W. Sewell,

Rotary Meter.

No. 7,075. Patented Feb. 5, 1850.

Fig. 3

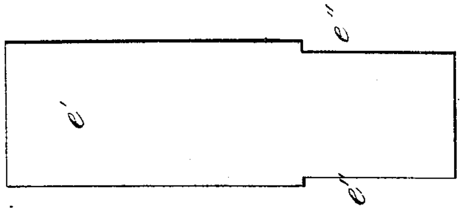


Fig. 2.

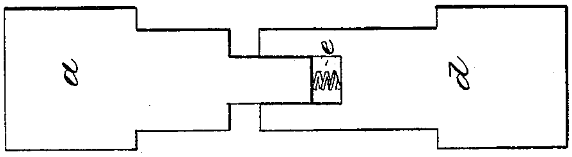
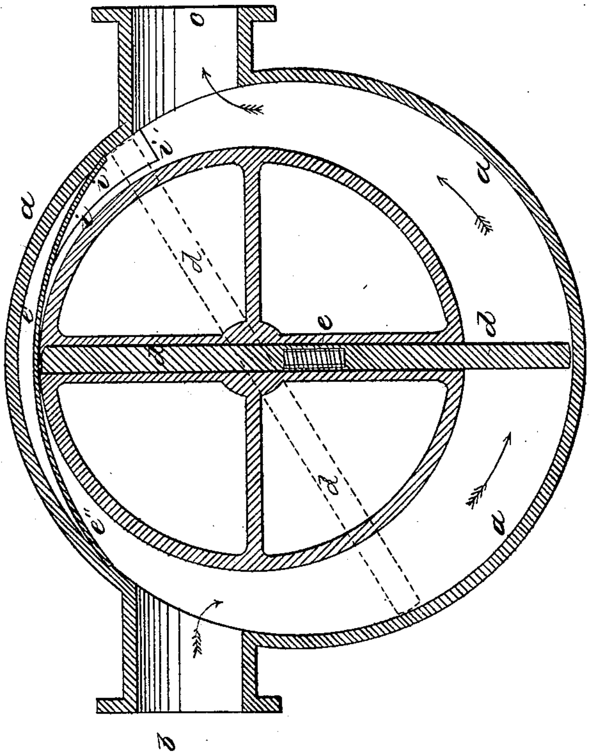


Fig. 1.



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

UNITED STATES PATENT OFFICE.

WILLIAM SEWELL, JR., OF WILLIAMSBURG, NEW YORK.

IMPROVEMENT IN WATER-METERS.

Specification forming part of Letters Patent No. **7,075**, dated February 5, 1850.

To all whom it may concern:

Be it known that I, WILLIAM SEWELL, Jr., of Williamsburg, in the county of Kings and State of New York, have invented a new and useful Machine for Measuring Water Passing Through Pipes; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes it from all other things before known, and of the usual manner of making, modifying, and using the same, reference being had to the accompanying drawings, in which—

Figure 1 is a section showing the interior of the meter. Fig. 2 is a plan of the wings. Fig. 3 is a plan of the flat spring.

My invention consists in arranging an apparatus so as to move with the least amount of force that can be attained and maintain the meter water-tight, or nearly so, and in affording the greatest capacity within a given compass.

The construction is somewhat like that of several rotary steam-engines heretofore made; but the friction is reduced and the parts modified to suit the purpose of passing a non-elastic fluid through the apparatus. It consists of a cylindrical chamber, *a*, formed of any suitable material, into which there are two tangential openings, one of which, *b*, serves for an inlet, and the other, *c*, for an outlet, connected with the main pipe and passing all the water from it through the meter. Within this cylindrical case there is a drum suspended a little eccentric to the case on axles that have their bearings in the sides of the case and revolving close enough to prevent any material leak. In the periphery of the drum are inserted two radial wings, *d*, opposite to each other, with their shanks interlocking, and a spiral spring, *e*, (see Fig. 2,) between them to keep a light and perfect bearing of their outer ends against the case and yield to any inequalities of the inner surface of the cylindrical case. The drum is so located as not to come in contact with the interior of the case on either side, a space being left all around it, as clearly indicated in Fig. 1. At the point where the interior of the case and periphery of the drum approach nearest, a flat metallic spring, *e'*, is placed, with its two ends resting against the interior of the case and the center part bearing upon the drum. A portion of the sides of this spring (see Fig. 3, *e'' e''*,) is removed at the end nearest the inlet-pipe, so that there will be a pressure of water behind it. The rest of the spring fits closely to the sides of the case. It will be observed that this spring relieves the machine from the shock or strain incident to the passage of the non-elastic fluid, and also yields back if the wing projects any and becomes obstructed. To permit that portion of the water that passes behind the outlet-pipe at *i* to escape backward without too much resistance, I form a recess, *i'*, in the side of the case for the purpose. By these arrangements I am enabled to obtain a greater capacity within the chamber than by the ordinary arrangements of rotary engines, and insure a greater ease and perfection of action and prevent the possibility of stopping should anything get between the wing and the spring.

Having thus fully described my improved machine for measuring water in its passage through pipes, what I claim therein as new, and for which I desire to secure Letters Patent, is—

The employment of a flat spring, *e*, with both sides of which the water as it enters communicates, substantially in the manner and for the purposes set forth, in combination with the wings, with an adjusting-spring in the center, by means of which improvements I relieve the apparatus from danger arising from obstruction in its movement and the strain caused by the transmission of a non-elastic fluid, and cause it to move with less friction than any other form with which I am acquainted.

WILLIAM SEWELL, JUN.

Witnesses:
WILLIAM GREENOUGH,
J. J. GREENOUGH.