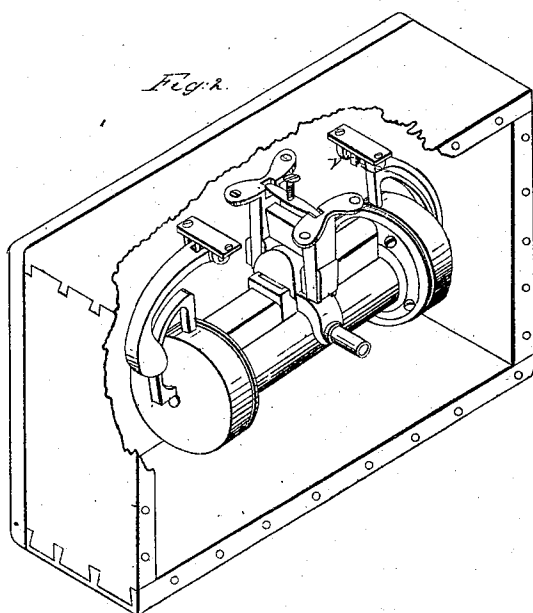
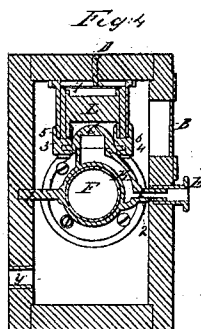
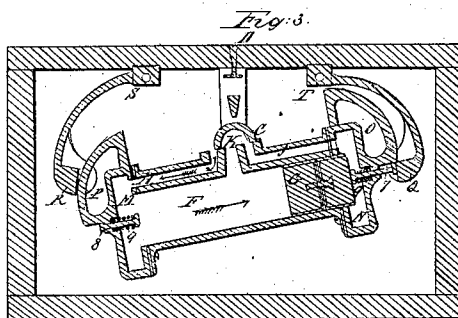
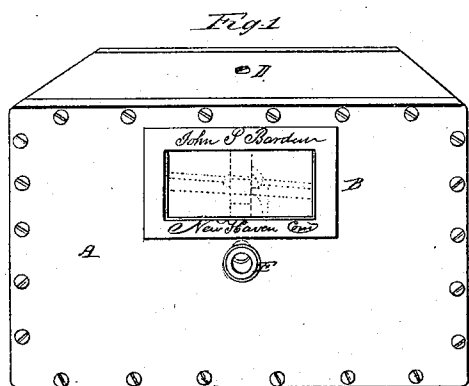


J. S. Barden,
Oscillating Meter

N^o 12232.

Patented Jan. 16, 1855.



UNITED STATES PATENT OFFICE.

JOHN S. BARDEN, OF NEW HAVEN, CONNECTICUT.

WATER-METER.

Specification of Letters Patent No. 12,232, dated January 16, 1855.

To all whom it may concern:

Be it known that I, JOHN S. BARDEN, of the city of New Haven and county of New Haven, State of Connecticut, have invented a new Improvement in Water-Meters; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon.

Figure 1 represents a perspective view of the case of the meter in which the machine of the same is contained. The front of the case A is secured to the sides of the same by means of screws or bolts which when repairs are required can be removed for that purpose. B represents an opening covered with plate glass, through which any derangement of the valve C, as shown in Figs. 3 and 4, may be seen without removing the plate A. D represents a set screw which regulates the springs that press upon the valve C. E represents the egress or delivery passage and stuffing box through which the water is drawn from the machine.

Fig. 2 represents a perspective view of the case with the front plate A, with part of the top and side removed showing the machine within.

Fig. 3 represents a longitudinal section of the case and machine.

Fig. 4 represents a cross section of the case and machine. F represents the cylinder which is suspended upon the two arms 1, 2 one on each side, directly in the center of the cylinder. (As to lengths and diameter.) The arm 1 may be supported as represented in the side of the box working in a journal or upon centers, the opposite arm 2 is hollow and forms part of egress passage, and is supported in the side of the front plate A, the joint being made tight by means of the stuffing box E. Upon these two arms (which are connected with the cylinder) and suspended by the two journals the cylinder is permitted to oscillate.

G represents the piston see Fig. 3, which may be packed as represented with two of the ordinary cup piston leathers one turned toward the right one toward the left or ring or ring packing and springs, and of sufficient weight to change the machine, thereby causing the cylinder F with its appendages to oscillate at each change of the piston in moving from one end of the same to the other.

H, J, are the ingress passages for the

water to pass into each end of the cylinder and out alternately, through the egress passage K arm 2, delivery passage and stuffing box E, as seen in Fig. 4.

C is the ordinary slide valve which covers the egress and one of the ingress passages alternately. This slide valve C is suspended upon two journals 3, 4, or centers being cast upon the valve, one on each side and supported in the boxes 5, 6 whereby the valve adapts itself to the motion of the cylinder as it oscillates, and is kept upon the valve seat by means of a spiral spring on each side of the hanger L, and within it pressing upon the top of the two boxes 5, 6. The pressure of these two springs is regulated by the cross bar 7 (which may be an elliptic spring of itself as represented) and the screw D as represented. See Fig. 4.

M, N, Fig. 3, represents two reservoirs—which are secured to each end of the cylinder by means of bolts and may be of any size required (while they act in a twofold capacity as heads to the cylinder) whereby the sediment that all waters are more or less subject to is permitted to collect upon the side of the same while the cylinder is kept free from such by the continual movement of the piston G from one end of the cylinder to the other, and is permitted to pass a little beyond the length of the cylinder, over and into the reservoir before the stroke is completed whereby any sediment that may have passed through the ingress passages and is not thrown out will fall into one of the two reservoirs, whereas, were it not for the heads of the cylinders being thus formed into reservoirs the sediment would collect in sufficient quantities in a very short space of time to prevent entirely the movement of the piston to the full length of the stroke, therefore any combination of machinery arranged to change the valve at the full completion of the stroke or a moment before would be interfered with and the machine would cease to operate till the heads were removed and cleaned and all other sediment drawn in taken out.

7, 8, Fig. 3, represents two small pistons which pass through the center of each reservoir and in line with the center of the cylinder, having around the same and on the inside of the reservoir a spiral spring for throwing the same back after the piston has left them alternately. An elliptic spring may be connected with each of these pistons

from the outside or within, or an india rubber spring may be placed around each piston on the inside of the heads or reservoirs for throwing the same back to their proper places after the piston G has left them. But I deem the spiral spring most preferable while the same may or may not be loosened to protect it from sediment that may collect upon them and prevent their movement to a certainty.

O, P, represents a guide and catch connected with each reservoir to guide and receive the latches Q, R, as they are thrown off by the pistons coming in contact with the small piston 7, 8, thereby pressing each one out alternately, sufficient to throw off each latch respectively whereby the weight of the piston causing the cylinder to drop, raising the opposite end sufficient to permit the opposite latch to fall of its own gravity into the receiving catch—which movement the position of the passages is changed. These latches Q, R, are suspended from the top of the case by means of the hinge joints S, T, as seen in Fig. 3. In each of these hinge joints is an india rubber bumper V, Fig. 2, for the purpose of removing any jar or concussion that may be caused by the falling of the cylinder the opposite end striking each bumper alternately at the completion of each stroke.

Y, Fig. 4, represents the opening through which the water is received from the fountain head into the case which acts as a reservoir; from thence it finds its passage into the cylinder through the ingress passage H, in the direction of the arrow behind the piston Fig. 3, forcing the same toward the right, thereby the water that was in front of the piston is forced out through the ingress passage I into the egress one K (the valve C covering the same to all outward communication) thence out through the arm 2 and stuffing box E. The piston near the close of the stroke comes in contact with the piston 7, pressing the same out sufficient to throw off from the catch O the latch Q when the cylinder from the weight of the piston drops, causing the opposite end to rise sufficient to allow the latch R, to drop of its own gravity into the catch P, by which means the position of the passages is changed the valve C covering the passage H thereby making a communication with it, and the egress one, leaving the ingress one J exposed to the pressure in the case from the fountain

head therefore the motion of the piston is changed forcing the water that was behind the piston out through the ingress passage H into the ingress one K, through the arm 2 and stuffing box E till it, the piston comes in contact with the small piston 8 pressing the same out sufficient to throw the latch R off the catch P. When the cylinder drops, the opposite end rises to permit the latch Q to drop of its own gravity into the catch O thereby the position of the passages are again changed, the valve C covering the opening I, and so vice versa at each completion of every stroke of the piston, while the spiral springs 9, 9, around each small piston 7, 8, brings them back to their respective places as soon as the piston leaves them while the amount of water that is drawn from the machine in gallons is marked upon an ordinary dial plate or indicator not shown constructed similar to clock work.

Having thus described my improvements, what I claim as new and wish to secure by Letters Patent is

1. The two heads being secured one to each end of the cylinder by means of bolts, in the form of reservoirs, for the purpose of collecting all sediment that may be drawn into the cylinder through the passages, and is not thrown out, or the collection of sediment upon their sides deposited from the water itself, without which the machine would in a short time cease to operate.

2. The two small pistons 7, 8, with the spiral springs attached in combination with the guide and latch O, P, the latches Q, R, suspended from above by the hinge joints S, T, and the bumpers attached the latches falling of their own gravity.

3. The construction of the valve C, suspended upon the two arms in connection with the hanger L, the two boxes 5, 6, the two spiral springs within the same, and resting upon the top of the said boxes, with the cross bar 7 and screw D, for regulating the pressure of the valve. Also in having the cross bar an elliptic spring resting on the boxes themselves. And finally the entire combination of the above parts for the object herein described.

J. S. BARDEN.

Witnesses:

A. C. WETMORE,
G. B. HAMAM.