter swing upward about their centres. This raises the lower arm of the U, and as this gives an outward as well as an upward motion, the lower edge of the stock is forced out. At the same time, the face M of the swinging arm forces inward the upper part of the stock, the combined action twisting the stock through a complete right angle into the shape indicated. To keep the arm from lifting, the guiding piece N is provided, keeping the arms down while the lifting action due to the twisting, is operative.

necessary, but greater depths are being regularly cast on wheels originally made for the type of brass mentioned earlier. The wheel, when thus prepared, is turned on end and placed flat on the rails over one of the locomotive pits in the erecting shop floor. The rails being approximately perfectly level, automatically level up the wheels for the pouring.

The lower part of the bearing is protected from the hot metal by a piece of asbestos paper A tied around the axle as indicated. To accommodate the different sizes of brasses to be cast, retaining rings of various diameters within the limits of the commoner sizes of brasses, have been made. These rings, indicated at B, are similar to piston rings, only

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in order that they may be easily placed in position, they are made in three sections, the different sections being held up to place by weights C. With these preparations, the wheel is ready for pouring.

Bearing brass is melted in a crucible in an open-top oil furnace. This part of the process is slow, requiring several hours to melt a crucible full; but several brasses may be cast in one heat. When melted, the crucible is carried to the wheel and the brass poured as at D. The molten brass penetrates to every crack and crevice if sufficiently fluid, these fins and spines forming retaining projections to hold the brass in place. The main grip is at the keyway; the key holding wheel to axle seldom projects all the way through, so that a projecting spur of brass acts as a dowel to hold the bearing in position.

The subsequent cooling of the brass sets up strains in the metal, which before normal temperature has been reached, are sufficient to radially break the disc of brass in one place. This, however, has a beneficial effect, as the broken brass acts the same as a spring piston bearing, the brass bearing out on the dove-tailed edge, securing the brass tightly in place. This crack, which for a wheel of the size shown will be from 1-16 to 1/8 inch in width, is filled with the rest of the surface.

Following the filling of the break with babbit, the bearing surface is finished off to the required size in the lathe when the wheel tread is being turned up. The finished wheel with its brass is shown in fig. 2. The simplicity and economy of the method must be apparent to all railway mechanical men.

Asphalt Mechanism, at the C.P.R. West Toronto Roundhouse.

An asphalt pit for accommodating the ashes removed from a locomotive after it has been taken off a run, can be made a very simple arrangement, all that is necessary being a pit into which the ashes may be scooped from the locomotive; the particular difficulty lies in the manner of disposal of all these accumulated

moving tracks are provided as indicated in fig. 1, the locomotive in the photograph in the operation of removing ashes being on the second track over. In the immediate foreground there are three depressed narrow-gauge tracks, in a pit, the central one running to the further ash-removing track. Under the nearer ash-removing track, this central

which it is rivetted. There are four main tracks leading to the roundhouse, so that in order to provide each track with means for removing ashes, the arrangement shown is duplicated on the far side.

Flanging Press at the Michigan Central Railroad St. Thomas Shops.

The uses to which air may be put around a railway shop are many and varied, as anyone familiar with railways, knows. The accompanying illustration of a flanging press as used by the M.C.R. in its shops at St. Thomas, Ont., affords one more example of its adaptability, another means of usefulness in this field.

The usual flanging press is essentially the same as the one shown, only the clamping is effected by square-threaded screws at each end bearing down on the upper clamp. This makes an effective means of clamping, the plate to be flanged being very securely held; but where it failed was in its slow action, it being necessary to slowly release the ends by their respective jack screws, then insert the plate and finally clamp down. All this took time and labor, a very important factor.

The press shown, being operated by air, is very quick-acting. The upper, or moveable jaw, instead of doing a moveable jaw, instead of having a jack-screw action, is attached by pistons to plungers in the air cylinders at each end. These two air cylinders have air connections from the same valve making their operation simultaneous. The cylinders being of ample proportions provide a good holding grip on the plate to be flanged, at the same time making it possible to quickly release when desired. This quick-action is especially essential when inserting, on account of the heat in the thin plate as it comes from the flange fire quickly dissipating. Clamping pressure and release are both obtained by air in the respective ends of the cylinders, two double valves providing for this double action.

Steel Passenger Cars.—The rapid change from wood to all-steel construction passenger cars is pointed out in a



Fig. 2.—Radial Air Hoist for Raising Loaded Ash Cars.

cross-track space is covered, as a protection against clogging up with ashes.

On these narrow-gauge cross tracks are three little ash trucks of the form shown, which, when filled, are run out from under the locomotive, where they may be picked up by the radial crane shown in fig. 2, and swung up over the cinder car to the right, in the picture,

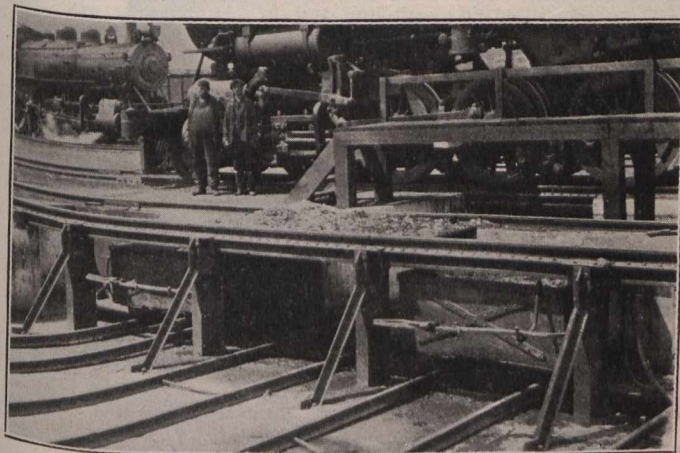
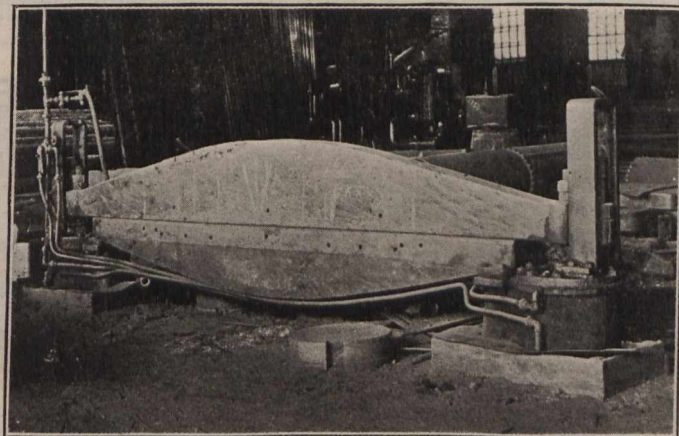


Fig. 2.—Discharging Ashes to Ash Cars.



Flanging Press Actuated by Air.

ashes. Nearly all roads have different arrangements, and even the same road at its various roundhouses has probably a different arrangement at each, the designs being generally devised by the local authorities. In the majority of cases very satisfactory arrangements are worked out.

The arrangement in use at the C.P.R. West Toronto roundhouse is a particularly simple and good design for the rapid handling of ashes where a too expensive equipment, such as deeply submerged cinder-car tracks beside the ash emptying track, is not desired. This C.P.R. mechanism is shown in the accompanying figs. 1 and 2. Two ash-re-

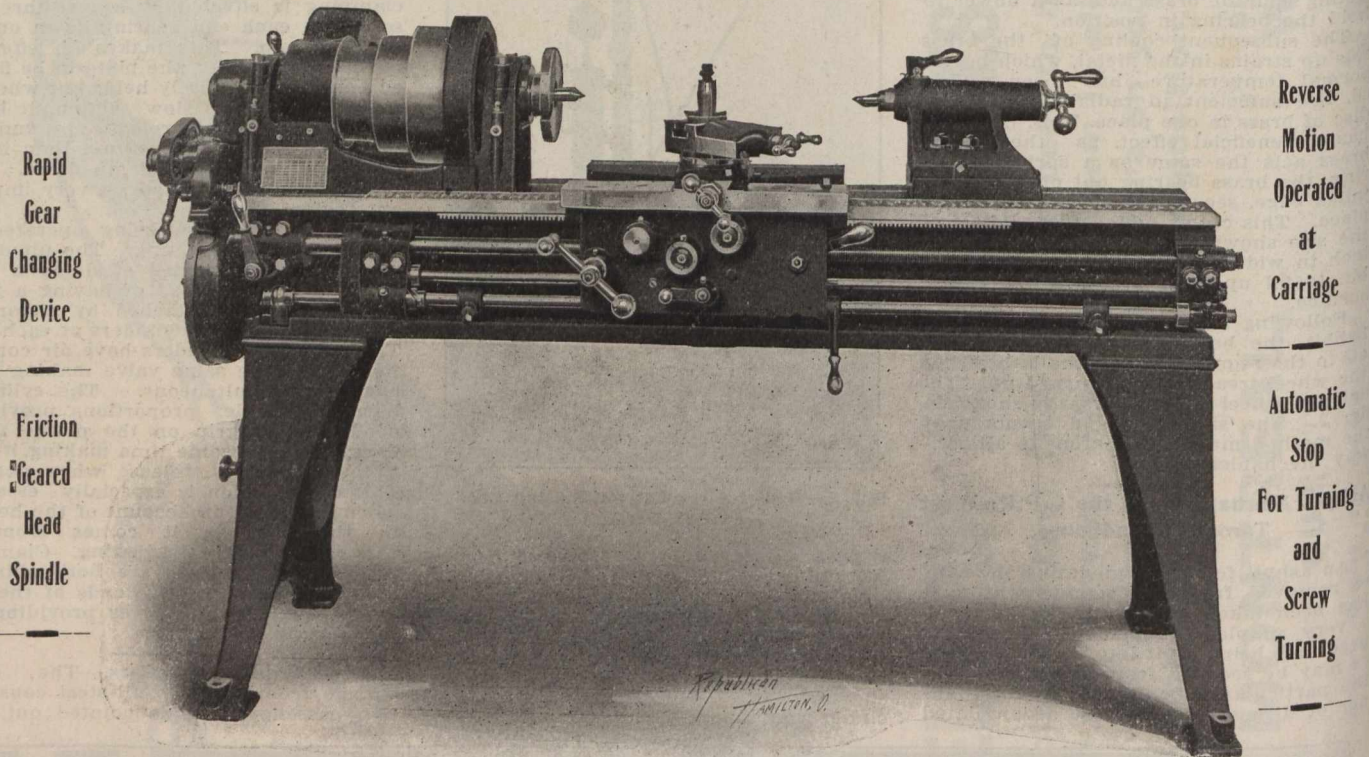
and tripped. Like most improvised mechanisms around railway repair shops and roundhouses, the radial crane is operated by compressed air, acting through a cylinder vertically attached to the frame of the crane as indicated. A plunger moving vertically in the guides provided, draws the steel rope over the several sheaves, raising the bucket to a position where it may be swung around and dumped.

The pit is constructed of concrete throughout, all the locomotive rails being supported on the concrete walls, with the exception of the inner rail which is supported on I-beam sections, the rail being braced by an inverted rail to

recent issue of the Railway Age Gazette. At the beginning of this year there were about 3,000 passenger cars of this type in service, which, out of a total of 54,600 cars of all kinds, gives a percentage of 5.3 of the total. Of the cars constructed and contemplated for this year, 62% will be all-steel construction, so that at the end of this year, fully 9.3% of all passenger cars will be of steel, while 3.5% have steel underframes. An estimate given by our contemporary places the cost of substituting all the wooden for steel cars at about \$630,000,000. These figures do not seem to have been reckoned with by the principal advocates of the change.

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Dumping Box Cars for the Canadian Pacific Railway.

From time to time, attempts have been made by railways, car builders, designers and inventors towards the production of a practical dumping box car that would be equally well adapted to carrying either bulk freight like grain, coal, coke, ore, etc., or general merchandise; in other words, an endeavor has

der to do away with a lot of the empty car haul.

The factor of unloading is another point commonly overlooked. By the use of dump cars, much of the unloading time is saved, necessitating fewer cars to carry a given volume of traffic between two points. For instance, it takes two men about 10 hours to unload 30 tons of coal from a box car on a trestle at a cost of from 8 to 10 cents a ton, whereas the same two men could unload

The interior arrangement of the finished car is shown in figs. 1 and 2. To the left, in the former illustration, one of the wooden convertible doors is shown closed. The convertible door to the right is in its open position. It will be noticed that this door sets into a recess in the wall, leaving no space for bulk freight to accumulate. The convertible doors at the centre of the car, opposite the side doors of the car, are made large enough to extend half way across the

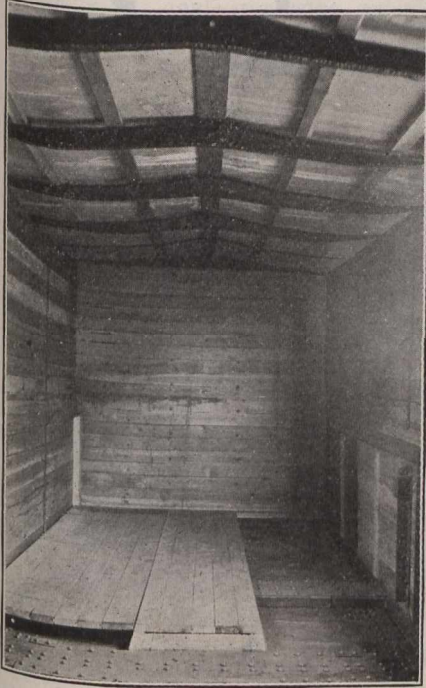


Fig. 1.—Interior View of Car with Convertible Door on One Side Open.

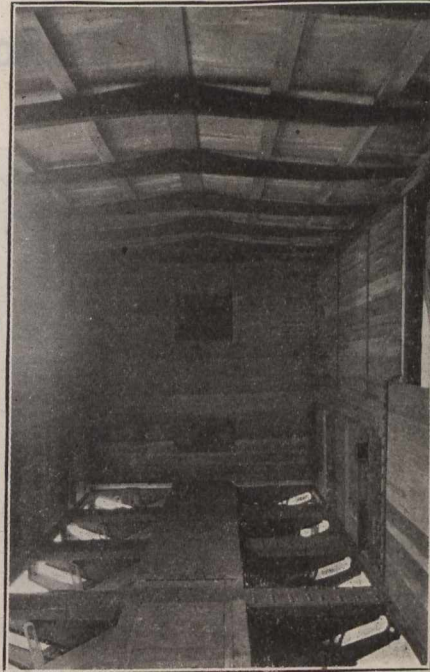


Fig. 2.—Interior View of Car with both Convertible and Dumping Doors open.

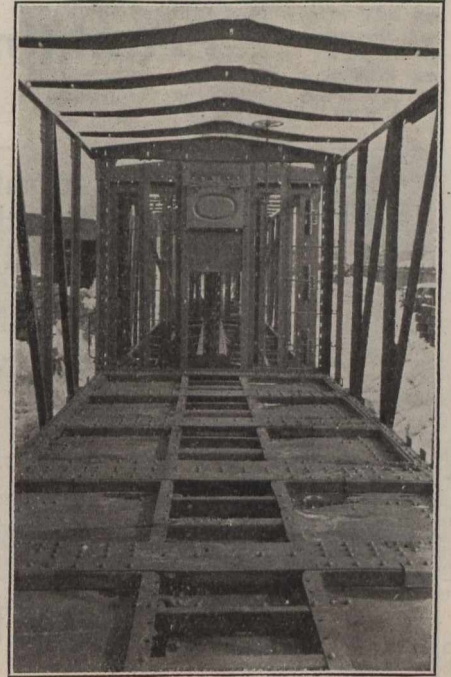


Fig. 3.—Skeleton of Car before the Woodwork has been added.

been made to produce a car that would be at the same time both a box car and a gondola. Traffic conditions have created this demand, for there are many points on every railway from which nothing but commodities that must be put in box cars are shipped in but one direction, the car returning to that point empty, while the conditions in the opposite direction are probably just the re-

verse, the main traffic in that direction being such as to require gondolas. This means that empty box cars are traveling in the same direction as loaded gondolas, and vice versa. Such conditions exist on the C.P.R., where grain is brought east and coal is shipped west over the same line. As a general rule, the railways have been compelled to use box cars very extensively for as many kinds of commodities as possible in or-

struction of a modified design of the Hart-Otis dump car made while the superstructure is that of the standard C.P.R. steel frame box car. The doors of this car are specially designed with a view to making them tight for carrying grain, making it possible to come east with grain and return to the west laden with coal. The car being of the dumping type gives the users all the advantage of a gondola.

50 tons from a dump car of the Otis type at the same point in 10 minutes at a cost of only 1½ cents a ton. Recently, the C.P.R. had an experimental car built of the dumping box car type, illustrations of which are shown herewith. This car was built to the design and patents of the Hart-Otis Car Co. by the Canadian Car & Foundry Co. and has a floor and underframe con-

struction of a modified design of the Hart-Otis dump car made while the superstructure is that of the standard C.P.R. steel frame box car. The doors of this car are specially designed with a view to making them tight for carrying grain, making it possible to come east with grain and return to the west laden with coal. The car being of the dumping type gives the users all the advantage of a gondola.

with, leaving only the centre ones for grain doors. These centre doors and middle portion running lengthwise between the end convertible doors, form a runway for trucks when loading merchandise. Dispensing with the end convertible doors would mean a saving in weight of about a ton.

Figs. 3, 5, 6 and 7 give detailed views of the car construction, and fig. 4 shows an exterior view of the completed car



Fig. 4.—Exterior View of Completed Car with Dumping Doors open and Grain Door up.

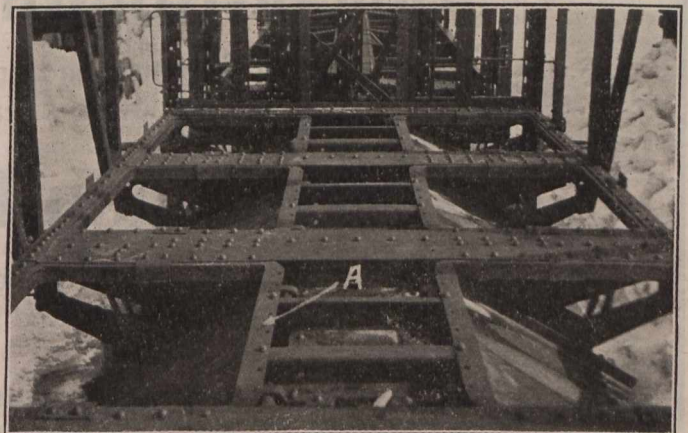


Fig. 5.—Framework of Car before Woodwork has been added, showing Dumping Doors open.

verse, the main traffic in that direction being such as to require gondolas. This means that empty box cars are traveling in the same direction as loaded gondolas, and vice versa. Such conditions exist on the C.P.R., where grain is brought east and coal is shipped west over the same line. As a general rule, the railways have been compelled to use box cars very extensively for as many kinds of commodities as possible in or-

struction of a modified design of the Hart-Otis dump car made while the superstructure is that of the standard C.P.R. steel frame box car. The doors of this car are specially designed with a view to making them tight for carrying grain, making it possible to come east with grain and return to the west laden with coal. The car being of the dumping type gives the users all the advantage of a gondola.

with, leaving only the centre ones for grain doors. These centre doors and middle portion running lengthwise between the end convertible doors, form a runway for trucks when loading merchandise. Dispensing with the end convertible doors would mean a saving in weight of about a ton.

Figs. 3, 5, 6 and 7 give detailed views of the car construction, and fig. 4 shows an exterior view of the completed car

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with one section of the drop bottom lowered. The half-opened side door shows one of the centre convertible doors raised into position to act as a grain door. Fig. 3 is practically the same view as that in figs. 1 and 2, only no woodwork has been added. The flooring, it will be noted, is very like a flat gondola dump car.

The drop bottom construction in its dump position is clearly shown in fig. 5, and fig. 6 shows the operating gear at close range. As will be noted in fig. 5, there is an angle-iron edge, extending all around the opening, one leg projecting downward. Over this, the upturned edge of the door fits, making a tight joint. This edge of the door is indicated at B in fig. 6. The front edge of the door has no flange, so that no interfer-

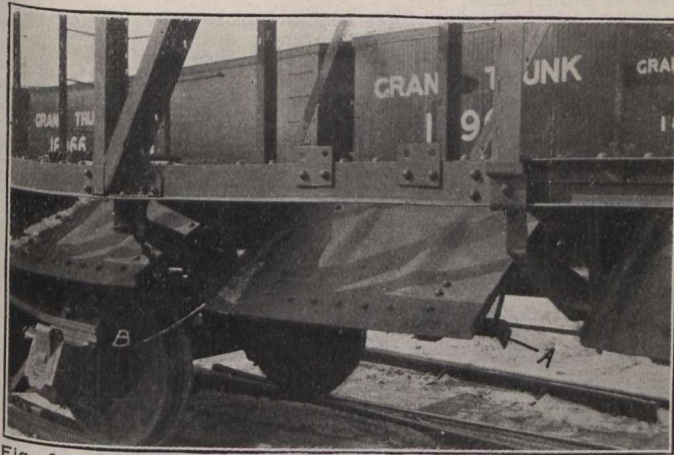


Fig. 6—Near View of Dumping Door, showing Sealing Hinge for Outer Edge.

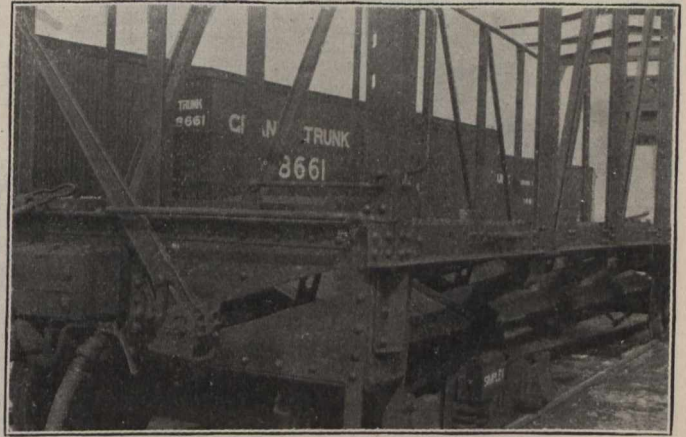


Fig. 7—Near View of Operating Gear and Drop Bottom Construction.

ence may be offered to the flow of the material in the car while dumping. When closed, this edge without a flange is protected by the hinged piece A in fig. 6, swinging up into place at the outer edge of the door, forming a tight joint at that point. This hinged piece is operated by the door closing mechanism.

The door closing mechanism is shown at close range in fig. 7. A shaft passing along each side of the car is confined in its motion to move along inclined ways in the cross-beams of the car. These guiding ways are clearly shown. The hinged doors rest on this shaft, and the position of the ways is so arranged that as the shaft moves outward, the doors are gradually closed. In its outer position, the shaft comes up under the hinged piece A of fig. 6, securely locking the door and making a tight joint.

In a recent test, the bottom of the car proved perfectly tight, meeting the expectations held for it. The designers and builders have every confidence for its future success.

Is It Economy to Use Soft Ties for Switches, Switching Leads and Track?

At the Roadmasters' and Maintenance of Way Association's recent annual convention at St. Louis, Mo., the committee on this subject presented the following report:—

CLASSIFICATION OF HARD AND SOFT TIES.—Under the classification of soft ties we deem it proper to consider cedar, pine, gum and similar woods while, under hard wood we have in use as ties, oak, beech, hickory, hard maple, ash, pecan, honey, locust, etc. Perhaps the best examples of the different classes are seen in the cedar in the soft wood and the white oak in the hard wood. There is much to be said for all the different woods in both classes but to confine our report to one line we will consider only the cedar and white oak and eliminate all consideration of tie treatment prolonging the life of the wood.

SAFETY THE FIRST CONSIDERATION.—The safety of the track outside of the grade is assured by three things, line, surface and gauge, while there are three elements that produce them, the ballast, ties and rail. From the ballast we get the surface, from the rail the line and from the tie the gauge, each, of course, being in a manner influenced by the other. In the main track, with heavy traffic and modern equipment, we are striking at the very foundation of the safety of our track in attempting to use soft ties, no matter what their relative cost to hardwood ties, for the reason that one train may turn over many rails in apparently sound ties.

Under safety we must think of other tracks as well as the main track, since damage to equipment is a matter of con-

that answered every purpose for 13 years, when almost in a night a stone field was developed, coal was diverted from another line and merchandise runs were sent over this line on account of better grade than the old line. One hundred thousand capacity steel cars and the heaviest engines replaced the little coal train and the cedar ties were found entirely inadequate to the demand put upon them. The first means of improving conditions was to replace 1,500 cedar ties with oak ties the first year and to change out the balance as fast as they could be reached each year. The gravel ballast stood the strain as well as the light rail and after five years of heavy traffic the same rail is still in service and in good condition. At the time the cedar ties were taken out they were as

cern to us as well as loss of human life, and no side track of general use should be so constructed that engines of the heaviest class cannot use it without perfect safety. This is especially true of ladder racks and switching leads in important yards, and passing tracks along the main line where a derailment may mean a yard blocked for an indefinite time and the whole system hampered by one weak link in the chain.

On nearly every railway freight business has reached a state of development far in advance of the track facilities of the terminal yards. We have been slow to awake to the fact that perishable freight is not the only freight that is advertised to leave a given point one night and be at a given destination the following morning. A very small delay in either yard is enough to delay the delivery, which often repeated will eventually give the business to a competing line. One railway connecting many points in the northwest advertises over a score of points where all classes of merchandise will be delivered on almost passenger schedule. The yards where this freight is loaded and unloaded must be equal to the standard set for them, or the system would fail.

CHEAP TIES ON BRANCH LINES.—We hear much of cheap ties on new branch lines, where the argument is presented that the traffic is light, and the cedar tie on account of its long life, will give all the service that is necessary for years to come, when, if the line proves profitable and new business is developed, a more permanent construction can be furnished. This argument is good if it were given to the management to foresee what each branch line will do in the coming 10 or 20 years. But railway business is at best a variable quantity and the line that sees but one local train each way a day when built, may in a year be the only outlet to coal or oil fields undreamed of when built. Your committee investigated among other cases one track 34 miles long that was built of gravel ballast, cedar ties and 65 lb. rail

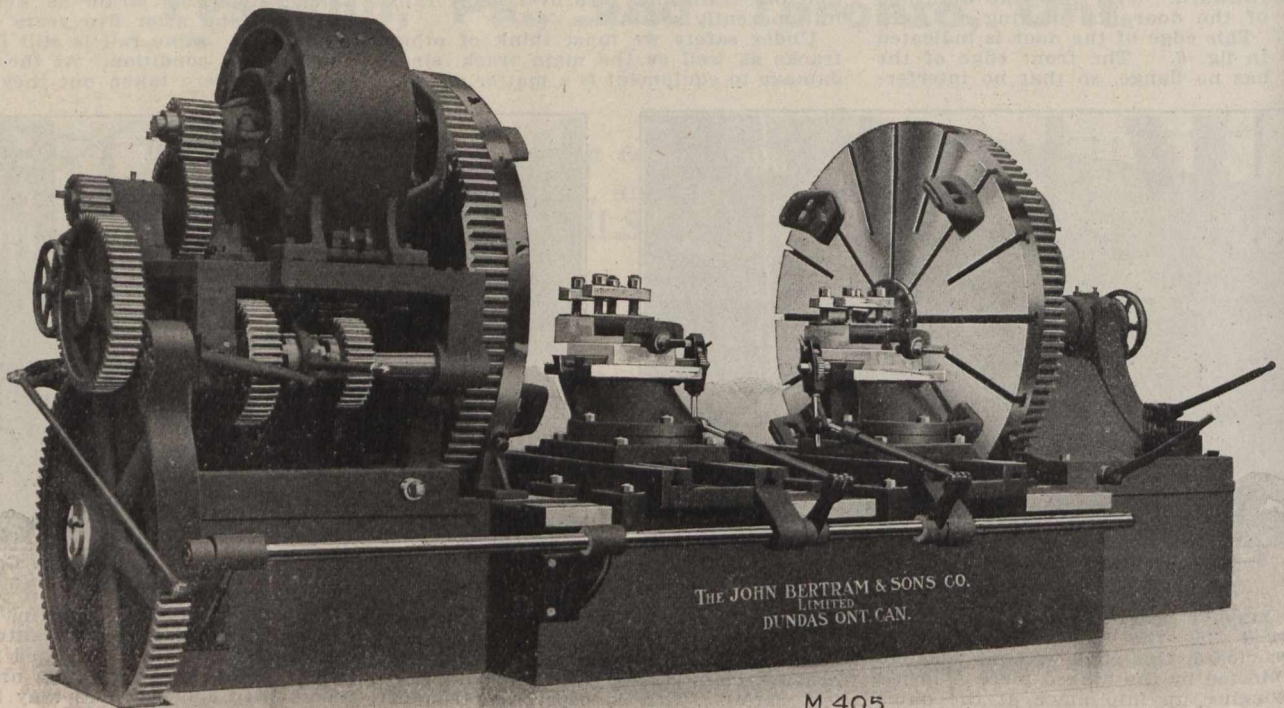
sound on top as when put in, although slightly decayed from the bottom. Under the rail they were crushed from one inch to half way through and cut to pieces with spikes where they had been driven to restore the spreading gauge. At the time this line was built the soft ties cost 50c. each and oak ties were worth only 35c. each, the cedar ties being selected because they were known to be of long life and there was no apparent reason why they should not give all the services that would be demanded of them for 25 years. When built all the ties in the track were protected by light tie plates, which were the heaviest plates on the market at the time. These tie plates proved of very little benefit when the heavy traffic was put on the line.

SOFT TIES FOR REPAIR TRACKS.—In repair yards we have conditions that are ideal for the soft ties. Here we have nothing heavier than a switch engine and low speed on all tracks. The long life of the tie is a matter of economy both in first cost of the tie and the greater expense in renewing the tie in the hard ground where it has been packed down by the men working in the yard. We also find good use for the soft tie in empty tracks at coal mines, storage tracks and similar tracks where the traffic is light enough that we are justified in using light rail and inferior ballast.

SUMMARY.—Local conditions and not good engineering have made the soft tie a factor in railroad construction, where it serves its time until pushed out by its hardier brother. When fast trains and heavy trains follow the converted switch engine, and freight must move on schedule time to arrive at growing terminal points, there is no place for a weak unit in the machine of railway operation and if the use of soft ties in switches, switching leads and track means the making of an inferior tie one of the links in the construction of an up-to-date railway, it is not economy and its use is not recommended.



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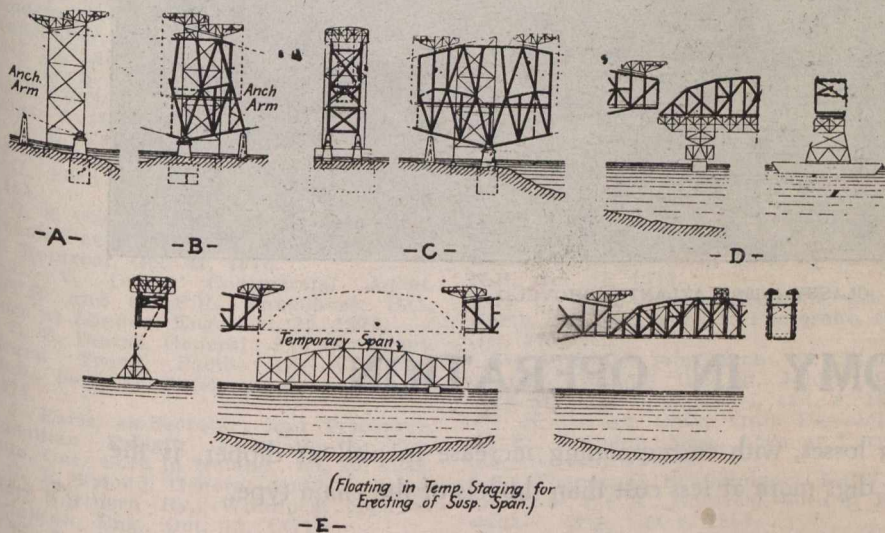
Schemes of Erection Proposed for the Quebec Bridge

In our last issue we gave the schemes of erection proposed by the St. Lawrence Bridge Co., for its accepted and other designs. Following are schemes proposed by other tenderers:—

BRITISH EMPIRE BRIDGE CO., LTD.

This company tendered only on the Board's design, but proposed three different schemes of erection of the suspended span: (a) cantilevering out; (b) floating in on high falsework; and (c) floating in a special truss to be used as stage or falsework upon which the suspended span proper will be afterwards erected.

The method of erection of the cantilever and anchor arms is naturally the same for all three cases (fig. 3). The work is started by first building a high steel tower, two legs of which will rest on the main pier, while the other two are on special concrete pedestals. These towers will be slightly higher than the top chords of the bridge. On top of the tower will be erected the two travellers to be used for the erection of the bridge itself, one to be used on the top chord of the anchor arm and the other on the top chord of the cantilever arm.



(Floating in Temp. Staging for Erecting of Susp. Span.)

Fig. 3.—British Empire Bridge Co., Board design. (This proposal includes a scheme for erecting the suspended span on a temporary span floated in.)

A portion of the material is to be delivered by water and a portion by rail—the material delivered by water will be erected by the travellers standing on the top of the tower and the erection will be carried forward by water and far as convenient.

Afterwards the material will be delivered by rail. For this purpose a trestle will be erected between the land and the portion of the steelwork already erected.

To obtain stability during erection a temporary concrete pier will be built under panel point AL10. This pier will have eyebars built into it, to which the truss may be anchored. During erection the member AU12—AL10 will be reinforced so as to act as a compression member. After the travellers have done all the erecting possible from their position on the towers, they are transferred to special tracks on the top chords from which position they proceed with the erection, panel by panel. As both the cantilever and anchor arms are erected as cantilevers the stresses during erection are the same as in the completed bridge, and all joints will be riveted up complete as the erection proceeds.

SUSPENDED SPAN CANTILEVERED.—When the cantilever arms are completed the same top-chord travellers can proceed

with the erection of the suspended span to junction at the centre. The adjustment at this point is controlled by adjustable members between the suspended span and cantilever arm.

SUSPENDED SPAN FLOATED IN.—Floating the suspended span into place permits of work on this part of the structure to be pushed ahead at the same time as the other parts of the bridge. In the case of the high floating erection, the falsework is to be erected on concrete piers at Sillery, about three miles below the bridge site. The falsework consists of a long truss supported on two towers, the foot of each tower being carried on a pontoon 225 ft. long, 45 ft. wide and 30 feet deep. The panel-points of the supporting falsework correspond to the panel-points of the suspended span, permitting the use of eyebars in the bottom chord of this span. The falsework is not transferred to the pontoons until the suspended span has been completed and everything is ready for towing to the site. It is built high enough so that at extreme low tide there is no chance of the suspended span putting any load on the supporting cables attached to the cantilever arm, during the operation of coupling up. The falsework is securely attached to the pontoons, but the span itself is supported on special bearings, preventing any side or lateral movement

is arranged so as to give free access to joints and connections of the permanent but leaving the falsework free to descend below the span when required. This span to facilitate driving of pins, riveting, etc., and the top and bottom chord are either above or below the corresponding chords of the suspended span. The floor of the stage is as shallow as possible, so as not to interfere with the clear headway required for navigation. The floorbeams are attached to the side trusses by a knuckle bearing between the trusses, thus ensuring equal distribution of load.

In erecting the stage it is intended that each double truss will be hoisted in place separately by means of the top-chord travellers and slung from the end of the cantilever arms. To ensure stability during hoisting and until the floor system and bracing was put in place the particular form of truss used was decided upon. Until the wind bracing is put in, the trusses are guyed to the ends of the travellers overhanging from the end of the cantilever arms.

The suspended span will be built on the stage floor outside the temporary girders. When this truss is completed it will be hung in its proper place, being attached, however, to the temporary truss to prevent lateral motion or stress from wind. The floor and bracing will then be put in place, the dead load of which will be carried by the permanent structure, the temporary staging being required to carry only the dead load of two main trusses. Special adjusting devices are placed under the panel-points of the suspended-span trusses during construction, to correct whatever deflection may take place in the temporary staging under the constantly increased load.—Engineering News.

(To be Continued.)

The Use of Manganese Steel for Frogs and Crossings.

The committee on this subject, appointed by the Roadmasters and Maintenance of Way Association, presented the following report at the recent convention at St. Louis, Mo., based on the personal experience of members of the committee, and close examination of such frogs and crossings in use on the various railways in and around Chicago and other points:

We find at points where such material has been in use for a number of years, as far as we have seen and have been able to obtain information, that manganese frogs and crossings have proven a success.

We have found that by use of such material the maintenance of frogs and crossings has been greatly reduced by eliminating cost of bolts which are ordinarily used in the Bessemer rail frogs and crossings. Another advantage is a big saving in frogs and crossing timbers which are ordinarily ruined, due to respiking and rail cutting.

One of your committee had installed two no. 10, 85 lb. manganese frogs which have been in service under the heaviest kind of traffic on switching lead since Dec. 8, 1908. One of these frogs is still in the track and will wear one more year. The other frog was removed Feb. 1, 1911, on account of toe and heel of Bessemer rail being flange worn. The manganese part of frog is still in good condition and would wear out another set of rails.

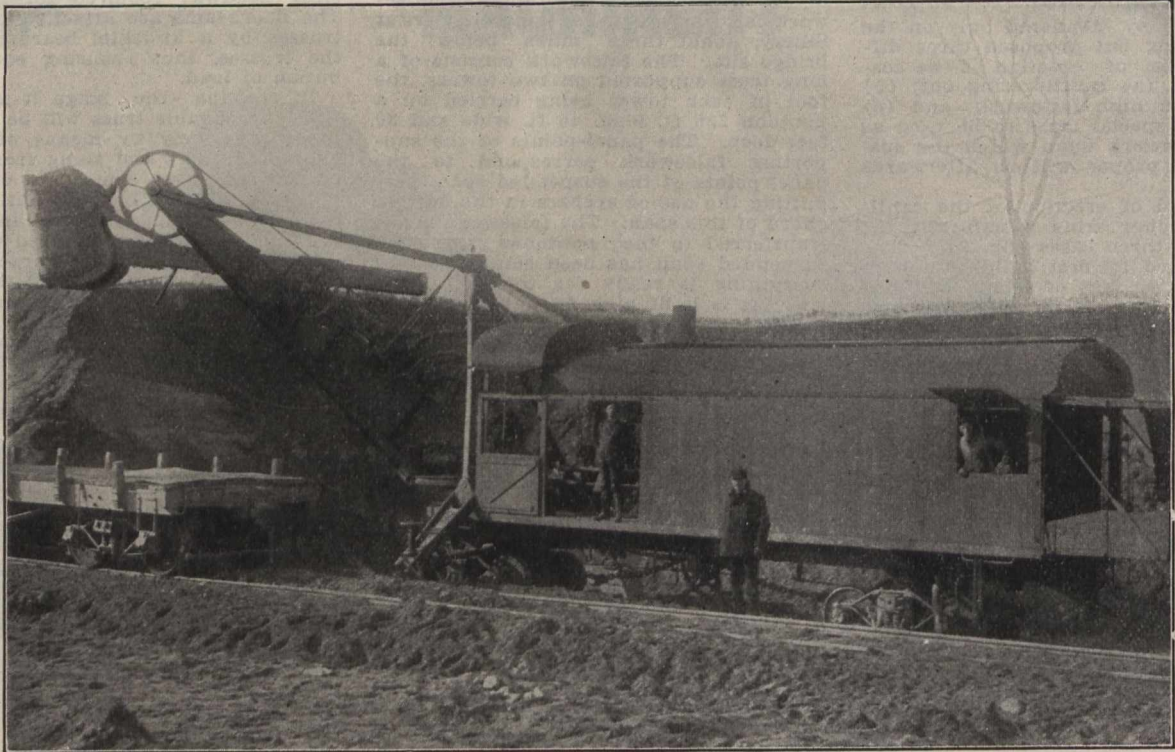
At the point where those frogs are in use the traffic is of the heaviest kind—continuous switching on this lead night and day. The longest service obtained from the ordinary Bessemer rail frog at this point was 30 days. In the time that the manganese frog has been in the track it would have worn out 26 Bessemer rail frogs, each costing about \$29

prevents any chance of the weight of the falsework and pontoons being taken on the structure. The pontoons are fitted with pumps and valves so that the level of the steelwork can be controlled at all times. The pontoons are held in position under the bridge by the tugs supplemented by anchors and moorings attached to winches on the adjacent shores. Navigation on the river would have to be stopped during the operation of floating in.

STAGE ERECTION.—The third scheme for erecting the suspended span proposed by this company is by means of a special temporary span which is floated in and suspended between the two arms of the cantilever arms, and upon which the permanent span is finally erected.

In general, this supporting stage consists of two main trusses spaced 64 ft. c. to c., each main truss being made up of two independent trusses spaced 9 ft. c. to c., the two being securely braced together so that they would act as a single truss. The construction of the stage is made as light as possible, wire cables being used for all tension members, the compression members being of nickel-steel. The weight of each double truss is about 510 tons. The spacing of the vertical posts and diagonal bracing

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Reduction in friction and boiler losses, with corresponding increase in pull at dipper, is the reason why the Atlantic shovel digs more at less cost than shovels of the chain type.

Wire rope hoist, found only in the Atlantic, exerts a direct pull on the dipper and substitutes friction of a rope with but one large sheave for that of a chain with from four to six additional small sheaves. The less power lost in the machine itself, the more you have left for digging.

Further economy in operation is secured by using a large boiler of the locomotive type, in which more of the heat is utilized and less is lost up the stack. This is possible only because of the removal of the hoisting engines from their usual position on the car body, to the boom.

The placing of the main hoisting engines at the foot of the boom reduces the power necessary for swinging the boom and removes the twist upon the car body when working on one side. With this construction the turntable centre and boom foot constitute the engine frame. One casting takes the place of four or more in the usual construction, reducing the total weight of the shovel, and the weight on the front trucks.

Spare parts are kept on hand at our Works at Longue Pointe, Montreal, Canada. Every part is made to gauges, and sure to fit.

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while the cost of the manganese frog was about \$94. In addition to this there was no cost in maintaining manganese frogs up to date. You all know there would be, with the ordinary Bessemer rail frog at least in the way of rebolting.

Your committee would recommend extensively solid bottless manganese frogs and crossings for heavy switching leads and all other points where traffic is heavy and crossing for high speed main line tracks.

From the committee's experience and personal observation they recommend that such frogs be of solid bottless construction, and in their judgment it would be great economy for any railway company to adopt their use.

Transportation Men's Birthdays in October.

Many happy returns of the day to:—
 R. A. Burford, cashier, C.P.R. ticket office, New York City, born at Brooklyn, N.Y., Oct. 4, 1878.
 G. E. Burns, Freight Claims Agent, Eastern Lines, C.P.R., Montreal, born at St. Thomas, Ont., Oct. 6, 1863.
 T. C. Burgess, Commercial Agent, G.T.R., Minneapolis, Minn., born at New York City, Oct. 2, 1853.
 F. F. Busted, C.E., General Superintendent, British Columbia Division C.P.R. Vancouver, born at Battery Point, Que., Oct. 10, 1858.
 J. M. S. Carroll, Montreal Sales Manager, Canadian Rubber Co., born at Ballarat, Australia, Oct. 22, 1874.
 C. E. Cartwright, M. Can. Soc. C.E., ex-Division Engineer, C.P.R., Vancouver, B.C., born at Toronto, Ont., Oct. 13, 1864.
 G. S. Cooke, Superintendent, Grand Trunk Pacific Ry., Melville, Sask., born at Montreal, Oct. 27, 1875.
 L. V. Druce, Commercial Agent, G.T.R. and G.T.P.R., Vancouver, B.C., born at London, Eng., Oct. 20, 1873.
 C. E. Dewey, General Freight Agent, Grand Trunk Pacific Ry., Winnipeg, Man., born at Cheshunt, Eng., Oct. 2, 1873.
 J. Earls, ex-Secretary and Treasurer, Canadian Freight Association at Toronto, Ont., born in Ireland, Oct. 30, 1838.
 C. E. Friend, General Auditor, Canadian Northern Ry., Winnipeg, born at Brighton, Eng., Oct. 12, 1871.
 W. P. Fitzsimmons, Commissioner of Industries, G.T.R., Montreal, born at Detroit, Mich. Oct. 27, 1868.
 A. H. Harris, Special Traffic Representative, C.P.R., Montreal, Que., born in Devonshire, Eng., Oct. 15, 1855.
 G. Hodge, Superintendent, District 2, Ontario Division, C.P.R., London, Ont., born at Montreal, Oct. 2, 1874.
 J. H. Hughes, Superintendent, District 2, Lake Superior Division, C.P.R., White River, Ont., born at Charlottetown, P.E.I., Oct. 7, 1865.
 J. W. N. Johnstone, General Passenger Agent, Reid Newfoundland Co., St. John's Nfld., born at Campobello, N.B., Oct. 4, 1878.
 S. Way Kent, Hicket Agent, C.P.R., Paris, Ont., born in Brant County, Ont., Oct. 23, 1879.
 W. M. Kirkpatrick, Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, Ont., Oct. 8, 1874.
 W. B. Lanigan, Assistant Freight Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Three Rivers, Que., Oct. 12, 1861.
 J. W. Leonard, Assistant to Vice President, C.P.R., Montreal, born at Epson, Ont., Oct. 1858.
 C. F. Lunan, Assistant Commissary Agent, C.P.R., Calgary, Alta., born at Sorel, Que., Oct. 2, 1879.
 W. T. Marlow, Import Freight Agent, C.P.R., Montreal, born at Limerick, Ireland, Oct., 25, 1872.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., born in Montgomeryshire, Wales, Oct. 9, 1850.

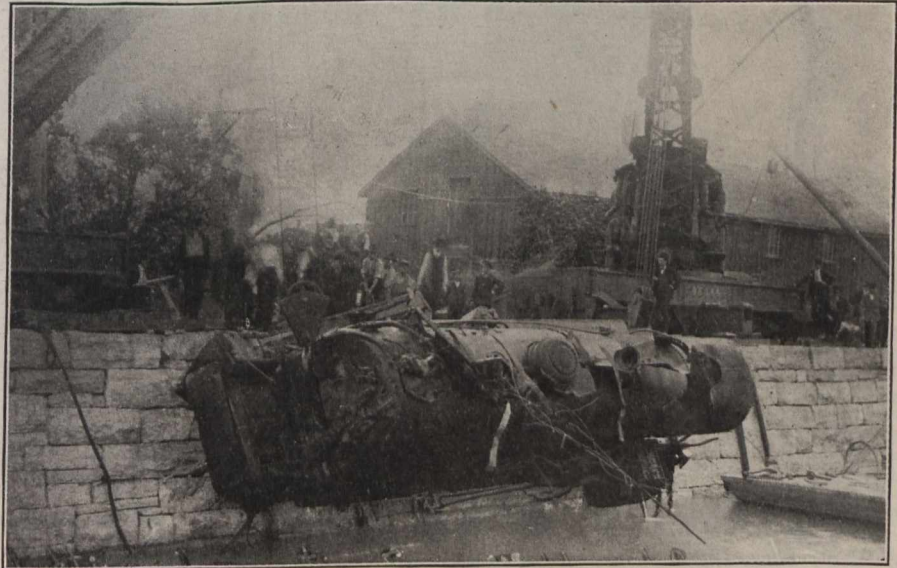
F. G. Martyn, Assistant Superintendent, C.P.R., West Toronto, Ont., born at Bury, Que., Oct. 7, 1848.

H. Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrew, Scotland, Oct. 5, 1852.

D. Pottinger I.S.O., Assistant Chairman, Government Railways Managing Board, Moncton, NB., born at Pictou, N.S., Oct. 7, 1843.

Lifting a G.T.R. Locomotive out of the Welland Canal.

In an accident at Port Colborne, Ont., July 21, Grand Trunk locomotive 638 dropped 33 ft. into 19 ft. of water in the Welland Canal and turned a complete somersault. The tender was broken loose, which proved a great advantage. It was not found practical to take the locomotive out where it went in, and as the canal was blocked and immediate



Lifting a G.T.R. Locomotive out of the Welland Canal.

N. L. Rand, ex-Master Mechanic, I.C.R., Moncton, N.B., born at Shediac, N.B., Oct. 28, 1843.

H. G. Reid, Master Mechanic, C.P.R., North Bay, Ont., born at Pembroke, Ont. Oct. 27, 1863.

W. S. Rollo, joint agent, G.T.R. and Central Vermont Ry., St. John's Que., born at Dundee, Scotland, Oct. 8, 1852.

J. K. Savage, Chief Train Dispatcher, C.P.R., Brandon, Man., born at Forrester, Ill., Oct. 5, 1876.

Sir Thomas G. Shaughnessy, K.C.V.O., President, C.P.R., Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

T. Duff Smith, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, Man., born at Barking, Essex, Eng., Oct. 2, 1868.

A. B. Spence, Chief Dispatcher, Reid Newfoundland Co., St. John's Nfld., born at Harbor Grace, Nfld., Oct. 21, 1882.

C. W. Spencer, ex-General Manager Mackenzie, Mann & Co., Railway Lines east of Port Arthur, Montreal, born at Kemptville, Ont., Oct. 31, 1857.

E. Sterling, Divisional Trainmaster, British Columbia Electric Ry., New Westminster, born at Thornbury, Ont., Oct. 3, 1875.

W. S. Taylor, ex-Treasurer, C.P.R., Montreal, born at Dornoch, Sutherlandshire, Scotland, Oct. 18, 1839.

E. N. Todd, Division Freight Agent, Eastern Division, C.P.R., Montreal, born at Huntington, Que., Oct. 17, 1879.

A. W. Wheatley, Manager, Canadian Locomotive Co., Ltd., Kingston, Ont., born at Ashford, Kent., Eng., Oct. 12, 1870.

L. H. Wheaton, Divisional Engineer, National Transcontinental Ry., Moncton, N.B., born at Sackville, N.B., Oct. 5, 1866.

G. B. Wyllie, Travelling Passenger Agent, Illinois Central Rd., Buffalo, N.Y., born at Toronto, Ont., Oct. 15, 1851.

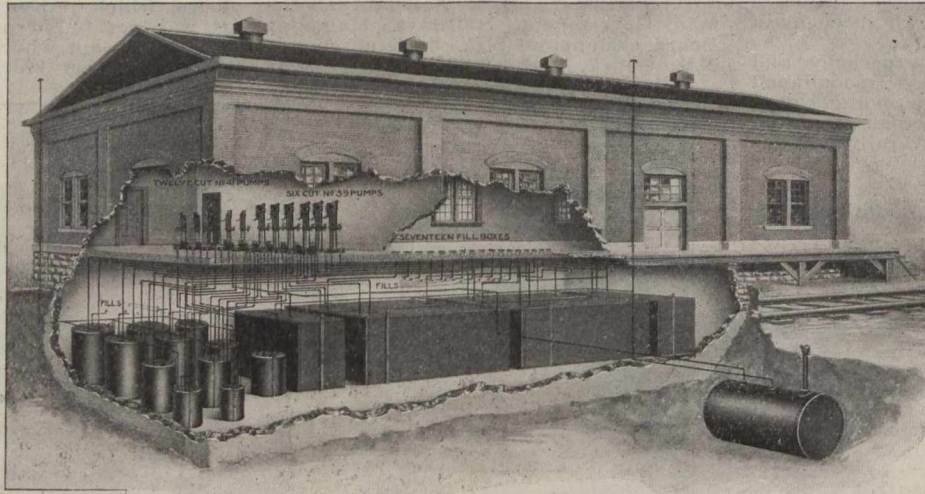
Railway Lands Patented.—Letters patent were issued during July, covering Dominion railway lands to the C.P.R. on account of grants, 1,324.36, on account of stations and grounds, 124.09 acres.

removal was necessary, a powerful dredge was employed, pulling one end at a time, and the locomotive was dragged clear of the new canal and left 40 ft. from shore in 18 ft. of water. Tenders were asked for taking the locomotive out, and ranged from \$6,000 to \$8,000. As these were considered very excessive, it was decided to do the work with the company's own forces.

Two of the company's 100 ton derricks and a supply of two-inch wire and cables and heavy clevises were secured and on Aug. 7 the locomotive was moved close up to the stone wall of the canal. It was felt certain that this wall was not strong enough to stand the lifting of the locomotive with one derrick, so, in order to prevent any possibility of an accident, two were used, placed 30 ft. apart, parallel with the canal, and far enough back so that the outrigger rested on the wall. As the blocks would not reach far enough to raise the locomotive at one lift, it had to be anchored half way up. This was done by cables from the boom, and the blocks lowered for the second lift, after which it was landed on the track on August 8, without a hitch of any kind.

The whole work was most successfully carried out under the charge of Thos. Rodgers, car foreman, Hamilton, the diver employed being Williams, of Port Colborne. It is said that the total expense of raising the locomotive was only about \$1,700, of which some \$700 was paid the diver.

Calgary Elevator.—The John S. Metcalf Co., Limited, Montreal and Chicago, is drawing plans for additional machinery installation for the Globe Elevator Co., Calgary, Alta., to consist of 10,000 bush. shipping leg, 2,000 bush. scale, shipping spout and appurtenances. This machinery is to go in the 250,000 bush. elevator built for the company two years ago by the John S. Metcalf Co., the business having already outgrown the elevator.



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Telephone Train Dispatching.

By A. Dwight Smith.

[This, the second of a series of articles, by Mr. Smith, deals with dispatchers' and way station equipment.]

One can now occasionally walk into a dispatcher's office where the telephone is installed and see the dispatcher with his feet on the desk, his train order book in his lap, and the long green telephone cord from his chest transmitter and head receiver connecting him officially to business, while formerly when using the telegraph for the movement of trains, the same man was working at a nerve-straining rate. Perhaps it is needless to say that the dispatchers like the telephone; anything which will make the operator down the line answer his call quickly, with no work for the dispatcher, is certainly to be appreciated at the dispatcher's end of the line.

Generally, when the telephone is installed, it is given over to the dispatcher and way station operator to become familiar with, before being officially cut



Fig. 1.—Dispatcher's Calling Key Cabinet.

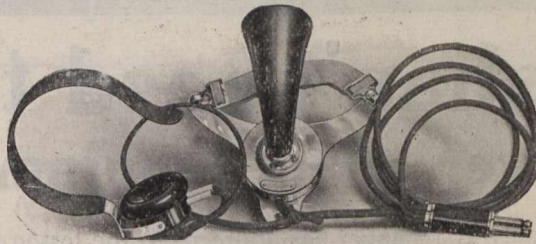


Fig. 4.—Dispatcher's Telephone Set.

over for train order work. It is interesting to see how the dispatcher starts in using the apparatus upon his own responsibility. The dispatcher will be calling a station on his Morse wire for five minutes without getting a glimmer of a response; then he will go over to his telephone sending key cabinet and ring the office up on that; the bell is always answered at once and the things the dispatcher says in telling the man to go over and answer his Morse usually need expurgating.

Practically all dispatchers start in hostile to the innovation of telephone train dispatching. They are used to the telegraph from years of association. They take to it grudgingly, but inside of a month are swearing by the telephone, and if anything happens to put the line out temporarily, they are hot after the telephone inspector until the trouble is removed. This does not happen in one or two cases, but has happened everywhere, and will until all the dispatchers in the country have the luck to be reformed to the good natured way of handling trains.

A circuit for handling trains should be under the control of one man. This is accomplished in the use of the telephone, and the dispatcher has absolute control. He does all the calling, and if a way station wishes to talk to another way station, he can only reach him with the dispatcher's permission who does the calling. Formerly, it was not a rare occasion for two operators to want to use the wire at the same time and start fighting for it; they would sometimes leave the key open for a few minutes in hopes that the other man might leave the wire. In railway message work, the circuit as above designed, with special signalling apparatus, will allow one way station to call another as readily as a dispatcher can summon an operator.

In standard telephone train dispatching lines, there is what is known as the "sending key cabinet" equipped with the required number of individual sending keys (one allotted to each station) and

placed before the dispatcher. These keys are noiseless and are mounted in a highly polished oak cabinet as shown in fig. 1, and with their black japanned faces and white designation strips give this part of the equipment a very attractive appearance. Any individual key can be removed from the cabinet without disturbing any other or breaking the circuit.

If the dispatcher wishes to call a given station, he selects the key in his cabinet allotted to this office, gives it a quarter turn and lets go. This sets a train of gears in motion by means of a small spring motor, which operates through a local battery a main line relay, which in turn, because of a certain operation of the sending key, sends out on the line a predetermined number of direct current impulses which operate the selector at the station required, the contact of this station is closed and the bell rung. This can be completed in from a fraction of a second to four seconds, regardless of the distance, but according to the number given to the selector at the way station (this selector

contact of the relay absorbs the condenser discharge.

The condensers and resistances around the telegraph relay contacts are for eliminating sparking and greatly increase the life of the relay. A similar arrangement is used on the sending keys.

The circuit above described, with a few unimportant modifications, is what is used on practically all standard individual call systems.

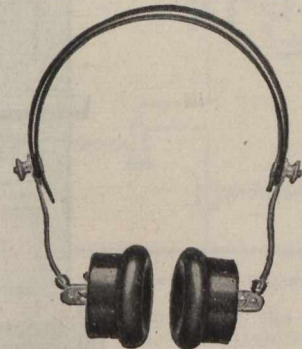


Fig. 3.—Dispatcher's Double Head Receiver.

The dispatcher is supplied with similar telephone equipment to that used by the switchboard operators at central office exchanges, consisting of a chest transmitter and head receiver (either double or single, figs. 3 and 4), and connected to the line by means of the six or eight foot telephone cord and plug. This gives him ample room to move around and manipulate his train sheet. He is supposed to be connected in on the circuit all the time he is working his trick, so apparatus light and easy to wear is provided. A key is also wired in the transmitter circuit so that the dispatcher's transmitter can be cut off the line when he is listening, or does not want the way station operator to hear any conversation that might be going on in the office. Fig. 5 shows the wiring of the dispatcher's equipment.

In addition to this, if a division is equipped with more than one telephone circuit, whether it is to be used for train dispatching or not, by means of a key switching device he is able to shift from one line to the other using the same telephone equipment.

We have now covered the function of the dispatcher's apparatus. At the way station the equipment is equally interesting. There are a great many types of

will be described more fully in a later article).

Fig. 2 is a diagrammatic sketch of the apparatus located at the dispatcher's office. A battery (of dry cells usually) is installed here, whose voltage may run from 50 to 300 volts. This is for sending the signalling impulses out on the line and the voltage depends on the length of the line and the number of way stations on it.

The contacts of the sending keys are not designed to carry heavy current, so this battery is connected to the line through the contacts of specially designed telegraph relays. Three retardation or "choke" coils are also employed in series with the telephone line, and

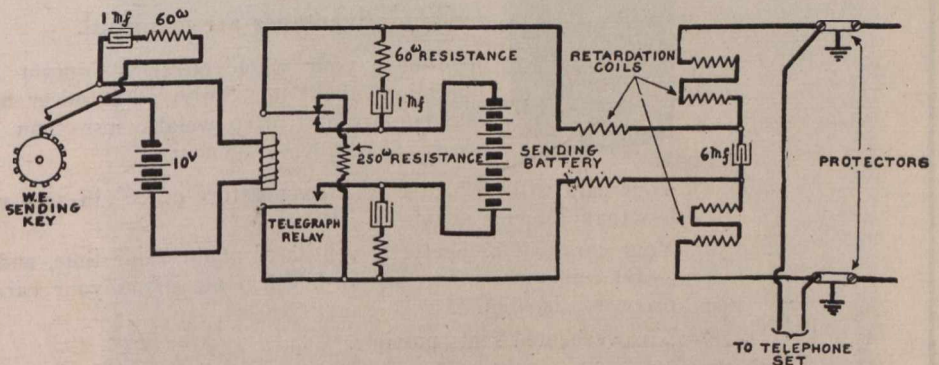
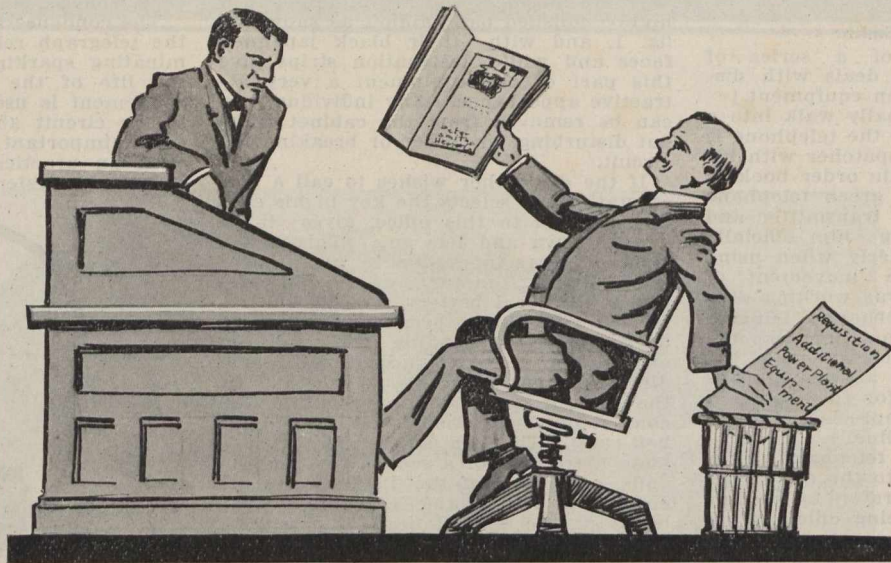


Fig. 2.—Wiring Diagram of Dispatcher's Apparatus for Signalling Stations.

across these condensers of 6-microfarads capacity are placed. These are for the purpose of absorbing the noise of the signalling impulses and permit calling the way station and a conversation to be carried on at the same time. If some means were not provided for taking care of the thump due to the high voltage sending battery, this would be impossible. As it is, it is absorbed by the coils and condensers. The 250-ohm resistance across the line on the back

telephones developed to meet conditions that arise on different roads, but the apparatus manufactured today has been so standardized that it takes care of them in most cases.

It is quite a problem in telephone engineering to have a pair of wires 250 miles or longer and have 50 way stations distributed along this distance, and to be able to call these stations selectively and at the same time permit them to listen in simultaneously; yet it has been



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This electric railway manager has appreciated the lesson we've been trying to drive home—that before trying to relieve an overloaded plant by adding to your equipment, it is well to consider the heater question. Conservative estimates show that practically half the total output used for car operation is required for operating electric heaters at such times as they are turned on at their maximum capacity. A fair average for the winter is 20 to 30 per cent.



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No overheated seats possible.

You will appreciate the enormous saving if you will ask us to send you a reprint of an article on electrical heaters which appeared in Electrical Railway Journal, last December.

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done. You can go to any standard installation now in service and listen at any place you may select. If you can persuade the dispatcher to call all stations and keep them in on the circuit, you can have offhand a pretty severe test of the transmission efficiency of the circuit, and you will not notice any loss in transmission, but will be able to hear the operator at the end of the line as well as the station next to you. You can have the dispatcher call a way station while you are listening, but beyond being able to distinguish the signals faintly, you would not be aware of it. You can hear the buzz of the "answer back" signal at the station called when the bell rings, and then you hear the operator come in and answer perhaps 200 miles away, but sounding as if he were in the next room.

How is it done? Very simply, as far as actual apparatus is concerned, and simplicity obtained after long years of skilful and careful designing and experimenting. To explain this, we will have to refer to transmission values, and it might be well to explain the units used. In giving the value of a certain quality

circuit, which is schematically shown in fig. 6. It will be seen that during a conversation the condenser, receiver and secondary of the induction coil are in series across the line. The resistance of the receiver is 70 ohms and of the induction used in series. The total impedance of coil 20 ohms—a 2 microfarad condenser this circuit to talking frequency is about 600 ohms, about 300 of which are active for receiving purposes. It is obvious, therefore that when a number of sets are bridged across the line at the one time, the joint impedance is very low and the transmission correspondingly difficult between widely separated stations.

The first step toward overcoming this difficulty was to raise the impedance of the bridge by using a different induction coil wound with a low primary winding and a high resistance secondary. This improved matters somewhat as higher resistance bridges produced more even distribution and gave a better outgoing transmission from way stations. Although the dispatcher's voice current was undoubtedly better distributed by the use of this later method,

secondary of induction coil reduced the outgoing transmission to a great extent. It was then decided that the best results, both for receiving and transmitting, would be attained by the installing of a

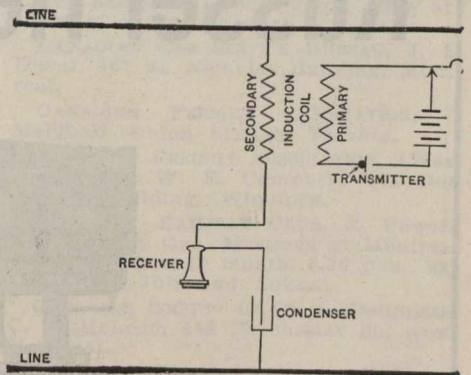


Fig. 6.—Wiring Diagram of Original Method.

switching arrangement at the way station, so that when the switch was in one position, it offered the best conditions for receiving, and when in the other, the best conditions for transmission.

By referring to fig. 5, it will be seen that there is a non-locking switch device located at the way station and in its normal position. The bridge across the line consists of a 700-ohm receiver and 1-M.F. condenser. The impedance of this receiver, is about 2,500 ohms, and as the total impedance of the bridge is all in the receiver, it is effective for receiving purposes. When the way station operator wishes to talk, he depresses the switch apparatus, which in some cases is in the form of a non-locking key on his table, and in other cases a foot switch resting on the floor. This operation closes his transmitter battery and connects the secondary of his induction coil to the line. The voice currents have a path directly across the line in series with the condenser. In addition to this operation, there is also a retardation coil shunted in series with the receiver. This retardation coil has about 6000-ohms impedance and is placed in series with the receiver, in order that the dispatcher

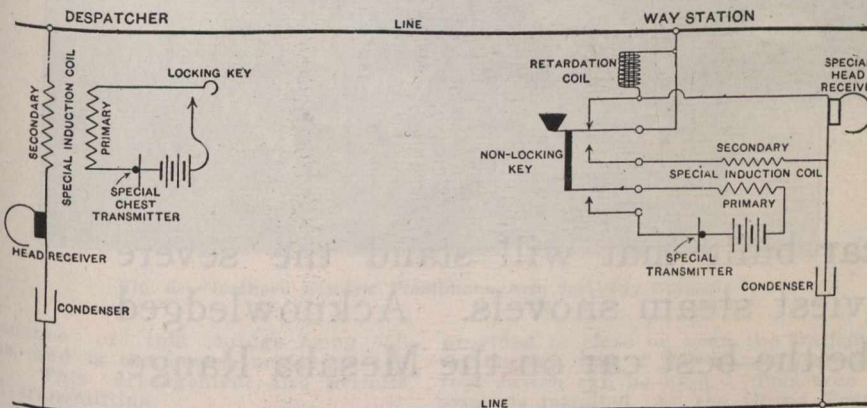


Fig. 5.—Diagram of Dispatcher's and Way Station Telephone Apparatus.

and volume of transmission, it is said to be equal to a certain number of miles of cable. This means that a number of miles stated is such that when standard telephone instruments are used for this distance over no. 19 gauge telephone cable of 0.06 microfarad capacity per mile, the value of transmission would be the same. It is considered that the commercial limit of good transmission is 30 miles of cable. This value can be equated in terms of any other kind of circuit: one mile of cable loss is equivalent to a loss sustained in 16 miles of no. 9 B. & S. copper, and this is generally the standard size of wire used on dispatching circuits.

It will be seen that the line may be 480 miles long before the so-called commercial limit is reached. This is considerably longer than any of the circuits now in use, there being but few over 250 miles in length. There is, however, a surplus of transmission available which can be taken advantage of in arranging circuits to permit a number of operators to listen in at the same time. The loss caused by the selector bridges is almost negligible, the impedance to talking frequency of the Northern Electric Selector being about 50,000 ohms.

For the benefit of those who are not familiar with the term "impedance," it may be stated that in this case it means the opposition which the bridged apparatus offers to high frequency alternating voice currents, and it is obtained by the use of iron in the bridged apparatus. This, represented in loss value when 40 selectors are across the line, is equivalent to about one mile of cable.

In the first few installations of telephone train dispatching, the talking circuit was the standard local battery cir-

still, due to the fact that the bulk of the impedance was in the secondary of the coils, the receiver having a resistance of only 70 ohms, the transmission gained was very slight.

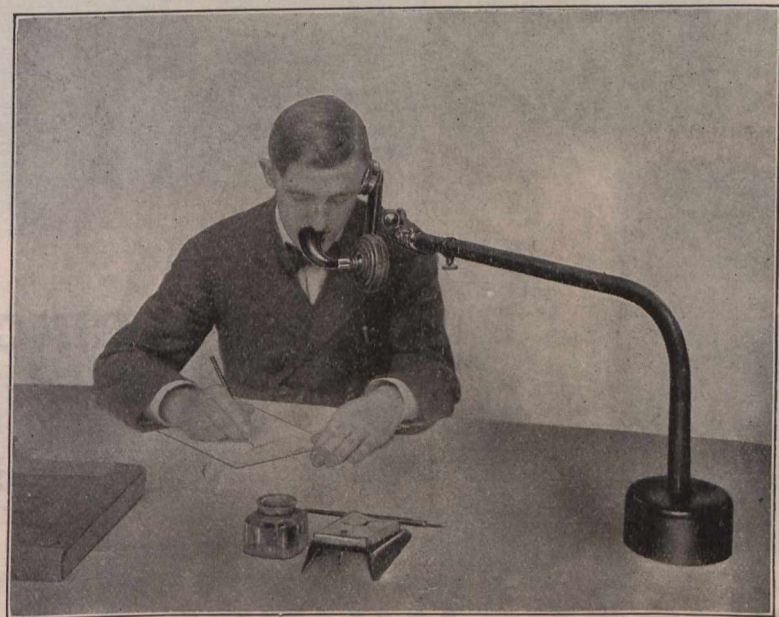


Fig. 7.—Van Aiken Transmitter Arm.

The next method was to maintain the high impedance in the bridge and place as much of this as possible in the receiver. In doing this, however, the high impedance receiver in series with the

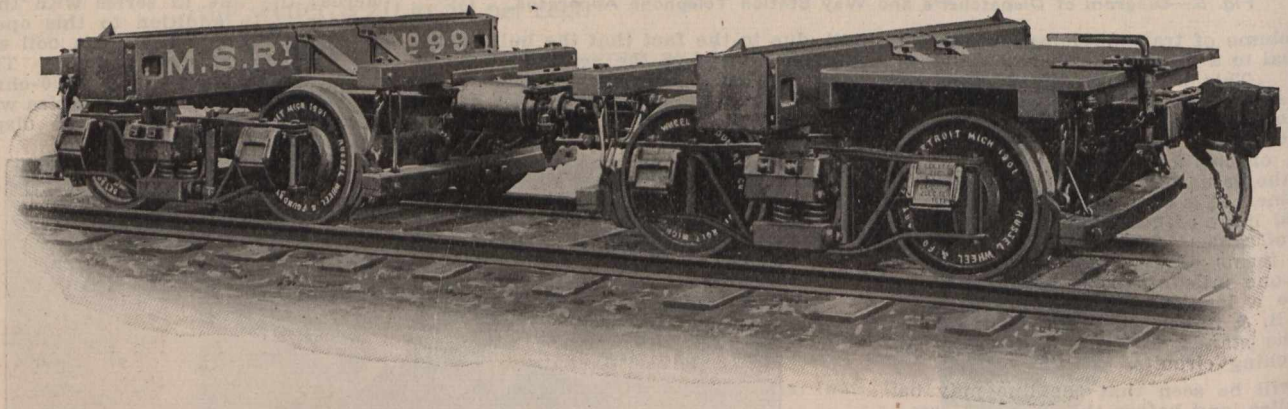
may break in if it is necessary for him to interrupt the operator while talking.

By referring back to fig. 5, it will be noticed that the dispatcher's circuit is somewhat different from that used at the

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way stations. He must be on the line at all times, and the transmission and receiving of his set must be as good as possible, without resorting to the non-locking push button for talking and listening, as his time is too fully occupied to permit him to use this device. A 70-ohm receiver is used in series with the secondary of the same type induction coil and a 1-microfarad condenser, the

lowered so that it can be used seated or standing, and in addition can be rotated in a horizontal plane.

The Northern Electric no. 1020 type arm, fig. 9, is another transmitter arm which is very simple, and is equipped with a head receiver, thus giving the operator free use of both hands to copy his train orders.

A key operated by hand is usually

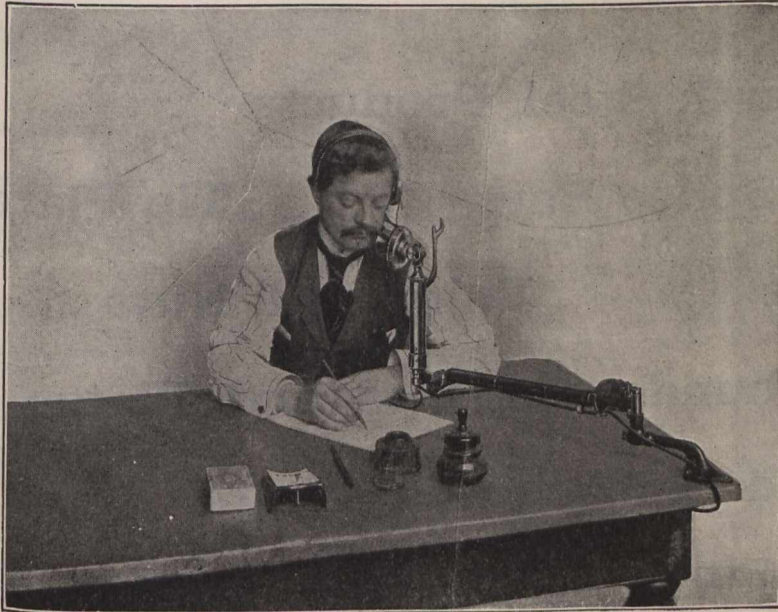


Fig. 8.—Northern Electric Flexiphone Arm for Way Stations.

impedance of this bridge being 650 ohms, and is the lowest bridge on the line. This arrangement also permits good transmitting.

It may be well here to attempt to describe some of the standard types of telephones used at the way stations, as stated conditions change with each installation and different superintendents of telegraphs have different ideas as to the best apparatus to be used.

In Canada the Canadian Pacific Ry. has adopted the telephone for the movement of trains to the greatest extent, and has approximately 4,500 miles of track operated by telephone. In 85% of its installations it uses the Van Aiken arm. This transmitter was invented by S. L. Van Aiken, of the New York Central Lines, and is so arranged that the transmitter and receiver are fixed on the arm, and the operator upon placing his ear to the receiver has his mouth in line with the transmitter. This arrangement permits the operator to have free use of both hands (fig. 7). The transmitter arm is arranged with an adjustable mouthpiece on transmitter, and adjustable receiver to allow for the different positions it might be placed in. There is a commutator arrangement on this arm so that when the arm is moved to talking position, certain springs cut it in for use. When shoved away from the operator, it is cut off the line entirely.

A foot switch (fig. 11) is generally used to close the transmitter battery. This is used to prevent waste of battery and all unnecessary noise entering in on the line, and also carries out the above stated high efficiency transmission scheme.

On a few of the C.P.R. western circuits, what is known as a flexiphone transmitter arm is used. To cite one instance. There is a line from Moose Jaw to Broadview, dispatcher located at Moose Jaw, a distance of 130 miles, with 18 way stations equipped. This set, fig. 8, consists of a desk stand attached to the arm which can be raised or

provided to close or open the transmitter battery, and if this is not desired a foot switch can be used. This type of arm is installed by the Grand Trunk Railway on two circuits on its Northern division, viz., North Parkdale to Burlington Jct., dispatcher located at Allandale, a distance of 145 miles, with 23 way stations equipped. Also Allandale to Nipissing, dispatcher located at Allandale, a distance of 160 miles, with 22 way stations equipped. The Michigan Central Rd. has also adopted this arm and has one circuit in Canada equipped from Windsor to St. Thomas.

The desk stand, fig. 10, arranged for a head receiver, has also been used, principally because of its low price. It has, however, the objection of being subject to injury by being knocked off the desk, but again has the advantage of being located so as to be convenient to a number of persons.

The apparatus used at way stations

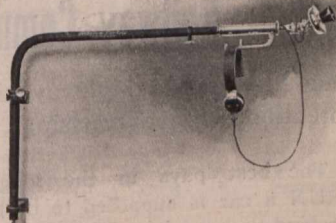


Fig. 9.—Northern Electric Transmitter Arm.



Fig. 10.—Special Northern Electric Desk Stand.

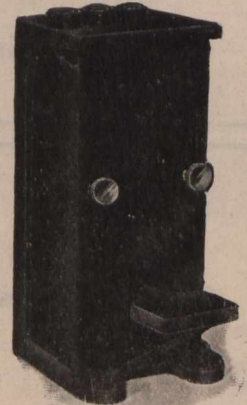


Fig. 11.—Foot Switch.

and dispatcher's office having been described, and in the next article the operation and construction of the various selectors will be taken up.

The Grand Trunk Ry. commenced running trains between Montreal and Toronto on October 27, 1856.

Railways and Allied Associations, Clubs, Etc.

The names of persons given below are those of the secretaries.

CANADIAN CAR SERVICE BUREAU, J. E. Duval, 401 St. Nicholas Building, Montreal.

CANADIAN FREIGHT ASSOCIATION, T Marshall, Union Station, Toronto.

CANADIAN FREIGHT ASSOCIATION, (Western Lines), W. E. Campbell, 101 Bon Accord Building, Winnipeg.

CANADIAN RAILWAY CLUB, J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July and August.

CANADIAN SOCIETY OF CIVIL ENGINEERS, C. H. McLeod, 413 Dorchester St., west, Montreal.

CANADIAN STREET RAILWAY ASSOCIATION, Acton Burrows, 70 Bond Street, Toronto.

CANADIAN TICKET AGENTS' ASSOCIATION, E. de la Hooke, London, Ont.

CENTRAL RAILWAY AND ENGINEERING Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto 3rd Tuesday each month, except June, July and August.

EASTERN CANADIAN PASSENGER ASSOCIATION, G. H. Webster, 54 Beaver Hall Hill, Montreal.

ENGINEERS' CLUB OF MONTREAL, R. W. H. Smith, 9 Beaver Hall Square, Montreal.

ENGINEERS' CLUB OF TORONTO, R. B. Wolsey, 94 King St. west, Toronto.

NOVA SCOTIA SOCIETY OF ENGINEERS, J. Lorn Allan, Halifax and Eastern Ry., Dartmouth, N.S.

QUEBEC TRANSPORTATION CLUB, J. S. Blanchet, Quebec.

WESTERN CANADA RAILWAY CLUB, W. H. Rosevear, 25½ Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

A Railway to Hudson Bay.

The contracting plant of the J. D. McArthur Co., of Winnipeg, has been moved from the Winnipeg-Lake Superior Jct., section of the National Transcontinental Ry. to Pas Mission, Sask., and work has been started on the northern bank of the Saskatchewan River, on the line towards Hudson Bay.

The section under contract extends from Pas Mission to Thicket Portage, 185 miles.

Tenders will be received by the Department of Railways to Oct. 15, for 30,000 tons of 80 lb. steel rails, together with the necessary fastenings for the same. (Sept., pg. 843.)

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have endorsed our illuminated highway signals as good protection for level crossings.

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for all purposes,
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Frogs,
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Canadian Pacific Railway Co's Annual Report.

Following is the 30th annual report addressed to shareholders over the signature of the President, Sir Thos. G. The accounts for the year ended June 30, show the following results:—

Gross earnings	\$104,167,808.21
Working expenses	67,467,977.64
Net earnings	\$ 36,699,830.57
Net earnings of steamships in excess of amount included in monthly reports	1,118,349.87
	\$ 37,818,180.44
Deduct fixed charges	10,011,071.44
	\$ 27,807,109.00
Surplus	
Deduct amount transferred to steamship replacement account	\$1,000,000.00
Contribution to pension fund	80,000.00
	1,080,000.00
	\$ 26,727,109.00
From this there has been charged a half yearly dividend on preference stock, of 2%, paid April 1,	\$1,112,333.33
And three quarterly dividends on ordinary stock of 1 3/4% each, paid Dec. 31, 1910, Apr. 1, and June 30, 1911	9,450,000.00
	\$ 10,562,333.33
	\$16,164,775.67
From this there has been declared a second half yearly dividend on preference stock, payable Sept. 30,	\$1,141,533.31
And a fourth quarterly dividend on ordinary stock of 1 3/4%, payable Sept. 30,	3,150,000.00
	\$ 4,291,533.31
Leaving net surplus for the year	\$11,873,242.36
In addition to the above dividends on ordinary stock 2 1/2% was paid from special income.	
DETAILS OF SPECIAL INCOME FOR YEAR.	
Interest on cash proceeds and on deferred payments for land sold	\$1,688,170.70
Interest on deposits and loans	1,030,377.88
Interest on C.P.R. 1st mortgage bonds acquired	61,003.66
Interest from Minneapolis, St. Paul & Sault Ste Marie Ry. bonds	159,720.00
Interest from Duluth, South Shore & Atlantic Ry. bonds	150,000.00
Interest from Mineral Range Ry. bonds	50,160.00
Interest from Toronto, Hamilton & Buffalo Ry. bonds	10,840.00
Interest from Kingston & Pembroke Ry. bonds	9,345.00
Interest from Dominion Government bonds	182,500.00
Interest from Ontario Government bonds	48,000.00
Interest from British consols	116,544.28
Interest from Montreal & Atlantic Ry. bonds and on other securities	139,922.40
Dividend on St. John Bridge & Ry. Extension Co. stock	50,000.00
Dividends on Dominion Express Co. stock	160,000.00
Dividends on Minneapolis, St. Paul & S.S.M. Ry. common stock	736,071.00
Dividends on Minneapolis, St. Paul & S.S.M. Ry. preferred stock	368,039.00
Dividends on Alberta Ry. & Irrigation Co. stock	86,162.50
	\$5,046,856.42
Transfer of balance of interest from land surplus at June 30, 1910	1,555,348.78
	\$6,602,205.20
Less—payments to shareholders in dividends: October 1, 1910 to June 30, 1911	3,900,000.00
	\$2,702,205.20
From this a dividend has been declared, payable Sept. 30, 1911	1,350,000.00
	\$1,352,205.20
Leaving net surplus carried forward	\$1,352,205.20

The working expenses for the year were 64.77% of gross earnings, and the net earnings, 35.23%, as compared with 64.38 and 35.62% respectively in 1910. Four per cent. consolidated debenture stock to the amount of £1,263,667 was created and sold, and of the proceeds £745,489 was applied to the construc-

tion of authorized branch lines; £194,178 to the acquisition of St. Maurice Valley Ry. Co. bonds, the interest on which had been guaranteed by your company; £134,000 was used to acquire a like amount of your company's first mortgage 5% bonds, and with the balance, £190,000, the outstanding Canada Central second mortgage 6% bonds were purchased and retired.

Four per cent. preference stock to the amount of £300,000 was created and sold, the proceeds being used to meet capital expenditures.

Your guarantee of interest was endorsed on 4% consolidated bonds of the Minneapolis, St. Paul and Sault Ste. Marie Ry. Co., to the amount of \$3,600,000, issued and sold to meet the cost of constructing 180 miles of railway added to that company's system.

The sales of agricultural land during the year aggregated 650,874 acres for \$9,558,427.17, being an average of \$14.69 an acre. Included in this area are 19,097 acres of irrigated land, which brought \$33.63 an acre, so that the average price of the balance of the land was \$14.11 an acre.

The Hudson's Bay Co. had parcels of land scattered throughout the irrigation belt, and, in order that you might control the entire belt and thus receive the full advantage of your expenditures on irrigation, it was decided to acquire these lands, about 102,174 acres, at \$13.50 an acre. All these lands will be sold at a substantial profit.

Believing that it would be in the interest of everybody concerned, your directors proposed to the Alberta Ry. and Irrigation Co., in which you owned a controlling interest, an arrangement whereby, in consideration of a lease of their railway lines and a transfer to your company of their coal mines, lands and other assets, your company would guarantee the interest on its outstanding debenture stock (\$3,250,000), and an annual dividend of 6% on its share capital during the life of the lease, and coupled with this proposed arrangement was your company's offer to purchase all of the outstanding shares of the Alberta Company's capital stock at 150 and accrued dividend. The proposition was accepted, an agreement and lease were approved by the shareholders of the Alberta Company, and will be submitted for your sanction. Since the agreement was made a large part of the outstanding stock has been acquired, and you now hold all the shares excepting about 2,000 out of a total of 32,500 shares. Worked in conjunction with your system, this line will not only be profitable in itself but will be useful in connection with future extensions in southern Alberta.

By the construction of a railway 16.2 miles long between Hamilton and Guelph Jct., Ont., the distance from Hamilton to points on your lines in western Ontario will be shortened very materially, and, therefore, subject to your approval, an agreement has been made with the South Ontario Pacific Ry. Co. for the construction of the line, and for a lease of it to your company on its completion for 999 years at a rental equivalent to 4% per annum on the bonds of the South Ontario Pacific Ry. Co., issued with the consent of your company.

In order to provide transportation facilities for incoming settlers it is very desirable that the following branch lines in Saskatchewan and Alberta should be constructed without unnecessary delay; Moose Jaw southwest, 35 miles, Kerrobert northeast, 25 miles, Weyburn branch extension, 21 miles, Estevan branch, 55 miles, Swift Current southeast, 45 miles, Swift Current northwest, 35 miles, Wilkie northwest, 32 miles, Wilkie, southeast, 31 miles, Kininzie branch extension, 37 miles, Bas-

sano to Kininzie Jct., 36 miles, Kipp branch extension, 27 miles, and you will be asked to authorize the sale of a sufficient amount of 4% consolidated debenture stock for the purpose.

An order has been placed with the Fairfield Shipbuilding Co., of Glasgow, for two steamships, 570 ft. long and 68 ft. beam, with a speed of 18 knots an hour, to supplement the fleet now engaged in the Pacific trade between Vancouver, Yokohama and Hong Kong. The approximate cost will be £440,000 each and they will be delivered early in 1913.

During the year 103 locomotives, 204 passenger cars and 3,808 freight cars were added to your rolling stock equipment, at a cost of about \$9,000,000, and there are orders outstanding for cars and locomotives to the value of \$7,000,000 that are expected to be available for the autumn traffic.

The work of enlarging your terminal yards and buildings, providing additional shops and machinery, laying many miles of new passing tracks, extending your telegraph lines, and of generally improving the standard of your property and operating facilities to meet the requirements of the traffic, continues to have the earnest attention of your directors, the amount expended for these purposes during the year aggregating \$18,000,000.

The double track between Winnipeg and Brandon is nearing completion, and it is evident that a second track must be laid on some portions of the main line between Brandon and Calgary in the near future.

You will have observed that in this annual report the earnings and expenses of your railway and steamship lines are shown together, and that the revenue from other sources is given in a separate statement. This is in accordance with the policy outlined by your directors in the circular letter of March 15.

Your directors report with sincere regret the death at Nice in April, of their esteemed colleague and friend, Hon. L. J. Forget. He had been a member of the board since 1906, and always displayed a keen and intelligent interest in the company's affairs. H. S. Holt, of Montreal, was elected a director to fill the vacancy caused by Senator Forget's death.

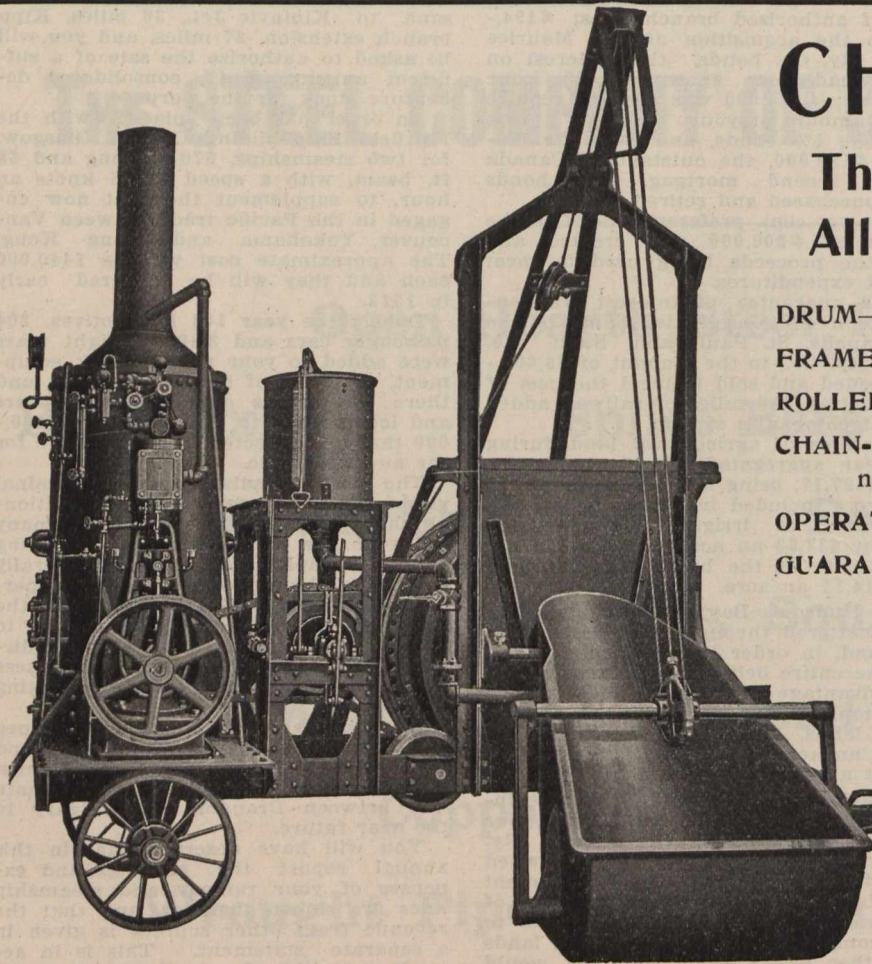
The undermentioned directors will retire from office at the approaching annual meeting, and are eligible for re-election: Sir William C. Van Horne, R. B. Angus, E. B. Osler, H. S. Holt.

CONDENSED BALANCE SHEET.

ASSETS.	
Railway and equipment	\$343,595,230.24
Ocean, lake and river steamships ..	19,679,673.54
Acquired securities (cost)	75,979,653.19
Properties held in trust for company	6,180,692.76
Deferred payments on land and town site sales	34,116,420.82
Advances to lines under construction	8,996,903.63
Advances and investments	9,637,202.18
Material and supplies on hand	11,191,254.01
Current assets:	
Agents' and conductors' balances	\$2,367,534.47
Net traffic balances	261,049.38
Miscellaneous accounts receivable	5,421,315.51
	8,049,899.36
Temporarily invested in Government securities	10,088,734.86
Cash in hand	34,371,550.98
	\$561,887,215.57

Note.—In addition to above assets, the company owns 7,061,184 acres of land in Manitoba, Saskatchewan and Alberta (average sales past year \$14.69 an acre), and 4,427,811 acres in British Columbia.

LIABILITIES.	
Capital stock	\$180,000,000.00
4% preference stock	57,076,665.70
4% consolidated debenture stock	142,861,462.26
Mortgage bonds:	
First mortgage 5%	\$34,998,633.33
Algoma Br. 1st mortgage	3,650,000.00
	38,648,633.33



CHAIN BELT

**That Better Built Mixer,
All Steel Construction.**

- DRUM—Cast semi-steel—longer life.
- FRAME—Steel channels—no blocking up.
- ROLLERS—Chilled semi-steel—no renewing.
- CHAIN-BELT DRIVE—Unquestionably better—no more gear troubles.
- OPERATION—Fast and perfect—assures capacity.
- GUARANTEED—To be right.

WRITE FOR CATALOG No. 39 R.

**Dominion Equipment
and Supply Company**

Canadian Sales Agents,

45-46 Canada Life
Bldg.

WINNIPEG, MAN.

Why the G. P. R. North Toronto Route to Ottawa and Montreal is the Logical One

The train leaves as follows:

Leave North Parkdale	- - -	9.15 p.m.	Arrive Ottawa, 6.50 a.m.
Leave West Toronto	- - -	9.30 p.m.	Arrive Montreal 7.00 a.m.
Arrive North Toronto	- - -	9.40 p.m.	Daily except Sunday.
Leave North Toronto	- - -	10.00 p.m.	Will Stop at Westmount.

- ¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.
- ¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.
- ¶ The roadbed has been improved till it is unexcelled in Canada.
- ¶ The equipment is "Canadian Pacific Standard," a synonym for the "best" and attentive porters, non-obsequious, ensure efficient service. .

SLEEPING CAR SPACE HELD

Toronto City Office, 16 King St. East

North Toronto Station

King Edward Hotel

West Toronto Station

Current liabilities:	
Audited vouchers	\$ 8,581,511.96
Pay rolls	4,789,834.48
Miscellaneous accounts payable	3,832,305.09
Interest on funded debt and rental leased lines. Coupons due July 1, and including coupons overdue not presented	\$ 1,207,164.50
Accrued fixed charges..	185,152.00
Equipment obligations	1,392,316.50
Equipment replacement fund	2,658,363.75
Steamship replacement fund	5,040,666.67
Appropriation for additions and improvements	7,119,285.64
Reserve fund for contingencies.	4,052,906.33
Lands and town sites sales	49,258,770.42
Surplus	55,374,493.44
	\$561,887,215.57

Permanent bridges and improvements of line	495,797.07
Wharves, docks and warehouses	45.00
Telephone dispatching equipment	39,167.17
	853,108.15
Port Arthur to Field—	
Additional sidings, buildings, stations and yards	1,880,513.42
Permanent bridges and improvements of line	571,809.25
Winnipeg station and hotel	15,544.45
Winnipeg terminals	301,487.27
Wharves, docks and warehouses	16,177.06
Double tracking	737,825.97
Telephone dispatching equipment	57,007.42
Right of way	2,111.10
	5,822,475.94

Properties held in trust for company—	
Amount received from sales of properties	901,633.66
Less payments	608,481.47
	293,152.19
Capital Stock—	
Subscription to \$30,000,000 additional ordinary stock—Remaining instalments and additional premiums on unsubscribed stock sold	14,007,984.69
4% preference stock, realized from issue £300,000	1,438,111.58
Consolidated debenture stock, realized from issue £1,263,667	6,273,611.57
	\$110,918,994.09
Deduct—	
Advances to lines under construction	8,996,903.63
Advances and investments	9,637,202.13
Current assets	8,049,899.36
	26,684,005.17
Less amt. at June 30, 1910.	19,867,914.21
	6,816,090.96
	\$104,102,903.13

FIXED CHARGES FOR YEAR ENDED JUNE 30

1st mortgage bonds 5% due July 1, 1915.	\$1,749,931.66
Canada Central Ry. 2nd mortgage 6% bonds, (redeemed Nov. 1, 1910) interest 4 months	19,466.67
St. Lawrence & Ottawa Ry. 4% 1st mortgage bonds	38,933.34
Man. So. West Colzn. Ry. 1st mortgage 5% bonds due June 1, 1934	127,200.00
Toronto, Grey & Bruce Ry. rental	140,000.00
Ontario & Quebec Ry. debenture stock 5%	975,129.56
Ontario & Quebec Ry. ordinary stock 6%	120,000.00
Atlantic & North West Ry. 1st mortgage bonds due Jan. 1 1937	323,633.34
Algoma branch 5% 1st mortgage bonds due July 1, 1937	182,500.00
New Brunswick Southern Ry. 1st mortgage bonds, 3%, 6 months	7,500.00
Rental, Calgary & Edmonton Ry.	138,357.60
" Farnham to Brigham Jet	1,400.00
" Mattawamkeag to Vanceboro.	23,800.00
" New Brunswick Ry. system.	372,829.74
" Terminals at Toronto.	26,494.29
" Terminals at Hamilton	33,812.80
" Hamilton Jet. to Toronto.	42,062.35
" St. Stephen & Milltown Ry.	2,050.00
" St. Marys & West. Ontario Ry.	3,235.14
" Joliette & Brandon Ry.	5,000.00
" Lachine Canal Branch	939.96
Interest on Montreal & Western Ry.	16,039.60
Interest on equipment obligations.	71,866.67
4% CONSOLIDATED DEBENTURE STOCK.	
Interest from July 1, 1910. \$5,504,560.74	
Interest from Jan. 1, 1911.	92,327.98
	5,596,888.72
Less received from subsidy Northern Colonization Ry.	8,000.00
	5,588,888.72
	\$10,011,071.44

Field to Vancouver—	
Additional sidings, buildings, stations and yards	1,067,761.20
Permanent bridges and improvements of line	694,876.27
Field Hill revision of line.	60,307.47
Wharves, docks and warehouses	18,832.98
Right of way	2,790.10
Vancouver terminals	398,144.29
	2,242,712.31

BRANCH LINES.

South Western branch	\$45,823.24
Stonewall branch	14,593.66
Selkirk branch	30,481.95
Emerson branch	2,953.69
Nakusp and Slocan branch.	27,484.54
Revelstoke & Arrow Lake br.	1,026.25
Snowflake branch	Cr. 201.65
Waskada branch	3,315.36
St. Lin branch	1,007.81
St. Eustache branch	417.56
Lake Timiskaming branch	60,542.00
McGregor branch	1,816.95
Mission branch	24,791.88
Arcola-Regina branch	21,462.25
Northern Star branch	4,589.42
Lac du Bonnet branch	1,461.32
Wolsley-Reston branch	14,543.25
Lachine Canal branch	9,960.00
Toronto-Sudbury line	425,558.36
Pheasant Hills branch	584,612.44
Souris Branch—	
Additional sidings, buildings, stations and yards	199,868.64
Permanent bridges and improvements of line	229,882.06
Right of way	70.09
Algoma Branch—	
Additional sidings, buildings, stations and yards	8,019.81
Permanent bridges and improvements of line	98,898.72
Crow's Nest Pass Branch—	
Additional sidings, buildings, stations and yards	246,439.99
Permanent bridges and improvements of line	51,295.14
Right of way	490.32
	298,225.45
Crow's Nest Pass Branch—	
McLeod-Lethbridge deviation	47,749.12
British Columbia Southern Ry—	
Additional sidings, buildings, stations and yards	164,932.35
Permanent bridges and improvements of line	234,647.39
Right of way	2,161.87
Telephone dispatching equipment	1,150.13
Balfour extension	16,289.75
Yahk branch	3,270.90
	422,452.39
Telegraph extensions and additions	2,581,406.56
Office building, Toronto	224,590.01
Rented and temporary sidings	164,345.00
	178,463.07
Total main line and branches	\$4,103,470.97

EXPENDITURES.	
Dividends on preference stock—	
2% paid Oct. 1, 1910	\$1,112,333.33
2% paid Apr. 1, 1911	1,112,333.33
	\$2,224,666.66
Dividends on ordinary stock—	
4% paid Oct. 1, 1910	6,000,000.00
2% paid Dec. 31, 1910	3,600,000.00
2½% paid Apr. 1, 1911.	4,500,000.00
2½% paid June 30, 1911.	4,500,000.00
	18,600,000.00
Construction of acquired and branch lines	5,449,078.47
Additions and improvements, main line and branches	12,103,470.97
Additions and improvements, leased and acquired lines	5,975,813.81
Rolling stock, shops and machinery.	9,656,683.24
Ocean, lake and river steamships—	
Additional steamships and appurtenances for Pacific Coast service	910,591.42
Additional river steamers and barges	260,221.57
Extension to steamship Alberta	48,699.17
	1,219,512.16
Canada Central Ry. 2nd mortgage bonds redeemed	973,333.33
Securities acquired—	
C.P.R. 1st mortgage bonds. \$	678,414.59
Kingston & Pembroke Ry. 1st mortgage bonds	16,460.00
St. Maurice Valley Ry. 1st mortgage bonds	945,000.00
Dominion Atlantic Ry. stock	1,066,512.03
Kingston & Pembroke Ry. stock	1,075.00
Lindsay, Bobcaygeon & Pontypool Ry. stock	166,000.00
Toronto, Hamilton & Buffalo Ry. 2nd mortgage bonds.	237,125.00
Alberta Ry. & Irrigation Co. Stock	1,853,382.12
	4,963,968.74
Less Canada Central Ry. 2nd mortgage bonds redeemed.	48,666.67
	\$4,915,302.07
Subscription to Minneapolis, St. Paul & Sault Ste. Marie Ry. ordinary and pref. stock	1,987,380.00
	6,902,682.07
Payment of equipment obligations	160,000.00
Increase in material and supplies on hand	242,786.96
	63,508,027.67
Deduct—	
Increase in current liabilities	3,865,410.38
	59,642,617.29
Temporarily invested in Government securities	10,088,734.86
Cash in hand	34,371,550.98
	\$104,102,903.13

EXPENDITURES ON CONSTRUCTION—ACQUIRED AND BRANCH LINES.

Moosejaw branch	\$1,900,544.90
Craven-Bulyea branch	316,685.33
Virden-McAuley branch	6,797.09
Stonewall branch extension	86,101.05
Lauder branch	89,553.66
Weyburn-Lethbridge branch	371,880.10
Langdon branch	127,041.66
Kipp-Aldersyde branch	296,084.74
Kinzie branch	443,382.05
Regina-Colonsay branch	1,260,913.44
Estevan-Forward branch	65,097.99
Waldo-Galloway branch	32,896.20
Moosejaw S.W. branch	50,566.48
Wilkie N.W. Branch	2,238.07
Kerrobert N.E. branch	14,699.70
Wilkie-Anglia branch	50,175.56
Swift Current S.E. branch	89,964.81
Swift Current N.W. branch	71,715.48
Bassano branch	8,124.57
Surveys of projected lines	164,615.59
	\$5,449,078.47

EXPENDITURE ON ADDITIONS AND IMPROVEMENTS.

MAIN LINE.	
Quebec to Bonfield—	
Additional sidings, buildings, stations and yards	\$ 39,959.14
Permanent bridges and improvements of line	329,344.04
Right of way	174,108.93
	\$543,412.11
Montreal Terminals	782,728.24
Windsor St. station extension	472,359.35
Double track bridge over St. Lawrence River	477,870.23
Bonfield to Port Arthur—	
Additional sidings, buildings, stations and yards	318,098.01

Cash in hand, June 30, 1910	\$46,165,817.05
Temporarily invested in Government securities	10,088,734.86
Surplus revenue	\$26,727,109.00
Special income	5,046,856.42
	31,773,965.42

RECEIPTS.

Land Department—	
Lands and townsites:	
Net proceeds of sales.	8,448,516.04
Collection of deferred payments on previous year's sales	4,593,945.47
	13,042,461.51
Less cost of lands purchased from Hudson's Bay Co.	1,396,591.54
	11,645,869.97
Less amounts remaining in deferred payments on year's sales	10,768,253.24
	877,616.73

Subscription to Minneapolis, St. Paul & Sault Ste. Marie Ry. ordinary and pref. stock	1,987,380.00
	6,902,682.07
Payment of equipment obligations	160,000.00
Increase in material and supplies on hand	242,786.96
	63,508,027.67
Deduct—	
Increase in current liabilities	3,865,410.38
	59,642,617.29
Temporarily invested in Government securities	10,088,734.86
Cash in hand	34,371,550.98
	\$104,102,903.13

DETAILS OF EARNINGS FOR THE YEAR.

From passengers	\$28,165,556.41
From freight	65,645,227.59
From mails	832,733.97
From sleeping cars, express, telegraph and miscellaneous	9,524,290.24
Total	\$104,167,808.21

DETAILS OF WORKING EXPENSES FOR THE YEAR.

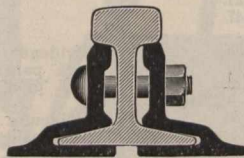
Transportation expenses	\$31,537,518.82
Maintenance of way and structures	15,561,086.29
Maintenance of equipment	12,056,260.11
Traffic expenses	2,623,280.98
Parlor and sleeping car expenses	731,738.62
Expenses of lake and river steamers	989,768.74
General expenses	2,714,425.00
Commercial telegraph	1,196,899.08
Total	\$87,467,977.64

ADDITIONAL SAFETY AND ECONOMY IN TRACK MAINTENANCE

has been proved by the use of Continuous, Weber and Wolhaupter base-supported rail joints—after fifteen (15) years' service, having a record of over **50,000 miles in use**—the extent of which is evidence of their excellence. Made in Canada.

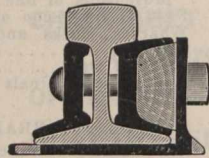
HIGHEST AWARDS.

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



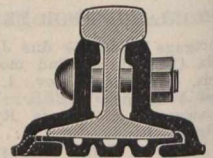
Continuous Joint.

Over
50,000
miles
in use.



Weber Joint.

Rolled
from Best
Quality
Steel.



Wolhaupter Joint.

Catalogues at Agencies

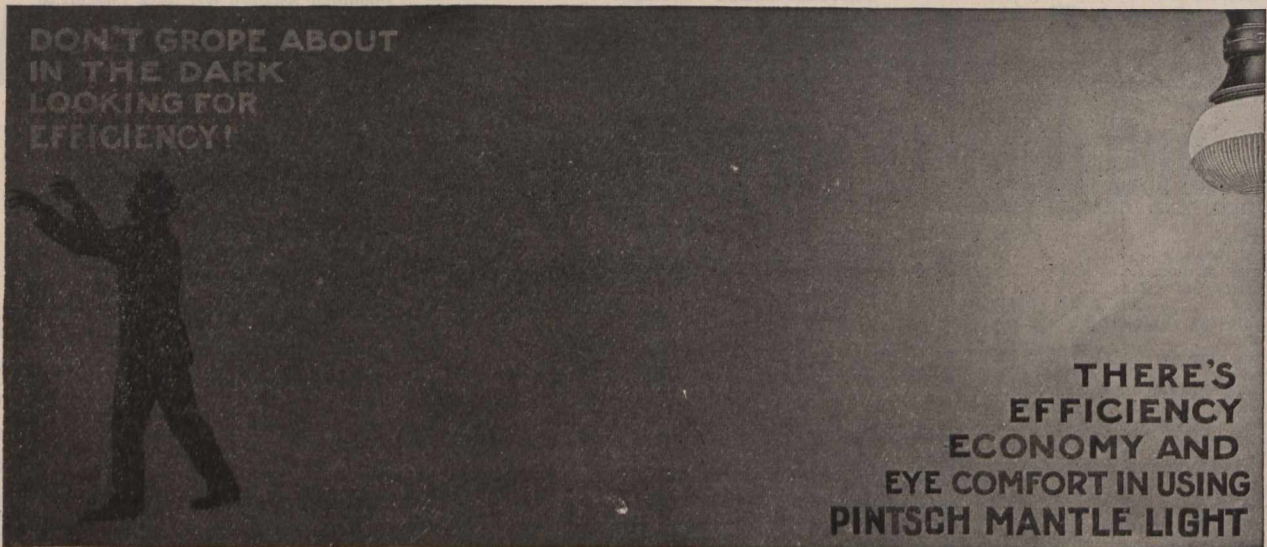
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|----------------|--------------------|---------------|---------------------|----------------|
| Baltimore, Md. | Boston, Mass. | Chicago, Ill. | Denver, Colo. | Pittsburg, Pa. |
| | Portland, Ore. | | St. Louis, Mo. | Troy, N.Y. |
| | London, E.C., Eng. | | New York City, N.Y. | |

THE RAIL JOINT COMPANY OF CANADA, LIMITED

OFFICES: BOARD OF TRADE BLDG., MONTREAL, CAN.

Makers of Base Supported Rail Joints for Standard and Special Rail Sections, also Girder, Step or Compromise, Frog and Switch, and Insulating Rail Joints, protected by Patents.

DON'T GROPE ABOUT
IN THE DARK
LOOKING FOR
EFFICIENCY!



THERE'S
EFFICIENCY
ECONOMY AND
EYE COMFORT IN USING
PINTSCH MANTLE LIGHT

How can you plan for efficiency if the operating cost of your equipment is an unknown quantity?

PINTSCH MANTLE LIGHT

Costs one cent a burning hour for a 100 candle power lamp.

The Safety Car Heating & Lighting Co.

2 RECTOR STREET, NEW YORK

- Philadelphia St. Louis Washington Chicago Boston Montrael San Francisco

EQUIPMENT AT JUNE 30.

Locomotives	1,637
First and second class passenger cars, baggage cars, and colonist sleeping cars	1,689
First class sleeping, dining and cafe cars	318
Parlor cars and paymasters' cars	67
Freight and cattle cars (all kinds)	52,602
Conductors' vans	923
Boarding, tool and auxiliary cars and steam shovels	3,896

OCEAN, LAKE AND RIVER STEAMERS.

Atlantic Service.—Empress of Britain, Empress of Ireland, Lake Champlain, Lake Erie, Lake Manitoba, Lake Michigan, Milwaukee, Montcalm, Montfort, Montreal, Montrose, Monmouth, Montezuma, Mount Royal, Mount Temple, Cruiser.

Pacific Service.—Empress of China, Empress of India, Empress of Japan, Monteagle.

Pacific Coast Service.—Amur, Beaver, Charmer, City of Naniamo, Czar, Joan, Nanoose, Otter, Princess Adelaide, Princess Alice, Princess Beatrice, Princess Charlotte, Princess Ena, Princess May, Princess Mary, Princess Royal, Princess Victoria, Tees, Transfer No. 1, Transfer No. 2, Queen City.

Upper Lake Service.—Alberta, Assiniboia, Keewatin, Manitoba, Athabasca.

British Columbia Lake and River Service.—Aberdeen, Bonington, Columbia, Castlegar, Hosmer, Kaleden, Kokanee, Kootenay, Kuskanook, Minto, Moyie, Nelson, Okanagan, Proctor, Rossland, Sandon, Slocan, Valhalla, Ymir, York, Whantsham.

Ferry Service.—Michigan, Ontario.

DETAILS OF FREIGHT FORWARDED.

	1911.	1910.
Flour, bbls.	8,469,744	7,489,812
Grain, bush	111,169,982	112,795,345
Live stock, head	1,567,665	1,381,183
Lumber, ft.	2,441,007,107	2,292,821,963
Firewood, cords	298,345	280,878
Manufactured articles, tons	5,759,844	5,468,548
All other articles, tons	8,971,037	7,567,052

FREIGHT TRAFFIC.

	1911.	1910.
No. tons carried	22,536,214	20,551,368
No. tons carried 1 mile	8,062,102,013	7,772,012,635
Earnings per ton per mile	0.81 cts.	0.77 cts.

PASSENGER TRAFFIC.

	1911.	1910.
No. passengers carried	12,080,150	11,172,891
No. passengers carried 1 mile	1,457,332,932	1,355,266,088
Earnings per passenger per mile	1.93 cts.	1.83 cts.

TRAFFIC STATISTICS.

Train Mileage.		
	1911.	1910.
Passenger trains	17,393,532	16,119,543
Freight trains	21,701,893	20,574,576
Mixed trains	1,680,420	1,672,993
Total trains	40,775,846	38,367,112

Car Mileage.

	1911.	1910.
Passenger—Coaches and p. d. and s.	89,404,332	82,472,864
Combination	2,812,227	2,833,703
Baggage, mail and express	38,487,654	34,158,162

	1911.	1910.
Total passenger cars	130,704,213	119,461,729
Freight—Loaded	460,739,921	433,498,575
Empty	139,455,186	118,134,609
Caboose	23,521,772	22,374,512

	1911.	1910.
Total freight cars	623,716,879	574,007,696
Passenger cars per traffic train mile	6.85	6.72
Freight cars per traffic train mile	26.67	25.80

Passenger Traffic.

	1911.	1910.
Passengers carried (earning revenue)	11,928,943	11,050,924
Passengers carried (earning revenue) 1 mile	1,440,649,164	1,341,255,609
Average journey per passenger	139.297	133.080
Average amount received per passenger	120.77	121.37
Average amount received per passenger mile	2.31	2.20
Average number of passengers per train mile	1.92	1.81
Average number of passengers per car mile	75.53	75.38
Revenue from passengers per passenger car mile	15.62	15.72
Total passenger train earnings per train mile	29.91	28.47
Total passenger train earnings per train mile	1.73	1.64

Total passenger train earnings per mile of road...\$ 3,197.71 2,902.13

Freight Traffic.

Tons of revenue freight carried one mile	7,859,966,837	7,569,824,332
Tons of non-revenue freight carried one mile	1,241,451,628	1,110,379,421
Total tons (all classes) freight carried 1 mile	9,101,418,465	8,680,203,753
Tons of revenue freight carried 1 mile per mile of road	759,983	751,079
Tons of non-revenue freight carried 1 mile per mile of road	120,036	110,172
Total tons (all classes) freight carried — mile per mile of road	880,019	861,251
Average amount received per ton per mile of revenue freight	0.819	0.778
Average number of tons of revenue freight per train mile	336.16	340.25
Average number of tons of non-revenue freight per train mile	53.09	49.91
Average number of tons of (all classes) freight per train mile	389.25	390.16
Average number of tons of revenue freight per loaded car mile	17.06	17.46
Average number of tons of non-revenue freight per loaded car mile	2.69	2.56
Average number of tons of (all classes) freight per loaded car mile	19.75	20.02
Freight train earnings per loaded car mile	13.97	13.59
Freight train earnings per train mile	2.75	2.65
Freight train earnings per mile of road	6,222.89	5,844.47

STATEMENT OF PENSION DEPARTMENT TO JUNE 30.

Balance at June 30, 1910	\$687,104.26
Amount contributed by company for year	80,000.00
Amount received as interest	38,260.12
	\$805,364.38
Payment of pension allowances for year	134,876.92

Balance in cash and investments ...\$670,487.46

NUMBER ON PENSION ROLL AT JUNE 30.	
Under 60 years of age	64
Between 60 and 70 years of age	255
Over 70 years of age	173
Total	492

How to Conduct a Ticket Office.

By W. R. Russell, Agent, Canadian Northern Ry., Humbolt, Sask.

The three essentials, important in the highest degree, necessary for the proper conducting of a ticket office, are, first, courtesy; second, accuracy; third, cleanliness. The question, "How to Conduct a Ticket Office," is perhaps one of the most difficult questions for passenger traffic officials to solve at present. Railways are classed as public servants, and rightly so, and I am sorry to say too many ticket agents do not realize this important fact, by not being courteous to all who are patrons of the company they represent. No doubt many ask what we consider very foolish questions, but we should remember that we have the experience, which they have not, and should therefore try and give them a courteous reply, which would not convey the idea that the question was considered foolish or at all out of the ordinary. Nothing will turn a prospective traveller away more quickly than a crusty reply, or being uncivil. They have feelings as well as we have. Put yourself in their places.

Accuracy. See that you have the correct fare made up before you give your passenger the rate. It is annoying to you as well as to them if you have to change the rate later on when you find you have made a mistake. Get your time cards down, study them, get the route from the passenger, the way he or she requires to travel; then get busy and give the particulars as to changing and time of trains on the different lines, and any other information that would naturally come up on the route. No

doubt you have travelled; give them the benefit of your experience. Finally, if you are issuing coupon tickets, go over it very carefully before it is handed to your passenger. If necessary go over each coupon separately to see that you have included transfers where necessary and in the proper place.

Cleanliness is one of the very best assets you can have in your office. Have your counter clean, your pen and ink wells spotless; do not use blotting paper until it will not absorb the ink, and, above all, keep yourself as clean as you possibly can. Dress well, it counts in the end, and don't forget it.

I will give you a few points as to how a ticket agent can assist the freight traffic. If you have followed the first part of this article, namely, courtesy, you can do so, in this way: A commercial traveller comes to the wicket; you know he is a commercial traveller by the certificate he presents for the ticket. While you are getting his ticket ready bring it around in a casual way as to how he finds business, then if prospects are good, bad or indifferent ask him as to the routing of the goods he has taken orders for. If he is prejudiced against the company you are working for, ask him to give you the routing, and also assure him that you will use your best efforts to get the freight over the road, and give the home company the long haul. After this has been done, refer the matter to the freight agent, if you are in a city, where ticket and freight agents are different men. If you are the freight agent as well as the ticket agent, lose no time in advising your general freight agent, giving him name and address in full of consignor, and consignee, and also probable amount of freight to be moved. It may be small, but if handled properly it will probably increase. The general freight agent will appreciate your efforts; it means increased revenue for his department. Finally, make your railway one to be envied for courtesy, Hang this motto up in the office: "A soft answer turneth away wrath."

Courtesy is a valuable asset for any railway. See that your line has it.

I would like to see all ticket agents who sell coupon tickets become members of the ticket agents' associations, namely, the Canadian Ticket Agents' Association and the International Ticket Agents' Association. I will be pleased to give any prospective member particulars or refer them to the secretaries of the associations.

[We may add that the Secretary of the Canadian Ticket Agents' Association is E. de la Hooke, London, Ont., who will always be pleased, on application, to send full particulars in regard to membership.—Editor.]

Transportation Conventions in 1911.

Oct. 9-13.—American Electric Railway Association, Atlantic City, N.J.

Oct. 10.—Railway Signal Association, Colorado Spring, Col.

Oct. 17-19.—American Railway Bridge and Building Association, St. Louis, Mo.

Oct. 18-19.—American Association of Railway Surgeons, Chicago, Ill.

Oct. 19-21.—American Association of Dining Car Superintendents, Cincinnati, O.

Nov. 6-10.—Association of Railway Electrical Engineers, Chicago, Ill.

Nov. 15.—American Railway Association, Chicago, Ill.

Nov. 17-18.—American Association of Freight Traffic Officers, Cincinnati, O.

Dec. 12-13.—Association of Transportation and Car Accounting Officers, Louisville, Ky.

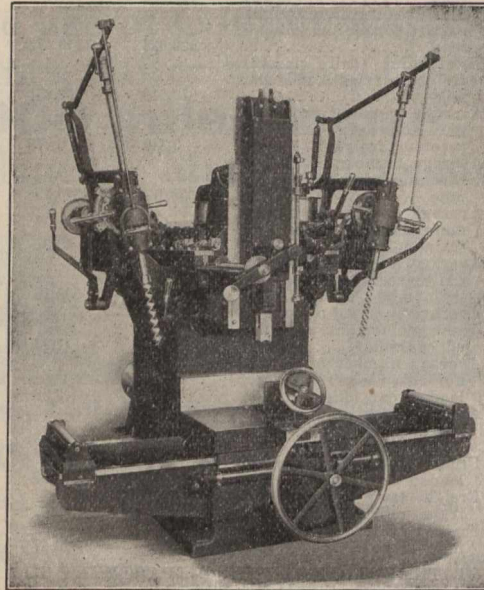
Dec. 29-30.—American Association of Passenger Agents, Jacksonville, Fla.

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

H. G. ELLIOTT, Gen. Passenger Agent, MONTREAL.

Orders by the Board of 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 read our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given on 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.

14384. July 22.—Authorizing C.N.R. to build across public road between secs. 8 and 7, tp. 5, r. 6, w. 2 m.

14385. July 18.—Authorizing British Yukon Ry., British Columbia Yukon Ry., Pacific and Arctic Ry. and Nav. Co., and the Dawson Board of Trade or other shippers affected, to supplement their case by such evidence, etc., as they deem proper; and relieving said companies from filing joint tariffs prescribed under order 2, Jan. 18.

14386. May 16.—Declaring upon application of British American Oil Co., that the legal rate chargeable by C.P.R. on carload shipments of crude oil from Stoy, Ill., to Toronto, was fifth-class joint through rate.

14387. May 16.—Declaring, upon application of Canadian Oil Companies, that the legal rates chargeable on petroleum and its products, in carloads, from certain Ohio and Pennsylvania points to Toronto and other Canadian points were fifth-class joint through rates.

14388. July 27.—Authorizing C.P.R. and G.T.P.R. to operate interchange track in St. Marys, Ont.

14389. July 25.—General order re track scale weights.

14390. July 15.—Approving locations of eight G.T.P.R. stations in western provinces.

14391. July 27.—Approving C.N.R. standard plan of overhead farm road bridge for east eastern lines.

14392, 14393. July 26.—Authorizing G.T.P. Branch Lines Co., to build its Calgary branch across highway in s.w. ¼ sec. 18, tp. 31, r. 23, w. 4 m., and across six other highways in Alberta.

14394. July 27.—Approving G.T.P.R. plan showing interlocking signalling system to be installed on bridge over Kyax River, B.C.

14395. July 24.—Approving revised location, G.T.P.R. station at Elle.

14396. July 25.—Approving location G.T.P.R. station at Oban, Sask., and rescinding order 13928, in so far as it relates to approval of said station.

14397 to 14399. July 25-15-24.—Approving stations in western provinces, and of station at Nestor, sec. 13, tp. 48, r. 14.

14400. July 25.—Authorizing Vancouver Power Co. to cross New Westminster and Eastern Ry. and Vancouver, Victoria and 2, New Westminster district.

14401. July 24.—Approving C.P.R. station at Bridgeford, Sask.

14402. July 27.—Approving revised location of C.P.R. main line, Waldo Branch, between mileage 9.7 and 11.33, lot 132, Kootenay district, B.C.

14403. July 24.—Approving revised location of C.P.R. station at Val Morin, Que.

14404. July 25.—Approving change in location of C.P.R. station at Long Swamp, Que.

14405. July 26.—Authorizing C.P.R. to build spur for J. A. Lougheed in block 65, n.w. of corner of Second St., W., and Ninth Ave., Calgary, Alta.

14406. July 27.—Authorizing Georgian Bay and Seaboard Ry., (C.P.R.) to divert road allowance between Eldon and Maribou, build tps. Ont. at mileage 59.94; and to build across same.

14407. July 27.—Authorizing South Ontario Pacific Ry. to carry its Guelph Jct. Hamilton Line, at mileage 15.37 from Sarnia Jct., across G.T.R. Hamilton to Sarnia Line.

14408. July 27.—Authorizing C.N.R. to open for freight traffic its line between Delisle and MacRorie on its Delisle branch.

14409. July 27.—Approving revised location of C.N.O.R. Toronto-Ottawa Division, east of Sydenham, mileage 164.31 to 165.56 from Toronto.

14410. July 27.—Authorizing C.N.R. to open for freight traffic its line from Calder to Rhein, and limiting speed of trains to 18 miles an hour.

14411. July 27.—Approving revised location of C.N.O.R. Toronto-Ottawa Division, at Buck Lake, Storrington and Bedford tps.

14412 to 14419. July 27-19.—Approving standard mileage tariffs of United States,

Canadian, American, National and Pacific Ex. Cos., also tariff for Alberta Ry., and Irrigation Co., and standard mileage tariffs of Great Western, Dominion and Canadian Ex. Cos., to take effect Sept. 1.

14420. July 26.—Authorizing G.T.P. Branch Lines Co., to cross with its Melville Regina branch, C.P.R. main line in east half sec. 23, tp. 17, r. 20, w. 2 m., Sask., interlocking plant to be installed.

14421. July 31.—Relieving Windsor, Essex and Lake Shore Rapid Ry. from speed limitation at North Talbot Road crossing, Sandwich South tp., and from providing watchman there.

14422. July 28.—Authorizing G.T.R. to rebuild its most southerly track crossing Seventh Line Road, Oakville, Ont.

14423. July 27.—Approving location and detail plans of G.T.R. proposed station at Winona, Ont.; authorizing it to build additional track across public road between lots 4 and 5, Saltfleet tp., Ont., and a branch from its yard at Winona, to Hamilton, Grimsby and Beamsville Electric Ry spur.

14424. to 14426. July 28.—Authorizing G.T.R. to build sidings into premises of W. S. Morrison, Parry Sound, Ont., J. P. Dupuis, Montreal, and C. C. Morrison, Norwich, Ont.

14427. July 31.—Authorizing G.T.R. to use bridges 15 and 16 over St. Lawrence River at mileage 55.63 and 54.12.

14428. July 28.—Authorizing G.T.R. to build additional track across St. Annes and Bourdages Sts., St. Hyacinthe, Que.

14429. July 31.—Authorizing G.T.R. to rebuild bridge over Trout Creek, near St. Marys station, Ont.

14430 to 14433. July 25.—Temporarily approving agreements of Bell Telephone Co. with Dr. E. J. Foster, La Compagnie de Telephone de Beauce, Laurentide Telephone Co. and La Compagnie de Telephone St. Maurice et Champlain.

14434. July 25.—Approving C.N.R. location mileage 255.73 to 260.03 Alta.

14435. July 28.—Authorizing C.N.R. to build across public road between secs. 2 and 11, tp. 60, r. 26, w. 4, m., Alta.

14436. July 27.—Approving C.N.O.R. plan of station building at Shannonville.

14437. July 27.—Approving C.N.O.R. revised location through McGregor and McTavish tps, mileage 15.75 to 24.75, east from Port Arthur and 552.6 to 543.6 from Sudbury.

14438. July 28.—Authorizing C.N.R. to build across public road between secs. 11 and 14, tp. 60, r. 25, w. 4 m., Alta.

14439. July 29.—Approving C.N.O.R. plan of freight yard at Trenton.

14440. July 28.—Authorizing C.N.R. to build across and divert east and west road allowance, secs. 10 and 15, tp. 65, r. 22, w. 4 m., Alta.

14441. July 28.—Authorizing C.P.R. to build bridge 27.34, Cartier subdivision, Lake Superior Division.

14442 to 14445. July 24-31.—Authorizing C.P.R. to build two spurs for city of Winnipeg on lot D.G.S. 50, St. John, spurs for F. B. Hartney, West Toronto, Ont. Nicholson and Bain, and Provincial Lumber and Supply Co., Calgary, Alta.

14446. July 31.—Authorizing C.P.R. to close portion of road allowance along south boundary of sec. 27, tp. 32, r. 17, w. 2 m., Sask., and replace by road diversion, and cross same at mileage 46.01.

14447. July 29.—Authorizing C.P.R. to build bridge at mileage 31.2, Elmira, Ont.

14448. July 31.—Approving plan of clearance between C.P.R. main line and no. 1 track at overhead bridge, Brown St. West, Fort William, Ont.

14449, 14450. July 29-31.—Authorizing C.P.R. to build spurs for city of Toronto, between Perth and Symington Aves., and for Dominion Bridge Company, lot 5, Gloucester tp., Ont.

14451. July 28.—Authorizing C.P.R. to build bridge 62.8 over Thames River, Windsor subdivision, Ontario Division.

14452. July 31.—Authorizing C.N. Alberta Ry., to build across and divert north and south road allowance between secs. 32 and 33, tp. 54, r. 1, w. 5 m.

14453. July 31.—Approving Crows Nest Southern Ry. by-law 7.

14454, 14455. July 24.—Authorizing South Ontario Pacific Ry. (C.P.R.), to cross York Road by undercrossing, at mileage 15.77, Hamilton, to build its Guelph Jct., to Hamilton branch across highways at mileage 0.42 and 1.39, and to divert highway at mileage 1.31, Nassagaweya, tp., Ont.

14456 14457. July 24.—Approving G.T.P.R. stations at Exira and Lerose.

14458. July 27.—Authorizing G.T.R. to build connection between its main line from Orillia to Midland and its Wye Bridge cut off, at junction near Old Fort station, Ont.

14459 to 14461. July 29-28.—Approving bylaws of New Westminster Southern Ry., Victoria Terminal Ry. and Ferry Co., and

Victoria and Sidney Ry.; authorizing H. A. Jackson to prepare tariffs of freight tolls.

14462. July 11.—Ordering on complaint of St. Pierre village, Que., that foot crossing at St. Alexandre St., over G.T.R. and Montreal Park and Island Ry., to be open for pedestrians only; that foot path from Canadian Car and Foundry Co.'s works be closed; that farm crossing at Second Ave., Lachine parish, and that Simplex St. be made regular highway crossings; that town of Lachine have leave to convert Tenth Ave. into a public crossing, and that crossing at Notre Dame St., Lachine, be converted into regular highway crossing.

14463. Aug. 1.—Authorizing G.T.R. to build bridges at Jameson, Dunn and Dowling Aves., Toronto.

14464. Aug. 1.—Authorizing G.T.R. to build sidings into Golden Lake Lumber Co.'s premises on lot 10, South Algoma tp., Ont.

14465. July 29.—Ordering C.N.O.R. to make certain changes in respect of bridge in East Whitty tp., so as to allow for road traffic and free flow of water of creek.

14466. July 17.—Authorizing C.P.R. to build spurs for A. Bowerman and Cushing Bros., Saskatoon, Sask.

14467. Aug. 3.—Approving G.T.P.R. Cutknife branch, mileage 14.66, to 41.45.

14468. Aug. 3.—Authorizing G.T.P. Branch Lines Co., to carry traffic over its Melville-Regina branch from Ederly to Regina.

14469. Aug. 4.—Approving C.N.R. location, mileage 49.94 to 60.45, tps. 50-51, r. 20-21, w. 3 m., Sask.

14470. Aug. 2.—Authorizing C.P.R. to build bridge at mileage 95.15, Lake Superior Division.

14471. July 31.—Approving C.N.R. location through tps. 60-66, r. 25-22, w. 4 m., mileage 46.68 to 93.40, Alta.

14472 to 14474. Aug. 2-1.—Authorizing C.N.O.R. to build across public road between lots 361 and 360, con. 1, Chatham tp., Que.; across Point Anne Road, lots 20-21, Thurlow tp., Ont., and across public road between lots 430 and 436, con. 1, Chatham tp., Que.

14475 to 14478. Aug. 1-2.—Authorizing C. N. Alberta Ry. to build its St. Albert Western line over two crossings on Lac Ste. Anne trail, and two public roads.

14479. Aug. 1.—Extending to Oct. 31, time within which interlocking plant be installed by G.T.R. west of Fergus, Ont.

14480, 14481. Aug. 2.—Authorizing G.T.P. Branch Lines Co., to cross 14 highways with its Prince Albert branch, in Saskatchewan, and seven highways with its Calgary branch, in Alberta.

14482.—This order has not yet been issued.

14483. Aug. 2.—Authorizing G.T.P. Branch Lines Co., to build its Cutknife branch across 10 highways between mileage 1 and 14.7, Sask.

14484. Aug. 2.—Authorizing G.T.P.R. to build spur for Edmonton Portland Cement Co., secs. 6 and 7, tp. 53, r. 19, w. 5 m., Alta.

14485. Aug. 2.—Authorizing G.T.P. Branch Lines Co., to divert three highways on its Prince Albert Branch, at mileage 78.3, 94.6 and 107.3.

14486, 14487. Aug. 2.—Authorizing G.T.P. Branch Lines Co., to build its Moosejaw branch across highway mileage 1.1 to cross and divert highway, mileage 2.1; and cross nine highways, mileage 3.1 to 11.2, Sask.

14488. Aug. 9.—Approving location of C.P.R. Kerrobert Northeasterly branch for 20 miles from Kerrobert, Sask.

14489. Aug. 1.—Amending order 13880, June 10, approving location of G.T.P. Branch Lines Co., Calgary branch, and ordering that new plans to be subject to clause 20 of agreement between C.P.R. and G.T.P.R. be filed.

14490. Aug. 1.—Approving revised location of G.T.P. Branch Lines Co., Calgary Branch mileage 163.5 to 181.74 South Alberta, District, subject to agreement to cross C.P.R. irrigation ditches.

14491. Aug. 1.—Authorizing G.T.P. Branch Lines Co., to occupy C.P.R. lands for its Tofield-Calgary branch location, mileage 150 and 190, and revised location, mileage 163.97, subject to agreement between the companies.

14492. Aug. 3.—Rescinding order 14215, June 29, requiring C.P.R. to stop its morning and night trains at Gauthier's siding, Que.

14493. July 28.—Approving G.T.R. plan of clearance for its standard round house doors.

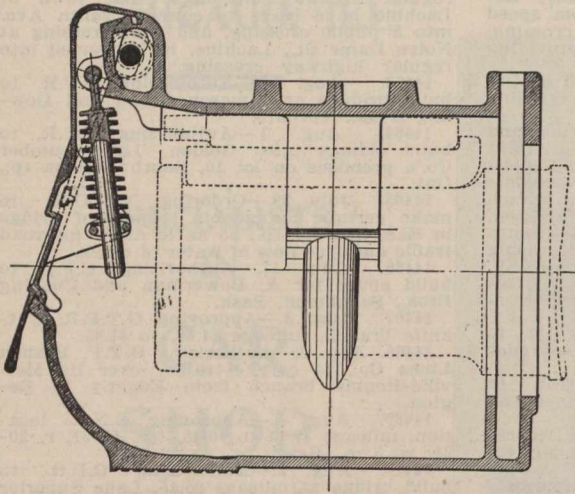
14494. Aug. 3.—Approving C.N.O.R. revised location, mileage 1.81 to 7.85 from Hawkesbury.

14495. Aug. 4.—Approving Supplement 2 to Canadian Classification 15, on application of Canadian Freight Association.

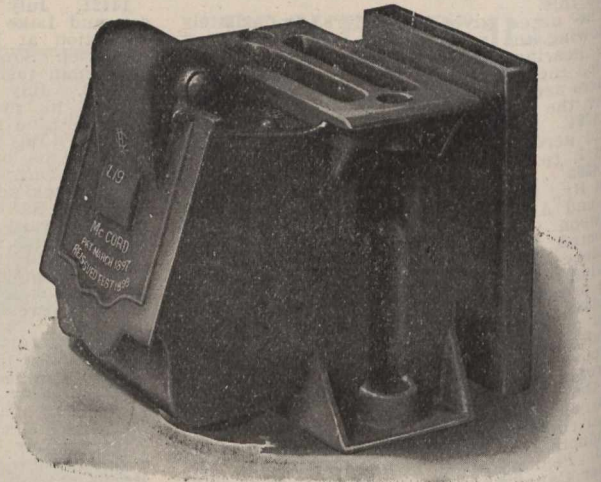
14496. July 18.—Approving temporary station location at mileage 9.4 from Ottawa, on C.P.R. Ottawa-Prescott branch.

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General Manager.

GEORGE RILEY
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14497. Aug. 4.—Authorizing C.P.R. to build spur for Bishop Construction Co., in lot cadastral 637, St. Laurent parish, Que.
14498. Aug. 3.—Authorizing C.P.R. to build its Estevan-Forward branch across 20 highways, mileage 0.49 to 19.386 and to cross and divert two highways, mileage 0.94 to 3.064.
14499. Aug. 9.—Authorizing C.P.R. to cross with extra track, seven highways from Smiths Falls to Bathurst, Ont., mileage 1.43 to 9.64.
14500. Aug. 9.—Authorizing G.T.P. Branch Lines Co., and C.P.R. to operate trains over interlocking plant at Alix, Alta., without being brought to a stop.
14501. Aug. 9.—Authorizing G.T.P. Branch Lines Co., to operate trains over C.P.R. at Yorkton, Sask.
14502. Aug. 9.—Authorizing G.T.R. to rebuild bridge 0.63 miles south of Richwood Station, Ont.
14503. Aug. 9.—Authorizing G.T.P. Branch Lines Co. to cross C.P.R. Pheasant Hills branch at Balcarres, Sask., interlocking plant to be installed.
14504. Aug. 8.—Authorizing C.P.R. to open for traffic its Craven-Colonsay branch, mileage 49.7, between Colonsay and Imperial, Sask.
14505. Aug. 8.—Authorizing Alberta Ry. and Irrigation Co., to open for traffic its Kimball branch from Rayley south for 8 miles.
14506. Aug. 8.—Authorizing C.N.R. to open for traffic its Rosburn extension, from Rhein to Hamton.
14507. Aug. 8.—Authorizing Algoma Eastern Ry. to divert road at mileage 22.98.
14508. 14509. Aug. 8.—Authorizing Toronto Eastern Ry. to build across Oshawa Electric Ry. at Simcoe St., and to carriage factory, Oshawa, Ont.
14510. Aug. 4.—Authorizing C.P.R. to build third track on north side of present tracks, between its Angus shops and Mile End, Montreal.
14511. Aug. 9.—Authorizing C.P.R. to build spur for Burns and Jordan, near Wandner, B.C.
14512. Aug. 8.—Authorizing C.P.R. to build spur for Cornellier and Joly, near Mile End Station, Montreal.
14513. Aug. 4.—Approving revised location of C.P.R. main line through part of Kamloops, B.C., and authorizing crossing of Lorn St.
14514. Aug. 9.—Authorizing C.P.R. to build bridge 5.9 over Twelve Mile Creek on its Guelph Junction-Hamilton branch.
14515. Aug. 9.—Authorizing C.P.R. to build spur to Dominion Gypsum Co.'s premises, St. James, Winnipeg.
14516. Aug. 9.—Authorizing C.P.R. to build spur for O. Martineau et Fils, St. Denis Ward, Montreal.
14517. Aug. 9.—Authorizing C.P.R. to build bridge 27.4 on its St. Stephen branch, Atlantic division.
14518. Aug. 5.—Approving C.N.R. location, mileage 0 to 41.71, Sask.
14519. Aug. 8.—Authorizing C.N.O.R. to build across Riviere des Prairies, west channel, Dorothee parish, at mileage 39.6 from Hawkesbury, Ont.
14520. Aug. 8.—Authorizing C.N.O.R. to connect with Central Ontario Ry. at Trenton, Ont.
14521. Aug. 5.—Approving revised location C.N.O.R. Sudbury-Port Arthur Line, mileage 536.00 to 517.73, from Sudbury Jct., mileage 32.4 to 50.6 east of Port Arthur.
14522. Aug. 5.—Authorizing the C.N.O.R. to build across highway, between lots 24 and 25, con. 4, Bastard tp.
14523. Aug. 5.—Authorizing C.N.R. to carry its Vegreville-Calgary branch over C.P.R. main line by overhead crossing in n.e. ¼ sec. 36, tp. 23, r. 1, w. 5 m., Alta.
14524. Aug. 8.—Approving, temporarily, G.T.P.R. Standard Freight Mileage Tariff C.R.C. 8, pending Board's inquiry into British Columbia rates.
14525. Aug. 4.—Extending to June 15, 1912, time in which G.T.P. Branch Lines Co. shall install interlocking plant at crossing of C.P.R. Arcola branch at Griffin, Sask.
14526. Aug. 8.—Authorizing G.T.P. Branch Lines Co., to cross and divert five highways on its Battleford branch, Sask.
14527. Aug. 5.—Authorizing G.T.P. Branch Lines Co., to cross with its Biggar-Calgary Branch the C.P.R. Lacombe branch at Druid, Alta., interlocking plant to be installed.
14528. Aug. 5.—Extending to Oct 1, time for installation of interlocking plant by G.T.P. Branch Lines Co., across C.N.R. at Dana, Sask.
14529. Aug. 5.—Authorizing G.T.P. Branch Lines Co. to cross 18 highways on its Cutknife branch, mileage 22.6 to 39.7, Sask.
14530. Aug. 8.—Approving location and plans of G.T.R. station at Thorndale, Ont.
14531. to 14533 Aug. 9-3.—Authorizing G.T.R. to build spurs into premises of St. Lawrence Flour Mills Co., Lachine Canal Bank, Montreal, Muskoka Wood Manufacturing Co., Huntsville, Ont., and Ham & Nott Co., Brantford, Ont.
14534. Aug. 14.—Approving location of G.T.P. Branch Lines Co. Brandon branch, mileage 0 to 18.36, Brandon District, Man.
14535. Aug. 15.—Authorizing M.C.R. to operate its trains over drawbridge and crossing of Niagara, St. Catharines and Toronto Ry., without being brought to a stop; interlocking plant being completed.
14536. Aug. 11.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.), to cross under highway between cons. 4 and 5, Ops. tp., Ont.
- 14537, 14538. Aug. 12.—Authorizing C.P.R. to build extra track across road allowance on west boundary sec. 2, tp. 8, r. 21, w. p.m. Man., lying north of its Winnipeg to Souris branch and to build extra track across Main St., Minnedosa, Man.
14539. Aug. 12.—Authorizing C.P.R. to build seven bridges on its Atlantic Eastern Ontario and Alberta divisions.
14540. Aug. 12.—Authorizing C.P.R. to build spur into premises of A. W. McGregor and A. Martin, Regina, Sask.
14541. Aug. 14.—Authorizing C.P.R. to build bridge 14.9 near Cooksville, Ont.
14542. Aug. 12.—Amending order 14285, July 18, re C.P.R. Smiths Falls-Bathurst double track highways crossing in Lanark County, Ont.
14543. Aug. 11.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.), to build spur across road allowance between cons. 7 and 8, Thorah tp., Ont.
14544. Aug. 12.—Authorizing C.P.R. to build second track across Edwin St., Perth, Ont.
14545. Aug. 14.—Authorizing Esquimaux and Nanaimo Ry. to build bridge 37.8 over Koksilah River, B.C.
14546. Aug. 14.—Ordering G.T.R. to build and complete bridge at Brooker's crossing, Front tp., Ont., before Oct. 31.
- 14547, 14548. Aug. 11.—Approving C.N.Q.R. and C.N.O.R. bylaws authorizing G. H. Shaw, General Traffic Manager, to issue tariffs of tolls for all traffic.
14549. Aug. 11.—Relieving G.T.P. Branch Lines Co. from speed limit of 15 and 10 miles an hour over its Tofield-Calgary branch.
14550. Aug. 12.—Authorizing G.T.P.R. to cross and divert highway in n.e. ¼ sec. 27, tp. 24, r. 10, w. 2 m. at mileage 100.9, Sask.
14551. Aug. 11.—Authorizing Hull Electric Co. to operate its cars over C.P.R. in Hull, Que. without being brought to a stop.
14552. Aug. 11.—Authorizing C.P.R. to use, pending completion of interlocking plant, crossing of James Bay Ry. (C.N.R.), at Brechin, Ont.
14553. Aug. 14.—Authorizing Toronto Eastern Ry. to cross 11 highways, mileage 0.9 to 7.7, Pickering, tp., Ont.
- 14554 to 14556. Aug. 12-14.—Relieving C.P.R., G.T.P.R., and M.C.R. respectively, from further protection at crossings in Rawdon tp., Ont., Ituna, Sask., and at highway east of Fargo, Ont.
14557. Aug. 14.—Authorizing Ottawa Electric Co. to maintain wires across C.P.R. in Rideau Park, Ottawa, Ont.
14558. Aug. 15.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to operate trains over interlocking plant without stopping, at Coldwater, Ont.
14559. Aug. 14.—Amending order 13968, Mar. 28,—re location of C.P.R. Hamiota to Birtle Branch, Man.
14560. Aug. 15.—Authorizing city of Sherbrooke, Que., to maintain sewer under G.T.R. in south ward.
14561. Aug. 15.—Authorizing city of Hamilton, Ont., to lay temporary level crossing over Hamilton Radial Electric Ry.
14562. Aug. 15.—Authorizing Alberta Government to build highway over C.P.R. in s.w. ¼ sec. 36, tp. 46, r. 22, w. 4 m.
14563. Aug. 16.—Authorizing Toronto, Hamilton and Buffalo Ry. to cross highway in con. 8, Pelham tp., Ont.
14564. Aug. 15.—Authorizing G.T.R. to build spur into Colonial Wood Products Co.'s premises, Thorold, Ont.
14565. Aug. 16.—Authorizing G.T.R. to use Port Hope viaduct at mileage 270.28, Eastern Division.
14566. Aug. 15.—Authorizing C.N.O.R. to divert spur at Trenton, Ont., authorized by order 12534, Dec. 12, 1910.
14567. Aug. 15.—Authorizing C.N.O.R. to build 90 ft. D.P.G. bridge across St. Charles River, at mileage 4.38 from Quebec.
- 14568, 14569. Aug. 15.—Authorizing C.N.O.R. to cross two public roads in Loughborough tp.
14570. Aug. 15.—Authorizing C.N.O.R. to build across Riviere du Chene, Que.
14571. Aug. 15.—Authorizing C.P.R. to build First St. West southwesterly across its main line and divert road allowance between sec. 33 and 34, tp. 19, r. 16, w. 4 m., Southesk, Alta.
14572. Aug. 15.—Authorizing C.P.R. to build three spurs for Canadian Tube and Iron Co., St. Patrick and Hamilton Sts., Montreal.
14573. Aug. 16.—Authorizing C.P.R. to build spur for Armour and Co., Regina, Sask.
14574. Aug. 16.—Authorizing C.P.R. to build across road allowances, mileage 128.16, 132.39, Moose Jaw subdivision.
14575. Aug. 15.—Authorizing C.P.R. to build bridge 4.30, Angus shops to Mile End Quarry Road, Montreal Terminals.
14576. Aug. 15.—Approving location of C.P.R. Waldo branch, Kootenay district, B.C.
14577. Aug. 15.—Authorizing C.N.R. to cross C.P.R. Mission Branch, B.C., for construction purposes only.
14578. Aug. 15.—Authorizing C.P.R. to build spur for A. B. Cushing Lumber Co., and sub-spur for Pacific Cartage Co., Calgary, Alta.
14579. Aug. 16.—Authorizing C.P.R. to build branch to A. Warren's premises, Toronto.
14580. Aug. 15.—Authorizing C.P.R. to build across road allowance between lots 15 and 16, con. 6, Ops. tp., Ont.
14581. Aug. 15.—Authorizing C.P.R. to build siding along Front St., Vancouver, B.C.
14582. Aug. 15.—Authorizing C.P.R. to build extra track across road allowances, Moose Jaw to Caron, Sask.
14583. Aug. 15.—Authorizing South Ontario Pacific Ry. (C.P.R.), to close portion of the Hamilton Road, replace same by diversion and to cross underneath with its Guelph Junction-Hamilton branch; also close portion of highway, mileage 14.05, replace by diversion and cross underneath at mileage 13.98.
14584. Aug. 14.—Approving C.P.R. station at Markinch, Sask., and extending time for building to Sept. 15.
14585. Aug. 16.—Approving C.P.R. Wilkie to Anglia branch, mileage 21 to 40, Sask.
14586. Aug. 17.—Authorizing C.N.O.R. to build bridge over Riviere des Milles Isles, at mileage 37.9 from Hawkesbury.
14587. Aug. 17.—Approving proposed Bott drains to be built under C.P.R. in West Nissouri and North Dorchester tps., Ont.
14588. Aug. 17.—Authorizing C.P.R. to build a switchback and spur for Sand and Supplies, Ltd., lot 31, con. 9, Dumfries, tp.
14589. Aug. 17.—Approving revised location of C.P.R. Bassano to Irricana branch, Alta.
14590. Aug. 17.—Approving portion of C.P.R. Bassano to Irricana branch, mileage 0, northwesterly for 20.2 miles.
14591. Aug. 18.—Approving Canadian Freight Association bulk grain bill of lading, subject to amendment of sec. 6.
14592. Aug. 19.—Relieving C.P.R. from further protection at first public highway crossing east of Tillbury station, Ont.
14593. Aug. 21.—Relieving G.T.R. from further protection of crossing at Hensall Station, Ont.
14594. Aug. 21.—Approving uniform tariff of express tolls on all cream, schedule B, excluding, and schedule C including collection and delivery, effective Sept. 30.
14595. Aug. 21.—Authorizing G.T.R. to build branch from Sauter St. to Hoyt Metal Co.'s premises, Toronto.
14596. Aug. 17.—Approving G.T.P. Branch Lines Co.'s Biggar-Calgary branch from sec. 2, tp. 31, r. 25, w. 3 m., to 4 m., Sask.
14597. Aug. 22.—Approving location of portion of C.P.R. Moose Jaw Southwesterly branch from main line for 35.59 miles.
14598. Aug. 22.—Approving detail plans A, of South Ontario Pacific Ry. (C.P.R.), bridge at mileage 15.37 from Guelph Jct.
14599. Aug. 18.—Authorizing C.P.R. to build spur for Breckenridge and Lund Coal Co., in s.e. ¼ sec. 26, tp. 7, r. 2, W. 5 m., Alta.
14600. Aug. 18.—Authorizing C.P.R. to build bridges 80.09, 46.37, and 3.2 on its Ontario, Lake Superior and Manitoba Divisions.
14601. Aug. 17.—Authorizing Kootenay and Alberta Ry. to build across 15 highways in Alberta.
14602. Aug. 23.—Approving C.N.R. location of its Swift Current extension through tp. 12, r. 23-25, w. 2 m., Sask., mileage 0 to 14.16 from junction with its Moose Jaw extension.
14603. Aug. 17.—Approving Algoma Central and Hudson Bay Ry. revised location at connection with C.P.R. at Hobon, Ont.
14604. Aug. 17.—Authorizing South Ontario Pacific Ry. (C.P.R.) to build its Guelph Junction-Hamilton branch across road allowance between con. 3 and 4, East Flamboro tp., Ont.
14605. Aug. 17.—Authorizing Calgary and Edmonton Ry. to carry by a bridge its main line across Edmonton, Yukon and Pa-

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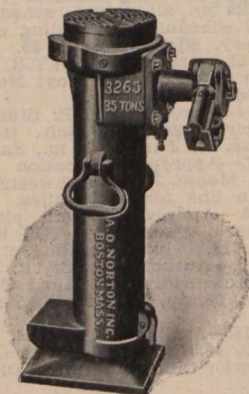
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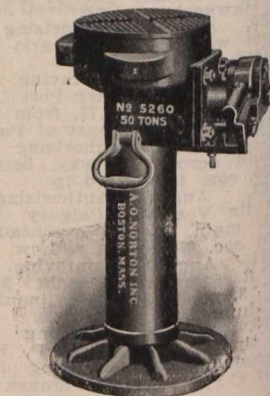


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- cific Ry. in Hudson Bay Reserve, North Saskatchewan River and Saskatchewan Ave. Edmonton, Alta.
14606. Aug. 21.—Granting application of city of Brandon, Man., for transfer track between C.P.R., Brandon, Saskatchewan and Hudson Bay Ry. (G.N.R.), and C.N.R., tariffs to be filed covering interchange charges.
14607. Aug. 18.—Authorizing C.P.R. to build spur for Holden and Service, near Pilot Butte station, Sask.
14608. Aug. 19.—Approving location of C.P.R. station at Waldeck, Sask.
14609. Aug. 18.—Authorizing C.N.O.R. to build bridge over Jock River, Nepean tp.
14610. Aug. 18.—Approving C.N.R. location through tps. 27-26, r. 8-6, w. 3 m., mileage 45.54 to 62.31, Sask.
14611. Aug. 18.—Authorizing C.N.R., subject to conditions, to build across and divert Maclead trail, to cross Thistle St., Pine St., Spruce Ave., Hungerford St., Poplar Ave., and Victoria Road, and to close and cross Lindsay and St. Joseph St., Calgary, Alta.
14612. 14613. Aug. 21, 31.—Authorizing C.P.R. to use bridge 16.16, Webbwood subdivision, Lake Superior Division, and bridge 43.3 on its Muskoka sub-division.
14614. Aug. 21.—Authorizing C.P.R. to build bridge 118.4 over Boundary Creek, Boundary sub-division, B.C. Division.
14615. Aug. 19.—Amending order 14342, July 19, re highway crossings of C.P.R. Moose Jaw Northwesterly branch.
14616. Aug. 18.—Approving C.N.R. location subject to certain conditions, through tp. 24, r. 1, w. 5 m., mileage 260.03 to 261.08, Calgary, Alta.
14617. Aug. 19.—Authorizing C.N.Q.R. to take for a ditch, portion of C. Barbeau's property, Les Ecureulle, parish, Que.
14618. Aug. 19.—Authorizing C.N.Q.R. to cross Montreal Terminal Ry., transfer track east side of La Salle Ave., Montreal.
14619. Aug. 24.—Authorizing C.P.R. (G.B. & S. Ry.) to build bridge over public road at mileage 56.4 Eldon tp., Ont.
14620. Aug. 23.—Authorizing Toronto Eastern Railway to cross public road 2nd concession Pickering tp., Ont.
14621. Aug. 24.—Authorizing G.T.P. to divert highway in n.w. ¼ sec. 31, tp. 21, r. 4, west 2nd m., at mileage 62.9.
14622. Aug. 24.—Authorizing G.T.R. to reconstruct bridge 7, over Thames River, near Thamesville, Ont.
14623. Aug. 24.—Authorizing G.T.R. to extend its siding into Anglo-Canadian Leather Co.'s premises, Bracebridge, Ont.
14624. Aug. 24.—Authorizing T. H. & B. Ry. to build siding to Schacht Motor Car Co.'s premises, Hamilton, Ont.
14625. 14626. Aug. 24.—Authorizing C.P.R. to build bridge 82.7, across Kettle River in district 3, Boundary subdivision, B.C. and bridge at mileage 24.3 on lots 1 and 2, Con. 6, South Orillia, tp., Ontario. (G.B. & S.R.)
14627. 14628. Aug. 24-25.—Authorizing C.P.R. to cross with its Moose Jaw Northwesterly branch, 22 highways between mileage 222.20 and 242.67 and with its Lauder Westerly extension (Tilston to Griffin) 22 highways, mileage 4.237 to 25.653.
14629. Aug. 28.—Directing G.T.R. to install within 90 days, improved type of electric bell at crossing of Wellington St. Drayton, Ont., 20% to be paid from railway grade crossing fund.
14630. Aug. 29.—Approving plans and specification for drain to be placed under G.T.R. by London tp., Ont.
14631. Aug. 25.—Authorizing T. H. & B. Ry. to operate spurs to American Can Co.'s premises, Hamilton, Ont.
14632. Aug. 28.—Approving character of Cook drain, to be built under G.T.R. by Logan tp., Ont.
14633. Aug. 28.—Authorizing C.N.R. to cross 6 highways in Saskatchewan.
14634. Aug. 29.—Approving location of C.N.R. through tps. 11 and 12, ranges 25-26, west 2nd m., Sask., mileage 14.16 to 26.38.
14635. Aug. 28.—Authorizing C.N.O.R. to cross and divert Beckwith Road, Smiths Falls.
14636. Aug. 28.—Authorizing C.N.R. to cross with its Prince Albert-Battleford line, 11 highways in Saskatchewan.
14637. Aug. 29.—Authorizing C.N.R. to cross 12 highways in Saskatchewan.
14638. Aug. 28.—Authorizing Algoma Central and H. B. Ry. to open for traffic portion of Magpie branch connecting with Josephine branch at mileage 17 and extending northerly for about 9½ miles.
14639. Aug. 28.—Authorizing C.P.R. to build two additional tracks across St. Clair Ave. and Scarlett Rd. at West Toronto station until subway at Scarlett Rd. is completed.
14640. Aug. 28.—Authorizing C.P.R. to extend Calgary Brewing and Malting Co.'s spur at Bengal, Alta.
14641. Aug. 28.—Authorizing Esquimalt & Nanaimo Ry. to build bridge 4.0.
14642. Aug. 28.—Authorizing Quebec Ry., Light and Power Co., to open for traffic the north track of its Montmorency branch near Beauport station to near Montmorency rails, 3.4 miles.
14643. Aug. 28.—Authorizing G.T.P.R. to divert highway in n.e. ¼ of sec. 25, tp. 20, r. 2, w. 2nd m., mileage 44.2, Sask.
14644. Aug. 25.—Authorizing G.T.R. to build siding to C. J. Miller & Son's premises South Orillia, Ont.
14645. Aug. 30.—Relieving G.T.R. from further protection at crossing of Brunswick St., Stratford, Ont.
- 14646, 14647, Aug. 30.—Relieving C.P.R. from further protection at St. Jovite, Laurentian subdivision, Que., and at east end of Hitchcock station, on its Portal section, Sask.
14648. Aug. 29.—Authorizing G.T.R. to construct siding to Independent Glass Producers' premises, Toronto.
14649. Aug. 30.—Authorizing C.P.R. to divert road allowance between cons. 7 and 8, Town Line Road between Manvers and Cavan tps, at mileage 87.36, G.B. & S. Ry.
- 14650, 14651. Aug. 30.—Authorizing C.P.R. to construct spur for Maxwell & Hood, block 27, D.G.S., 53, St. James, Winnipeg, and spur for O. Velie, Argola, Sask.
- 14652, 14653, Aug. 30.—Authorizing Toronto Eastern Ry. to cross two public roads in 1st con., Pickering tp., Ont.
14654. Aug. 30.—Authorizing C.P.R. (G. B. & S. Ry.) to cross highway between cons. 6 and 7, Manvers tp., Ont.
14655. Aug. 31.—Relieving C.P.R. from further protection at crossing at mileage 9, St. Brigid Parish, Que.
14656. Aug. 29.—Authorizing G.T.R. to build spur west of Rockfield station, Que., to St. Lawrence Bridge Co.'s premises.
14657. Aug. 31.—Authorizing Montreal & Southern Counties Ry. to open for traffic railway from Front St., St. Lambert, to the Country Club, about one mile.
- 14658, 14660. Aug. 30-31.—Approving location of C.P.R. stations to be built at Luseland, Sask., Vernon, B.C., Milden, Herschel, Plenty, Kerrobert and Conquest, Sask.
14661. Aug. 21.—Authorizing G.T.P.R. to increase speed limit on its trains, from Prince Rupert easterly 100 miles, to 30 miles an hour.
14662. Sept. 1.—Extending to Oct. 15 time for filing of Dominion Ex. Co.'s Standard Mileage Tariffs of Maximum Tolls.
14663. Sept. 1.—Approving G.T.R. plans for terrace over C.P.R. and Hull Electric Ry. at west side Chateau Laurier, Ottawa.
14664. Sept. 2.—Authorizing G.T.R. to build spur into Anthes Foundry, Toronto.
14665. Sept. 2.—Authorizing G.T.R. to build branch at Nipissing Jct., Ont., crossing C.P.R. and connecting with T. & N.O.R.; interlocker to be installed.
- 14666 to 14668. Sept. 2.—Approving C.N.O.R. location through Booth, Purdom and Ledger tps. and unsurveyed territory, Thunder Bay District, mileage 84 to 100, 100 to 120, and 160 to 179, from Port Arthur.
- 14669, 14670. Sept. 2.—Authorizing C.N.R. to cross with its Prince Albert-Battleford line, five highways, and to cross three other highways in Saskatchewan.
14671. Sept. 2.—Authorizing C.N.O.R. to build station at St. Andrews, Que., and approving location.
14672. Aug. 31.—Authorizing C.N.R. to cross with its Swift Current extension nine highways in Saskatchewan.
14673. Sept. 2.—Authorizing Algoma Central and Hudson Bay Ry. to cross C.N.O.R. at mileage 80.54 on its Port Arthur-Sudbury branch; interlocker to be installed.
14674. Sept. 2.—Authorizing C.P.R. to close highway at mileage 96.6, Mountain tp., Ont.
14675. Sept. 2.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.), to close portion of road allowance in Eldon tp., Ont.
- 14676, 14677. Aug. 30, Sept. 2.—Authorizing C.P.R. to cross with its Lacombe easterly branch 21 highways in Alberta, and to build across six highways with its Regina, Saskatoon and North Saskatchewan branch, from mileage 15.09 to 22.646, Sask.
14678. Sept. 2.—Approving location of C.P.R. Langdon North branch from mileage 40.1 to 102.1 Alta.
14679. Sept. 1.—Authorizing Essex Terminal Ry. to build overhead crossing over M.C.R. Detroit River tunnel tracks at Windsor, Ont.
14680. Sept. 1.—Approving Kettle Valley Ry. location from mileage 0 to 5, B.C.
14681. Sept. 1.—Ordering G.T.P. Branch Lines Co., to build overhead crossing in n.e. ¼ sec. 36, tp. 39, r. 23, w. 4 m., Alta., within 90 days, under penalty of \$25 a day.
14682. Sept. 2.—Approving Alberta Central Ry. location from mileage 120 to 160, east of Red Deer, Alta.
14683. Sept. 2.—Approving detail plan for C.P.R. subway at Scarlet Road, York tp., Ont.
14684. Sept. 2.—Authorizing C.P.R. to build its Swift Current to Brooks branch across seven highways in Saskatchewan.
14685. Aug. 18.—Ordering C.N.Q.R. to make certain changes in train service on its Laurentian subdivision to connect with C.P.R. train at Three Rivers.
14686. Aug. 1.—Authorizing G.T.P. Branch Lines Co. to cross with its Tofteld-Calgary branch, the C.P.R. Langdon Branch in n.e. ¼ sec. 34, tp. 27, r. 26, w. 4 m., Alta.
14687. Aug. 5.—Authorizing G.T.R. to take certain lands of Mrs. J. A. Wright and Rockneid Land Co., in Lachine Parish, Que. for overhead crossing of Lachine Rd.
14688. Sept. 2.—Authorizing Toronto Carpet Co. to build a bridge across its siding, King St. West, Toronto.
14689. Aug. 23.—Suspending White Pass and Yukon Route Tarius C.R.C. 15, to take effect Sept. 1, until further evidence is heard at Board's sitting in Oct.
14690. Sept. 5.—Authorizing South Ontario Pacific Ry. (C.P.R.), to build its Guelpa Jct. to Hamilton line under bridge at Dundas St., Waterdown, Ont.
14691. Sept. 2.—Authorizing C.P.R. to build its Bulyea South Branch across nine highways.
14692. Sept. 5.—Authorizing C.N.O.R. to build across Elmsley St., Smiths Falls.
- 14693, 14694. Sept. 5.—Authorizing C.P.R. to build spurs for Herbert Rolling Mills Co., Herbert, Sask., and for Haug Bros., and Nellerme Co., Regina, Sask.
14695. Sept. 5.—Authorizing C.P.R. to rebuild six bridges on British Columbia and Lake Superior divisions.
14696. Sept. 5.—Authorizing G.T.R. to build siding into Houedry & Son's premises, Peterboro, Ont.
14697. Sept. 5.—Authorizing G.T.R. to maintain additional passing track across public highway east of Oshawa station, Ont.
14698. Sept. 5.—Authorizing G.T.R. to maintain siding to J. Heney & Son's premises, Ottawa.
- 14699 to 14705. Sept. 5.—Approving Kettle Valley Ry. plans for bridges over Coldwater and Kettle Rivers, B.C.
14706. Sept. 6.—Approving Brandon, Saskatchewan and Hudson Bay Ry. bylaw authorizing H. T. Noble G.P.A., to prepare and issue tariffs.
14707. Sept. 6.—Granting certificate correcting error in Georgian Bay and Seaboard Ry. (C.P.R.), location plan.
14708. Sept. 5.—Authorizing C.P.R. to build spur to C.P.R. mill site, mileage 5, west of Ignace, Ont.
14709. Sept. 6.—Authorizing C.P.R. to build spur for Manitoba Government Telephones, Winnipeg.
14710. Sept. 6.—Authorizing Alberta Central Ry. to build bridges over highway at mileage 20, 29 and 29.8 between Red Deer and Rocky Mountain House.
14711. Sept. 5.—Authorizing Montreal Terminal Ry. to build spur into Raymond Cement Products Co.'s premises, Montreal East, Que.

The Canadian North-Eastern Ry.'s standard passenger tariff, standard freight tariff and standard passenger and wharf terminal have been approved by the British Columbia Minister of Railways, under the provisions of the B.C. Railway Act, 1911. The tariffs are signed by N. McL. Curran, Managing Director.

Master Mechanics and Master Car Builders Committees.—Announcement has been made of the appointment of committees for the American Railway Master Mechanics Association and the Master Car Builders Association for the current year. On the Master Mechanics Committee are the following Canadian officials: H. H. Vaughan, Assistant to the Vice President, C.P.R., on Consolidation, and on Maintenance of Superheater Locomotives; W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, on Safety Valves; L. R. Johnson, Assistant Superintendent of Motive Power, C.P.R. Eastern Lines, Montreal, on Steel Tires; R. W. Burnett, General Master Car Builder, C.P.R., is on two of the Master Car Builders committees, namely, Car Wheels and Car Trucks.

Electric Headlight Saves Train

(From Daily Papers)

"Wednesday night B—— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the —— Canyon near —— . The warning light was seen in time to enable the freight to get back on to the siding at —— ."

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Alberta Central Ry.—The Board of Railway Commissioners has approved of location plans of the line from mileage 120 to 160 easterly from Red Deer, Alta., and has authorized the building of bridges on the line under construction westerly from Red Deer to Rocky Mountain House, Alta., at mileage 20, 29, and 29.8. (Sept., pg. 853.)

Alberta Ry. and Irrigation Co.—The Board of Railway Commissioners has authorized the opening for traffic of the Kimball branch, which runs from Raley, Alta., to Wolford, about eight miles. The route was described in our issue of Oct. 1909, pg. 743, at which time the grading was being done, and track was laid in the same year.

The provincial government has decided to appeal to the Imperial Privy Council as to the construction of bridges across the irrigation canals. The company disputes its liability to build bridges on road allowances on which there was regular travel at the time of the building of the canal, and the decision of the courts endorsing this view is being appealed against. (July, pg. 645.)

Algoma Central and Hudson Bay Ry.

—The Board of Railway Commissioners has approved of the revised location plans of the connection with the C.P.R. transcontinental line at Hobon, Ont., and has authorized the building of the extension from Hobon to the National Transcontinental Ry. across the Canadian Northern Ontario Montreal-Port Arthur line at mileage 80.94, at which point an interlocking plant is to be installed. The starting point of this extension is at Hobon, mileage 194.5 north of Sault Ste. Marie, and the route will follow the east side of Oba lake and river to the National Transcontinental Ry., 142 miles west of Cochrane, a distance of about 102 miles. The maximum gradient will be 0.6% and the maximum curvature six degrees. Following are some details stated to have been supplied by an officer: On the first 50 miles the average quantities per mile are as follows: excavating solid rock, 5,238 cu. yds.; loose rock, 5,760 cu. yds.; common excavation, 14,625 cu. yds., and overhaul, 36,850 cu. yds. The balance of the work will average per mile: solid rock, 93 cu. yds.; loose rock, 610 cu. yds.; common excavation, 16,330 cu. yds., and overhaul 35,480 cu. yds. There will probably be two steel bridges in the future. The present construction work calls for putting up 25 pile bridges. There will be a number of stations, water tanks and a coaling plant. (Sept., pg. 853.)

Algoma Eastern Ry.—The Board of Railway Commissioners has authorized the building of bridges over the Whitefish River and over the Spanish River at mileage 66.23 and 42.80 and over the trunk road in Merritt tp., at mileage 47.38. (Aug., pg. 733.)

Atlantic, Quebec and Western Ry.—Track has been laid on the extension of this line into Gaspé, Que., and C. R. Scoles, the General Manager, arrived there Sept. 4, in his private car. It is expected that a regular train service will be put on early in Oct. (See Atlantic and Lake Superior Ry., Sept., pg. 853.)

Blomidon Ry.—The provisional directors named in the act of the Nova Scotia Legislature incorporating the company are: A. S. Burgess, H. Bigelow, A. M. Covert, Canning, N.S.; H. H. Wickwire, Kentville, N. S.; L. S. Macann, Ottawa. The line authorized is to start from Canning on the Cornwallis branch of the Dominion Atlantic

Ry., and will extend to Cape Blomidon via Woodside, North Corner, Upper Pereaux and Delhaven; with a branch to Cape Split, via Scotts Bay, and from Wolfville to Canning via Port Williams, Starr's Point and Canard. (Mar., pg. 409.)

Brandon Transfer Ry.—The Board of Railway Commissioners has granted the application of the city of Brandon, Man. for a transfer track between the C.P.R. the Canadian Northern Ry., and the Brandon, Saskatchewan and Hudson Bay Ry., (Great Northern Ry.) and has directed the filing of tariffs covering the interchange charges.

British Columbia and Alaska Ry.—Officers of the company visiting Fort George, B.C., recently said the company was not ready to announce plans for construction but hoped to be able to give out definite information in a short time. The plans for the route between Vancouver and Fort George, have been deposited with the Provincial Department of Railways at Victoria. (See B.C. Ry. and Development Co., Sept., pg. 853.)

A Canada-Siberia Railway.—Russian engineers, cables state, are again considering the question of constructing a tunnel under Behring Strait, with a view of connecting up the Trans-Siberian Railway with Alaska, and consequently with Canadian and United States railways. The Trans-Siberian Railway can be extended to East Cape, and the Alaskan lines to Cape Prince of Wales, between which points the strait is 26 miles wide, and has an average depth of water of about 180 ft. About midway across the strait are two islands which would divide the tunnel into two sections.

C. Erlund, who was engaged on the construction of the Trans-Siberian Railway, was in Vancouver at the end of Aug. looking over the proposition for the building of a railway from Vancouver to the Peace River.

Chicago, Milwaukee and St. Paul Ry.—Chicago, Milwaukee and Puget Sound Ry.—Press reports state that the C.M. and St. P. Ry. has under consideration plans for the extension of one of its North Dakota branches into Saskatchewan.

Another report credits the C.M. and P.S. Ry. with negotiating for the Indian reservation just north of Surrey, Wash., and with being engaged in locating a route for a line parallel with that of the Great Northern Ry., from Everett, Wash. to Vancouver, B.C. (Sept., pg. 853.)

Delaware and Hudson Co.—The Board of Railway Commissioners has ordered the Napierville Jct. Ry., one of the lines owned in Canada by the D. and H. Co., to file plans for a station building at Nelson Jct., by Oct. 19. (July, 1910, pg. 547.)

Edmonton to Peace River.—Recent press reports state that J. D. McArthur, railway contractor, Winnipeg, has acquired the Edmonton, Dunvegan and Peace River Ry Co.'s charter, and that survey parties are being placed in the field to locate a route for the first section of the work, from Edmonton to Dunvegan, Alta.

There is probably some error in this item, particularly as to the title of the company. The Edmonton, Dunvegan and British Columbia Ry. was incorporated by the Dominion Parliament in 1907, to build a railway from Edmonton to Dunvegan, thence via the Peace and Parsnip river valleys to Fort George, B.C., the provisional directors being: J. B. MacDonald, Winnipeg; J. A. Sandgreen, Edmonton, Alta.; C. Pringle, Ottawa; T. G. Gallagher, Spokane, Wash. An extension of powers was granted in 1908, and an extension of time for construction in 1910. (See Edmonton,

Dunvegan and British Columbia Ry., July, 1910, pg. 547.)

Essex Terminal Ry.—The Board of Railway Commissioners has authorized the line to be carried by an overhead crossing over the Detroit River Tunnel tracks at Windsor, Ont. (Sept., pg. 853.)

Ha Ha Bay Ry.—Senator Choquette, President, has made an inspection of the branch line to Laterriere village, Que., seven miles in length, which is practically completed. It is expected to have it opened for traffic early in Oct. (Mar., pg. 205.)

Intercolonial Ry.—Tenders will be received by the Department of Railways and Canals to Oct. 12, for the building of a branch line from near Alba to Baddeck, N.S., 22.7 miles. A description of this line was given in our July issue, pg. 647.

Tenders are under consideration for the building of the Hampton spur line, extending from Hampton station to Hampton village, N.B. This will not be a very important piece of construction, as the sum voted by the Dominion Parliament for it is only \$15,000. Tenders for the construction of the projected line from Guysboro to deep water at Country Harbor, 72 miles, and the line from Dartmouth to Deans, 43.2 miles, are also under consideration. (Sept., pg. 853.)

Tenders are also being asked for the construction of the Moncton yard and cut-off.

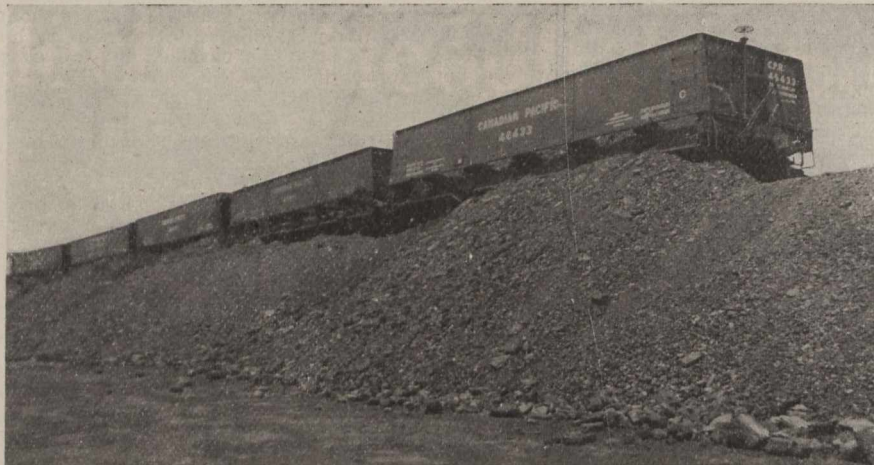
Joliette and Lake Manuan Colonization Ry.—Press reports state that a contract has been let to a New York firm in conjunction with an Ottawa contractor, and that R. F. H. Bruce, Ottawa, the chief engineer, went to Joliette, Que., Sept. 7, to arrange for the immediate starting of construction on the first 60 miles of the line.

Following are the directors for the current year elected at the annual meeting, held in Montreal, Sept. 6, Senator Belcourt, who was subsequently elected President; S. G. Lemoque, R. Chevrier, L. C. Morrisette, R. Ritchie, K.C., Ottawa; E. S. Daniel, De A. Laredo, London, Eng. (July, pg. 647.)

Kaslo and Slocan Ry.—The Premier of British Columbia is reported to have informed the mayor of Kaslo, Sept. 4, that the reconstruction of the K. and S. Ry. would be taken in hand by the new owners at once, and that the aid promised by the Government would be available as soon as the company was in a position to claim it. (Aug., pg. 733.)

Kettle Valley Lines.—The line under construction from Midway via the Hope Mountains to the Fraser River is making rapid progress. About 20 miles of track is reported to have been laid northward along the west fork of the Kettle River, and 10 miles of additional grading has been done. Further up the stream grading is going on on a 35-mile section, which has its westerly termination at Kettle Valley summit, about 45 miles from Pentiction. At this place it is proposed to build a four mile spur to Dog Lake, and preliminary surveys are reported to have been made for a branch towards Summerland. J. J. Warren, President, and A. McCullough, Chief Engineer, are negotiating with the local authorities as to the building of the lines in the vicinity of Pentiction.

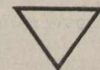
A contract has been let to L. M. Rice and Co., Inc., Seattle, Wash. and Vancouver, B.C., for the construction of a 40 mile section of the line from Pentiction, along the west side of Okanagan Lake to Trout Creek, and along Trout Creek to Osprey Lake summit. The maximum curvature is 10 degrees and the maximum gradient 2%. There is considerable rock work on the construction all along being classed heavy.



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It is reported that a sub-contract has been let to McLean and Mitchell, Spokane, Wash., for a section of this mileage, and that their grading outfits have already started work. From Osprey summit to Otter summit, the distance is 75 miles, and from Otter summit to Merritt, 30 miles. Track has been laid on the first 20 miles out of Merritt, and the grading on the remaining 10 miles to Otter Summit is well advanced. The line is to be extended from the Otter summit across the Hope Mountains to Hope, where a bridge will be built across the Fraser River to afford a connection with the C.P.R. transcontinental line.

The Board of Railway Commissioners has approved location plans of the line from mileage 0 to 5, and plans for bridges crossing the Coldwater and Kettle rivers.

The Spokane and British Columbia Ry., which is the Washington end of the K.V.R., is fighting in the U.S. law courts with the Great Northern Ry. over a right of way through the Colville reservation grant, in connection with its projected railway from Republic to Spokane, Wash. A Spokane dispatch says if the S. and B.C.R. succeeds in its contention, the line will be at once built, the C.P.R. doing the financing, and the whole of the Kettle Valley Lines being taken over. (Aug., pg. 733.)

Kingston and Pembroke Ry.—It is proposed to carry out a number of improvements and repairs, other than ordinary maintenance, on the line during the current year. These works include the relaying of 30 miles of track with new 65 lb. steel rails, a considerable expenditure on ballasting and ditching, bridging and culverts, new fencing and buildings, besides work at the Y's at Sharbot Lake and Renfrew, Ont.

Kootenay and Alberta Ry.—The crossing of 15 highways in Alberta by the company's projected railway has been authorized by the Board of Railway Commissioners. (July, pg. 647.)

Lingan Coal Co.—The Atlantic Coal Co. was incorporated by the Nova Scotia Legislature in 1902 to carry on coal mining in Nova Scotia, and in connection therewith to build railways. The provisional directors were A.C. H. and H. S. Ross, of Sydney, N.S. The Legislature last session changed the name of the company to the Lingan Coal Co.

The Liverpool and Caledonia Ry. Co. was incorporated at the last session of the Nova Scotia Legislature, to build a railway from a shipping point in Queen's county, to Caledonia, and thence to a shipping point on the Bay of Fundy in Annapolis county, with branches to make connections with other lines, etc. The company may operate the line by steam, electricity or any other power. The provisional directors are D. H. Foresman, V. J. Paton, Bridgewater, N.S.; J. M. Hastings, Pittsburgh, Pa.; C. O. Shepherd, New York. (May, pg. 411.)

London and Port Stanley Ry.—In connection with the approaching termination of the lease of this line to the Pere Marquette Rd. (as successor to the Lake Erie and Detroit River Ry.) the London city council, which owns the line, is considering the question of electrifying it. It was reported to the council that the P.M.R. has been doing the minimum of repairs and that the road-bed is deteriorating. (Feb., pg. 111.)

Minneapolis and St. Louis Rd.—Iowa Central Ry.—W. G. Baird, Vice President, is quoted as having recently stated that there is to be no merger of the Minneapolis and St. Louis Rd. and the Iowa Central Ry., consequent on the appointment of N. Erb as President of both companies, and that there is no foundation in the report that the companies' lines will be extended to the Can-

adian boundary so as to connect with the Canadian Northern and G.T. Pacific railways. Notwithstanding this, the New York Financial World, states that N. Erb represents interests associated with the Canadian Northern Ry., and the G.T. Pacific Ry. and that the Minneapolis and St. Louis Rd. will build 250 miles of line from its present terminus in South Dakota, to connect at the international boundary with C.N.R. and G.T.P.R. lines. Later reports state that the Iowa Central Ry. will be extended to St. Louis, Mo., and that there would thus be formed a through connection between the Canadian lines and St. Louis, the Mississippi River giving water connection with the Gulf of Mexico.

Another report states that connection will be made with the Canadian lines by a line to be built from either Leola or Watertown, S.D., and that another line will be built from St. Paul, Minn., to Winnipeg, Man. (Sept., pg. 829.)

Pacific Trans-Canada and Hudson Bay Ry.—Application will be made next session of the Dominion Parliament for an act incorporating a company with this title to build a line from Edmonton northerly to Athabasca Landing, thence north westerly, northeast of Lesser Slave Lake to Wabisca or Loon River, thence northerly to the confluence of the Loon and Peace rivers, or that of the Red and Peace Rivers, near Fort Vermillion, thence northerly to Fort Smith, with a branch from the crossing of the Wabisca or Loon rivers easterly to Fort Murray, and on to Fort Churchill or Port Nelson, on Hudson Bay, and another from the same starting point westerly via Laurier Pass to Prince Rupert or Portland Canal, B.C. Smith and Johnston, Ottawa, are solicitors for applicants.

Prince Edward Island Ry.—Tenders are under consideration by the Department of Railways for the construction of a branch line from O'Leary to West Point, and tenders have been asked for building of a line from Stanley Bridge to New London, P.E.I. and for a line from Clifton highway bridge to Stanley bridge, about 3.75 miles. Votes on account of the construction of these lines were made last session of the Dominion Parliament. (Sept., pg. 855.)

Quebec and Saguenay Ry.—We are advised that the section of the line from Point a Pic wharf to the Chutes, (where there is a large pulp mill under construction by the East Canada Pulp Co.) will be completed this fall. A 65-ton locomotive and 12 flat cars have been delivered for ballasting the line and transporting the machinery from the wharf to the mill site. The Bishop Construction Co., Montreal and Toronto, has the contract for this section of the work. It is expected that surveys for the continuation of the line from the Chutes towards Cape Charles, at the mouth of the Straits of Belle Isle, will be started this fall. (Sept., pg. 855.)

Quinze River and Ottawa Ry.—The Dominion Parliament will be asked next session to incorporate a company with this title to build a railway from near Kipawa, connecting there with the C.P.R. Kipawa branch northwesterly to the Quinze River. Smith and Johnston, Ottawa, are solicitors for applicants.

Reid Newfoundland Ry.—W. D. Reid, President, made a trip of inspection over the Bonavista branch line, Sept. 9, preparatory to its being opened for traffic. (Sept., pg. 855.)

St. John Valley Ry.—The Provincial Secretary of New Brunswick, in a recent speech said he expected that, within a few weeks the Government would receive information from England that the necessary funds for financing construction would be forthcoming. A contract between the St. John and Quebec

Ry. and the Provincial Government for the building of the line from St. John to Grand Falls, N.B., had been agreed to, and another for the operation of the line by the Intercolonial Ry. had been prepared. As soon as the Government's financial agents in London, Eng., approved of these, the starting of construction would be arranged. (Sept. pg. 855.)

The Shelburne and Bear River Ry. Co. was incorporated at the last session of the Nova Scotia Legislature, to build a railway from Shelburne to Bear River, with branches to any shipping point in the counties of Digby or Annapolis. The provisional directors are: J. A. McElwain, C. J. Prescott, S. King, Boston, Mass. V. J. Paton, Lunenburg, N.S. (May, pg. 413.)

Sydney and Louisburg Ry. Co.—The Nova Scotia Legislature has authorized this company to acquire the railway, rolling stock and terminals of the Dominion Coal Co.

Sydney, Waterford and East Bay Mono Rail Ry.—The company is authorized to build a railway or monorail line in Cape Breton county, from Sydney to East Bay, and from Sydney to New Waterford, N.S. The company is also authorized to acquire other railways already built in the county. The provisional directors are: D. McQuaig, J. P. Joy, J. B. McCormack, D. A. Cameron, Sydney, N.S. (May, pg. 413.)

Temiskaming and Northern Ontario Ry.—The Commission has laid out a townsite at Iroquois Falls, Ont. the starting point of the branch to the Porcupine district. A passenger service has been started on the branch to South Porcupine, and the spur line to the Dome, with a branch to Dome extension has been completed. The extension of the Porcupine branch to Pearl Lake is being proceeded with. The proposed terminus of the extension is the Campbell veteran claim, west of the Hollinger mine. (Sept., pg. 855.)

Vancouver, Westminster and Yukon Ry.—Test holes are now being driven on the site proposed by the V.W. and Y. Ry. for the bridge to be built jointly with the Burrard Inlet Tunnel and Bridge Co., across the Second Narrows of Burrard Inlet. The trestle work is also being erected on the site. (Sept., pg. 855.)

Elgin and Havelock Railway.

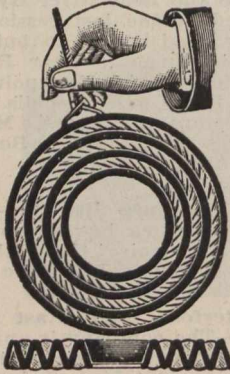
The report for the year ended June 30, presented at the annual meeting at Halifax, N.S., Sept. 6, shows assets consisting of plant and equipment, of \$96,959.96, and liabilities of \$107,203.73, made up as follows: capital account, \$44,900; accounts payable \$521.53; cash, \$1,807.21; bond interest, \$9,974.99; bond account, \$50,000.

PROFIT AND LOSS ACCOUNT.

Freight earnings—		
Elgin	\$3,383.94	
Havelock	4,772.22	
Petiteodiac	596.17	
	\$8,752.33	
Less paid I.C.R.	1,132.14	\$7,620.19
Passenger earnings	\$3,193.02	
Less paid I.C.R.	592.33	
	2,600.49	
Dominion Express Co.	91.46	
Post Office Department	676.08	
Balance	10,243.77	
	\$21,231.99	
Balance from June 30, 1910	\$8,350.88	
Bond interest	2,500.00	
Operating expenses	10,381.61	
	\$21,231.99	

Following are the officers and directors for the current year: President, R. T. Harris, K.C., other directors, B. F. Pearson, K.C., and C. H. Cahan, K.C.

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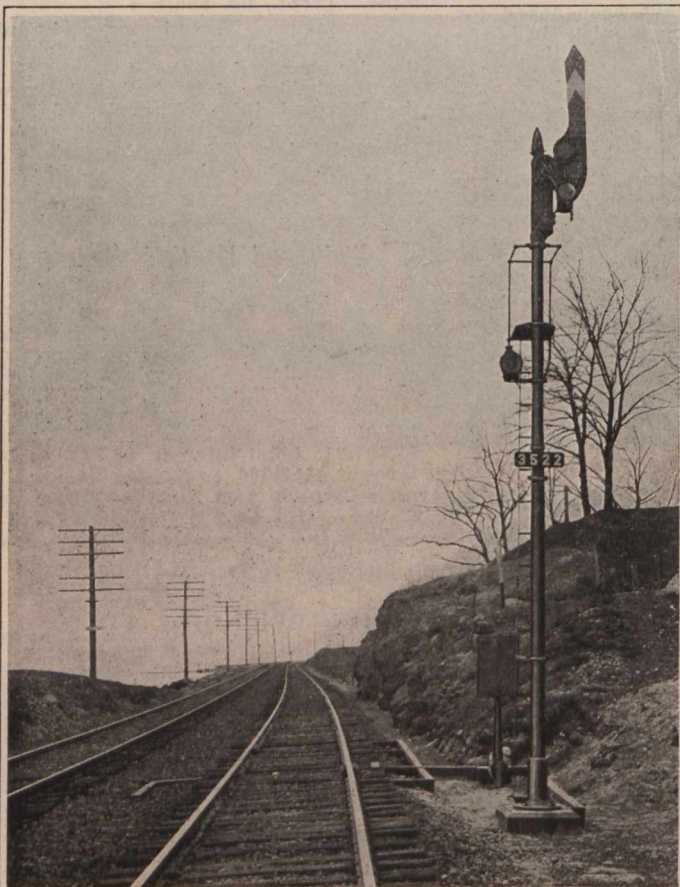
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Great Northern Railway Lines in Canada.

Midland Great Northern Ry. or Midland Ry. of Manitoba.—While all the negotiations respecting the location of what are known as the "Midland" terminals have taken place between the Winnipeg city council and representatives of the Great Northern Ry., there is some speculation as to what interests are really behind the matter. The Midland Ry. Co., of Manitoba's charter originally obtained primarily in the interests of the Northern Pacific Ry., but the two lines already built under it, were built by the G.N.R., and are being operated by it. The Midland Great Northern Ry. was incorporated with power to take over the Midland Ry. of Manitoba, and in the negotiations sometimes one name was used and sometimes the other. Local papers of recent date state that the Northern Pacific Ry. has an interest equal to that of the G.N.R. in the line now being built into Winnipeg, and in the terminals being laid out, whatever may be the ownership of the lines, to Portage la Prairie, and to Morden.

Track laying has been started on the line in Winnipeg, and it is expected to have most of it done this year. Work is being rushed on the subways, and about half the work on the freight sheds has been completed.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—J. L. Kennedy, chief engineer, is reported as saying that the final survey to the summit of the Hope Mountains has been made and that contracts will be let for construction in the near future. Track will be laid from Princeton to Coalmount on the Tulameen River this fall, and then the section to the Summit will be gone on with. Survey parties are on the field locating a route from the Summit to Hope, near where connection will be made with the Canadian Northern Pacific Ry. Between Hope and Chilliwack the Canadian Northern Pacific Ry. will be used, and into New Westminster the company's existing line will be used. The Board of Railway Commissioners has ordered the company to file plans for the proposed shunting tracks at Sapperton, and the company promised to proceed with the erection of a new station at New Westminster at once.

New Westminster Southern Ry.—Plans for the construction of a new station at New Westminster, were laid before the city council, Sept. 12. The site will be on block M., which was deeded to the city by the provincial government for station purposes for \$1 a year on a 99 year lease. The city in transferring the property stipulates that other railways shall be entitled to use the building.

Vancouver Terminals.—The steel for the new bridge over the big cut at Park Drive has been delivered, and it was expected that the erection would be completed Sept. 29.

A contract is reported let to the Dominion Creosoting Works, Vancouver, for the provision of piles necessary for the erection of the new wharf at False Creek, and it is said that W. H. Chase, also of Vancouver, has been given the contract for driving the piles. There will be 3,000 piles to be driven.

A. H. Hogeland, Chief Engineer, G.N.R., St. Paul, Minn., after a recent inspection of the works in progress, stated that the company's plans for the development of its interests in Vancouver were practically completed, and the work would be put in hand as speedily as possible. (Sept., pg. 847.)

The Board of Railway Commissioners has authorized the C.P.R. and the G.T.R. to operate an interchange track in St. Marys, Ont.

Central Railway of Canada.

In connection with the issue of bonds for the construction of this railway, it would appear that the original grant of land was in favor of the Carillon and Grenville Ry. Co., and that the Canada Central Ry. Co. was one of a group of railway companies incorporated with a view to carrying out the project, and entitled to participate in the land grant. The company is advised by eminent counsel, not only in Canada but in Great Britain that "no legislation has affected the rights of the Carillon and Grenville Ry. Co., and the right of that company to call for the land grant remains in force."

A legal action as to the land grant was tried in 1873 and 1874, and is reported in 20 Grant's Chancery reports, pg. 273, the decision dealing with the land grant and the method of distribution among the several railways entitled to it. The Canada Central Ry. Co. succeeded in regard to about 360,000 acres of land in respect to the 28.5 miles of line between Ottawa and Carleton Place, Ont., and it is said that this was afterwards commuted for a cash subsidy of about \$13,000 a mile. The payments made to the Canada Central Ry. Co. as an "exceptional subsidy" amounted in all to \$1,525,250, and as the company built 120 miles of line this would work out to over \$12,700 a mile. The contention is that the agreement with the Canada Central Ry. Co., only affects that company and the mileage constructed under its charter, and that the land grant is still available for any company building the balance of the line under the charter of the Carillon and Grenville Ry. Co., or its successors. The Railway Act of 1903 gives a purchasing railway the right to a land grant attached to a purchased railway, and this right is claimed to be fully protected by secs. 152 and 153, of the Railway Act in the Revised Statutes of Canada of 1906. The land grant available for the company originally would be about two-thirds in Ontario and one-third in Quebec. With reference to the sale of the physical property of the Carillon and Grenville Ry. to the Canadian Northern Ry. or allied interests, it is contended that neither company has power to sell to the other, and that the sale has not been properly ratified. The proceedings which it is proposed to take will set this matter right.

So far as the old Ottawa Valley Ry., which is the charter upon which the Central Ry. of Canada has been built up, is concerned, we are advised that seven miles of the line has been graded, and we are also advised that the C. Ry. of C. owns the charter of the Central Counties Ry., which covers the equity in the constructed lines leased to the Canada Atlantic Ry., and now operated by the G.T.R. The annual meeting of the shareholders was held in Montreal Sept. 6, C. Ross Dobbin, Guardian Bldg., Montreal, being the Secretary.

At a meeting of the directors of the Central Ry. Co. of Canada, held in Montreal, Sept. 4, W. D. Hogg, K.C., Ottawa, was elected a director.

We are advised by a representative of the contractors, C. J. Wills and Sons, London, Eng., and Montreal, that it is intended to start work on the main line from Montreal to Ottawa immediately, and a director of the railway is reported to have stated in Ottawa, Sept. 13, that the work would be started at Hawkesbury, that grading would be completed easterly and westerly for a total distance of 40 miles, by the end of the year, but that track laying would not be started until the spring, when grading on the Ottawa-Midland section of the line would be started.

Meetings of the shareholders of the Ottawa River Navigation Co., and of the Carillon and Grenville Ry. have been called to be held in Montreal, Oct. 18, "to authorize and confirm the sale and transfer of the company's charter, and all rights, properties and franchises thereof to the Central Ry. of Canada, and to do all such things as may be necessary to carry out and complete the said transfer."

Intercolonial Railway Harbor Terminals at Halifax.

The contract for the construction of the first section of the new deep water terminals for the I.C.R. at Halifax, N.S., has been let by the Department of Railways to the Nova Scotia Construction Co., Sydney, N.S. at a cost of approximately \$915,000.

The layout of the present I.C.R. deep-water terminals, which are situated along Tidewater St., includes four piers. In the new layout, plans for which have been prepared by J. Kennedy, Consulting Engineer, Montreal, no. 1, pier will not be interfered with, but it is proposed to remove piers 2, 3 and 4, and to replace them by longer and broader structures, with more extensive shed accommodation thereon, and with deeper water alongside. The work proposed to be carried out under the present contract, involves the construction of what is known as the new pier and shed no. 2. This pier will be 808 ft. long, and 235 ft. wide, and will be provided with a two-story shed. The other three piers will be similar in size and construction, and there will be a depth of 34 ft. alongside each pier, with a width of 280 ft. between each pier.

The contractor for no. 2 pier, is called upon to clear the site of the existing buildings, deepen the basins on either side of the pier, protect the existing cribwork and pile the foundation of the Immigration Building and other work incidental to the construction. The pier will consist of a bulkhead at the shore end, and the pier proper will be built on concrete trestles, braced, and facings and deck. The bulkhead is to be built in cribs or blocks reaching up to about 2 ft. above low water; above that level the crib work is to be built continuous, and finished with a coping of two 12 in. square creosoted timbers laid side by side. The cribs are to be filled with stone to at least 15 ft. high above the bottom, and above that to rail level with earth or other good filling. The pier itself is to be built on reinforced concrete piles, calculated to stand a load of 85 to 90 tons on each pile, driven to rock, stayed as they are driven, and the brace piles are to be moulded on such a curve as to make a uniform stress throughout the cross section of the pile under a compressive load of 80 tons on the pile head. The flooring will be of reinforced concrete, with granolithic surfacing, and the pier above low water will be protected with creosoted timbers. The contractor will lay the railway tracks on the pier, all the steel and fastenings being supplied by the I.C.R. Two hundred feet of the pier floor is to be completed by Feb. 15, 1912, that progress may be made with the shed construction. The shed is to be built entirely of reinforced concrete, the flooring of the second story being surfaced with granolithic. The doors at the side and east end of the shed are to be of steel frames plated with iron, and carried on rollers running on bottom tracks and girded on the top. The windows are to be of wired glass. At the west end of the building there will be offices for the staff. The roof of the shed will be finished with tar and gravel. The entire work of building the pier and shed is to be completed by Oct. 15, 1912.



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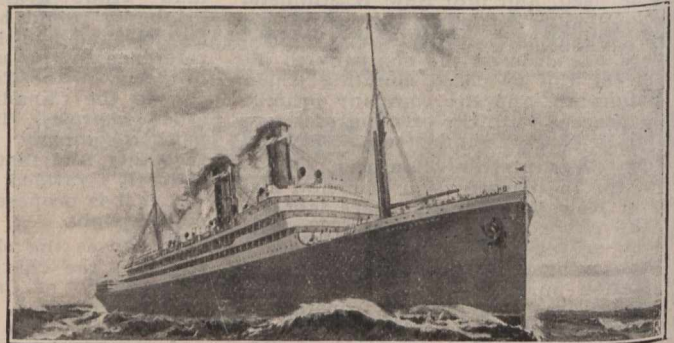
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National Transcontinental Railway Construction, Etc.

The plans for the entrance of the N.T.R. into Quebec, are divided into two sections, the first showing the double-track line between the bridge over the St. Lawrence River, and the terminal yard, and the second the general arrangement of the tracks and buildings in the terminal yard. There will be one yard with four sets of tracks, parallel with Champlain St., along the harbor front between some existing ice houses, and near Lampson's Cove; while the real terminal yards and terminal buildings will extend from near the Allan Co.'s pier, to the boundaries of the Champlain market site. The whole area between Champlain St. and the protection wall will be covered with tracks, and provision is made at the waterfront for a freight shed 500 ft. by 80 ft. Provision is also made for other buildings at convenient points in the yard. The station site is 200 by 100 ft., with a 50 ft. concourse. The platforms 608 by 15 ft. will extend from the concourse to near the existing Queen's wharf, three platforms being shown on the plan. Tenders for the erection of the station building, a description of which was given in our last issue, are under consideration.

Contracts are reported to have been let to C. A. Murphy and J. A. Lea, Moncton, N.B., for the erection of buildings on the line between Moncton and Beaver Brook, N.B., at an estimated cost of \$150,000. Tenders will be received to Oct. 2, for the erection of a trainmen's house at Cochrane, Ont.

We are advised that it is not contemplated that any change will be made at present in the operation of the N.T.R. from Winnipeg to Lake Superior Jct. The G.T. Pacific Ry. began to operate its trains on the section in Oct., 1910, but under the contract with the Government, will not take over any part until the whole line is completed through between Winnipeg and Moncton.

Rapid progress is being made with the laying out of the yards at Transcona, near Winnipeg, the site of the principal western shops. About 125 carloads of gravel a day have been dumped round the buildings for filling in, and levelling and tracklaying is being proceeded with. The J. D. McArthur Co. is doing the work. The erection of the buildings by Haney, Quinlan and Robinson, is making satisfactory progress.

We were advised Sept. 20, that a contract has been let to J. King, for the construction of station and other buildings on the line between Cochrane and Superior Jct., Ont. Press reports state that portions of the work have been sublet to C. Masher, A. Haequoil, and J. Lavole.

Grand Trunk Pacific Railway Construction, Etc.

C. M. Hays, President, G.T.R. and G.T.P.R., accompanied by several directors and officers of both companies, returned to Winnipeg, Sept. 16, from a trip of inspection over the entire line. The President expressed his satisfaction with the progress being made; there was plenty of labor, and the general conditions of weather, etc., had been favorable to the advancement of the work.

A contract has been let to the George A. Fuller Co., Montreal, for the erection of the company's hotel at Winnipeg, the Selkirk. Preliminary work on the site is in progress and the contractors expect to start on actual building operations immediately. The building is to be completed by the end of 1912.

The Board of Railway Commissioners has approved location plans for the

projected Brandon branch, mileage 0 to 18.36. The branch starts from the main line near Harte, and work was reported to have been commenced at that point Sept. 1, by Rigby, Hyland and Plummer, a member of which firm is reported as stating that a contract had been awarded them for grading 28 miles from Harte, and the five miles from Brandon, which will complete the branch. The mayor of Brandon informed the city council, Sept. 6, that it was expected to have the branch completed this year, but this would depend on whether rails could be obtained or not.

The Board of Railway Commissioners has authorized the company to connect its Yorkton branch with the Canadian Northern Ry. at Canora, Sask.; to carry traffic over the entire line from Melville to Regina, rescinding the previous orders. Under this order a regular passenger and freight service was inaugurated Sept. 7, there being one train each way on alternate days between Melville and Regina. The freight sheds being built at Regina are not expected to be ready until the end of Oct., meanwhile the old Allan house is being used as a temporary freight and passenger station. The passenger traffic will ultimately be accommodated in the new union station being built by the C.P.R.

It is expected that about 25 miles of steel will be laid on the line from Regina towards the international boundary this fall. About 30 miles of grading has been completed.

We are officially advised that there is no present intention of building a line starting from a point 13 miles out of Regina, on the branch now under construction, passing through Weyburn to the international boundary as stated in press reports.

With respect to the line under construction from Regina towards Moose Jaw, local reports, Sept. 10, state that it is extremely improbable that any steel will be laid this year. About 30 miles of grading has been completed, and work on the remaining 15 miles is well advanced. The biggest piece of work on this section is the trestle bridge over the Grand Coulee, in which there is about 1,500,000 ft. of timber. Rigby, Hyland and Plummer have the contract for this line.

Rigby, Hyland and Plummer also have the contract for the line being built from Moose Jaw, westerly, which will ultimately be connected with the line now under construction from Tofield to Calgary, Alta. Fifty miles of the line has already been placed under contract, and grading over this distance is practically complete.

We are officially advised that it has not been contemplated to build a line from Moose Jaw northwesterly to Young, Sask., as stated in press reports. The question of the terminals in Moose Jaw is under consideration. The company desires to purchase 6.05 acres from the city for right of way across the city, and there is considerable opposition to the sale.

We are officially advised that there is no present intention of building a branch from Saskatoon to Battleford, Sask.

The Board of Railway Commissioners has approved revised location plans for the Prince Albert Branch, mileage 105.04 to 109.01. Press reports state that work on this branch is being rapidly pushed forward; that steel has been laid as far as Waka, 68 miles from the main line, and that grading has been completed to within 24 miles of Prince Albert.

Grading is reported to be practically completed on the first 50 miles of the line from Bessar, Sask., towards the Tofield-Calgary branch. The Board of Railway Commissioners has approved

the location plans of a fourth section of the branch.

The Board of Railway Commissioners has approved location plans of the Cutknife branch from mileage 14.66 to 41.45.

The bridge across the Red Deer River is reported to have been completed, and tracklaying on the Tofield-Calgary branch has been resumed. Following the agreement with the C.P.R. respecting the building of the branch through that company's irrigated lands, the Board of Railway Commissioners has authorized the preparation of new plans, the occupation of C.P.R. lands between mileage 150 and 190, the crossing of the C.P.R. Langdon branch, and certain revised location plans.

During the recent visit to Edmonton, Alta., of C. M. Hays, President, and other directors and officers, the city council was informed that as soon as the necessary legal steps had been taken by the city to close certain streets, work would be started upon the proposed hotel.

Construction is reported to have been started on the erection of car shops at Edson, Alta. The shops will be 200 by 60 ft., with a machine shop adjoining. The plans for this latter shop are reported to be in preparation.

Considerable difficulties are being met with, according to reports, in the construction of the branch from Bickerdike, near Edson, southerly to the coal fields. The branch will be 56 miles long, and the work includes the crossing of a summit 500 ft. higher than the Yellowhead Pass; considerable tunnelling along the Embarras River, and the building of a bridge across that river at a point where the banks are high, and where there is a good deal of quicksand in the river bed.

There is no present intention, we are officially advised, of building a line from west of Edson, Alta., into the Peace River country.

Steel was reported to have been laid, Sept. 1, to Fitzhugh, in Jasper Park, Alta., 1,027 miles from Winnipeg, and it is expected to have the track laid for about a further 60 miles to Tete Jaune Cache this season. It is expected to have a train service in operation to Fitzhugh, early in October.

President C. M. Hays made the definite announcement, during his recent trip over the line, that the contract for building the line from Tete Jaune Cache to Aldermere, B.C., 415 miles, had been let to Foley, Welch and Stewart, the firm having at present the contracts terminating at the two points named. Construction gangs are being sent in as fast as the work is completed east of Tete Jaune Cache, and clearing work is reported to be in progress at various points as far west as Fort George. At this point the reversionary interests of the Indians in the reservation are being acquired by the company, the agreement having been signed by the chiefs, Aug. 31. At the western end of the contract, a report states that M. Shedy & Co. have been given a sub-contract for the clearing of 50 miles out of Aldermere.

The agreement between the city of Prince Rupert and the company was practically unanimously approved by the vote of the citizens, Sept. 2. The agreement provides that the company is to pay \$15,000 a year taxes on its lands for ten years, give the city 3,200 ft. of water frontage; several sections of land for park purposes, 60 acres for a cemetery site; to build a dry dock at a cost of \$2,500,000, and to erect station, car and machine shops, and a roundhouse at a cost of \$1,000,000. The plans for the different buildings have been prepared, and preliminary construction work has been started.

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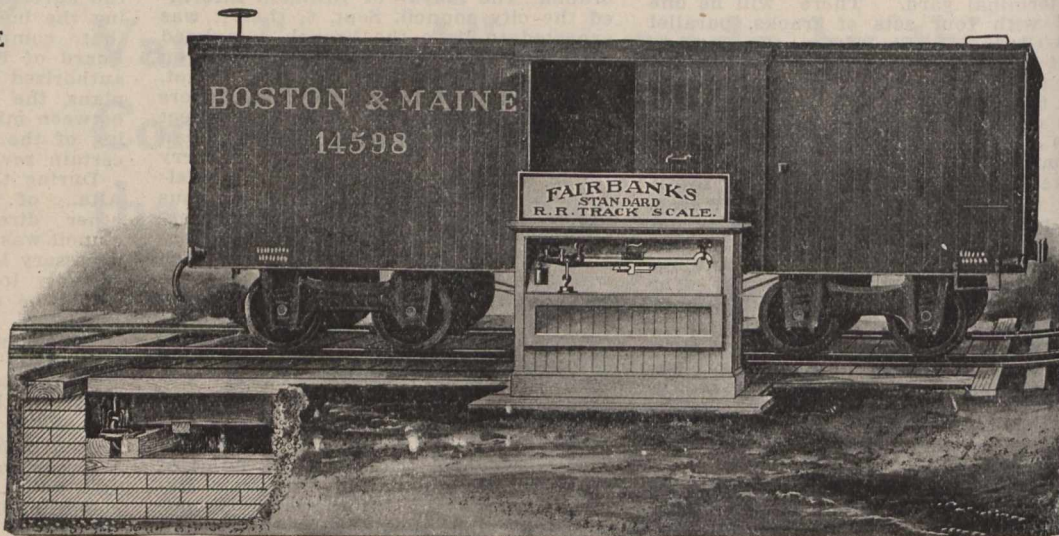
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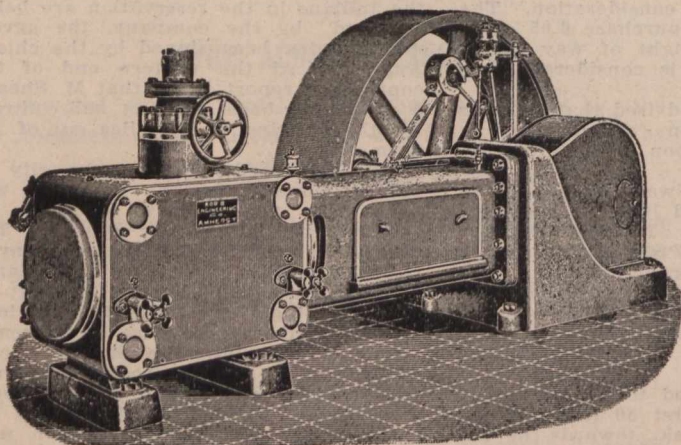
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Railway Finance, Meetings, Etc.

Dominion Atlantic Ry.—The head offices of this company have been changed from London, Eng., to the C.P.R. Windsor St. station, Montreal, where the annual meeting of the shareholders will be held Oct. 13.

Gross earnings for July, \$160,600, against \$148,432 for July 1910.

Grand Trunk Pacific Ry.—The annual meeting of the shareholders, which was to have been held in Montreal, Sept. 19, was postponed, until after the return of C. M. Hays, President, from his western trip.

London and Port Stanley Ry.—The question of the future of this line is again occupying the attention of the citizens of London, Ont. The present lease to the Lake Erie and Detroit River Ry., (which is owned by the Pere Marquette Rd.) expires in about two years, and it is stated that the P.M.R. has no desire to renew it.

Maritime Coal and Ry. Co.—The Nova Scotia Legislature has authorized the company to issue, with the approval of the shareholders, 10,000 preferred shares of \$100 each, bearing 7% interest.

Massawippi Valley Ry.—The annual meeting was held at Stanstead, Que., Sept. 6. The following officers and directors for the current year: President, J. G. Foster; Vice President, C. W. Cate; other directors, J. W. Dunklee, C. H. Kathan, C. D. White, F. N. McCrea, E. O. Grundy, H. N. Turner and J. H. Williams.

New Brunswick Ry.—The report for year ended June 30, shows gross earnings from stumpage, \$192,437; from sundries \$466; total earnings \$192,903; expenses including taxation, management, etc., \$29,798; surplus from previous year \$24,088, total surplus at June 30, \$187,194. At the recent annual meeting a dividend of \$4 a share was declared, absorbing \$120,000, leaving \$67,194 to be carried forward.

Quebec Central Ry.—Gross earnings for June, \$129,359.06; expenses \$84,228.34; net earnings \$45,130.72, against \$121,032.42 gross earnings; \$82,117.85 expenses; \$38,914.58 net earnings for June 1910. Aggregate gross earnings for 12 months ended June 30, \$1,208,948.88; expenses \$820,803.12; net earnings \$388,145.76, against \$1,105,866.77 aggregate gross earnings; \$759,555.75 expenses; \$346,311.02 net earnings for same period 1909-10.

Subject to audit, the gross receipts for the year ended June 30, including interest, were \$1,217,255 working expenses, \$820,803; net receipts, \$396,452; interest on first and second debenture stock \$165,873; balance \$230,579, less full interest on 7% income bonds \$115,545, leaving a balance of \$115,434, from which the directors recommend a dividend of 3%.

Quinze and Blanche River Ry.—At the recent annual meeting in Ottawa, Ont., the following officers and directors were re-elected for the current year: President, Hon. E. H. Bronson; Vice President, F. P. Bronson; other directors, W. G. Bronson and H. W. Cole; Secretary Treasurer, L. Rannell.

Temiscouata Ry.—Profit on operation for June, \$7,592, against \$6,450 for June 1910. Aggregate profit for six months ended June 30, \$21,174, against \$21,828 for same period 1910.

Victoria and Sidney Ry.—The Victoria, B.C., city council contends that the V. and S.R. owes \$170,000. The Great Northern Ry. interests have taken over the line, and it is said made an offer of \$29,000 in liquidation of the debt, that amount being stated to be in excess of income over operating expenses. A special committee of the council has the

matter under consideration, and is hoping to secure a satisfactory arrangement by which the whole amount will be recovered.

White Pass and Yukon Ry.—Gross earnings for seven months ended July 31, \$539,110 against \$627,679 for same period 1910.

Grand Trunk Railway Construction, Betterments, Etc.

New England Lines Proposals.—A special act passed last session of the Vermont Legislature, gave power to the Public Service Commission to arrange for the building and operation of a union station by the railways entering Burlington. The Commission sat there Sept. 6, to hear the views of the Central Vermont Ry., and the Rutland Rd., as to which of them should build the station. The C.V.R. has presented a plan for the building of a station to be owned and operated jointly, and for the separation of all grade crossings in the city. The plans is generally approved by the citizens, and the hearing was adjourned until Oct. 24, with the object of enabling the two railways to agree on plans and terms so that a consent order can be made.

Press reports, Sept. 15, state that the G.T.R., through allied interests, has secured control of two trolley lines which will give it a through connection from Portland, Me., to Boston, Mass.

Tracks, Bridges and Buildings.—The Board of Railway Commissioners has authorized the company to build an additional track across Ste. Anne's and Bourdages streets, St. Hyacinthe, Que.; to build an additional passing track at Thedford, Ont.; to rebuild its most southerly track crossing Seventh line road, Oakville, Ont.; to build an additional track across the public road between lots four and five Saltfleet tp., Ont.; to build a branch from its yards at Winona, Ont., to the station of the Hamilton, Grimsby and Beamsville Electric Ry.; to build a branch at Nipissing Jct., Ont., crossing the C.P.R., and connecting with the Temiskaming and Northern Ontario Ry., an interlocking plant to be installed.

The Board has authorized the use for traffic of bridges 15 and 16, over the St. Lawrence River at mileage 55.63 and mileage 54.12, the use of five other bridges on the Eastern Division, and the building of the following bridges: at Brooker's Crossing, Front tp., Ont.; at milepost 89.39, or 9.63 miles south of Richwood station, Ont., at Patton St., Grimsby Ont., and at Front Creek, near St. Marys, Ont.

The Board has approved location and detail plans for stations at Thorndale, Ont., and Winona, Ont., and authorized the building of a station and dwelling at Manilla Jct., Ont.

Kingston, Ont.—The company is reported to have purchased 400 acres of land at Kingston Mills, four miles from the city. Local reports state that it is the intention to remove the station at Kingston Jct. to Kingston Mills, and make that point the connection for its Toronto-Ottawa line via Smiths Falls. The present line from Kingston Mills to the city and outwards to the west is in the form of a loop. For some time the company has had under consideration the straightening of its line from the Mills to Collins Bay, whereby two miles in distance would be saved and two gradients eliminated. No official communications have passed between the company and the civic authorities as to any proposed changes.

Toronto Grade Elimination.—The Board of Railway Commissioners has authorized the building of bridges at

Jameson, Dunn and Dowling Avenues, Toronto along the line of this work. The track at the Queen St. subway, Sunnyside, has been tunnelled under, and the abutments are being built. In connection with this work the Sunnyside bathing beach is being expropriated together with some adjoining property. The centre pier of the new bridge over the Humber river is approaching completion. The work of building this pier was a difficult one, as a cofferdam 30 ft. deep had to be built before the 65 ft. piles could be driven for the foundation work. The other work along the whole section to Mimico is well advanced.

Lansing, Mich.—We are officially advised that there is no foundation for the press reports that the erection of a large warehouse equipped with the latest mechanical appliances, is under contemplation for the company's business at Lansing, Mich. (Sept., pg. 831.)

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 Goldschmidt Thermit Co., has issued pamphlet 20, showing the advantages of metals and alloys produced by its Thermit process.

The Northern Electric and Manufacturing Co., Ltd., Montreal, has increased its capital stock from \$1,000,000 to \$5,000,000, by the issue of 40,000 shares of \$100 each.

Roland Yeates, formerly of the Rudel-Yeates Machinery Co., Montreal, is now handling the London Machine Tool Co.'s products, with office at 607 Canadian Express Building, Montreal.

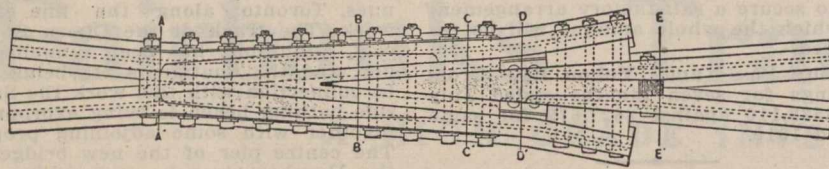
The Safety Car Heating and Lighting Co.'s monthly pamphlet, Safety Heating and Lighting News for September, contains a number of interesting items relating to heating and lighting railway cars.

Butterfield & Co., Rock Island, Que., have issued an illustrated catalogue of taps, Reece's and Derby screw plates, stocks and dies, hand and machine reamers, taps and dies for all purposes and tools for engineers and steam fitters, copies of which may be obtained on application to them.

The American Vanadium Co.'s monthly publication, American Vanadium Facts, for September, contains a number of concentrated comments by users of Vanadized metals, chiefly Vanadium steel, together with an article on the epoch of alloys and description of various works in progress where Vanadium steel has been specified.

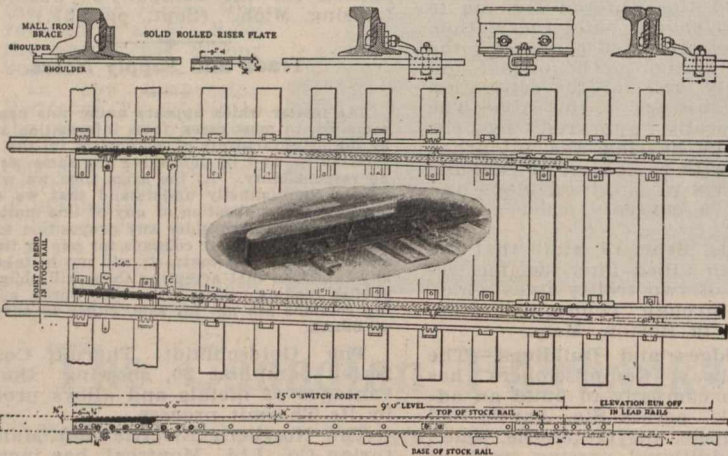
The Canadian Westinghouse Co., Hamilton, Ont., has issued circular 1028, describing its rotary converters; circular 1190 describing its engine driven alternating-current generators, type E, and folders illustrating its watt-hour meters, types C and OA, the latter for residence loads, and A.C. and D.C. switchboard meters.

During the twelve months ended Aug. 31, the following number of cars were used for the transportation of grain from the Prairie provinces: C.P.R., 57,615, or 60% of the total number; Canadian Northern Ry., 30,677, or 32% of the total number; G.T. Pacific Ry., 6,970 or 7% of the total number, and Great Northern Ry. 1,199, or 1% of the total.



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Canadian Pacific Railway Construction, Betterments, Etc.

Atlantic Division.—D. McNicoll, Vice President, visited St. John, N. B., Sept. 13, and in the course of an interview, is reported to have said that the extension work at West St. John would be undertaken as soon as possible, most probably in the spring of 1912. The company's plans for the development of the coal areas in Queen's county were not sufficiently defined to enable any announcement to be made. The plans are said to include the building of a line from Fredericton to Minto.

The Board of Railway Commissioners has authorized the building of a bridge at mileage 27.4 on the St. Stephen, N.B., branch; the closing of a crossing at the station and a diversion of the highway along Munquart River near Bath, N.B.; and the rebuilding of seven bridges on the Edmundston, N.B. subdivision.

Montreal to Ste Therese.—A contract is reported to have been let to M'Donald and Macdonell, Montreal, for the building of a double track bridge at Ste. Therese, Que. The bridge is a steel structure of three spans, 158 ft. each, on masonry piers and abutments. The press reports add that the tourist traffic in the Laurentian Mountains this summer has been so heavy that it has been decided to lay a second track to Ste. Therese in time for next season's business.

Land Purchases in Montreal.—Transfer was registered recently of two blocks of land at Longue Pointe, to the C.P.R., the purchase price being \$81,042.75. An area of 434,775 square feet adjoining the Glen yards has also been purchased by the company, with a view to providing for further extensions of the yards and station facilities.

The first of these purchases has to do with the new industrial lines which the company is laying in that district. The Board of Railway Commissioners has authorized the building of a bridge on the line from the Angus shops to Mile End quarry road, and the building of a third track on the north side of the present tracks between the Angus shops and Mile End.

The board of control informed the C.P.R., Sept. 19, that the plans for the new line from Place Viger station to Longue Pointe could not be approved as they involved additional level crossings. The company will submit modified plans.

Western Jct. near Montreal.—The contract for the works proposed to be carried out at Western Jct. near Montreal, to which reference was made in our last issue, has been let, so far as the building construction is concerned, to C. E. Deakin. The rest of the work will be done by the company's own forces. The locomotive house will be of steel and concrete construction and will have a mill roof. The boiler house will be equipped with 200 h.p. boilers, and the coaling plant will serve two tracks.

Ottawa Entrance Plans.—D. McNicoll, Vice President, had an interview with the Ottawa city council Aug. 29, in reference to the plans for the proposed new entrance of railway lines into the city.

Ottawa-Prescott Branch.—The Board of Railway Commissioners has approved of the temporary location on this branch at mileage 9.4 from Ottawa.

Montreal-Toronto Second Track.—In connection with the second track construction now in progress between Smiths Falls and Bathurst, Ont., the Board of Railway Commissioners has authorized the second track to be car-

ried across Erwin St., Perth, and a number of highways.

Georgian Bay and Seaboard Ry.—The Board of Railway Commissioners has authorized the company to build across a number of highways, and road allowances, and to divert a number of road allowances.

Victoria Harbor, which will be the terminus of the line, on Georgian Bay, will on the opening become an important point for the interchange of lake and rail traffic. The company is spending considerable sums upon providing proper facilities for the handling of traffic. Fourteen miles of track has been laid in the yards, and grading for an additional 11 miles has been completed. The buildings, etc., being erected, include a 6-stall locomotive house, with machine shop attached; machine shop, equipped with a 72 in. and a 36 in. lathe; shaper, bolt-cutter and radial drill; oil and storehouse, with 12 oil tanks in the cellar, from which oil is pumped to the store above; bunk house; 70 ft. turntable; two track ashpit; two track coaling plant; laundry, ship stores and office; icehouse; freight shed, 750 ft. long; flour shed, 300 ft. long; 2,000,000 bush. elevator; eight cottages; large boarding house; two boarding houses to accommodate 150 men; and 8,400 lineal feet of wharfage. All the buildings are to be lighted by electricity, and the company is installing its own fire, water and lighting systems.

Nothing definite has been announced as to when the upper lake steamboat service will be transferred from Owen Sound to Victoria Harbor.

A contract was reported let Sept. 20, to G. T. Martin, Smiths Falls, Ont., for the construction of all stations, freight sheds, water tanks, and other buildings on the line.

In a recent interview, D. McNicoll, Vice President, is reported to have stated that when the line was completed, the company would have a dead-level track all the way between the Georgian Bay and Montreal, in addition to having a route shorter by many miles than any other possible connection. As a result the company would use Victoria Harbor as a transfer point to and from Upper Lake steamboats, instead of Owen Sound, as at present.

Toronto Office Building.—A contract is reported let to the Geo. Fuller Co., for the erection of the new office building at the corner of Yonge and King streets, Toronto.

Campbellford, Lake Ontario and Western Ry.—In a recent interview, D. McNicoll, Vice President, is reported to have stated that several parties of engineers were preparing for construction on this line, which is to run from near Smiths Falls, to the lake shore and then on to Toronto via Port Hope.

South Ontario Pacific Ry.—We are advised that good progress is being made with the construction of the line from Guelph Jct. to Hamilton, Ont. The Toronto Construction Co. has the contract for the whole work, and has had a steam shovel at work since June 20, in cemented gravel at mileage 15.7 to the junction with the Toronto, Hamilton and Buffalo Ry. at mileage 16.28. The Toronto Construction Co. is doing all the concrete work itself, and expects to have it completed by Oct. 31. The work from Guelph Jct., mileage 0 to Progression, mileage 6, has been sublet to C. J. Price, who had previously been carrying out some railway work at Cobalt, Ont. J. Baskin, Norwood, Ont., has the sub-contract for grading from mileage 6 to 10.5; no sub-contract has been let for the work from this point at mileage 13, although it is expected to let one at an early date; Taylor and Love, Waterdown, are the sub-contractors for the next mile, on which they have two gangs

at work; and L. W. Reade, Hamilton, is grading from mileage 14 to 15.7. The Price and Baskin contracts are expected to be finished this fall, and it is expected to have five or six miles of track laid from Guelph Jct., southerly, by the end of the year.

The Board of Railway Commissioners has authorized the building of the line across a number of highways, to divert certain others, to cross the G.T.R. in West Flamboro tp., and to build a bridge to carry Dundas St. in Waterdown over the line. It has approved detail plans for the bridge over the line at mileage 15.77.

London Improvements.—Work has been started on the new bridge over the Thames at Oxford St., London, Ont. This bridge will be of the solid truss type, and the old link and pin bridge, which it replaces, is being removed to Mattawa, Ont., where it will be re-erected.

The London city council has issued a permit for the erection of the remainder of the buildings in connection with the new roundhouse. They are to be of steel and concrete and will cost about \$60,000.

Lake Superior Division Bridges.—The Board of Railway Commissioners has authorized the company to build bridges at mileage 27.34 and 95.15 on this division, and to use bridge at mileage 16.16 Webbwood sub-division.

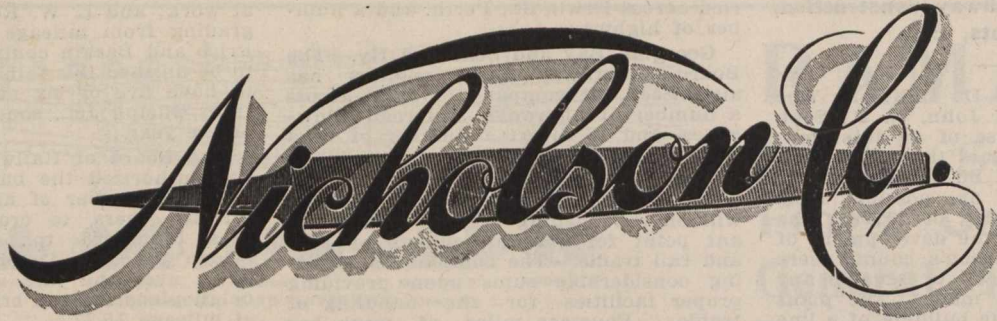
Fort William Coaling Plant.—The Canadian Stewart Co. started work, Sept. 1, on the big coal handling plant and freight terminal on Island no. 1, Fort William, Ont. The estimated cost of the work is said to be about \$2,000,000.

New Buildings, etc., Manitoba, Division.—Tenders are under consideration for trenching and laying pipe lines at Sidney and Newdale, Man., and it is also reported that it has been decided to erect new shops and a roundhouse at Neepawa, Ont.

Lanigan to Prince Albert.—We are advised that there is nothing in the press reports that a line is being located from Lanigan, via Humbolt to Koshern, Sask. The company has under consideration the building of a line from Lanigan to Prince Albert, Sask., but nothing definite can be said as to when it will be built.

Brandon Station.—The existing facilities consist of two buildings, east and west, placed 50 ft. apart and built 60 ft. from north boundary of Pacific Ave. The ground floor is approximately the track level and is about 12 ft. below Pacific Ave. level. The greater portion of the existing building is to be removed and to be replaced by new work which will connect with the existing east building, and part of it, 50 ft. in width, will extend to the north boundary of Pacific Ave. When the work is completed, all departments will be enlarged and new ones added. On the ground floor, (track level), the refreshment rooms, baggage room, parcel checking room, telegraph office, Dominion Express room and office, men's smoking room and lavatory and store rooms, etc., will be located. On the first floor, (Pacific Ave. level) will be the general and women's waiting rooms, women's retiring room and lavatory, and the ticket office. The second floor will have the various railway operating offices. The exterior will be of brick and stone construction. The interior of the first floor will be finished in oak with marble base and terrazo floors. The contract for the construction of the station has been awarded to the Brandon Construction Co.

Union Station, Regina.—The new station at Regina, for the joint use of the C.P.R. and Canadian Northern Ry., is designed in a free renaissance style of



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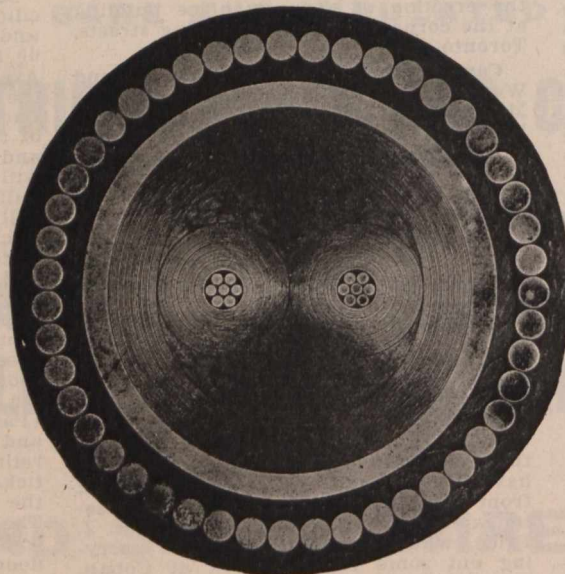
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architecture. The main building, centrally placed, is three stories high, with one story wings on each side, the total length is 316 ft., the width 62 ft. and the height of central portion 48 ft. The accommodation provided includes general waiting room, ticket office, men's and women's smoking and retiring rooms and toilet rooms. These take up the entire ground floor space of the central building, the dimensions being 120 by 59 ft. The ticket office, octagon shaped, is conveniently placed in the centre of general waiting room on the track side and opposite to the entrance vestibule from the front. There are wide doors placed to the right and left of ticket office and give access to the platform and track. The news, telegraph and telephone offices are in full view and placed at one end of the general waiting room. The baggage room, 64 by 58 ft., is reached from the general waiting room through a wide corridor, on each side of which the public will have access to the baggage checkers, valises, parcels, customs, baggage master and transfer offices. An additional entrance is provided from this corridor to the platform. The C.P.R. and C.N.R. express rooms and offices, which are kept entirely separate, are placed to the right of main station building, the general dimensions being 105 by 57 ft. Large storage for the use of the baggage is placed in the basement, and a freight elevator is provided for the use of baggage department. The staff offices are placed on first and second floors of the main building and are well lighted and conveniently arranged around a central staircase, constructed of steel and white marble, which leads directly out of the general waiting room. The buildings are to be of reinforced fire-proof construction, the whole of the basement walls being of concrete and external walls of superstructure of brick faced with Bedford cut stone neatly tooled and moulded. The roofs are to be covered with tar and gravel and the whole of the interior walls and ceilings plastered. The general waitingrooms, etc., will be finished with white polished oak, the floors with terrazzo mosaic, and maple floors will be laid in the baggage and express rooms and in the first and second floor offices. An ornamental glazed copper marquise will be fixed over the entrance to waiting room and express platforms. The buildings are to be heated throughout by a system of steam at low pressure supplied to vertical direct radiators placed in the various rooms. The electrical wiring will be done by the C.P.R. Co.'s own workmen. The contractors for the building are the J. McDiarmid Co., of Winnipeg, and the building was designed in the C.P.R. Assistant Chief Engineer's office, at Winnipeg.

Locomotive and Car Shops, Saskatchewan Division.—Press reports state that it is the company's intention to locate locomotive and car repairing shops for the Saskatchewan Division, at Weyburn, Sask. Some new plant and machinery for locomotive and car repair work is being installed at the roundhouse, and this is regarded as the beginning of the development.

Crave-Colonsay Branch.—The Board of Railway Commissioners has authorized the opening for traffic of this branch between Colonsay and Imperial, Sask. The branch connects via Craven, with the main line at Regina.

Forward to Ogema, Sask.—A train service has been placed in operation on the extension of the branch from Weyburn, towards Lethbridge, between Forward from Ogema. A further extension westerly from Ogema, is under construction.

Moose Jaw, Southwesterly.—The

Board of Railway Commissioners has approved location plans of the branch from the main line at Moose Jaw, southwesterly for 35.39 miles. The latest map issued by the company shows that this line will connect up with the branch now under construction from Swift Current southeasterly, and that at or near the junction a branch will run south and join the extension of the line from Weyburn to Lethbridge, which now terminates at Ogema.

Moose Jaw to Macklin, Sask.—A Rose-town dispatch, Sept. 14, states that tracklaying on the extension of the branch from Moose Jaw has been practically completed. It is not expected that the line will be ready for operation until the spring, owing to the fact that the bridge across the Saskatchewan River at Outlook, will not be completed for some time.

Wilkie-Anglia and Wilkie-Kerrobot.—Grading has been completed on the first of these branches southerly from Wilkie, and tracklaying is being proceeded with. Fourteen miles of grading has been done on the second branch, which will terminate at Kerrobot, on the Moose Jaw-Macklin branch.

Castor to Kerrobot.—The Lacombe branch of the Calgary and Edmonton Ry. is being extended from its present terminus at Castor, Alta., to Kerrobot, Sask, and track was reported to have been laid to Coronation, Alta., 20 miles, Sept. 15. Press reports state that engineers are locating northerly and southerly from Coronation.

Cutknife Branch.—Considerable work is being done on the branch northerly from Wilkie, Sask., to the Cutknife district.

Irrigation Belt Branches.—The Board of Railway Commissioners has approved the location of the branch from Langdon, Alta., northerly, from mileage 40 to 102.1. The branch is in operation as far as Acme, and the company's latest maps show it as effecting a junction with the Calgary and Edmonton Ry. at Tuttle. From Irricana, on this line, there is a branch running easterly to Standard, from where the company's latest map shows it will be extended to Kininvie; and at the Irricana end to Crossfield. The Board of Railway Commissioners has approved the revised location of a line from Bassano to the Irricana branch, and a portion of the location plans for the same branch, mileage 0 northwesterly for 20.2 miles.

Medicine Hat to Calgary.—The fact that C.P.R. engineers are constantly making examinations of territory to ascertain its development, and making approximate surveys for branch lines, has probably given rise to the report that it is proposed to start work this year on the building of a line from Medicine Hat to Calgary, Alta. We are officially advised that there will be no such line built this year.

Edmonton to International Boundary.—We are officially advised that there is no truth in the report that the company is making surveys for a line from Edmonton, via Swift Current to the International boundary, about 100 miles west of North Portal. The line now being built from Swift Current northwesterly will not cross the Saskatchewan River, and there is no intention of extending the line now being built south easterly from Swift Current, to the International boundary.

Calgary Shops.—Tenders are under consideration for building an extension of the boiler house at Calgary, Alta.

Calgary and Edmonton Ry.—The Board of Railway Commissioners has authorized the carrying of the projected line into Edmonton, Alta., across the Edmonton, Yukon and Pacific Ry., in the Hudson's Bay reserve, the North

Saskatchewan river, and Saskatchewan Ave. This is the high level bridge under construction, between Strathcona and Edmonton.

Western Shops.—Sir Thos. G. Shaughnessy, President, on his recent trip west, was questioned at various points as to the location of the proposed western shops. He stated at Calgary, that a special meeting of the directors would be held to consider the matter shortly after his return to Montreal, and an announcement would be made about Oct. 1.

Fort William Terminals.—The increased business and the prospects of future expansion in business, which has to be handled at Fort William, is far greater than the company can meet with its present layout, and owing to the condition becoming somewhat congested, it has been decided to extend the developments on to the east side of the Kaministikwia River on the property that is known as Island no. 1. The company has recently purchased a large area of this island and intends ultimately to construct rather large facilities in the way of coal handling plants, freight sheds, etc. In order to properly serve such facilities, extensive yards will be necessary, also engine terminal facilities. In the lines of this development, the company is now constructing a bascule bridge over the Kaministikwia River on to Island no. 2, and also a rolling lift bridge from island no. 2. The only facility which the company is at present constructing on the island is the new coal handling plant, which, when completed, will have a storage capacity of 800,000 tons, a boat discharging capacity of about 10,000 tons a day and a car loading capacity of about 300 cars a day. The plants will be so designed that all these capacities can be increased when the company desires. There will be about six miles of yard tracks and sidings to serve the coal docks.

Waldo Branch.—The Board of Railway Commissioners has approved of the revised location of this branch between mileage 9.7 and 11.33 on lot 152 Kootenay District, B.C.

Vancouver, Etc., Terminals.—The Board of Railway Commissioners has authorized the company leave to appropriate certain lots at Coquitlam, required for its proposed shops and yard facilities there.

Sir Thos. G. Shaughnessy, speaking to the Vancouver board of trade, Sept. 7, said the extensive new yards proposed to be laid out at Coquitlam would greatly relieve the traffic at Vancouver. Plans had been prepared for extensive improvements at the Vancouver station, but after full consideration it had been decided to build a new station, and plans for this were in course of preparation.

Esquimalt and Nanaimo Ry.—The extension of the line into Alberni, is expected to be placed in operation Nov. 1. Work on the Cowichan Lake extension is being pushed rapidly. (Sept., pg. 845.)

Three Forks to Lucky Jim Mine.—The spur line under construction from Three Forks to Lucky Jim Mine, B.C., will be 3.5 miles long. The work is very light, the gradient is 3.5%, with 15 degrees of curvature. There is one frame trestle 800 ft. long and 75 ft. high to be built.

Canadian Pacific Railway Second Track Work in Saskatchewan.

The C.P.R. is building 23 miles of second track on its main transcontinental line from Pasqua through Moose Jaw to Caron, Sask., a distance of 23 miles. For a portion of the distance between Pasqua and Moose Jaw, a new double track line is being built, and on

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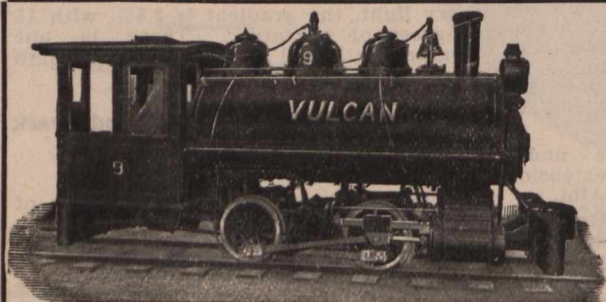
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TORONTO, CANADA, OCTOBER, 1911.

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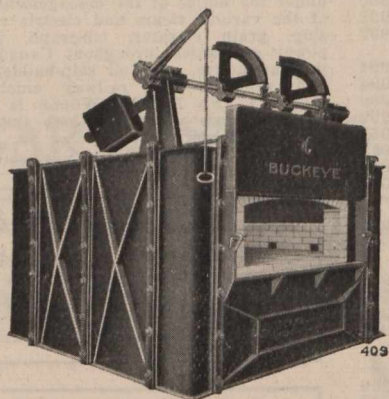
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the remaining distance a second track is being built on the old right of way allowance.

Starting at Pasqua, the junction point of the C.P.R. main line with its Portal subdivision, which runs to North Portal, on the international boundary, where connection is made with the Minneapolis, St. Paul and Sault Ste. Marie Ry., to St. Paul and Minneapolis, the new line parallels the C.P.R. main line for two miles, and then branches off for 2.5 miles, rejoining the present main line 4.5 miles from Pasqua. The old main line has gradients of 0.77% and 6.88%, while the new line has a gradient of 0.40% compensated for curvature. From the point where the new piece of track joins the main line a new track is being built, and the old track is being raised so as to eliminate the 0.77% gradient; and give a maximum gradient of 0.40 over the whole piece of second track, compensated for curvature, the curvature remaining the same as heretofore.

The quantities on the Pasqua-Moose Jaw section of the work ran to 250,000 cubic yards, principally earth. The contractors were allowed to use all available dirt, which amounted to 110,000 cubic yards, the rest being removed for train filling. A steam shovel has been installed in cuts to get the minor quantity of dirt, and incidentally to widen the cuts, thereby hoping to avoid cuts being filled with snow during the stormy periods of the year. From Moose Jaw to Caron, 16 miles, the work consists of building a second track parallel with the existing track, 13 ft. centres, requiring about 105,000 cubic yards of earth. There are also on the work 16 small bridges over water courses, for which concrete abutments, requiring about 800 cubic yards of concrete, are required. Progress on the first section of the work has been slow on account of the very heavy traffic which does not give the work trains much chance to work steadily. From Moose Jaw to Beharm, eight miles, the track will be laid with all crossed ties, tie plates on all ties, and 85 lb. steel, and the rest of the mileage will be laid with 85 lb. steel on no. 1 ties. The contractor for both sections is the J. C. Hargrave Co., Ltd., Winnipeg, which firm did the second track work between Winnipeg and Portage la Prairie, Man.

Traffic Orders by the Board of Railway Commissioners.

Summaries of other orders are given on another page, under "Orders by the Board of Railway Commissioners."

RATES ON CRUDE OIL, STOY, ILL., TO TORONTO.

14386. May 16. Re application of British American Oil Co. Ltd., for an order declaring that the C.P.R. has unjustly discriminated against crude oil shipments from Stoy, Ill., to Toronto, by refusing to carry them at 20c. per 100 lbs., in accordance with published tariff and Official Classification; that the C.P.R. has overcharged the applicant; and that order 7093, made upon the complaint of the applicant against the G. T. R. is equally binding upon the C.P.R. It is declared that the legal rate chargeable on the said carload shipments was the fifth class joint through rate in effect at the time the shipments moved, as shown in the joint through tariffs published and filed with the Board, and in accordance with Official Classification 29, and subsequent issues thereof.

RATES ON PETROLEUM, ETC., FROM OHIO AND PENNSYLVANIA.

14387. May 16.—Re application of Canadian Oil Companies, Ltd., against the G.T.R. and the C.P.R., complaining that the railway companies unjustly dis-

criminated against them upon shipments of petroleum and its products from certain Ohio and Pennsylvania points to Toronto and other Canadian points, by refusing to carry such shipments in carloads, at fifth class rates in accordance with the Official Classification; that the companies overcharged the applicant and applying for an order prescribing proper tolls. It is declared that the legal rates chargeable on petroleum and its products, in carloads, from points in Ohio and Pennsylvania to Toronto, were the fifth class joint through rates in effect at the time the shipments moved, as shown in the joint through tariffs published and filed with the Board, and in accordance with Official Classification 29, and subsequent issues thereof.

APPROVAL OF SUPPLEMENT 2, TO CANADIAN CLASSIFICATION 15.

14495. Aug. 4.—Re application of Canadian Freight Association for order approving proposed Supplement 2, to Canadian Classification 15, embodying a revision of the ratings on plate or mirror glass. It is ordered that the proposed supplement abolishing the form of shippers' "release" hitherto required to entitle shippers to certain ratings for plate or mirror glass of the said classification, and embodying certain amendments in the ratings necessitated thereby, but without advancing any of the said ratings, be approved, to take effect in Canada not later than Sept. 1, 1911.

APPROVAL OF BULK GRAIN BILL OF LADING

14591. Aug. 18.—Re consideration of new bulk grain bill of lading submitted for approval by the Canadian Freight Association on behalf of the railway companies, for use at stations west of Lake Superior, it is ordered that the form be approved, subject to the proviso that section 6 be amended to read as follows:

"Sec. 6. Notice of loss, damage, or delay must be made in writing to carrier at the point of delivery, or to the carrier at the point of origin, or to the claims agent of either, within four months after delivery of the bulk grain herein described, or in case of failure to make delivery, then within four months after a reasonable time for delivery has elapsed. Unless notice is so given the carrier shall not be liable."

Transportation Men in the General Election.

F. N. McCrae (Liberal), President, Lotbiniere and Megantic Ry., was elected in Sherbrooke, Que., by 52 majority.

J. A. C. Ethier, (Liberal), director, Central Ry. of Canada, was re-elected in Two Mountains, Que., by acclamation.

M. L. Hersey (Liberal), consulting chemist, C.P.R., was defeated in St. Antoine, Montreal, by H. B. Ames, by 2,360.

Col. H. H. McLean, K.C. (Liberal), Vice President, St. John Railway, was re-elected in Sunbury-Queens, N.B., by 238 majority.

D. A. Gordon (Liberal), President, Chatham, Wallaceburg and Lake Erie Ry., was re-elected in East Kent, Ont., by 300 majority.

E. Bristol, K.C., (Conservative), director, Richelieu and Ontario Navigation Co., was re-elected in Centre Toronto, Ont., by 2,124 majority.

Hon. G. P. Graham (Liberal), who has been Minister of Railways and Canals since Aug., 1907, was defeated in Brockville, Ont., by 125.

R. B. Hepburn (Conservative), President and General Manager, Ontario and Quebec Navigation Co., was elected in Prince Edward, Ont., by 281 majority.

Robt. Bickerdike (Liberal), President, Montreal and Great Lakes Steamship Co., was re-elected in the St. Lawrence Division of Montreal by 1,119 majority.

Hon. John Haggart (Conservative), who was Minister of Railways and Canals from Jan., 1892, to July, 1896, was re-elected in South Lanark by some 800 majority.

J. A. M. Aikins, K.C., (Conservative), who was elected in Brandon, Man., by 600 majority, has been C.P.R. Local Solicitor at Winnipeg since the company's inception.

H. B. McGiverin (Liberal), whose firm are solicitors for the Klondike Mines Ry. and who represented Ottawa, Ont., in the last parliament, was defeated by 1,112.

Jules Hone, Jr. (Independent Conservative), general railway and steamship ticket agent, and formerly City Passenger Agent, C.P.R., Quebec, was defeated in Quebec Centre.

C. A. Magrath (Conservative), formerly Land Commissioner, Alberta Railway and Irrigation Co., who represented Medicine Hat, Alta., in the late Parliament, was defeated there by 480.

E. B. Osler (Conservative), director, C.P.R., and President, Niagara Navigation Co., was re-elected in West Toronto, Ont., by 7,965, the largest majority obtained by any candidate in the Dominion.

S. Barker (Conservative), who was re-elected in Hamilton East, Ont., by 1,500 majority, was at one time Solicitor and general counsel for the old Great Western Ry. of Canada, and was for a short time General Manager, Northern and Northwestern Railway.

G. H. Barnard (Conservative), who was elected in Victoria, B.C., by 240 majority, is a son of the late F. J. Barnard, at one time M.P. for Cariboo, B.C., who was the founder of the British Columbia Express Co. and interested in other transportation matters.

Rodolphe Forget (Conservative), President, Quebec Railway, Light and Power Co. and Richelieu and Ontario Navigation Co., who sat for Charlevoix, Que., in the last parliament, was re-elected for this constituency by 530 majority and was also elected in Montmorency, Que., by 54.

Hon. R. Lemieux, (Liberal), who represented Gaspé, Que., prior to dissolution and who was appointed Minister of Marine and Fisheries a short time ago, was elected in Rouville, Que., by 265 majority. He also ran again in Gaspé, where the election was held four days later, and was defeated there.

W. F. Nickle (Conservative), Secretary-Treasurer, Kingston, Portsmouth and Catarqui Electric Ry., was elected in Kingston, Ont., by 345 majority. He represented the same seat in the Ontario Legislature from 1908 until he resigned to run for the House of Commons. Kingston was represented in the House of Commons from 1902 until the recent dissolution by W. Harty, President, Canadian Locomotive Co., who refused to again be a candidate.

Use of Soft Ties.—The report of the Roadmasters' and Maintenance of Way Association's committee on the question: "Is it economy to use soft ties for switches, switching leads and track?" as presented at the recent convention, is given in full on page 911 of this issue. In the discussion on the report, T. Hickey, Roadmaster, Michigan Central Rd., St. Thomas, Ont., said the M.C.R. had used cedar ties for many years but had stopped buying them. They were not satisfactory under heavy traffic, and even on branch lines where standard equipment is used they are being replaced by white oak.

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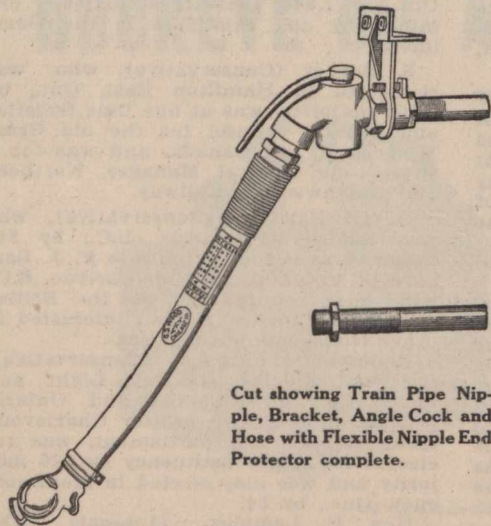
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Canadian Northern Railway Construction, Betterments, Etc.

The Canadian Northern Quebec Ry.—

The Board of Railway Commissioners has authorized the building of a 90 ft. deck plate girder bridge across the St. Charles River, at mileage 4.38 from Quebec.

The question of the extension of the company's yards in Hochelaga ward, Montreal, has been before the Board of Railway Commissioners on several occasions recently, and an appeal to the Supreme Court is being made against one of the Board's rulings. In this connection the Montreal city council has been recommended to delay granting roads.

The Board of Railway Commissioners has extended the time for the completion of the line across Notre Dame St., and the Montreal Street Ry. tracks.

Canadian Northern Ontario Ry.—A deed of sale has been registered in Montreal showing the transfer of 500 arpents of land in Longue Pointe ward from Mackenzie, Mann & Co., Ltd., to the C.N.O. Ry. The land adjoins the C.N.Q. Ry. near the approach to the Moreau Rd. terminal.

The bridges on the new short line which is being built from Montreal to Hawkesbury, Ont., are as follows: Riviere des Nordes, mileage 13.5 from Hawkesbury, consisting of five 55 ft., three 60 ft., deck plate girder spans, and one 24 ft. beam span on concrete piers and abutments. Rouge River, mileage 15.5 from Hawkesbury, consisting of two 40 ft. and one 85 ft. half through plate girder spans on concrete piers and abutments. Riviere des Chenes, mileage 30.7 from Hawkesbury, consisting of one 65 ft. half through plate girder span on concrete abutments. Riviere des Milles Iles, mileage 37.9 from Hawkesbury, consisting of 16 half through plate girder spans of 65 ft. each, girders 17 ft. 6 in., centre to centre, with floor systems, on concrete piers and abutments. Riviere des Prairies, (Back River) West channel, mileage 39.6 from Hawkesbury, consisting of five 80 ft. half through plate girder spans, girders 17 ft. 6 in. centre to centre, with floor system; main or east channel, mileage 40 from Hawkesbury, consisting of two 135 ft. centre to centre, and two 185 ft. centre to centre end bearing rivetted through trusses on concrete piers and abutments. These steel bridges will be built to Dominion Government specifications of 1908, class heavy loading, which provides for safe operation of two consolidated locomotives, coupled together, each weighing in working order 180 tons, followed by a train load of 4,750 lbs. per ft. The contract for the first four bridges has been let to the Dominion Bridge Co., Montreal. Contracts for the other two bridges have not yet been let. The concrete work is being done by the general contractor. The Board of Railway Commissioners has approved of the building of these bridges, and also of the revised location of the line from mileage 1.81 to mileage 7.85 from Hawkesbury.

The negotiations for the entrance of the line into Ottawa are proceeding, and it was reported Sept. 13, that the company had completed the purchase of the land necessary for its entrance and terminals. It is stated that negotiations are in progress for the purchase of the site of the Bate warehouse, on the west bank of the Rideau canal, just across from the new central station, for station purposes.

Revised plans for the line at Buck Lake, in Storrington and Bedford tps., and from mileage 164.31 to 165.56, have been approved by the Board of Railway Commissioners, which has also approved

of plans for a station at Belleville.

It is expected that the first section of the new line from Toronto to Ottawa will be opened for traffic Oct. 1. The mileage of this section from the junction with the Toronto-Sudbury line in the Don Valley just outside Toronto, to Trenton, is 104.4 miles. The company's officers inspected the line at the end of Aug., and the inspection by the Engineers of the Department of Railways was fixed for Sept. 23. The Board of Railway Commissioners has authorized the company to connect its tracks with the Central Ontario Ry. tracks at Trenton, mileage 104.4, from Toronto. The Board has also approved of the plans for laying out a freight yard at Trenton.

Application will be made to the Board of Railway Commissioners, Oct. 12, for approval of plans for a station building just south of the new bridge over the Don at Queen St. east, Toronto, and for the approval of the plans for the Toronto-Ottawa line from across the north part of Toronto.

In connection with the Ottawa-Selwood Jct. of the main line, it is stated that the delay in the letting of a contract is due to the fact that certain diversions will have to be made from the route as at present laid out, and that as a consequence it will be some little time before the new plans and specifications can be prepared.

With respect to the Sellwood Jct.-Port Arthur line, which is under contract, the Board of Railway Commissioners has approved of revised location plans for the line from mileage 15.75 to 24.75, and from mileage 32.4 to 50.6, southeast of Port Arthur, and of location plans through unsurveyed territory in Thunder Bay district from mileage 84 to 200, east of Port Arthur. The contractors are reported to have over 500 men at work on the first 70 miles east from Port Arthur, established in ten camps. A steam drill is at work in the rock cut near Current River.

Press reports state that a sub contract has been let to E. Anderson for grading 15 miles out from Port Arthur, to A. McGregor from mileage 15 to 17 and to Vigers and Paananan from mileage 19 to 23, easterly from Port Arthur, and that J. A. Whalen has been given a contract for building a bridge 59 miles east of Port Arthur.

A press report that C. P. L. Fowler, formerly Manager of the Nelson-Jenks Coal Co., at Great Falls, Montana, had been appointed Purchasing Agent for Foley Bros. and Northern Construction Co., contractors for the C.N.O.R. between Selwood Jct. and Port Arthur, was mentioned in our last issue. We have since been advised that Mr. Fowler has been appointed Chief Accountant, not Purchasing Agent.

C. T. De Lamere has taken charge of the work on Division C, at Nipigon, Ont., in place of R. H. McCoy, who was drowned recently.

Canadian Northern Ry.—Sir Donald Mann, Vice President, in an interview at Port Arthur, Ont., Sept. 11, is reported to have said the present grain elevator there will be doubled in size, thus bringing its storage capacity up to 14,000,000 bush., and that work on the enlargement will be started just as soon as the preliminary work, upon which the contractors are engaged, is completed. The contractors guarantee that a larger section of the additional storage capacity will be ready in Jan. or Feb., 1912. The company also proposes to establish a line of steamers of its own to ply between Port Arthur and the company's terminals on the Georgian Bay. The passenger steamers will be ready in the spring of 1913.

It is reported that the hotel at Port Arthur is to be enlarged at an early date.

The Board of Railway Commissioners has authorized the opening for traffic of the following lines: from Calder to Rhein, for freight at a speed of 18 miles an hour, the Roseburn extension from Rhein to Hamton, and the Delisle branch from Delisle to McRorie, Sask.

A connection between the C.N.R. line and the G.T. Pacific Ry. has been authorized by the Board of Railway Commissioners in s.w. ¼ sec. 36, tp. 30, r. 4, w. 2 m., Sask.

The Board of Railway Commissioners has ordered the fencing of the company's right of way on the Wawanesa subdivision, by July 1, 1912; has approved of plans for building a subway under the company's tracks at 23rd St., Saskatoon, and has approved location plans for the following lines: mileage 0 to 41.76 and mileage 49.94 to 60.45 on the extension westerly in Saskatchewan; mileage 0 to 14.16 from the junction with the Moose Jaw extension, Sask.; mileage 46.68 to 93.40 Alta.; mileage 255.73 to 260.03; and mileage 260.03 to 261.08 on the Calgary extension.

In a recent interview, G. H. Shaw, General Traffic Manager, in summing up the work in progress along the line, said the new station at Brandon is approaching completion, and the new hotel at the same place will be completed early in 1912. The work of relaying the old Qu'Appelle, Long Lake and Saskatchewan Rd., with heavier steel rails is practically completed between Regina and Warman. The new line from Vegreville to Calgary is in first class order from the junction with the main line at Vegreville, through Camrose to Stettler, Alta., 104 miles, and a full service of trains was put in operation Sept. 1.

Tracklaying on the branch into Moose Jaw, Sask., has reached a point about three miles south of that town; a large bridge is being erected there, and on its completion, tracklaying will be resumed.

In connection with the Vegreville-Calgary line, Sir Donald Mann, on the occasion of his recent visit to Calgary, said the line will be completed into the city by the end of the year. The Board of Railway Commissioners has authorized the construction of a bridge to carry the tracks over the C.P.R. main line near Calgary. To the south of Calgary there is a good deal of location work being done, and latest reports are that final location stakes are being put in on the route for the lines in the vicinity of Pincher Creek and Lethbridge.

Sir Donald Mann, Vice President, during his recent western trip, stated that a high level bridge will eventually be built to give connection with the country south of Edmonton, but whether it will be built at the east or west end of the city it has not been decided. Every effort of the company is now being directed to the completion of the coast to coast line.

As regards the work on the line from Edmonton to the Yellowhead Pass, late reports state that grading is well advanced to 168 miles west of Edmonton, and it is expected that track will be laid to the Rocky Mountains next year.

Track laying is reported to have been completed on the line to Athabasca Landing, to north of Clyde, Alta., and it is expected that steel will be laid into the Landing by the end of the year.

On the line towards the Peace River country from west of Edmonton, it is expected to have the grading completed to the Pembina River this fall. The Tobin Construction Co., which has the general contract is reported to have let a sub contract to the Bradley Construction Co.

Sir Donald Mann, Vice President, is reported to have stated on the occasion of his recent visit to Edmonton, that construction will be started next summer on a line northeast from Edmon-

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Hespeler, Ont.

tion, splitting the wedge of territory between the Athabasca Landing line and the Saskatchewan River. The route will, it is said, follow pretty closely that proposed for the Alberta and Great Waterways Ry., as far as the junction with the line now under construction from North Battleford to Athabasca Landing.

Canadian Northern Pacific Ry.—We are officially advised that a contract has been let for the construction of the line from Kamloops, B.C., to the Yellowhead Pass, to the Northern Construction Co., jointly. The work is to be started immediately and is to be completed by July 1, 1913. A general description of the route has already been given, but there have been some changes made on the revised location surveys which have just been completed. The Northern Construction Co., in conjunction with Foley, Welch and Stewart, has the contract for the 163 miles from Hope to Kamloops, while the Cowan Construction Co., is building westerly from Edmonton to the Yellowhead Pass.

Reports state that good progress is being made with construction on the Hope-Kamloops section, and the sub-contractors are getting large gangs of men and big plants on the different sections.

Sir William Mackenzie, President, and Sir Donald Mann, were at the Pacific coast at the beginning of Sept., looking over the work in progress at Port Mann, the terminus of the transcontinental line on the mainland, and at Victoria, in connection with the lines on Vancouver Island, and in interviews, stated that everything was going on satisfactorily.

Canadian North Eastern Ry.—Sir Donald Mann, in a recent interview said the project of extending this line, formerly known as the Portland Canal and Short Line Ry., across the divide into the Naas River Valley had not been lost sight of by the company. It was intended to carry the line through to a connection with the company's lines in Alberta, but the work could not be undertaken until the main trunk line was completed. (Sept., pg. 839.)

Terms of Quebec Central Railway Lease the to C.P.R.

The Secretary has issued the following circular to the holders of securities: I am instructed by my board to inform you that, subject to your approval, to be hereafter asked for at meetings of each class of debenture stockholders and the bond shareholders, to be summoned for that purpose, and subject also to the granting of the necessary statutory authority in Canada, they have entered into a provisional agreement with the directors of the Canadian Pacific Ry. Co., to lease your railway and all its assets for 999 years for a rental sufficient to provide for interest and dividends as follows:

Payment of interest on the 4% debenture stock (preserving all existing rights).

Payment of 3½% per annum on the 3% debenture stock (which is to be converted into a 50 year debenture stock at the new interest rate). Payment of principal guaranteed by lessee.

Payment of 5% per annum half yearly on the 7% income bonds (these bonds being converted into new 50 year bonds at the new rate of interest), and a 10% cash bonus being given as compensation to the converting bondholders for reduction of interest. Payment of principal guaranteed by lessee.

Payment half yearly of a dividend of 4% per annum on the shares for the first four years of the lease and a dividend of 5% per annum thereafter.

All these payments of interest and dividends will, in effect, be the direct obligation of the C.P.R. Co.,

The lease will commence from Jan. 1, or July 1, as the case may be, next after the date when the agreement becomes effective.

The C.P.R. will, it is understood, make such subsequent arrangements as may be necessary with the New York, New Haven and Hartford Rd. in regard to traffic agreement, etc. The control of the company will be with the C.P.R., and it is likely that the directorate will be changed to Canada.

The final steps in the transfer will not be taken by the shareholders until after the necessary act has been passed by the Quebec Legislature.

Canadian Northern Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:—

Earnings.	Expenses.	Net Earnings.	Net Increase
July \$1,475,900	\$1,114,300	\$ 361,600	\$ 13,400
Inc. \$ 250,800	\$ 237,400	\$ 13,400

Approximate earnings for August, \$1,420,650, and for two weeks ended September 14, \$696,500 against \$1,093,000 and \$544,300 for same periods 1910.

Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:—

Earnings.	Expenses.	Net Profits.	Net Increase.
July \$9,661,818.14	\$5,958,789.81	\$3,703,028.33	\$218,408.74
Inc. \$ 792,603.82	\$ 674,195.08	\$ 218,408.74

Approximate earnings for August, \$10,073,000, and for two weeks ended September 14, \$4,555,000, against \$8,926,000 and \$4,153,000 for same periods 1910.

Grand Trunk Railway Earnings, Expenses, Etc.

The following figures show the earnings and expenses of the G.T.R., C.A.R., G.T. Western Ry. and D.G.H. & M.R., for July, as compared with those for July, 1910:—

GRAND TRUNK RAILWAY.			
1911.		1910.	
Earnings	\$3,336,900	Earnings	\$2,538,400
Expenses	2,523,000	Expenses	1,826,750
Net earnings	\$ 813,900	Net earnings	\$ 711,650
CANADA ATLANTIC RAILWAY.			
1911.		1910.	
Earnings	\$ 177,700	Earnings	\$ 126,000
Expenses	157,000	Expenses	135,900
Net earnings	\$ 20,700	Net earnings	*\$ 9,900
GRAND TRUNK WESTERN RY.			
1911.		1910.	
Earnings	\$ 551,500	Earnings	\$ 394,400
Expenses	428,800	Expenses	335,700
Net earnings	\$ 813,900	Net earnings	\$ 711,650
DETROIT, GRAND HAVEN AND MILWAUKEE RY.			
1911.		1910.	
Earnings	\$ 171,200	Earnings	\$ 121,200
Expenses	143,400	Expenses	120,200
Net earnings	\$ 27,800	Net earnings	\$ 1,000

*Deficit.
Approximate earnings for Aug., \$4502,674, and for two weeks ended Sept. 14, \$2,060,101, against \$385,049 and \$ 1,901,444 for same periods, 1910.

TRAFFIC RECEIPTS OF THE SYSTEM.
Aggregate receipts from July 1 to Aug. 31:

1911.		1910.	
Grand Trunk Ry.	£1,414,826	£1,151,928	
Canada Atlantic Ry.	75,348	59,283	
G. T. Western Ry.	230,960	183,405	
D.G.H. & M. Ry.	74,768	57,084	
Totals	£1,795,902	£1,451,700	

During July 19 employees were killed and 31 injured in the course of their employment in railway service in Canada. Of the fatalities, seven were due to being struck by trains and locomotives, five to being run over, three to derailments, two to being crushed when coupling, and one each to heat prostration and to scalding. In addition to the foregoing, two employees were killed in the course of their work on railway construction, one being due to being run over by a train, and one to falling rock.

Railway Route Plans Approved.

The Minister of Railways has approved of the following route plans:—
ALGOMA CENTRAL AND HUDSON BAY RY.—July 24; about 100 miles.

CAMPBELLFORD, LAKE ONTARIO AND Western Ry. (C.P.R.) July 24. From east of Cobourg to a connection with Ontario and Quebec Ry. (C.P.R.) near Glen Tay, Ont.; about 109 miles.

CANADIAN NORTHERN ONTARIO RY.—July 24. Revision of Sudbury-Port-Arthur line, 10 miles.

Ottawa-French River line. Revision from Pembroke westerly; about 42 miles.

CANADIAN NORTHERN RY.—July 24. Yorkton to Hudson Bay Junction, about 95 miles.

Revision of Moose Jaw-Kindersley branch; about 25 miles.

CANADIAN PACIFIC RY.—July 24. Asquith to Conquest; 42 miles.

July 24.—Lauder to Boissevain; 33.5 miles.

July 24.—Wilkie to Anglia branch; 64 miles.

July 24.—Revision of Moose Jaw southwesterly line; 35 miles.

July 24.—Bassano to Irricana branch, 22 miles.

GRAND TRUNK PACIFIC BRANCH LINES Co.—July 24. Harte to Brandon; about 25 miles.

July 24.—Entrance to Brandon; about 5.4 miles.

July 24.—Biggar-Calgary branch, a slight revision in tp. 31, ranges 23 and 24, west of 3rd meridian, about 10 miles.

KETTLE VALLEY RY.—July 24. Revision of Midway-Carmi branch; 46 miles.

Aug. 24.—Penticton towards Osprey Lake, first 5 miles from Penticton.

LAKE ERIE AND NORTHERN RY.—July 24. Brantford to Port Dover, about 35 miles.

SOUTHERN CENTRAL PACIFIC RY.—July 24. From sec. 20, tp. 10, r. 2, to near n.e. corner of sec. 20, tp. 7, r. 2, west of 5th meridian; 22.4 miles.

July 24.—From sec. 26, tp. 6, r. 1, west of 5th meridian to the international boundary near Coutts; 96.5 miles.

Orders Placed for Steel Rails.

We were officially advised, Sept. 20, that the C.P.R. had ordered 1,200 tons of 65 lb. steel rails in the United States for use on branch lines in the Canadian northwest.

The National Transcontinental Railway Commission received tenders up to Sept. 4 for 2,000 gross tons steel rails, 80 lbs., to be delivered at Moncton, N.B. The Dominion Iron & Steel Co.'s tender has been accepted.

In our June issue it was stated that the Grand Trunk Ry. had ordered 37,500 tons of 100 lb. rails, divided between the Algoma Steel Co., and the Dominion Iron & Steel Co. We are now officially advised that a further order has been placed for 12,500 tons of 100 lb. rails, with the Algoma Steel Co., and 5,000 tons of 80 lb. rails have been ordered from the Lackawanna Steel Co., for use on G.T.R. lines in the United States.

A recent press report stated that the G.T.R. was in the market for 10,000 tons of steel rails. We were officially advised Sept. 21, that the management was figuring on the supply for next year, but the quantity to be ordered had not been decided.

The Secretary of the Board of Railway Commissioners, issued a circular Sept. 6, asking railway companies to furnish within 60 days a statement showing the number of snow ploughs equipped with automatic couplers on the front end, and the number that are not so equipped, or that are equipped with the old fashioned bar.

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Mr. Gear, who died in Montreal, Sept. 22, was father of W. I. Gear, Vice President, Robert Reford Co.

Mrs. J. T. Moore, wife of the President of the Alberta Central Railway, died in Toronto, September 6.

Hugh A., Mrs. and Miss R. Allan arrived in Canada by the s.s. Victorian, Sept. 8, from England, on a visit.

C. J. Binney, of the Canadian Freight Association's staff at Winnipeg, was married there, Sept. 6, to Miss R. M. Boulton.

H. H. Colpitts, C.P.R., engineer, Macleod, Alberta, was married recently there to Miss A. F. Johnson, of Monarch, Alta.

Mrs. S. P. Mabee, who died at Port Rowan, Ont., Sept. 5, aged 85, was mother of J. P. Mabee, Chief Railway Commissioner.

E. N. Soper, son of N. Y. Soper, director of the Ottawa Electric Ry., was married to Miss H. A. McDougall, in Ottawa, Sept. 30.

A. J. Gorrie, Receiver for the Quebec and Lake St. John Ry., returned to Quebec, Sept. 1, from Great Britain, by the s.s. Royal Edward.

T. Howell, General Immigration Agent, Canadian Northern Ry., Toronto, returned from Great Britain, by the s.s. Royal Edward, Sept. 1.

Jas. Leitch, K.C., Chairman, Ontario Railway and Municipal Board, returned to Toronto early in September, from a vacation in Great Britain.

W. R. McRae, Superintendent, Motor and Truck Dept., Toronto Railway, returned to Toronto on Sept. 14 with his family, from a trip to Europe.

N. Curry, President, Canadian Car & Foundry Co., Montreal, has been unanimously elected President of the Canadian Manufacturers' Association.

A. F. Murray, of the C.P.R. Architect's Department, Montreal, was drowned while bathing at Isle Cadieux, Lake of the Two Mountains, Sept. 3.

W. J. Connolly, who died at Gillingham, Alta., recently, aged 68, spent several years in railway contracting work west of Winnipeg.

W. Burn, a representative of the Great Western Ry. of England, recently completed a tour of Canada in the interests of his company.

Miss Brownlee, daughter of J. Brownlee, Superintendent, C.P.R., Moose Jaw Sask., was married there, Sept. 6, to Mr. Leach, of Cranbrook, B.C.

F. H. Phippen, K.C., General Counsel Canadian Northern Ry., accompanied by his family, returned to Toronto, Sept. 1, from Great Britain.

G. Hannah, Passenger Manager, Allen Steamship Line, returned to his office in Montreal, Sept. 18, after having been in Great Britain for some weeks.

Lady Shaughnessy and family have returned to Montreal from St. Andrews, N.B., and have closed Fort Tipperary, their summer home, for the winter.

Sir Wm. Van Horne, left Montreal, Sept. 22, for a short visit to St. Andrews, N.B., where Lady Van Horne expects to remain until the end of Nov.

Sir Thos. Tait, was in St. John, N.B., Sept. 13, in company with D. McNicoll, Vice President C.P.R., on the latter's inspection of the lines east of Montreal.

C. Schreiber, C.M.G., Consulting Engineer to the Dominion Government, returned to Ottawa, Sept. 19, after spending a short holiday in New Brunswick.

W. G. Annable, General Passenger Agent, C.P.R. Atlantic Steamship Service, Montreal, and Mrs. Annable arriv-

ed in England, Sept. 1, for a short holiday.

D. J. Evans was presented with a diamond ring, Aug. 31, by the office staff of the Canadian Locomotive Co., Kingston, Ont., on his retiring from the position of accountant.

J. M. Bryce, who died in Toronto, Aug. 29, aged 79, is reported to have been driver of the first C.P.R. engine which ran from Winnipeg across the Assiniboine River.

The marriage of C. P. Edwards, of the Dominion Government Radio-Telegraph Service, Vancouver, B.C., to Miss M. G. Dickeson, of Ottawa, is announced to take place in October.

C. S. Mellen, President, New York New Haven and Hartford Rd., is reported to have stated, Sept. 12, that there was no truth in the reports that he was about to resign the presidency.

F. J. Moss, of the Canadian Northern Ry. Emigration Department, London, Eng., spent some time in Aug. and Sept., on a tour through Canada, collecting information for the use of the department.

Lord Strathcona has given \$3,000 towards the fund being raised in Vancouver, B.C., to purchase the old British survey ship, Egeria, as a training ship for the Vancouver branch of the Navy League.

Dr. D. M. Lincham, Winnipeg, and Dr. Fraser, Brandon, Man., are reported to have been appointed medical officers in charge of the construction camps on the Dominion Government railway to Hudson Bay.

Frank Grundy, Vice President, Quebec Central Ry., Sherbrooke, Que., who died Nov. 15, 1910, left an estate of \$213,713.77, divided equally in shares of \$35,618 each among five sons and one daughter.

Lord Strathcona sailed from England, Sept. 23, via New York, for Canada. He may be present at the welcome to H.R.H. the Duke of Connaught, when he arrives to assume the position of Governor-General.

H. N. Frith, at one time in the B.C. Electric Ry. accountants' department, and now Secretary of the Yokuna Valley Transportation Co., is reported to have resigned that position with a view of returning to Vancouver.

J. F. Cameron, of Trickey and Cameron, railway contractors, died in the hospital at Cornwall, Ont., Sept. 3, aged 55. He was a son of the late J. Cameron, who was engaged on the construction of the Hoosac tunnel.

The engagement is announced of Miss M. G. Nanton, daughter of A. M. Nanton, Winnipeg, Managing Director of the Alberta Ry. & Irrigation Co., to D. L. Cameron, son of Hon. D. C. Cameron, Lieutenant-Governor of Manitoba.

A life size portrait of the late R. Reid, who was one of the original members of the National Transcontinental Ry. Commission, has been placed in the Public Library, London, Ont. He was the first chairman of the library board.

H. T. Wilgress, Agent, C.P.R. Trans-Pacific Steamship Line, Yokohama, Japan, accompanied by Mrs. Wilgress, arrived in Canada, Sept. 15, from England, on the C.P.R. s.s. Empress of Ireland, on their return to Japan after a vacation.

J. J. O'Connor, steamship agent, etc., Port Arthur, Ont., has been appointed by the Ontario Government as a magistrate, with jurisdiction along the Canadian Northern Ontario Ry. under construction from Port Arthur to Gowganda Jet.

G. S. Hodgins, who was at one time connected with the C.P.R. Mechanical

Department, has resigned the position of Managing Editor of Railway and Locomotive Engineering, New York, on account of ill health, and has gone abroad to recuperate.

S. O. Greening, President of the B. Greening Wire Co., Ltd., Hamilton, Ont., died there, Aug. 3, aged 64. He was one of the directors of the Dominion Power and Transmission Co., owning the electric railways running into and radiating from Hamilton.

Sir William Whyte was chairman of the committee which had charge of the arrangements for the dinner given in Winnipeg, Sept. 28, to Sir Daniel and Lady McMillan, on Sir Daniel terminating his tenure of office of Lieutenant-Governor of Manitoba.

P. A. Laing, a resident engineer on the National Transcontinental Railway construction, was presented with a diamond pin by the staff at Residency 20, near Cochrane, Ont., Sept. 12, on his leaving to take a post-graduate course in engineering in Columbia University, New York.

J. S. Campbell, who died at Byron, Cal., Sept. 10, resided for a number of years in Winnipeg, and was connected with the C.P.R. passenger department. At the time of leaving that company's service in 1898 he was Secretary to R. Kerr, then Assistant Traffic Manager Western Lines.

C. H. Allen, who has been appointed Real Estate Agent, Western Lines, C.P.R., Winnipeg, Man., is a son of T. Carleton Allen, K.C., LL.D., of Fredericton, N.B., and was born at St. John, N.B., Aug. 28, 1880. Prior to entering the C.P.R. Solicitor's office in Jan. 2, 1909, he practised law in Fredericton, N.B.

Sir Thos. G. Shaughnessy, President, C.P.R., has offered \$1,000 as a prize for the best 20 lbs. of hard red wheat at the American Land and Irrigation Congress to be held in New York in Nov. The C.P.R. will carry all shipments of wheat for the competition from the Calgary irrigation lands free of charge.

W. McIlroy, City Passenger Agent, C.P.R., Peterboro, Ont., who was appointed by the Canadian Ticket Agents' Association as representative to attend the American Association of General Passenger and Ticket Agents' convention at St. Paul, Minn., Sept. 19, was unable to be present in consequence of a change of staff in his office.

C. J. Rogers, who has been appointed acting Purchasing Agent and Cashier, White Pass and Yukon Route, Vancouver, B.C., was born at Winnipeg, Man., Dec. 22, 1887, and entered W.P. and Y. R. service Sept. 1904, since when he has been, to Nov. 1, 1906, clerk at Dawson, Yukon; Feb. 4, 1907 to July 31, 1911, Assistant Purchasing Agent, Vancouver, B.C.

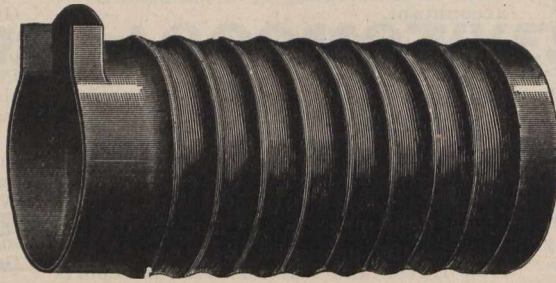
E. T. Agate, C.E., M. Can. Soc., C.E., who was recently appointed District Engineer, Canadian Northern Ontario Ry., in charge of District 1, Port Arthur-Sudbury line, at Sudbury, was born at Pittsford, N.Y., Dec. 7, 1874, and graduated from Cornell University in 1897. He was with the C.P.R. Construction Department from 1897 to 1906, and from 1906 to 1910 was engaged in railway work in British Columbia and Washington State.

G. T. Rooke, whose appointment as Inspector of Transportation, Eastern Lines, C.P.R., was announced in our last issue, was born at Whitby, Ont., Oct. 21, 1865, and commenced railway work in Aug., 1880, as telegraph operator on the Credit Valley Ry. He remained with the C.P.R. when it took over the C.V.R., and to the date of his present appointment has been telegraph operator, train dispatcher and train and station inspector, consecutively.

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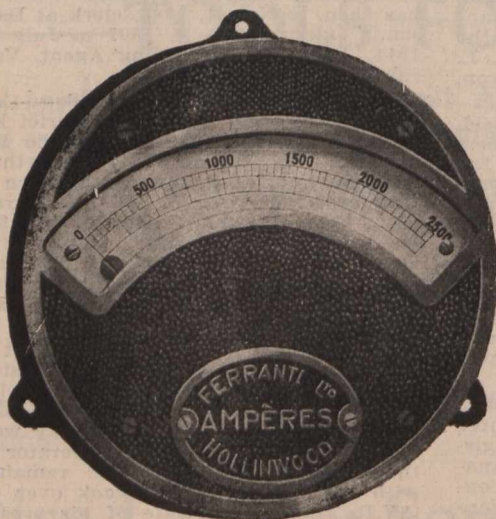
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R. H. McCoy, Division Engineer, Division C, Canadian Northern Ry., Gowanda Jet to Port Arthur line, with S. A. Drum, Resident Engineer, Nipigon, and R. Nelson, rodmian, were drowned by the upsetting of their canoe, in Lake Helen, north of Lake Nipigon, about Aug. 30. R. H. McCoy was for some years in the C.P.R. Engineering Department, and latterly was engaged under the Division Engineer, Chicago, Milwaukee and Puget Sound Ry., Spokane, Wash. S. A. Drum was a native of Minneapolis, and had latterly been engaged on the C.M. & P.S.R. in Washington, and R. Nelson was from Duluth, Minn.

A. A. Goodchild, whose portrait appears on another page, was born at London, Eng., June 3, 1866, came to Canada, June, 1886, and entered railway service in July, 1886, since when he has been, to Jan. 1, 1888, in Audit Department, G.T.R.; Jan. 1, 1888, to Oct. 2, 1899, in Comptroller's office, C.P.R.; Oct. 2, 1899, to Jan., 1900, Assistant Auditor of Disbursements, C.P.R.; Jan., 1900, to Dec. 28, 1904, Auditor of Statistics, C.P.R., on which date he was appointed Auditor of Stores and Mechanical Accounts, which position he now holds. He has taken an active part in the Canadian Railway Club's work and is its president for the current year.

R. L. Thompson, District Passenger Agent, C.P.R., Toronto, has resigned, and has been appointed Managing Director, Pacific Realty Co., Ltd., Toronto, which carries on an insurance and real estate business. He was born at Montreal, Aug. 17, 1873, and entered C.P.R. service Aug., 1888, in the General Passenger Department, occupying positions as stenographer, advertising, claims, accounts and rate clerk, to July, 1904, since when he has been, to Nov., 1905, assistant chief clerk, and Nov., 1905, to Jan., 1907, chief clerk to Passenger Traffic Manager, Montreal; Jan., 1907, to Sept. 8, 1908, General Agent, Passenger Department, Cincinnati, Ohio; Sept. 8, 1908, to Sept., 1911, District Passenger Agent, Toronto.

A. B. Calder, whose resignation from the position of General Agent, Passenger Department, C.P.R., Chicago, Ill., was mentioned in our last issue, was born at London, Ont., Aug. 24, 1867, and entered C.P.R. service in 1887, since when he has been, to 1889, in the Passenger Department, Winnipeg; 1889 to Oct., 1893, ticket clerk at Tacoma, Wash.; Oct., 1893, to July, 1895, Travelling Passenger Agent, Tacoma, Wash.; Oct. 1893, to July, 1895, Travelling Passenger Agent, San Francisco, Cal.; Dec., 1897, to Nov., 1904, Travelling Passenger Agent, Seattle and Tacoma, Wash.; Nov., 1904, to Nov., 1910, General Agent, Passenger Department, Seattle, Wash.; Nov., 1910, to Sept., 1911, General Agent, Passenger Department, Chicago, Ill. After a short vacation on the Pacific coast, he will join his father in the general ticket business in Winnipeg. Before leaving Chicago he was given by the passenger staffs of the various railways represented there a case containing an assortment of hats for all occasions.

J. M. R. Fairbairn, who has been appointed Assistant Chief Engineer Eastern Lines, C.P.R., Montreal, was born at Peterboro, Ont., June 30, 1873. He graduated from the School of Practical Science, Toronto, in 1893, and until Aug., 1901, was engaged in survey and construction work, since when he has been, to Nov., 1902, Assistant Engineer, Maintenance Department, Eastern Lines, C.P.R.; Nov. 1902, to Aug. 1904, Resident Engineer, District 4, C.P.R., Ottawa; Aug. 1904, to Aug. 1905, Assistant Engineer, Chief Engineer's office, C.P.R., Montreal; Aug., 1905, to Mar., 1906, acting Division Engineer, Eastern Divi-

sion, C.P.R., Montreal; Mar., 1906, to Nov., 1907, Division Engineer, Ontario Division, C.P.R., Toronto; Nov., 1907, to Oct., 1908, Division Engineer, Eastern Division, C.P.R., Montreal; Oct., 1908, to Oct., 1910, Principal Assistant Engineer, Eastern Lines, C.P.R., Montreal; Oct., 1910, to Feb., 1911, Engineer of Maintenance of Way, Eastern Lines, C.P.R., Montreal; Feb. to Sept., 1911, acting Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal.

J. W. Loud, whose retirement from G.T.R. service on account of his having reached the age limit is announced, was born in Warwickshire, Eng., and was in the employ of the Midland Ry. from Aug., 1861, to 1872, in which year he came to Canada, since when he has been, Sept., 1872, to Jan., 1875, clerk, General Eastern Freight Agent's office, G.T.R.; Jan. to Apr., 1875, Agent, G.T.R., Hamilton, Ont.; Apr., 1875, to Sept., 1877, chief clerk, Assistant General Freight Agent's office, G.T.R., Toronto; Sept., 1877, to Nov., 1881, chief clerk, General Freight Agent's office, G.T.R., Montreal; Nov., 1881, to Dec., 1886, Freight Agent, G.T.R., Toronto; Jan., 1877, to Aug., 1889, General Freight Agent, Through Traffic, G.T.R., Montreal; Sept., 1889, to Feb., 1896, Traffic Manager, Detroit, Grand Haven and Milwaukee Ry., Detroit, Mich.; Feb., 1896, to Apr., 1900, General Freight Agent, G.T.R., Montreal; May, 1900, he was appointed Freight Traffic Manager, G.T.R., Montreal, and subsequently, also, Freight Traffic Manager, Central Vermont Ry., and Grand Trunk Pacific Ry.

A. H. N. Bruce, whose portrait appears on the first page of this issue, was born at Ballyscullion, County Derry, Ireland, June 18, 1854, and after studying engineering and taking a practical course in Glasgow, Scotland, came to Canada in 1889, since when he has been, to 1890, on construction of Canada Atlantic Ry. bridge over the St. Lawrence at Coteau, Que.; 1890, assistant engineer on location and construction, St. Lawrence and Adirondack Ry.; 1890 to 1898, Chief Assistant Engineer on location and construction of Ottawa and Parry Sound Ry.; 1899, on location survey of Manitoba and South Eastern Ry.; 1900, on location and construction of 30 miles of Great Northern Ry. of Canada, from St. Jerome, Que., to Hawkesbury, Ont., including the bridge over the Ottawa River; 1901 and 1902, Chief Engineer, Whitney and Opeongo Ry.; 1903 to Mar. 31, 1904, Divisional Engineer on location and construction, Lindsay, Bobcaygeon and Pontypool, Ry., Mar. 31, 1904 to 1905, Chief Engineer, same road; 1905, Assistant Chief Engineer, Toronto and Hamilton Ry.; 1906, Chief Engineer on surveys and construction, Napierville Jct. Ry.; 1907 to 1909, in private practice; 1910, Chief Engineer in charge of surveys, Little Nation River Ry.; and since Feb., 1911, Chief Engineer, Quebec and Saguenay Ry., which is under construction between Cap Tourmente and Murray Bay, Que.

Comparative Freight and Passenger Rates.—A contemporary publishes the following: The statement is frequently made that the freight and passenger rates on United States railways are lower than those for other countries. The average freight rates charged by the Union Pacific and Northern Pacific per ton mile, for ten years figure out .97 cent. and .89 cent., respectively, compared with .76 cent. on the Canadian Pacific. The ten-year average passenger rates, per passenger per mile for three yoads, figure out as follows: Union Pacific, 2.13 cents; Northern Pacific, 2.23 cents; Canadian Pacific, 1.83 cents.

Grand Trunk Pacific Railway Fort William Terminals.

A press report states that the company's plans for terminals at Fort William, Ont., include elevators with a capacity of 60,000,000 bushels and docks. The dock plans show three great piers in the Mission River harbor from which freight can be loaded into lake vessels by working elevators on both sides. It will be possible to drop 75,000 bush. of grain every hour of the day from the elevators into lake boats. Each unit will consist of a working elevator and storage elevators of 10,000,000 bush. capacity when complete. The cars can be unloaded at six places at the rate of 2,400 cars a day of 20 hours. The unloading is done in the track shed, which is part of the working house. Four tracks extend through this shed. The arrangement is such that grain from the various cars cannot be mixed. The unloading is done by power grain shovels of unusual size and strength. Even the dock is of concrete and the storage house consists of seventy cylindrical concrete bins, each over 23 ft. inside diameter and with 50 interspace bins. Six vessel loading spouts are provided for loading grain into lake vessels.

C.N.R. Toronto to Trenton.—The Canadian Northern Ontario Ry. has arranged to open its recently completed Toronto-Trenton line for traffic, Oct. 2, when both passenger and freight services will be put into operation, should nothing unforeseen occur. The passenger service will consist of two trains each way daily, leaving Toronto Union Station, and calling at Queen St., Rosedale, East Don, Malvern, Cherrywood, Greenburn, Brooklin, Oshawa, Bowmanville, Orono, Starkville, Osaca, Port Hope, Coburg, Grafton, Colborne, Brighton and Trenton. The freight service will consist of one train each way, daily. There will be no changes of officials of the Operating Department, the present officials having their jurisdiction extended over the new line.

Railway Commission for the West.—During his tour in Manitoba and the other northwest provinces last summer the Dominion Premier-elect, R. L. Borden, stated that if returned to power he would create a western division of the Board of Railway Commissioners to deal with western cases. It is expected that legislation to carry this into effect will be introduced at the next session of Parliament and that a separate board, under an Assistant Chief Commissioner will be appointed with headquarters in the west.

The Canadian Railway Club has changed its monthly meetings at Montreal to the second Tuesday in the month, instead of the first Tuesday, as heretofore.

The C.P.R. has changed the name of its Ottawa union station to Ottawa Broad St. station. The central station, owned by the G.T.R., which is also used by the C.P.R. for certain trains is designated in C.P.R. time tables as Ottawa Sparks St. station.

Lt. Col. H. E. Greenwood, Assistant Chief Engineer, Mackenzie, Mann & Co., Ltd., returned to Toronto early in September from Great Britain. While there he engaged a number of young men to act as resident engineers, and in other positions on the Canadian Northern Ontario Ry. construction between Ottawa and Port Arthur. The resident engineers' pay is about \$100 a month and board. Applicants for positions were informed that they must provide transit, theodolite level and drawing instruments and pay their passage to Toronto.

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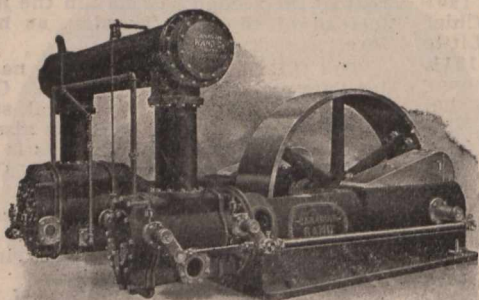
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TRANSPORTATION APPOINTMENTS.

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

Board of Railway Commissioners.—A. T. Kerr, has been appointed Assistant Engineer for Alberta and British Columbia. Office, Calgary, Alta.

H. A. K. Drury, continues as Assistant Engineer at Winnipeg, for Manitoba, and Saskatchewan, instead of for all territory west of Lake Superior as heretofore.

Canadian Northern Ontario Ry.—A. N. Molesworth, heretofore District Engineer, National Transcontinental Ry., at Cochrane, Ont., has been appointed District Engineer C.N.O.R. Office, Ottawa, Ont.

C. T. DeLamere has been appointed Division Engineer, Division C. Gowgan-da Jct.-Port Arthur section, vice R. H. McCoy, accidentally drowned. Office, Nipigon, Ont.

Canadian Northern Ry.—R. A. Lennox, heretofore in Canadian Northern Steamships Department, has been appointed Travelling Freight Agent, Toronto, vice M. A. Thompson, transferred to Hamilton, Ont.

M. A. Thompson, heretofore Travelling Freight Agent, Toronto, has been appointed Travelling Freight Agent, Hamilton, Ont.

Canadian Pacific Ry.—A. C. Lytle, heretofore Assistant Trainmaster, District 1, Eastern Division, Farnham, Que., having resigned to enter Montreal St. Ry. service, as Assistant Superintendent of Construction, the position of Assistant Trainmaster at Farnham, has been abolished.

C. W. Stackhouse has been appointed Locomotive Foreman at Three Rivers, Que., vice H. Frawley, transferred to Ottawa, Ont.

J. M. R. Fairbairn, heretofore Engineer of Maintenance of Way, and acting Assistant Chief Engineer, Eastern Lines, has been appointed Assistant Chief Engineer, Eastern Lines, vice J. G. Sullivan, appointed Assistant Chief Engineer, Western Lines, Winnipeg, in January.

A. T. Shaughnessy, heretofore in the office of G. M. Bosworth, Vice President, has been appointed Contracting Import Freight Agent, Atlantic Steamship Lines. Office, Board of Trade Bldg., Montreal.

H. Frawley, heretofore Locomotive Foreman at Three Rivers, Que., has been appointed Locomotive Foreman at Ottawa, Ont., vice F. Nowell, transferred to Lake Superior Division.

T. McCann has been appointed Foreman Boilermaker, Carleton Jct. shops, Ont., vice J. Clarke, resigned.

R. L. Thompson, District Passenger Agent, Toronto, has resigned to enter private business in Toronto.

A. P. Walker has been appointed acting Division Engineer, Ontario Division, Toronto, during the absence on leave of M. A. L. Hertzberg.

G. Joyce, city Ticket Agent, Woodstock, Ont., and also agent Dominion express Co. is reported to have resigned to engage in business in Montreal.

E. T. Wright has been appointed Storekeeper at Schreiber, Ont.

D. S. Schofield, heretofore Storekeeper at Lethbridge, Alta., has been appointed Storekeeper at Kenora, Ont., vice W. J. Fidler, transferred to the General Stores Department, Winnipeg.

C. H. Allen has been appointed Real Estate Agent for Western Lines, in charge of all properties owned or used on operated lines, and will procure and keep the necessary documents and all particulars in connection therewith, which particulars he will furnish to any

officer interested, on request. He will also have charge of the disposal by sale or lease of any such properties which the company may from time to time decide are not then required for its operating purposes or for sites for the handling of grain, coal and lime. Office, Winnipeg.

G. Pratt, heretofore Maintenance Foreman, Winnipeg shops, has been appointed General Locomotive and Fuel Inspector, Western Lines, Winnipeg.

J. Enman, heretofore in the Bridge and Building Department, Brandon, Man., has been appointed Maintenance Foreman, Winnipeg shops, vice G. Pratt, promoted.

G. Brooke has been appointed Storekeeper at Souris, Man. This is a new position.

R. S. Aylan has been appointed Storekeeper at Hardisty, Man. This is a new position.

H. H. Boyd, heretofore District Master Mechanic, Cranbrook, B.C., has been appointed Superintendent District 2., Saskatchewan Division, vice E. L. Chudleigh, resigned. Office, Saskatoon.

J. V. McNab, heretofore Resident Engineer Moose Jaw, Sask., has been appointed Resident Engineer at Saskatoon, Sask., vice R. C. Smith, transferred, as reported in our last issue.

R. C. Smith, heretofore Resident Engineer at Saskatoon, has been appointed Resident Engineer at Moose Jaw, Sask., vice J. V. McNab, transferred, as reported in our last issue.

I. Haynes, heretofore Shop Foreman, Calgary, Alta., has been appointed Car Foreman at Lethbridge, Alta., vice J. W. Marshall, transferred to Winnipeg car shops.

N. C. Stibbs has been appointed Storekeeper at Lethbridge, Alta., vice D. S. Schofield, transferred to Kenora, Ont.

F. R. Pennyfather, heretofore Locomotive Foreman, Lethbridge, Alta., has been appointed District Master Mechanic, Cranbrook, B.C., vice H. H. Boyd, promoted.

A Mainprize, heretofore switch foreman, has been appointed Night Yardmaster at Revelstoke, B.C. This is a new position.

T. J. Wall, heretofore City Passenger Agent, Chicago, Ill., has been appointed General Agent, Passenger Department, Spokane, Wash., vice G. A. Walton, transferred to Chicago, Ill.

Grand Trunk Pacific Ry.—R. G. Gilbride has been appointed Locomotive Foreman at Graham, Ont., vice J. P. Hogan, assigned to other duties.

R. Gardiner, heretofore acting Locomotive Foreman, Transcona, Man., has been appointed Locomotive Foreman at Melville, Sask., vice A. F. Lozo, resigned to enter private business.

J. H. Hanna, who was Division Freight Agent, G.T.R., at Hamilton, until May 1, 1903, when he resigned and went to Calgary on account of ill health, is reported to have been appointed City Passenger Agent G.T.P.R. at Calgary.

Grand Trunk Ry.—C. R. Morgan, is acting as City Passenger and Ticket Agent at Hamilton, Ont., the position held by his late father, C. E. Morgan, not having yet been permanently filled.

H. W. Matthews, heretofore Passenger Trainmaster, Western Division, Detroit, Mich., has been appointed Trainmaster, District 25 (G.T. Western Ry.) and District 29, (Detroit Division). All reports heretofore made to the Assistant Superintendent at Battle Creek, Mich., and Trainmaster at Durnand, Mich., from these Districts, will be made to him. Office, Port Huron, Mich. The position of Passenger Trainmaster has been abolished.

The following agents have been appointed: Severn, Ont., B. Sine (acting); Trout Creek, Ont., J. E. Bell; Lisle, Ont., J. Orr; Glencairn, and Avening, Ont., R.

Stephenson; Fergus, Ont., O. Martin; Lucknow, Ont., S. Young; South Indian Ont., W. J. Buberville; Barry's Bay, Ont., W. P. Bradley; Aubrey, Quebec, Beaufre.

Great Northern Ry.—W. P. [unclear] heretofore chief clerk, C.N.R. Wash., is reported to have been [unclear] ed General Agent, Victoria, B.C. R. Stephen, resigned to enter [unclear] business.

National Transcontinental Ry.—S. N. Parent, Chairman, to have resigned, and it is [unclear] Commissioners will do the [unclear] sequence of the defeat of the Dominion elections.

H. M. Balkam, heretofore [unclear] Engineer, Ottawa, has [unclear] District Engineer, Cochrane, A. N. Molesworth, resigned, C.N.O.R. service.

G. L. Mattice, Assistant District Engineer, North Bay, Ont., has [unclear] office moved to Cochrane, Ont.

Union Pacific Rd., Southern Ry.—Co., Oregon Short Line Ry., [unclear] Washington Rd. and Navigation [unclear] was stated in our last issue [unclear] Vaux, Travelling Passenger Agent [unclear] onto, had been appointed Canada [unclear] senger Agent. A copy of the [unclear] issued by the General Agent, [unclear] Mich, since received assigns him [unclear] lowing territory: points in Ont. [unclear] Ste. Marie, Ont., and east to, [unclear] ing points in Quebec, west [unclear] aginary line commencing at [unclear] Loup and St. Lawrence [unclear] south to the Northern state [unclear] Maine.

Wabash Rd.—G. C. [unclear] heretofore Travelling Freight [unclear] Toledo, O., has been appointed [unclear] ling Freight Agent, New York [unclear] ritory, reporting to General [unclear] Buffalo; the New York [unclear] being divided between him [unclear] Price, District Freight Agent [unclear] Ellicott Square Bldg., Buffalo, N.Y.

White Pass and Yukon Ry.—O. L. Diskeson, Vice President, has also assumed the duties of General Manager, vice A. L. Berdoe, resigned.

G. H. Miller has been appointed acting Auditor, vice W. B. King, resigned. Office, Skagway, Alaska.

C. J. Rogers has been appointed acting Purchasing Agent and Cashier, vice H. H. Phillips, resigned. Office, Vancouver, B.C.

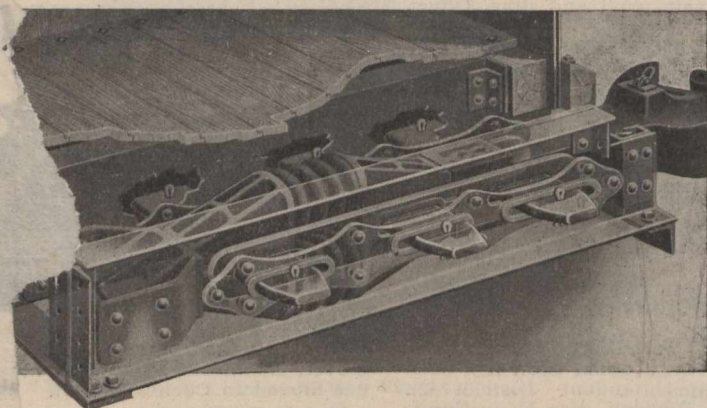
Creosoting Ties.—The Canadian Northern Ry. has, we are officially advised, made an arrangement with Alex. Bruce & Co., for the preservative treatment of 500,000 ties, by the Bruning & Marmetsche process. The plant, which is to be erected at Fort Frances, Ont., will have a capacity of about 2,000 ties a day, and the C.N.R. has agreed to deliver enough 8 ft. ties to keep the plant employed till the contract is completed. This year 100,000 ties are to be delivered, and the balance during 1912, the whole 500,000 to be treated by Dec. 31, 1912.

C.N.R. Elevator at Port Arthur.—Hugh Sutherland, Executive Agent, Canadian Northern Ry., Winnipeg, is reported to have stated there, Sept. 6, that the company would shortly increase its storage capacity at Port Arthur. Estimates are being prepared, but it is said that work will not be commenced this year owing to the lateness of the season.

A conciliation board will shortly be appointed to consider the question of the G.T.P.R. machinists and makers for a similar wage and schedule to that which prevails on C.P.R. and C.N.R.

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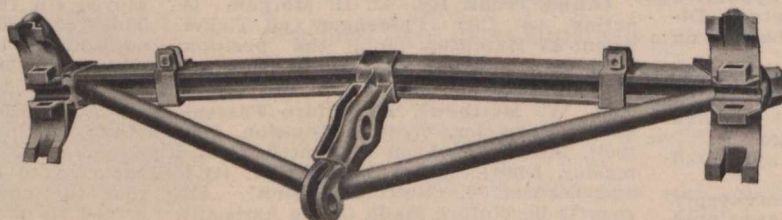
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The Retirement of Sir William Whyte from the C.P.R. Service.

The withdrawal of Sir William Whyte, Vice President of the C.P.R., from active railway work, after 46 years continuous service in Canada, first with the G.T.R. and for 28 years with the C.P.R. and its acquired lines, is an event of really national importance, and the announcement has been received with deep regret, not only throughout the vast territory of empire extent west of Lake Superior, where he has had general charge of all the company's great interests, but in every part of Canada, his name being a household word from the Atlantic to the Pacific.

After most satisfactorily serving the C.P.R. in various operating positions in Ontario and Quebec, Mr. Whyte went to Winnipeg in 1886, as General Superintendent of the then Western Division, in charge of all lines between Lake Superior and British Columbia's eastern boundary. In the following year he was made Manager of all lines west of Fort William to the Pacific Coast and in 1901 was appointed Assistant to the President. In Dec. 1903 came the crowning point in his career, when he was appointed Second Vice President in general charge of the maintenance and operation of the Western Lines, and, under the President's direction, of the administration of the company's affairs in the territory between Lake Superior and the Pacific Coast. Never has any other railway appointment in Canada been so popularly acclaimed. The people and the press throughout the west unanimously gave expression to the general feeling of satisfaction and a new era of relations between the company and the western public was inaugurated.

In the years that have elapsed the wisdom of the C.P.R. directorate in placing Sir William at the head of its western affairs has become plainer day by day. He has administered its great interests with conspicuous ability and unwearied devotion, and while maintaining the company's position has carried the public with him, by his absolute candor and fairness. The public confidence in his integrity has been a most valuable asset to the company and has enabled him to carry through many negotiations in a manner that very few indeed, if any other, men could have done. A notable instance of how he could maintain the company's position without alienating public opinion occurred in the eighties, when the Northern Pacific Rd., backed by the Manitoba Government, the Winnipeg Board of Trade and in fact the citizens generally, attempted to lay a track across the C.P.R. in the Fort Rouge suburb of Winnipeg. Mr. Whyte having been apprised of what was to be attempted, was on the spot with a small army of men, before the N.P.R. forces arrived. He effectually prevented the laying of the crossing, for which there was no legal authority, but so judiciously handled the delicate situation that he made no enemies for himself or the company. The historic name, Fort Whyte, will ever be a reminder of this memorable incident, when most serious trouble might easily have occurred had the protection of the company's interests been in the hands of a less diplomatic man.

Among the other officers and employees of the Western Lines there is the deepest regret at the severance of

the tie with their chief of so many years. Absolutely fair in every respect, Sir William has for years been looked on as the friend of everyone on the pay roll and everyone knew that he could always get a patient and fair hearing and that he would not be the victim of any injustice or hasty action.

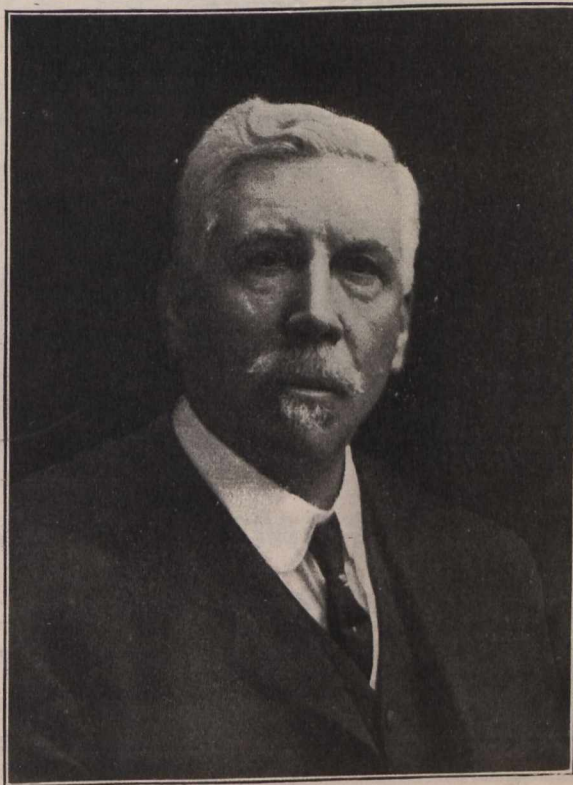
The history of Sir William's administration of the vast territory under his jurisdiction is practically the history of its general development and expansion. From a comparatively small mileage, he has seen the company's lines west of Lake Superior grow many times over, until the Western Lines alone have today more mileage than many of the more important systems on this continent. Most of the mileage has been constructed on his initiative and recommendation, in which and many other respects he has taken a foremost position as a great empire builder.

Under ordinary circumstances, Sir William would have retired three years ago, at the age of 65, but as Sir Thomas

associated than that of Sir William. His personal faith in the value of the prairie provinces never wavered, and from the beginning he pressed consistently for the speedy construction of further mileage and the supply of better equipment. When others were despondent and disposed to believe that the investment in the C.P.R. might prove a poor one, he urged a continuance of the policy of expansion. In all the large undertakings of a commercial nature, he took a deep interest, and while on every occasion seeking to protect the interests of the railway company, he sought also to aid and assist those who were doing the work necessary to develop the country. . . . He has gained a knowledge of the west which is not possessed by any other resident of the country, and his personal acquaintanceship west of Lake Superior is probably more widespread than that of any other citizen. In his contact with western people he has always inspired a spirit of hope and optimism, and has shown both in word and deed a readiness, so far as it was possible for him, to furnish to communities and to individuals the opportunity for advancement. So far as the employees of the C.P.R. are concerned, it may probably be said with truth that no railway official in Canada was ever regarded with esteem equal to that in which Sir William is held. Men in all positions in the employ of the corporation have been disposed to believe in his fairness and justice, and to accept his statements as final. He will carry with him into private life the warmest and kindest regard of thousands of workmen as well as of the officials with whom he has been so closely associated for so long a time."

Winnipeg Tribune: "Western Canada learns with profound regret that Sir William Whyte is about to retire. The company and Canada will lose the services of a man who ranks as a railway statesman, a man of the broadest ideas, progressive, conciliatory and considerate, one who has maintained the respect and esteem of every section of the people since the first day that he set foot on Manitoba soil. . . . Sir William has been the living example to the C.P.R. men. The courtesy, the thoughtfulness for public comfort, the care of life and limb, the general good conduct of the thousands of men in the C.P.R. service in Western Canada, all of these things may be set down in a large measure to the credit of Sir William. . . . He has earned the greatest reward that comes to any man on this side of time, namely, the highest esteem and profoundest respect of his fellow man."

Vancouver News Advertiser: "Sir William Whyte will be remembered as essentially a public man and regarded as one of the makers of Canada. . . . He saw from the first what the country would be, and became a source of inspiration to his company, and on the other side to the settlers, business men and investors in the west. Personally identified with all sorts of movements looking toward the development of Western Canada, both in material things, and in the higher lines of advancement, Sir William, with a great corporation behind him, and the unlimited resources of his own initiative and enthusiasm, became a power in the land. It is easy now to go on with this campaign, but it is not surprising that the older prairie people and the public of Winnipeg, who have been through the struggle, have been nominating Sir



Sir William Whyte.

Shaughnessy stated in announcing the retirement at a dinner in Winnipeg a short time ago, he personally solicited Sir William to remain in office for a few years longer. It is most gratifying that Sir William's great experience and ability will still be at the company's service as a director and we trust that he may be spared for many years to enjoy the rest and leisure which he has so well earned. In retiring, he carries with him the best wishes of the entire people; he has the satisfaction of knowing that he has done his duty, and his whole duty to the fullest extent, and that he is without any exception, the most respected and most popular man in the entire west.

The following extracts from leading western papers endorse everything we have said:

Winnipeg Free Press: "The retirement of Sir William Whyte, marks the end of an era in the development of the country and of the railway company. . . . With the era which may be said to have closed, no name is more closely

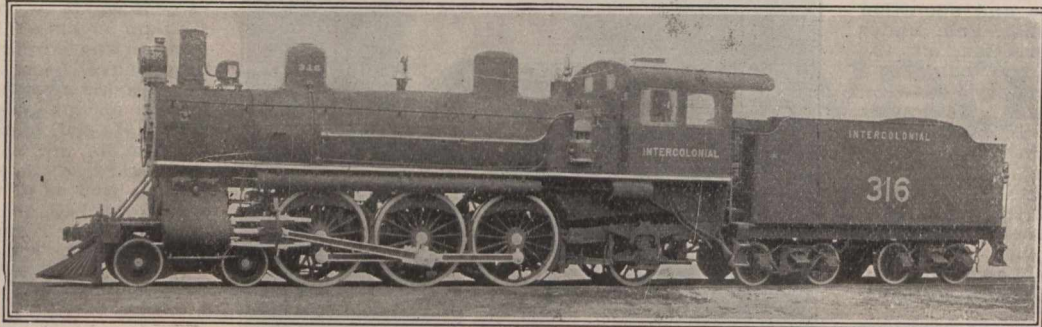
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Castings of All Kinds**

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Builders of Simple and Compound **LOCOMOTIVES** Adapted to every variety of service

**CANADA'S SUMMER TRAIN
via
INTERCOLONIAL RAILWAY.**

The Ocean Limited

No. 200	WILL LEAVE	No. 199	WILL ARRIVE	
Daily except Saturday.		Daily except Sunday.	Daily except Sunday.	Daily except Monday.
Montreal,	19.30	Halifax,	St. John,	Levis,
Daily except Sunday.		St. John,	Halifax,	Montreal,
Levis,	24.10	11.20	22.00	3.00
				7.35

ONLY ONE NIGHT ON THE ROAD

Between WESTERN ONTARIO AND ST. JOHN, HALIFAX saving hours of time

Through Sleeping Cars Between Montreal, St. John and Halifax. Dining car service unequalled.
Daylight views of the Matapedia and Wentworth Valleys. Direct connection for Prince Edward Island and the Sydneys.

William for everything in sight."

Victoria, B.C., Colonist: "The retirement has been expected for some little time, but it will be none the less regretted by every person who has any business transactions with him. Sir William had not only great qualifications for the very important post that he filled, but is a genial, whole-souled, public-spirited gentleman."

Railway Rolling Stock Notes.

The G.T.P.R. has received four consolidation locomotives.

The G.T.R. has ordered 25 locomotives from the Canadian Locomotive Co., Kingston, Ont.

The G.T.R. is asking tenders for four mogul locomotives for its Detroit and Toledo shore lines.

The 250 box cars which the Canadian Northern Ry. has ordered from the Crossen Car Manufacturing Co., Cobourg, Ont., as mentioned in our last issue, will be of 60,000 lbs. capacity, 36 ft. long, and will be equipped with Simplex bolsters and brake beams and Westinghouse air brakes.

The Canadian Car and Foundry Co., Montreal, is building 15 Hart convertible ballast cars for the Hart-Otis Car Co., Montreal; one snow plow for F. H. Hopkins and Co., Montreal; 30 six-ton mining cars for the Great Northern Mining Co., and two 30-ton flat cars for the Canadian Explosives Co.

The Canadian Northern Ry., between Aug. 15 and Sept. 16, ordered the following additions to rolling stock: six cabooses from the Crossen Car Manufacturing Co., Cobourg, Ont., and 150 flat cars; also 10 refrigerator cars and 20 stock cars, for the Duluth, Winnipeg and Pacific Ry., from the United States.

The 20 stock cars which the Duluth, Winnipeg and Pacific Ry. (C.N.R.) has ordered in the United States, will be equipped with Simplex truck bolsters and brake beams, R. E. Janney couplers, Westinghouse air brakes, McCord journal boxes, steel back brake shoes, class A truck springs and axles of open hearth steel.

The C.P.R., between Aug. 18 and Sept. 12, ordered the following additions to rolling stock: 76 box cars, seven stock cars, one van, 15 first class cars, 10 sleeping cars, five dining cars, six tourist cars, two double track snow ploughs, seven flangers and three D.10 locomotives from its Angus shops, Montreal, and 15 single track snow ploughs from the Canadian Car and Foundry Co., Montreal.

Following are the chief details of the 10 second class coaches which the Canadian Northern Ry. is having built by the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue:—

Length over end sills	72 ft. 6 ins.
Width over side sills	9 ft. 10 1/2 ins.
Width over all at eaves	10 ft. 2 3/4 ins.
Width between deck sills	5 ft. 6 ins.
Height, top of sill to bottom of plate	6 ft. 8 1/2 ins.
Platforms	Standard Coupler Co., type A-3
Body bolsters	Double cast steel

The Canadian Northern Ry., between Aug. 15 and Sept. 15, received the following additions to rolling stock: 42 flat cars, 149 box cars, two first class cars and three dining cars, from the Canadian Car and Foundry Co., Montreal; 46 refrigerator cars (freight) from the Crossen Car Manufacturing Co. Cobourg, Ont.; five second class and baggage cars from the Preston Car and Coach Co., Preston, Ont.; 130 box cars from the Nova Scotia Car Works, Halifax, N.S., and 350 box cars for the Duluth, Winnipeg and Pacific Ry., from the United States.

The C.P.R., between Aug. 18 and Sept. 12, received the following addi-

tions to rolling stock: 350 wooden box cars, 32 stock cars, 29 vans, one freight, refrigerator cars, two compartment sleeping cars, one baggage and smoking car, two horse express cars, one business car, five switching locomotives, four D.10 locomotives and one Mallet locomotive from its Angus shops, Montreal; 503 steel frame box cars from the Canadian car and Foundry Co., Montreal; eight N.3 locomotives from the Montreal Locomotive Works; five N.3 locomotives from the Canadian Locomotive Co., Kingston, Ont., and 92 steel frame box cars and 72 coal cars from the U.S.

The Algoma Steel Co., has ordered two six wheel switching locomotives from the Montreal Locomotive Works.

Following are the chief details:—

Cylinders, diar. and stroke	19 by 24 ins.
Driving wheels, diar.	50 ins.
Boiler pressure	185 lbs.
Firebox	84 by 33 3/4 ins.
Tubes, no. and diar.	218-1 ins.
Tubes, length	11 ft.
Wheel base, driving	11 ft.
Weight, total	123,000 lbs.
Heating surface, tubes	1246 sq. ft.
Heating surface, firebox	107 sq. ft.
Heating surface, total	1353 sq. ft.
Grate area	19.7 sq. ft.
Maximum tractive power	27,250 lbs.

Following are the chief details of the 10 freight refrigerator cars which the Duluth, Winnipeg and Pacific Ry. (C.N.R.) has ordered in the United States:—

Length over end sills	36 ft. 9 3/4 ins.
Length inside	33 ft. 10 ins.
Width over side sills	9 ft. 0 3/4 ins.
Width inside	8 ft. 1 in.
Body and truck bolsters	Simplex
Couplers	R. E. Janney cast steel
Air brakes	Westinghouse
Brake shoes	Steel back
Brake beams	Simplex
Journal boxes	McCord
Springs	Simplex
Axles	Open hearth steel
Galvanized ice boxes	4 in each end of each car

Following are additional details of the 10 Richmond compound consolidation locomotives which the G.T.R. recently ordered from the American Locomotive Co., Schenectady, N.Y., as mentioned in our last issue:—

Weight on front truck	26,400 lbs.
Weight on first pair drivers	48,350 lbs.
Weight on second pair drivers	44,430 lbs.
Weight on third pair drivers	48,720 lbs.
Weight on fourth pair drivers	43,800 lbs.
Weight on drivers, total	184,800 lbs.
Weight on front tender truck	65,600 lbs.
Weight on rear tender truck	77,700 lbs.
Weight of engine, loaded	211,200 lbs.
Weight of tender, loaded	143,800 lbs.
Wheel base, engine and tender	57 ft. 8 1/2 ins.
Total length, engine and tender	67 ft. 6 1/2 ins.

Following are chief details of the 10 consolidation locomotives, type D.4, which the C.P.R. has ordered from the Montreal Locomotive Works, as mentioned in our last issue:—

Cylinders, diar., and stroke	23 1/2 by 32 ins.
Driving wheels, diar.	63 ins.
Boiler pressure	180 lbs.
Tubes, no. and diar.	270-2 ins. & 24-5 ins.
Wheel base, driving	16 ft. 6 ins.
Wheel base, total	25 ft. 5 ins.
Weight on drivers	195,000 lbs.
Weight, total	220,000 lbs.
Heating surface, tubes	2620 sq. ft.
Heating surface, firebox	165 sq. ft.
Heating surface, total	2785 sq. ft.
Grate area	40 sq. ft.
Maximum tractive power	43,000 lbs.

The Canada Iron Corporation has ordered two six wheel switching locomotives from the Montreal Locomotive Works. Following are the chief details:—

Cylinders, diar. and stroke	19 by 26 ins.
Driving wheels, diar.	50 ins.
Boiler pressure	180 lbs.
Firebox	102 by 33 ins.
Tubes, no. and diar.	218, 2 ins.
Tubes, length	11 ft.
Wheel base, driving	11 ft. 6 ins.
Wheel base, engine and tender	40 ft. 10 ins.
Weight in working order	124,000 lbs.
Heating surface, tubes	1480 sq. ft.
Heating surface, firebox	140 sq. ft.
Heating surface, total	1620 sq. ft.
Grate area	23.4 sq. ft.
Maximum tractive power	28,720 lbs.

The Algoma Central and Hudson Bay Ry., has 180 steel under frame cars,

80,000 lbs. capacity, and 25 steel under frames on order with the Canadian Car and Foundry Co., Montreal; 50 Otis type general service cars, with the Hart-Otis Car Co., Montreal; five consolidation freight locomotives with cylinders 22 1/2 by 28 ins., with the Montreal Locomotive Works, and five similar locomotives and five 10-wheel locomotives, with the Canadian Locomotive Co., Kingston, Ont. The 25 steel under frames will be completed as flat cars in the company's shops at Sault Ste. Marie, Ont. Of the locomotives mentioned, the 10 consolidation ones are to be delivered this fall, and the five 10-wheel ones in the spring, while the company has, in addition, received five consolidation locomotives from the Montreal Locomotive Works this year. Further orders for rolling stock are under consideration, but we are advised that the plans are not yet completed.

The G.T.R. has ordered 10 switching locomotives in the United States, for use on its U.S. lines. Following are the chief details:

Weight	139,500 lbs.
Cylinders	20 by 26 ins.
Drivers, diar.	56 ins.
Boiler, type	Straight, 66 ins.
Boiler, pressure	190 lbs.
Heating surface, tubes	1772 sq. ft.
Heating surface, firebox	148 sq. ft.
Heating surface, total	1920 sq. ft.
Tubes, no. and diar.	264-2 ins.
Tubes, length	12 ft. 9 1/2 ins.
Firebox	98 1/2 by 40 1/2 ins.
Grate Area	27.44 sq. ft.
Capacity, water	4,500 galls.
Capacity, coal	8 tons
Axles	Steel
Bell ringer	G.T.R. standard.
Boiler lagging	Franklin Railway Supply Co.
Air brakes	Westinghouse.
Brake beams and shoes	G.T.R. standard.
Brick arch	Supported on water tubes.
Driving boxes	Cast iron.
Sanding device	G.T.R. standard.
Sight feed lubricators	Detroit Lubricator Co.
Wheel centres	Cast steel.

Following are chief details of the 10 six wheel switching locomotives which the G.T.R. has ordered from the Montreal Locomotive Works:

Cylinders, diar and stroke	20 by 26 ins.
Driving wheels, diar.	56 ins.
Boiler, outside diar, 1st course	66 ins.
Boiler, pressure	190 lbs.
Firebox	98 1/2 by 40 1/2 ins.
Tubes, no. and diar.	264-2 ins.
Tubes, length	12 ft. 9 1/2 ins.
Heating surface, firebox	140 sq. ft.
Heating surface, tubes	1772 sq. ft.
Heating surface, total	1920 sq. ft.
Grate Area	27.44 sq. ft.
Capacity, water	4,500 U.S. galls.
Capacity, coal	8 tons
Weight	139,500 lbs.
Wheel base, engine	12 ft. 8 ins.
Wheel base, engine and tender	42 ft. 4 ins.
Weight of tender	110,000 lbs.
Inside finish	Birch, stained mahogany
Lighting	Commercial Acetylene Co.
Heating	Gold Duplex with Frumveller heater
Fire extinguishers	Miller, No. 8
Air brakes	Westinghouse P.M. 1612
Trucks	C.N.R. standard 6-wheel, 60,000 lbs.
Wheels	36 in., steel tired, cast steel centres
Axles	M.C.B. steel, 4 1/2 by 8 ins.
Bolster springs	36 ins. double elliptic
Equalizer springs	8 1/2 by 10 ins., 3 coils
Brake beams	Simplex high speed
Journal boxes	McCord malleable
Journal bearings	Canadian Bronze Co.

The Reid Newfoundland Co., is building at its shops at St. John's Nfld., eight 10-wheel locomotives. One of these has been completed, and was recently given a trial run to Killigrews and back, with satisfactory results. This was the first locomotive built in the colony. Following are the chief details:—

Gauge	3 ft. 6 ins.
Cylinders	17 by 22 ins.
Cylinder valves	Balanced
Boiler, type	Straight, radial stayed
Boiler, material	Steel, 5/8 in. thick
Boiler, diar.	56 ins.
Boiler, pressure	180 lbs.
Firebox	97 1/2 by 33 3/4 ins.
Firebox, material	Steel
Firebox, depth	Front, 54 ins., back 48 3/4 ins.
Firebox, sheets	Sides and back, 3/8 in., crown, 7-16 in., tube, 9-16 in.
Tubes, no. and diar.	184, 2 ins.

Tubes, length	12 ft.
Heating surface, firebox	92.5 sq. ft.
Heating surface, tubes	1,200 sq. ft.
Heating surface, total	1,292.5 sq. ft.
Driving wheels, diar.	50 ins.
Journals	7 by 8 ins.
Truck wheels, diar.	26 ins.
Journals	4½ by 8 ins.
Wheel base, driving	11 ft.
Wheel base, engine	20 ft. 5 ins.
Wheel base, engine and tender	48 ft.
Weight on driving wheels	74,000 lbs.
Weight on front truck	17,000 lbs.
Weight, total engine	91,000 lbs.
Weight, total engine and tender	147,000 lbs.
Tender, type	8-wheel
Wheels, diar.	30 ins.
Journals	4½ by 8 ins.
Capacity, water	2,800 galls.
Capacity, coal	5½ tons
Air brake	Westinghouse standard automatic
Air signal and pump	Westinghouse
Steam heating	Gold improved
Lubricators	Nathan Mfg. Co. triple sight feed bull's eye

The Grand Trunk Ry. is asking prices on ten 30-ft. and ten 40-ft. steel under-frame flat cars.

The Grand Trunk Ry. has placed a contract with the Canadian Car and Foundry Co., Montreal, for 1,000 box cars, nos. 19,000 to 19,999, having a capacity of 60,000 lbs., with length over all, 36 ft. 9¾ ins., length inside, 36 ft., width 8 ft. 6 ins., height inside, 8 ft., underframes, steel, air brakes, Westinghouse.

Telegraph and Cable Matters.

The Canadian Northern Telegraph Co. has opened offices at Lampman and Parkman, Sask., and has closed its offices at Bresaylor, Jameson and Langbank, Sask.

A London, Eng., press dispatch of Sept. 15, stated that the Anglo-American Cable Co., the Western Union Telegraph Co., and the Direct United States Cable Co. have amalgamated.

The C.P.R. is renewing its telegraph line between Chilliwack and New Westminster, B.C. A two circuit line is being erected with new poles. This line was for some time operated by the B.C. Telephone Co. as a telegraph and long distance telephone line, but was abandoned some time ago in favor of another route.

A cable message was sent around the world recently by the New York Times in 16½ min. It was relayed at San Francisco, Honolulu, Midway Island, Manila, Hong Kong, Saigon, Singapore, Madras, Bombay, Aden, Suez, Port Said, Alexandria, Malta, Gibraltar, Lisbon and the Azores. In all, 21,397 nautical miles (24,963 land miles) of submarine cable and 3,650 land miles of telegraph line were traversed.

The erection of the telegraph line in the St. Barbe district, Nfld., is proceeding, the work having been completed as far as St. Barbe, and it was expected connection would be made with Flower's Cove before the end of Sept. From the latter point the line will be carried along the shore to Cape Norman. The poles for the last section are ready, but work has been somewhat delayed owing to the difficulty of getting men.

The 42nd annual report of the Dominion Telegraph Co., shows assets of \$1,310,530 and liabilities of \$1,016,860, with a balance to credit of profit and loss of \$293,670. Following are the officers and directors for the current year: President, T. Swinyard; Vice President, Sir Henry M. Pellatt; Secretary-Treasurer, F. Roper; other directors, B. Brooks, T. F. Clark, R. C. Clowry, A. E. Jarvis, C. O'Reilly and A. G. Ramsay.

The Newfoundland Government has opened telegraph offices at Daniel's Harbor and Port au Choix, in connection with the telegraph line extension which was completed to those points last year. Further extensions are being made this

season, wires having been erected beyond Port au Choix to within a few miles of Brig Bay. It is anticipated that before the close of the season the line will be completed round Cape Norman, and offices opened at Brig Bay, Flower's Cove and Cape Norman.

The Marconi Wireless Telegraph Co., of Canada's report for the year ended Jan. 31, 1910, recently issued, shows total traffic receipts of \$36,100, and it is stated that there is every anticipation that the receipts for the current year will be about 20% in excess of that figure. The directors propose to create and issue \$2,500,000 thirty year first mortgage 6% gold bonds, \$1,000,000 to be issued immediately, the proceeds to be used to pay off the company's indebtedness, the balance of the bonds only to be issued when the further development of the company requires further capital. The report is signed by A. A. Allan, Montreal, President.

The Marconi Wireless Telegraph Co.'s annual report shows gross trading profit of £127,452, and after deducting a number of expenses, including salaries, directors' fees and managing director's remuneration, there is a net profit of £60,513. After payment of preference dividend amounting to £16,600, there is a balance of £49,119. The assets show an amount owing by the Marconi Wireless Telegraph Co. of Canada, of £163,865, which the reports states has not been paid owing to the recent prosecution of officers of the United Wireless Telegraph Co., having disturbed the financial atmosphere concerning wireless telegraphy.

Among the Express Companies.

The Dominion Ex. Co. has closed its offices at Royal Muskoka and Port Cockburn, Ont., for the season.

T. H. McGarrell, agent, Dominion Ex. Co., New Liskeard, Ont., was married to Miss L. F. Traynor at Grand Forks, N.D., recently.

F. N. Wiggins, heretofore in Canadian Northern Ex. Co. service at Winnipeg, has been appointed Superintendent, C.N. Ex. Co., Ontario Division, in charge of lines east of Port Arthur and west of Ottawa. Office, Toronto.

The Canadian Northern Ex. Co. has inaugurated its service on the C.N.O.R. between Toronto and Trenton, and has opened offices at Malvern, Brooklin, Oshawa, Bowmanville, Orono, Port Hope, Cobourg, Grafton, Colborne, Brighton and Trenton.

The Canadian Northern Ex. Co., will re-open its offices, Oct. 2, on the C.N.O.R. between Parry Sound and Sudbury, as follows: Bayswater, Bolger, Burton, Coniston, Cranberry Lake, Deer Lake, French River, Key Jet., Mowat, North Magnetawan, Pickerel River, St. Cloud, South Magnetawan, Still River, Sudbury Jct., Waterfall and Waubamik.

The Board of Railway Commissioners has approved standard mileage tariffs of the Dominion, Canadian, Great Western, United States, American, National and Pacific Ex. Cos., and for express traffic on the Alberta Ry. and Irrigation Co.'s line, and has extended to Oct. 15, the time for the filing of the Dominion Ex. Co.'s standard mileage tariffs of maximum tolls.

The Canadian Northern Ex. Co. has put its service into operation on the Central Ontario Ry., and the Dominion and Canadian Ex. Co.'s which previously operated over the line, have retired. Offices have been opened at Anson Jct., Bancroft, Bannockburn, Birds Creek, Bloomfield, Central Ontario Jct., Coe Hill, Conson, Eldorado, Frankford, Gilmour, Hillier, L'Amable, Marmora, Maynooth, Millbridge, Ormsby Jct., Picton and Wellington.

RATES ON OYSTERS FROM NEW HAVEN, CONN.

The Board of Railway Commissioners passed the following order, 14723, Sept. 9:—Re complaint of H. Walker & Son, of Guelph, Ont., alleging discrimination in express rates on oysters originating at New Haven, Conn., destined to Guelph, as against the rates to Brantford, St. Thomas and London, Ont. It is ordered that all joint tariffs on oysters from New Haven, Conn., Providence, R.I., and other shipping points of the Adams Express Co., taking the same rates, containing higher through rates than \$1.50 per 100 lbs. to Toronto, and \$1.55 per 100 lbs. to Guelph, be disallowed.

That the Canadian and Dominion Express Companies on or before Nov. 1, file with the Board joint tariffs providing a through rate of \$1.50 per 100 lbs. to Toronto, and \$1.55 per 100 lbs. to Guelph; provided that the concurrence of the Adams Express Co. and the American Express Co. can be obtained thereto, and if such concurrence is withheld by either or both of said companies, then the Canadian and Dominion Express companies shall notify the Board thereof, giving the particulars of such refusal (if any) on or before Oct. 21, 1911.

That if any dispute arise as to the division of the said new rates, or any portion thereof, between the Dominion Express Co. and the American Express Co., then the Board will dispose of same upon application by any party interested.

Locomotive Spark Arresters.—The Board of Railway Commissioners has appointed twelve fire wardens to investigate the spark arrester and other appliances with which locomotives are equipped with the view of deciding what further, if anything, must be done so as to minimize the danger of fires being started in forests and elsewhere along the tracks.

Montreal and Southern Counties Ry.—That no action can be taken on the company's application for rights on additional streets in Montreal until the resumption of negotiations between the city and the Montreal Street Ry. was the decision reached by the Montreal board of control, Aug. 30. (Sept., pg. 879.)

Temiskaming and Northern Ontario Ry.—Gross revenue for July, \$149,783.11; expenditure, \$117,832.40; net earnings, \$31,950.71; hire of equipment, \$592.17; outside operations, \$300; net result, \$31,058.54; percentage of revenue against operation, 78.06.

Canadian Railway Club.—At the recent meeting of the Canadian Railway Club, a paper was read by A. A. Goodchild, Auditor of Stores and Mechanical Accounts, C.P.R., on the accounting department in connection with the mechanical and stores departments.

Alberta Ry. and Irrigation Co.—Notice is given that the company will on Jan. 1, 1912, pay off and redeem the amount of 5% debenture stock outstanding at the final closing of the books, Dec. 4.

Sir Thos. G. Shaughnessy returned to Montreal, Sept. 22, from his inspection trip over the company's lines to the Pacific Coast.

The Board of Railway Commissioners has authorized the operation of trains over the first 100 miles easterly from Prince Rupert at 30 miles an hour instead of 15 as formerly. (Sept., pg. 835.)

The s.s. Princess Alice, the latest addition to the C.P.R.'s British Columbia coast fleet, left Newcastle-on-Tyne, Eng., Sept. 22, for Vancouver, via Cape Horn in charge of Capt. A. Lindgren, who took the s.s. Princess Alice over the same route some months ago.

The Accounting Department in Connection with the Mechanical and Stores Departments.

By A. A. Goodchild, Auditor of Stores and Mechanical Accounts, C.P.R., Montreal.

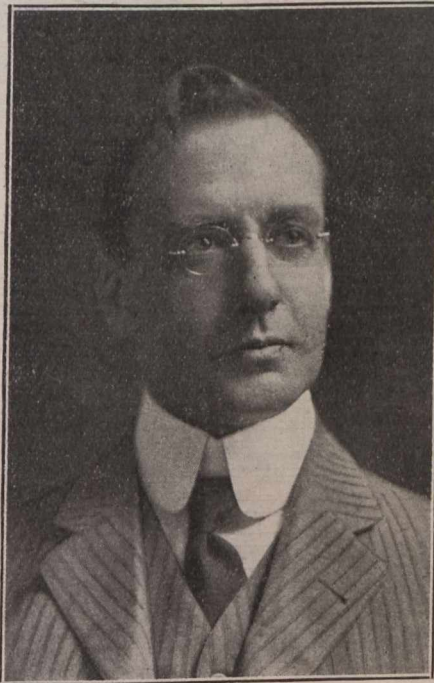
"By their fruits ye shall know them." This truth is as applicable to the various departments of a railway today as it was to those to whom it was spoken, nearly 2,000 years ago.

Whether it be the mechanical, traffic, transportation, maintenance, or any other department of a railway, the results obtained, as set forth in the balance sheet, are the final revelation of their fruit-bearing qualities. The accounting and auditing departments may be briefly described as the unbiased exhibitor of these fruits, without any desire to make them appear more or less worthy of the proprietor's approval than their inherent worth may justify. Some may, perhaps, carry the simile further, with allusions as to the method of preparation for the purposes of exhibition, etc., but in so far as these may infer a desire to overvalue, underrate, or in any manner mislead, they may be dismissed as illusions or delusions of unsuccessful cultivators. The function of accounting and auditing is the accumulation and statement of facts or conditions by means of which the proprietors and managers may know the financial and operating features of a corporation, or of any portion of its business, and it is generally recognized that the head of the department in charge thereof must have a very complete knowledge of the workings of every other department as well as his own, owing to the fact that all of them, whether revenue producing or otherwise, will be found to come under his surveillance in some manner or another. The method by which this surveillance is exercised, however, varies considerably in the many railways of this continent, and in no case is it more noticeable than in connection with the mechanical and storekeeping departments, to which our attention is especially directed at this time. It is the practice of a number of railways to leave considerable actual accounting in the hands of these departments, a balance sheet or other summary being sent to the head office periodically, for incorporation in the accounts of the company; indeed, in so far as the storekeeping department is concerned, the majority of roads may be said to adhere to this practice. Such a condition cannot be said to conform with sound business principles; it would be quite as logical for a departmental store, for example, to permit its various departments to employ and control their own staff of accountants, as it is for a railway to permit its mechanical superintendent or storekeeper to do this. The impropriety is readily recognized in the one case, and it is difficult to justify it in the case of a railway, where the expenditures, etc., are enormously larger than the largest departmental store.

The argument usually met with in justification of such methods is that the work is very largely of a technical nature, and it is necessary to be more familiar with material and its uses than is possible for the general staff of accountants to be. Whatever element of truth there may be in this claim, can, and should be, largely, if not entirely overcome by a proper classification and itemizing of material. One of the most essential features of material accounting forces itself upon our consideration right at this point; for whether the work is carried on in the stores, or in a central accounting office, such accounts should undoubtedly lend themselves to proper analytical process, in the same manner as the operating expenses do. Under any circumstances such an argument

does not apply more forcibly, if as strongly, in justification of the storekeeping department doing the necessary accounting than in favor of the accounting department, for there is no branch of business life today which necessitates more exact knowledge of details, and correct principles of work than that of the accounting department. Extensive and varied training and experience is required to enable one to become proficient in such matters, and it is not possible for a storekeeper, be he ever so able, to properly meet such demands upon his time. This statement is made without the least desire to detract from the well-known ability of many forceful and energetic men holding, or who have held, such positions of responsibility in many of the railways of this continent.

These are days of specialization in professions of every class and description, and it is but natural that we should look for and expect to find it in all branches of railway work. Instances may be cited where an individual has been endowed with remarkable faculties of combining expert knowledge of a variety of



A. A. Goodchild,
Auditor of Stores and Mechanical Accounts,
C.P.R., and President, Canadian
Railway Club.

professional duties, and such an individual will almost naturally be found in the high places of professional life; but to the ordinary mortal, to excel in one special line of work may be said to entail the full use of his faculties. Apart, however, from this subject of individual capacity must be considered the actual requirements of the profession—I am referring now to the railway profession—and only to a few—a very few—can the positions of president or general manager ever be more than a mere chimera.

Railways today require a large number of specialists and few generalizers. Their organization resembles that of an army. One general in chief, two or more generals of divisions, a limited number of colonels, an increasing number of captains, and a further increasing number of lieutenants. Each officer must be proficient and possess sufficient initiative to enable him to act as though the entire result of any movement depended entirely upon his particular unit to command. Brilliance is not absolutely essential, but a perfect knowledge, to enable a junior lieutenant to carry out

his orders, is entirely necessary.

This question of the relationship of the accounting department to the stores and mechanical departments has been the subject of discussion at various conventions, also of consideration by many of the higher officials in the railway world, evidence of which may be found in the appointment of auditors or other accounting officers, to take full charge of all stores and mechanical accounts, for we may safely assume such changes would not be made except after mature consideration. Of course, the question is one of comparatively minor importance to a number of our smaller railways, for reasons which will at once occur to you. Let us discuss for a few moments the duties, responsibilities, and qualifications of a storekeeper, and in doing this, we shall deal with only the general practice of roads whose storekeepers are the custodians of unused material. The larger question as to the duties of taking cognizance of all material until actually used may be left to some future consideration.

These duties bring him in constant touch with the entire operating department of a road. Locomotive, car, bridge and building, transportation, and other branches of the service are dependent upon him for supplying the necessary materials with which to carry on the work, whether it be construction of a thousand box cars, or the putting on of a patch to the side of a car, the building of cars or monster locomotives, or the supplying of a tender truck box cover wherever we find material being used, there also we find the storekeeper an interested party, and this interest entails upon him the need of cultivating a very close acquaintance with the heads and the requirements of various departments. He is above all also an operating official, and should be able at all times to supply the material needs of the entire road. These needs are varied. No line of business can be excluded from its voracious maw. Hardware, glass, oils, paints, drugs, acids, the precious metals, lumber from the cheapest to the most expensive, minerals, coals, coke, road and shop tools of every description, office supplies, flour, cement, silks, furniture, carpets, and so on, ad lib., all serve to appease, but never satisfy the hunger of our railway systems. What kind of man is required to cater to all these varied needs, and to cater intelligently, in order that he may furnish the maximum amount of satisfaction at a minimum expense to his employers, be ever ready to fill the order and never overload himself with material which the æsthetic taste of a superintendent of motive power, or a master car builder refuses to attempt to digest? Surely a man to fulfill such requirements must be a paragon, surely such duties in themselves entail a large enough field for the most industrious cultivation, and the requisitioning for, receiving, storing, and disbursement of such material, calls for the very highest ability taxed to its utmost capacity.

Having those requirements in mind, let us glance briefly at the various steps one must tread before he can reach the topmost rung of the storekeeping ladder. Let us enter one of our large stores and as we pass along we find our man trucking castings or unpacking boxes of various materials, may be, sweeping away refuse. Later on he is found loading material into cars or getting articles down from the shelves, assisting a storeman. He advances steadily, and is, perhaps given charge of certain divisions or sections of the store house, and in the fulness of time is called upon to assume charge over the entire section or store.

The completion of this paper, read before a recent meeting of the Canadian Railway Club, Montreal, will be given in our next issue.

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

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The Toronto Railway Co's Lansdowne Avenue Car Shed.

The rapid growth of Toronto, demanding a constantly increasing number of street cars, made necessary the construction of a new shed to accommodate the growing equipment. The pinch being most keenly felt among the lines terminating in the north-western section of the city, that locality was selected for the new shed, plans for which

the Carlton St. cars. Previously, these cars were spread around among the nearest sheds, the Bathurst at the Roncesvalles shed; Belt Line at Yorkville shed, Carlton at Dundas, and the Bloor at Dundas. The building was completed and moved into in May of this year, under charge of A. J. Edmunds, Divisional Superintendent, who was well qualified for his new duties, having served in a similar capacity at the King St. and other sheds previously.

As mentioned, the plans for the new building were prepared in 1908, following a consideration among the company's superintendents, etc. The idea was to build the best possible shed for the purpose, it being therefore necessary that the ideas of all might be gleaned, the composite idea taking shape in the final plans evolved. It is acknowledged by all, however, that Jno. McCulloch, Division Superintendent, is entitled to credit for many of the new ideas. The plans were prepared by the Imperial Construction Co., which built the shed and offices, the company doing the interior work direct.

The general plan and layout of the shed and yard, is comprehensively shown in fig. 1. It is of the slow-burning mill-building design throughout. As will be noticed, the shed lies along Lansdowne Ave., a principal north and

shed is given in fig. 2. This will present a neater frontage when paved, as it will be in the near future.

OFFICE AND MEN'S ROOM.

Along the Lansdowne Ave. side of the building are located the various auxiliary rooms of the shed. The more southerly of these—a large room 50 by 92 ft.—has a cross partition of glass, dividing the office from the men's room. The small rooms indicated in the office are used for divisional superintendent's office, lavatory for office staff and vault. Behind the glass partition on the office side are located the ticket counters. Fare boxes and transfers for each conductor are arranged together in pigeon-holed racks directly behind the clerks, convenient for passing out through the wicket. Two such wickets and racks are in use.

To the north of the glass partition is the men's room, a corner of which is shown in fig. 3. It is a spacious room, arranged with the creature comforts of the men in mind. The two rooms to the north contain lavatory facilities of the most modern type. One feature of particular interest in the men's room is the manner of displaying the routing cards as indicated in fig. 3, where the weekday, Saturday and holiday running schedules are posted for the four reg-

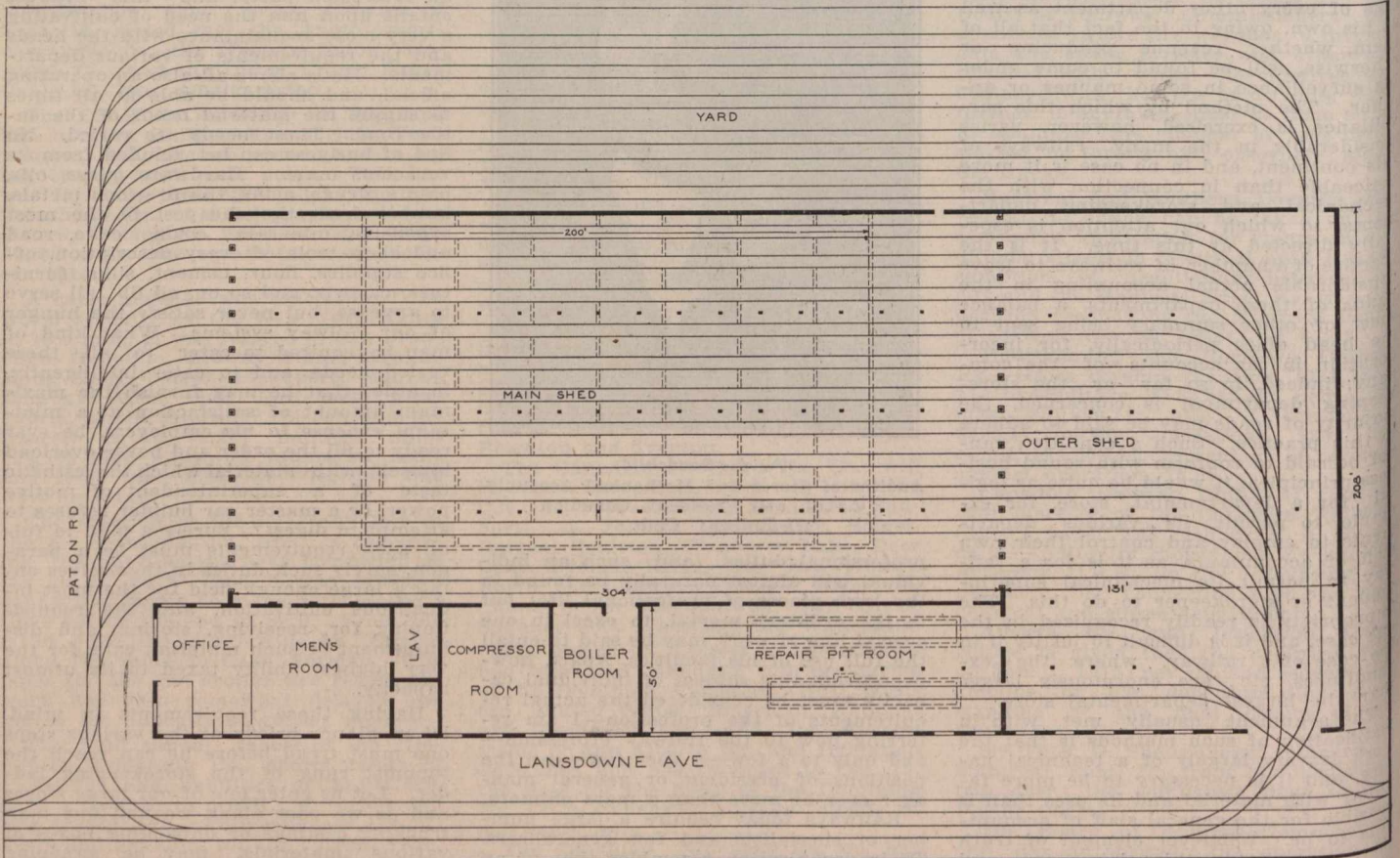


Fig. 1.—Layout of Shed, Yard and Auxiliary Rooms of Lansdowne Ave. Car Shed, Toronto Railway

were begun in 1908, the location being settled upon for Lansdowne Ave., at the corner of Paton Rd., a short distance above Bloor St. This site is midway between the termini of the Bloor and Carlton St. lines, each of which operates a heavy service. All the Bloor and Bathurst cars are accommodated here, also the Spadina, Belt Line, and half

south through thoroughfare. The layout is such that incoming cars from the south pass in at the rear or north end of the building (to the right) to their proper locations in the shed, and are thus ready at all times to run out on their respective routes through the front, or the Paton Rd. entrance. A view of this Paton Rd. frontage of the

ular and the night car runs. As will be noticed, the cards are large and well spread out to avoid crowding on the part of the motormen taking down their schedule. To facilitate this latter operation, the front of the schedule frames has a ledge projection to form a desk for writing purposes. This is a most useful feature.

COMPRESSOR ROOM.

The compressor room to the north of the rooms just described, is at present equipped with but one compressor unit, a Reavell compressor direct-connected to a motor, as shown in fig. 4 and operating at a speed of 250 r.p.m., with an air displacement of 186 cu. ft. per minute. A similar air unit is at present being installed.

The air storage consists of four long steel drums of relatively small diameter, stacked in a pile along the south wall. The three upper ones carry the high pressure, or 315 lbs. per sq. in., and have a total capacity of 332 cu. ft.,

ted hot-water pump with receiver tank complete on one base, returns all the water of condensation to the boiler. It is also arranged with the necessary by-passes to pump water directly to the boiler from the city mains when necessary. Special care has been taken to eliminate all traces of oil from the condensed water by means of unusually large area oil separators.

The heating of the shed is effected by what is known as the plenum or blast system through tunnels constructed under the floor to all parts of the building as will be described later, in the description of the main car shed. The

and cylinder oils.

REPAIR PIT ROOM.

The repair shop, 140 by 50 ft., contains two repair pits, as shown in figs. 5 and 6. These pits are of a special construction, as fig. 5, a view of the westerly pit indicates. The rails are carried on the top of cast-iron bracketed posts, so that the walls may be set back from the rails, leaving a clear space. On the brackets which project outwardly from the centre of the track, a platform is placed about 18 ins., below rail top. This facilitates repair work for the mechanic. When not in use, the open space above the platform

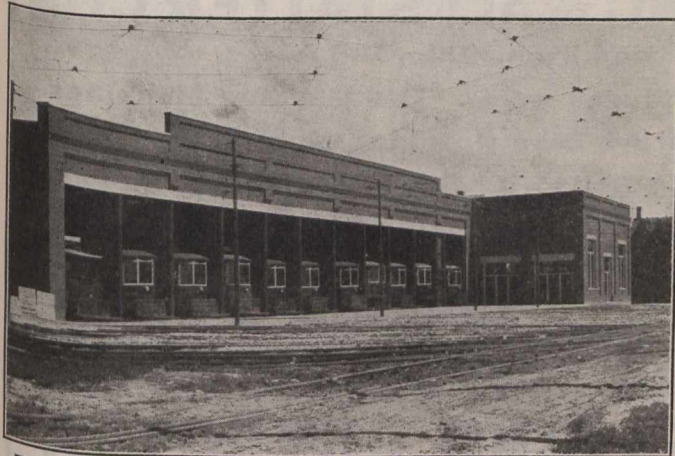


Fig. 2.—Paton Road Frontage on the Lansdowne Ave. Car Shed.

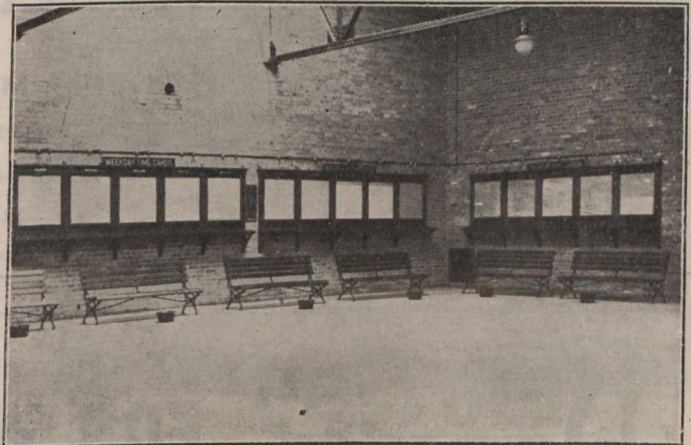


Fig. 3.—Men's Room, with Desk-front Routing Cards.

while the lower one with a capacity of 80 cu. ft., carries a 40 lb. pressure.

Air is supplied to the cars from a connection between each of the front doors, two on the street outside the barn, and two at the corner of Bloor St. and Lansdowne Ave., a couple of blocks away, where the Bloor car supply is replenished. The air is also used for car cleaning.

BOILER ROOM.

The boiler room, located directly north of the compressor room, in a fire-proof division with incombustible cell-

main equipment consists of two vertical pipe heaters, located over the boiler, each containing 10,000 ft. of 1 in. pipe, tested after installation to 100 lbs. cold water pressure. Two 120 in. bottom horizontal multivane exhaust fans with a capacity of 78,000 cu. ft. of free air at 200 r.p.m., direct-connected to two 8 by 7 in. McEwan fly-wheel governor engines, draw the air up a shaft from the pit in the main shed, through the heating coils, and discharge it through the ducts mentioned.

The induced draft for the boilers is

is protected by a wooden grilling, made in sections for easy removal. The construction of the platform is more clearly shown in the pit illustration, fig. 6. A convenient pit truck is also illustrated in fig. 5.

The pit nearer the Lansdowne Ave. side, contains a flat-wheel grinding attachment, as indicated in fig. 9. This is a standard attachment and need not be described. The driving motor is set back into a recess in the front wall for the sake of convenience. The jackshaft for driving the grinding wheels, is so ar-

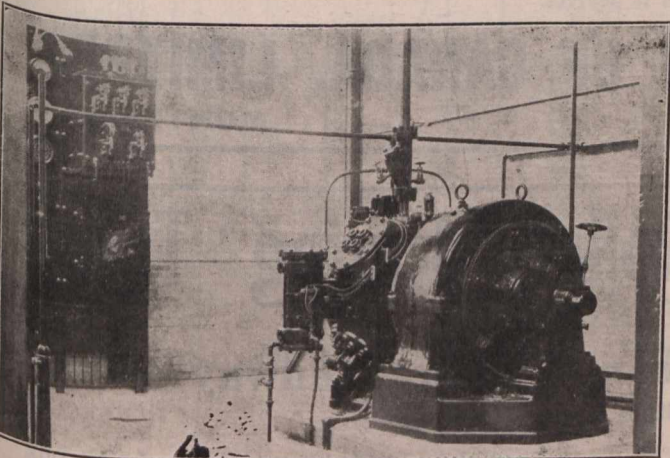


Fig. 4.—Direct-connected Compressor with Switchboard.

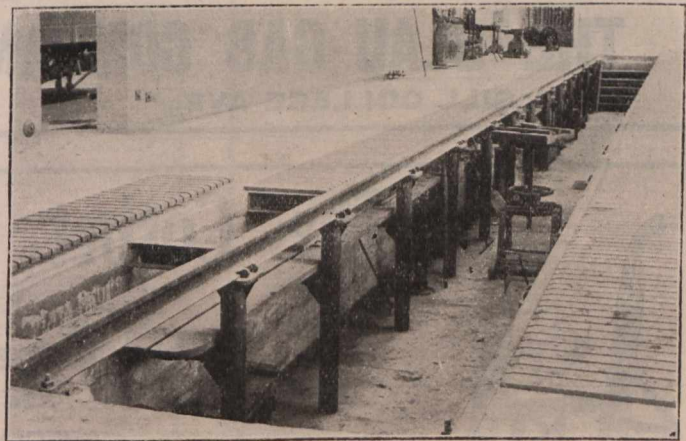


Fig. 5.—A Repair Pit showing Workmen's Platforms.

ings and fitted with firehose, contains the complete heating system of the plant. The total volume of air within the main part of the car shed is 2,500,000 cu. ft., and it was the aim of the designers to maintain a temperature of 65 degrees F., with an outside temperature of zero. This point appears to have been attained to the satisfaction of those in charge.

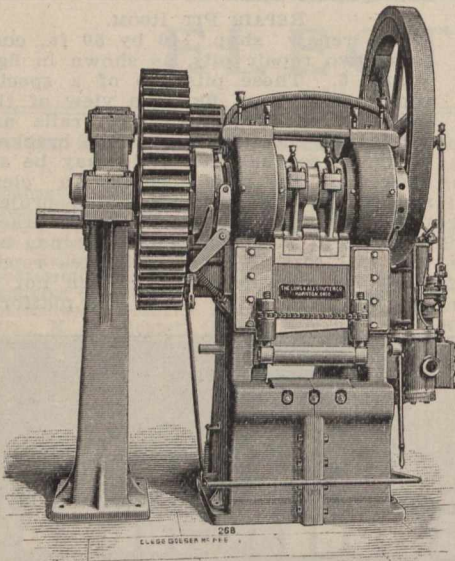
The heat generators consist of two 72 in. by 18 ft. return tubular boilers, each containing 72-4 in. tubes. A short steel stack is all that is required, forced draft being used. A 6 by 4 by 7 in. brass-fit-

obtained from a 100-in multivane top discharge exhaust fan with a capacity of 32,000 cu. ft. at 200 r.p.m., direct-connected to a 8 by 7 in. McEwan engine running under control of a reducing valve on the main steam header. It is so arranged that when the steam in the main drops below a specific pressure, the engine automatically speeds up until the increased draft causes the pressure to rise to its normal position again, when the draft fan again drops to its normal speed. All this equipment is located over the boilers. Bowser oil tanks are used for storing the engine

ranged as to be easily removed when not in use, leaving a clear, unhampered pit. The removable sections of rail immediately over the grinding wheels, are so disposed as to be easily taken out and replaced.

MAIN SHED.

The main shed is a structure 304 by 154 ft., and containing 11 tracks, 10 of which are over the large pit covering the greater portion of the area of the shed. This pit is 200 by 133 ft. and forms an immense room under the shed floor as indicated in fig. 7, which is a photograph taken under the shed floor.



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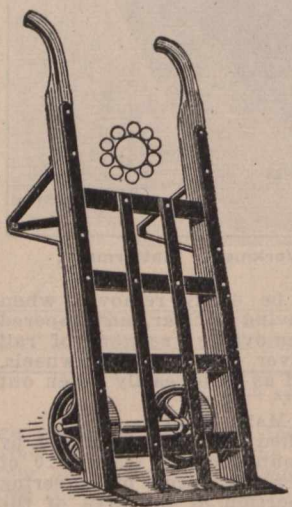
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OWEN SOUND

ONTARIO

This pit is 4 ft. 11 ins. deep at the middle and 4 ft. 8 ins. at the ends, providing a small drainage slope.

The roof structure is supported at frequent intervals, as shown in fig. 1, by wooden posts, the main features of which are indicated in fig. 8. The post caps are designed and constructed to give an equivalent wood bearing value for end thrust and side compression for the post and roof members respectively. The design of foundation cap is particularly good. The cap is cupped both top and bottom to receive post and

shown, which is built into the wall structure.

The pit construction is decidedly unique, as an inspection of figs. 1 and 7 will show. In the former illustration, the pit is shown dotted under the floor of the main car shed. The whole under-floor space is open except for concrete arches to be seen in the background in fig. 7, and which are located every 30 ft. through the length of the pit. These arches are in width equal to the distance between the outside rails of adjoining tracks, so that the space be-

The devil strip over the pit is constructed throughout of reinforced concrete. Adjoining rails are tied together, making ties between the individual rails of a track unnecessary.

Various minor features for facilitating work have been introduced at different points in the shed. For example, fig. 12, illustrates the idea devised for facilitating the carman's work of placing the route signs on the car. An elevated stand secured to the roof posts is used. This illustration at the same time shows the roof construction of the building.

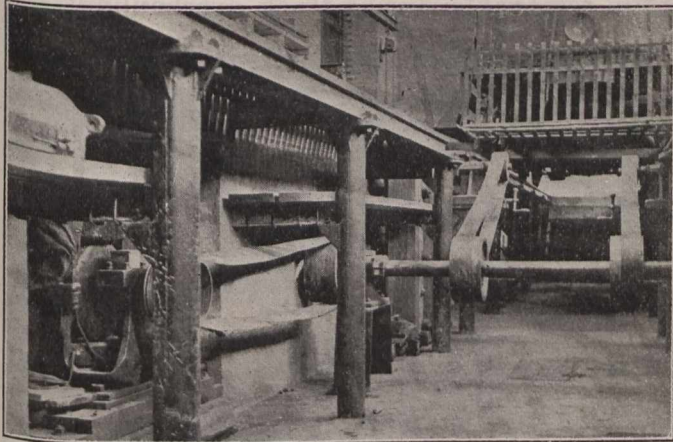


Fig. 6.—Repair Pit fitted with Flat-wheel Grinder.

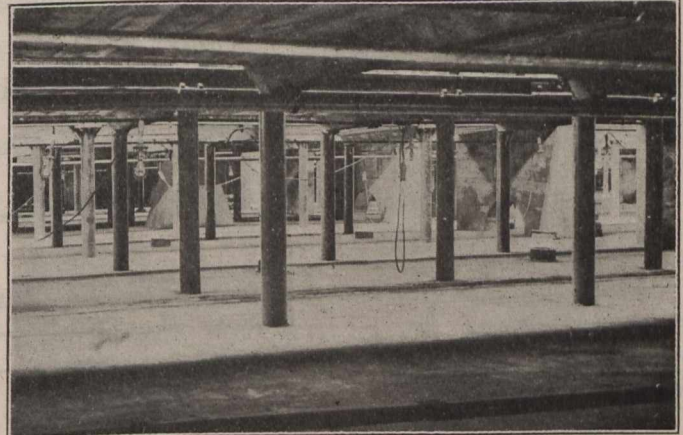


Fig. 7.—Under Shed Floor, showing Pit Construction.

foundation. The foundation abutment being built of concrete, tends to chip at the top, but by this construction, it is constrained from so doing by the retaining cap. Cupping both faces of the cap also gives the post a permanent location.

Among the special features of design is that of the door posts, a section of one of which is given in fig. 9. The curved section faces outward to receive

tween the rails through the full length of the pit is open. Between arches are four cast iron posts of a construction indicated in fig. 10. This illustration shows the method adopted for bolting down the rail, a special type of bolt being used.

Near the northerly end of the pit, the devil-strip between all the tracks over the pit is depressed, as indicated in fig. 11, in order to facilitate inspection and

Another feature worthy of notice is the car starter's sign racks, shown in fig. 3. Here all the car numbers, routing signs and destination cards are kept in a convenient location near the office door. To the right of the point in the illustration, on the office wall, the car starter has his routing board, on which the conductor's number, car and track on which car is located, are previously scheduled, so that no confusion exists

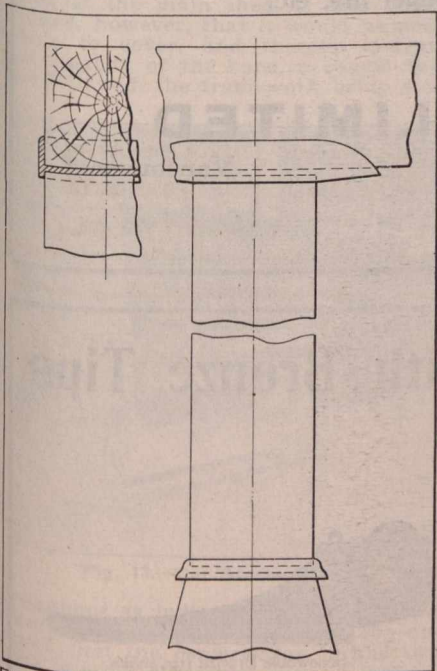


Fig. 8.—Roof Post, showing Cap and Base Construction.

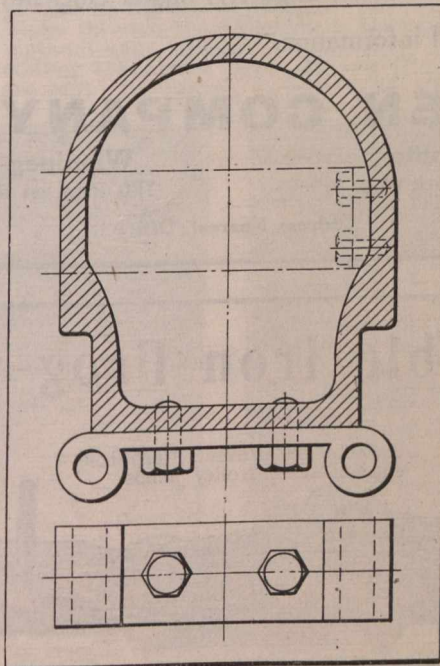


Fig. 9.—Door Post of Reinforced Construction

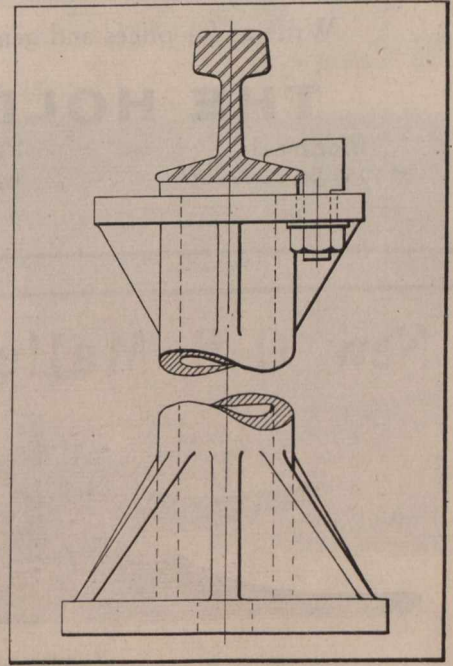


Fig. 10.—Underfloor Post Construction in Pit.

any impact from striking cars. The design is such that the post is so reinforced that a collapse under a side impact is practically impossible. Fig. 8 also shows how the end posts next to the side walls are retained in position. The end posts are made in half-sections, and are held up against the brick wall of the building by the dotted straps

light repairs on the cars in the barns. This depression is of just sufficient length to accommodate the newer type of cars being built by the company.

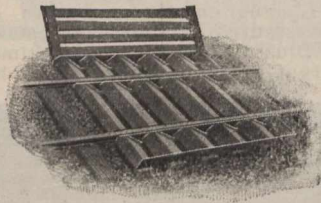
Figs. 7 and 11 show the provision for lighting in the pit. Between each arch, under every track, three protected hand lamps, with cable of convenient length, are provided.

when all the cars start out as they do, in quick succession.

The heating system employs concrete passages moulded to shape, with 6 in. walls. From under the boiler room floor a duct 6 ft. 5 ins. by 4 ft. leads right across to the underside of the pit floor, tapering down to an opening 5 ft. 8 ins. by 4 ft., where it opens into two

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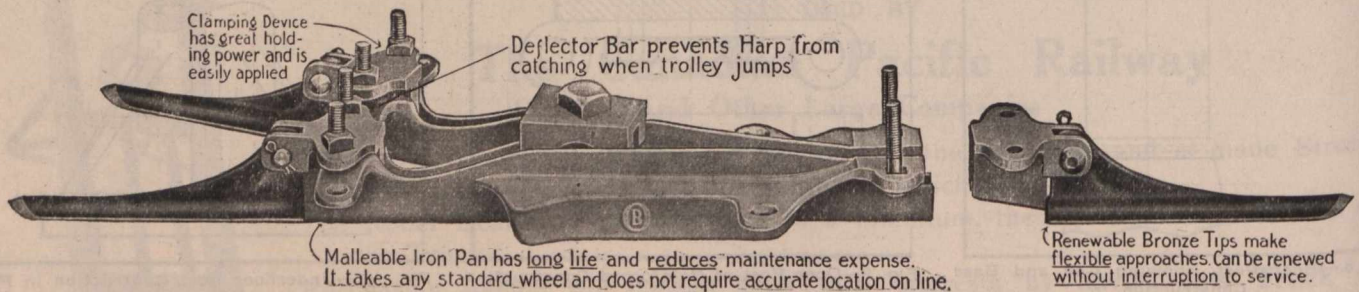
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parallel passages, the two forming the same size passage. These two parallel passages run directly across the building tapering to small size at the far side. Under each devil strip under the pit floor, lengthwise passages branch out from the two main ducts. Each of these lengthwise passages has two openings into the pit between each concrete arch. These openings are through special cast iron grids of a form shown on the pit floor in figs 7 and 11. The heat rising from these grids, strikes the underside of the devil-strip and is deflected each way up into the running-gear of the car where the heat is most required. A perfect system of heating

and confusion is thereby avoided.

CAPACITY.

The main shed has a capacity of 100 large cars or about 150 small cars on its 11 tracks. Counting the 6 tracks in the yard to the west, and the trackage in the outer shed, about 200 cars of all sizes can be accommodated, which is the number at present reporting there.

The Calgary Municipal St. Ry. added four cars to its rolling stock during Sept., making 30 in all. Out of the money to be raised under a bylaw to be shortly voted upon, it has been arranged to purchase 20 more cars, some 41 and others 46 ft. long.

detail.

The author's specification for an ideal construction follow:

Sub-grade in trench prepared by thorough rolling and checking, an 8-ton roller to be employed.

Installation of a tile in the centre between double tracks about 8 inches below base of tie, same to be connected with sewers at about 100-foot intervals.

Wood ties to be chemically treated with some adequate preservative; to have not less than a 6-in. face and to be laid with not to exceed 16 in. open space between ties.

Rails to be of the 7-in. Shanghai tee rail type, not under 90 lbs. per yard in

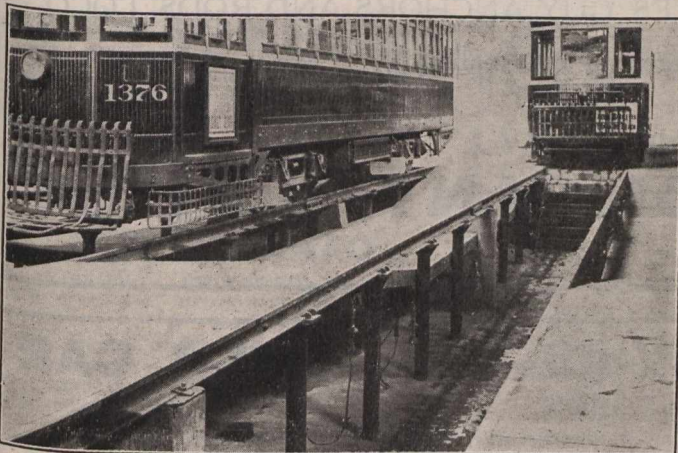


Fig. 11.—Depressed Devil-strip for Side Inspection of Trucks.

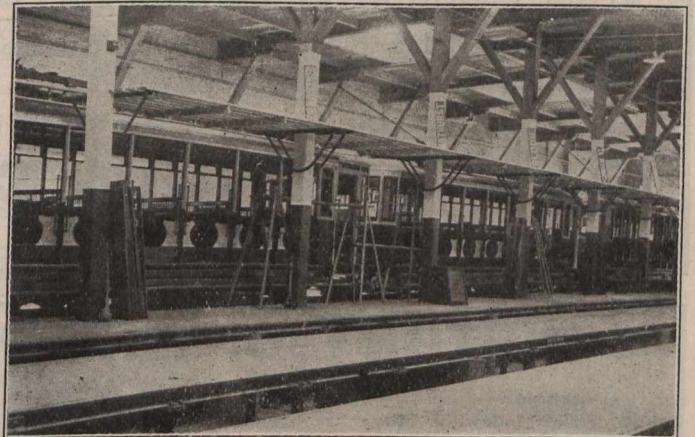


Fig. 12.—Stands for Placing Signs on Cars.

is thus obtained, the means of heating being at the same time so located as not to inconvenience the workmen. The heating is only accomplished in the pit. The heating of office and rooms is independent.

OUTER SHED.

The original intention of the designers was to leave open the 131 ft. to the north of the main shed. It was finally decided, however, that it would be preferable to cover, and thereby increase the capacity of the barn, a course that was followed, the framework being steel

The Use of Tee Rails in Street Railway Construction.

By F. G. Simmons.

(CONTINUED FROM SEPTEMBER ISSUE.)

The numerous references and quotations cited show conclusively that the use of tee rail in the permanent paving of city streets is not an experiment, although its use has been given many setbacks through the selection of improper material and improper methods of installing the paving where tee rail tracks are laid. Therefore, in concluding this

weight, 60 to 66-ft. lengths and preferably of open hearth steel.

Joints to be cast welded in a thorough and workmanlike manner.

Track to be ballasted on at least 6 ins. of Portland cement concrete, mixture no leaner than 1-2½-5 and to be well tamped to place. Concrete to be continued up to the proper level for the installation of the paving.

Paving to be as follows:

On streets where commercial vehicular traffic is very heavy, granite stone paving.

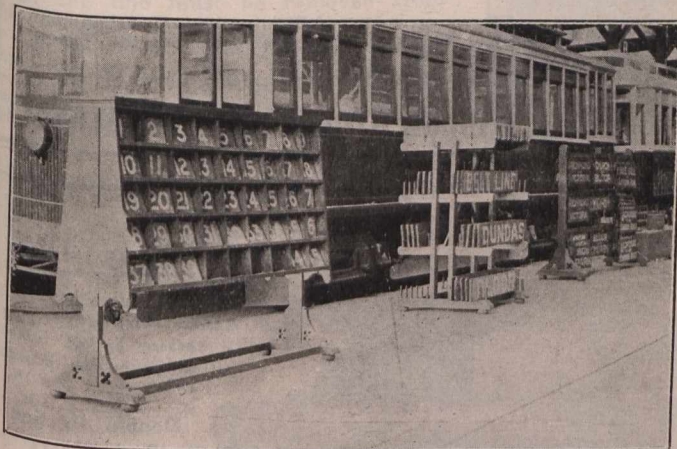


Fig. 13.—Car Starter's Racks for Routing Signs.

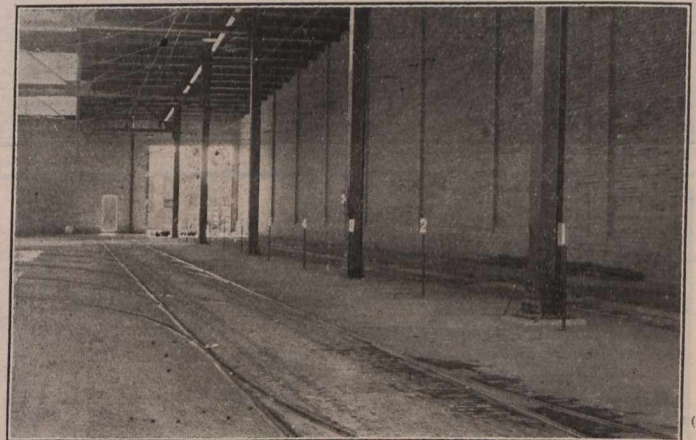


Fig. 14.—Outer Shed, showing Numbered Switches.

throughout as indicated by fig 14. Comparing figs. 12 and 14, it will be observed that the construction of the two parts is quite different.

An interesting operating feature is also shown in fig. 14, which is a view from the rear entrance on Lansdowne Ave. Each track is numbered over the entrance to the main shed. The cars as they enter from the rear are scheduled on to a certain track. To facilitate locating the switch belonging to the proper track—a confusing detail where there are so many switches—each of the switches corresponding to the track, is numbered at the turnout, as shown in the illustration. Much time

paper the author wishes to give his ideas as to the proper construction of tracks in city streets, the proper paving to be laid in connection with these tracks and the proper method of laying such paving.

To begin with tee rail of proper section should be selected, this being admittedly the most nearly perfect mechanical type.

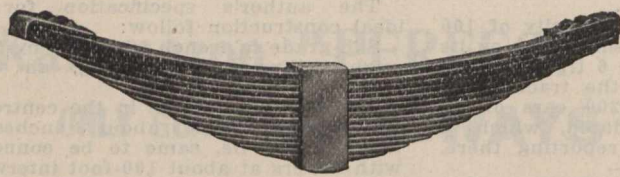
The track should be so laid that while not absolutely rigid it yet permits only a very minor deflection, scarcely more than vibration.

The paving should not be of the sheet variety for the most obvious reasons (previously quoted), and it should be laid with extreme care as to every

Where the traffic is still commercial but not so heavy, either sandstone or vitrified brick.

On residence streets vitrified brick or creosoted block. As previously stated there is sufficient field for sheet asphalt on boulevards and other streets, either residence or retail business, where street railway tracks do not exist.

The sand cushion on which the paving is placed should be in no place less than 1 in. in thickness and should be well compacted before the paving is set. The blocks or bricks at the gauge line of the rail should be depressed and projected under the head of the rail crowning up within 17 ins. to a level with the



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A HISTORY OF THE PAY-AS-YOU-ENTER CAR AND ITS LESSON

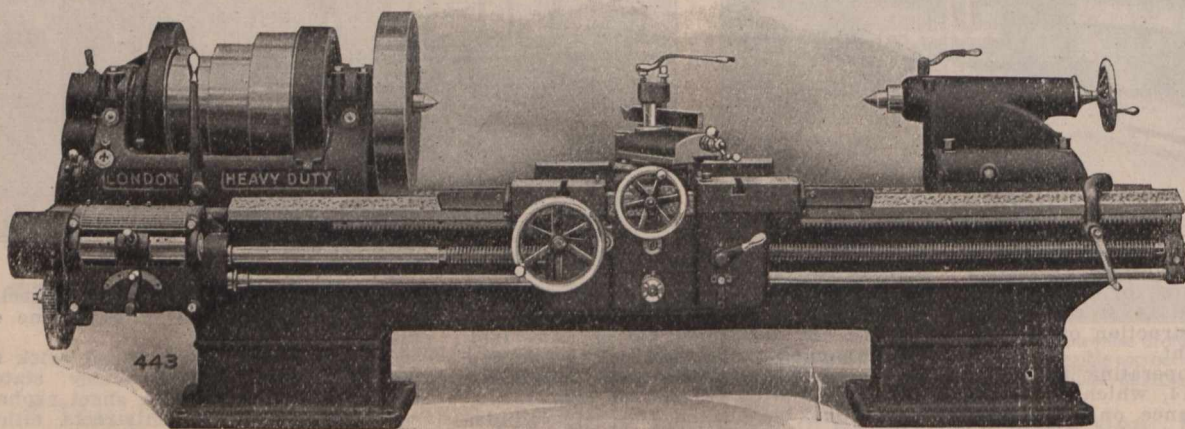
The following cities are using Pay-As-You-Enter Cars: Chicago City Railway, 839 cars; Chicago Railways, 1,323; Public Service Corporation of New Jersey, 466; New York City Railway, 555; Third Avenue Railroad, New York, 550; International Railway, Buffalo, 200; Buffalo & Lake Erie Traction Co., 10; Washington Ry. & Elec. Co., Washington, D.C., 100; Capital Traction Co., Washington, D.C., 51; Municipal Traction Co., Cleveland, Ohio, 180; United Rys. Co. of St. Louis, Missouri, 310; Portland Ry., Lt. & Pwr. Co., Portland, Ore., 25; Columbus Ry. & Lt. Co., Columbus, Ohio, 10; Wichita R.R. & Lt. Co., Wichita, Kan., 14; Jacksonville Elec. Co., Jacksonville, Fla., 5; Dallas Elec. Co., Dallas, Texas, 20; Houston Elec. Co., Houston, Tex., 41; Northern Texas Trac. Co., Ft. Worth, Texas, 25; Ithaca Street Ry., Ithaca, N.Y., 2; Peoria Street Ry., Peoria, Ill., 13; Urbana & Champaign Ry., Champaign, Ill., 3; Mutual Lt. & Water Co., Brunswick, Ga., 4; Rochester Ry. Co., Rochester, N.Y., 25; Ft. Dodge, Des Moines & So. R.R. Co., 2; Muskogee Elec. Trac., Muskogee, Okla., 6; Union Traction Co., Dubuque, Ia., 4; Topeka Ry. Co., Topeka, Kas., 12; United Rys. & Elec. Co., Baltimore, Md., 32; Detroit United Ry., Detroit, Mich., 225; Cincinnati Traction Co., Ohio, 50; Montreal Street Railway, 400; British Columbia Elec. Ry., 30; Calgary Street Railway, 18; Metropolitan Street Ry., Kansas City, Mo., 50; Edmonton Radial Ry., 4; San Antonio Traction Co., San Antonio, Tex., 6; Rockford & Int. Ry., Rockford, Ill.; Cairo Street Ry. & Lt. System, 6; Des Moines City Railway, Iowa, 12; Macon Ry. & Lt. Co., Macon, Ga.; Virginia Ry. & Power Co.; Columbia Elec. St. Ry. & Lt. & Power Co., Columbia, S.C.; Aurora, Elgin & Chicago Ry., Chicago, Ill.; Wichita Falls Traction Co., Wichita Falls, Tex.; Ottawa Electric Ry. Co., Ottawa; Bloomington & Normal Ry. & Lt. Co., Bloomington, Ill.; Corsicana Transit Co., Corsicana, Tex.; Compania Electrica y de Ferrocarriles, Mexico; The Milwaukee Elec. Ry. & Lt. Co., Milwaukee, Wis.; Springfield Street Ry. Co., Springfield, Mass.; Lynchburg Traction Co., Lynchburg, Va.; Chicago & Southern Traction Co., Chicago, Ill.; Calumet & South Chicago Ry. Co., Chicago, Ill.

THE LESSON

taught by this widespread use of Pay-As-You-Enter Cars is obvious. Increased Revenue, Accident Elimination and Schedule Improvement have been demonstrated in every case. Isn't all this sufficient to show that it always pays to operate the Pay-As-You-Enter Car? Why not remodel some of your present cars?

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top of the rail and then extending practically level until within 17 ins. of the other gauge line. The outside stem of the rail should be properly filled with a creosoted strip or cement blocks, and the entire pavement filled with a one-to-one cement grout very carefully applied and allowed to thoroughly set before any traffic is permitted.

The author believes that while some objection may be found to various of the details in this construction that it embodies a method which most nearly equalizes the requirements of the city and the company and produces a result giving the maximum of wear with the minimum of obstruction.

The author will be pleased to go into this matter further with anyone who is actively interested and will endeavor to elucidate to the best of his ability any of the details that have not been thoroughly explained.

Electric Railway Notes.

The Ottawa Electric Ry. is the fifth largest taxpayer in Ottawa.

The ratepayers of Kildonan, Man., will vote Oct. 7, on a bylaw permitting the operating of street cars in the municipality.

The Regina, Sask., Municipal Ry., has in operation on its lines, four single truck and two double truck pay-as-you-enter cars.

F. H. Deacon, Toronto, has been elected a director of the Duluth-Superior Traction Co., Duluth, Minn., in succession to R. Forget, Montreal, resigned.

The operation of the Regina, Sask., Municipal Ry. is in charge of H. Doughty, as Superintendent, with E. W. Bull as Superintendent of the power plant.

The Edmonton Radial Ry. has received two 30½ ft. pay-as-you-enter car bodies, 43½ ft. long over all, mounted on 27-G-1 trucks, from the Ottawa Car Co., Ottawa, Ont.

The Montreal City Council has notified the Incline Ry. that unless it is prepared to enter into a contract with the city, the line must be removed from Mount Royal Park.

The Board of Railway Commissioners has extended to Nov. 1 the time for equipping the Hull Electric Ry. cars with power brakes as required by the Board's general order.

The Pay-as-you-Enter Car Corporation is reported to have sold its European patents, in connection with which the International Pay-as-you-Enter Car Co. is to be organized in Great Britain.

The Quebec Public Utilities Commission, in the application of the Shawinigan Water & Power Co., and with the approval of the Shawinigan Falls Terminal Ry. Co., has authorized a crossing of the railway and a diversion of a roadway.

The Niagara, St. Catharines and Toronto Ry. had to cease operations for several hours, Aug. 27. The cable carrying power, which is laid across the Welland canal at Thorold, Ont., was broken by an anchor thrown out to stop a vessel which had broken away from her moorings.

The St. Thomas, Ont., Electric Ry. and the London and Lake Erie Ry. and Transportation Co. have some differences over right of way for their cars. The city owns the line, and has leased a right of way for the L. and L.E. Ry. and T. Co.'s cars through the city. The difficulty arises when the city cars and the through cars between London and Port Stanley arrive at a crossing point together.

A. C. Lytle, formerly General Superintendent and Freight and Passenger

Agent, Orford Mountain Ry., and since the absorption of that railway by the C.P.R., Assistant Trainmaster, District 1, Eastern Division, C.P.R., at Farnham, Que., has been appointed Assistant Superintendent of Construction, Montreal St. Ry.

G. H. Bentson, Secretary-Treasurer London St. Ry. Co., died in the Victoria Hospital, London, Ont., Sept. 9, of acute liver trouble, after having only been in the hospital two days. He was born at Toledo, Ohio, Aug. 26, 1879, was in the service of the Toledo Traction Co., and afterwards with the Toledo Railway and Light Co. as cashier. In 1895 he was appointed Secretary-Treasurer, London St. Ry. Co.

Wilford Phillips, whose portrait appears on this page, was born in Prince Edward County, Ont., Oct. 8, 1858, and commenced electric railway work on the Metropolitan Ry., North Toronto, now the Metropolitan Division, Toronto and York Radial Ry., in March, 1890, in which service he remained until July, 1902, since when he was, to March, 1893, Engineer and Superintendent, North To-



Wilford Phillips,
Manager, Winnipeg Electric Railway.

ronto Water Works and Electric Light; March, 1893, to 1896, Mechanical and Electrical Engineer, Niagara Falls Park and River Ry.; 1896 to June, 1900, Manager same company. In August, 1900, he was appointed Manager, Winnipeg Electric Ry., which position he now holds.

A Winnipeg dispatch, Sept. 24, says: "Following a conference between Sir Wm. Mackenzie and the special committee of the city council for the purpose of discussing certain details demanded by the solicitors before drafting the agreement, the arranging of a basis of audit and ultimate purchase of the Winnipeg Electric Railway has been agreed upon. General satisfaction is expressed by both parties interested. The proposed purchase involves the payment of some \$24,000,000 for all the Mackenzie & Mann interests in Winnipeg pertaining to the electric railway, light, power and gas plants. The agreement cannot become law, until the ratepayers vote favorably.

The B.C. Electric Ry. put in effect, Sept. 1, a general reduction of passenger rates over the interurban lines con-

necting Vancouver and New Westminster, except as to the Burnaby interurban line, which is operated under a Dominion railway charter, and the revised rate on which will go into effect as soon as the permission of the Board of Railway Commissioners can be obtained. The new rate from Vancouver to New Westminster is 25c. single fare and 50c. round trip. Proportionate reductions are made covering all points on the lines where interurban rates prevail. The company has also recently put in force a reduced freight tariff covering its South Fraser Valley extension, which covers the 76 mile stretch between Vancouver and Chilliwack, and connects the rich agricultural district lying on the south side of the Fraser River with the B.C. coast cities.

Electric Railway Finance Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for July, \$409,330; working expenses, \$258,265; net operating earnings, \$151,065 renewal funds, \$38,012; net earnings, \$113,053; approximate income from investments, \$25,000; net income, \$133,053, against \$283,535 gross earnings; \$173,850 working expenses; \$109,685 net operating earnings; \$23,820 renewal funds; \$85,865 net earnings; \$22,000 approximate income from investments; \$107,865 net income for July 1910.

The Cape Breton Electric Co. has been authorized by the Nova Scotia Legislature to guarantee the payment of the principal and interest on bonds or other securities of any corporation, the majority of the capital stock of which is held or controlled by the company.

Calgary Municipal Street Ry.—Passenger earnings for July, \$38,301.90; miscellaneous earnings, \$845.85, making altogether, \$39,147.75 against \$23,474.15 for July, 1910. Operating expenses, \$15,187.22, against \$9,443.56 in July, 1910. After providing \$5,263.33 for interest and sinking fund charges, and setting aside 5% of the gross revenue for sinking fund there remains a net profit for the month of \$16,739.82 against \$10,141 for July, 1910.

Edmonton Radial Ry.—Gross receipts for Aug., \$26,848.86, against \$17,662 for Aug., 1910. Passengers carried, 643,005, against 389,633, in Aug., 1910.

Halifax Electric Tramway.—Receipts for Aug., \$25,594.16, and for three weeks ended Sept. 21, \$18,690.11, against \$22,781.86 and \$14,365.54 for same periods, 1910.

Montreal St. Ry.—Passenger earnings for Aug. \$426,252.67; miscellaneous earnings, \$16,855.31; total earnings, \$443,107.98; operating expenses, \$232,529.56; net earnings, \$210,578.42; city percentage on earnings, \$52,562.98; interest on bonds and loans, \$15,463.55; rental leased lines, \$607.10; taxes, \$5,000; total charges \$73,633.63; surplus, 136,944.79; expenses per cent. of earnings, 52.48, against \$382,817.76 passenger earnings; \$16,010.81 miscellaneous earnings; \$398,828.57 total earnings; \$216,314.19 operating expenses; \$182,514.38 net earnings; \$46,707.72 city percentage on earnings; \$14,482.71 interest on bonds and loans; \$552.90 rental leased lines; \$4,000 taxes; \$65,743.33 total charges; \$116,771.05 surplus; 54.24 expenses per cent. of earnings, for Aug. 1910. Aggregate total earnings for 11 months ended Aug. 31, \$4,319,819.20; operating expenses \$2,478,724.76; net earnings \$1,841,094.44; total charges \$549,606.62; surplus, \$1,291,487.82; expenses per cent. of earnings, 57.38, against \$3,889,475.05 aggregate total earnings; \$2,237,830.24 operating expenses, \$1,651,644.81 net earnings;

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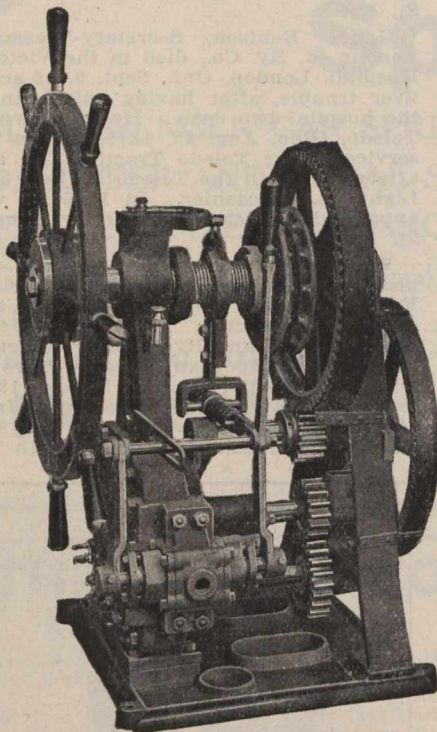
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\$485,289.82 total charges; \$1,166,354.99 surplus; 57.54 expenses per cent. of earnings for same period 1909-10.

A meeting of the shareholders has been called for Oct. 5, to ratify the acquisition of the Montreal Park and Island Ry. and Montreal Terminal Ry., and the contract transferring these properties and the property of the M.S.R. to the Montreal Tramways Co., the title of the new company. In connection with this meetings of the shareholders of the Montreal Park and Island Ry., and Montreal Street Ry. were called for Sept. 28, when the Tramways Co. released each of the two companies of their indebtedness, covenanted to pay all debts and liabilities, and to indemnify each of the companies against all loss or damage arising in respect thereof. The Board of Railway Commissioners is being asked to ratify the amalgamation of the several companies.

Quebec Ry., Light, Heat and Power Co.—The annual meeting, which was to have been held Sept. 12, was postponed on account of the general election, in which the President, R. Forget, was engaged.

The Regina Municipal Ry. started regular operation, July 29. The receipts for August, including July 29 and 30, were \$7,718.50; operating expenses, \$3,328.48; net earnings, \$4,390.02. Car mileage, 12,815 miles; gross earnings per car mile, 60.23 cents; operating expenses, 25.97 cents; net earnings, 34.26 cents; passengers carried, 151,104.

The Sherbrooke Ry. and Power Co.'s capital is \$1,500,000 stock and \$1,500,000 of bonds, and there have been issued \$1,000,000 of each. The last \$1,500,000 of each issued being to provide for the purchase of the Stanstead Electric Light Co., and the Eastern Tonships Light and Power Co.

The gross earnings for the three months ended July 31, were \$12,960.46 against \$9,578.05 for the corresponding months in 1910. Only the lines taken over from the old company were being operated during that period, the extensions not being operated over until the end of July.

Toronto Ry.—Gross earnings for Aug. \$421,973.75, expenses \$210,962.33, net earnings \$210,991.42; against \$380,934 gross earnings, \$195,883.22 expenses, \$185,050.78 net earnings for Aug., 1910. Aggregate gross earnings for eight months ended Aug. 31 \$3,052,968.07, expenses \$1,551,378.12, net earnings \$1,501,589.95; against \$2,767,357.94 aggregate gross earnings, \$1,433,380.71 expenses, \$1,333,977.23 net earnings for same period 1910.

For the 12 months ended Aug. 31, the company paid the city \$751,870.38, made up of \$668,730.38 percentage on earnings, and \$83,140 mileage rent. The amount paid to the city for the previous year was \$661,399.58. During the past year 101,788,323 tickets were sold realizing \$3,873,710, and \$753,221.45 was taken in cash fares. The total receipts were \$4,643,651.94, an increase of \$451,636.65 over the previous year. The directors have declared a quarterly dividend of 2%.

Winnipeg Electric Ry.—Gross earnings for July, \$322,751; expenses \$152,108; net earnings, \$170,643, against \$252,014 gross earnings; \$119,754 working expenses; \$132,260 net earnings for seven months ended July 31, \$2,204,710. Aggregate gross earnings July 1910, net earnings \$1,096,193, against \$1,784,210 aggregate gross earnings and \$887,140 net earnings for same period 1910.

Mayor Evans is reported as stating Sept. 14, that while some delay has been

experienced in connection with the negotiations for the purchase of the company's lines by the city, it was hoped that with an independent audit sufficient information will have been compiled, so that the purchase by the city may be carried out to the advantage of all concerned.

Electric Railway Projects, Construction, Betterments, Etc.

Alberta Electric Ry.—Press reports state that application is to be made to the Dominion Parliament to change the name of the company to the Alberta Interurban Ry. The report further states most arrangements are being made for the building of about 30 miles of line from Calgary eastward, in the direction of Bassano, and that the route will be on the main highways for the greater part of the distance, and adds that individual unit cars, fitted with internal combustion engines will be used. May, pg. 453.)

Berlin and Waterloo St. Ry.—It is reported that an addition will be built to the car house, in which a hydraulic motor lift will be installed. (Jan., 1910, pg. 57.)

Brandon, Man.—Considerable work has been done in the way of building an electric railway on Ninth St., by the city council, and the work is being pushed forward rapidly. (Aug., pg. 783.)

British Columbia Electric Ry.—A start was made, Sept. 7, upon the building of a second track on the Vancouver and Lulu Island Ry., and tenders are being asked for the grading between King Edward Ave. and Eburne, four miles. Heavy steel is to be laid on the new track, and the steel rails on the present track are to be replaced with rails of corresponding weight. The Burnaby municipal council decided, Sept. 11, to consider the question of taking legal proceedings with the view of having the validity of the company's franchise tested.

A contract has been let to C. C. Moore & Co., Seattle, for the extension of the auxiliary steam power plant at Main and Branard Streets, at an approximate cost of \$250,000. The equipment covered includes four Babcock and Wilcox boilers, each of 500 h.p., which will operate a 2,000 k.w. Allis-Chalmers turbo-generator. The contract also covers condensers, piping, etc., necessary for the operation of the new unit. A special feature of the work is the erection of a reinforced concrete stack 256 ft. high, similar in detail to the stack of the same height which was built for the company's steam auxiliary plant a few years ago. The additional equipment will increase the available power from the steam auxiliary plant to 12,000 horse power.

The company has also called for tenders for a large car barn at Queen's Ave. and 12th St., New Westminster, nearly opposite the company's shops. The plans call for alternate bids on reinforced concrete or wood frame with galvanized iron covering. The barn is to be 240 by 104 ft. and will consist of two units each having four tracks. Provision is made for pit tracks, workshops, etc., in connection with the project, the plans covering the demands for an up-to-date car barn in every particular. The work will be rushed to completion as soon as the contract is awarded.

The new interurban station and office building at New Westminster was opened Sept. 5. The building is two stories high, of brick construction, the lower floor being used for passenger and freight traffic and the upper for the company's offices. From the station are operated the Westminster city lines, interurban lines connecting New West-

minster with Vancouver over the three routes of the company between the cities, and Fraser Valley branch running through the South Fraser Valley to Chilliwack.

A contract for grading 18 miles of a new interurban line on Vancouver Island running north from Victoria, has been awarded to Moore & Pethick, who have been doing work for the company in connection with the Jordan River power plant. They will start work at once and are to complete the work within a year. The Saanich extension will be 22 miles in length, connecting Victoria with Deep Bay on the west shore of the Saanich peninsula near its northern point. The estimated cost of the line complete is from \$600,000 to \$750,000. It will open up a large area of land which is ripe for settlement and development, but which has previously been sparsely settled owing to inadequate transportation facilities. Considerable preliminary clearing work has already been done on the right of way by the company. From the northern terminus of the line it is probable a ferry will be operated connecting fertile islands on the Gulf with the mainland. (Sept., pg. 877.)

Calgary Municipal Street Ry.—A by-law is being prepared for submission to the ratepayers for the purpose of raising \$400,000 to meet the cost of second track work on certain streets, extensions of lines, and general improvements. It was expected to have added 25 miles of track to the system by Sept. 30, bringing the total length of lines built to 40 miles, of which 10 miles are double track. (Sept., pg. 877.)

The Chilliwack Tramway Co. is reported to have been formed with a capital of \$25,000 to build an electric railway within the limits of the city of Chilliwack, B.C. The company is formed under the provisions of the general Railway Act passed last session, but it does not appear to have been formally registered.

Coteau Power Co.—Press reports from British Columbia, Sept. 15, state Sir Wm. Mackenzie, Sir Donald Mann and associates have purchased the Coteau Power Co.'s rights and interests. The company was formed by W. C. Richards, G. A. Henderson and others interested in the development of the Okanagan Valley, with a view to providing electric power for industrial, lighting and heating purposes, and to build a system of electric railways throughout the valley. M. Neilson, Montreal, recently made an examination of the route covered by the company's powers and is said to have made a favorable report thereon. J. E. Rothery, manager of the Toronto Eastern Ry., a Mackenzie-Mann project, was also in B.C. recently, and probably also looked into the C.P. Co.'s scheme. The route of the line as projected will be from Shuswap Falls, through the White Valley, and Coldstream, linking up the various Okanagan Valley towns, and reaching out to Enderby on the north and Kelowna on the south. (June, pg. 555.)

Dartmouth and Cow Bay Electric Ry.—The line which this company is authorized by the Nova Scotia Legislature to build is to extend from Dartmouth to Cow Bay Beach in Halifax county, and it may be built "along, alongside of or across the public highways." The provisional directors are: R. Stanford, I. W. Vidah and A. Pyke, Dartmouth, N.S. (June, pg. 555.)

Dunnville, Wellandport and Beamsville Electric Ry.—It is reported that about \$100,000 of the capital stock has been subscribed for, and that about \$15,000 has been paid in. Bonds for \$40,000 are understood to have been issued, and municipal bonuses amounting

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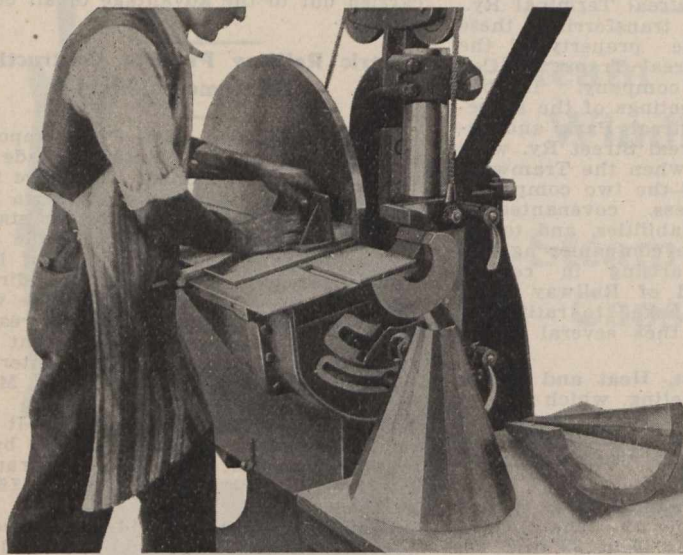
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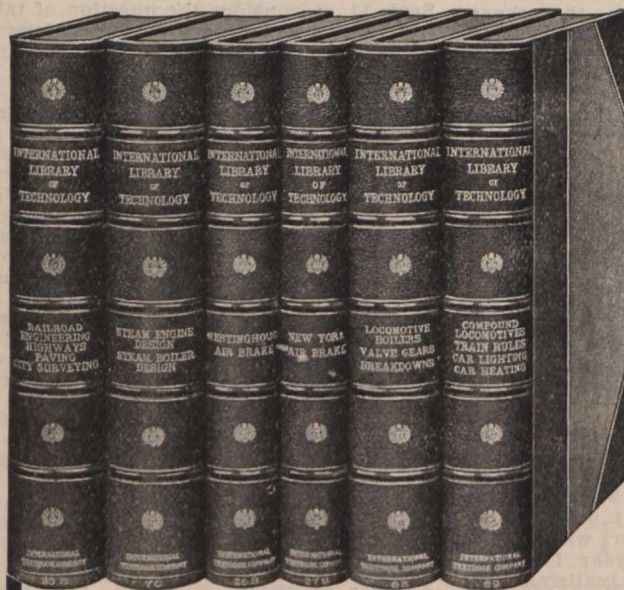
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to \$20,000 are said to have been paid in. The company has some real estate, and has expended a considerable sum on grading, bridges, plant, etc. For some time past construction has been at a standstill. (Aug., pg. 783.)

Lake Erie and Northern Ry.—The Brantford, Ont., city council, Sept. 12, directed the preparation of a bylaw for submission to the ratepayers authorizing the guarantee of the company's bonds to the extent of \$300,000. The town of Simcoe and the village of Port Dover are being asked to guarantee an additional \$50,000 of bonds each, and it is proposed to issue \$900,000 of bonds or at the rate of \$30,000 a mile for the 30 miles of line proposed to be built between Brantford and Port Dover. The estimated cost of construction is \$40,000 a mile.

We are advised that it is intended that the line shall be built entirely over a private right of way, and that all the surveys made have been across country, running via Mount Pleasant, Boston, Waterford and Simcoe, a distance of 32 miles, which it is expected to shorten by two miles on revision. It is proposed to start construction this fall, or early next spring.

The officers and directors are: President, J. Muir, Vice President, J. Sanderson, Secretary-Treasurer, W. S. Brewster Chief Engineer, W. P. Kellett; other directors, R. E. Ryerson, D. W. Schultz, all of Brantford, Ont. (Sept., pg. 879.)

Moncton Tramways, Electricity and Gas Co.—We are advised that owing to the misunderstanding of a cablegram, at Moncton, the information given in our last issue that steel rails had been ordered in the United States, was incorrect. Grooved girder rails, 84 lbs. to the yard, for two miles of track have been ordered in Great Britain. Track work has been proceeded with and about a mile of roadway has been opened and is ready for the rails. It is the company's intention to lay two miles of track and have it in operation in the fall. (Sept., pg. 879.)

Montreal Street Ry.—In connection with the opening of the Canadian Light and Power Co.'s new plant, at St. Timothee, Que., Aug. 31, E. A. Robert, President of both companies, stated that the street railway problems would be solved within a short time, and that the various lines would be extended, one of the extensions being to Beauharnois. (Sept., pg. 879.)

Nanaimo, B.C.—Notice has been given that a bylaw providing for the granting of a franchise for an electric railway in the city, will be introduced at an early meeting of the city council. (Sept., pg. 879.)

Nipissing Central Ry.—The Mayor of Liskeard, Ont., received a letter from J. L. Englehart, President N.C.R., and Chairman of the Temiskaming and Northern Ontario Ry. Commission, Sept. 12, stating that engineers were in the field locating the proposed extension from Haileybury to Liskeard, Ont., and stating that construction would not be delayed any longer than could be helped.

Reports from Cobalt state that it is proposed to divert the line in North Cobalt, in order to avoid a section upon which expensive repairs have constantly to be made. The new route will be shorter and more convenient. (Sept., pg. 879.)

Ottawa Electric Ry.—Questions affecting the extension of lines in Ottawa were considered by the city council's street railway committee, Sept. 11, and the committee's report is now before the council. Superintendent J. E. Hutcheson, is reported as stating that nothing can be done as to the Ottawa

South extension until after the completion of the Bank St. bridge by the city, which he expects will take about a year to build. (Sept., pg. 879.)

Ottawa, Smiths Falls and Kingston Ry.—Press reports state that it is proposed to operate this line, when constructed, with cars and trains which will generate power for themselves. Each car or locomotive will be equipped with a gasoline engine for the purpose of driving a dynamo for generating power. (Sept., pg. 879.)

Peoples Ry.—The Guelph, Ont., city council passed a resolution Sept. 5, notifying the company that if the line be not completed within three months, the agreement between the city and the company will be cancelled. The agreement which was ratified by the Ontario Legislature in 1910 provides for the construction of certain lines in the city, and extensions to various points, which are to be completed at specified times, the whole to be finished by June 30, 1913, and further that if the city or the Guelph Radial Ry. considers that substantial or satisfactory progress has not been made with construction, three months' notice may be given to terminate the agreement, but "no part of such three months shall extend beyond Dec. 1, or commence earlier than April 1, in any year." (Aug., pg. 783.)

Regina Municipal Ry.—We are advised that two miles of the electric railway built by the city council have been in operation since Aug. 1, although traffic on a regular schedule was not started until Aug. 14. The construction program for the current year covers the building of six miles of track, and it is expected that this will be ready for operation early in Oct. A 7½ minute service is being given in the centre of the city, and a 15 minute service elsewhere.

The city council has let a contract to A. E. Downs for the erection of car barns at a cost of \$22,975. The work is to be completed early in Oct. The main building will be 200 by 88 ft. and 24 ft. high. It will be of stone and reinforced concrete, with roof of steel truss construction, and will have four rows of desk lights running the entire length. There will be 10 pairs of windows in the west side of the building. Adjoining will be repair and machine shops and an office section.

A bylaw was given its third reading by the city council Sept. 6, authorizing the raising of \$40,000 for street railway construction.

The construction work is being carried out under the direction of L. A. Thornton, city engineer. (Sept., pg. 879.)

Saskatoon, Sask.—The city council is preparing to start work on grading the streets on which it is proposed to lay the first sections of the projected electric railway. M. E. Evans, submitted plans showing the proposed routes to the city council on Aug. 28, and these have been approved of. (Aug. pg. 785.)

Toronto and York Radial Ry.—The new bridge over the Mimico Creek, on the Lake Shore division has been completed, and cars are being operated over the new double track line constructed on private right of way there. (July, pg. 685.)

Toronto Civic Lines.—The Toronto city council is asking for tenders for the building of certain subways with the view of ascertaining the probable cost of the same preparatory of submitting a bylaw to the ratepayers in Jan. It is proposed to abandon the projected Yonge St. subway, and to build one instead from Front St. along Bay, Terauley extended, St. Vincent, Chapel and North streets to Bloor, and northerly to Yonge St., at Birch Ave., and then along the surface level to St. Clair Ave., pro-

vided an arrangement can be made with the Metropolitan Ry. for the use of its tracks in exchange for the use of the city tracks between certain points. (Sept., pg. 879.)

Toronto Eastern Ry.—The Board of Railway Commissioners has authorized the line to be built across 11 highways in Pickering tp., between mileage 0.9 and 7.7; and to build across the Oshawa Electric Ry. at Simcoe St., Oshawa, Ont. (July, pg. 685.)

Winnipeg Electric Ry.—Tracklaying on the extension of the line on Marion St., Norwood, was expected to be started, Sept. 25. (Sept., pg. 847.)

American Electric Railway Association.

As previously announced in these columns, the annual convention of this association and its affiliated associations will be held at Atlantic City, N.J. Oct. 9 to 13.

James Anderson, Manager, Sandwich, Windsor and Amherstburg Ry., Windsor, Ont., and President, Canadian Street Railway Association, has been appointed a member of the transportation committee in connection with the convention. The Eastern Canadian Passenger Association has made the following concessions in rates: Lowest one way first-class fare and one-half; from Kingston, Sharbot Lake, Renfrew and west, tickets will be sold on Oct. 5 to 9, inclusive; from east of Kingston, Sharbot Lake and Renfrew, tickets will be sold on Oct. 6 to 10 inclusive; return limit to reach original starting point not later than Oct. 10. Tickets are to be validated by agent of terminal line at Atlantic City, N.J.



CITY OF TORONTO. TENDERS

for

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Sealed tenders will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, up to 12 o'clock noon on Wednesday, Nov. 1st, 1911, for the construction of three miles of reinforced concrete subway and subway stations.

No tender will be received for less than one-half mile sections.

Envelopes containing tenders must be plainly marked on the outside "Tenders for Proposed Subway Construction."

Plans and specifications may be obtained on application to the Department of Railways and Bridges, City Engineer's Office, Toronto, also on file for inspection at the following points:

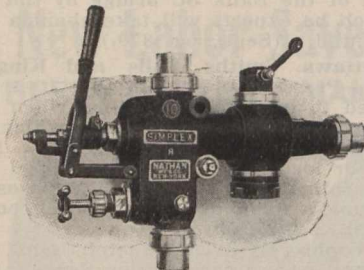
1. N. B. Colcock, Ontario Govt. Agent, 163 Strand, London, W.C.
2. Canadian Engineer, B-33 Board of Trade Bldg., Montreal.
3. Canadian Engineer, Room 404 Builders' Exchange Bldg., Winnipeg.
4. Engineering News, 220 Broadway, New York.
5. Engineering Record, 239 West 39th St., New York.
6. Engineering Contracting, 537 S. Dearborn St., Chicago, Ill.

Each tender must be accompanied by a marked cheque for Two Thousand (\$2,000) dollars for each one-half mile section tendered on.

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

Ship Masters' Association of Canada.

GRAND MASTER, Capt. J. H. McMaugh, Toronto, Ont.; GRAND SECRETARY-TREASURER, Capt. H. O. Jackson, 376 Huron St., Toronto.

Floating Dry Dock and Repair Plant for Toronto.

The Dominion Government recently granted Polson Iron Works, Ltd., Toronto, a 3% bonus yearly for 20 years on \$900,000 to be spent in building a floating dry dock and a repair plant at Toronto. The dock will be located at the foot of Frederick St., just west of and adjoining the company's present plant. The company has leased from the city, 136 ft. of land just west of the present property on which a basin will be blasted to a depth of 28 ft. to accommodate the floating dock. The company has also recently acquired the property to the east of its present plant and to the east of the Sherbourne St. slip, and it is the intention to use this property outside of Lake St., as a basin for the accommodation of steam boats which may come to the dock for repairs, and this space will provide ample dock accommodation for all vessels which may be waiting their

are being built, making an overall length of 336 ft., having a lifting capacity of 4,500 tons, and easily able to accommodate any vessel on Lake Ontario. In the future, when larger vessels are expected to be on these waters, a 300 ft. section will be built and added to the dock, making a total length of 642 ft., and having a lifting capacity of 9000 tons.

The dry dock is of the U-shaped section, and each 150 ft. part is divided transversely by two watertight bulkheads, spaced 50 ft. apart. These bulkheads are fitted intercostally between the three longitudinal bulkheads which are run continuously from end to end, the centre one being non-watertight, and the side ones at 20 ft. from the centre line being watertight. These bulkheads are composed of 3/8 in. plating, 5 by 3 by 3/8 in. vertical stiffeners, spaced 30 in. apart and 5 in. by 3 by 3/8 in. horizontal stiffeners spaced about 7 ft. apart, and shell and deck angles of 3 1/2 by 3 1/2 by 3/8 in.

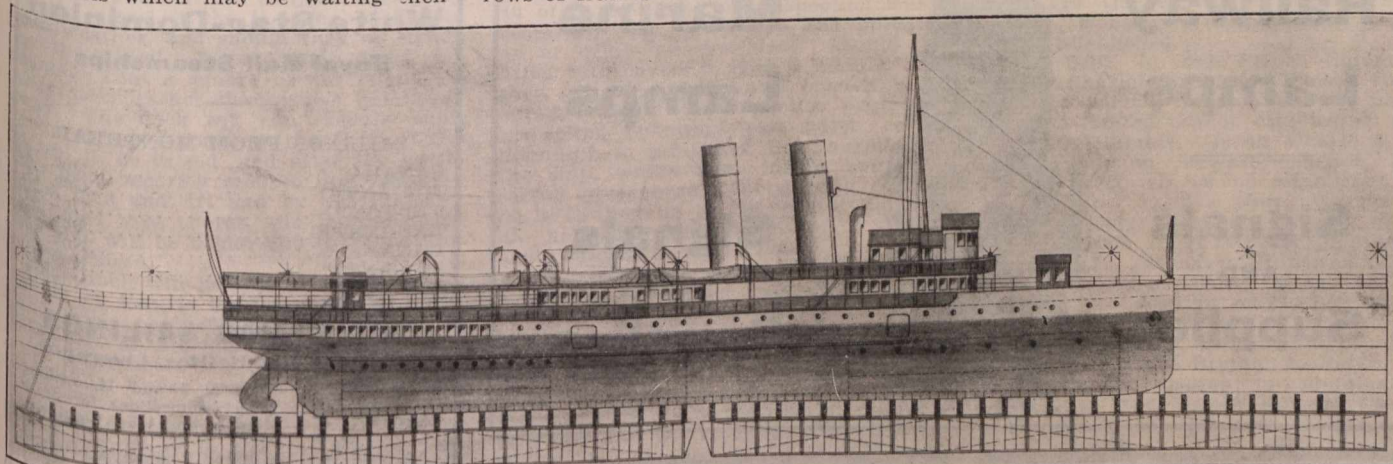
The framing consists of both longitudinal and transverse systems, the former being carried out between the wing bulkheads in the centre and the latter outside the wing bulkheads and on the walls. Solid floors are fitted transversely every 10 ft. between the longitudinal bulkheads, and consist of 3/8 in. plating, with connecting angles of 3 by 3 by 3/8 in. and vertical stiffeners of 5 by 3 by 3/8 in. spaced 30 ins. apart. Between these solid floors are fitted the longitudinal frames which are 6 by 3 1/2 by 3/8 in. on the bottom and 12 by 25 in. channel at the top. The former are fitted intercostally between the solid floors, but the latter run continuously from bulkhead to bulkhead. This longitudinal system of framing is completed by a continuous series of lattice work of 4 by 4 by 3/8 in. angles with 3/8 in. cross ties and brackets securely connecting them to frames and vertical stiffeners. The longitudinal framing amounts to a non-watertight centre bulkhead, two side wing bulkheads, both watertight, and 14 rows of frames and bracings. The trans-

verse framing consists of a series of lattice work frames opposite every solid floor of 6 by 3 1/2 by 3/8 in. angle frames, 3/8 in. brackets and 4 by 4 by 3/8 in. bracings. The side frames of outer and inner walls extend from top to bottom continuously, and have beams securely bracketed to them about every 7 ft. The intermediate frames are fitted between each solid floor, spaced 30 in. and extend from wing bulkhead to top and are

of 6 by 3 1/2 by 3/8 in. angles with 3/8 in. brackets connecting beams and stanchions. The bottom plating is 7-16 in. worked transversely in way of longitudinal framing at centre, and longitudinally in way of transverse framing at sides. The outer wall is 3/8 in. plating with top and bottom strakes of 7-16 in. The inside wall is of 3/8 in. plating and the top is 7-16. The deck plating is 3/8 in., worked in the same manner as the bottom plating in connection with the framing. The corner angles at the deck, top and bilge are 4 by 4 1/2 in. All shell landings will be joggled and linears dispensed with. The end plating is 3/8 in., and is connected to deck and bottom by 4 by 4 by 3/8 in. angles with 5 by 3 by 3/8 in. vertical stiffeners spaced 30 ins. and horizontal stiffeners of 5 by 3 by 3/8 in. The gangways are fitted in each section in each side; the opening being 20 by 15 ft., with plating 3/8 in. and connecting angles 3 by 3 by 3/8 in. The rivets in the whole construction are 3/8 in. in diameter, the plate landings being double rivetted and the laps quadruple rivetted.

Ladders are placed at each side of each pontoon and rails and stanchions are fitted all around the top. Cast iron bollards are placed in each corner of each section and securely bolted into place. Three cast steel brackets are placed on each side of each section securely fastened to heavy brackets and special connection between the two sections are fitted so as to give rigidity to the whole dock when lifting operations are under way.

The connecting links are made of forged iron and secured by bolts and held by strong lugs. The outrigger platform which extends 15 ft. from each end of dock is made up of 3/8 in. plating and has brackets and stays every 30 ft. with a fender all round its edge. On the top deck, two manholes with hinged covers are fitted to each watertight compartment. Ladders of 2 1/2 by 1/2 in. flat, are placed in way of each manhole



Longitudinal Section of Floating Dry Dock for Toronto.

turn to use the dock. The floating dry dock is ultimately to be of the following dimensions:—

Length	600 ft.
Length over outrigger	642 ft.
Breadth over all	100 ft.
Breadth at deck inside	80 ft.
Depth at top inside	84 ft.
Depth over all	35 ft.
Depth to dock deck	8 ft.
Lifting capacity	9,000 tons

At present, two sections 150 by 100 ft.

verse framing consists of a series of lattice work frames opposite every solid floor of 6 by 3 1/2 by 3/8 in. angle frames, 3/8 in. brackets and 4 by 4 by 3/8 in. bracings. The side frames of outer and inner walls extend from top to bottom continuously, and have beams securely bracketed to them about every 7 ft. The intermediate frames are fitted between each solid floor, spaced 30 in. and extend from wing bulkhead to top and are

on the bulkheads.

Bilge and keel blocks are placed at suitable distances apart having an oak base 60 ft. long on which the bilge blocks can slide. This base will be bolted through clips 5 by 3 by 3/8 in. securely riveted to deck. The sliding blocks are of pine and the best arrangement of guides, pulleys, and chains will be fitted so as to make the work of docking as easy as possible.

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The pumps are the horizontal centrifugal type with 16 in. suction located in the bottom of the dock and are driven by a vertical shaft connected to a 50 h.p. motor, located on top of dock. Two pumps are fitted in each section and all parts are interchangeable. The pumps have a capacity of 7,000 imperial gallons a minute at 300 revolutions. The two pumps in each section are to empty that section in about 1 hour, 20 minutes. The motors are 50 h.p., located on suitable base plate at top of dock. The pumps are located in the bottom of the docks, discharging through the side of the dock about 3 ft. above the bottom. The casing is of cast iron and about 7 ft. in diameter.

The suction nozzle is 16 ins. in diameter and the discharge 15 ins. diameter, the latter having a 15 in. screw check valve between end and sea valve. A cast iron manifold is fitted close to each pump for the end compartments, and two similar manifolds for the middle compartments, and from these the different branch lines run. The branches to the centre compartment are 6 in. and to the wing compartments 10 ins., each valve being fitted with a quick opening gate valve close to the manifold. Suction boxes are fitted on end of each pipe and placed in a gutterway of special construction built in the bottom of the dock, so that it can be drained dry. A 16 in. pipe connects the two pumps so that one pump can operate the whole section in case of emergency. The two flooding valves are 18 ins. in diameter. The flooding and discharge valves are operated by a spindle, with hand wheel on stand, with different heights of stands so as to be easily distinguished.

As previously stated, it is expected that at a future date, a 300 ft. section will be added to the first 300 ft. dry dock, and so accommodate the largest vessels that are expected to be on these waters, but in case of the smaller vessels, up to 150 ft., the sections will be separated and only one used for lifting. In operating docks of this description, considerable care has to be taken previous to the submersion of the dock, particularly with regard to the position of the bilge blocks, which should be as far away from the centre as possible. Also all chains and guides must be seen to be clear of all obstructions.

At the corners of the dock are vertical rollers which are of great assistance to the vessel if she is being docked in bad weather, and should they be struck by the vessel, instead of doing the damage that a square corner might do, they assist rather than retard her headway. The dock will be usually sunk about 2 ft. deeper than the draft of the vessel to be raised, and after the vessel has been securely moored by ranging lines fore and aft and by mechanically governed side shores, the pumping operations will be begun and the dock and vessel raised.

The dock will have a complete installation of electric light on the top deck, and every convenience for the rapid handling of all kinds of repairs.

It is expected to have the two sections now under construction completed so that vessels may be docked on the opening of navigation.

The company is also building a new boiler shop 300 by 120 ft. composed entirely of steel, except the boiler walls. Two large compartments are to be built, one 60 by 40 ft., for a pump and compressor room, the other 60 by 60 ft., for a flange fire shop.

During July, 18 employes were killed and nine injured in the course of their work in connection with the navigation of Canadian waters. Of the fatalities, 17 were due to drowning and one to being caught in machinery.

The Loss of the s.s. Sechelt.

The enquiry into the loss of the Sechelt Steamship Co.'s s.s. Sechelt, which foundered with all hands, Mar. 24, off South Bedford Island, Beecher Bay, Straits of Juan de Fuca, was concluded Sept. 1, at Victoria, B.C., and judgment delivered by Mr. Justice Martin, concurred in by Capts. Neurotsos and Reed as nautical assessors. Following is a summary of the judgment:—

While in the absence of direct testimony it is impossible to state definitely what brought about the disaster, yet it seems to be clear that from some unexplained cause the ship got into the trough of the sea, with a heavy westerly wind and hard squalls prevailing, which caused her to heel to such an extent as to allow the water to flow into the body of the ship through the apertures on the main deck communicating with the engine and boiler space, and forehold, and it is probable that cargo on the main deck, of light iron rails, car wheels and axles, shifted in the heavy rolling to an extent sufficient to deprive the ship of ability to right herself.

The ship, though given a certificate to carry 40 passengers under sec. 1, part VII, of the Inspection Rules, was not fitted for the Victoria-Sooke route, for which she was licensed, and the Inspector of Hulls, J. C. Kinghorn, should not have given her permission to run on it. A grave error in judgment was made in classing the route in question as being one within "the island waters" of Canada, as defined by sub-sec. (g), sec. 72 of the Canada Shipping Act, because it comes clearly within the exception "salt water ways and gulfs on the sea coast" specified in that section, and though part of the route, viz., from Victoria to Race Passage, would in general be more or less sheltered, except from southeasterly gales, yet after passing through that passage a ship would be exposed to the full force of prevailing westerly gales from the Pacific ocean. The Sechelt was quite unable to cope with such conditions or with the ordinary stress of wind and weather to be encountered in that locality, because of her peculiar construction, whereby the main deck was in effect made the weather deck, and also because of the insecurely protected apertures above mentioned, which properly come within the scope of sec. 14 of part VII, of the Inspection Rules, requiring that "gangways and openings on or below weather deck" should "be fitted with covers in such a manner that they can be quickly and efficiently secured;" with other similar provisions respecting coamings and hatch covers intending to safeguard the buoyancy of the ship, which were insufficiently observed or ignored, though the section declares them to be "important items to be noticed by the inspector in steamboats subject to heavy seas."

The vessel was originally designed as a tug for service on Lake Washington, but had had much additional superstructure for the accommodation of passengers which tended to lessen her original stability, and encouraged the carrying of freight on the main deck.

Though sec. 24 of the Inspection Rules provides that the steering gear shall be inspected and thoroughly examined at least once a year by the Inspector of Hulls, there is no specific evidence that this was done, which is the more to be regretted as it was suggested that the cause of the ship unaccountably getting into the trough of the sea was owing to some defect in the steering gear. It is surprising to observe that in the printed form of return of inspection no reference is to be found to this essential matter. Though the Sechelt has been stranded in the Vancouver Narrows, Aug. 7, 1910, and again on Bowen Island,

Nov. 5, 1910, and her main engine had broken down on Dec. 8, 1910, suffering on each occasion a material degree of injury to her hull or machinery as defined by secs. 15 and 21 of the Canada Shipping Act of 1908, which injuries were, in two cases at least, reported to the Inspector of Hulls, yet permission was given to her owners to change her run from Vancouver to Sechelt to a more dangerous one, viz., from Victoria to Sooke, without any inspection, though full powers are given to the inspector in such cases. With reference to the issuance of a certificate that a vessel is fit to ply, the limits within which she may ply must be defined and a duplicate of the certificate posted in a conspicuous part of the steamboat. In this case the certificate states that the Sechelt is permitted to run on the waters between Vancouver and Sechelt, therefore she was running on a route for which she had in fact no certificate.

The judgment concludes with a number of recommendations, for the appointment of additional inspectors, and for the establishment of rules that no vessel should be allowed to carry freight or passengers for hire without having first obtained the certificate of a board of inspection collectively, that she is in all respects suitable for the route on which she is to ply, instead of the two individual and inadequate certificates now in use.

Canadian Notices to Mariners.

The Department of Marine has issued the following:—

94. Aug. 23. 252. Quebec, Ottawa River, Vaudreuil bay, Vaudreuil village wharf, day beacons. 253. United States of America, Lake St. Clair, light vessel removed. 254. United States of America, Lake, Huron, north channel Potagannising bay, shoal reported.

95. Aug. 25. 255. Quebec, Chaleur bay, Carleton, Tracadigash point, lighthouse rebuilt. 256. Quebec, Chaleur bay, Cascapedia bay, New Richmond, change in position of buoy. 257. Quebec, River St. Lawrence below Quebec, off Cape Tormente, gas buoy removed. 258. Quebec, River St. Lawrence below Quebec, northward of Ile aux Reaux, gas buoy placed temporarily for dredging purposes.

96. Sept. 2. 259. Quebec, Saguenay river, buoys established below Chicoutimi. 260. Quebec, River St. Lawrence, below Montreal, Tetreauville, range lights established.

97. Sept. 7. 261. British Columbia, Queen Charlotte Islands, Hecate strait, Moresby island, Houston Stewart channel, gas lighted beacon established. 262. British Columbia, Queen Charlotte islands, Houston Stewart channel, Flat rock, gas lighted beacon established.

98. Sept. 11. 263. New Brunswick, Bay of Fundy, Chignecto channel, Cumberland basin, Barnes point, lighthouse established. 264. New Brunswick, Chaleur bay, Miscou island, Miscou harbor, change in position of Harper Point light. 265. Nova Scotia, off Madame island, Green island, height of light. 266. Nova Scotia, Cape Breton, St. Peter bay, Jerome point, change in illuminating apparatus. 267. Prince Edward Island, north coast, off Malpeque harbor, bell buoy established. 268. Newfoundland, east coast Conception bay, Carbonear, light established on wharf.

99. Sept. 12. 269. British Columbia, Strait of Georgia, Active pass, Mayne island, Georgine point, temporary fog alarm.

100. Sept. 12. 270. Nova Scotia, Cape Breton, Baleine cove, bell buoy established. 271. Newfoundland, west coast Hawke bay, range beacons established. 272. England, west coast, Scilly Isles, St. Mary's island, light established, St. Agnes island, light discontinued.

The McConway & Torley Co.

PITTSBURG, PA.

Manufacturers of the

**JANNEY,
JANNEY "X"**

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PITT FREIGHT COUPLERS

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**MALLEABLE IRON AND STEEL CASTINGS
FOR RAILROAD USE**



Department of Railways and Canals, Canada.

HUDSON BAY RAILWAY.

Notice to Contractors.

SEALED TENDERS for the following supplies addressed to the undersigned and endorsed "Tender for track materials for the Hudson Bay Railway," will be received at this office until 16 o'clock on Monday, the 16th day of October, 1911.

30,000 gross tons steel rails 80 lbs. per yard.
1,700 gross tons splice bars.
2,100 kegs track bolts and nuts 200 lbs. per keg.

8,000 kegs track spikes 200 lbs. per keg.
Specifications, drawings, forms of tender, and form of contract to be entered into can be seen on and after Tuesday, August 22nd, at the office of the Chief Engineer of the Department of Railways and Canals, Ottawa, and at the office of the Chief Engineer of the Hudson Bay Railway, Winnipeg, at which places forms of tender may be obtained.

Contractors are requested to bear in mind that tenders will not be considered, unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature, the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque equal to 5 p.c. of the tender made payable to the order of the Minister of Railways and Canals must accompany each tender, which sum will be forfeited if the party tendering declines entering into contract for the work, at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part of security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,

L. K. JONES,
Secretary.

Department of Railways and Canals,
Ottawa, September 6, 1911.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

A new Detroit

Locomotive Lubricator

The new Detroit No. 22 Bullseye Locomotive Lubricator can be started and stopped instantly without even touching the feed adjustments.

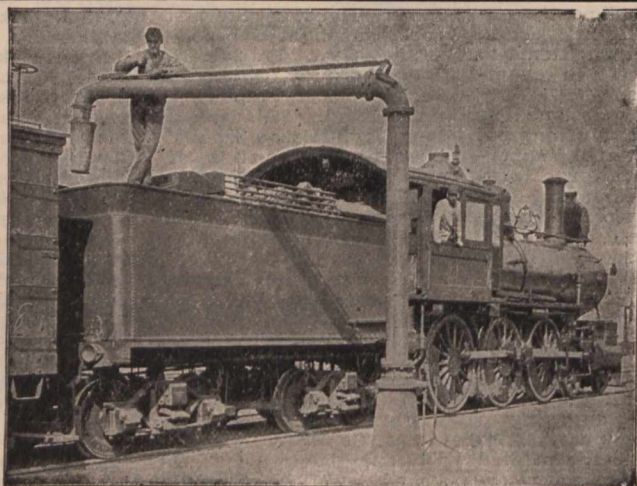
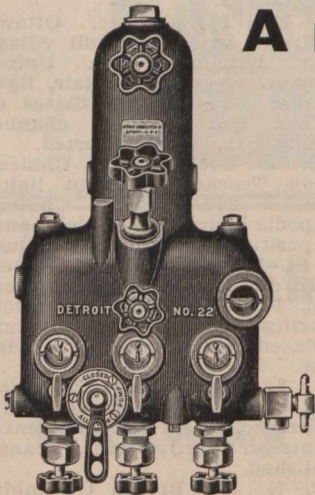
One valve controls the admission of oil to all the feeds. This Oil Valve makes it easy to save oil without bothering to change the feed adjustment.

There are no removable tubes in the Detroit. Nothing to get out of order. Nothing to require repairs.

Write to-day for catalog U and full information.

DETROIT LUBRICATOR COMPANY.
DETROIT, U.S.A.

Canadian Agents: Taylor & Arnold, 404 St. James St., Montreal.



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and Contractors' Equipment

Immediate and Prompt Deliveries
Correspondence Solicited

ROBT. M. BURNS & CO.

Railway Exchange
CHICAGO

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COMMERCIAL FURNITURE**

of all descriptions to stock
or special design, apply to

The Canadian Office & School Furniture
Presion Co. Limited Ontario

New Steamship for Halifax-Boston Route.

The Canada Atlantic and Plant Steamship Co., has ordered in Glasgow, Scotland, a steamship for service between Halifax and Boston. The contract calls for delivery at Halifax, N.S., by June 1, 1912. She is being built to Lloyds' requirements with all the latest improved equipment. Her dimensions will be, length 350 ft., breadth 46 ft., depth, molded to main deck, 33 ft. The hull will be of steel, with double bottom and seven water tight bulkheads divided into six compartments. There will be five decks, lower, main, awning, boat or promenade and navigating and bridge. There will be 265 staterooms, with accommodation for 650 passengers, and cargo capacity of 1,500 tons. The deck houses will be of steel with teak doors and finish. On the bridge deck there will be captain's and officers' quarters, wireless telegraph office and operator's room, and on the promenade deck will be situated a smoke room, 40 by 25 ft., finished in oak and morocco leather, aft of which will be the main entrance leading to the awning deck, and also 50 staterooms. The whole of the awning deck will be devoted to pas-

senger accommodation, with wide promenade on each side. A social hall will be provided, 56 by 30 ft., the forward part constituting an observatory with a clear view looking forward. Adjacent to the social room, six suites of rooms will be provided, and there will be other staterooms aft. The dining saloon will be on the main deck forward, being 35 by 45 ft., with seating accommodation for 150 persons. The remainder of this deck will be taken up with staterooms, bridal suites, and toilet accommodation. The crew's quarters, galley, etc., will be on the lower deck. The most improved systems of steam heating and electric lighting will be installed. The vessel will be driven by twin screws and equipped with engines capable of developing a speed of 18 knots an hour.

Atlantic and Pacific Ocean Marine.

The Newfoundland Shipping Co., has chartered the s.s. Rescue, owned in Goole, Eng., to load fish at St. John's for Spain and Italy.

The Uranium Steamship Co.'s s.s. Uranium, bound from Rotterdam to New York, after calling at Halifax, had to

delay her voyage there, owing to trouble with her engines.

A Montreal press report states that a Liverpool, Eng., firm, will shortly inaugurate a steamship line between the Maritime Provinces and Mediterranean ports, starting from Halifax, N.S., and calling at St. John N.B. and New York or Philadelphia, mainly in the fish trade.

A Liverpool, Eng., press dispatch announces an increase of 10% in freight rates by steamship companies operating across the Atlantic, to go into effect Sept. 11, but it is stated that it was doubtful if the change can be put into force before the commencement of the winter traffic.

The new vessels which the C.P.R. has ordered for its Pacific service will be built with cruiser sterns, that is, the underbody aft will be cut away, and the rudders will be of a type which has not been used generally in the merchant service, but has been adopted on the channel service vessels between England and France.

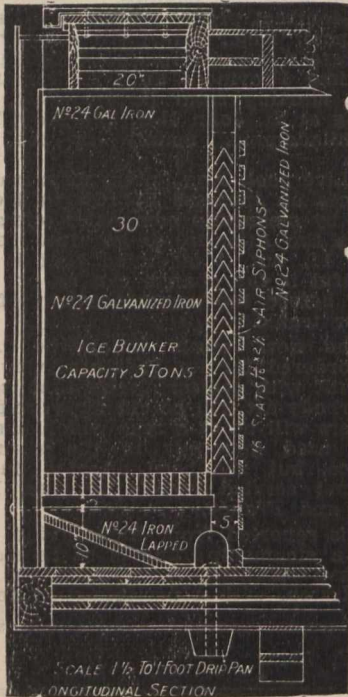
It is reported from Jacksonville, Fla., that a steamship line is to be started between Halifax, N.S., Savannah and Charleston, with a possible extension of

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING JULY, 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
A. L. Conrad	130,675	Tancook, N.S., 1911	Screw 1 n. h. p.	40.4	10.6	5.2	12	11	Lunenburg, N.S.	A. Conrad, Rose Bay, N.S.
Adelphi	130,694	Vancouver, B.C., 1911	"	37.7	11.2	5.5	11	9	Vancouver, B.C.	W. J. Thicke, Vancouver, B.C.
Annie Boss	130,695	"	"	30.6	7.2	4.0	6	4	"	H. Curtis and R. Ashcroft, Vancouver, B.C.
Axa	130,341	Bredalbane, P.E.I., 1911	"	26.9	7.6	4.9	6	5	Charlottetown, P.E.I.	W. P. Murry, Bredalbane, P.E.I.
Cuprum	130,558	Vancouver, B.C., 1911	"	59.5	11.4	5.8	29	19	Vancouver, B.C.	Britannia Mining Co., Britannia Beach, B.C.
Dotken	130,376	Lindsay, Ont., 1907	"	24.8	5.8	2.4	3	2	Peterboro, Ont.	C. P. Routley, Peterboro, Ont.
Elsie C.	130,690	Tancook, N.S., 1911	"	40.2	9.8	5.0	11	10	Lunenburg, N.S.	W. Cross, Tancook, N.S.
F. N. & B.	130,641	Sturgeon Falls, Ont., 1911	"	28.0	9.6	3.2	12	8	Ottawa, Ont.	F. E. Clark, Sturgeon Falls, Ont.
Gambier	130,696	Vancouver, B.C., 1911	"	28.2	9.0	3.2	9	6	Vancouver, B.C.	T. H. Burgess, M.O., Vancouver, B.C.
Gaudiose	130,527	Verdun, Que., 1911	"	27.7	7.9	2.5	5	3	Montreal, Que.	E. Thornton, Verdun, Que.
George P.	130,323	Rockport, Ont., 1905	"	31.6	8.3	3.0	7	5	Kingston, Ont.	F. Williams, M.O., Newport, Ont.
Grosbeak	130,379	Hastings, Ont., 1911	"	39.2	11.7	4.7	14	10	Peterboro, Ont.	Randolph Macdonald Co., Toronto
Hope Tranfer	130,486	Vancouver, B.C., 1910	"	28.2	8.1	2.0	7	5	New Westminster, BC	L. Gibson, Hope, B.C.
Ivola	130,378	Peterboro, Ont., 1909	"	26.0	5.3	2.2	2	1	Peterboro, Ont.	L. A. Potvin, Peterboro, Ont.
J. W. Dickie	130,559	United States	"	24.0	8.0	2.5	6	4	Vancouver, B.C.	D. W. Taylor, Vancouver, B.C.
Jolly Mac	130,694	Vancouver, B.C., 1911	"	53.2	11.0	5.0	26	18	"	A. Houston, M.O., Vancouver, B.C.
Lady Fraser	130,484	Rosedale, B.C., 1910	"	35.2	9.0	1.2	12	8	New Westminster, BC	L. Gibson, Hope, B.C.
Little Queen	130,327	Cape Vincent, N.Y., 1911	"	44.6	9.8	5.5	13	10	Kingston, Ont.	G. Pyke, Wolf Island, Ont.
Loafer	130,524	Montreal, 1910	"	32.0	7.8	3.2	7	5	Montreal	R. Burnett, Montreal
Long Sault	126,858	Sorel, Que., 1911	"	65.0	17.6	6.5	69	28	Sorel, Que.	G. Dansereau, Grenville, Que.
Lottie B. L.	130,570	Tancook, N.S., 1910	"	42.0	10.4	5.3	12	11	Lunenburg, N.S.	A. Levy, Little Tancook, N.S.
Louis Joseph	126,931	Ste. Anne de Chicoutimi, 1911	"	70.8	17.9	4.9	61	40	Quebec, Que.	E. Gagnon, Ste. Anne de Chicoutimi, Que.
Mersyde	130,342	Summerside, P.E.I., 1911	"	63.8	16.0	5.6	40	37	Charlottetown, P.E.I.	D. A. Pickering, Summerside, P.E.I.
Nakano	130,691	Steveston, B.C., 1911	"	48.0	11.8	5.2	24	16	Vancouver, B.C.	R. Nakano, Steveston, B.C.
Namida	126,918	Indian Harbor, N.S., 1911	"	38.0	11.2	5.5	14	*	Halifax, N.S.	J. Hackenley, Indian Harbor, N.S.
Oso	130,326	Kingston, Ont., 1911	"	60.3	9.6	4.8	24	15	Kingston, Ont.	J. H. Davis, Kingston, Ont.
Rebecca M.L.	130,569	Tancook, N.S., 1911	"	41.4	10.3	5.3	12	11	Lunenburg, N.S.	N. Levy, Little Tancook, N.S.
Samuel G.	126,777	Richibucto, N.B., 1911	"	37.5	11.8	5.5	14	10	Richibucto, N.B.	A. Loggie, Richibucto, N.B.
Scotty	130,692	Steveston, B.C., 1909	"	34.4	8.1	3.2	9	6	Vancouver, B.C.	G. C. Jackson, Vancouver, B.C.
Sterling D.	130,693	Vancouver, B.C., 1911	"	34.4	10.6	5.2	13	9	"	J. Plowman, North Vancouver, B.C.
Valnda	130,244	Liverpool, N.S., 1911	"	95.0	21.5	9.3	118	60	Liverpool, N.S.	Hendry Limited, Liverpool, N.S.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING JULY, 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Cecile B.	126,919	West Chezetcook, N.S., 1911	Schr.	51.2	17.0	6.3	32	Halifax, N.S.	J. Bellefontaine, M.O., West Chezetcook, N.S.
Cormier	126,780	Aldouane, N.B., 1907	"	30.0	12.0	5.0	10	Richibucto, N.B.	J. Cormier, Richibucto, N.B.
Cunier	130,677	Tancook, N.S., 1911	"	40.8	10.0	5.2	11	Lunenburg, N.S.	V. Langille, Tancook, N.S.
E. L. Comeau	130,856	L'Ardoise, N.S., 1910	"	42.0	12.5	5.8	14	Arichat, N.S.	E. L. Comeau, Petit de Grat, N.S.
Eva E. L.	130,687	Little Tancook, N.S., 1909	"	39.6	10.2	5.4	11	Lunenburg, N.S.	L. Awalt, Bayswater, N.S.
F. No. 2	130,485	Fraser Mills, B.C., 1910	Barge	101.0	32.5	8.2	244	New Westminster, BC	Canadian Western Lumber Co., Fraser Mills, B.C.
Harper	130,678	Little Tancook, N.S., 1908	Schr.	40.8	9.8	5.0	10	Lunenburg, N.S.	H. Publicover, M.O., Blandford, N.S.
Hay Boy	130,328	Wolfe Island, Ont., 1911	Scow	65.2	20.0	5.1	77	Kingston, Ont.	G. Pyke, Wolfe Island, Ont.
Hollo	130,684	Tancook, N.S., 1911	Schr.	42.8	10.1	5.5	12	Lunenburg, N.S.	A. Stevens, M.O., Tancook, N.S.
Hughie, V. L.	130,673	Little Tancook, N.S., 1910	"	39.6	10.2	5.4	11	"	R. Levy, Little Tancook, N.S.
Hydraulic	130,653	Loggieville, N.B., 1911	Scow	85.0	27.0	5.0	146	Chatham, N.B.	A. Loggie, M.O., Dalhousie, N.B.
K. 26	130,660	New Westminster, B.C., 1911	"	62.7	26.0	6.9	102	Vancouver, B.C.	G. C. McKeen, Vancouver, B.C.
L'Acadienne	130,337	Lameque, N.B., 1911	Schr.	37.0	13.3	5.8	18	Chatham, N.B.	J. S. Noel, Shippigan Island, N.B.
Laurin & Leitch, No. 4	130,528	Montreal, 1910	Scow	55.2	22.0	6.7	89	Montreal	T. Bastien et al, J.O. Montreal
Laurin & Leitch, No. 3	130,529	" 1910	"	57.0	22.0	6.6	89	"	"
Libby P.	130,343	North Rustico, P.E.I., 1911	Schr.	35.7	11.7	5.1	11	Charlottetown, P.E.I.	J. N. Pino, North Rustico, P.E.I.
M. A. McDonald	130,362	Ingonish, N.S., 1911	"	38.3	12.9	6.6	17	Sydney, N.S.	N. McDonald, South Bay, N.S.
Matilda H.	130,676	Tancook, N.S., 1906	"	40.0	10.1	5.2	12	Lunenburg, N.S.	C. Heisler, Tancook, N.S.
Oriole, L.	130,683	" 1909	"	39.4	10.0	5.0	10	"	W. Levy, Little Tancook, N.S.
Richibucto, Pearl	130,661	Peters Mills, N.B., 1911	"	35.0	11.0	5.0	12	Richibucto, N.B.	C. Mazroll and T. Arseneault, Peters Mills, N.B.
Reggie P. P.	130,674	Eastern Points, N.S., 1910	"	40.0	10.5	5.6	11	Lunenburg, N.S.	H. Publicover, Blandford, N.S.
S. F. Levy	130,685	Little Tancook, N.S., 1911	"	40.4	10.0	5.6	12	"	H. Levy, Little Tancook, N.S.
Sagua	126,779	St. Louis, N.B., 1902	"	32.0	11.0	5.0	10	Richibucto, N.B.	C. Mazrolle, St. Charles, N.B.
V. F. Williams	130,363	Ingonish, N.S., 1911	"	35.0	12.7	6.2	13	Sydney, N.S.	V. and F. Williams, Ingonish, N.S.
Vera May	130,686	Tancook, N.S., 1911	"	46.6	13.4	6.8	22	Lunenburg, N.S.	E. M. Boutillier, M.O., Halifax, N.S.
Verna L.	130,681	Lunenburg, N.S., 1907	"	40.6	10.9	5.5	12	"	J. Lohnes, Middle L. Have, N.S.
Warren C. C.	130,682	" 1907	"	40.2	10.8	5.5	12	"	D. Gilfoy, M.O., Feltz South, N.S.



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Department of Railways and Canals, Canada.
BADECK BRANCH LINE.

Intercolonial Railway.

SEALED TENDERS addressed to the undersigned and endorsed "Tender for Alba-Baddeck Branch," will be received at this office until sixteen o'clock on Thursday, October 12th, 1911, for the construction of a branch line of railway from a point on the intercolonial Railway, near Alba to the town of Baddeck, a distance of 22.7 miles.

Plans, specifications and form of contract to be entered into may be seen and full information obtained on and after 15 inst. at the office of the Chief Engineer of the Department of Railways and Canals, Ottawa, and at the office of the Chief Engineer of the Intercolonial Railway at Moncton, N.B.

Parties tendering will be required to accept the fair wages schedule prepared or to be prepared by the Department of Labour, which schedule will form part of the contract.

Contractors are requested to bear in mind that tenders will not be considered, unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature, the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque for the sum of \$30,000.00, made payable to the order of the Minister of Railways and Canals must accompany each tender which sum will be forfeited if the party tendering declines entering into contract for the work, at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

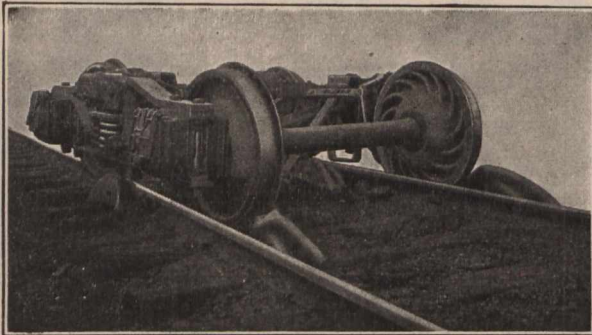
The lowest or any tender not necessarily accepted.

By order,
L. K. JONES,
Secretary.

Department of Railways and Canals,
Ottawa, September 9th, 1911.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

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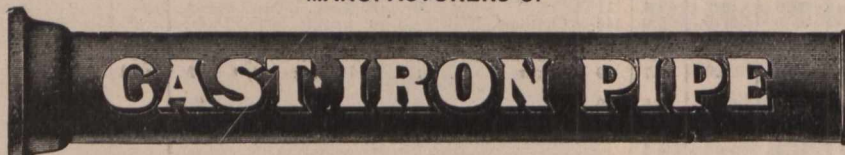
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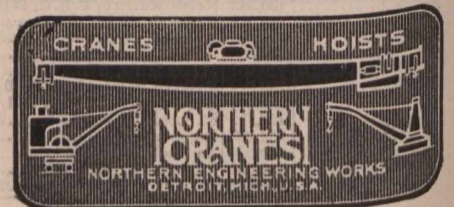
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TORONTO



the service to Havana, that the proposed service will be commenced as a monthly one, and that if the trade permits, a better service will be put on. M. N. Stineud, of Halifax, N.S., is said to be interested in the scheme.

Press reports state that the London and North Western Ry. of England, has sent representatives to various parts of Europe and to Lake Michigan, to study the operation of car ferries, with a view to deciding the practicability of adopting some such service between Great Britain and Ireland in connection with the proposed "all-red" service between Galway, Ireland and Halifax, N.S.

A Halifax press report states that following a conference between Sir William Mackenzie, President, Canadian Northern Steamships Ltd., and the Newfoundland Premier, the company is considering the extension of its transatlantic service to Newfoundland, with Trepassey as the port of call. The Newfoundland Government is stated to be willing to pay a subsidy for the service.

The Union Steamship Co. of New Zealand, has ordered in Scotland, a vessel for service between Vancouver, Honolulu, Suva, Auckland and Sydney. She will be about 12,000 tons, length 423 ft.; beam 66 ft.; and will be equipped with combined turbine and reciprocating engines for a speed of 17 knots an hour. There will be accommodation for about 700 passengers and a large refrigerator space. The contract calls for delivery by the summer of 1912.

The Union Steamship Co., of New Zealand is reported to have purchased the s.s. Port Kingston, which was built at Glasgow, Scotland, for the Elder Dempster Co.'s West Indies route. It is stated that this vessel will be placed on the Canada-New Zealand mail route pending the completion of the vessel which the company has recently ordered, and that she will replace the Zew Zealand Shipping Co.'s s.s. Zealandia, at present on the route.

A correspondent writing to a London, Eng., daily paper, recently, from Dublin, Ireland, says that a harbor at Gal-

London and by one day between London and New York.

The enquiry into the cause of the stranding of the C.P.R. s.s. Empress of China, off the Japanese coast, July 27, which was held at Yokohama, Aug. 17, showed that the disaster was due to the vessel having been set out of her course 18 nautical miles by a strong and unusual current, of which the master had no knowledge and no means of knowledge. No blame was attached to him, nor other of the officers, but he was ordered to pay the cost of the enquiry, £6 4s. 6d. Since the wreck, salvage operations have been in progress almost continuously, under considerable difficulties. It was recently reported that the vessel had been dragged about 40 ft. nearer deep water and that her cargo had been lightered and several holes patched up. She is in a bad position, and should a heavy storm arise, it is feared that she might break up. It was however anticipated that she could be floated and taken to Hong Kong for repairs.

Maritime Provinces and Newfoundland.

The Dominion Public Works Department received tenders Sept. 20 for the construction of a series of wharves in the harbor at St. John West, N.B.

The Dominion Public Works Department has awarded the contract for the construction of a breakwater at Brooklyn, N.S., to the Nova Scotia Construction Co., at about \$200,000.

The steam tug Progress, of St. Pierre, which left St. John's, Nfld., recently, after undergoing repairs, sprang a leak during a storm off Cape Pine and sank, the crew escaping in one of the boats.

At a meeting of the St. John ferry committee, Sept. 1, \$2,500 was voted for the installation of steam steering gear and other changes in the ferry steamboat Governor Carleton, bringing the cost of the vessel to date, to \$42,689.42. A contract was also awarded for the repainting of the ferry Ludlow.

The Merchants' Transportation Co.,

recently built at Shelburne, N.S., has been towed to Yarmouth, where her machinery is being installed. She has been built for hard service and her passenger accommodation has been made large and comfortable. Her dimensions are, length 125 ft.; breadth, 25 ft.; depth 10 ft. It was expected that she would be ready for operation early in October.

The Newcastle Mines is applying to the Lieutenant-Governor in Council, for incorporation, with a capital of \$600,000 and office at Minto, N.B., with power to carry on a general mining business, and among other things, to build, own and operate barges, vessels, etc.

The Dominion Department of Public Works will receive tenders, to Oct. 3, for the construction of a wharf at Meat Cove, N.S., to Oct. 11, for the construction of a breakwater at the entrance to Little Bras d'Or, and for the construction of a wharf at Louisdale, N.S., and to Oct. 19, for the construction of a wharf at Rous Brook, Lunenburg, N.S.

The steamboat Miner, which was sold by the sheriff, Sept. 11, at North Sydney, N.S., to Thompson and Sutherland, for \$250, was formerly owned by the Port Hood Richmond Ry. Coal Co., and was built at Jarrow, Eng., in 1880. She is screw driven with engine of 16 n.h.p. Her dimensions are: Length, 65 ft., breadth 14.6 ft., depth 6.8 ft., tonnage, 49 gross, 33 register.

The steamboat Sincennes, owned by D. J. Purdy, St. John, N.B., was destroyed by fire at Cole's Island, Sept. 8, one of the crew losing his life, and another receiving injuries, from which death resulted later. She was built at Montreal in 1893, and was a paddle wheel vessel with engine of 34 n.h.p. Her dimensions were, length 142.2 ft.; breadth 24.4 ft., depth 8.4 ft., tonnage, 228 gross, 129 register.

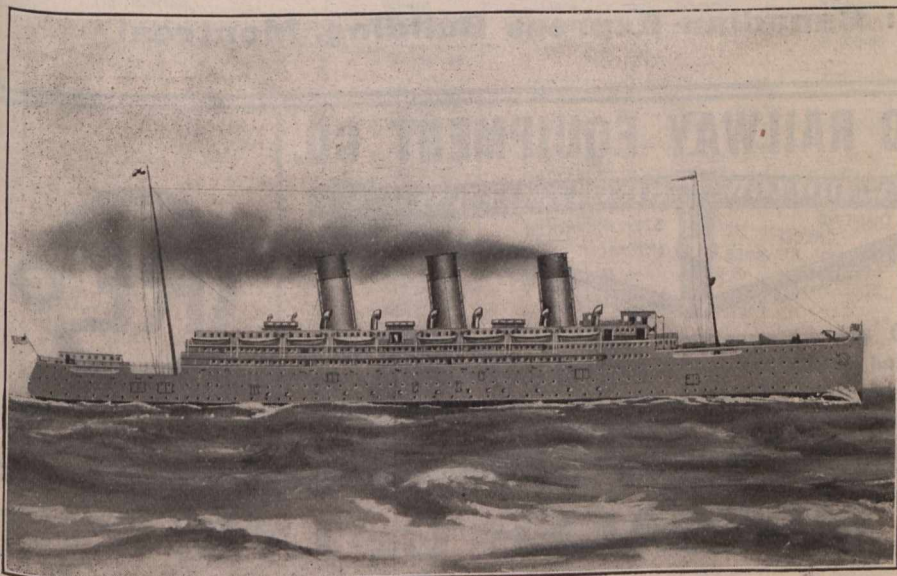
At the recent annual meeting of the Canada Atlantic and Plant Steamship Co., at Halifax, N.S., it was announced that a new steamship is under construction at Glasgow, Scotland, for the company, for delivery by June, 1912. Following are the officers for the current year: President, A. W. Perry; Vice President, McC. Grant; Treasurer, H. G. Perry; Auditor, R. C. Verner; Secretary and Eastern Manager, H. L. Chipman.

The Dartmouth, N.S. Ferry Commission's new ferry steamboat Halifax, built at Glasgow, Scotland, arrived at Dartmouth, Sept. 1, having taken 22 days on the voyage. She is a double screw vessel, driven by compound surface condensing engines supplied with steam at 120 lbs. working pressure, by two boilers. The hull is of steel with three water tight bulkheads at each end of the vessel. Her dimensions are: length 125 ft.; breadth, 48 ft.; depth 13 ft. 1 in.; tonnage, 600 gross, 268 register.

The Nashwaak Lumber Co., Ltd., has been incorporated under the New Brunswick Companies Act, with a capital of \$2,500,000 and office at Marysville, N.B., to acquire the Alexander Gibson Railway and Manufacturing Co. property, and in connection therewith to build, own and operate steam and other vessels, wharves, piers, warehouses, etc., and to act as ship owners and carriers by land and sea. The incorporators are, D. Jardine, Liverpool, Eng.; L. and J. S. MacLaren, H. H. McLean, F. R. Taylor, St. John, N.B., and A. Rowley, Marysville, N.B.

Province of Quebec Marine.

The Department of Public Works received tenders, Sept. 26, for the construction of a breakwater at Rimouski, Que.



One of the Twin Steamships being built for the C.P.R. Trans-Pacific Service.

way is of Imperial importance, as it would shorten the ocean journey between Ireland and Halifax, N.S., to 3½ days, and to Trepassey, Nfld., to 2¾ days, the saving in distance being 965 miles to Canada and 1,480 miles to Newfoundland, as compared with the Liverpool to New York route. The mail service, he says, would be accelerated by 1½ days between Halifax and

Ltd., has been incorporated under the Dominion Companies Act, with a capital of \$50,000 and office at Sydney, N.S. to own and operate steam and other vessels and carry on the business of shipowners and common carriers. The incorporators are, Jas. McConnell, A. W. Mann, F. G. König, W. T. Lynch and J. A. Young, Sydney, N. S.

The steamboat Robert G. Cann, re-

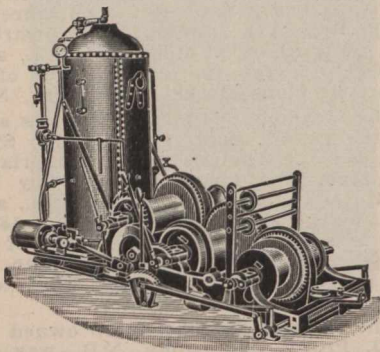
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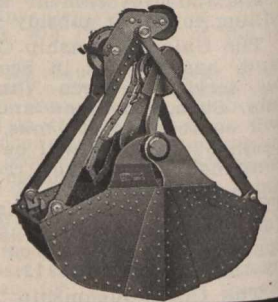
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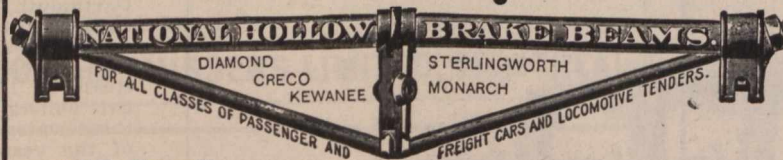
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Montreal, Que.

Chicago, Ill.

It is reported that the Quebec and Levis Ferry Co. will build another railway ferry to cope with the increasing traffic between Quebec and Levis.

Revillon Freres Trading Co., is applying to the Dominion Parliament for incorporation, to carry on a general trading business and to take over the business and property of Revillon Bros. Ltd.

The Montreal Harbor Commissioners, accompanied by their Chief Engineer, Secretary and Superintendent Engineer, visited Quebec, Sept. 8, in their steam tug, Sir Hugh Allan, and were entertained on board the Dominion Government s.s. Druid by the Quebec Harbor Commissioners.

The International Transit Co., has sold its ferry steamboat Algoma, to a Montreal syndicate. She was built at Toronto in 1901, and is a screw driven vessel with engine of 54 n.h.p. Her dimensions are, length 104 ft.; breadth, 26.3 ft.; depth 11ft.; tonnage, 157 gross, 107 register.

There was handled in the Montreal Harbor Commissioners' elevators this year, to Aug. 1, 8,348,001 bush. of grain, against 7,962,777 bush., during last year. In Aug. there was a slight decrease in the amount handled, as compared with Aug. 1910, stated to be due to the railway strikes in England.

The Montreal Harbor Commissioners invited a number of business men to accompany them on an inspection trip, Sept. 6, on their new steam tug, Sir Hugh Allan. The various works in progress were visited, including the 10-ton electric hoist, which had been put into operation the previous day for the first time, the grain elevator and the new Victoria pier.

During August there were 3,426 vessel passages through the Lachine canal, against 3,336 in Aug. 1910. Of the vessels passing through the canal, 640 steamboats and 682 barges were Canadian owner, and 83 steamboats and 84 barges owned in the U.S. There was a considerable increase in the quantity of merchandise handled and a decrease of about 4,000 in the number of passengers.

The Montreal Harbor Commissioners, after an interview with a special committee of the Corn Exchange, Sept. 13, decided to postpone the date, from Sept. 15, when their bylaw limiting the free storage of grain in their elevators to 10 days, shall come into force, pending the receipt of a written statement on the matter promised by the committee. The bylaw limits the free storage to 10 days, instead of 20 days, as heretofore, and provides for a charge of one-twentieth of a cent a bush. for each day thereafter which the grain shall remain in storage. The committee points out that Portland, Me., allows 30 days and 1/2c. a bush. for each additional 10 days; Boston, Mass., 20 days and 1/2c. for each additional 10 days, and New York, 10 days and 1/2c. for each additional five days, with insurance charges extra.

Ontario and the Great Lakes.

The canal employes in the Dominion Government Service have been granted increases in wages, to date from April last.

Weddell and Manley, of Toronto, have been awarded the contract for the construction of a turning basin in the Welland canal at Thorold.

The navigation season on the Yukon River will close Oct. 10, on which date the last sailings from Dawson and White Horse are scheduled.

The Calvin Co., Kingston, Ont., has entered action against the owners of the s.s. Hero, for \$30,000 damages for the sinking of its s.s. Chieftain.

A. Major, master of the Montreal Transportation Co.'s barge Hector, died suddenly at Kingston, Sept. 13, aged 55. He was a native of Valleyfield, Que.

The Welland canal was open for the passage of vessels on Sunday Sept. 10, and it was announced that it would be kept open on Sundays for the remainder of the navigation season.

An Ottawa press dispatch of Sept. 7, stated that the Canadian Northern Ry. has acquired the Rideau Lakes Navigation Co., and that it will extend the service on the Rideau Lakes.

The steamboat Riverside, which grounded in the Cornwall canal, Aug. 23, was released Sept. 3, by the raising of the water level, owing to the local works being closed and the canal not open to navigation.

The city of Toronto recently invited tenders for the construction of a steam tug for use in the harbor. Only one tender was received, viz.: from the Polson Iron Works, Ltd., Toronto, for \$17,063. The board of control has recommended that it be accepted.

Alex. Cunning, master of the Great Lakes Towing Co.'s steam tug Favorite, was arrested at Amherstburg, recently, on a charge of theft of cargo from the wreck of the steamboat Wissahickon, which ran ashore on Duck Island about the close of navigation last year.

The Montreal Transportation Co.'s barge Winnipeg, in tow with 1,200 tons of coal for Montreal, struck a rock in the Rapid du Plat, Sept. 13, and later sank near Farrans Point, below Morrisburg. She was built at Kingston in 1893.

The Dominion Public Works Department has been carrying out sounding and boring operations at Goderich, north of the harbor, and near the mouth of the Maitland river, in connection with the proposal to extend the north breakwater by 1,000 ft.

Capt. M. A. Livingstone of the Northern Navigation Co.'s s.s. City of Midland, was presented with a silver loving cup recently, by a number of the passengers, in appreciation of his services during a disagreeable trip through bad weather, between Mackinac and Collingwood.

The schooner Keepsake, owned at Belle River, and which has been used for some time as a sand carrier, ran on the rocks near the mouth of the Detroit River, Sept. 1. She was built at River Puce in 1880, her dimensions being, length 72.6 ft.; breadth, 19.9 ft.; depth, 3.7 ft.; tonnage 45 register.

The Northern Navigation Co.'s s.s. City of Midland, while backing out of Parry Sound harbor recently, struck bottom, breaking her shoe and driving her rudder into the wheel. The Dominion Government steamboat Simcoe, towed her to Collingwood, where the necessary repairs were carried out.

The Turbine Steamship Co.'s s.s. Turbinia, which was recently fined \$50 for an alleged infringement of the U.S. navigation laws, has had the fine remitted, and has been allowed, for the present, to continue to carry excursionists as heretofore. It is stated that during the winter, the law will be carefully looked into.

The Northern Navigation Co. has arranged with Hugh Calderwood to prepare plans for another steamship,

LAKE GRAIN SHIPMENTS.

The following statement, prepared by F. E. Gibbs, Grain Inspector, Fort William, Ont., shows the bushels of grain shipped by vessels from Fort William, and Port Arthur, of the 1910 crop, from Sept. 1, 1910 to Aug. 31, 1911. The last two figures in each column represent lbs.

Destination	Wheat	Oats	Barley	Flax
Buffalo	22,884,128-00	1,113,110-06	653,291-05	1,974,368-21
Cleveland				80,000-00
Collingwood				6,662-48
Chicago	500,241-10			
Depot Harbor	891,224-30	351,465-10		
Erie	251,885-00			
Goderich	5,379,831-00	2,697,693-20	92,167-26	101,842-46
Hamilton	50,896-00			
Kingston	8,117,262-30	2,680,015-12	391,314-14	78,101-33
Montreal	5,590,408-40	6,446,156-80	139,407-14	176,008-47
Midland	314,511-50	50,169-13		
Meaford	485,000-00			
Owen Sound	1,184,103-20	1,645,312-31	99,071-34	
Port Colborne	3,719,698-50	562,513-18		
Prescott	27,878-20			10,443-32
Prince Edward	1,515,332-00	922,438-00	53,728-40	123,219-30
Port Huron	612,595-40			22,835-32
Port Stanley	99,698-20			
Quebec		30,360-00		
Tiffin		285,350-15		
Thorold	8,100,930-10	1,986,654-21	89,911-10	
Walkerville	289,106-40			
Victoria Harbor	340,181-50			
	1,311,466-20	717,189-00		
Crop, 1910	61,665,375-10	19,488,429-06	1,518,891-47	2,574,488-09
Crop, 1909	62,756,194-40	20,100,953-25	2,585,437-20	3,030,241-30
Canadian vessels	38,626,296-10	18,479,138-08	1,060,600-42	694,451-46
U.S. vessels	23,040,079-00	1,009,290-32	458,291-05	1,970,031-19

The following shows grain shipped from the opening of navigation, Apr. 21, to Aug. 31.

Destination	Wheat	Oats	Barley	Flax
Buffalo	9,509,460-10	683,785-12	197,623-06	229,399-25
Depot Harbor	431,224-30	34,000-00		
Goderich	2,175,392-20	2,211,299-22	67,667-26	75,017-47
Kingston	4,012,348-50	1,789,469-13	263,032-21	59,627-38
Montreal	3,899,496-20	5,059,207-25	44,298-36	81,420-42
Meaford	105,000-00			
Owen Sound	506,127-20	677,466-31	74,071-34	
Port Colborne	1,751,601-20	562,513-18		
Point Edward	221,630-00	409,479-14	9,727-32	60,128-17
Quebec		198,159-26		
Tiffin	2,342,638-30	1,626,738-04		
Walkerville	107,370-00			
Victoria Harbor	258,417-40	472,310-28		
	24,820,617-00	13,724,430-23	656,421-11	496,594-01

THE CANADIAN BRIDGE CO., LIMITED

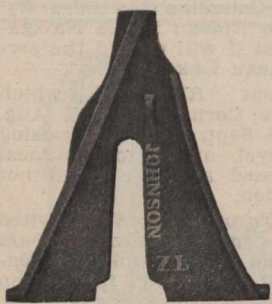
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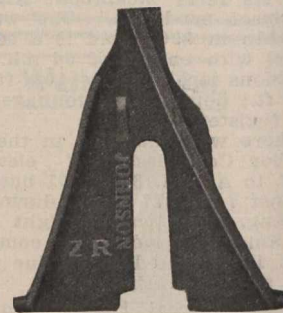
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Forms a friction grip with rail during the operation.
Brings rails to gauge during replacement.
Distributes the load on the Rail, not one or two ties.
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which it intends to build for operation next season. The new vessel will be about the size of the company's s.s. Hamonic, and as soon as the plans are completed they will be submitted to shipbuilders for tenders.

The Montreal, Ottawa and Georgian Bay Canal Co. has given notice of application to the Dominion Parliament for amendments to its act of incorporation, including the naming of seven of the incorporators to act as provisional directors, and to extend the time within which the contemplated works may be commenced and completed.

J. H. Hall, Manager, Ottawa Forwarding Co., who recently returned to Canada from Scotland, is reported to have stated that negotiations were practically completed for the purchase of a vessel in Scotland, for operation on the Rideau canal, between Ottawa and Kingston, and that the vessel will be brought across the Atlantic under her own steam.

The Northern Michigan Transportation Co., Chicago, Ill., is arranging docking facilities at Collingwood, for its steamboat Missouri, which it purposes placing on the route from Chicago via Mackinac Island and the Sault canal, to Georgian Bay points. The Missouri is a steel vessel, and was built in 1904, and is of the following dimensions, length, 250 ft.; breadth 40 ft.; depth, 16 ft.; tonnage, 2434 gross, 1484 register.

The vessel Toiler, a new type of lake freighter, of which we gave a full description some time ago, and which has been built in England for the Canadian lake trade, sailed from Middlesbrough, Eng., at the end of August, with a cargo of pig iron, for Halifax and Montreal, arriving at Halifax, Sept. 22. It was not anticipated that she would make the voyage this season, and we were advised to that effect a few weeks ago, as mentioned in our September issue.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tidewater for August, as follows:— Superior, 602.15; Michigan and Huron, 579.83; Erie 571.62; Ontario 245.19. Compared with the average August levels for the past ten years, Superior was 0.71 ft. below; Michigan and Huron 1.33 ft. below; Erie, 1.08 ft. below and Ontario, 1.45 ft. below. It was anticipated that during September, Superior would rise 0.1 ft., Michigan and Huron,

would fall 0.2 ft.; Erie, fall 0.3 ft., and Ontario, fall 0.4 ft.

The Ottawa River Navigation Co. has only been operating the steamboat Princess on the river between Montreal and Carillon this season, and has not been operating the Grenville and Ottawa end of the route. The Carillon and Grenville Ry., which has been purchased by the Mackenzie, Mann and Co. interests, has not been operated this year. This railway is to be changed to standard gauge, and it is anticipated that next year connection will be made with the steamboat at Carillon, and the journey to Ottawa completed by rail.

A press dispatch from Winnipeg, Sept. 8, stated that Sir Donald Mann, Vice President, Canadian Northern Ry., announced there that next year the C.N.R. would proceed with the establishment of a line of passenger vessels on the Great Lakes, the first sailing to take place in the spring of 1913. Another dispatch, from Duluth, Minn., states that the headquarters of the proposed service will be at Duluth, and that strong competition with U.S. lake lines is proposed, with an increased ocean service to handle grain cargoes.

The Farrar Transportation Co., Collingwood, has been awarded about \$20,000 as damages sustained by its steamboat Collingwood in a collision with the U.S. steamboat George L. Craig in the Detroit River, Aug. 24, 1909. The matter has been before the courts for some time, and was referred to arbitrators, who met in Cleveland, Ohio, recently and settled the case. G. E. Fair, Manager, Farrar Transportation Co., and A. W. Wright, Manager, St. Lawrence and Chicago Steam Navigation Co., Toronto, acted for the Farrar Transportation Co., and W. H. McGean, Cleveland, Ohio, for the owners of the George L. Craig.

B.C. and Pacific Coast Marine

The Vancouver Dry Dock and Shipbuilding Co., Ltd. is applying to change its name to The Port of Vancouver Dry Dock and Shipbuilding Co., Ltd.

The Canadian North Pacific Fisheries Co., which recently acquired the s.s. Petriana from the Northern Steamship Co., has changed its name to Grey.

The steam tug Colima, which we announced in our last issue had been purchased by the C.P.R., for use in its car

ferry service, has been re-named Qualicum.

The North Vancouver Ferry Co., has renewed its application to the city council to purchase \$150,000 of the company's stock to enable it to purchase an additional ferry steamer.

After an inspection by the Government Steamboat Inspector, the North Arm Steamship Co.'s steamboat Skeena, has been licensed to carry 425 passengers instead of 150 as heretofore.

The liquidator of the Fort George Lumber and Navigation Co., recently stated that it would be several months before the company's affairs would be settled and that the dividend to ordinary creditors would be very small.

The B.C. Public Works Department received tenders, Sept. 15, for the operation of ferries across the Fraser River at North Bend; across the North Thompson River at Chinook Cove, and across the North Thompson River at Jones' Crossing.

It is reported that an engineer representing the Department of Public Works, has selected a site at Nelson, for the immediate construction of a dredge for service on the Columbia River, to replace the present one, which is considered too small for the work.

By order of the British Admiralty, the single screw sloop of war, H.M.S. Egeria was offered for sale at Victoria, Sept. 18 and 19, together with one 28ft. steam cutter and other equipment. She is 160 ft. long, with beam 31ft. 4 ins., and is equipped with engines of 120 h.p.

A press dispatch from Mirror Lake, Sept. 6, stated that J. C. Gore, Superintendent, C.P.R. British Columbia Lake and River Service, accompanied by some Great Northern Ry. officials, inspected the steamboats International and Kaslo, which are controlled by the G.N.R., with a view to purchase.

C. H. Nicholson, Manager, G.T.P. Pacific Coast Steamship Co., announced recently that the steamships Prince Rupert and Prince George would be equipped with oil burning apparatus, at the close of the summer season, and that the company would construct large capacity oil storage tanks near the Main St. docks.

Robert Ward and Co., Victoria, are applying to the Governor General in Council for approval of the plan and site of a proposed wharf to be built in front of lot 1299, Lot 46 Beckley Farm, Victoria. The necessary plans have been deposited with the Minister of Public Works, Ottawa, and in the Land Registry Office, Victoria.

The Vancouver Harbor and Dock Extension Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of \$10,000,000 and office at Vancouver, to build, own and operate steam and other vessels, to carry on a general ship owning and forwarding agents' business, to build, own and operate wharves, docks, dry docks, warehouses, etc., and for other purposes.

J. A. Thomson, Dominion Government Steamboat Inspector for British Columbia, stated recently that since 1889, the tonnage of vessels on the Slokan, Kootenay and Arrow lakes has increased from under 100 to over 8,000 tons. In 1889 the largest steamboat on the lakes was the Galena of 47.64 gross tons, now the largest is the C.P.R. steamboat Bonnington of 1,700 tons.

The C.P.R. has added another transfer barge to its car ferry service. It was built at Esquimalt, and is stated to be the first steel barge built on the Pacific coast. It is constructed on the Isherwood longitudinal system, giving greater strength and additional space. It will carry 15 loaded cars, and has four hatches for cargo. It is equipped

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the Sault Ste. Marie Canals in August:

ARTICLES	CANADIAN CANAL	U. S. CANAL	TOTAL
Copper	571	14,647	15,218
Grain	3,748,210	686,208	4,434,418
Building stone	800	195	995
Flour	304,149	664,702	968,851
Iron ore	3,839,629	1,440,451	5,280,080
Pig iron	"	2,615	2,615
Lumber	4,832	76,127	80,959
Silver ore	"	"	"
Wheat	"	"	"
General merchandise	3,286,295	2,171,241	5,457,536
Passengers	9,403	20,177	29,580
	4,409	7,339	11,748
Coal, hard	32,750	255,333	288,083
Coal, soft	485,572	1,730,871	2,216,443
Flour	"	"	"
Grain	"	"	"
Manufactured iron	23,588	37,956	61,544
Iron ore	3,136	"	3,136
Salt	14,294	65,489	79,783
General merchandise	77,308	89,597	166,905
Passengers	6,283	6,912	13,195
Vessel passages	1,022	2,064	3,086
Registered tonnage	2,952,817	3,823,878	6,776,695
Freight—Eastbound	4,053,958	1,746,878	5,800,836
—Westbound	624,396	2,123,580	2,747,976
Total freight	4,678,354	3,870,458	8,548,812

Short tons are tons of 2,000 pounds

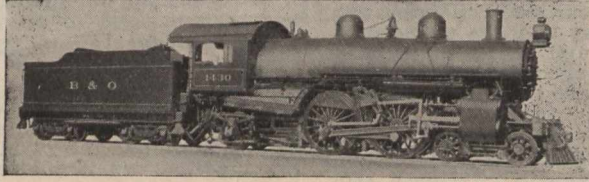
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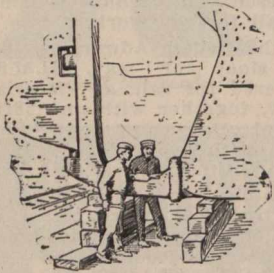
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Write for Pamphlet No. 22-N.

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with strong derricks and gear for quick transfer. It is named Transfer No. 3, and its dimensions are: length, 254 ft.; breadth, 42 ft.; depth, 4 ft., with capacity for 1,200 tons of cargo.

Judgment respecting the loss of the s.s. Iroquois, off Sidney, B.C., Apr. 10, was given by Justice Martin, assisted by Capt. Neroutsos and Reed as nautical assessors, Sept. 14, when the certificate of the master, A. A. Sears, was cancelled, that of the engineer, W. Thomson, suspended for nine months, and that of the mate, J. Isbister, for six months. Regarding the master, the judgment declares that the harsh comments on his conduct after reaching shore were not justified by the evidence, but he failed to perform his duty in regard to rescue work and stowage of cargo, and also failed in his ability as a seaman and master. The Inspector of Hulls is blamed for not insisting on suitable alterations to vessels.

The Wreck of the s.s. Amethyst.

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash, and Capt. F. J. Thomson, Superintendent Canadian Northern Steamships, as nautical assessors, held an investigation at Quebec, Aug. 26, into the cause of the stranding and the loss of the s.s. Amethyst off Mutton Head, in Trepassy Bay, Nfld., on July 22. The Amethyst was a single screw steel built vessel, whose speed was from eight to nine knots. She was registered in Montreal, the owner being Dr. J. P. L. Fiset, and was engaged in transportation of freight and a limited number of passengers, between Montreal and the Maritime provinces and St. John's, Nfld. Her crew numbered from 18 to 20 and her tonnage was 1,400 gross and 892 net. She was drawing 13 ft. aft and 7 ft. forward on her fatal voyage.

The master, O. C. Bernier, deposed that he is the holder of a Canadian certificate of competency, issued in 1883, and that the Amethyst left Sydney, July 20, and that on passing Flat Point at 7.30 a.m. a departure was taken, the log was put over and set at zero, and although enveloped continually in a dense fog the vessel proceeded at full speed on a southeast by east half east course. At 4 a.m. on the 22nd a sounding, which recorded 72 fathoms, was taken, but this is contradicted by the log entry reading "55 fathoms," which latter, however, the master declares is incorrect. After a lapse of approximately four hours, without an additional cast having been taken, the indistinct sound of a fog signal was heard, whereupon the master, with an unverified position, forthwith accepted the vague sound as Cape Race and proceeded accordingly. Herein, however, rested the error which lost this ship, for the sound which came to him, as he now admits, was Cape Freer, but at the time its existence being unknown to him, although he had heard as long as a year previous of the proposed Cape Freer signal, he proceeded in an almost impenetrable fog at full speed under the belief that it was Cape Race. But a brief period elapsed before the captain and others observed that the ship was heading for and almost upon the rocks, whereupon the order to reverse was promptly given, but almost simultaneously with this order or immediately following it the vessel struck, and the engines being kept full astern for a period ranging from 10 to 15 minutes the gravity of the vessel's position was realized by the master, who then ordered full ahead with the object of beaching her. A signal for assistance was sounded, and the boats ordered to be lowered and the crew quickly manned them and abandoned the ship

without instructions from the captain to do so. Tow vessels in the vicinity responded to the call for assistance and succeeded in salvaging a large number of the live stock, as well as a portion of the general cargo from the then partly submerged vessel, which work could have been accomplished more satisfactorily and with greater completeness had the crew rendered the assistance their duty called for. Interrogated as to the navigation instruments at his disposal on the trip, the captain declared that there was but one compass, so enclosed within the wheelhouse that the deviation could not be ascertained by planetary observation, and that he relied exclusively upon the courses previously steered and the bearings of known points of land to navigate his ship. The inadequacy of the ship's equipment in this respect was brought to the owner's attention by the master, but the desired improvement was not affected. Other witnesses corroborated the captain's testimony both as regards the weather conditions and the manner in which the ship was navigated, and the second officer declared that as they believed the ship would sink immediately,



John S. Conradi, M.I.M.E.

they sought refuge in the boats and abandoned her, he adding, however, that the master was one of the last if not the last to leave the disabled ship. When he, the second officer, left the vessel in the boat only part of the Amethyst was above the water and the morning following she was no longer visible.

The court finds that as the Amethyst was inadequately supplied with navigating instruments, the captain instead of suggesting the need of additional aids in this respect to the owner, who was not a mariner and therefore unaware of its importance, should have insisted upon the vessel being properly equipped for its safe navigation. Furthermore, that the master by his own admission, failed to exercise the caution and the navigating skill which the circumstances called for and that too much reliance was placed upon the infrequent sounding of an unreliable lead line. Also, that the log was improperly kept and that the captain, when he heard the sound, which he admits to have been indistinct, should have taken the necessary means of authenticating his sup-

position, which action would have disclosed his error, instead of forthwith concluding that the signal which he heard was Cape Race and none other. In view of the fact that the master of the Amethyst has already been in command of two vessels which met with disaster, the present ship being his third total loss, the court orders that his certificate be suspended for 18 months from Aug. 26, 1911, to Jan. 26, 1913. The first officer, Oscar Mercier, who in a measure is also responsible for the careless method in which the Amethyst was navigated, cannot be exonerated, and in view of his negligence in this respect, and for his unpardonable indifference to a subpoena served upon him by the court, which action on his part is akin to contempt, his certificate is suspended for six months from Aug. 26, 1911 to Feb. 26, 1912.

The Polson Iron Works Management.

John S. Conradi, who has been appointed General Manager of Polson Iron Works, Ltd., Toronto, and who will have the active management of the present plant, and of the construction and operation of the floating dry dock now under construction, was born in Glasgow, Scotland, and is 41 years of age. He commenced his engineering career in the workshops of the late firm of Maudsley, Son & Field, of Westminster, engineers and boiler makers, who supplied propelling machinery for a large number of British battleships and cruisers, and it is said that many mills in Great Britain are still running with engines built by them a hundred years ago. To gain experience in the running of marine engines and handling and care of boilers under actual running conditions, he joined the Ross Line of steamships sailing to Australia, South America, and the Gulf of Mexico and Canada. After four years of this experience and obtaining Board of Trade certificates, he entered the service of John I. Thornycroft Co., of Chiswick, Southampton and Basingstoke, shipbuilders and engineers, remaining with them 14 years, for six of which he was Superintendent and Manager and was responsible for the speed and steam trials of many speed record breaking vessels built under his supervision. He also had to do with the building of the first destroyer for the British Admiralty and the stern wheel steamboats built for relief of Khartoum in the Nile expedition. He is said to have been the first person in England to adopt pneumatic tools in the construction of marine boilers. The first steam turbine built and installed in a war vessel was carried out during his service with the firm. Five years ago he entered the Vickers Co.'s service as General Manager of their plants at Erith, Crayford and Dartford, the manufactures including ordnance, ammunition, rifles and motor cars. He was elected a member of the Institute of Mechanical Engineers in 1892.

Industrial Opportunities in Nova Scotia and New Brunswick, a booklet issued by the Intercolonial Ry., contains useful information for those who desire to establish new industries, or to invest capital in the exploitation and development of natural resources. The advantages of many parts of New Brunswick and Nova Scotia are presented in detail, together with many facts that ought to impress those who have capital ready to invest in a new field that is certainly rich in opportunity. The booklet will be mailed free on application to the Industrial Department, I.C.R., Moncton, N.B.

The Crows Nest Southern Ry. has authorized H. A. Jackson, Assistant Traffic Manager, Great Northern Ry., St. Paul, Minn., to file tariffs of tolls, under the provisions of the B.C. Railway Act, 1911.

manner the aids to navigation in the vicinity of the stranding, which neglect is all the more pronounced in view of the exceptionally clear weather prevailing at the time, and furthermore, that when he undertook to pilot a vessel in waters with which he had not a thorough knowledge he ignored the grave responsibilities of his charge, in view of which the court held that he was careless and committed a serious error of judgment. He was fined \$40 and warned that if he reappeared before the Wreck Commissioner he would be severely dealt with.

Vessels Removed from the Register.— The following vessels were removed from the Canadian register, during July, for the reasons assigned:— Steam—Belcarra, Vancouver, B.C., 172 tons, foundered; Belfast, Vancouver, B.C., 72 tons, burnt; Ganges, Vancouver, B.C., 15 tons, burnt; Maple Leaf, Peterboro, Ont. 17 tons, broken up; Ouangondy, St. John, N.B., 99 tons, broken up; Saturna, Vancouver, B.C., 15 tons, wrecked; Western Extension, St. John, N.B., 169 tons, broken up. Sailing—Damaraland, Liverpool, N.S., 199 tons, abandoned at sea; Frances, Shelburne, N.S., 68 tons,

transferred to Newfoundland; Minnie Cline, St. John, N.B., broken up; Nautilus, St. Andrews, N.B., 19 tons, broken up; Nettie M.G., Halifax, N.S., 32 tons, transferred to Newfoundland.

The Australian Government is reported to have re-opened negotiations to join in the subsidy agreement regarding the Canadian mail service. The present arrangements cover a service between Canada and New Zealand, the respective Governments only being parties thereto, Australia having withdrawn from the previous agreement.

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- Alloys**
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- Axles**
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Nova Scotia S. & C. Co. New Glasgow, N.S.
Jas. W. Pyke & Co.Montreal.
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- Buoys**
International Marine Signal Co.Ottawa.
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Western Wheeled Scraper Co. Aurora, Ill.
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Canadian Car & Foundry Co.Montreal.
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Lumen Bearing Co.West Toronto, Ont.
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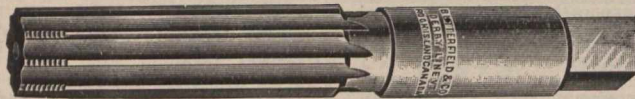


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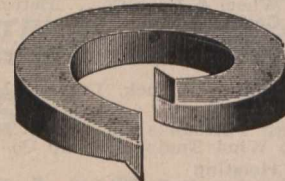
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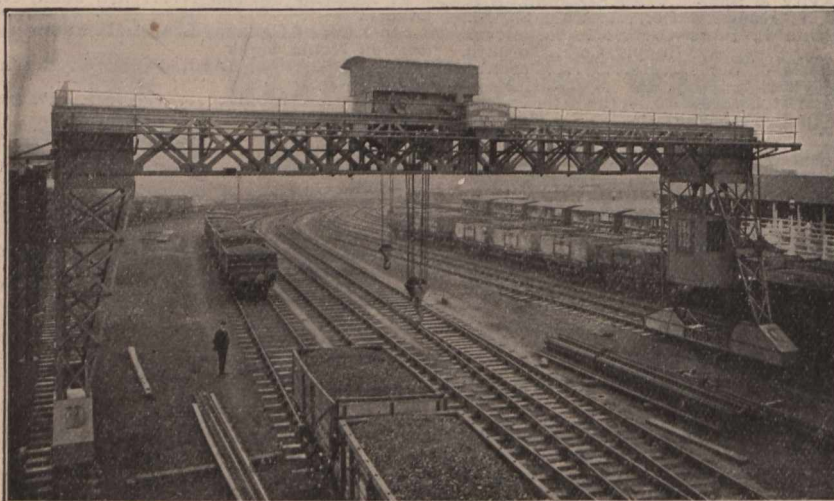
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Dominion Bridge Co.Montreal.
- Typewriters**
Royal Typewriter Co.New York.
- Valves**
Consolidated Car Heating Co. Albany, N.Y.
Detroit Lubricator Co.Detroit, Mich.
- Valves, Angle and Globe**
Detroit Lubricator Co.Detroit, Mich.
Kerr Engine Co.Walkerville, Ont.
Nathan Manufacturing Co.New York.
- Valves, Brass Gate**
Detroit Lubricator Co.Detroit, Mich.
Kerr Engine Co.Walkerville, Ont.
- Valves, Check**
Nathan Manufacturing Co.New York.
- Valves, Iron and Brass**
Canadian Fairbanks Co., Ltd.Montreal.
- Valves, Iron Gate**
Detroit Lubricator Co.Detroit, Mich.
Kerr Engine Co.Walkerville, Ont.
- Valves, Locomotive Pop**
T. McAvity & SonsSt. John, N.B.
Taylor & ArnoldMontreal.
- Valves, Steam**
Detroit Lubricator Co.Detroit, Mich.
Nathan Manufacturing Co.New York.
- Vanadium Steels**
American Vanadium Co.Pittsburgh, Pa.
- Varnishes**
The Dougall Varnish Co., Ltd.Montreal.
- Velocipedes**
Kalamazoo Ry. Sup. Co. Kalamazoo, Mich.
- Ventilators, Car**
Burton W. Mudge & Co.Chicago, Ill.
- Vessels**
Polson Iron Works, Ltd.Toronto.
- Wagons, Dump**
Western Wheeled Scraper Co. Aurora, Ill.
- Washers**
Steel Co. of Canada, Ltd.Hamilton, Ont.
- Waste**
B. J. Coghlin & Co.Montreal.
N. L. Piper Railway Supply Co.Toronto.
- Water Softeners**
Babcock & WilcoxMontreal.
L. M. Booth Co.Chicago, Ill.
Dearborn Drug & Chemical Co.Chicago.
- Welding**
Goldschmidt Thermit Co.Toronto.
- Wheelbarrows**
F. H. Hopkins & Co.Montreal.
- Wheels, Car**
Canada Iron Corporation, Ltd.Montreal.
Canadian Car & Foundry Co.Montreal.
Jas. W. Pyke & Co.Montreal.
- Wheels, Locomotive**
Canada Iron Corporation, Ltd.Montreal.
- Wheels, Re-inforced Pressed Steel**
Kalamazoo Ry. Sup. Co.Kalamazoo, Mich.
- White Lead**
Steel Co. of Canada, Ltd.Hamilton, Ont.
- Windlasses**
Dake Engine Co.Grand Haven, Mich.
- Windmills**
Ontario Wind Engine & Pump Co. Toronto
- Wire**
American Vanadium Co.Pittsburgh, Pa.
Titanium Alloy Mfg. Co.Pittsburgh, Pa.
- Wire and Wire Rope**
Canada Wire & Cable Co., Ltd.Toronto.
Dominion Wire Rope Co.Montreal.
Mussens, LimitedMontreal.
The Wire & Cable Co.Montreal.
- Wire, Brass, Iron and Steel**
Steel Co. of Canada, Ltd.Hamilton, Ont.
- Wire, Copper**
Canada Wire & Cable Co., Ltd.Toronto.
E. F. Phillips Elec. Works, Ltd.Montreal.
The Wire & Cable Co.Montreal.
- Wire, Electric**
Chapman & Walker, Ltd.Toronto.
E. F. Phillips Elec. Works, Ltd.Montreal.
The Wire & Cable Co.Montreal.
- Wire Goods, Bright**
Steel Co. of Canada, Ltd.Hamilton, Ont.
- Wire, Insulated, Copper**
Canada Wire & Cable Co., Ltd.Toronto.
E. F. Phillips Elec. Works, Ltd.Montreal.
The Wire & Cable Co.Montreal.
- Wire Rope Clips**
American Hoist & Derrick Co.St. Paul.
- Wire, Telegraph and Telephone**
Canada Wire & Cable Co., Ltd.Toronto.
Chapman & Walker, Ltd.Toronto.
E. F. Phillips Elec. Works, Ltd.Montreal.
The Wire & Cable Co.Montreal.
- Wire, Transmission and Trolley**
Canada Wire & Cable Co., Ltd.Toronto.
Chapman & Walker, Ltd.Toronto.
The Wire & Cable Co.Montreal.
- Wrenches, Cast Steel**
American Brake Shoe & Fdry. Co. Mahwah.
- Yachts**
Polson Iron Works, Ltd.Toronto.



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