Chemical House and Coal Storage.—The chemical house and coal storage is shown in Fig. 1 and in cross-section in Fig. 4. Fig. 12 gives an interior view of the coal storage portion of this building. Storage for 1,500 tons of coal and 800 tons of aluminum sulphate, as well as a general store, has been provided. The chemical house consists of circular building or tower 40 feet in diameter,

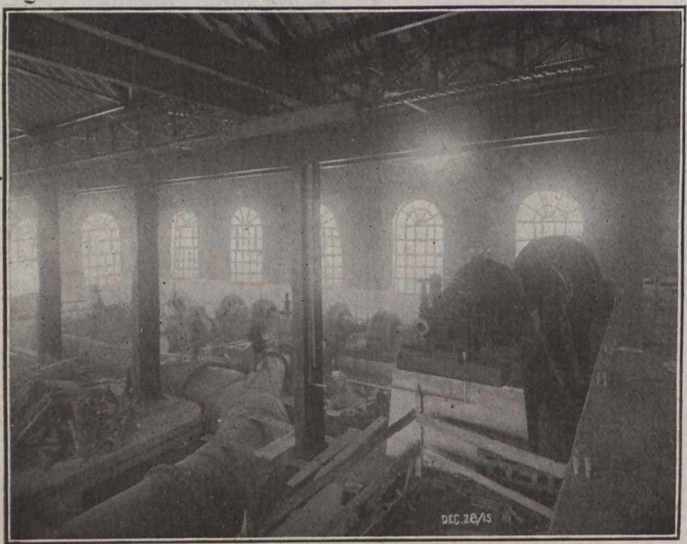

Fig. 6.—Interior of Pumping Station, Showing Machinery Nearly Completed.

through the centre of which is a crane turret mounted with an electrically operated revolving four-ton crane with a boom that reaches 60 feet.

Around two-thirds of the circumference of the chemical building is a coal store, but this is not of such great height, as can be noted from Fig. 4. The building has a straight face parallel to the wharf and is conveniently

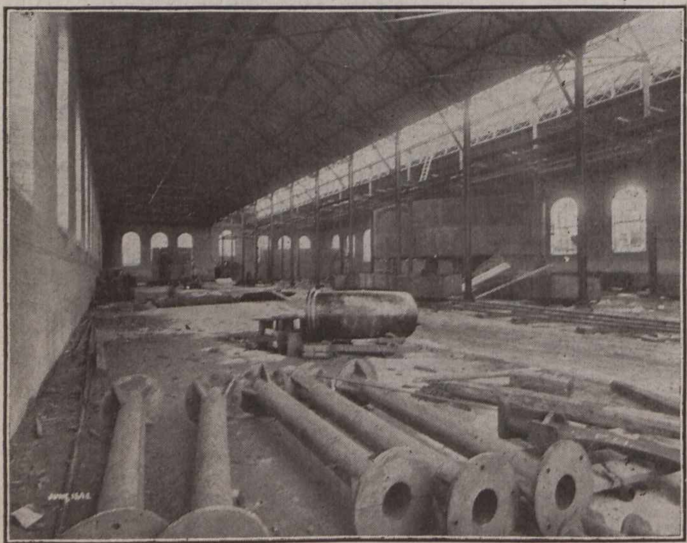

Fig. 7.—Interior of Filter House, Looking Towards the North, at Start of Tank Erection. Cast Iron Supporting Columns for Filters Shown in Foreground.

arranged for unloading material direct from the scows. A wide passageway leads from the chemical and coal store to the boiler house and offices, and this passageway is provided with a fireproof door. In Fig. 12 can be noticed pipes coming out at the bottom of the reinforced concrete columns. These pipes extend up through the centre of each column and project through the roof. By this means the temperature of the coal at any point can be ascertained, and any point can be flooded with water if necessary to stop spontaneous combustion, by flooding the roof.

Chemical Feed.—The arrangements for the supply of sulphate of alumina, or filter alum, to the water before filtration are novel in many respects. The underlying idea is to allow the dry chemical to feed automatically down from the store through a number of control doors into a tray at mid-level in a dissolving channel maintained full of water. This arrangement is shown in Fig. 4. The solution formed may be of any strength in excess of 5 per cent. and this solution is fed from the bottom of the dissolving channel into a dilution tank in which it is automatically diluted down to the standard 5 per cent. by a hydrometer-like arrangement. From this tank the standard solution is fed into a measuring tank controlled by the 72-inch raw-water meter in the pumping station, through a combined electric and hydraulic relay. From the bottom of the measuring tank the solution gravitates through lead pipes to the suction well and is there dis-

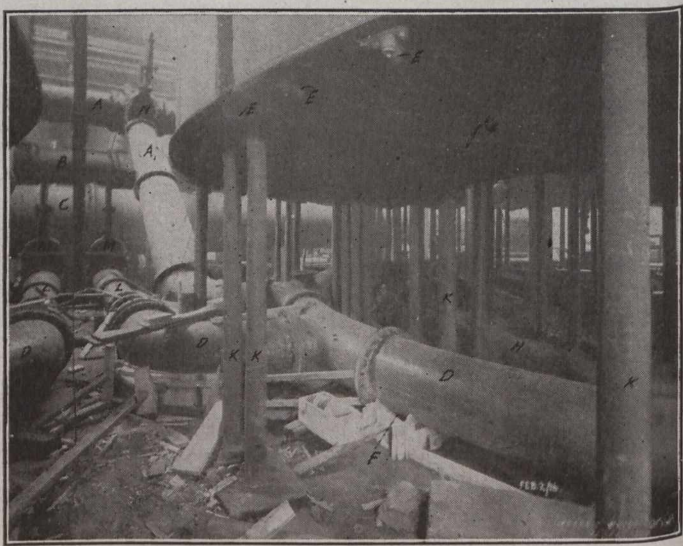

Fig. 8.—Piping in Filter House, Looking Toward Central Gallery. (A) 36-in. c.i. back-wash pipe; (A_1) Branch from A; (B) 36-in. c.i. waste pipe; (C) Steel raw water pipe; (D) 22-in. c.i. filtered water pipe; (E) External extractor; (F) Concrete form work; (G) 6-in. raw water inlet; (H) 16-in. c.i. raw water pipe; (K) 120 c.i. columns per tank; (L) 24-in. Venturi meter; (M) 24-in. valve, filtered water; (N) 24-in. valve, wash water.

tributed over the water by being allowed to flow out of ½-inch holes in a circular 2-inch pipe ring that is suspended just above the water in the suction well in such manner that the solution is sprayed upon the water immediately prior to the water being sucked up into the suction pipes by the pump.

In Fig. 4 some of the parts have been displaced to a certain extent in order to illustrate their working more clearly. The water tank (marked 5) is maintained full of filtered water by a float valve. From this tank the water flows freely to the annular dissolving chamber (marked 1), and, after dissolving, the aluminum sulphate passes to a valve at the top of the hydrometer (marked 3). At the same time, water also goes from Tank 5 to a valve on the bottom of the hydrometer. The hydrometer is poised in the solution between the two valves; thus any vertical movement of the hydrometer opens one valve and closes