following systems of lighting, namely, the Pintsch Compressed Oil-Gas System, or the Commercial Acetylene System; and rescinding Order No. 5690, 17th November, 1908.

6191—February 6—Directing the G.T.R. Company to keep a night-watchman at the crossing of the Montreal Road, Kingston Junction, with the G.T.R., pending the construction of the subway.

6192—February 4—Dismissing application of the C.N.O. Railway Company for an Order to vary Order No. 5869, dated December 16th, 1908, granting the C.N.O. Company authority to place its track across Bay View Avenue, on Lot 20, Concession 2, Township York, Ont.

6193—February 4—Dismissing the application of the Toronto Electric Light Company for leave to place its underground ducts below the C.P.R. Company's tracks on Christie Street, North Toronto, Ont.

6194—February 4—Authorizing the C.N.O. and C.P.R. companies to operate their trains over the crossing east of Lorette, in Parish of St. Sauveur, Que., as authorized by Order No. 4862, of the 2nd June, 1908.

6195—February 3—Dismissing application of C.P.R. Company for an Order amending Order No. 3242, authorizing the Commissioners of the Transcontinental Railway to cross the C.P.R. track at a point near St. Bazile Station, Que.

6196—February 8—Directing that sleeping car and parlor or chair-car tariffs filed with the Board be printed on sheets uniform in size, namely, 11 inches by 11 inches, and be specifically numbered by each company beginning with C.R.C. No. S 1, and that subsequent tariffs be numbered consecutively with the prefix C.R.C. No. S—; and further directing that said tariffs be filed under filing devices similar to those used for the filing of passenger tariffs.

6197—February 8—Approving application of C.P.R. Company for approval of plan B-1-95-1, and 3 showing spans at each end of bridge No. 0.72, Fraser River, on the Mission Branch of the C.P.R., British Columbia.

6198—February 8—Authorizing the Qu'Appelle, L. Lake and Sask. Ry. and Steamboat Company to construct spur lines on Smith Street, and in the lane between Smith and Mc-Intyre Streets, Regina, Sask., and that such spur lines be completed within 2 years from the date of this Order.

6199—February 8—Authorizing the C.P.R. Company to open for traffic that portion of the Mountain Section of its line from mile 99.17 to mile 100.4, known as the Rogers Pass Diversion, British Columbia.

6200—February 8—Authorizing the C.P.R. Company to construct a branch line of railway in the town of Tilsonburg, Ont., to and into the premises of the Tilsonburg Packing Company, and that such branch be completed within 2 years from the date of this order.

6201—February 8—Authorizing the G.T.R. Company to construct branch lines from a point on its railway at Donald, on part of Lot 6, Concession 2, Township Dysart, to the premises of the Woods Products Company, Limited, and that such branch lines be completed within 2 years from the date of this order.

6202—February 8—Directing the Toronto, Hamilton & Buffalo Railway Company to make certain improvements in the crossing of its railway with the Lee Mountain Road, in the Township of Saltfleet, Wentworth County, Ont.

6203 to 6212—February 9—Authorizing Okanagan Telephone Company to cross tracks of the C.P.R. with wires at ten different points in British Columbia.

6213—February 9—Approving of plan showing pier of Cornwall bridge draw span; Ottawa and New York Railway.

6214—Febrsuary 9—Authorizing the Chatham, Wallaceburg and Lake Erie Railway Company to open to the carriage of traffic that portion of its line of railway running from the crossing of the Michigan Central at Charing Cross to Erie Beach Park, Ont.

6215—February 9—Authorizing the Provincial Natural Gas & Fuel Company, of Ontario, Limited, to lay a gas pipe or main under the tracks of the G.T.R., Lot No. 74, Township of Stamford, County of Welland, Ontario.

6216—February 6—Authorizing the C.P.R. to use and operate the bridge crossing the canal at the Canada Sugar Refinery, on the South Bank Branch of the G.T.R. at the same point.

6217—February 9—Authorizing the Okanagan Telephone Company to cross the tracks of the C.P.R. 223 feet east of the 35th mile post.

6218—February 9—Authorizing the G.T.R. to construct, maintain and operate a branch line of railway from a point on its Lachine Canal Bank Branch immediately west of the draw span at the entrance to the dry dock into the premises of G. A. Grier & Sons, Montreal.

6219—February 8—Authorizing Hawthorn Hill Rural Telephone Company to erect and maintain its wires across the tracks of the G.T.R. on the second concession of the Township of Minto, Ont.

6220 to 6221—February 8—Authorizing the Okanagan Telephone Company to cross tracks of the C.P.R., with wires at 900 feet north of the 39th mile post; also at Lake Drive, Vernon, B.C.

6222—February 2—Authorizing the Georgian Bay & Seaboard Railway Company, (C.P.R.), to cross until November 1st, 1909, the tracks of the G.T.R., by means of the trestle over Hog's Bay, at or near Lots 13 and 14, Concession 5, Township of Tay, Ontario.

6223 to 6224—February 9—Authorizing Okanagan Telephone Company to cross tracks of the C.P.R., at Strand Hotel Level Crossing, and at Rosedale Avenue, Armstrong, B.C.

6225—February 9—Authorizing the Le Chemin de Fer de Colonisation du Nord to construct its railway across the highways and divert certain portions of the highways between Nominingue and a point ten miles northwesterly in the Province of Quebec.

6226—February 10—Authorizing the C.P.R. to open for carriage of traffic that portion of its Sheho Extension from Leslie, mileage 66.2 to Wynward, mileage 89.0, a distance of 22.8 miles.

6227 to 6228—February 10—Authorizing Dunnville Consolidated Telephone Company to cross the tracks of the G.T.R., at Forks Road, and Cedar Street, Dunneville, Ontario.

## THE VALUE OF A WATER POWER.

## C. T. Main.\*

The value of an undeveloped constant water power is such a sum as when put at a proper rate of interest, say 10 per cent., will pay the difference in cost between steam and water power, items of cost being considered.

A power which is variable, and which cannot be depended upon throughout the year, has, of course, less value than that which is constant. In such a case the items for consideration are:—

The maximum, minimum, and average quantity of water, an 1 length of time when there is no water; all the other items which enter into the value of a uniform power; necessity in nearly all cases for a supplementary steam plant, with the expense of maintenance and running for a portion or all of the time.

The value of an undeveloped variable power is little or nothing if its variation is great, unless it is to be supplemented by a steam plant. It is of value then only when the cost per horse-power for the double plant is less than the cost of steam power under the same conditions as mentioned for a permanent power, and its value can be represented in the same manner as the value of a permanent power has been represented.

To determine the market value of such a power which has been developed, it will be necessary to consider the power by itself, independent of the plant; that is, to determine first the value of the power as though it were undeveloped, and

<sup>\*</sup>Mill Engineer and Architect, Boston, Mass.