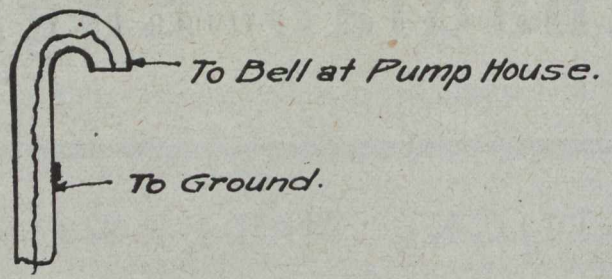
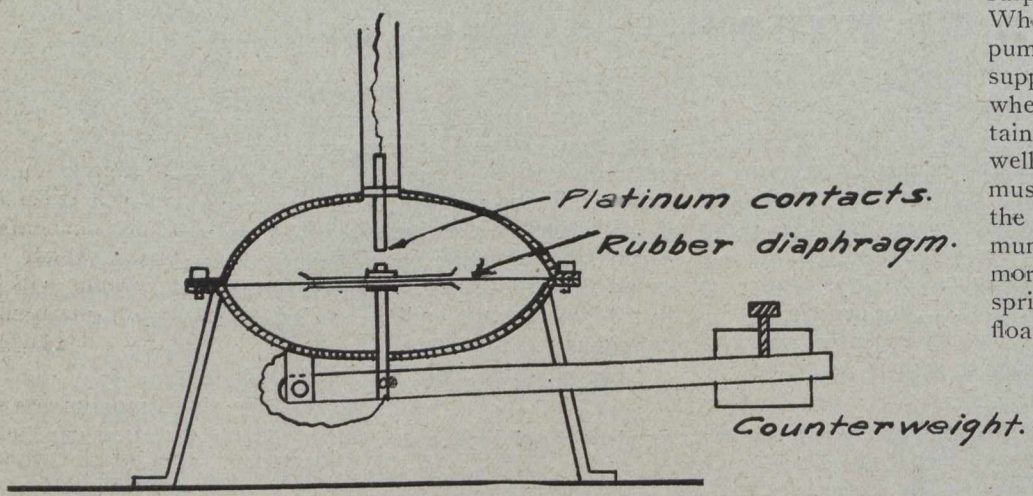


Water Level Alarm—Woodstock Waterworks.



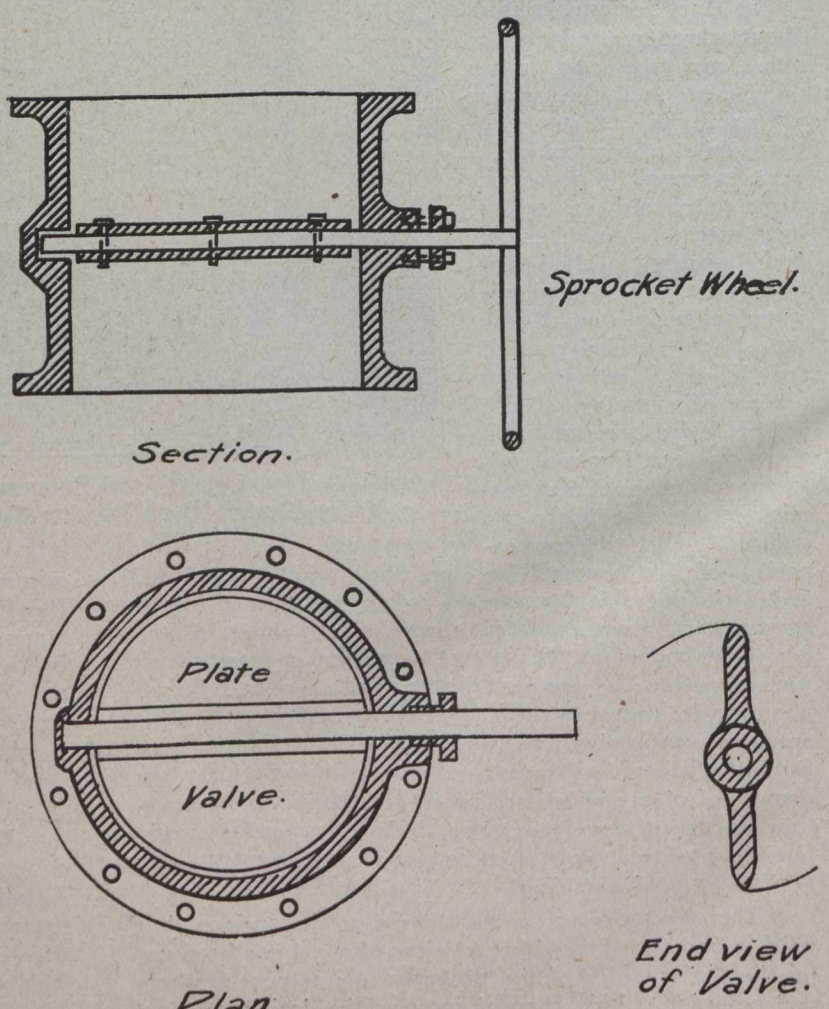
the supply of air is obtained from a small air compressor operated by a water motor mounted on the pump end. The air vessels are kept constantly charged with air so that a quick start can be made by the pump in case of fire.

The two steam boilers are Babcock & Wilcox double-drum type, each 220 h.p. with Moffat feed water heater and purifier supplied by Goldie & McCulloch, of Galt. The chimney is 120 feet high, 5 feet flue diameter, built of reinforced concrete by Webers, of Chicago. As the hydro-electric current is paid for on the basis of a 20-minute peak load, it is necessary to have the steam plant ready for operation within that time.

The Venturi meter is 10 inches diameter, 5-inch throat fixed as a part of the vertical delivery from the pump.

There are two 12-inch mains leading from the pump-house to the city and one 16-inch main leading from the pump-house to a one-million-gallon open reservoir on Wilson's Hill, standing about 190 feet above the pump-house floor. There is also an 8-inch connection from the 16-inch rising main to the city along Mill Street, with a non-return valve to prevent fire pressure discharging into the reservair. The reservoir is 150 feet long 80 feet wide and 12 feet deep, and is about 6,500 feet west of the pump-house. The electrically operated pumps have 12-inch suction connected to a joint 16-inch suction from the well, and the delivery connections are 10-inch. The well is 16 feet in diameter and 15 feet deep, built of brick and located by the building.

There are two devices installed which are interesting. First, the control valve in the delivery main and connected by a flexible line to a float in the well. There is a plate attached to a central spindle fixed at right angles to the axis of the vertical delivery pipe and is connected to an external sprocket wheel which in turn is connected by a flexible wire attached to a weighted float in the well. When the plate is horizontal it will allow about 400 gallons per minute to pass and when vertical, then the main is practically full open and the pump can deliver, say, 1,700 gallons per minute. The pumps are operated at full load to supply water direct to the city and the surplus is delivered into the reservoir. When the reservoir is about full the pumps are shut down and the city is supplied by gravity. It is necessary when operating the pumps to maintain a fairly uniform water level in the well; that is, the quantity pumped must be about equal to the flow from the springs so as to secure the maximum efficiency. If the pump raises more water than is coming from the springs the water level falls and the float causes the plate valve to check the quantity delivered. In this way the record on the Venturi meter chart is maintained at a relatively even line. In case of fire, water is returned from the



Main Delivering Control Valve—Woodstock Waterworks.