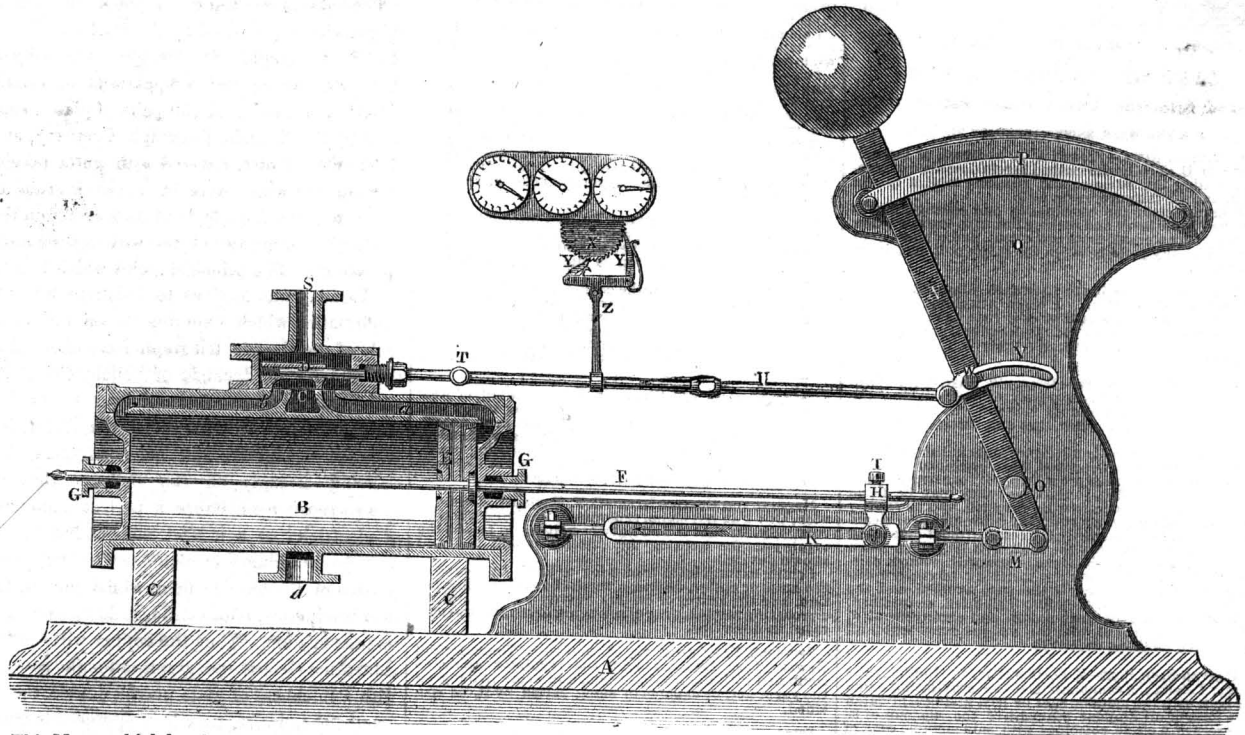




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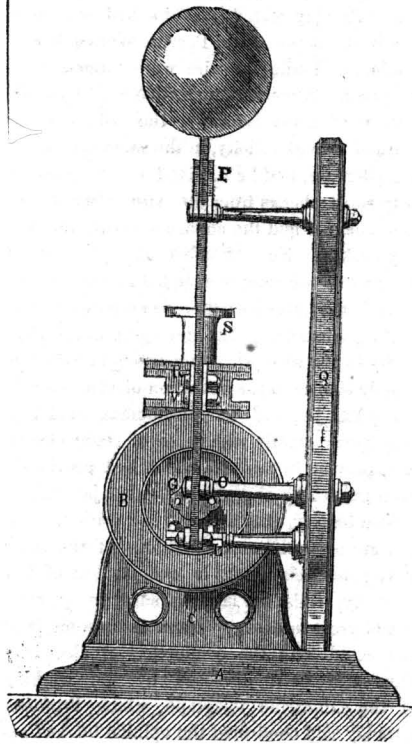
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This Meter which has been patented in this country and England, is a simple arrangement of a cylinder and piston, fitted up with slide-valves, for the ingress and exit of the water to

Fig. 2.



be measured; the cylinder, which is the actual measuring vessel, being filled at each stroke of the piston, after which the slide-valve is rever-

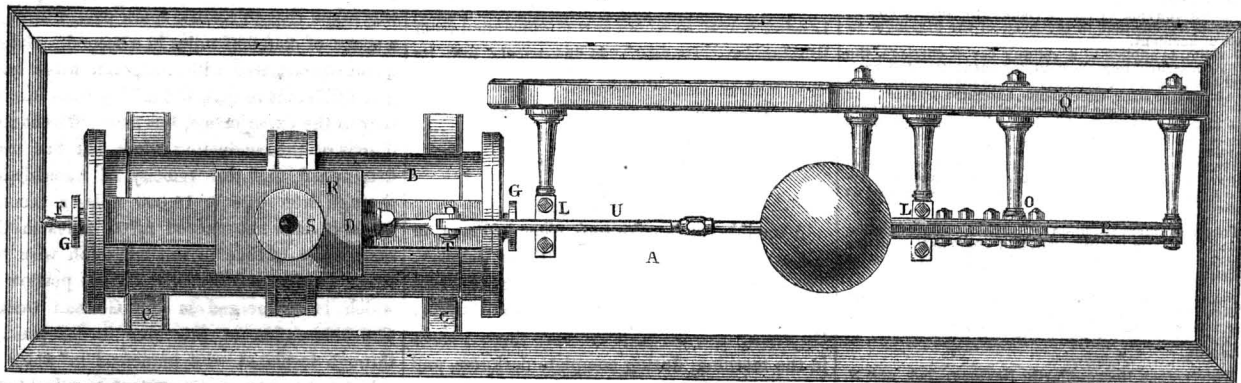
sed, when the water escapes, and a fresh supply is admitted on the opposite side of the piston. This action therefore keeps a reciprocating movement of the piston, and the registration of the measured fluid is effected by a counter attached to the valve-spindle, and actuated by the slide movement.

Fig. 1. is a sectional elevation of the meter complete; fig. 2 is a corresponding end view of the meter; and fig. 3 is a plan. At A, is a wooden or base-plate, for supporting the cylinder and working parts of the apparatus. The cylinder, B, is carried by the two vertical supporting brackets, C, and is fitted by a slide-valve, D, and piston, E, screwed on to the piston-rod, F. This rod passes through a stuffing-box, G, in each end of the measuring cylinder, and has a short adjustable arm, H, screwed to it near its outer extremity by a pinching screw, I. The lower end of this arm is fitted with a stud-pin, J, which works in the longitudinal slotted rod, K. This rod slides in the fixed bearings, L, which are bolted to the main vertical portion of the framing. The outer extremity of the slotted rod is connected by a short link, M, with the lower end of the vertical weighted tumbling lever, N, working on a fixed centre, O. The upper end of this lever is guided in its movements by the segmental guide-plates, P, which are carried by a pillar, Q, bolted to the main framing. The slide, D, is contained in the chamber, R, which is furnished with an inlet-pipe, S, and the spindle of the slide is jointed at T, to one end of the adjustable connecting-rod, U. The opposite end of this rod is jointed to the segmentally-

slotted plate, V, in which works a stud-pin, W, fitted into the lever. The slot on this segmental plate is rather shorter than the traverse of the pin in the lever, so that, when the lever is caused to oscillate or vibrate, a certain amount of traverse is given to the slide, D. The movement of the lever, N, is effected by the stud-pin in the slotted rod, K, the slot in this rod being shorter than the stroke of the piston; and consequently, when the pin arrives at the end of the slot, the further traverse of the piston slides the rod, K, in its bearings, and thereby turns the lever, N, on its fixed centre, O. The registration is effected by the ratchet-wheel, X actuated at every stroke of the slide by the pawls, Y, fitted to the T-lever Z, which is secured to the connecting-rod of the valve-spindle.

In measuring fluids by this meter, the fluid to be measured enters by the inlet-pipe, S, into the chamber, R, whence it passes along the open part, a, into the corresponding end of the cylinder, B. The pressure of the fluid forces the piston to the opposite end of the cylinder, thereby causing the pin, J, to traverse along the slotted rod, K, and move it in the direction of the arrow. This movement of the rod reverses the lever, N, which effects the movement of the slide, D, by means of the stud-pin, W, and slotted link, V. By this means, the port, b, is opened suddenly, and the fluid is allowed to enter the opposite end of the cylinder, thereby, forcing the piston back again, and consequently expelling the fluid which was contained above the piston; this fluid escapes by the egress port, c, which is now in communication with the inlet thoroughfare, a. A hollow

Figure 3.



zone or belt is cast round the cylinder, and forms the outlet for the fluid which pours into the source-pipe through the branch-pipe, d, cast in one piece with the cylinder. By fitting a moveable false bottom or end to the cylinder, so as to be capable of adjustment by an external screw or other movement, the capacity of

the cylinder may be regulated to the greatest nicety, by simply screwing or setting in or out the internal false bottom.

The American Patent of this invention was issued May 24, 1853. Any further information can be obtained by addressing the inventor, J. Hartin, 273 West 37th street, N. Y.

Valves of Locomotives.

On the 23d inst., a freight train on the Hudson river railroad ran into another, because the engineer was unable to reverse his engine, by the great pressure on the slide valves. Balance valves are wanted for our locomotives. One man was killed, and an another severely injured.