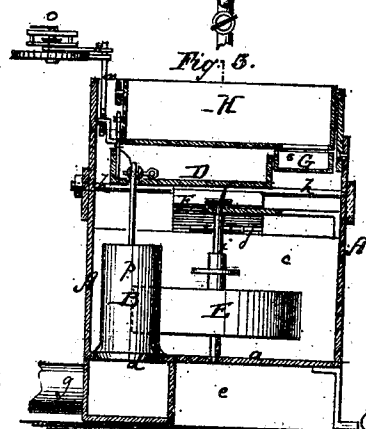
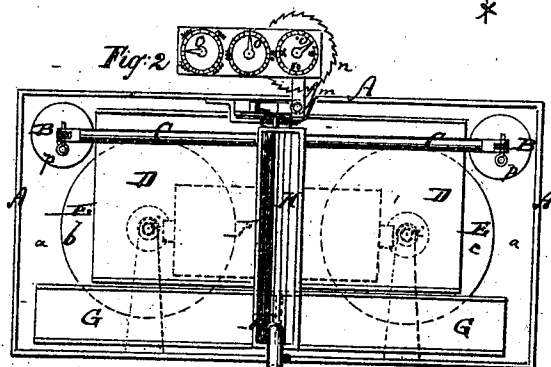
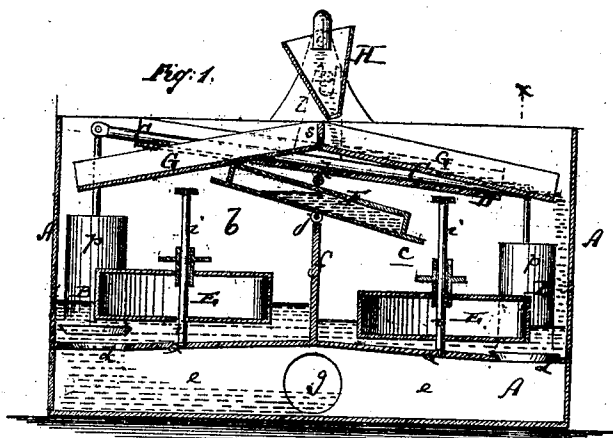


A. Buettner. Liquid Meter.

No. 113017.

Patented Mar. 28. 1871.



Witnesses:

G. Praetig.
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Inventor:

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PER

UNITED STATES PATENT OFFICE.

ANNA BÜTTNER, ADMINISTRATRIX OF THE ESTATE OF FRIEDRICH BÜTTNER,
DECEASED, OF NEW YORK, N. Y.

IMPROVEMENT IN LIQUID-METERS.

Specification forming part of Letters Patent No. 113,017, dated March 23, 1871.

To all whom it may concern:

Be it known that FRIEDRICH BÜTTNER, deceased, late of the city of New York, in the county and State of New York, did, during his life-time, invent a new and Improved Liquid-Meter; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

Figure 1 represents a vertical longitudinal section of the improved liquid-meter. Fig. 2 is a plan or top view of the same. Fig. 3 is a vertical transverse section of the same, *x x*, Fig. 1, being the section-line.

Similar letters of reference indicate corresponding parts.

This invention relates to liquid-meters; and consists in certain improvements thereon, which will be first described in connection with all that is necessary to a full understanding thereof, and then clearly specified in the claim.

A in the drawing represents a box or chest, of quadrangular or other suitable form, provided with a false bottom, *a*, and divided above said false bottom into two equal parts or chambers, *b c*, by means of a transverse partition, *f*. The bottom of each chamber *b c* has one aperture, *d*, leading to the lower chamber, *e*, under the false bottom, where the discharge-pipe is applied.

B B are valves for closing the apertures *d*, they being suspended from the ends of a beam, C, which is pivoted by a pin or shaft, *h*, to the sides of the box A. To the beam is secured, or with it is connected, a plate, D, which covers part of the box A, as shown.

Within the center of each chamber *b c* is set up a fixed post or pin, *i*, on which a float, E, is allowed to slide up and down.

F is a small longitudinal box, pivoted in the box A by a pin, *j*, which is parallel with the pivot *h* of the beam C, and directly above the partition *f*. The box F is thus under the beam C. It is partly filled with quicksilver, which serves to hold it in an inclined position.

G is the stationary trough for conveying the liquid to the chambers *b c*. It is higher in the middle, its lower open ends being respectively

above the chambers *b c*, and has a transverse partition across its highest part. Above it is pivoted the distributing-trough H, which extends across the upper part of the box A, but has an opening for the discharge of the liquid only above the trough G.

The trough H is pivoted at its ends, so that it can swing to be inclined to either side. It is, by means of forked arms *l*, or equivalent devices, connected with the beam C, so as to be moved by the same.

The operation is as follows: The water or other liquid to be measured is allowed to flow into the trough H, and is, by the opening in the same, discharged into that end of the trough G which is above the lowered valve B, the trough H hanging so inclined as to discharge the liquid only in the desired direction.

In the drawing the positions of the trough H and beam C are shown to be such that the water will flow to the chamber *c*, whose valve is closed. As the water rises in said chamber it will gradually elevate the float E until the same strikes the lower end of the vessel F.

When the chamber *c* has been filled to the desired height the float has been raised against the vessel F so as to tip the same over—*i. e.*, incline it to the other side—which motion, when the start is once given, is rapidly completed by the quickly-moving mercury.

The vessel F in swinging strikes with its elevated end against the lower end of the beam C, and swings the same over in the same manner, so as to open the valve in *c* and close that in *b*.

The same motion of the beam swings the trough H, so that the liquid will be discharged into the vessel *b*, while from *c* it will flow out through the opening *d*. There is thus a rapid change in the position of the distributing-trough and valves to change the flow of the liquid from *c* to *d*, and vice versa, as soon as the requisite quantity is in either.

By means of an arm on the rocking trough H, or on the pin *h*, motion can be imparted to a pawl, *m*, by which it is transmitted to a ratchet-wheel, *n*, and thence to a series of indicators or pointers, *o o*, in the ordinary or suitable manner.

Each valve B has the greater part of its surface covered by a pipe or hollow case, *p*, which

projects above the height to which the liquid rises, so that thereby the liquid is prevented from weighting the valve and obstructing its elevation.

Having thus described the invention of FRIEDRICH BÜTTNER, deceased, I claim as new and desire to secure by Letters Patent—

A case, *p*, applied as described to the valve B, for the purpose of preventing the latter from being weighted by the liquid.

ANNA BÜTTNER.

Witnesses:

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