2 Sheets—Sheet 1.

W. H. CUSACK & E. B. VERONEE.

Rotary Water-Meter.

No. 210,841. Patented Dec. 17, 1878.

Fig. 1.

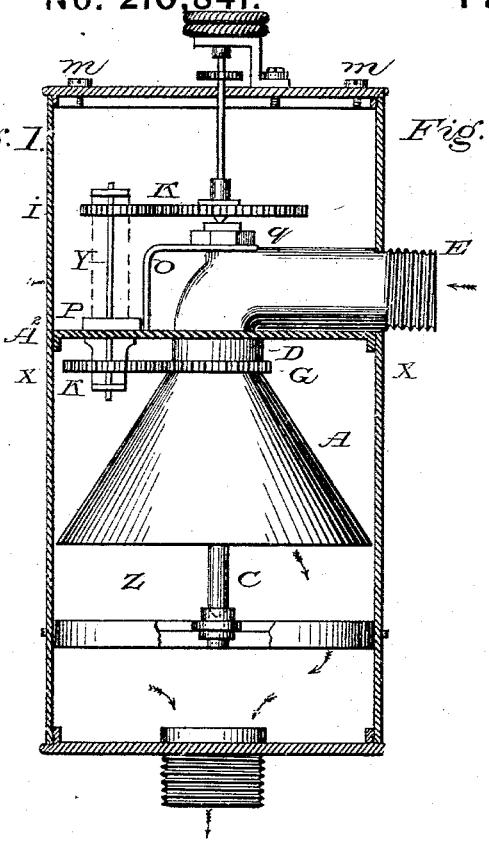

Fig. 2.

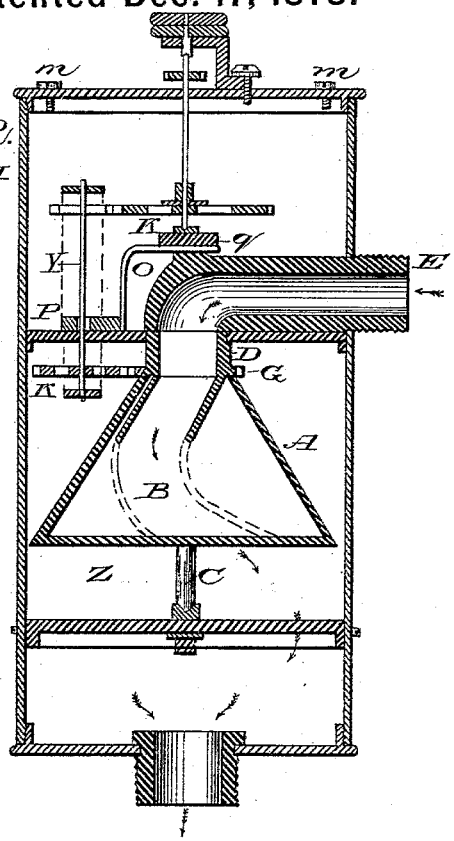

Fig. 3.

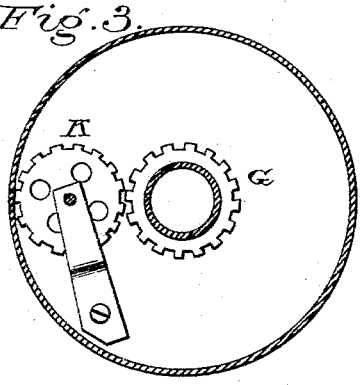

Fig. 4.

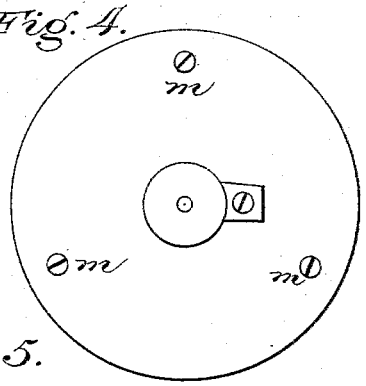

Fig. 5.

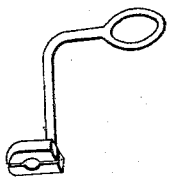

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Fig. 6.

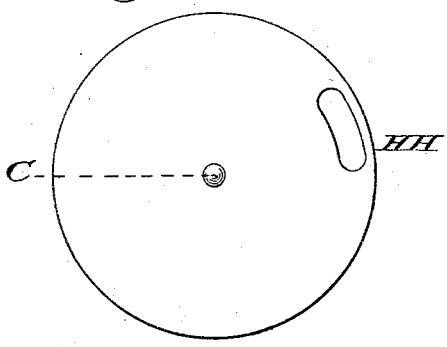


Fig. 7.

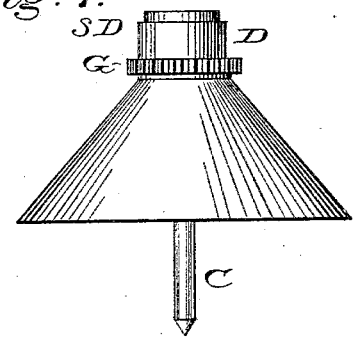
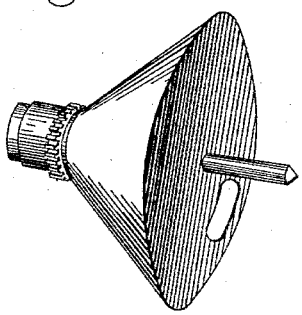


Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM H. CUSACK AND EDWARD B. VERONEE, OF NASHVILLE, TENN.

IMPROVEMENT IN ROTARY WATER-METERS.

Specification forming part of Letters Patent No. **210,841**, dated December 17, 1878; application filed October 25, 1878.

To all whom it may concern:

Be it known that we, WILLIAM HENDRIE CUSACK and EDWARD BYRON VERONEE, of the city of Nashville, Davidson county, State of Tennessee, have invented a new and useful Improvement in Water-Meters, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a sectional elevation, showing our invention, the case of the water-meter being shown in section, while the inner parts are shown in elevation. Fig. 2 is a section of Fig. 1, all the parts being shown in section. Fig. 3 is a transverse section on the line *x x* of Fig. 1, looking toward the top. Fig. 4 shows the top of the case I, showing where the registering mechanism may be attached. Fig. 5 shows the packing-spring O more in detail. Figs. 6, 7, and 8 show three views of the cone A. The first one shows the outlet of the tube B; the second view shows the short pipe D, which connects with the arm B, the annular cog-wheel G, and the pointed bearing C, and the rims S D, that fit in the lower part of the inlet-pipe E; the last view is a perspective of the above.

The object of our invention is to furnish a device by which to measure water as it flows from the main pipes of the city or corporation water-works, so as to protect the consumer, and the authorities who own the water, so that the consumer shall only pay for the amount of water that he actually consumes or uses, and no more, and the authorities or owners of the water shall be guarded against destructive waste, only receiving pay for what is their just due, and no more.

In Fig. 1 is shown the case I, which incloses the water-meter works. The water, entering the inlet-pipe E, is carried directly to the revolving hollow cone A through the short pipe D, which connects with the curved and hollow downward arm B, which is so curved as to produce, when the water passes through it, a centrifugal action, causing the cone A to revolve, the number of revolutions indicating the amount of water, through the train of wheel-work K K, which is set in motion by the annular cog-wheel G, which is adjusted to the top of the revolving cone A. This train of wheel-work is carried to the top of the case I, Fig. 4, where any suitable registering mechanism can be attached by means of the screws *m m m*. The cone A, which incloses the curved and downward hollow arm or tube B, (which causes the cone A to revolve,) is used for the purpose of overcoming or lessening the friction the arm B would otherwise have in revolving in the water, and thereby preventing a weaker stream of water to register.

This combination of the cone A and arm B is inclosed at the bottom, Fig. 6, only allowing the opening H H of the arm to come out.

The cone A and arm B are kept in position by the pointed bearing C in the lower chamber, Z, and by the upper end of the short pipe D, which abuts against and in the socket in the lower part or end of the inlet-pipe E.

The chamber in the upper part of the case I will be kept dry, by the stuffing or packing spring O, which will be held in position at P by the nut *q*. This spring P presses down on the packing and around it at the spindle Y. The spring is shown more in detail in Fig. 5.

In use and action the meter-case I will be full of water between the partition or diaphragm A^2 and the lower part, from which the water is drawn off. This water will act as a cushion to prevent any sudden jar by drawing or closing the water off.

The works or case may be made of any shape or materials suitable for the purpose. We would prefer brass, as not liable to get out of order by oxidation.

It will be seen, by carefully examining this water-meter, that the water and any impurities in the way of muddy or sandy water, or small eels or fish, that may occasionally enter, have only a continuous pipe to pass through until the water discharges itself into the lower chamber, Z, ready to be drawn off; also, that it is so arranged as to offer the least amount of friction; also, that its working parts are simple and inexpensive, and not liable easily to be deranged.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The arrangement and combination, in a water-meter, of a revolving hollow cone, A, inclosing a curved and downward hollow arm,

B, resting on the lower part on the pointed bearing C, and kept in position on the upper part by the short pipe D, which abuts against and in the socket of the pipe E, through which flows the water direct from the main water-work pipes, causing the above curved arm and cone freely to revolve, and forming a continuous pipe from the main water-work pipes to the point where the water is discharged into the lower chamber, Z, substantially as and for the purposes hereinbefore set forth.

2. The arrangement and combination, in a water-meter, of the hollow revolving cone A, inclosing the curved and hollow arm B, the partition or diaphragm A^2, the packing-spring O, and the annular cog-wheel G, adjusted to the top of the revolving cone A, which moves the train of wheel-works K K, to which may be attached any registering mechanism, substantially as and for the purposes hereinbefore set forth.

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EDWARD BYRON VERONEE.

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