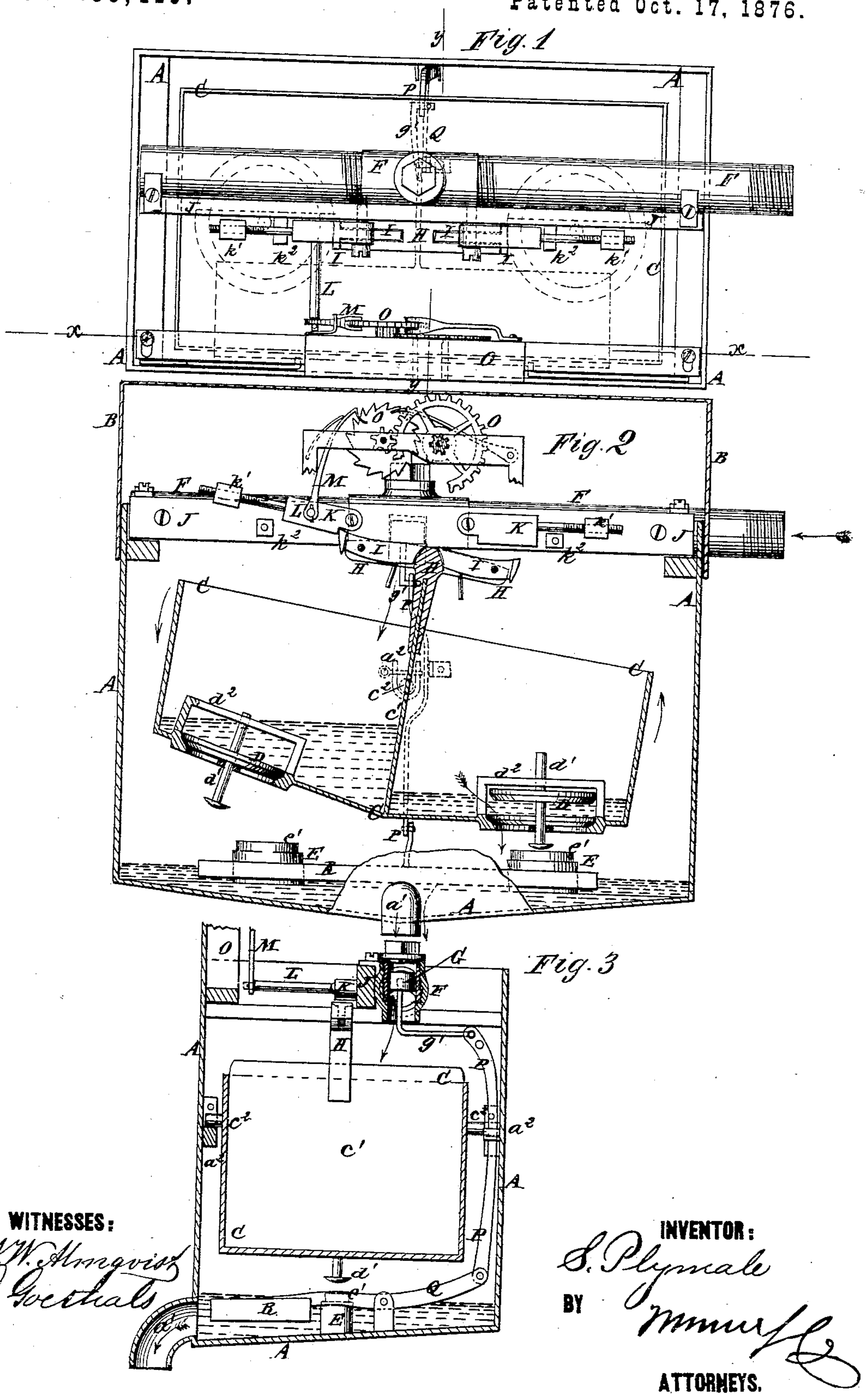
S. PLYMALE.

WATER-METERS.

No. 183,416. Patented Oct. 17, 1876.



WITNESSES:

A. W. Almqvist

J. Goethals

INVENTOR:

S. Plymale

BY Munn & Co

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

SEBASTIAN PLYMALE, OF PORTLAND, OREGON, ASSIGNOR TO HIMSELF AND THOMAS HUTTEN, OF SAME PLACE.

IMPROVEMENT IN WATER-METERS.

Specification forming part of Letters Patent No. **183,416**, dated October 17, 1876; application filed July 22, 1876.

To all whom it may concern:

Be it known that I, SEBASTIAN PLYMALE, of Portland, in the county of Multnomah and State of Oregon, have invented a new and useful Improvement in Water-Meters, of which the following is a specification:

Figure 1 is a top view of my improved water-meter, the cover being removed. Fig. 2 is a vertical longitudinal section of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a vertical cross-section of the same, taken through the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved water-meter simple in construction, inexpensive in manufacture, not liable to get out of order or become choked by sediment or other impurities passing in through the supply-pipe, and which shall be accurate in operation, measuring, and registering the entire amount of liquid that passes through it.

The invention consists in the combination of the slotted T-bar, the pivoted catch-bars, the pivoted weighted bars, the pin or rod, the pawl, and the ratchet-wheel, with the tilting tank, the case, and the register; and in the combination of the valve, the connecting-bar, the lever, and the float with the supply-pipe and the case, as hereinafter fully described.

A is the box or case of the meter, which is made rectangular in its general form, and with its bottom slightly inclined toward the point where the discharge-pipe a^1 is placed. The case A is provided with a cover, B, to prevent the operating parts of the meter from being tampered with. In the box or case A is placed a tank, *c*, which is divided into two equal compartments by a central partition, c^1. The tank C is balanced upon pivots c^2 attached to the middle parts of its sides, and which work in sockets or bearings a^2 attached to the sides of the case A.

The bottom of the tank C inclines toward the center, so that when tilted in either direction the bottom of the lower compartment may be level or nearly so. In the bottom of each compartment of the tank C is placed a valve, D, the upper part of the stem d^1 of which passes through a hole in a guide-bar, d^2, attached to the tank C. The lower end of the valve-stem d^1 projects below the bottom of the tank C, and has a head formed upon it, which, when the said tank C is tilted, strikes upon a stop, E, attached to the bottom of the case A to open the valve D and allow the water contained in said compartment to flow out.

A rubber block, e', is attached to the stop E for the head of the valve-stem d^1 to strike against to lessen the concussion. F is the supply-pipe, which passes through the upper part of the case A, and is provided with a valve, G, directly over the partition c^1 when the tank C is level. When the tank C is tilted the water from the pipe F flows into the upper compartment of said tank until that compartment overbalances the other and reverses the tank. This opens the valve of the full compartment, and allows the water contained in it to flow out, while the other compartment receives water. By this construction, exactly the same quantity of water must flow into each compartment each time to tilt it, and, by registering the number of times the tank C tilts, the exact amount of water that has passed through the meter is ascertained. To the partition c^1 of the tank C is attached a T-bar, H, the arms of which are slotted to receive the bars I, which are pivoted to the said arms. J is a bar that crosses the case A longitudinally, and the ends of which are secured to the ends of the said case A. To the side of the bar J, upon the opposite sides of and equally distant from its center, are pivoted the inner ends of two bars, K, upon the outer ends of which or upon rods attached to said ends are screwed adjustable weights k^1. The outer parts of the bars K rest upon stops k^2 attached to said bar J, and which are provided with rubber blocks to prevent concussion when the bars K drop upon them.

Upon the lower side of the inner ends of the bars K are formed shoulders to receive the ends of the pivoted catch-bars I. With this construction, as each end or compartment of the tank C rises, the outer end of the bar I toward that end of the tank strikes the inner end of the bar K, turns upon its pivot, and passes it. As the said end of the tank C descends, the outer end of the pivoted bar I strikes against

the shoulder of the bar K, and raises the said bar sufficiently to pass it. To the bar K is attached a rod or pin, L, to the outer end of which is pivoted a hook or pull pawl, M, the engaging end of which rests upon the teeth of the ratchet-wheel N, connected with the mechanism of an ordinary register, O.

As the bar K rises the pawl M slides up a tooth of the wheel N. As the bar K escapes from the bar I its weight draws down the pawl M and turns the ratchet-wheel N, and through it the register O. The other bar, K, acts simply as a counter-balance. The stem g' of the valve G projects downward, is bent to the rearward, and to its end is pivoted the upper end of the connecting-bar P, which passes down along the rear side of the case A, and to its lower end is pivoted the rear end of the lever Q. The lever Q is pivoted to a stud attached to the bottom of the case A, and to its forward end is attached a float, R, which, when the water is passing freely through the meter, rests upon the bottom of the case A. If the outlet a^1 should be stopped accidentally or purposely, the accumulating water in the lower part of the case A raises the float R, which closes the valve G, and prevents the inflow of any more water until the water in the lower part of the case A has run off and allowed the float R to again sink to its place. The supply-pipe F should be provided with a stop-cock, (not shown in the drawings,) to enable the entrance of water to the meter to be controlled and prevented when desired.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the slotted T-bar H, the pivoted catch-bars I, the pivoted weighted bar K, k', the pin or rod L, the pawl M, and the ratchet-wheel N, with the tilting tank C, the case A, and the register O, substantially as herein shown and described.

2. The combination of the valve G g', the connecting-bar P, the lever Q, and the float R, with the supply-pipe F and the case A, substantially as herein shown and described.

SEBASTIAN PLYMALE.

Witnesses:

JOSEPH SIMON,

C. A. DOEPLE.