

but have been leased for a limited period. It is probable that a similar number of sleepers & diners will be built for the line, to be owned by the Government, & run on the through express trains between Montreal & Halifax.

The combined dining & restaurant cars placed on the Intercolonial, as described & illustrated in our June issue, pg. 91, have not proved a success, their operation having shown that there was no general demand for lunch counter meals to be served on board, as it was anticipated there would be when the dining stations on the line were closed. Two of the combined cars have been altered by extending the dining-room accommodation, & the other is being kept as a spare car to be used in case of emergencies.

Towards the end of June a press despatch from Montreal stated that A. M. Peterson, of Colborne, Ont., had concluded arrangements with the Minister of Railways for the use on the Government Railway System of the Cleveland cylinder for locomotives, a Canadian invention which, it is claimed, will develop a high rate of speed. Mr. Peterson has since written us stating that he has made such an arrangement. A subsequent enquiry from this office to the Mechanical Superintendent of the Government System at Moncton elicited the information that he had not been advised of any such action. On taking the position recently he found that an engine fitted with a Cleveland cylinder had been running between Moncton & St. John for some months, & it was claimed it had given satisfaction, but no tests had been undertaken & it was very likely these would be made in an exhaustive manner before such a change would be generally adopted.

Speaking to a press representative recently Mr. Peterson stated that the main features of the device are a double piston, large central exhaust & the application of the suction or inductive principle to the nozzle. Each cylinder has 2 piston heads on 1 rod, & consequently the cylinder is longer than that ordinarily in use on a locomotive. Near the centre of the cylinder a groove is cut in its wall, of sufficient area to afford an ample exhaust under any conditions. As the piston passes over this point the exhaust assumes the characteristic of an explosion rather than anything else, opening as it does into the chamber between the 2 pistons, which are in constant communication with the smoke stacks. As the piston passes back on the return of the stroke & covers the main exhaust port, the valve or supplementary exhaust passes out through the nozzle in such a way that the main exhaust operates to create a vacuum in the cylinder. The valve & valve motion of the ordinary engine can be used in the device.

Grand Trunk Passenger Cars.

The 20 passenger coaches recently built at the Pullman shops, Chicago, have all been delivered at Chicago, & are ready for service. The cars are 62 ft. long, fitted with wide Pullman vestibules, 6 wheeled trucks, 33 in. steel tyred solid disc wheels, Westinghouse quick action triple brake & air signals. Sixteen cars, numbered 807 to 822, are fitted with patent drawbars & buffers, & 4 cars, numbering 823 to 826, are fitted with the interchangeable drawbar, to work in harmony with the M.C.B. or Miller drawbar by changing the knuckle, & are intended for the Portland Division. Each car is fitted with wrecking tools. The cars have high-back walkover pattern seats, with seating capacity for 64 passengers in the body of car & 8 in smoking-room, 72 in all. The cars are fitted up in mahogany, lighted by 7 Acme, no. 121, two-burner lamps, heated by steam, & have roller blinds. There is a strip of carpet in the centre aisle. Ladies' dressing-room at one end of car, with flush closet & washbasin. Wash-

basin at the smoking end of car & flush water-closet for men. They are painted & ornamented G.T. standard color outside. Average weight of car 89,550 lbs.

The 6 cars recently built at the Co.'s shops, Montreal, numbered 801 to 806, are the same length & style generally, no vestibules, ordinary platforms, patent drawbars & buffers, brass hand railing, lighted by gas, 7 four-burner lamps, roller blinds. Three of these have gone into service & balance will be out almost immediately.

Canadian Pacific Items.

A considerable force is engaged in the C.P.R.'s Winnipeg shops placing Westinghouse air brakes on the freight cars. About 2,000 cars have already been fitted with these brakes there.

The compound 10-wheeled type locomotive illustrated on page 121 one of 13 received by the C.P.R. in the latter part of last season from the Baldwin Locomotive Works. The general dimensions were given in our April issue, pg. 34.

The first of the 10 magnificent sleeping cars which are being built at the C.P.R. shops at Hochelaga is ready for service. These cars are exceptional in design & finish, & will be the handsomest & costliest cars on the Co.'s tracks. Each car will be finished in Louis XV. style, with Watteau decorations, richly upholstered, & most comfortably furnished. The natural woods used in the wood-work are especially fine. There will be no oil lamps, electric lighting taking their place. Two electric lights will be suspended from each berth rod bracket. In each seat, or compartment, a reading light will be attached to the side of the car, to be turned on or off at the wish of the occupant. The smoking compartments have been made 2½ ft. larger than the ordinary sleeping car smoking room. It has been the object of the management to build 10 little palaces on wheels that shall be unexcelled by anything on the continent in workmanship, & it has succeeded.

The extent of the Westinghouse Mfg. Co.'s business is well illustrated by the change in their advertisement in our current issue. When we first published their advertisement in March last the number of freight cars on which the Westinghouse air brake was in successful operation was 520,000; to-day it is in operation on 650,000 freight cars. At a recent stockholders' meeting of the Westinghouse Co. it was decided to increase the capital stock to \$11,000,000.

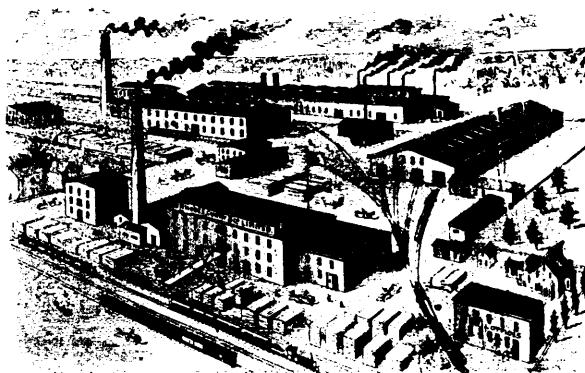
A London, Eng., cable says: "The North-Eastern Ry. has just completed a locomotive which, it is hoped, will soon gain the world's record. It is triple expansion, weighs 80 tons, & will drag a heavier load than any locomotive now on the rails in any country. At all events, that is what the builders claim. With an ordinary passenger train no doubt it is felt that it will maintain a speed of 80 miles an hour for hours at a stretch. But this engineering marvel has not yet been seen outside the North-Eastern Ry.'s works at Gateshead.

OPERATING.

G.T.R. Air Brake System.

The employees of the G.T.R. are not only being instructed in the new code of signals, but the brakemen are getting special instructions on the air brake system. A special car is fitted out with a complete outfit, with an instructor in charge, who gives lectures several times each day & in the evening. In the car there is represented an air brake train of 20 cars. In explaining the manner in which the brake is operated from the engine & the coach, the instructor points out the meaning of various colors representing different pressure. The method of turning on the air in case of an emergency & otherwise is demonstrated in a clear & intelligible manner. In the engine department are located 2 pumps & 2 large main reservoirs, with a capacity of 4,000 cubic inches. The new system is known as the automatic, which will replace the old straight air brake. Formerly when a train broke in two the air brake was useless, but the new brake remedies that fault, as it applies immediately to the train with rapidity & force. The first pump compresses the air & is stored in the reservoir located on the engine in a convenient place. The air passes from there into the train pipe through the engineer's brake valve located in the cab of the engine, then from the train pipe through a triple valve into the auxiliary reservoir.

The train is then charged for a journey. The brakes are applied by a reduction of train line pressure. Then the triple piston & slide valves go to the applied position & allow the pressure to pass from the auxiliary reservoir to the brake cylinder, which applies the brake. To release the brakes an increase of train line pressure is applied. In the main reservoir on the engine there is more pressure than that carried in the train line. The pressure, which is called excess pressure, is derived by an automatic feature of the brake valve. When the brakes are released the engineer throws that excess pressure into his trainline,



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