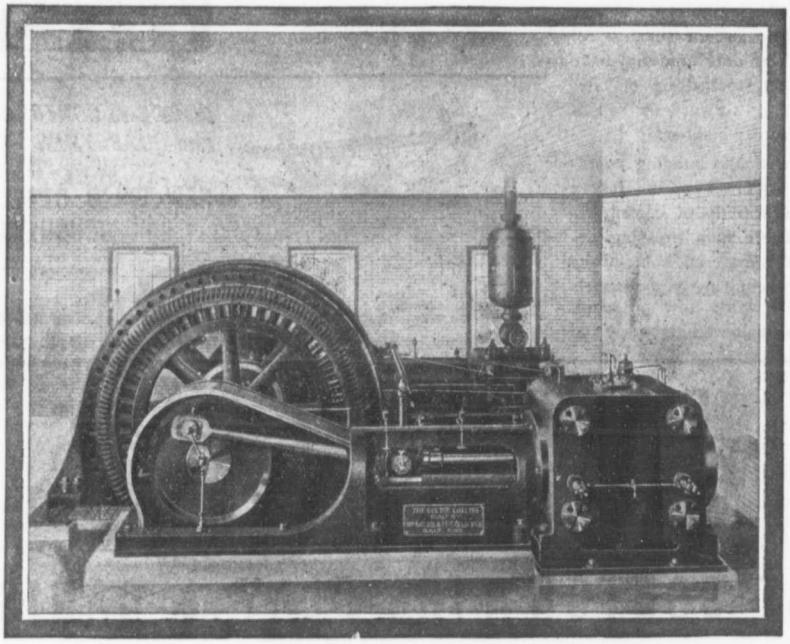
THE BARRIE MUNICIPAL LIGHTING PLANT

The first electrical installation was made in Barrie some sixteen years ago by a private company, the equipment comprising one 16 foot x 66 inch horizontal return tubular boiler, and a 14 and 28 x 36 Brown engine. A 133 cycle, single phase, 2,200 volt alternator of approximately 50 kilowatts capacity was installed, together with an equipment of direct current series arc machines. In 1899 the plant passed into the hands of the municipality, and was completely remodelled. The old boiler and engine rooms were made into one, and a 12 and 22 x 30 Wheelock engine was installed. Two new boilers, 16 feet x 73 inches, each containing 96 3 1-2 inch tubes, were purchased from the Goldie & McCulloch Company, A new smoke stack was built, and a 150 kilowatt, 66 cycle, S.K.C. generator of the two-phase type, wound for 2,200 volts, was installed. The arc machine equipment was enlarged, and new switchboards purchased for the two generators. The load on the plant steadily increased, until in 1903 it was found necessary to install meters.

Considerable controversy arose as to the frequency of the meters to be used, but this was finally decided at sixty cycles, and, as matters stand at present, every consumer using three lights or over is purchasing current on the meter basis. This made a material reduction in the load on the plant, but three years later it was found necessary to increase the capacity. This question was very carefully worked out, and we understand that the town has to-day one of the most economical equipments to be found in the Province of Ontario.

The old boiler house was considerably enlarged, and a new Backcock & Wilcox boiler was installed therein. This new boiler contains some 2,000 square feet of heating surface, and is designed for a working pressure of 165 pounds to the square inch A cross compound, high speed Corliss engine with steam actuated dash pots was purchased from the Goldie & McCulloch Company, and a 350 kilowatt, two phase, sixty cycle, 2,300 volt, 150 revolutions per minute, Bullock generator was mounted directly upon its shaft. This generator, which is shown in the illustration, was supplied by Allis-Chalmers-Bullock, Limited, Montreal.

The Goldie & McCulloch engine is designed to run in parallel with a second machine of this type which it is proposed to install in the present power house. The high pressure cylinder is 14 inch diameter x 30 inch stroke, and the low pressure cylinder 28 inch diameter x 30 inch stroke. The engine runs at a speed of 150 revolutions per minute. The flywheel is 12 feet in diameter and weighs 16,000 pounds. This engine is of the latest design and has heavy duty frame. The valve gear is of the Corliss trip type, fitted with steam actuated dash pots, which enable a quick cut-off to be obtained even with the high rotative speed at which the engine is running.



GENERATING UNIT, BARRIE LIGHTING PLANT.

There is also mounted on the shaft of the engine a double-flanged pulley 42 inches in diameter, which is used for driving a 17 kilowatt exciter, furnished also by Allis-Chalmers-Bullock. This pulley is mounted between the generator and the flywheel, and hence is not unsightly.

A 12 and 18 x 18 independent jet condenser was also purchased from the Goldie & McCulloch Company, and a heater of the open type was installed by the Canada Foundry Company. Two duplex, outside packed plunger pumps were supplied by the Deane Steam Pump Company, of Holyoke, Mass., and these, with the old duplex pump formerly used in the plant, comprise the feed water supply. One pump, operating under a Williams governor, supplies