READ & ELLIS.

Water Meter.

No. 94,132. Patented Aug. 24, 1869.

Fig. 1.

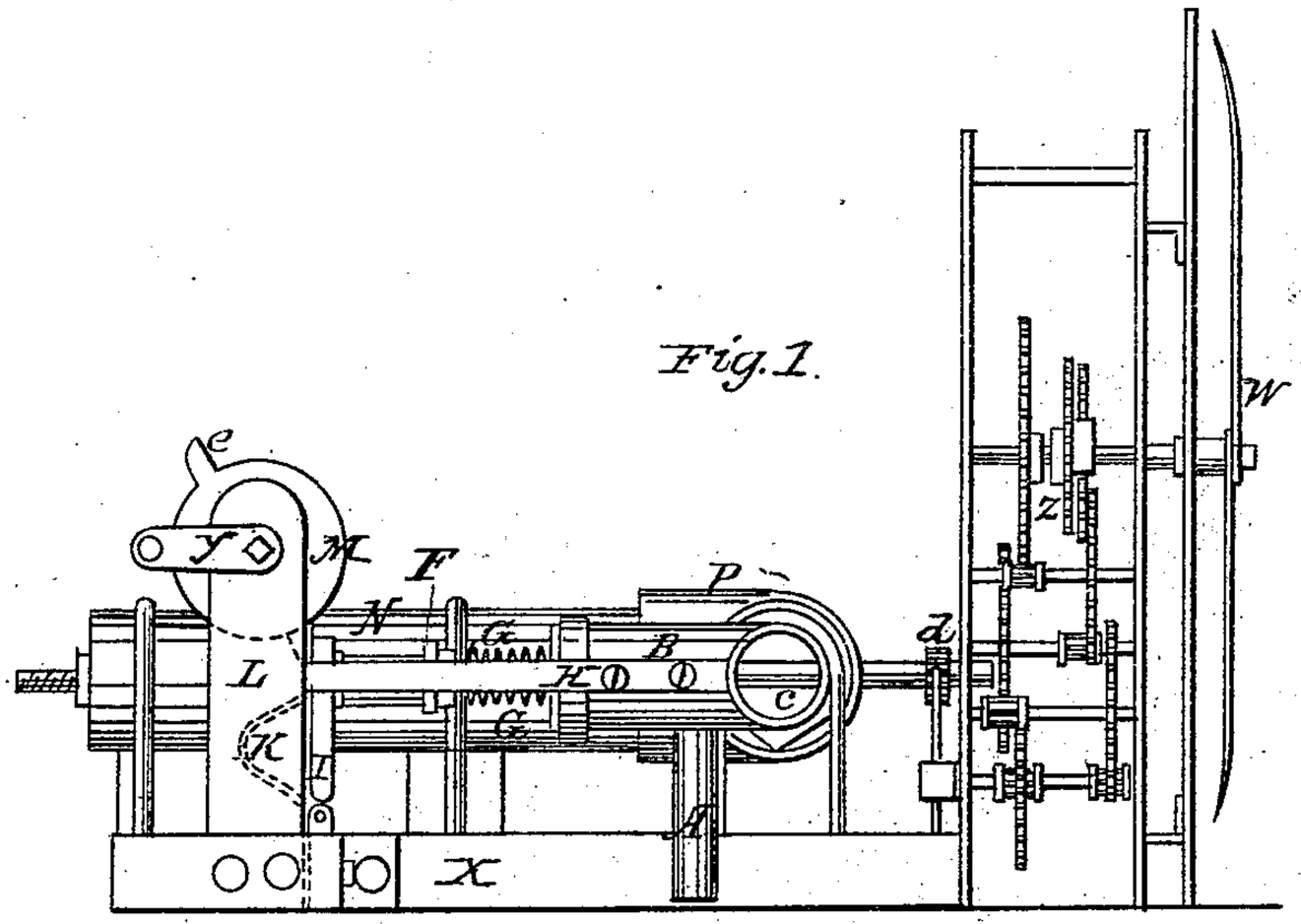
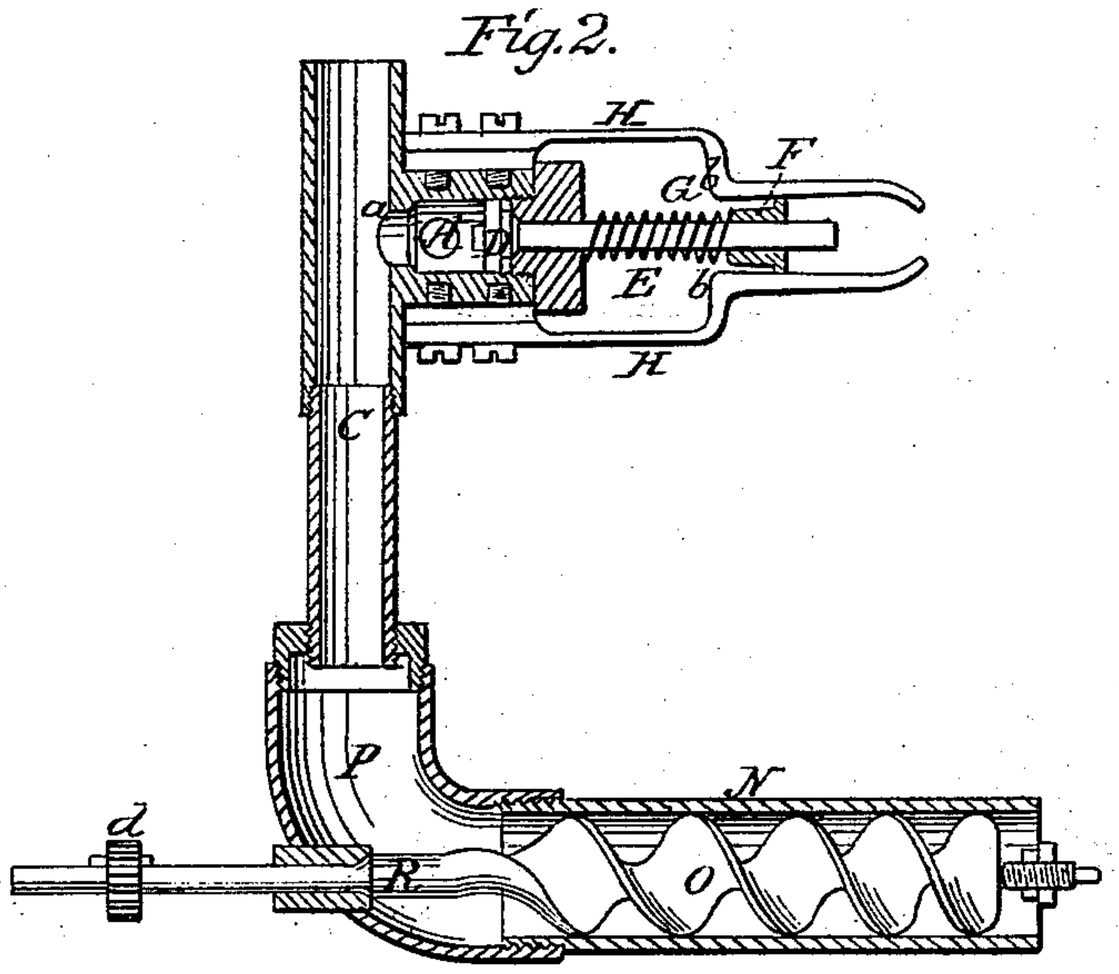


Fig. 2.



Witnesses
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THOMAS D. READ AND LEWIS M. ELLIS, OF ABERDEEN, INDIANA.

Letters Patent No. 94,132, *dated August* 24, 1869.

IMPROVEMENT IN WATER-METERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, THOMAS D. READ and LEWIS M. ELLIS, of Aberbeen, in the county of Ohio, and in the State of Indiana, have invented certain new and useful Improvements in Water-Meters; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of our invention consists in the construction and general arrangement of a "water-meter" and its several parts, as will be hereinafter fully set forth.

In order to enable others skilled in the art to which our invention appertains, to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side view of our meter, and

Figure 2 is a horizontal section of a part of the same.

X represents the frame or support for the machine.

A represents the inlet-pipe through which the water is introduced into the discharge-pipe B, which latter is placed at right angles with the main pipe C. This pipe is, at a suitable distance from the discharge-pipe, provided with an elbow, P, and extension-pipe, N, in which the mechanism for operating the indicator, to show the amount of water discharged, is placed, the water passing around and operating said mechanism, as will be hereinafter fully set forth.

The discharge-pipe B is provided with a valve-seat, *a*, at each end, that is, at the outer end, and at the point where said pipe connects with the main pipe C.

Through the outer end of the discharge-pipes passes a rod or plunger, E, which, within the discharge-pipe, is provided with a double valve-head, D, that fits the valve-seats *a a*.

It will be seen that when the plunger E is moved inward, the valve D closes the opening leading from the discharge-pipe into the main pipe, thus shutting off the flow of water, while, when the valve is moved to the outer end, the water has free passage.

The movement of the plunger with the valve is accomplished in the following manner:

Near the outer end of the plunger E is placed a collar or nut, F, between which and the outer end of the discharge-pipe B, around the plunger, is placed a coiled spring, G, which presses the plunger outward, holding the valve D away from the inner valve-seat *a*, so that the water can pass freely through the same.

On each side of the discharge-pipe B is secured a spring, H, of the peculiar construction shown in fig. 2, said springs having hooks or shoulders *b b*, which, when the plunger is moved inward to shut off the water, catch on the collar F, and hold the plunger in this position.

As soon as the springs H H, or rather the hooks *b b*, are released from the collar F, the coiled spring G at once forces the plunger outward, again allowing the water to pass through.

From a suitable point on the frame X, rises a hinged bar, I, the upper end of which passes up between the outer ends of the springs H H, and is held against the outer end of the plunger E, by means of a spring, K, shown in dotted lines in fig. 1.

On the frame X are also two standards, L, which form bearings for an axle or shaft on which a wheel, M, is placed, said wheel being on its periphery provided with two projections, *e e*, of sufficient size to strike and act upon the upper end of the hinged bar I, when the wheel is turned by means of a crank, Y, attached to one end of the axle.

By turning the wheel M in one direction, one of the projections *e* will strike the bar I on the outer side, pressing the same inward, and with it the plunger E, until the hooks *b b*, on the springs H H, catch on the collar F, shutting off the water as above described. When the wheel M is turned in the opposite direction, one of the projections *e* strikes the bar L on the inner side, moving it outward, which causes the springs H.H to separate, so that the hooks *b b* are released from the collar F, allowing the spring G to force the plunger E outward again.

In the extension or branch-pipe N, is placed a wheel, O, somewhat in the shape of the pad of an auger, the shank of which passes out through the water-tight valve R, in the elbow P, and is, outside of said elbow, provided with a cog-wheel, *d*, which connects, by means of clock-work *z*, or other suitable gearing, with an indicator, W. When the water passes through the pipe N, it causes the wheel O to revolve, setting the gearing or clock-work *z* in motion, so that the indicator will register the amount of water used.

Having thus fully described our invention,

What we claim as new, and desire to secure by Letters Patent, is—

1. The discharge-pipe B, connected with the inlet-pipe A and main pipe C, and having a valve-seat, *a*, in each end, substantially as shown and described.

2. In combination with the discharge-pipe B and its valve-seats *a a*, the double valve-head D, with its rod or plunger E, constructed as described and for the purposes set forth.

3. The arrangement of the discharge-pipe B, valve D, plunger E, collar F, and coiled spring G, all substantially as and for the purposes herein set forth.

4. The springs H H, when provided with hooks or shoulders *b b*, and used substantially in the manner and for the purposes herein set forth.

5. The arrangement of the wheel M, with projections *e e*, crank Y, hinged bar, I, and spring K, all substantially as and for the purposes herein set forth.

6. The arrangement of the elbow P, pipe N, wheel O, valve R, and suitable gearing to operate an indicator, substantially as shown and described.

In testimony that we claim the foregoing, we have hereunto set our hands, this 13th day of April, 1869.

THOMAS D. READ.

his

LEWIS × M. ELLIS.

mark.

Witnesses:

JOHN WELCH,

JAMES HEMPHILL.