

from cars & discharging into boats or cars, & for charging the grain in its bins. The two storage houses are similar in size & equipment to those of the Consolidated Elevator Co., above described, & they are placed, not one opposite each end of the working house, but one beyond the other at the same end. Between the working house, & its nearest storage annex there are 2 belt conveyors, one at high level for connecting the tops of the bins; & the other at ground level for connecting their bottoms. Between the two annexes there is only one conveyor, & it is placed at ground level. The group is instructive as having an elevator & a storage annex of capacities respectively the same as those proposed for Montreal, & it is notable as being the only instance we saw in which two buildings are connected with more than one conveyor.

"Another group visited was the Great Northern elevators, consisting of a working house of 1,500,000 bush. capacity, & a storage house of 2,000,000, & in course of erection, another working house of 3,000,000 capacity. The existing working house is of the usual construction & is accessible to both cars & boats. The storage annex is placed diagonally inland at about 800 ft. clear distance, quite out of reach of boats & without direct connection with cars. Between the working & storage houses there is a conveyor of 2 parts, of about 800 ft., & about 100 ft. in length, respectively, placed at right angles to each other, & at ground level. The interest of the example is in the very considerable distance of 900 ft. to which the grain is carried inland from the existing working house to the annex. The new working elevator under construction is remarkable, not only in that it will be of the great size of 3,000,000 capacity, but that it is being built wholly of steel, & with rectangular bins.

"Of elevators with circular steel bins there are several examples elsewhere than in Duluth, but we are informed that this is the first trial of steel bins of rectangular shape, & that it therefore remains to be seen whether they will prove satisfactory or not. On the same basin, but on the opposite side, is a package freight warehouse, 1,600 ft. long, 120 ft. wide & 2 stories high, for the trans-shipment & storing of freight exchanged between cars & boats, which is of interest as being provided with both high & low level tracks so that cars may unload or receive at either story, or at both together.

"Another group is the Peavy, 700,000 bush. working house, & an 1,800,000 storage annex; & the Cargill working & storage houses, of the same capacities, at Old Town near Duluth. The two plants are on adjacent piers, are exact duplicates of each other, were built at the same time & just finished. The working house of each is placed on the outer end of the pier, accessible to cars & deep draught vessels, & the storage annexes are about 200 ft. distant from their respective working houses, on the inner ends of the piers, where the water is shallow. The case is of interest as being a very recent repetition by different experienced grain operators of the same arrangement of what may be considered the standard one in Duluth. Other examples might be described, but those given are considered sufficient.

"The following general observations may be added: All the elevator buildings of Duluth & Superior, so far as we saw, or could learn, are built of wood, covered with sheet iron, except the large Hill elevator under construction, which will be entirely of steel. No existing building is of over 2,000,000 bush. capacity, & all of such capacity are storage houses. No working house is of over 1,500,000 capacity, & the average sizes are about 1,000,000 for working houses, & 1,500,000 for storage houses. The difficulty of placing insurance on grain in very large quantities, & the higher premiums charged, were given us

as the chief reasons why preference is given to buildings not exceeding 1,500,000, or, at most, 2,000,000 bush. capacity. It is, however, to be noted that this applies especially to wooden elevators, & that it yet remains to be seen what the practical effect of fire-proof construction will be in allowing of larger capacities in one building. The Great Northern's steel tank elevator at Buffalo, & its new one, with rectangular steel bins, being built at Duluth, show that it at least has adopted 3,000,000 as an admissible size for fire-proof working houses.

"The elevators of Minneapolis present greater variety of fire-proof construction than do those of Duluth & Superior, & although the service for which they are built differs materially from that required in Montreal, we deemed it of importance that they should be visited, & especially so as there is there an experimental bin of new fire-proof construction, which we were informed it is proposed to adopt for the storage house in Montreal. In Minneapolis we found that the same practice prevails as regards the dividing of elevators into working houses & storage houses, & that when enlargements to existing capacities are needed they are invariably added in the form of detached annexes. We found several examples of cylindrical steel bins, & one elevator under construction having rectangular steel bins & wholly steel framing similar to those of the largest elevator being built at Duluth. We examined with much care & interest the experimental fire-proof bin, of the construction under consideration for the storage house for Montreal. It is a cylindrical bin, 20 ft. in diameter & 60 ft. in height, built of 2 thicknesses of glazed cellular tiles, with steel bands between to give the necessary strength & stiffness. It is proposed that those for Montreal shall be 32 ft. in diameter & 80 ft. in height, & that the spaces between the cylinders, as well as inside them, shall be used for storage."

A steamer was stopped at the mouth of the river owing to a dense sea fog. An old lady asked the captain the cause of the delay. "Can't see up the river," replied the captain. "But I can see the stars overhead," continued the old party. "Yes, but until the boilers bust, we ain't a-going that way," said the captain.

It is suggested that it will be profitable to try the experiment of using gas engines for driving ships, the gas being generated on the vessel itself. Coal will be roasted in retorts aboard the ship in order to drive off the gas for the engines. The coke thus produced, will furnish the fuel needed to roast the coal. The purpose of the experiment which is to take place is to ascertain whether the saving of weight of the gas-producing plant & gas-consuming engines over the ordinary plant of steam boilers & engines, & the saving of space, are sufficient to warrant the adoption of a new system.

The U.S. weather bureau has adopted an iron storm warning tower, which being constructed in sections, can be extended to a greater or less height, in accordance with the visual conditions of different ports. Near the top of the tower two powerful lens lamps are located, & above the lamps is the flagstaff from which day signals are to be displayed. The old inferior marine lantern, which consumes oil, & which has been displayed only from wood staffs, will be discarded & the display of danger warnings more efficiently made by the introduction of the new iron towers. Congress made an appropriation sufficient to equip one-half of the 300 display stations of the bureau during the coming year. The new towers will be distributed as equally as possible between the lake & sea ports, as only one-half of the service can be equipped during the coming year.

SHIPPING MATTERS.

Richelieu & Ontario Navigation Co.

The Co. began the operation of its mail line between Montreal & Toronto May 29.

Good progress is being made on the Co.'s new hotel, the Manoir Richelieu, at Murray Bay, which will very soon be opened for business.

The pursers appointed for the western route are as follows: str. Toronto, J. Tinning, Toronto; Bohemian, W. R. Tandy, Kingston; Algerian, H. M. Nimmo, Kingston; Hamilton, Capt. Baker, Cornwall; Corsican, J. D. Devlin, New York; Spartan, G. E. Hall, Napanee. H. Dubois, who has been purser on this route for many years, is transferred to the Saguenay route.

During the winter many improvements have been made on the vessels of the fleet. The str. Quebec has had new feathering wheels put on, & in place of large paddle boxes formerly used, small ones have been introduced. This gives 12 additional staterooms, besides improving the lighting & ventilation facilities of many more. New fittings for the staterooms, beds, etc., have also been put in all rooms. The dining-room has also been refitted. The str. Montreal has had her staterooms refitted & the dining-room & other portions have been redecorated. The str. Hamilton has received new feathering wheels, which will make her time between Montreal & Hamilton much faster than before. The Hamilton & the Algerian have been put on the Hamilton route, leaving Montreal on Mondays and Thursdays, at 7 p.m., in place of 4 p.m. as in previous years. The leaving time at Toronto & Hamilton has also been changed. The str. Spartan has been refitted throughout & will run between Montreal & Toronto. The str. Bohemian has been lengthened about 18 ft., making her 198 ft. over all. She will run in connection with the Toronto. The Corsican will also run on this route. The str. Longueuil has been completely rebuilt, improving her facilities to a great extent. The str. Carolina, Canada & Saguenay have been overhauled & will operate as usual on the Saguenay line. The running time between Montreal & Toronto has been shortened by 3 hours, owing to the improved steamers & the new Soulanges canal, which will be used.

Maritime Provinces & Newfoundland.

The Sydney Ferry Co. has placed a new & larger boat than heretofore on the route from Sydney to North Sydney. The str. Hygeia has been put on a new route between Sydney, the west side & the International pier.

A recent despatch from Sydney, N.S., mentioned a rumor that one of the largest shipbuilding concerns in Europe was represented in Sydney by agents who were making enquiries with a view to the establishment of a shipbuilding plant on the west side of Sydney harbor.

A Sydney, N.S., despatch says:—"The management of the Plant Line of steamers has definitely decided to open communication directly between Boston & Sydney, the initial trip commencing at the former port on June 15. The str. Florida, which has been running between Boston & Southern ports for some years, has been engaged on the new line, & it is proposed to leave Boston Friday & Sydney Monday each week. The Florida is about the size of the str. Halifax, elegantly fitted up for passenger service, & is capable of carrying a large volume of freight. J. A. Young has been appointed agent at Sydney."

S. C. Brookfield, of Halifax, is endeavoring to interest Canadian & U.S. capitalists in a project for establishing large steel shipbuilding works. It is understood that leading members of the Dominion Iron & Steel Co. have been approached with a view to enlist