

is mixed thoroughly with the hard water in a baffle channel. Thence the turbid soft water flows to the bottom of two large tanks, where it deposits nearly all of its suspended matter or sludge. Rising slowly to the top, it flows off through floating discharge pipes to the filters, which give its final clarification.

There are seven filters, each one containing about 1,450 sq. ft. of filter cloth surface. Each filter runs about 24 hours. It is then opened and the cloths are removed, washed and replaced. The softened and filtered water passes into a 300,000-gal. service reservoir, whence it is pumped to the city. After passing the filters, the water is carried over perforated copper plates through which it falls like rain, into a trough through which carbonic acid is being passed. The falling water absorbs the gas and flows from the trough into the storage reservoir described above.

A description of Winnipeg water supply would not be complete without a reference to the special fire service water works now being constructed in the business center of the city. This system is to take its supply from the Red River. It is to be capable of pumping 13,000,000 gal. of water per day at a pressure of 300 lb. per square inch. The water is to be distributed by about three miles of cast iron pipes, fitted with hydrants of special design, and with hose attachments for 4½ and 3½-in. hose. The pumps being made by Glenfield & Kennedy, of Kilmarnock, will be six in number, four 13½ x 18 in. and two 9½ x 18 in. triple double acting. These will be driven by six Crossley gas engines rated in the aggregate at 2,600 b.h.p. It is hoped that this system will be in operation early next year.

THE PRODUCTION OF CEMENT IN 1905.

The cement industry in the United States in 1905 is the subject of a bulletin recently published by the Division of Mineral Resources of the U. S. Geological Survey.

The number of kilns in use naturally shows an increase, though not, however, corresponding to that of the industry itself. For example, of rotary kilns in 1902, there were 456 active, 9 idle and 46 in process of building; in 1905 there were 722 active, 23 idle, and 42 building.

But along with the increase in the number of kilns, there has been a marked increase in the rate at which the plants were driven, and also in the size of the kilns. For 1902, it is stated, each active rotary kiln averaged a total output of 36,909 bbls.; for 1905 the average output was 48,118 bbls. This increase of about 30% is attributed partly to more steadily driving, and partly to the use of longer kilns. It is estimated that in 1906 an average of over 50,000 bbls. per kiln per year will be

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