

steamers to transatlantic ports, exclusive of tramps. New York alone of the Atlantic ports exceeds this in number. Montreal has five regular lines to Liverpool and the same number to London, two lines to Glasgow, and two to Hamburg, and one each to Bristol, Manchester, Belfast and Antwerp. Baltimore has twelve regular lines of steamships to Europe, Boston nine, and Philadelphia eight. No doubt all these Atlantic lines exceed Montreal in number and tonnage of vessels, as well as in cargo carried. They have twelve months' navigation against seven for the St. Lawrence. The real significance of Montreal's eighteen regular lines of steamships is the demonstration that, in spite of climatic drawbacks, or inferiority in other respects, the St. Lawrence is the route towards which northern exports will gravitate during its open season.

PORTLAND TERMINUS OF THE GRAND TRUNK.

From Chicago on the west, to Portland on the east, change and improvement everywhere meet the eye of the traveller on the Grand Trunk Railway System. In all these changes nothing has been done for mere display or whim, but in every case money has been spent to give increased comfort and safety to passengers or to afford increased facilities for transportation of freight. An instance of the latter may be cited at Portland, where every provision is being made for the winter traffic, which the company will need to provide for at this terminus. Nature has marked out Portland as one of the great sea-ports of the United States in the future. Possessing a wide and deep harbor, well protected from storms by its archipelago of rock-ribbed islands across Casco Bay, of which Portland Bay is an arm, it is not only a safe winter port, but is so guarded by islands and capes as to be easily made a station of immense strength in time of war. Along this harbor the Grand Trunk owns a sea front of nearly a mile, and during the past two years the present management, foreseeing the needs of the sea-borne traffic of the port, have prepared to provide what the steamship companies are even now demanding, for arrangements are concluded which will make Portland the winter port of call of steamship lines, enough to give it practically a daily service to Europe. These contracts include a weekly boat each by the Allan and Dominion lines to Liverpool, a weekly boat to London direct by the Thompson line, fortnightly boats to Glasgow by the Allan and Donaldson lines each, fortnightly boats to Bristol by the Elder-Dempster line, to Hamburg by the Hamburg-American line, while there are reports of a fortnightly service to Antwerp by the Leyland line, and to Manchester by the Manchester line, though the last two proposals have not yet taken shape. To meet this traffic, which will be inaugurated in November, the Grand Trunk recently joined hands with some Portland capitalists in building a second grain elevator, the new one having a capacity of a million bushels, and being provided with three conveyors running direct to their own wharves, so that three or more steamers can take in grain at the same time. Ten cars can unload grain at one time in this elevator, which is provided with all the latest machinery for quick work, being able to deliver 30,000 bushels per hour. While the grain trade has been well looked to, other merchandise is amply provided for by four new freight sheds, each about 500

feet long and 100 feet to 120 feet wide. This gives six sheds alongside of which tracks are laid, and from which seven or eight ships can load at a time. In fact, ten vessels have been loading or discharging cargo at a time at the G.T.R. wharves, which can accommodate vessels of 500 feet length. There are also two coal wharves owned by the company, having ample capacity for present needs. Last year new tracks were laid in the company's yards to accommodate 1,500 cars, and this has been followed by the erection of new stock yards to accommodate the growing export cattle trade. The city of Portland, which has now a population of about 60,000, including the suburbs of Deering and South Portland, and which has an active board of trade, with a membership of over 300, appears to be fully awake to its opportunities. Its suburbs and the islands of Casco Bay are every year being resorted to more by Canadians, who always meet with a hearty welcome from the hospitable people of the Maine coast, and who find in the temperate climate and bracing sea breezes of this region an ideal summer resort.

THE CEMENT INDUSTRY.

The great increase in the production of Portland cement in Canada is causing considerable remark among those interested in engineering and the building trades. There does not appear to be a corresponding expansion in the business of the producers of the natural rock or hydraulic cements, and these latter complain that there is a prejudice growing up which is against them, and in favor of Portland cement makers.

The peculiar qualities of Portland cement, as distinguished from the natural or rock cements, are: A very much higher strength at early dates; greater uniformity in manufacture, due to the constituents being brought together artificially and therefore being controlled with ease. It can be laid in frosty, even winter weather, with safety; it will stand wear of pavements, etc.

The characteristics of natural or rock cements, which commend them to use, are: Their continually increasing strength, by which in time they are nearly equal to Portlands; safeness, as they are not over-limed; cheapness, near point of manufacture, where early strength or frost proofness are not requisite, and where concretes are not to be immersed in water for several months.

THAT "COMPRESSED AIR" FIZZLE.

Readers of The Canadian Engineer will remember our discussion on some of the auto-car schemes exploited in the United States, and particularly the Croker-Leiter scheme, relating to compressed air auto-trucks. Complete verification of our prophecies is to hand, in the form of an announcement that all the compressed air companies and affiliated concerns—nominally capitalized at about forty millions—are all to be merged into one central corporation, with H. Payne Whitney, son of William C. Whitney, as president of the new company, which will have a nominal capital of one hundred millions. Does this mean that we are to see the auto-trucks by hundreds doing work in our streets? Not at all; for, as the Cycle Age well says, "Nothing has as yet transpired in the way of inventions or tests that would make compressed air appear as