(No Model.) 2 Sheets—Sheet 1.

R. A. THAYER & E. EVERETT.

OSCILLATING METER.

No. 606,601. Patented June 28, 1898.

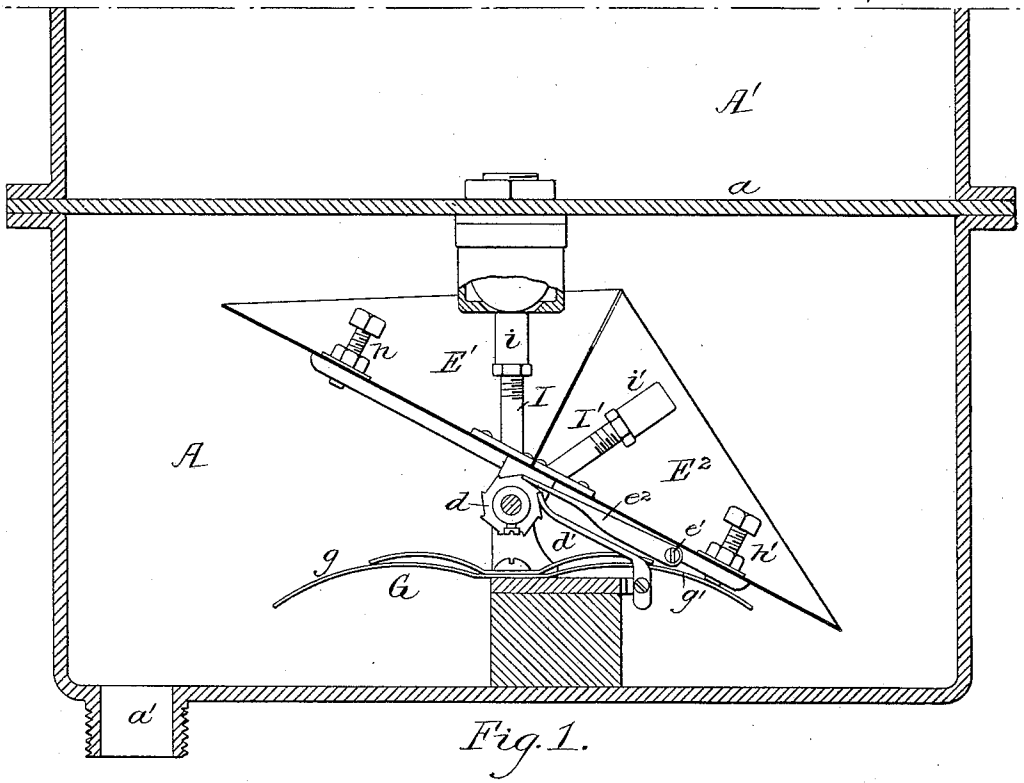

Fig. 1.

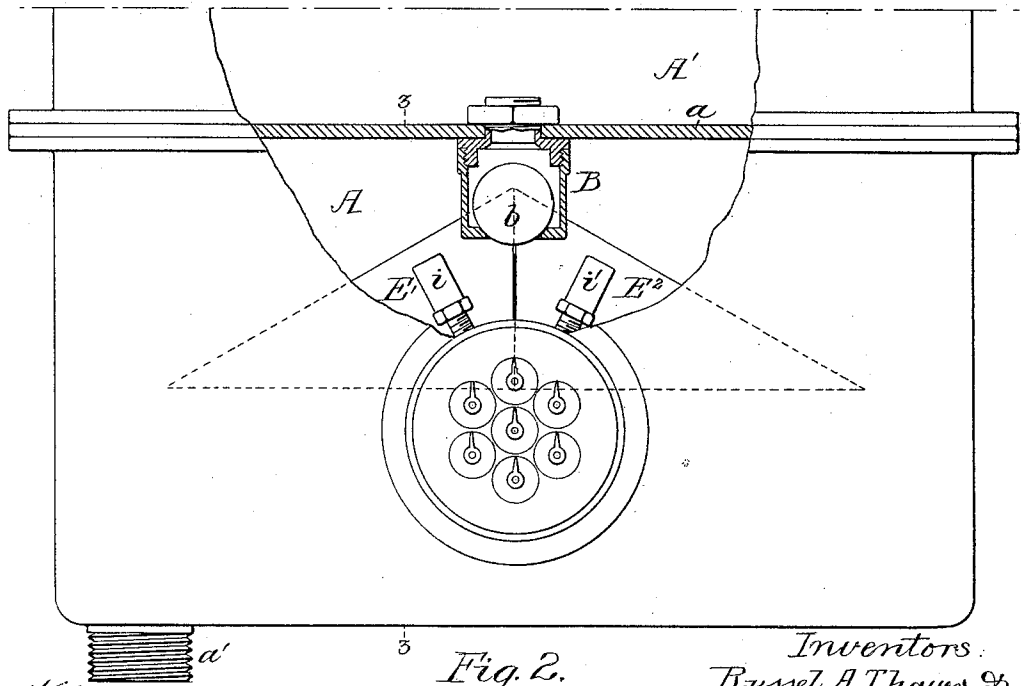

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

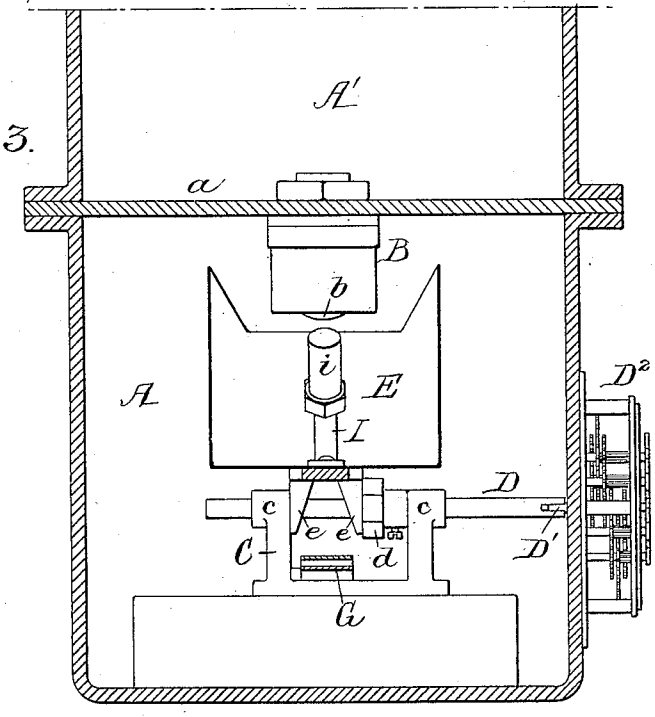
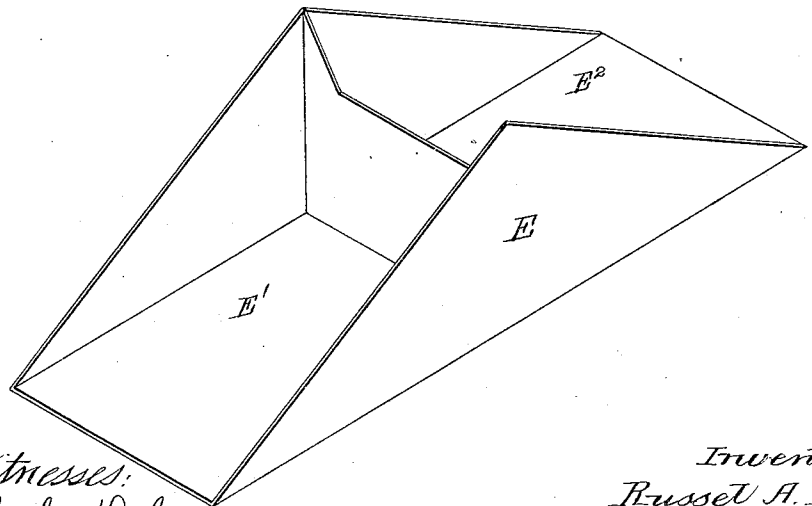


Fig. 4.



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UNITED STATES PATENT OFFICE.

RUSSEL A. THAYER AND EDWARD EVERETT, OF ALLENTOWN, PENNSYLVANIA.

OSCILLATING METER.

SPECIFICATION forming part of Letters Patent No. 606,601, dated June 28, 1898.

Application filed August 7, 1897. Serial No. 647,402. (No model.)

To all whom it may concern:

Be it known that we, RUSSEL A. THAYER and EDWARD EVERETT, citizens of the United States, and residents of Allentown, Pennsylvania, have invented certain Improvements in Oscillating Meters, of which the following is a specification.

Our invention relates to certain improvements in oscillating meters for registering the amount of water of condensation from steam-heating systems for which a patent was granted to us on February 24, 1891, No. 447,140.

The object of our present invention is to simplify the construction of the meter and make it double-acting, dispensing with the balance-weight, as fully described hereinafter.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of our improved oscillating meter. Fig. 2 is a side view, partly broken away to show the valve. Fig. 3 is a transverse section on the line 3 3, Fig. 2; and Fig. 4 is a detached perspective view of the measuring-chamber.

Meters of the type to which our invention relates are placed in a water-pipe from the heating-coil of a dwelling or other building, so as to weigh and register accurately the water of condensation as it passes from the pipes, as this is the only accurate method of ascertaining the quantity of steam used.

A is the weighing-chamber, and A′ is the receiving-chamber for the water of condensation from a certain steam-supply system. A partition *a* separates the two chambers. In the partition *a* is secured a valve-chest B, having an ordinary ball-valve *b*, which extends below the chest, so as to be acted upon by the measuring vessel, as illustrated in Fig. 2. The chest is made in two parts, so that the ball can be readily removed when necessary, and has a stem which extends through the partition and is confined in place by means of a suitable nut at the top.

In the chamber A is a frame C, having bearings *c c* for a shaft D, on which is a ratchet-wheel *d*, and loose on this shaft D are the trunnions *e e* of the pivoted measuring vessel E, which has two compartments E′ E². Pivoted at *e*′ to this weighing-chamber is a pawl *e*², which engages with the ratchet-wheel, so as to move it forward one notch as the frame is tilted.

Secured at a fixed point is a detent-pawl *d*′, which prevents the ratchet-wheel moving in the reverse direction.

G is a leaf-spring secured to the frame C. The two sections *g g*′ of the spring extend under the vessel E and support it in either of its two positions, and on the tilting frame are set-screws *h h*′, which strike the spring, and by adjusting these set-screws the extent of tilt to the vessel E can be regulated.

On the vessel E are two screw-posts I I′, having screw-caps *i i*′, respectively, which can be adjusted. These posts act upon the ball-valve, lifting it off its seat when in the position shown in Fig. 1 or when in the opposite position, so as to allow the water of condensation to flow into one or the other compartment, and when the water reaches a certain height in one compartment it overbalances the empty compartment and tilts, allowing the water to flow into the measuring-chamber and out through the passage *a*′.

The shaft D is connected to the main shaft D′ of registering mechanism D², which registers the amount of water passing through the meter. This registering mechanism may be made in any ordinary manner without departing from the main feature of our invention.

The operation of the apparatus is as follows: The meter is connected to the exhaust-pipe of a steam-heating system of a house or other building, for instance, so as to measure the water of condensation passing from the system, and as it passes to waste it runs into the chamber A′ through the valve-casing B and alternately into the compartments E′ E² of the pivoted measuring vessel E, and as the one compartment is filled it will tilt, discharging the water and placing the other compartments in position to be charged, the valve automatically closing the moment one post leaves the valve and is opened again as soon as the other post comes in contact with it.

We claim as our invention—

1. In a meter, the combination of a weighing-chamber, having an outlet and a valved

inlet, a registering mechanism, a shaft rotatably mounted in suitable bearings in the chamber and positively connected with the registering mechanism, a measuring vessel having two compartments rotatably mounted upon said shaft, with means on the vessel for acting directly upon the valved inlet, said vessel being thus loosely pivoted with respect to the registering mechanism, and means carried by the vessel for intermittently connecting the same with the registering mechanism to operate the latter, substantially as described.

2. The combination in a meter, of a weighing-chamber having an outlet and a valved inlet, a registering mechanism, a shaft rotatably mounted in suitable bearings in the chamber and positively connected with the registering mechanism, a measuring vessel having two compartments with adjustable posts in each compartment for acting upon the valve in the inlet, said vessel being loosely pivoted with respect to the registering mechanism, and means carried by the vessel for intermittently connecting the same with the shaft and thus operating the registering mechanism, substantially as described.

3. The combination in a meter, of the measuring-chamber, an inlet therefor, a ball-valve in said inlet, a pivoted measuring vessel having two compartments, means on the vessel for opening the valve when either of the compartments is under the inlet, two springs, one under one compartment the other under the other compartment and set-screws on the pivoted measuring vessel so as to regulate the extent of tilt of the vessel, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

RUSSEL A. THAYER.
EDWARD EVERETT.

Witnesses:
ALVIN F. KUTZ,
LEFANUS J. GIFT.