

**Mountain Type Locomotives, Canadian Pacific Railway.**

The C.P.R. has built recently at its Angus shops, Montreal, 2 Mountain type locomotives, the first to be used in Canada. This type was first introduced on the Chesapeake and Ohio Ry. in 1911, and as it was especially designed for high speed passenger service over mountainous divisions, the name now used naturally followed. In detail design these new C.P.R. locomotives follow C.P.R. standard practice as far as possible, and the cylinders, pistons, piston rods, piston valves, cylinder heads, steam chest covers, boxes, axles, and other details are interchangeable with the more recent

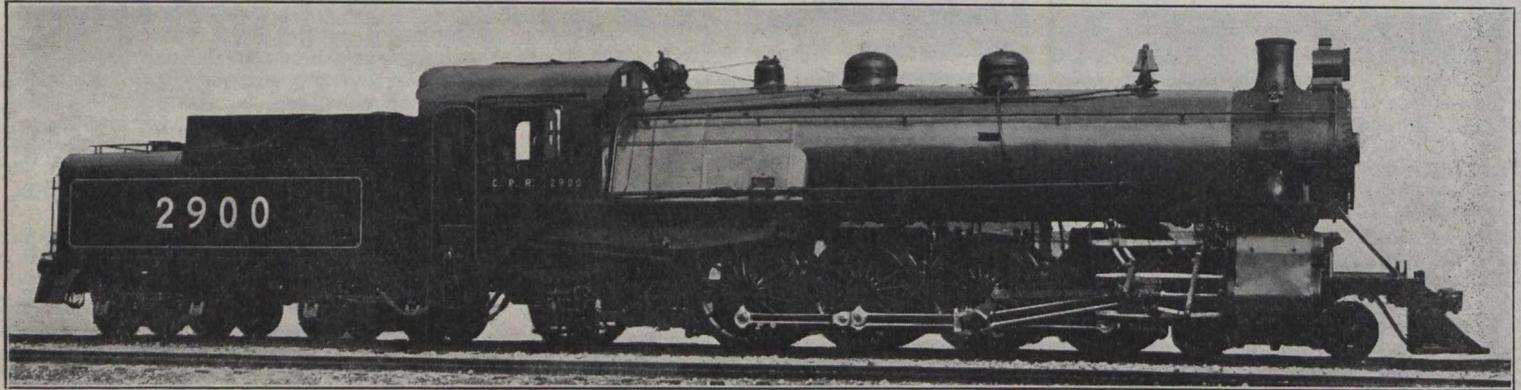
Railway and Marine World, June, 1912, and have the latest design of screw reverse gear.

**Canadian Northern Railway Terminals at Port Mann.**

Canadian Railway and Marine World for March, 1914, contained a description and plans of the terminal facilities planned by the C.N.R. at Port Mann, B.C., part of which were then under way. While the scheme as outlined there provided for an extensive terminal, sufficient to meet all requirements of the line for some years to come, the intention was to merely build a portion of the facilities, adding thereto according to a prearranged scheme as required.

South of the locomotive house there have been erected two buildings for the men, a dining hall and bunk house. The dining hall is 86 by 31 ft., two stories high, with a seating accommodation on the lower floor for 200 men. The upper floor is laid out for 13 bedrooms, with lavatory accommodation, and a sitting room at one end. The bunk house, 92 x 31 ft., is similar in construction to the dining room, with 13 bed rooms upstairs and 13 downstairs, and lavatory accommodation and sitting room on both floors. These two buildings have been used by the construction men, but will be turned over to the operating department for the shop and road men.

About \$20,000 has been spent in laying out good roads from the shop site to Bon Accord



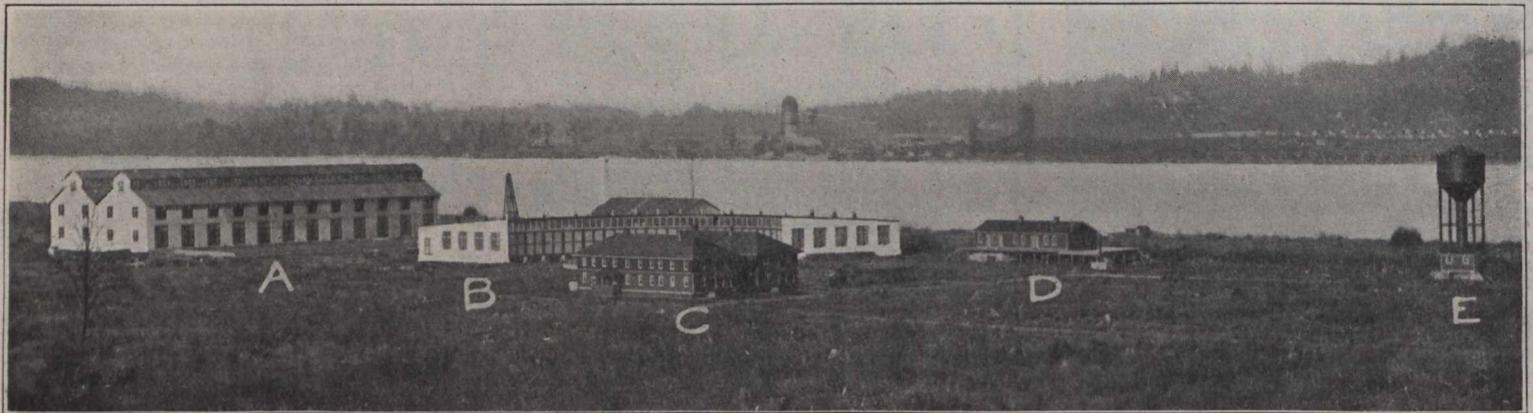
Mountain Type Locomotive, Canadian Pacific Railway.

consolidations and the mikados, classes P1 and N1, over 200 of each of which are in service: Following are the principal dimensions:

Type .....	4-8-2
Sub class .....	H1a
Boiler pressure .....	200 lbs.
Firebox width, inside .....	88 7/8 ins.
Firebox length, inside .....	161 1/2 ins.
Tubes, number and outside diameter .....	210—2 1/4 ins.
Flues, number and outside diameter .....	30—5 1/4 ins.

A 10 stall section of the proposed 43 stall locomotive house has been completed, and is in use, and for it certain facilities, such as coaling plant, ash pits, etc., have been built, including an 80,000 gal. steel tank. The locomotive house stores building has also been completed. This consists of a single story and basement structure, 83 1/2 x 30 ft., with an 8 ft. platform along three sides, with a platform 30 ft. long along the fourth side for outside storage. This is

Road, which runs through what will eventually be the main business section of Port Mann. About \$350,000 has been expended in and around the shop area. We are indebted to J. Montgomery, of the Imperial Construction Co., which had the contract for this work, for the information contained in the foregoing, and to T. H. White, M. Can. Soc. C.E., Chief Engineer, Canadian Northern Pacific Ry., for the photograph from which the illustration was made.



Canadian Northern Railway Terminals at Port Mann.

A.—12 stall locomotive machine shop; B.—10 stall locomotive house; C.—dining hall and bunk house; D.—store house; E.—80,000 gal. steel tank.

Length over tube sheets .....	20 ft. 8 1/2 ins.
Superheater, type .....	Vaughan-Horsey
Superheater tubes, number and outside diameter .....	120—1 1/4 ins.
Superheater tubes, average length .....	19 ft. 4 1/2 ins.
Superheating surface .....	760 sq. ft.
Firebox heating surface .....	299 sq. ft.
Tube heating surface .....	3,414 sq. ft.
Equivalent heating surface .....	4,853 sq. ft.
Grate area .....	59.6 sq. ft.
Cylinders .....	23 1/2 by 32 ins.

One of the main features of the design is the style of firebox adopted, which is 13 ft. 5 3/8 ins. long by 7 ft. 6 7/8 ins. wide, fitted with a Gaines combustion chamber and arch, and having a 59.6 sq. ft. grate area. The locomotives are equipped with the Vaughan-Horsey superheater, and the vestibule cab, which was described in Canadian

served by a spur track from the main line, which also serves the boiler house addition to the locomotive house, over which coal is supplied.

A section of the locomotive repair shop, 277 1/2 x 145 ft. has been completed, to the southern end of which a future addition will be made, increasing the size to 600 x 145 ft. when required. This shop is of a mill design, consisting of two bays, with a central row of cast iron columns, and a low gallery along one side of one of the bays, about half the width of the bay. This shop is due west of the locomotive house, and separated from it by a track storage space and 80 ft. transfer table, which is completed to serve the 12 shop tracks.

**Bending Copper Pipes.**

Bending copper pipes, as ordinarily effected by plugging up one end, filling it with melted resin, and then, after bending, melting out the resin again, is troublesome and expensive. The substitution of sand for resin is sometimes practised as an improvement on the resin, as regards the time that it takes. There is a much better way, which leaves the pipes much more truly circular in cross section at the bends. It consists of taking a spiral of wire, preferably of square section, of a diameter slightly greater than the bore of the pipe to be bent. One end of the spiral has a squared shank to permit of the application of an ordinary car-