

material retained in the embankment will prove a great saving to the Co. over other methods. It is expected this will be at least 50% & probably more with favorable circumstances.

There are 2 distinct operations, viz: 1st. Washing the bank down, leading & delivering it by means of a series of sluice boxes to where the filling is to be made. 2nd. Retaining & impounding the material after it is deposited. In hydraulic mines, the first operation only is done, since the tailings or gravel after the gold has been extracted are of no further use, therefore are deposited to the nearest dumping ground & allowed to go to waste.

The pipe line terminates with what is called a "Monitor" or "Giant" so constructed with ball joints, that the large volume of water, emerging under great pressure can be controlled & directed with greatest ease. There is a gate, a short distance behind the "Giant" which acts as a valve & closes the water when necessary. The piper & monitor men direct the jet of water at the foot of the bank of gravel, soon a cave-in of the bank takes place, & the water, gravel & boulders all run into the sluice boxes placed at the lowest point of the working pit. The sluice boxes, 33 in. wide by 2 ft. high are built of planks, with the bottom covered with pieces of old steel rails so to prevent the wear. When necessary to have the line of these sluices turn any small or large angle, the forward length of sluice boxes has to be built a few inches lower, so to prevent the gravel blocking the sluice, & forming bars at the turning point. They are on a steep or 8% grade, running down to the point of unloading, generally at the centre of the embankment to be made. Thus the gravel & all filling material is carried into the proposed filling. Now begins the difficulty of controlling, holding this material in its partly liquid state from wasting itself all over the country. Not only is it necessary to control it, but it must be held within the limits of the slope, usually $1\frac{1}{2}$ to 1, or angle of rest of an earth embankment. This is done by alternative rows of logs & brush, hand-laid along the outside face of the filling, each row receding the required distance to form the slope required. All the gravel, rocks, &c., are thus held back & the water only is allowed to fall over, & run down the face of the embankment already built. The filling at Mountain Creek began in Aug. 1897, & continued till Oct. 1897, when the winter weather stopped all possibility of work. It was resumed again last May & in all probability will be completed this fall. This was written Sep. 3. The volume of water used may be reckoned as 800 miners' inches, under a pressure of 180 feet.

The smaller of the two illustrations on page 270 shows the monitor at work, the larger illustration shows the hydraulic fill on the west side made to a height of 90 ft., also the sluice boxes fastened on the side of the trestle work.

F. S. Barnard, Resident Director in British Columbia of the B. C. Electric Ry. Co., is visiting England.

P. J. Myler, who has been Secretary & Asst. Treasurer of the Westinghouse Mfg. Co. since its establishment in Hamilton, Ont., & who has been Acting Manager since G. F. Evans went to St. Petersburg to establish the Co.'s Russian works, will, it is understood, be appointed Manager as well as Secretary at the next board meeting.

Grand Trunk Betterments, &c.

Portland Terminal Facilities.—Owing to the steady increase in the Co.'s business at Portland, Me., the officials have been greatly hampered in the narrow limits & small capacity of its yard. Various expedients were tried to extend the capacity of the freight yard, but it was not until the land near the East Deering stock yards was purchased & fitted up as a yard that the problem of handling the large business was solved in any satisfactory manner. Now the Co. has 2 yards, one near the passenger depot, extending out towards the bridge around the base of the Munjoy Hill & past Fish Point, & the other yard, the new one, about $1\frac{1}{2}$ mile from the passenger station & steamer docks.

The new yard begins just above Verandah street, where the Yarmouth road crosses the G.T. tracks. Its northerly end is at the stock yards, 2,500 ft. from the commencement of the yard. The yard contains $11\frac{1}{2}$ miles of tracks & holds 1,300 cars. The yard is 25 tracks across, the longest track being 2,400 ft. & the shortest about 1,300 ft. At the Verandah street entrance the yard branches out from the main line, which at this place is a double track, & this is the only entrance to the yard. It was the original intention to make the yard much longer than it now is, but this was prevented by the failure to secure a proper deed of the land near the northern terminus of the yard, & when the deed finally was secured it was too late to grade the land & lay the tracks for this season. This extension will probably be constructed as soon as it is required.

Grading for the yard was commenced July 22 & was done by contract. The big fields were smoothed down & the hollows filled in, making a perfectly level tract of land for the laying of the tracks. On Sep. 28 the work of putting in the tracks commenced. This required 23 miles of rails, 35,000 sleepers & hundreds of car loads of gravel for ballasting.

Victoria Jubilee Bridge.—The new superstructure is all completed, the removal of the old tube having been accomplished, with the exception of the centre span. As this will require a different method of handling, on account of its length, it will probably require more time than has the removal of the others. The laying of the floor is closely following the removal of the spans. The illustration on page 271 shows a cross section of the 11th pier, & of the 12th span. The old tubular bridge is shown inside the new span.

Crossing at St. Henri.—The application of the corporation of St. Henri (Montreal), for permission to open Gareau street across the G.T. tracks again came before the Railway Committee of the Privy Council Nov. 10. This application had been twice refused by the Committee on account of the danger to life of additional level crossings of the G.T. & also because there is already a crossing at Fort street, which is the next street to Gareau. The Mayor of St. Henri & Mr. Bruneau appeared for the City, & produced a quantity of new evidence to show that the municipality had the right of way before the building of the G.T., & that the right had never been surrendered. The necessity for the crossing was also urged, in view of the crossing being needed by the large population on the other side of the tracks. W. Wainwright, on behalf of the G.T., urged the

danger to life of permitting additional level crossings, & contended that there was already ample accommodation for the public in the existing crossings. Speaking of the danger of level crossings, Mr. Wainwright said it had been so great in Montreal & vicinity that the G.T. was seriously contemplating the raising of its tracks into the city, so as to do away entirely with level crossings. The case was adjourned.

The Contract.—McCormick & McLeod, of Bracebridge, have been awarded a 3 years' contract for ties for the Northern division & main line between Toronto & Montreal. During the past year they held the contract for the Northern division only. It is estimated that fully 450,000 ties will have to be supplied yearly under the contract.

Midland Elevators.—The management is said to be considering the advisability of erecting a third elevator at Midland, Ont., the present structures being overtaxed to accommodate the grain passing through that port.

Bridge Near Allandale.—At a meeting of the Railway Committee of the Privy Council Nov. 10, residents of Innisfil township, in the vicinity of Allandale, tendered an offer of \$500 towards the building of a bridge over the G.T. tracks. The Co. expressed its willingness to contribute half of the cost, but could not accept the offer of \$500. The Committee not being able to announce any unanimous finding, reserved judgment.

The Black Rock Yards.—On Dec. 6 a Buffalo, N.Y., paper published a Washington, D.C., despatch as follows: "The G.T.R. Co. has secured control of the Canadian section of the bridge to be built across the Niagara River at Grand Island, & the Co. has in view the removal of its yards at Black Rock to Grand Island, where unlimited space can be secured. The agitation to connect Grand Island with the mainland by a bridge has been carried on for years, but has been held up on account of the enormous expense attached to the construction of the 2 big spans, one on the U.S. side of the island, & the other on the Canadian side. It is stated now that the G.T. Co. has offered to build the Canadian section, & it is believed that the scheme will be carried out. The island affords splendid dockage facilities, which it is believed the G.T. Co. would make use of."

We are officially authorized to deny the statements, as there is no basis for them.

Grand Haven Harbor.—A second warehouse, 400 ft. long, & several hundred feet of additional dockage are being built by the Co. north of Krause & Co.'s elevator. The river in front of the Co.'s property is being dredged to a depth of $17\frac{1}{2}$ ft.

Jurisdiction in a Railway Case.—In a recent case in which the writ was issued out of the High Court of Justice for Ontario, to recover damages against the railway company for an accident which happened in British Columbia, & was served on the defendant's claims agent in Toronto. The head office of the railway was in the Province of Quebec, but the Co. did business in Ontario, where it had many hundreds of miles of railway, millions of capital invested, & where hundreds of its officers & employees resided. Mr. Justice Meredith held that the action was properly brought in Ontario.

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