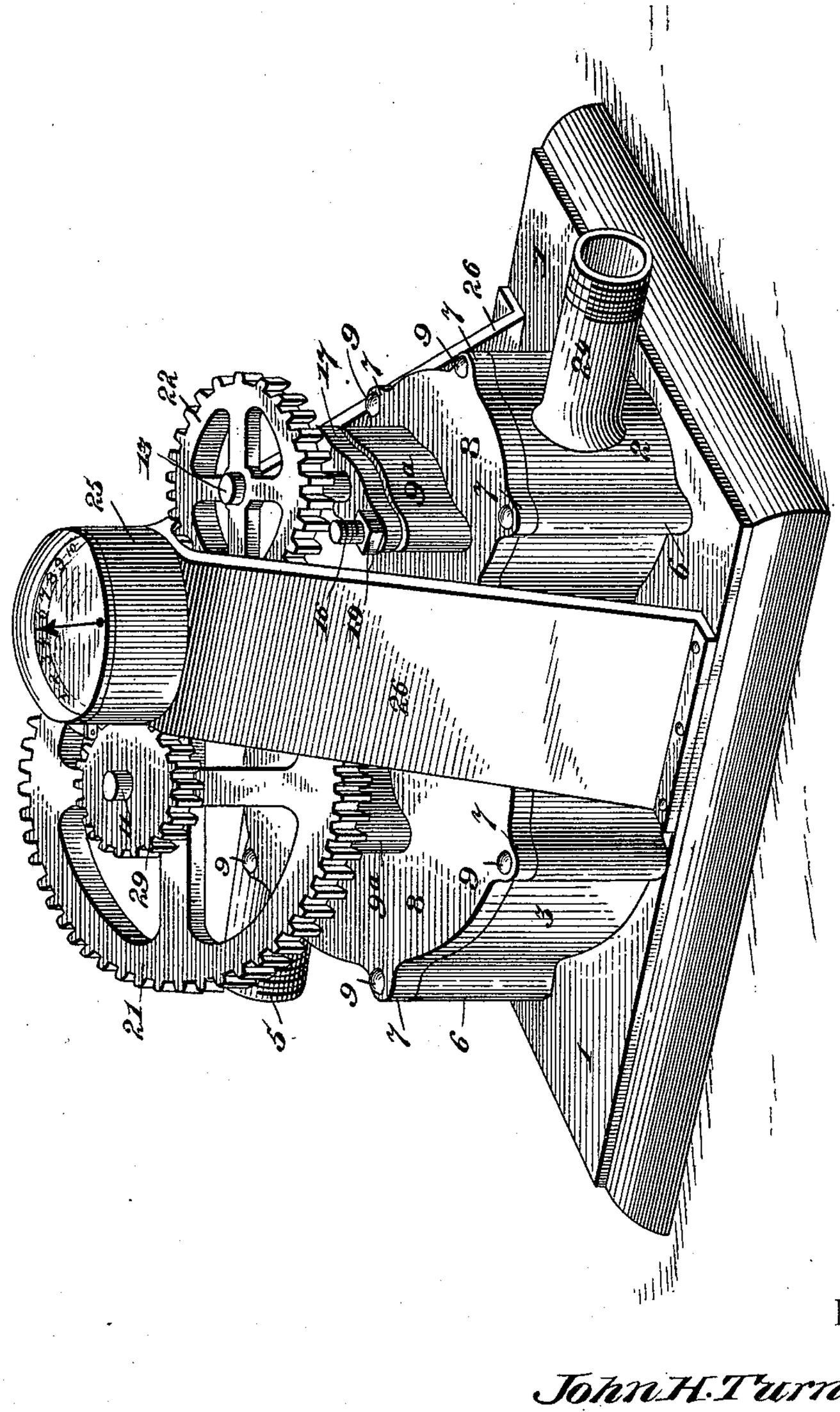
(No Model.) 2 Sheets—Sheet 1.

J. H. TURNER.

ROTARY METER.

No. 587,346. Patented Aug. 3, 1897.

Fig. 1.



Witnesses

H. G. Dieterich

Edwin Luse.

Inventor

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(No Model.) 2 Sheets—Sheet 2.

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ROTARY METER.

No. 587,346. Patented Aug. 3, 1897.

Fig. 2.

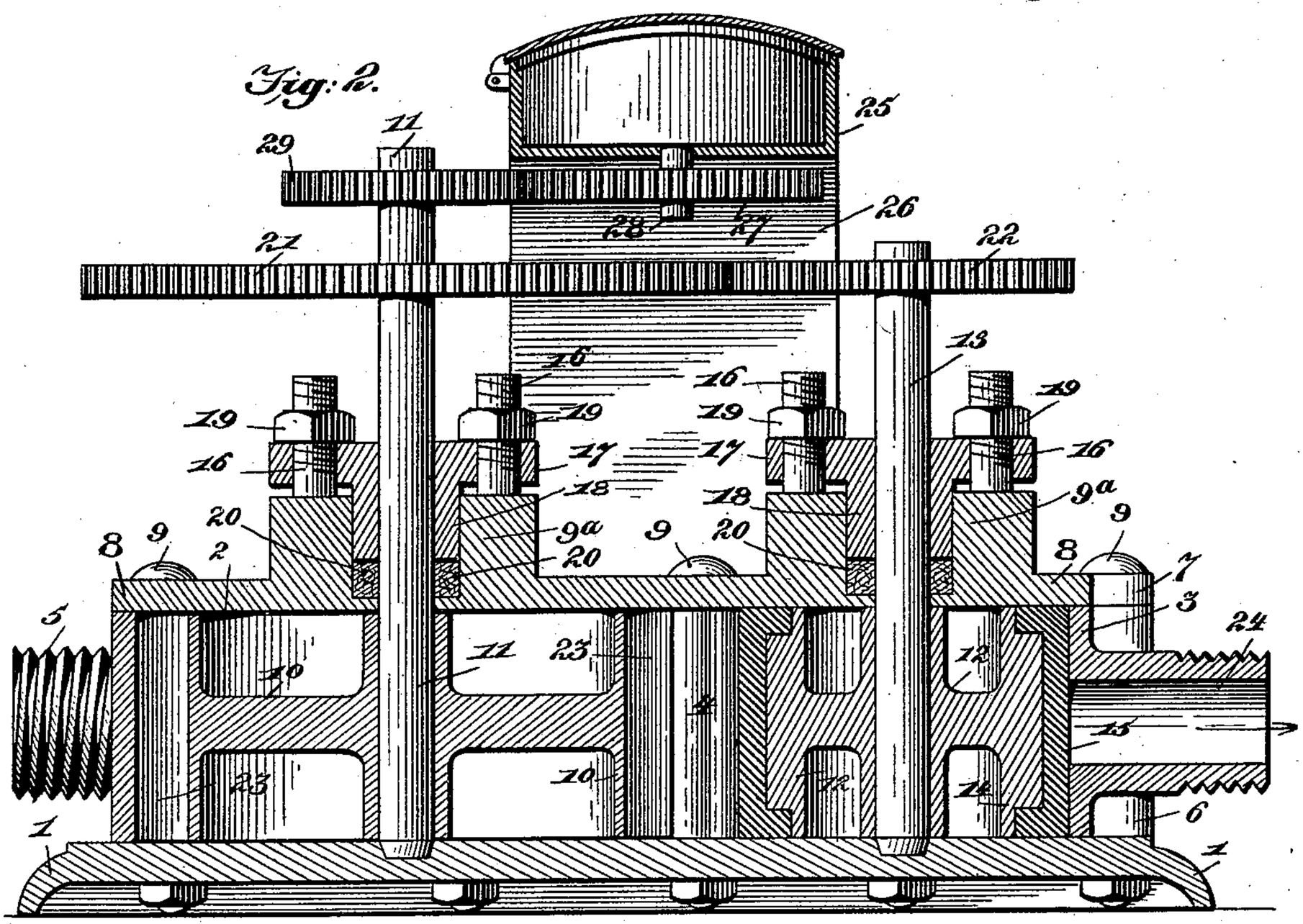
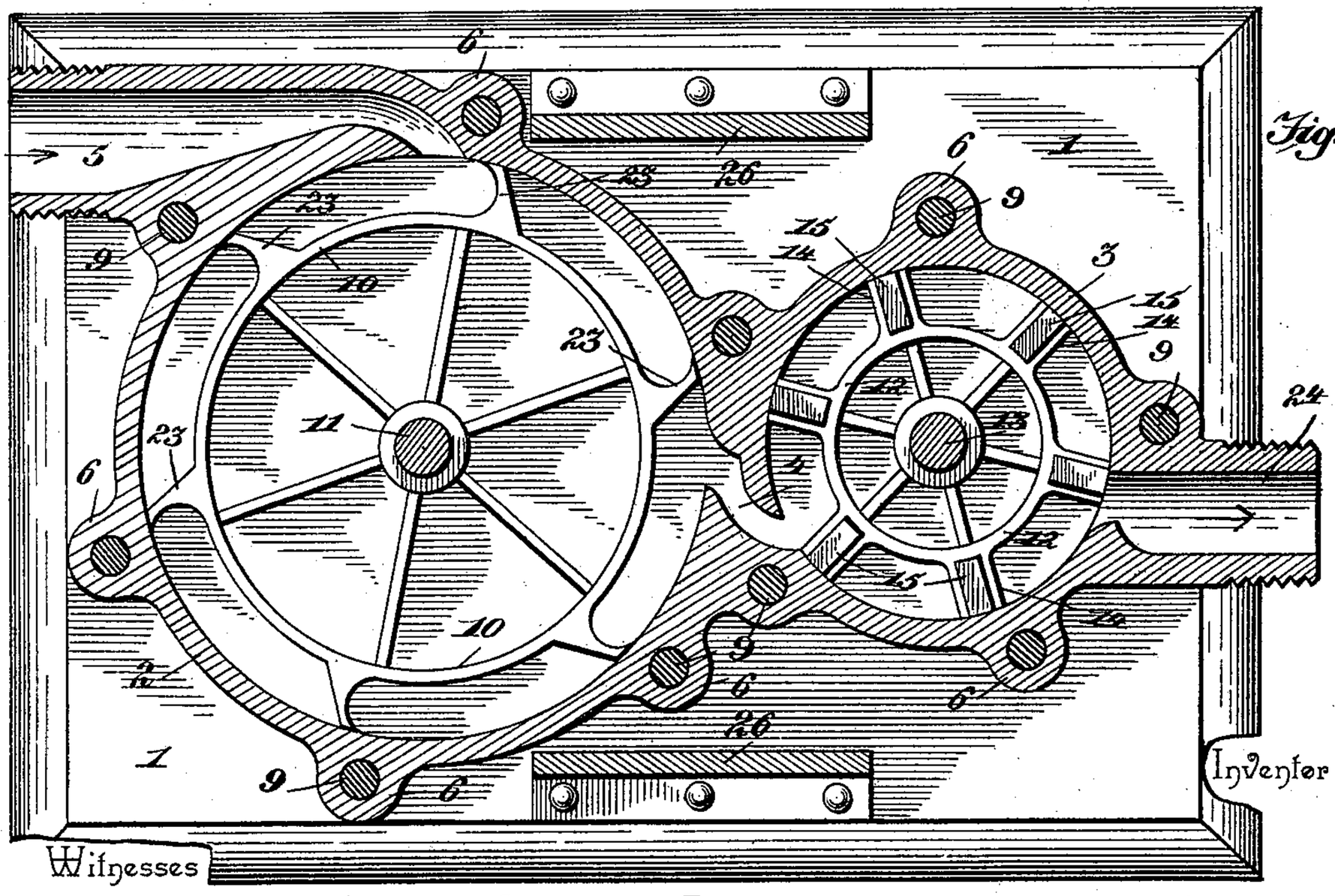


Fig. 3.



Witnesses

H. G. Dieterich

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By his Attorneys, John H. Turner

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JOHN H. TURNER, OF RICHMOND, INDIANA.

ROTARY METER.

SPECIFICATION forming part of Letters Patent No. 587,346, dated August 3, 1897.

Application filed April 22, 1897. Serial No. 633,362. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. TURNER, a citizen of the United States, residing at Richmond, in the county of Wayne and State of Indiana, have invented a new and useful Rotary Meter, of which the following is a specification.

This invention relates to rotary meters in which two rotating pistons are employed for measuring the water or liquid as it passes through the meter-chamber, in which the pistons are fitted in such manner as to be revolved by the flow of liquid and the motion of the pistons transmitted to a registering mechanism.

The object of the invention is to provide a device of this character simple and inexpensive in construction, easily kept in repair, and so efficient in its action that no water can pass through the meter without being registered.

With this object in view the invention consists in the details of construction and combination of parts hereinafter fully described, and particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view of a rotary meter made in accordance with my invention. Fig. 2 is a vertical longitudinal section. Fig. 3 is a horizontal section.

Similar reference-numerals indicate similar parts in the several figures.

1 represents the supporting-base, and 2 and 3 the cylinders, which may be attached to the base in any suitable manner, or, if desired, may be cast integrally therewith. The two cylinders are integral and communicate with each other through the passage 4. The cylinder 2 is larger than the cylinder 3 and is provided with an inlet-opening 5 at one side thereof, with which the pipe through which the liquid flows is connected. The cylinders 2 and 3 are provided at their upper edge with a series of perforated ears (indicated by 6) which correspond with similar perforated ears 7 on the cylinder-heads 8. These cylinder-heads are cast integral with each other and are secured to the cylinders by bolts 9, which pass through the perforated ears 6 and 7. The head for each cylinder is provided with a stuffing-box, (indicated by 9^a.)

10 represents the rotary piston within the cylinder 2. This piston is fast on its shaft 11, and the shaft is stepped at its lower end in the base 1 and extends upwardly through the stuffing-box. The blades of the piston 10 do not work water-tight within the cylinder 2, and this piston is designed to be a power-wheel, as will be more fully referred to hereinafter.

12 represents the rotary piston within the cylinder 3, which is fast on its shaft 13. This shaft is stepped at its lower end in the base 1 and projects upwardly through a stuffing-box 9. The blades 14 of the piston 12 are packed at their sides and edges, as indicated by 15, in order that they may work water-tight against the inner periphery of the cylinder 3. No water can therefore pass through the cylinder 3 except when the piston 12 is rotated.

Each of the boxes 9 is provided with upwardly-projecting pins 16, which are threaded at their outer ends and over which the perforated flanges 17 of the followers 18 fit and are secured in position by nuts 19 on the threaded ends of the pins 16.

20 represents packing within the boxes 9 with which the followers 18 engage.

Just above the stuffing-box the shaft 11 carries a gear 21, which meshes with a gear 22, carried by the shaft 13. As the blades 23 of the piston 10 do not work water-tight against the cylinder 2 and the blades 14 of the piston 12 do work water-tight against the cylinder 3, it is evident that the piston 10 will turn much more freely than will the piston 12. It is therefore necessary to use more force to turn the piston 12 than to turn the piston 10, and it is for this purpose that the gears 21 and 22 are provided. By this arrangement the piston 10 becomes a power-wheel to drive the piston 12, while the piston 12 will positively prevent any water passing through the cylinders 2 and 3 to the outlet 24 except when it is rotated, and it is evident that this rotation can only occur when the piston 10 is rotated. The inlet-passage 5 and the communicating-passage 4 between the two cylinders are so arranged relatively to each other that the water will drive the pistons in opposite directions to each other, and the gears 21 and 22 will also drive them oppositely to each other, and the force exerted by the pressure of the water against the

blades 14 is supplemented by the force exerted on the shaft 13 through the medium of the gears 21 and 22 to rotate the piston 12.

25 represents a registering mechanism supported on a stand 26, which in turn is supported and secured on the base 1. This registering mechanism may be of any approved form, and as it forms no part of my present invention it is not necessary to particularly describe it.

27 represents a gear which operates the registering mechanism. This gear is rigidly mounted on a shaft 28, which is supported in the standard 26 and actuates a primary wheel in the registering mechanism. The gear 27 is driven by a gear 29, rigidly mounted on the shaft 11. It will be seen, therefore, that every revolution of the piston 10 will be recorded by the registering mechanism, and as it will be known how much water will pass through the cylinders each time the piston 10 is rotated it is evident that an accurate registration of the amount of water passing through the outlet 24 can be made.

It will also be seen that as the piston 12 works fluid-tight in its cylinder and as it cannot be rotated except when the piston 10 is rotated no water can pass through the outlet 24 unless the cylinder 10 is rotated and must therefore be measured and registered.

It is also obvious that the several parts of the meter are extremely simple in construction and not liable to get out of repair, and also that should any of them become damaged in any manner the parts can easily be separated for the purposes of repair.

It will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim is—

1. In a rotary meter, the combination with two cylinders communicating with each other, one of said cylinders having an inlet-opening and the other an outlet-opening, of rotary pistons within the cylinders, the piston in the inlet-cylinder working loosely therein and that in the outlet-cylinder working fluid-tight therein, and gearing to transmit movement from the piston in the inlet to the piston in the outlet cylinder, substantially as described.

2. In a rotary meter, the combination with two cylinders communicating with each other, one of said cylinders being larger than the other and provided with an inlet-opening, and the smaller cylinder having an outlet-opening, of rotary pistons within the cylinders, the piston in the larger cylinder working loosely therein and that in the smaller cylinder fluid-tight therein, gears on the shafts of the pistons meshing with each other, and a registering mechanism operated by one of the pistons, substantially as described.

3. In a rotary meter, the combination with two cylinders communicating with each other, one of said cylinders being larger than the other and provided with an inlet-opening, and the smaller cylinder with an outlet-opening, of rotary pistons within the cylinders, the piston in the larger cylinder working loosely therein and that in the smaller cylinder fluid-tight therein, and the said inlet-opening and the communicating opening between the two cylinders being so arranged that the pistons are rotated in opposite directions to each other, gears on the shafts of the pistons meshing with each other, and a registering mechanism operated by the piston of the inlet-cylinder, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN H. TURNER.

Witnesses:
F. M. CURTIS,
CHAS. E. CHITRY.