

NEW PUMPING EQUIPMENT AT BRACEBRIDGE, ONTARIO.

BRACEBRIDGE, Ont., has lately installed and put in operation some new electric-driven pumping equipment, to supply water at high pressure for fire service; or, alternatively, to double the quantity of water at half that high pressure. This system, known

per min. against a head of 60 lbs. They may otherwise be run in series, giving 800 Imp. gal. per min. against a head of 120 lbs. or they may be run singly, each giving 800 gal. against a head of 60 lbs.

Particular attention has been given to the testing of this equipment. Fig. 3 shows the equipment set up complete in the testing plant at Rockfield, Que., of the Canadian Allis-Chalmers, Limited, who manufactured the

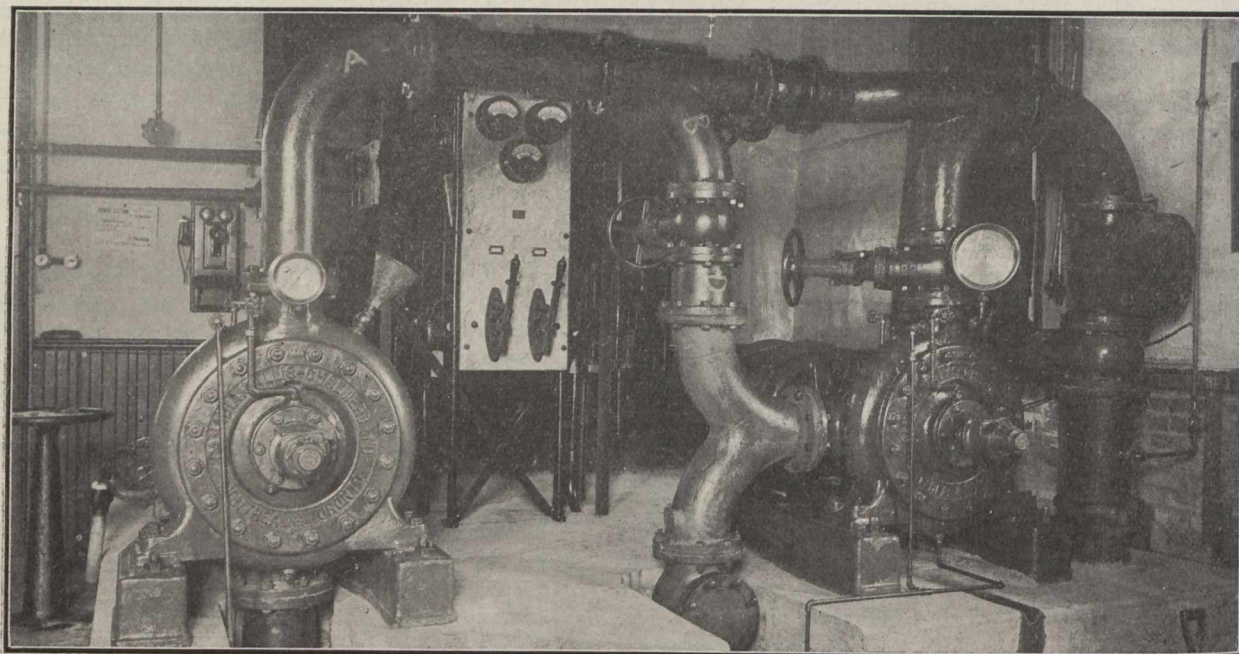


Fig. 1.—View of the New Installation at Bracebridge, Ont.

as the series-parallel arrangement of pumps, is one which is used quite frequently on municipal waterworks systems.

The equipment at Bracebridge consists of 2 single-stage Mather & Platt patent turbine pumps, each capable of pumping 800 Imp. gal. per min. against a total pres-

pumps. Curves giving the characteristics of the pumps at rated speed, as obtained in the test, are shown in Fig. 4.

After installation, which is illustrated in Fig. 1, the pumps were given a 24-hour run under fire pressure conditions. They were loaded on 4 fire nozzles. (Fig. 2.) To obtain the correct load on these pumps, with rated speed, the pressure was adjusted to that corresponding to the rated quantity of water, as shown in Fig. 4. After this duration test was completed the units were put into service.

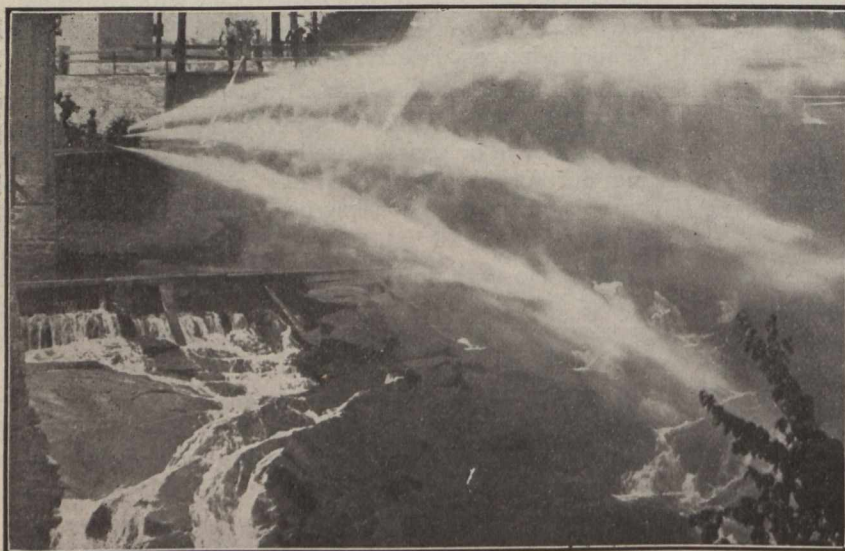


Fig. 2.—Four Fire Streams (one at a sharp inclination in the background) by Which the Pumps Were Loaded in the 24-hour Duration Test.

sure head of 60 lb. The piping, as shown in the accompanying illustrations, is arranged so that these pumps may be run in parallel giving a total of 1,600 Imp. gal.

Each pump is driven by a direct connected C.G.E. squirrel-cage induction motor rated 60 h.p., 3-phase, 60 cycles, 2,300 volts, 1,800 r.p.m. At the end of the 24-hour run these motors showed a shut-down rise in temperature of 26° C. in the iron and 21° C. in the coils, both being the hottest spots found. From the pump curves it can be seen that 53 h.p. are required to drive each pump at rated capacity, head, and speed, so that not only is ample power provided to drive the pumps but the temperature rise in the motors shows liberal rating. The idea of having ample capacity in the motor is to take advantage of the overload characteristics of the pump. These pumps are equipped with diffusion guides on exit.

Referring to Fig. 5, the advantage of the use of diffusion guides can readily be seen, when the pump is for waterworks systems or similar service. These curves are taken from two other actual pumps, one with