

Griggs & Barrows,

Water Meter.

No. 87,166.

Patented Feb. 23, 1869.

Fig. 1.

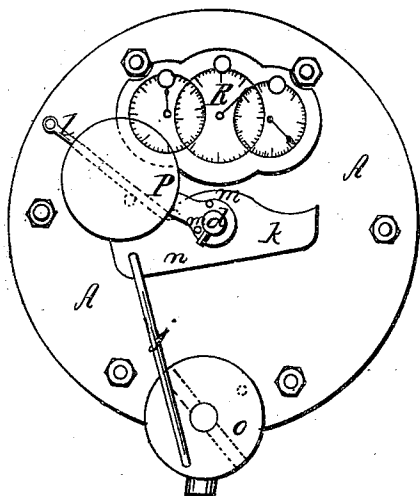


Fig. 2.

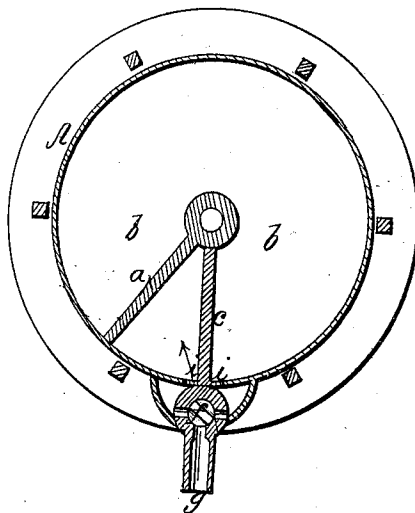


Fig. 3.

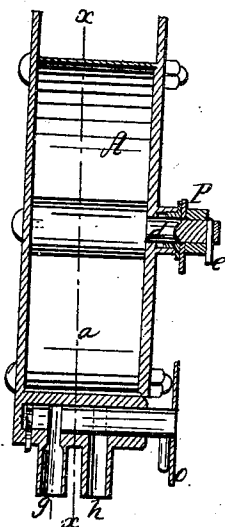
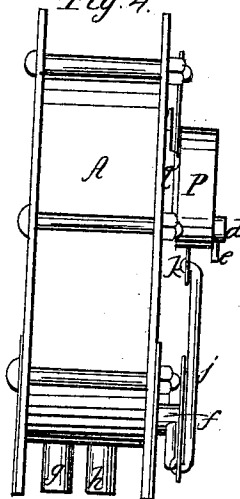


Fig. 4.



Witnesses;

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Inventors;

Oliver B. Griggs
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United States Patent Office.

OLIVER B. GRIGGS, OF MANSFIELD, AND EDWIN A. BARROWS, OF WINDHAM, CONNECTICUT, ASSIGNORS TO OLIVER B. GRIGGS.

Letters Patent No. 87,166, dated February 23, 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, OLIVER B. GRIGGS, of Mansfield, and EDWIN A. BARROWS, of Windham, both in the State of Connecticut, have invented a new and improved Liquid-Meter; and we do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation.

Figure 2, a vertical section of the case, the front plate, with the working-parts, being shown removed. This section is on the plane *x x*, fig. 3.

Figure 3 is a transverse vertical section.

Figure 4, a side elevation.

Like letters indicate corresponding parts in all of the views.

Our invention consists of a cylindrical case, having a radial piston affixed to a central hub or axis, and a fixed partition or butment extending from said hub to the periphery, said piston being alternately moved in opposite directions around the circle of the cylinder, from one side of the butment to the other, by the successive filling of the chamber with liquid from the induction-pipe, and actuating a lever and weight outside of the case, which, by falling, shift the induction-valve, and also actuate the registering-wheels by means of a lever and pawl.

As represented in the drawing, *A A* is the external case, and *a*, the piston which moves in the chamber *b b*, in alternately opposite revolutions, and is stopped before reaching the butment, or permanent division, by the shifting of the induction-valve, as hereafter described.

The induction-pipe *g* and eduction *h* are connected with the case, at or near the junction of the butment therewith.

The same valve, *f*, serves both, having ways for the induction and eduction, and is changed, to effect the filling of the chamber, through inductions *i i*, on each side of the butment, as hereinafter explained.

The water, or other liquid, entering through the pipe *g*, in the direction of the arrows, moves the piston around to the opposite side of the butment *c*, when the chamber having become filled, and the induction being instantly changed to *i*, the piston is actuated in the reverse direction, the water, at the same time, escaping through the eduction-way *h*, while the chamber is being again filled.

An arm, *d*, of the hub of the piston extends through the front side of the case, and has attached to its end the rigid pin *e*.

Pivoted loosely on this is the lever *k*, having two equal arms, and the ball or weight *P*.

A rod, *j*, connects one end of the lever *k* with a disk or arm, *o*, attached to the valve-stem *f*, so that the motion imparted to the lever is simultaneously transmitted to the valve.

This connection may be made by segmental gears on the parts *k* and *o*.

The piston-arm *d* turns freely in the lever, but as the piston is traversing around, the pin *e* is engaged

with one of two fixed pins *m m*, on the arm of the ball *P*, and carries the latter past the centre of gravity, when it suddenly falls on the lever *k*, and, by its weight, moves it far enough to shift the position of the valve *f*, so that the water is cut off from the chamber on the side of the butment from which it has been filled, and made to enter on the opposite side of the piston as the water admitted by the last stroke is escaping from the cylinder.

While water is being steadily drawn, this action is continuous, the piston moving alternately in opposite directions, and the weight changing the position of the valve, by falling first on one arm of the lever *k* and then on the other.

As the motion of the valve *f* is instantaneous, and is not directly communicated by the piston *a*, there is no liability to stoppage of the meter, when the valve is in its middle position, as is the case in many meters.

A modification of this valve will admit of its occupying the chamber *b b*. This consists in placing the induction and eduction-pipes both upon the back of the case, having each extended through the case by chambers elongated horizontally and bisected by the butment *c*. These chambers are covered with a disk, having two openings corresponding in position with the chambers, but smaller, so that the oscillation of the disk places the opening alternately in connection with the induction and eduction, on opposite sides of *c*. The movement of the valve is effected in the same manner as the other.

A pin, *n*, attached to the lever *k*, operates a lever, which works a pawl engaging with a toothed wheel in the register, gearing, and thereby putting in motion, a series of indexes, for recording the amount of liquid which passes through the cylinder, the contents of which are made to equal some definite measure; and, as this quantity must be equal in each oscillation of the piston, the water measured will be correctly indicated on the register.

The front side of the cylinder is made movable, and is secured to the back by bolts passing through the two sides. A spring may be applied to operate the valves, instead of the weight, with equivalent effect.

The apparatus is simple, cheaply constructed, durable, and invariably reliable in its operation.

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

1. The weight *P* and lever *k*, mounted on the same arm with the rotary piston *a*, in combination with said piston, the pins *e m m*, and rotary valve *f*, and operating substantially as and for the purpose described.

2. In combination therewith, the lever *l* and registering-apparatus *R*, substantially as and for the purpose described.

In witness whereof, we have hereunto signed our names, in the presence of two subscribing witnesses.

OLIVER B. GRIGGS.
EDWIN A. BARROWS.

Witnesses:

ELLIOT B. SUMNER,
C. H. FARNHAM.