

The pioneer heading is for the greater part of its length about 45 feet from the centre line of the main tunnel, with its grade, for the most part, 10 feet above the subgrade of the latter, although the western portal is 135 feet and the eastern portal 53 feet above grade. Its headings are 7 feet by 8 feet, and each extends from its portal along the right side of the centre line of the tunnel except in the central portion where the pioneer headings, about a mile apart, are carried over to the centre line and are continued as the centre heading. Cross cuts from these headings to the line of the main tunnel are being made every 1,500 feet or so, and drifts from each cross cut are being driven in both directions. The driving of the main tunnel is thus being accomplished at a large number of headings simultaneously. In addition, the main tunnel work was advanced from each portal. The initial heading is being made as an 8 feet by 11 feet centre heading and the enlargement operations follow closely.

Early in August of this year the pioneer headings were completed to the points where they were carried

over to the centre line, and on August 15th they only were 4,920 feet apart. About 2.95 miles of the centre heading has been driven and 1.69 miles of the enlargement completed. Concrete lining of the earth sections will be finished before the end of the year.

Besides necessitating about 18 miles of new track, the tunnel project involved, in its preliminary stages, a 900,000-cu. yd. fill in the centre of the Illecillewaet River valley, extending westward for a distance of  $1\frac{1}{2}$  miles. Between this fill and the west portal there is a 300,000-cu. yd. cut, the entrance being at a level of about 80 feet below the ground surface. In the east end there is another approach cut of about 100,000 cu. yd.

The work, commenced in June, 1914, will probably be completed in September, 1916, several months before the time stipulated. It is being carried out under the direction of Mr. J. G. Sullivan, Chief Engineer of Western Lines for the Canadian Pacific Railway. Mr. H. G. Barber is the engineer-in-charge.

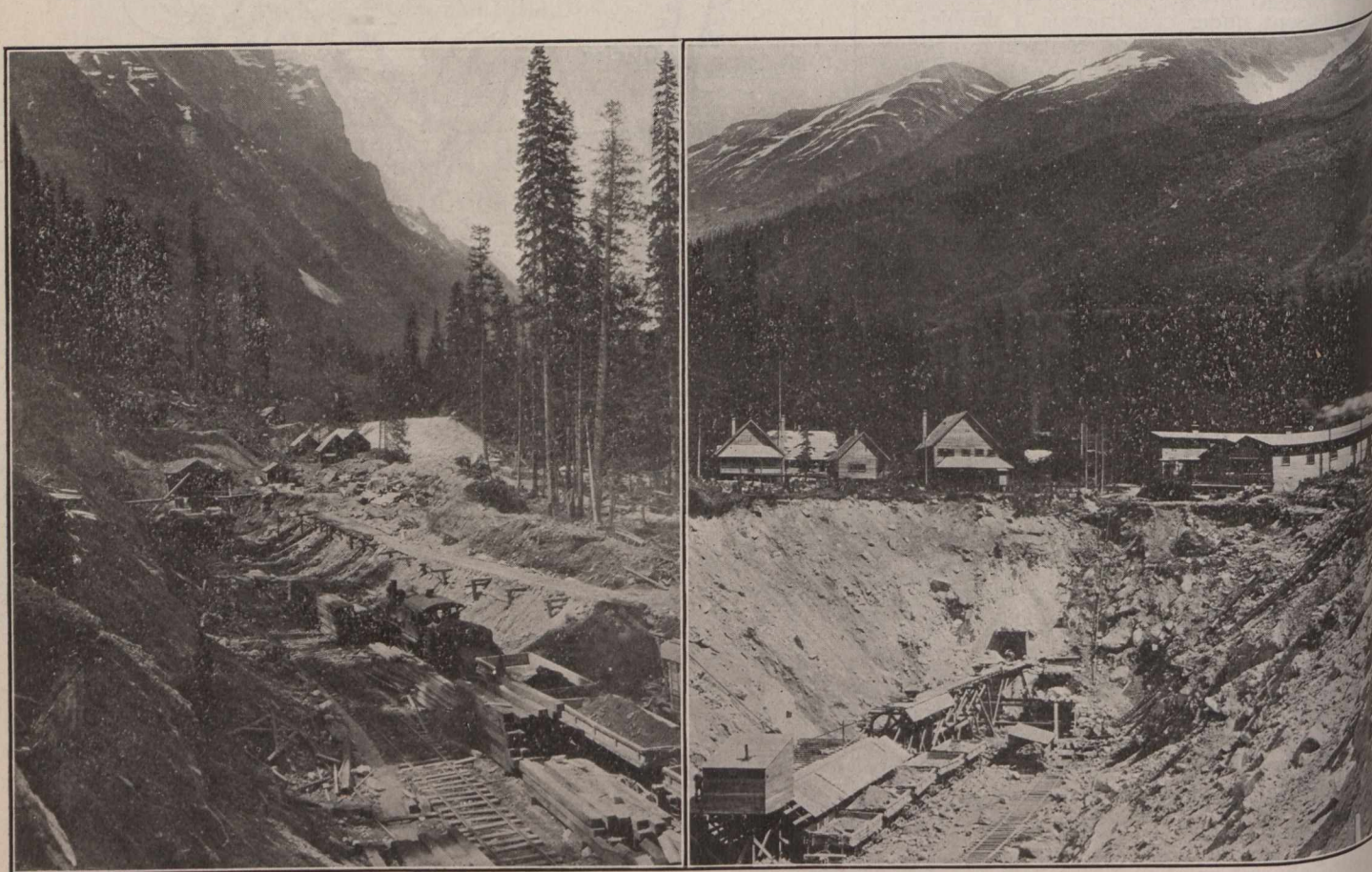


Fig. 5.—East and West Portals of the Roger's Pass Tunnel During Early Stages of the Work.

#### TUNNEL CONTRACTORS LOSE CASE.

In the British Columbia appeal court, McIlwee Brothers, contractors, Denver, Colo., won their appeal for half a million dollars judgment against Messrs. Foley, Welch and Stewart, contractors for the Rogers Pass tunnel. The plaintiffs sued for \$527,000 for damages alleged to have accrued to them through breach of contract in building the great Canadian Pacific tunnel and on prospective profits. The trial judge in the appeal court allowed them only \$30,000 and dismissed the remainder of their claim. The appeal court added approximately half a million dollars to the judgment.

#### COBALT ORE SHIPMENTS.

The following are the shipments of ore, in pounds, from Cobalt Station for the week ended August 6th, 1915:—

Chambers Ferland Mining Company, 58,350; Mining Corporation of Canada (Cobalt Lake Mine), 50,085; Mining Corporation of Canada (Townsite City Mine), 61,045; Dominion Reduction Company, 176,000; Coniagas Mines, 156,185; total, 501,665 pounds, or 250.8 tons.

#### Elk Lake—

Miller Lake O'Brien Mine, 48,000 pounds, or 24 tons.

The total shipments since January 1st, 1915, are now 18,444,873 pounds, or 9,222.4 tons.