

W. Mason,

Diaphragm Meter,

N<sup>o</sup> 16,284.

Patented Dec. 23, 1856.

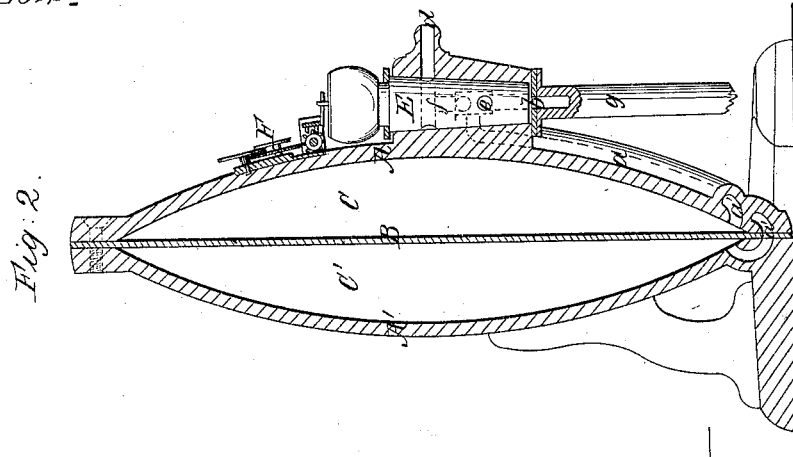


Fig. 1.

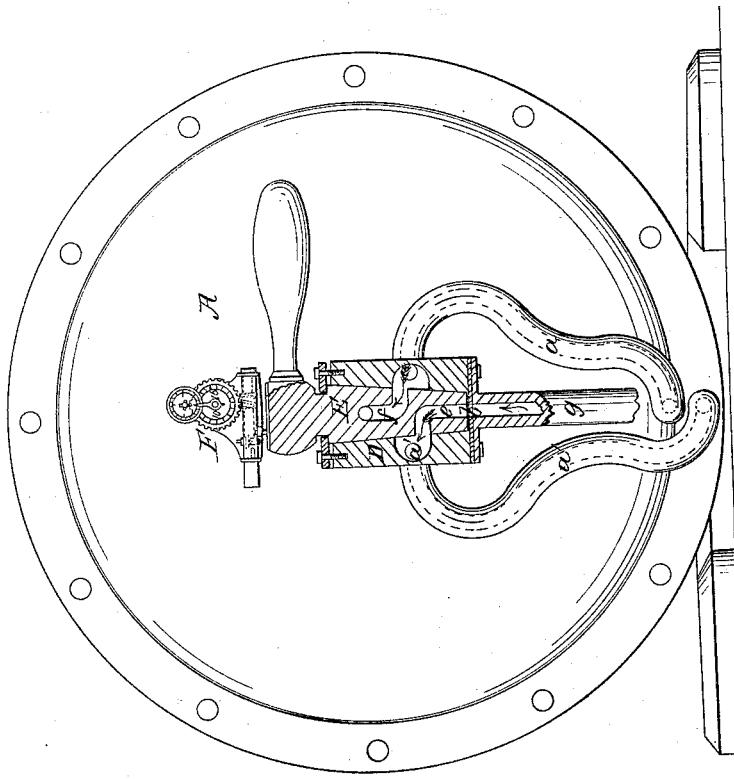
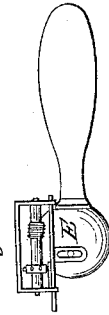


Fig. 3.



# UNITED STATES PATENT OFFICE.

WILLIAM MASON, OF WARREN, MASSACHUSETTS.

## IMPROVED DEVICE FOR OPERATING FLUID-METERS BY HAND.

Specification forming part of Letters Patent No. 16,284, dated December 23, 1856.

### *To all whom it may concern:*

Be it known that I, WILLIAM MASON, of Warren, in the county of Worcester and State of Massachusetts, have invented an Improved Meter for Water and other Fluids; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front view of the meter, partly in section. Fig. 2 is a central vertical section of the same at right angles to Fig. 1. Fig. 3 is a plan of the mechanism by which the registering apparatus is operated.

Similar letters of reference indicate corresponding parts in the several figures.

A A' are two concave metal disks with flanges.

B is a diaphragm of india-rubber secured between the flanges of the disks and dividing the space between them into two perfectly-separated chambers, C C'.

The disk A has attached to its exterior the seat D of a faucet-plug, E, from which seat a passage, *a*, runs to the chamber C and a passage, *a'*, to the chamber C'. The said seat also contains an inlet-passage, *b*, in its bottom, to which the supply-pipe *g* is connected, and an outlet-passage, *d*, in front. The faucet plug contains two passages, *e* and *f*, the former of which is always in communication with the inlet-passage *b*, and which by the turning of the plug half-way round may be made to bring the inlet into communication with one and the other of the passages *a a'*, and thus to admit water to the chambers C C' alternately. The passage *f* is of such form that when the passage *e* makes a communication from the inlet *b* to the passage *a* or *a'* it makes a communication from the other passage, *a* or *a'*, to the outlet *d*. By turning this faucet half-way be-

tween the two positions above mentioned all the passages are closed. The faucet, however, in itself is not claimed as new.

To operate the meter, the faucet-plug is turned to open the passages, and the water or other fluid, entering the chamber C or C' between one side of the india-rubber diaphragm and one disk, A or A', exerts a pressure on the diaphragm and forces the same toward the other disk, A' or A, until it fits closely thereto, thereby causing the fluid in the other chamber to be expelled through the outlet. As soon as one chamber is thus filled and the other emptied, which may be known by the fluid ceasing to run, the faucet-plug is turned half-way round by hand, and the fluid is then admitted to the chamber previously emptied, which forces the diaphragm back again and expels the fluid from the one previously filled. In this way each chamber is expanded to the full size of the meter in its turn and the other collapsed.

The faucet-plug has a suitable connection with a registering apparatus, F, by which the number of times the meter is filled and emptied is registered, and which, the capacity of the meter being known, is a correct index of the quantity of fluid consumed or drawn off.

What I claim as my invention, and desire to secure by Letters Patent, is—

The two concave flanged disks and the flexible diaphragm, combined as described, and provided with any suitable arrangement of passages and with a faucet or its equivalent to change the passages to admit water to each side of the flexible diaphragm alternately, the whole operating as and for the purpose set forth.

WILLIAM MASON.

Witnesses:

LUCIUS N. FAY,  
WILLARD W. FAY.