

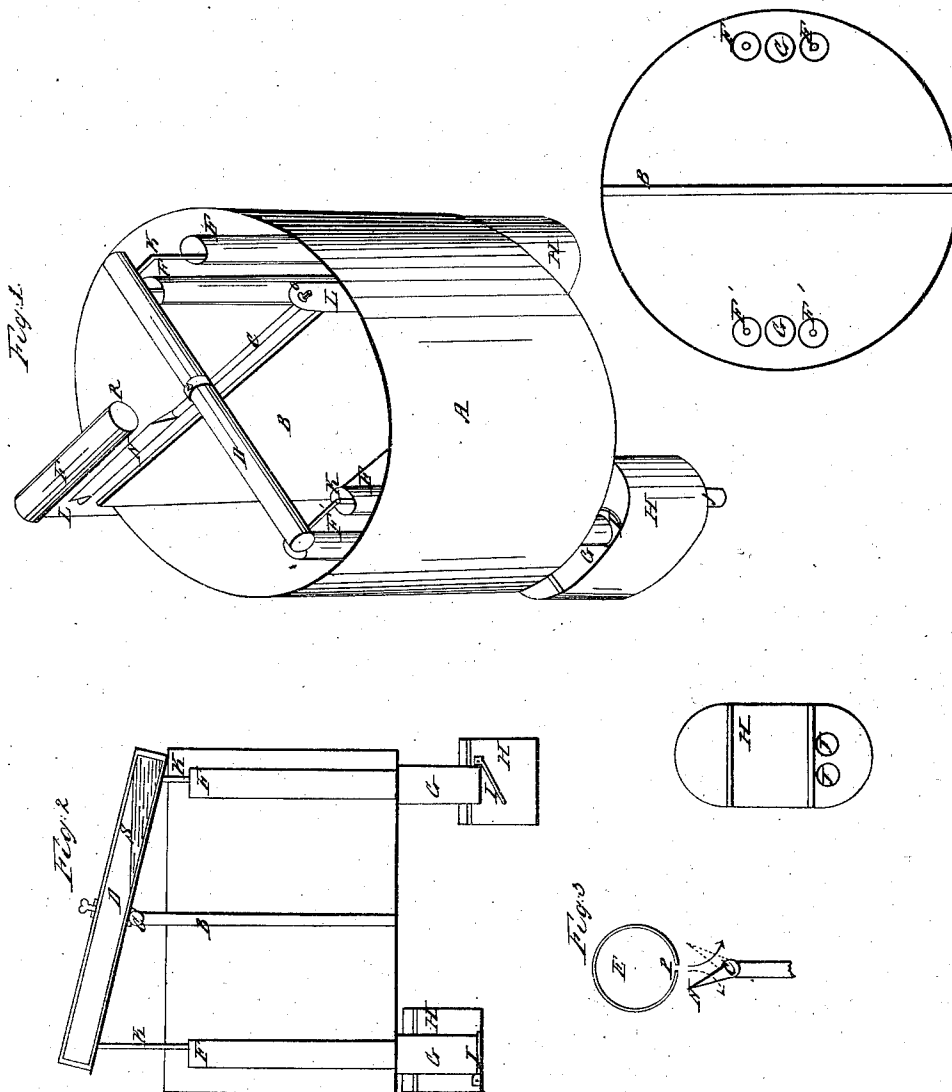
Sheet 1-28 Sheets

E. D. Weatherbee,

Oscillating Meter.

No 20,979.

Patented July 20, 1858.



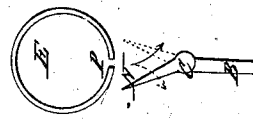
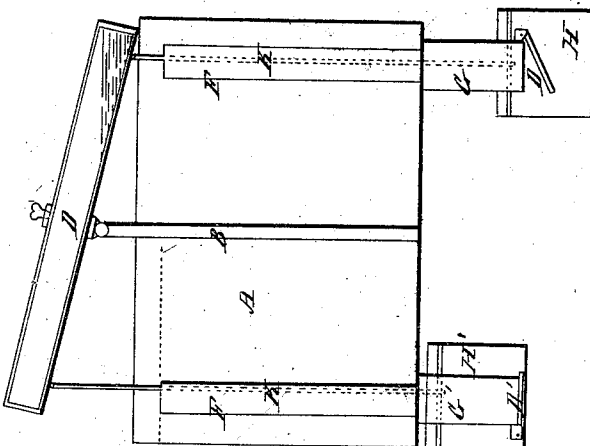
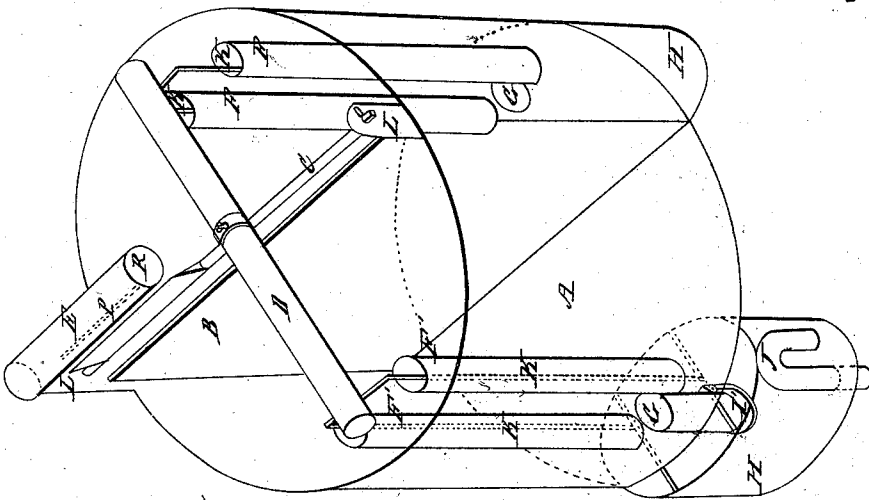
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E. D. Weatherbee,

Oscillating Meter,

N<sup>o</sup> 20,979

Patented July 20, 1858.



# UNITED STATES PATENT OFFICE.

E. D. WEATHERBEE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND LORENZO HARDING, OF SAME PLACE.

## FLUID-METER.

Specification of Letters Patent No. 20,979, dated July 20, 1858.

*To all whom it may concern:*

Be it known that I, EPHRAIM D. WEATHERBEE, of Worcester, in the county of Worcester and State of Massachusetts, have invented an Improved Apparatus for Measuring Water or other Fluids; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and to the letters of reference thereon, in which drawings—

Figure 1 shows the meter in perspective. Fig. 2 is a vertical section taken through the tube D lengthwise. Fig. 3 shows a cross section of the feed pipe E and vane N.

Similar letters refer to the same parts in all the figures.

To construct my meter, make a tight vessel A (the outside shape of which is not very material) having a partition B across its middle reaching from the bottom to a little above the top of the sides, and dividing the vessel into two equal parts. On the sides of the vessel make two supports L opposite to each other to hold the shaft C which lies across directly over the partition B. On this shaft C fasten the tube D at right angles to it. This tube is to have inside a proper quantity of mercury S or be otherwise suitably weighted the use of which will be hereafter explained. On the shaft C at one side of the tube D make a sharp edged vane piece N which shall stand upright when the tube D is level. The pipe E which conveys the fluid to be measured to the meter may be attached to the same support that holds that end of the shaft. This pipe E is closed at its inner end R but has a slot P through its under side to allow the fluid to flow out.

Near the sides of the vessel and nearly under the ends of the tube D place the four tubes F F F F two at each side. The holes in these four tubes extend through the bottom of the vessel and the tubes are fastened to it; between each pair of the tubes F put a short tube G projecting down below the bottom of the vessel, and having at their lower ends valves I' I opening downward. Under each pair of tubes F place two small vessels H' H suspending them by rods K K from the ends of the tube D, the rods passing down through the tubes F F; put in each of these vessels a siphon J the longer legs of which project down through the bot-

tom of the vessels and are fastened to the same.

To operate the meter, let on the fluid to be measured, by the pipe E out of which it passes by the slot P the vane N being inclined to one side by the tube D being tilted in that direction and held there by the weight of mercury in the lower end, the fluid will be directed into the opposite division of the vessel by the vane until it reaches to the top of the tubes F the valve I' being kept closed by the bottom of the vessel H' pressing against it and which is held up by the weight of mercury in the opposite end of the tube D but when the fluid gets to the top of the tubes F it flows over and down through them into the lower vessel H, which being filled overcomes by its weight the weight of the mercury in the other end of the tube D and causes it to be reversed, which reverses the vane N and turns the supply of fluid into the other division of the large vessel. When the small vessel H' sinks from the weight of fluid in it, it releases the valve I and this allows the fluid to flow out of the first division of the larger vessel into reservoir below and the small vessel H' is employed by the siphon J preparatory to being filled again, when the other side of the vessel has gone through with the same operation. Thus at each reversal of the tube D a certain quantity of fluid is measured off and by attaching to the end of the shaft at O a connection leading to a train of index wheels the number of times that the divisions of the vessel filled can be registered and the quantity of fluid passed ascertained.

I do not wish to be understood as confining myself to the exact shape or proportion herein described but to vary them as may be found convenient so long as I keep to the same principles or modes of operation.

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

1. I claim the arrangement of the weighted tube D with the vessels H and A when constructed and operating substantially as herein set forth.

2. I claim the combination of the siphons J J with the vessels H H and tubes G with valves I I for the purposes specified.

EPHRAIM D. WEATHERBEE.

Witnesses:

E. NEWTON,  
LYMAN L. HARDING.