

The warehouse has a high bay in the middle, with one gallery on the west side and two galleries on the east side. The machines delivered, as just described, from the general machine shop, are passed from the testing floor on the west side of the main bay, and after tests are finished, painted and shipped on cars from the warehouse track. This track also is the means for entry into the plant of the less bulky material and supplies, which are stored in this building for ready distribution to both the general and detail machine shops. The floor east of the tracks is at car floor level to facilitate handling of such material, and elevators are, of course, provided for distributing to the various floors.

The detail machine shop has two floors throughout, beside the ground floor at levels, corresponding to the two galleries on the east side of the warehouse, with which they directly communicate. It should also be noticed that the top floor of this building is at the same height as the gallery in the general machine shop and the west side of warehouse, and that a connection gallery at the same height is carried around the south end of the warehouse building. On the ground floor of the detail shop the coil winding and insulating departments are located, this being convenient both for receipt of wire from warehouse and delivery of completed coils to winding and assembling spaces at east end of general machine shop already referred to. The second floor is devoted to the machine work necessary on switches, rheostats, meters, instruments, arc lamps, etc., and on the third floor are the assembling and testing rooms for these lines of apparatus. No cranes are needed in this building, but elevators are provided, securing easy access to various floors.

The insulation treating building is separate from the main group so that this work, involving the use of inflammable materials, can be isolated. Convenient communication with the detail building is provided by a two-story enclosed bridge cut off at each end by fire doors.

The boiler house is small in comparison with the main plant, which is due to the fact that the use of steam will be largely restricted to heating and drying purposes. Most of the steam for drying will be used in insulation-treating building next adjoining, but for heating the buildings it will be piped to nests of coils suitably installed in each building, with fans to distribute the air heated by these coils.

Power for manufacturing and testing purposes, as well as for lighting, is to be obtained from the Hamilton Cataract Power, Light and Traction Co., which draws its supply from DeCew Falls. Current will be received in the transformer house at 2,400 volts, and distributed at 440 volts for general shop purposes, although lighting distribution will be at 110 volts, and transformation to direct current will be made to supply some of the cranes and machine tools.

The construction of the buildings, which is in the hands of Westinghouse, Church, Kerr & Co., of New York, as engineers and general contractors, is of the most modern approved type. The foundations and walls up to the window sill line are of concrete, above which the walls are of brick, laid up in cement mortar. Floors and roofs are of reinforced concrete throughout, and in detail machine shop and pattern buildings even the columns are of this construction. The result is a group of buildings, as desirable and as nearly fireproof as it is possible to make them. All roofs are practically flat, with drainage so arranged that the leaders are carried down through the interior of the buildings to avoid stoppage by freezing in cold weather. Floors are top dressed with 1-inch maple, and roofs with tar and gravel.

Transportation between the foundry and all buildings, including the air brake plant, will

be by industrial railway, operated by storage battery locomotive. The standard gauge tracks on the property are directly connected with the main line of the G.T.R. for receipt of material and shipment of product. The main entrance to the plant, for employees, is at the south end of warehouse building, a central point at which will be located time checking devices, and from which stairways lead directly to the various floors. Entrances for teams from the city streets are provided near west end of machine shop and in front of the office building. The equipment of the plant will be on the most modern approved lines as developed by experience of the Pittsburgh factories.

The officers, etc., of the company are: President, G. Westinghouse; Vice-Presidents, H. H. Westinghouse, F. H. Taylor; General Manager and Treasurer, P. J. Myler; other directors, G. C. Smith, L. A. Osborne, T. Ahearn, W. Y. Soper, C. F. Sise, Hon. J. M. Gibson; Secretary, J. H. Kerr; Sales Manager, N. S. Braden; Superintendent Air Brake Department, P. Domville; Superintendent Electric Department, F. A. Merrick. The head office of the company is at Hamilton, and district offices have been established at Montreal, Toronto, Halifax, Winnipeg and Vancouver.

Grain Elevator Notes.

A new engine is being installed at the King cleaning elevator, Port Arthur, Ont.

The grain elevator at Montreal constructed for the Harbor Commission has been completed, and is receiving grain.

The Canadian Northern Ry. has taken over the new elevator buildings at Port Arthur, Ont. It has now a storage accommodation of over 7,000,000 bush., and its working houses have a capacity of 2,000,000 bush. a day.

The Brackman-Ker Milling Co. proposes to construct an additional elevator at Edmonton, Alta., which will bring its elevator capacity at that point up to over 500,000 bush. The new building will be constructed of steel and brick.

Representatives of the Empire Elevator Co. have been interviewing the Dominion Government in connection with the dredging of the site for the company's proposed elevator at the mouth of the Kaministiquia River, Fort William, Ont.

The Empire Elevator Co. (Ltd.) has been incorporated under the Dominion Companies' Act with a capital of \$2,000,000, and head offices at Winnipeg, Man., to carry on a general grain elevator business in Canada. The provisional directors are: N. Bawlf, W. H. McWilliams, S. P. Clark, F. Phillips, W. W. McMillan, J. Love, F. H. Phippen, of Winnipeg; W. D. Douglas, of Cedar Rapids, Ia.; G. F. Piper, Minneapolis, Minn.; T. Foley, of St. Paul, Minn.; R. D. Martin, of Montreal. The company proposes to construct an elevator of 1,750,000 bush. capacity at Fort William, Ont., at once, and to add others at different points subsequently.

The C.P.R. has placed a contract for the erection of a new working house to work elevator E at Fort William, Ont., and to replace elevator B recently burned. The house will be of steel construction throughout, of rectangular bins enclosed with brick and tile walls, 154 ft. by 75 ft. on the ground with a track shed 30 ft. by 154 ft. The house will have a shipping and receiving capacity of 300 cars a day, and a cleaning capacity of 100,000 bush. a day. The equipment throughout the house will be fireproof, the cleaning machines, scale hoppers, garners, elevators and spouting will be of steel. The floor is to be of fireproof construction, in fact, there will be no wood whatever in the construction. The Barnett & Record Co., Minneapolis, Minn., has the contract.

SHIPPING MATTERS.

Grain Overages and Shortages.

A matter of considerable interest to vessel-owners and grain elevator companies has been brought before the Dominion Marine Association and the Government by A. A. Wright, of the Victoria Harbor Lumber Co., Toronto. This is the question of overages and shortages in grain cargoes from Fort William and Port Arthur. At present a steamer loading at any lake port elevator has to take the weight which is billed out by the elevators as being on board, whether accurate or not, and then at the unloading elevator has to accept the weight which they make out of the cargo, and if the quantity at the unloading elevator is less than at the loading elevator the shortage is charged against the steamer at the current market price. If the weight at the unloading elevator is greater than at the loading elevators at Fort William or Port Arthur, the steamer is paid for this quantity of grain at the current market price, in addition to the freight agreed upon per bushel for carrying the cargo. This state of affairs has existed for a great many years and has always been a sore point with vessel-owners, but owing to lack of concerted action on their part, it is contended that the elevators have, up to date, succeeded in shirking responsibility for their errors by charging them up to the steamers. If all the grain which is carried from these ports was carried by one line of vessels, so that all the overages would be set against all the shortages which occur, the matter would not be very serious; but when there are a dozen or more vessel-owners interested—some of them getting more than their share of the overages, and others getting more than their share of the shortages—it works out very unfairly, and it is thought that some equitable scheme can be devised which will be fair to all parties. In one case, in 1903, the V.H.L. Co. was brought out over 400 bush. short in one load at Owen Sound, the value of the grain being deducted from the amount of freight due the steamer. A steamer unloaded just ahead (which loaded just ahead at Fort William and Port Arthur) had an overage of over 700 bush. Another firm of vessel-owners, in four loads was charged up with 1,352 bush. of grain; and another owner was charged up over \$500 on one cargo. In no case were the vessels responsible in any way for the errors, as they delivered all the grain at the unloading elevator which was given them at Fort William and Port Arthur.

Mr. Wright states that he is credibly informed by grain shippers, and also by men who have been connected with the elevators, that it is not an unusual thing for elevators to come out ahead on the grain which is delivered to them. That is, after filling all the orders for the quantity of grain which they have received, they have grain left over, and this has been in some cases sold by the employees in connection with the elevator, and in other cases sold and the proceeds appropriated by the owners of the elevator. It was suggested at the meeting of the Marine Association that a fair proposition would be to have the Department of Trade and Commerce take charge of the weighing of grain at the receiving elevators, in the same way as it does at the loading elevators at Fort William and Port Arthur, allow the vessels to pay for their shortages in the same way as at present, and that all the overages be taken charge of by the Department until the end of the season; and that the total amount of the overages be distributed then pro rata amongst the vessels which had carried from Fort William and Port Arthur to Canadian ports, in proportion to the number of bushels shortage which had been charged up to them. This would be treating all vessels alike, and