(No Model.) 2 Sheets—Sheet 1.

L. H. NASH.

WATER METER.

No. 562,148. Patented June 16, 1896.

Fig. 1.

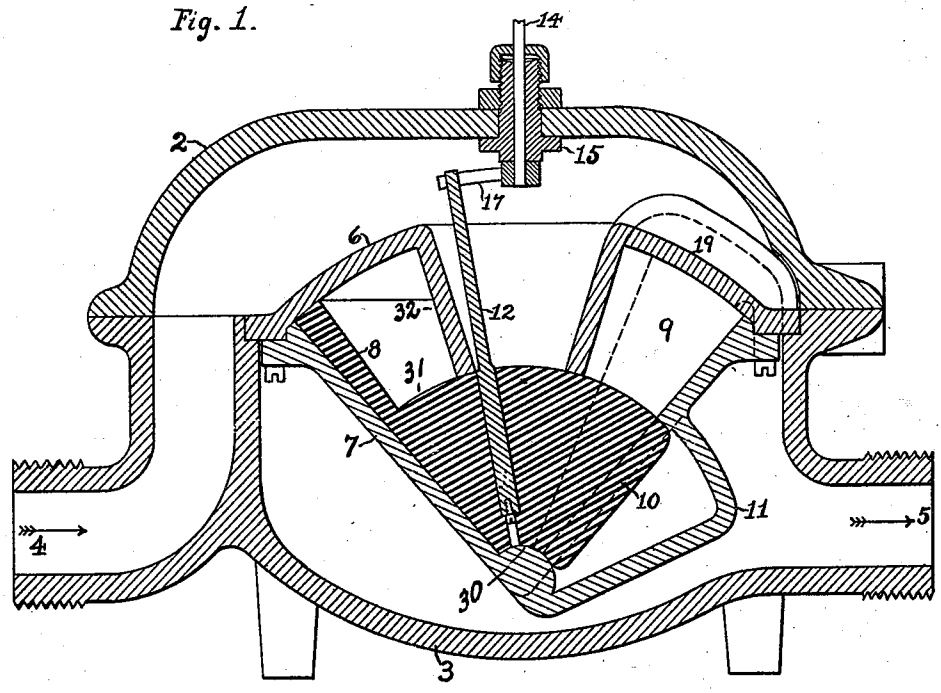
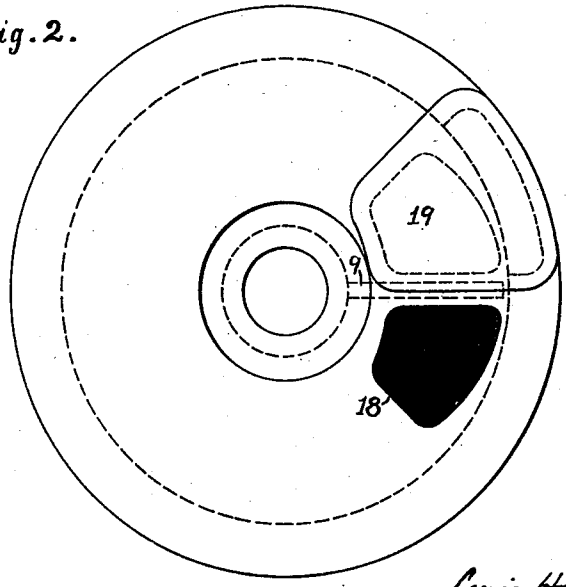


Fig. 2.



WITNESSES:

Geo. M. Copenhaver.

D. H. Naylor

INVENTOR

Lewis Hallock Nash

BY Johnson and Johnson

ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

L. H. NASH.

WATER METER.

No. 562,148.

Patented June 16, 1896.

Fig. 3.

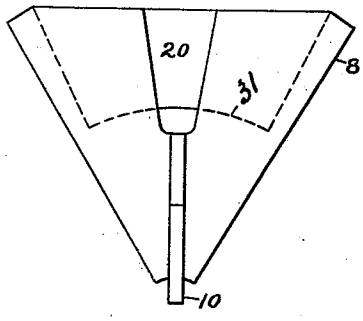


Fig. 4.

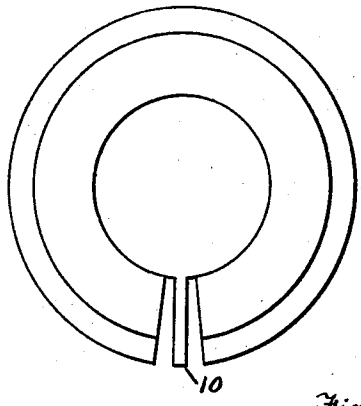


Fig. 5.

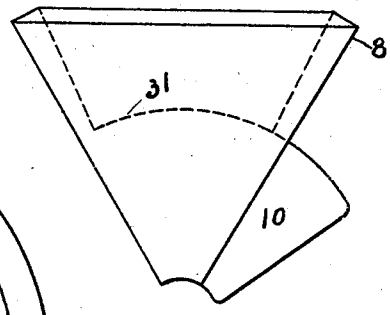
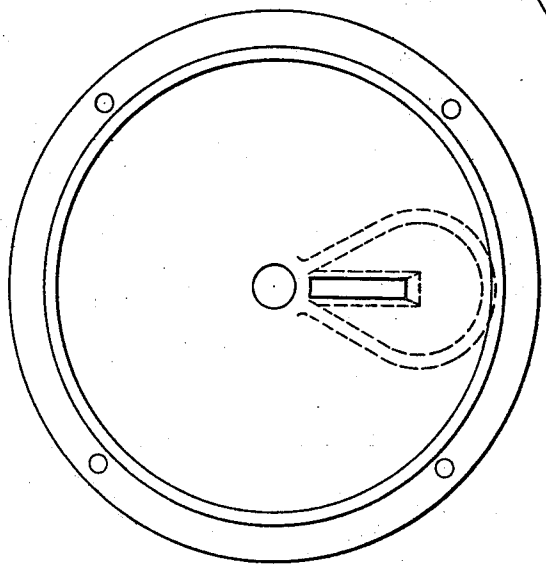


Fig. 6.



WITNESSES:

Geo. M. Copenhaver.

Walter Allen

INVENTOR

Lewis Hallock Nash

BY Johnson and Johnson

ATTORNEYS

UNITED STATES PATENT OFFICE.

LEWIS HALLOCK NASH, OF SOUTH NORWALK, CONNECTICUT, ASSIGNOR TO THE NATIONAL METER COMPANY, OF NEW YORK, N. Y.

WATER-METER.

SPECIFICATION forming part of Letters Patent No. 562,148, dated June 16, 1896.

Original application filed March 21, 1893, Serial No. 467,008. Divided and this application filed April 14, 1896. Serial No. 587,544. (No model.)

To all whom it may concern:

Be it known that I, LEWIS HALLOCK NASH, a citizen of the United States, and a resident of South Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Water-Meters, of which the following is a specification.

My invention relates to water-meters; and it consists of certain novel parts and combinations of parts specifically pointed out in the claims concluding this specification, which is a division of my application, Serial No. 467,008, filed March 21, 1893.

The following is a description of the structures shown in the annexed drawings, which structures embody in preferred forms the several features which constitute my present invention; but it will be understood that my invention is not limited to the precise forms shown nor to the precise combinations shown, as various modifications may be employed without departing from the spirit of my invention and without exceeding the scope of the concluding claims.

In the annexed drawings, Figure 1 is a vertical section through a meter. Fig. 2 is a top view of the upper section of the measuring-chamber. Fig. 3 is an external view of the piston. Fig. 4 is a top view of the same. Fig. 5 is a front view of the piston in position at right angles to that shown in Fig. 3. Fig. 6 is a top view of the lower section of the measuring-chamber.

The external case of the meter is formed of an upper section 2 and a lower section 3.

4 is an inlet-spud, and 5 an outlet-spud.

6 is the upper spherical wall of the measuring-chamber, and 7 its lower conical wall.

8 is a piston, preferably made of hard rubber.

9 is a radial abutment or diaphragm.

The piston 8 has a radial extension 10, which extends under the radial abutment 9, forming a joint therewith. This piston in detail is shown in Figs. 3 and 5. The lower section of the measuring-chamber is provided with a lateral extension 11, forming a chamber in which the extension 9 from the piston works.

30 is a ball-bearing at the lower end of the case, the piston being shaped to correspond therewith.

31 is a spherical surface making contact with the downwardly-projecting part 32 of the meter-case, which spherical surface 31 defines the lower limits of the measuring-chamber.

12 is a shaft attached to the piston.

14 is the spindle connected to the registering mechanism extending down through a stuffing-box 15.

Water enters the spud 4, passes down through port 18, Fig. 2, is measured and then passes out through port 19 to the outlet-spud 5. The projection 10 on the piston is utilized in the form of meter shown (although it need not be) to form a guide to the piston, thereby relieving the diaphragm both of friction and wear and permitting all the spaces to be utilized (if desired) with ports through the piston. (See 20, Fig. 3.)

In the foregoing specification I have referred to a few modifications which might be employed in practicing my invention; but I desire it to be understood that mention by me of a few modifications is in no way intended to exclude others not referred to but which are within the spirit and scope of my invention, the object of this specification being to instruct persons skilled in the art to practice my invention in its preferred form.

As I have before remarked, many of the combinations and details illustrated and above described are not essential to the several features of my invention separately and broadly considered. All this will be indicated in the concluding claims, where the omission of an element, or the omission of reference to the detailed features of the elements mentioned, is intended to be a formal declaration of the fact that the omitted features or elements are not essential to the inventions therein severally covered.

What I claim is—

1. In a water-meter, a piston having a motion of nutation combined with a measuring-chamber having a radial abutment, said piston being provided with a projection making a joint with said abutment.

2. In a water-meter, a piston having a motion of nutation provided with a bearing which is a section of a sphere combined with a measuring-chamber having a radial abutment under which a projection on the piston works.

3. In a water-meter, a piston having a radial projecting flange combined with a measuring-chamber having a radial abutment and an extension below said abutment in line therewith forming a chamber in which the radial extension of the piston works to form a joint.

4. In a water-meter, a piston having a motion of nutation, a conical measuring-chamber with spherical walls having a radial abutment, said piston being provided with a projection making a joint with said abutment.

5. In a water-meter, the combination of a piston having a motion of nutation, a conical measuring-chamber having spherical end wall and a central projection forming a bearing-surface opposite the spherical surface, said piston having a spherical bearing making a joint on said extension and a projection forming a joint with the radial abutment of the case, with a bearing at or near the apex of the cone.

LEWIS HALLOCK NASH.

Witnesses:
M. WILSON,
D. L. THOMPSON.