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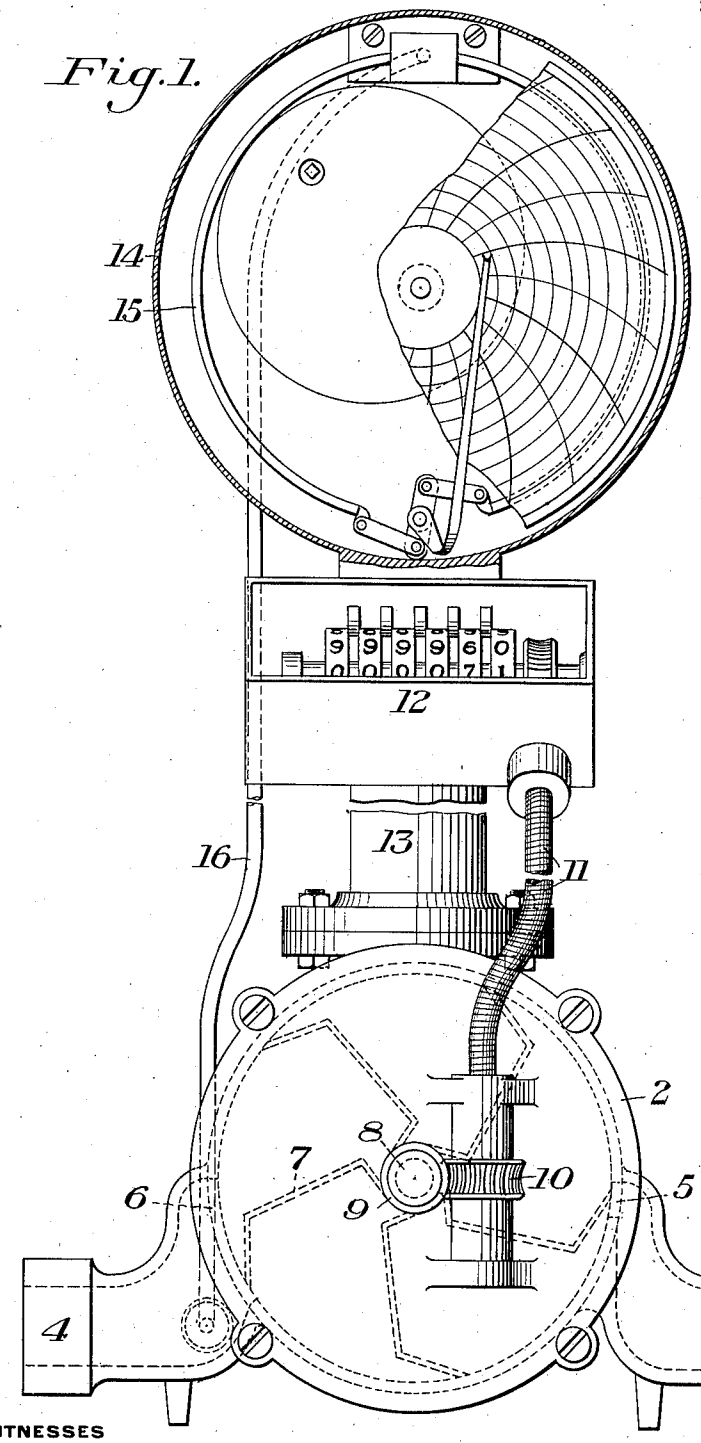
LIQUID METER.

APPLICATION FILED MAR. 21, 1912.

1,093,808. Patented Apr. 21, 1914.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES

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2 SHEETS—SHEET 2.

Fig. 3.

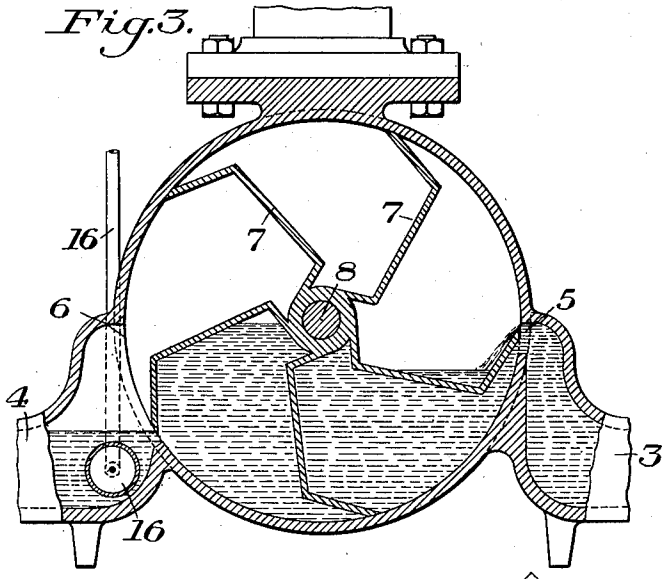
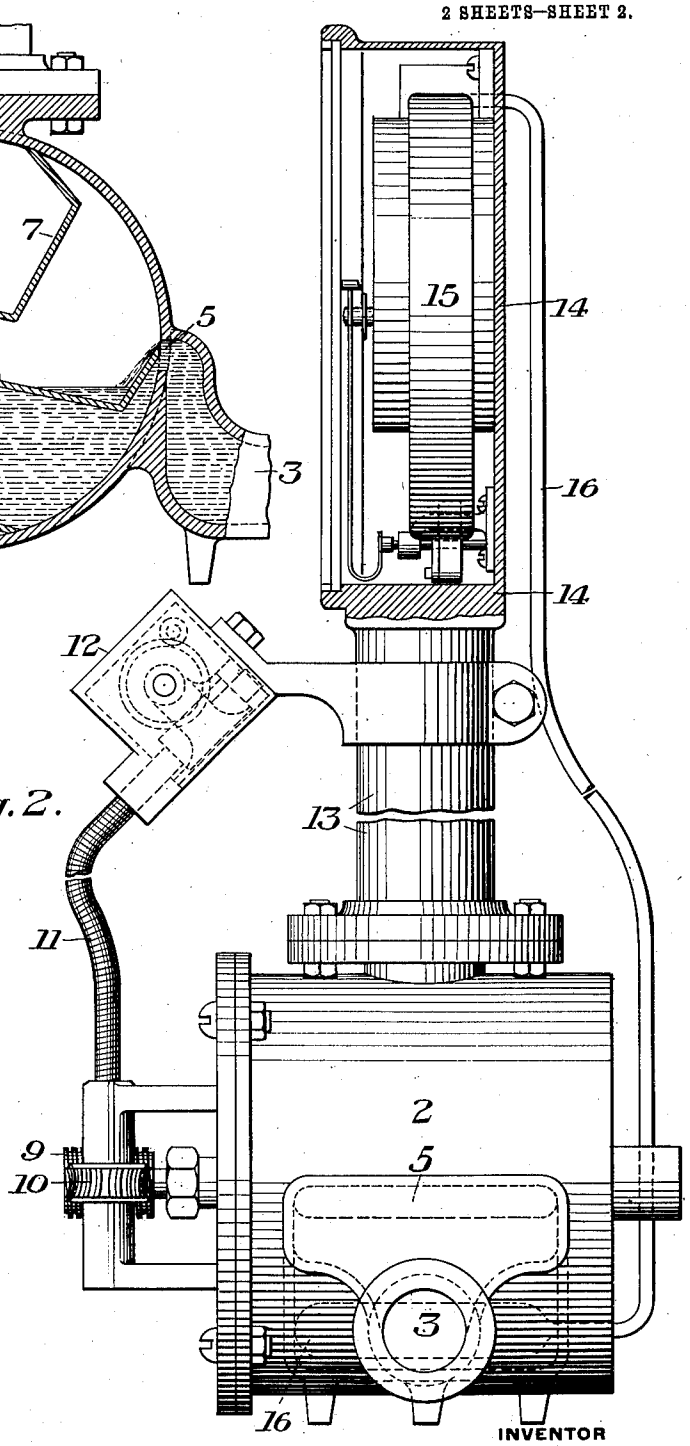


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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LIQUID-METER.

1,093,808. Specification of Letters Patent. Patented Apr. 21, 1914.

Application filed March 21, 1912. Serial No. 685,317.

To all whom it may concern:

Be it known that I, WERNER I. STAAF, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Liquid-Meters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end elevation, partly broken away, of a meter embodying my invention; Fig. 2 is a side view, also partially broken away; and Fig. 3 is a sectional view of a portion of the meter.

My invention has relation to liquid meters, and is designed to provide a meter of simple and efficient character which will measure either the weight or volume of the liquid passing therethrough, and which also has means for recording and indicating the temperature of the water.

The nature of my invention will be best understood by reference to the accompanying drawings, in which I have shown my preferred embodiment thereof, which will now be described, it being premised, however, that various changes may be made in the details of construction and arrangement of the parts, without departing from the spirit and scope of my invention as defined in the appended claims.

In these drawings, the numeral 2 designates a cylinder, having an inlet connection 3 and an outlet connection 4, for the liquid to be measured. These connections are at the lower portion of the cylinder at opposite sides; but the inlet orifice 5 is well up toward the horizontal center line of the cylinder, the upper edge of the orifice being preferably at or near such horizontal center line. The outlet orifice 6 also has its upper edge preferably extended up to the horizontal center line of the cylinder, and its lower edge is carried down considerably below the lower edge of the inlet orifice, so as to give an extended discharge opening in the direction of the movement of the meter blades or buckets.

7 designates the blades or buckets, a plurality of which is carried by central shaft 8, which extends longitudinally of the cylinder and revolves therein. These blades are preferably of spider leg form, so that when they are brought into receiving position, as shown at the right-hand side of Fig. 3, they form relatively deep buckets, with upwardly extending, outwardly directed, outer end walls or flanges. As this flange of each bucket uncovers the upper edge of the inlet orifice 5, a portion of the entering water or other liquid flows over the upper edge of the flange into the bucket, while another portion of the liquid can flow below said flange and into the space below the bucket. Therefore, I insure the complete filling of the space between each two adjacent blades or buckets, while at the same time I provide for a sufficient current of water to keep the buckets in motion. This is also assisted by the weight of the water which collects in each bucket while it is passing the inlet orifice 5.

On the outer end of the shaft 8, I provide a suitable gear wheel 9, which meshes with another gear wheel 10, the latter driving a flexible shaft 11, which is connected up to and drives a suitable register 12. This register is of any well known form, and may be made to indicate either weight or volume of water.

Rising from the cylinder 2 is a post or column 13, upon which is mounted a case 14, containing a recording thermometer 15. This thermometer may be of any well known character, and may be driven by clock work, or in any usual way.

16 is the thermometric element, which actuates the pencil of the recording thermometer, and which is carried downwardly and into the outlet connection 4 of the meter so as to be affected by the temperature of the outgoing water.

My invention provides an extremely simple and convenient form of meter, by means of which either the weight or volume of water, or other liquid may be registered, and which will also make a continuous record of the temperature of the water.

What I claim is:—

1. A liquid meter, comprising a cylinder having an inlet opening at one side and an outlet opening at the opposite side, a horizontal shaft journaled in said cylinder and extending through one end thereof, blades or buckets carried by the shaft within the cylinder, a vertical column mounted on said cylinder, a meter device supported by said column, gear connections between the movable elements of the meter and the extended

end of said shaft, a thermometric element extending into the path of flow through said cylinder, and a recording thermometer instrument also mounted on said column, and having an actuating connection with said thermometric element; substantially as described.

2. A liquid meter, comprising a cylindrical casing, a shaft extending therethrough, a series of bucket-shaped blades fixedly connected to said shaft, each of said blades having an outer wall which extends in an upward and outward direction when the blade is at the down-going side of the meter, the casing having lateral inlet and outlet openings at opposite sides thereof, at points nearly at the horizontal center line of the shaft, the upper edge of the inlet opening being at a point near the horizontal center line of the shaft, and said opening being wider than the adjacent edge of a blade so that liquid will be discharged into the casing above and also below each blade when the latter is adjacent to the center line of the opening; substantially as described.

3. A liquid meter, comprising a cylindrical casing, a shaft extending therethrough, a series of bucket-shaped blades fixedly connected to said shaft, each of said blades having an outer wall which extends in an upward and outward direction when the blade is at the down-going side of the meter, the casing having lateral inlet and outlet openings at opposite sides thereof and at points nearly at the horizontal line of the shaft, the upper edge of the inlet opening being at a point near the horizontal center line of the shaft, said opening being wider than the adjacent edge of a blade so that liquid will be discharged into the casing above and also below each blade when the latter is adjacent to the center line of the opening, and the edges of the blades contacting with the inner wall of the casing throughout their travel between the edges of the inlet and the outlet openings; substantially as described.

In testimony whereof, I have hereunto set my hand.

WERNER I. STAAF.

Witnesses:
H. M. Corwin,
Geo. H. Parmelee.