

Besides this valve, which is of the electrically controlled, hydraulically operated type, there were installed two others—ordinary hand-operated, non-rising stem, gate valves—one on either side of it, so that, in case of trouble with the electro-hydraulic valve, there would be no difficulty in cutting it out and attending to it.

Figs. No. 1 and No. 2 show the lay-out, in plan and elevation respectively, of this valve chamber.

Excavation for this chamber amounted to about 62 cubic yards and the concrete required to 33 cubic yards; the large amount of concrete is due to the fact that one end of the chamber forms the footing for the riser drum, which on account of the great weight (= that of a column of water 6 ft. diameter and 155 ft. high plus the weight of the riser drum plus the compression, at times, on the riser drum, due to expansion) to be supported, is of necessity rather massive. Drainage, ventilation and lighting of the valve chamber are all suitably provided for.

Factory and field inspection of the whole of the work, at all stages, was arranged for by the Hydro-Electric Power Commission of Ontario.

The capital cost was approximately \$30,000, this being somewhat augmented by the fact that contracts were let and the work carried on during war-time.

No figures are available to the writer as to the saving in cost of pumping effected by this water tower, but there is reason to believe that this has been appreciable, since the electric pumps can undoubtedly be operated under more favorable conditions, *i.e.*, they can be kept off the peak.

#### SIFTON ADVOCATES INTERNATIONAL DEVELOPMENT OF THE ST. LAWRENCE

WITHIN a very few years there will be a demand for every horse-power that can be developed on the St. Lawrence River to which Canada is entitled for use upon the Canadian side, predicts Sir Clifford Sifton in the ninth annual report of the Commission of Conservation which has just been issued. "The situation with regard to Niagara will undoubtedly be duplicated," he declares, "and if we are foolish enough to allow vested interests to be created on the other side of the line, we shall inevitably find ourselves handicapped and embarrassed as we now are with respect to Niagara power." He contends that a thorough study of the situation reveals that there is only one sound method of developing these powers, *viz.*, "an international commission under which the best use of the powers will be made, the most economical development effected and a just and equitable division of the power will take place for the benefit of the people who are directly concerned in its use."

Special prominence is laid in the report on power and fuel problems. Following a comprehensive review of the progress of conservation in 1917, by Sir Clifford Sifton, are addresses on "Peat as a Source of Fuel," by Dr. Eugene Haanel; "The Fuel Situation in Canada," by Fuel Controller C. A. Magrath; "Power Possibilities on the St. Lawrence," and "The Niagara Power Situation," by A. V. White; and a comprehensive treatment of the subject of railway electrification, by S. T. Dodd, of the General Electric Company, and W. F. Tye, C.E.

A full account is given of the work accomplished by the commission during the year in regard to water-powers, town-planning, mining, agriculture and game conservation. An interesting feature is a chart showing how the German buying combination controlled the metal markets of the world before the war.

#### AMERICAN WATER WORKS CONVENTION

(Special Correspondence)

ST. LOUIS, MO., May 20th.—Officers and members of the American Waterworks Association have reason to be gratified at the success which attended the thirty-eighth annual convention, held last week in this city. The war, the scarcity of materials, the shortage of labor, and the transportation difficulties are factors that to some degree must affect gatherings of men who are concerned with the design, construction and maintenance of waterworks plants. Nevertheless, more than 400 delegates and 200 guests registered, many of them arriving on Sunday afternoon, May 12th.

#### Waterworks Men Can Play Important Part

Monday, the opening day of the convention, was mainly devoted to registration and "getting together." The executive committee and the standing and special committees met at different times during the day. In the evening Mayor Kiel, of this city, delivered an address of welcome, laying stress upon the important part the association and its members can play in the winning of the war, especially through the preservation of the health and efficiency of the fighting forces and civilian populations of the United States and Canada. An informal reception and dance was then held by courtesy of the local entertainment committee.

The convention started business Tuesday morning with an illustrated address by Geo. W. Fuller, of New York City, on "Emergency Construction Work Due to War Conditions." The speaker made special mention of the important post which is held by a past-president of the association, Lt.-Col. Dabney H. Maury, who is supervising the sanitary conditions at the United States army cantonments. Following this address, reports of various committees were read. Owing to the fact that the president, Major Theodore A. Liesen, is engaged in military work, the chair was occupied by the vice-president, Allan W. Cuddeback, engineer and superintendent of the Passaic Water Co., Paterson, N.J.

In the afternoon the delegates were invited to join either of two parties. Those who were golfers were provided with transportation to the Midland Valley Country Club, where a tournament was held under the auspices of the Permanent Golf Committee of the Waterworks Manufacturers' Association and the American Waterworks Association. Twenty-seven members entered the tournament. The other delegates and their guests were taken by special cars to the Anhauser-Busch brewing plant, which employs about 6,200 people, where the automatic machinery was inspected.

#### Technical Papers Were Read

Tuesday's evening session was devoted to the reading of the following papers (while the ladies were entertained at a card party through the courtesy of the Waterworks Manufacturers' Association):—

"Management of Public Utilities in Cantonments," by Major P. Junkersfeld; "The Artesian Water Supply of Savannah, Georgia," by E. R. Conant; "Design of a Tilting Dam and Its Relation to Back Water on the Gunpowder River," by V. B. Siems; "Water Treatment Conditions at Council Grove, Kansas," by Louis L. Tribus.

Four papers were read on Wednesday morning. These dealt with various phases of the waterworks here, and were particularly timely in view of the fact that a trip of inspection to the waterworks plant had been ar-