

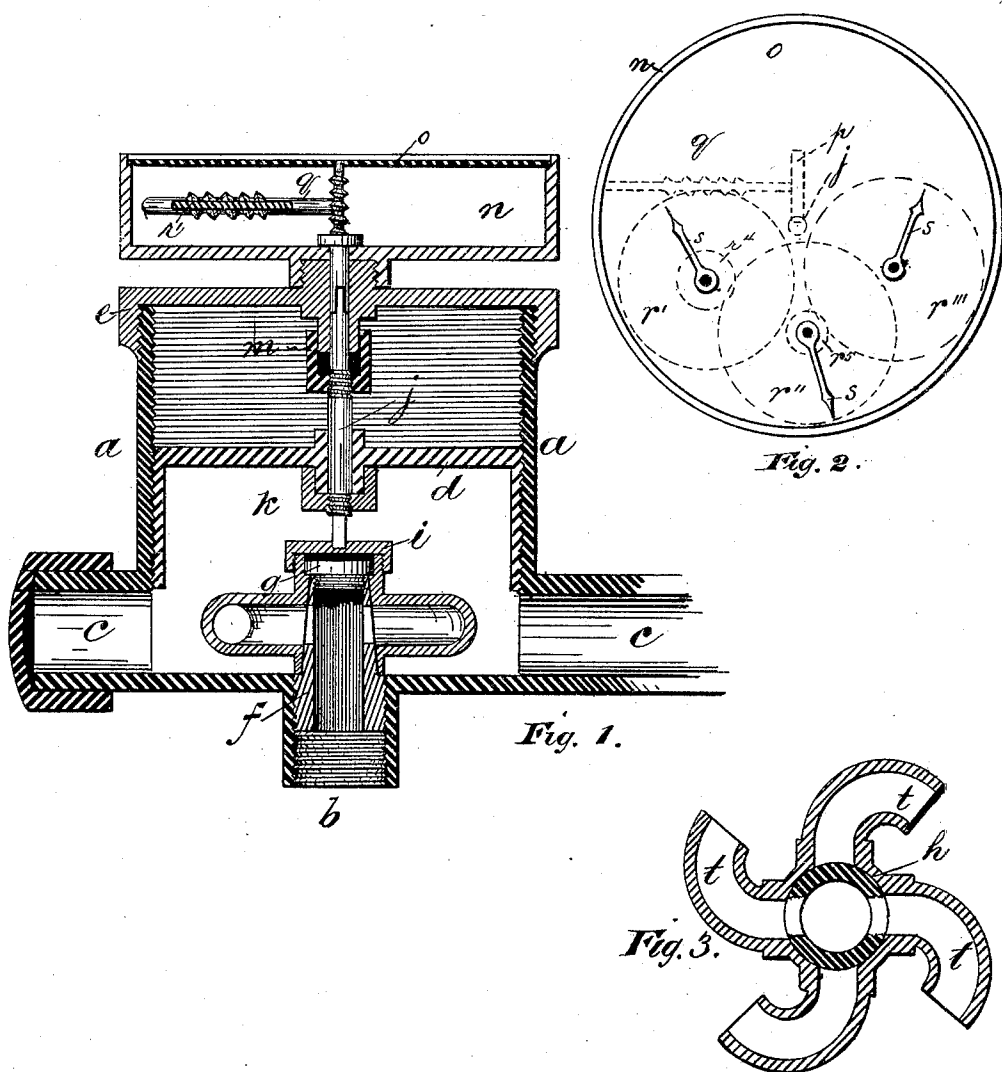
(No Model.)

H. FREDRICK.

ROTARY METER.

No. 271,233.

Patented Jan. 30, 1883.



Attest

Charles H. Bee
Chas. Herr.

Inventor:

Henry Fredrick, by
O. Drake. Atty.

UNITED STATES PATENT OFFICE.

HENRY FREDRICK, OF NEWARK, NEW JERSEY.

ROTARY METER.

SPECIFICATION forming part of Letters Patent No. 271,233, dated January 30, 1883.

Application filed September 16, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY FREDRICK, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Liquid-Meters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to reduce the cost of construction and facilitate and improve the operation of water-meters, and to measure the water with greater correctness than by means of those heretofore employed.

The invention consists in the arrangement and combination of parts, substantially as will be hereinafter set forth, and finally embodied in the claims.

Referring to the accompanying drawings, in which similar letters of reference indicate like parts in each of the several figures, Figure 1 is a sectional view of my improved meter, showing the internal arrangements of the parts. Fig. 2 is a plan of a dial for indicating the quantities of water passed the meter, showing the arrangement of a train of cogs, whereby the pointers above the said dial-plate are actuated to indicate said quantities. Fig. 3 is a detached sectional plan of rotating arms, adapted to be caused to revolve under the influence of the water, which arms actuate the several parts hereinafter mentioned.

In said drawings, *a* represents a box having an inlet-port, *b*, and exit-ports *c c*, also threaded side walls to receive a diaphragm, *d*, and a cap, *e*. Said diaphragm divides or separates the box *a* into an upper and lower chamber, the latter receiving and discharging the water through the ports. The upper chamber is separated from the lower so thoroughly as that no water can enter, as will be hereinafter described; but should a leak occur because of wear or imperfect workmanship the upper chamber, receiving such leakage, and being thoroughly disconnected from the indicating-

mechanism containing chamber *n*, prevents the access of water to said mechanism. Said inlet-port has or may have threaded side walls, and into the same is secured an upwardly-projecting tubular portion, *f*, having side ports therein, and having its upper extremity closed by a cap, *g*. Said projecting portion *f* receives the rotating arms *t*, the former acting as a pivot for the latter. The hub *h*, or connecting portion of the arm, is provided with a cap, *i*, having a central aperture therein, in which latter a rod, *j*, has a lower bearing. The connected arms *t* from their peculiar shape, hereinafter described, cause the rod *j* to revolve therewith, as will be apparent from the drawings, the cap *i* being rigid in its relation to the hub, and the bearing extremity of the rod being angular or otherwise formed, whereby said action is performed. The rod *j* passes upward through the diaphragm *d*, as shown in Fig. 1, a water-tight joint being formed at this point by means of the box *k*, secured upon the said rod and revolving therewith, covering a protuberance on the diaphragm, the parts being ground together to produce said joint. A similar joint is formed where the rod passes through the cap *e* of the water-meter, a second cap, *m*, being formed to engage with a projecting head. From the meter-box *a* the rod *j* passes upward into a second box, *n*, having a train of cog-wheels and other mechanism arranged therein, whereby the amount of water passing through the meter is measured. Said mechanism and cogs may be arranged in any appropriate manner to produce the result, the simplest method being, however, as follows: The upper end of the rod is provided with a screw-thread, as shown in Fig. 1, which thread engages with a small cog, *p*, Fig. 2, carried by the shaft *g*. Said shaft is provided with threads, which engage with and actuate the train of cogs with their pinions *q' q'' q''' q'''' q'''''*. The cogs are connected with and actuate the pointers *s* upon the face of the dial, which latter is provided with graduated scales, (not shown,) by which the quantities of water are indicated. The arms *t* are curved and tubular, as shown, and receive the water through the side openings in the tubular portion *f*. The greater the quan-

tity of water passing through the arms the greater will be the rotary speed of the same, as will be apparent.

Having thus described my invention, what I
5 claim, and wish to secure by Letters Patent, is—

1. In combination, in a water-meter, the box
10 *a*, having the diaphragm *d* and cap *e*, the tubular portion *f* projecting into the said box, having opening therein, the curved tubular
15 arms working on said projecting portions *f*, the rod *j*, actuated by the arms, and connecting the latter with the indicating mechanism, arranged in the box *n*, secured to the cover *e*, all said parts being arranged and operating substantially as set forth and shown.

2. In combination, in a water-meter, the box
a, having inlet and outlet ports, and curved and tubular arms and rod *j* working therein, of the diaphragm *d*, box *k*, cap *e*, box *m*, and box *n*, all said parts being arranged and operating substantially as set forth and shown. 20

In testimony that I claim the foregoing I have hereunto set my hand this 13th day of September, 1882.

HENRY FREDRICK.

Witnesses:

OLIVER DRAKE,
CHARLES H. PELL.