

(No Model.)

2 Sheets—Sheet 1.

J. J. TYLOR.
ROTARY WATER METER.

No. 354,614.

Patented Dec. 21, 1886.

Fig. 1

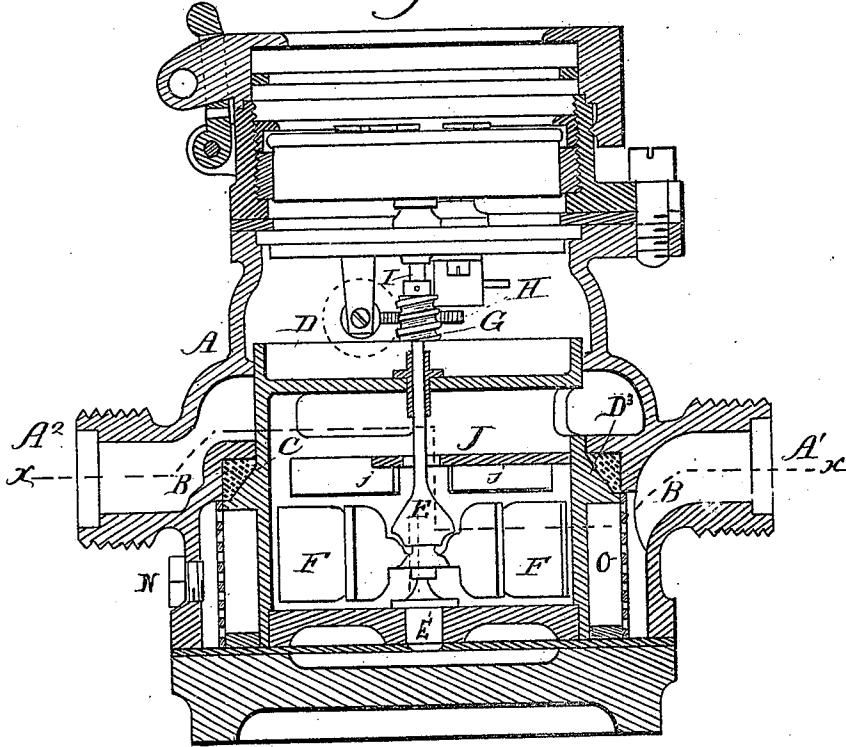
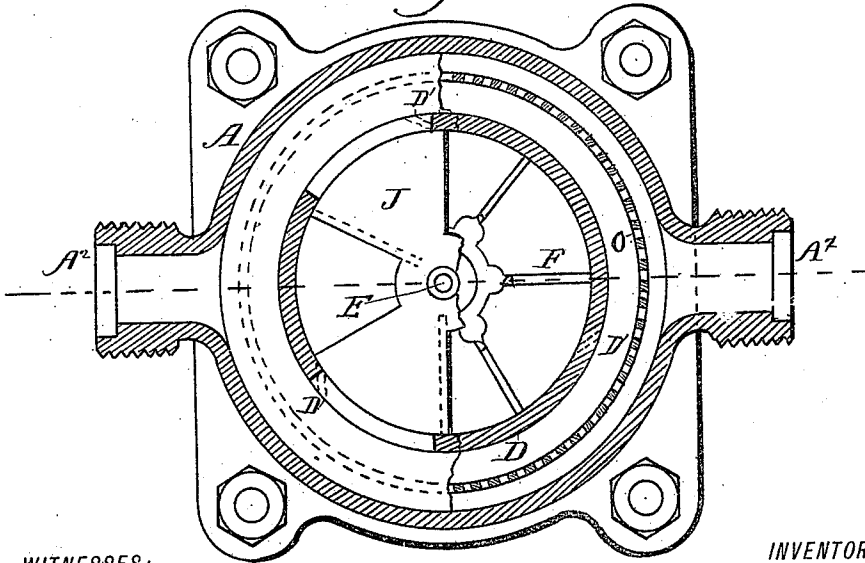


Fig. 2.



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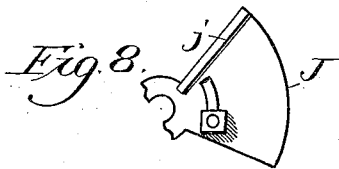
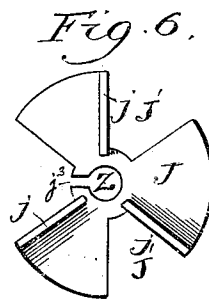
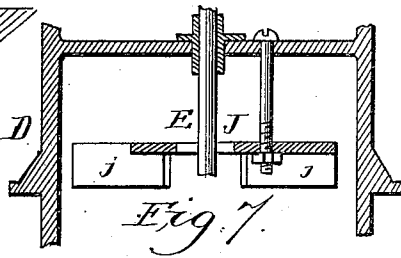
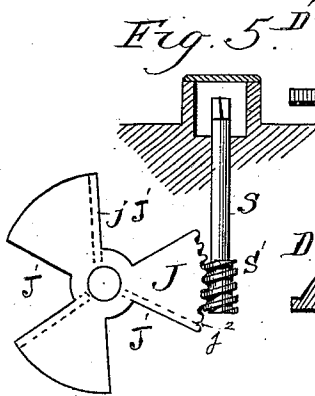
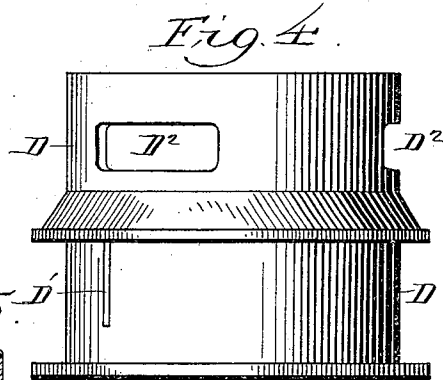
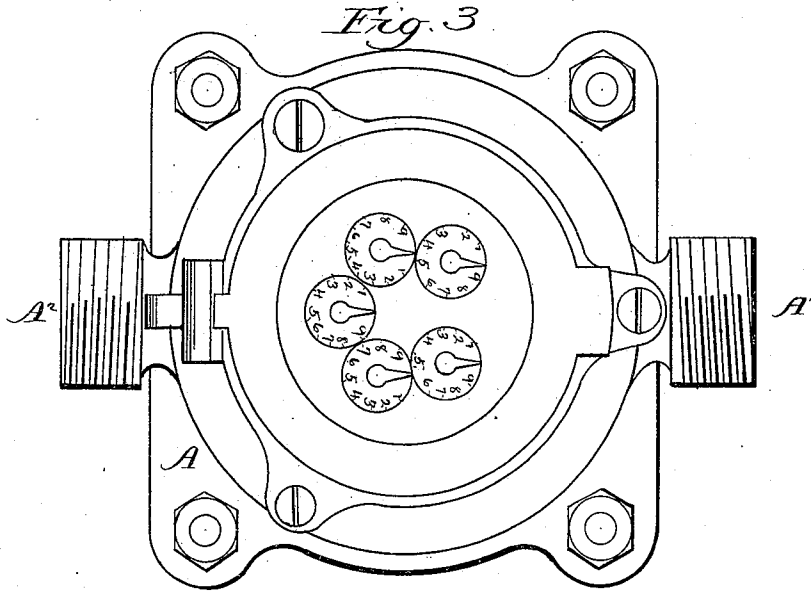
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UNITED STATES PATENT OFFICE.

JOSEPH JOHN TYLOR, OF LONDON, COUNTY OF MIDDLESEX, ENGLAND.

ROTARY WATER-METER.

SPECIFICATION forming part of Letters Patent No. 354,614, dated December 21, 1886.

Application filed April 10, 1886. Serial No. 198,455. (No model.) Patented in England September 3, 1885, No. 10,443.

To all whom it may concern:

Be it known that I, JOSEPH JOHN TYLOR, a citizen of Great Britain, residing at 2 Newgate Street, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Liquid-Meters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to rotary water-meters; and it consists in the combination of an outer casing with a removable inner casing, a fan, brake, spindle for the fan, and a pivot for supporting it, the four latter parts being contained within said inner casing and removable therewith.

The said invention further consists in the combination of an outer casing having an internal annular shoulder and a packing thereon with a removable inner casing, and a fan, brake, fan-spindle, and pivot, all contained within said inner casing and removable therewith.

The said invention further consists in the combination of a removable inner casing having an external annular beveled shoulder with an outer casing having an internal elastic packing-ring, which fits on said shoulder and is compressed thereby to form a water-tight joint.

The said invention further consists in the stationary adjustable brake J, hereinafter described, arranged between the inlet and the outlet, with the fan and casings of a liquid-meter, substantially as hereinafter set forth.

In the accompanying drawings, Figure 1 represents a vertical central section through my improved meter; Fig. 2, a horizontal section on the line *xx* of Fig. 1; Fig. 3, a plan view of said meter. Figs. 4, 5, 6, 7, and 8 represent detail views.

A designates the outer casing of the meter, having in one side of it the inlet-opening A¹, and in the other the outlet-opening A². It is also provided with an interior shoulder and a recess below the same, which receives a rubber packing-ring, B.

In measuring hot water I use an inclined shoulder without the said packing-ring B, said shoulder being grooved to fit a beveled annular shoulder, D³, on the exterior of the inner

casing, D. This inner casing contains within it the fan F, the fan-spindle E, the stationary adjustable brake J, and the pivot E', which supports the lower end of said spindle, all of these parts being removable with said inner casing. The upper end of said spindle is journaled in said casing at the upper end of the latter, and the part of said casing around the upper end of said spindle, which projects slightly above said casing, constitutes an oil-cup. Said spindle carries above said casing a worm, G, which gears with a worm-wheel, H, on a shaft, I, whereby the registering mechanism is driven.

The entire inner casing and mechanism contained therein may be easily removed and easily replaced, and the inclined or beveled face of the annular shoulder D² and the elastic packing B will compensate for any slight difference in size or shape, so as to make these inner casings interchangeable, instead of the same outer casing requiring always the same inner casing or one of the same exact size and shape to make a good fit.

The inner casing, D, is provided with two or more oblique inlets, D', below said brake J, and with three outlets, D², arranged above said brake at equidistant points around the perimeter of said inner casing. There are two annular spaces between the outer and inner casing—one connecting the said inlets D' one to another and to main inlet A', and the other the outlets D² one to another and to main outlet A². In the former annular space an annular filter or strainer, O, is preferably inserted between the main inlet A' and the inlets D' of the inner casing.

The water or other liquid fluid or gas flows in through openings A' and D', turns the fan F, ascends through openings J' of brake J, and passes out through openings D² and A². The function of the brake J is the usual one of resisting the action of the inflowing liquid, so that volume will be registered and not velocity. It becomes very important to regulate the exact degree of this resistance. By adjusting the said brake so that the flanges *j*, which are vertical, whereas the body of the brake is horizontal, shall be more or less presented to the flow of liquid, this resistance is varied at will. This brake consists of a flat disk turning in the inner case and supported there-

by, and having openings J' cut in from the periphery thereof at intervals, leaving horizontal plates between them. From one edge of each plate one of the said vertical flanges *j* extends
5 downward.

To allow the axial adjustment of said brake as stated, the periphery thereof may be provided with cogs *j*², as shown in Fig. 5, which mesh with a worm, S', on a spindle, S, that
10 extends outward through the casings D and A. The same object may be effected, as shown in Figs. 7 and 8, by a bolt passing through a slot in said brake, or the brake may be made
15 of resilient metal and rather greater in diameter than the interior of the inner case, D, and slotted at *j*³, so that it may be squeezed within the same. It will then fit tightly, but may be turned by hand to the desired position of
20 adjustment. An opening, closed by a screw-plug, N, in the side of the outer casing under the outlet A², facilitates the cleaning of the interior of said casing.

Brakes have been long known and used in meters of this sort, but an adjustable brake interposed between the inlet and outlet is found
25 to operate more satisfactorily than any other.

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

1. The combination of an outer meter-casing with a removable inner casing, and a fan, fan-spindle, pivot for said spindle, and brake, all contained within said inner casing and removable therewith. 30

2. An outer casing having an internal annular shoulder and packing thereon, in combination with a removable inner casing, and a fan, fan-spindle, pivot for said spindle, and brake, all contained within said inner casing and removable therewith. 35 40

3. The combination of a removable inner meter-casing having an external annular beveled shoulder with an outer casing and an internal elastic packing-ring interposed between the two casings, which fits on said shoulder and is compressed thereby to form a water-tight joint, substantially as set forth. 45

4. The stationary-adjustable brake J, having openings J' and flanges *j*, and arranged between the inlet and the outlet, with the fan and casings of a meter, substantially as and for the purpose set forth. 50

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH JOHN TYLOR.

Witnesses:

W. P. CALLOWAY,
GEO. D. COLEMAN.