AN INTERESTING FILTER INSTALLATION.

Probably no one phase of municipal engineering has attracted so much attention during the past few years, at least in Canada, than that which has to do with the securing and maintenance of a proper and adequate water supply.

In Canada, where new municipalities are coming into being so quickly, and existing communities are growing so rapidly, it is quite natural to find such a great interest in this subject.

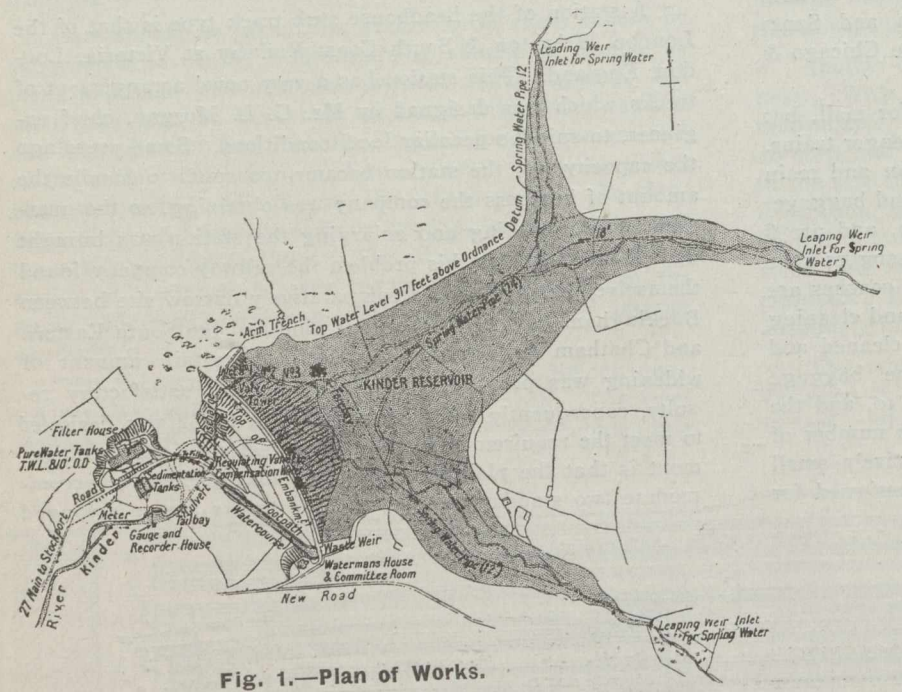

Fig. 1.—Plan of Works.

In order to place before the municipal engineers of Canada information concerning various types of filters used in Canada itself, the United States and Great Britain, *The Canadian Engineer* has, during the past few years, published descriptions of various filter installations. By studying the characteristic features of these various plants municipal engineers have been enabled to form some idea as to their relative values and thus be able to judge intelligently when brought face to face with the question themselves.

This particular article deals with an English installation, that at Stockport, which plant has a number of features which we feel sure our readers would like to be informed about.

The filtration plant proper is located at Kinder, near Stockport, named after the river upon which the reservoir is built. The engineers for the work were Messrs. G. H. Hill and Company, of Manchester. The reservoir in connection with this plant has a capacity of 515 million gallons, an area of 44 acres situated in the valley of the River Kinder. A plan of the layout will be found in Fig. 1.

The filter house, shown in Fig. 2, is built of common brick faced with stone work and is 180 feet long by 39 feet 6 inches wide, with an annex 39 feet 6 inches long by 35 feet 6 inches wide. Light for the filter house is secured by means of sky-lights in the roof. The installation called for twenty-four No. 5 Bell patent filters (provision having been made for an additional eight) and these batteries are so arranged that they can be operated as a whole or entirely separate. Fig. 3 shows a general view of the interior of the filter house and will give the reader a clear idea as to the arrangement as well as the interior construction of the house, methods of lighting, etc.

The filters consist of steel shells having hydraulically dished and flanged ends in which are placed pebble strainers which will allow the filtered water to pass through every passage, absolutely preventing the escape of filtering material. The filtering medium rests on the top of the strainer. Fixed in each shell and passing through the centre of the bed, is a hydraulic central shaft to which is connected a number of horizontal wash arms which in turn are provided with special valves and rakes. This hydraulic shaft is only used when the filter beds are to be cleaned. The two rows of four filters forming the batteries have specially constructed turbines, fitted on the end of the inlet pipe which revolve according to the flow of water passing through the filters, working in turn pumps which take their supply of standard alumina solution from small tanks and force the same into the water supply on its way for filtration. After the alumina has been applied the water is agitated and thoroughly mixed while passing through the turbines. Each of these batteries is supplied with a Venturi meter, which accurately registers the amount of water filtered and the amount of wash water.

It will be seen from Fig. 3 that the overhead travelling crane of suitable capacity is provided for, and in order to facilitate manipulation, the marine type of platform is arranged along the top of the filters.

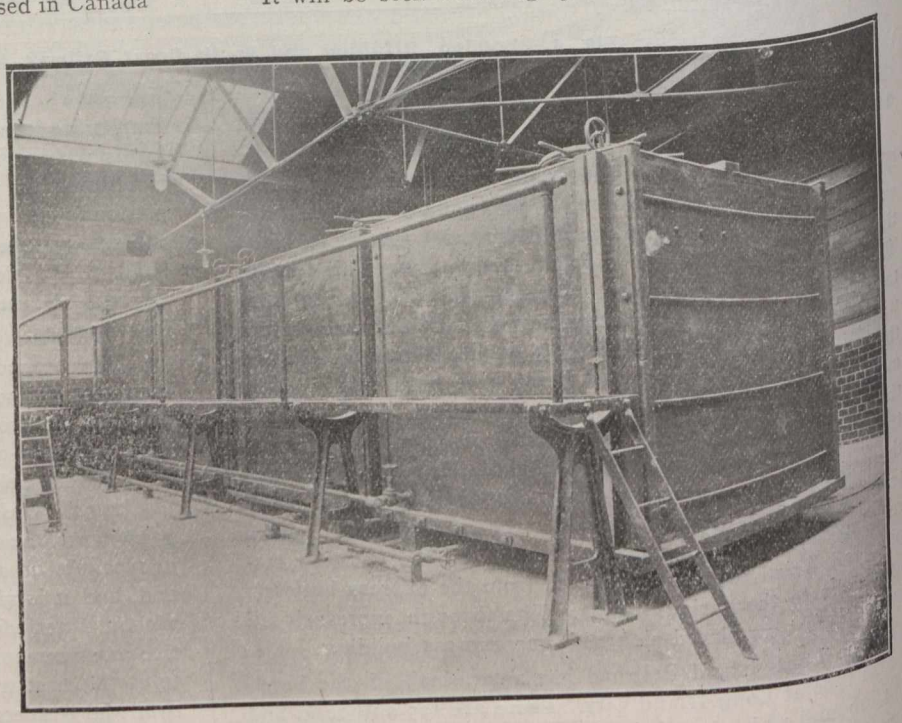

Fig. 4.—Alumina Tanks.