No. 696,692. Patented Apr. 1, 1902.

L. H. NASH & F. S. KING.

WATER METER.

(Application filed July 7, 1897.)

(No Model.)

Fig. 1

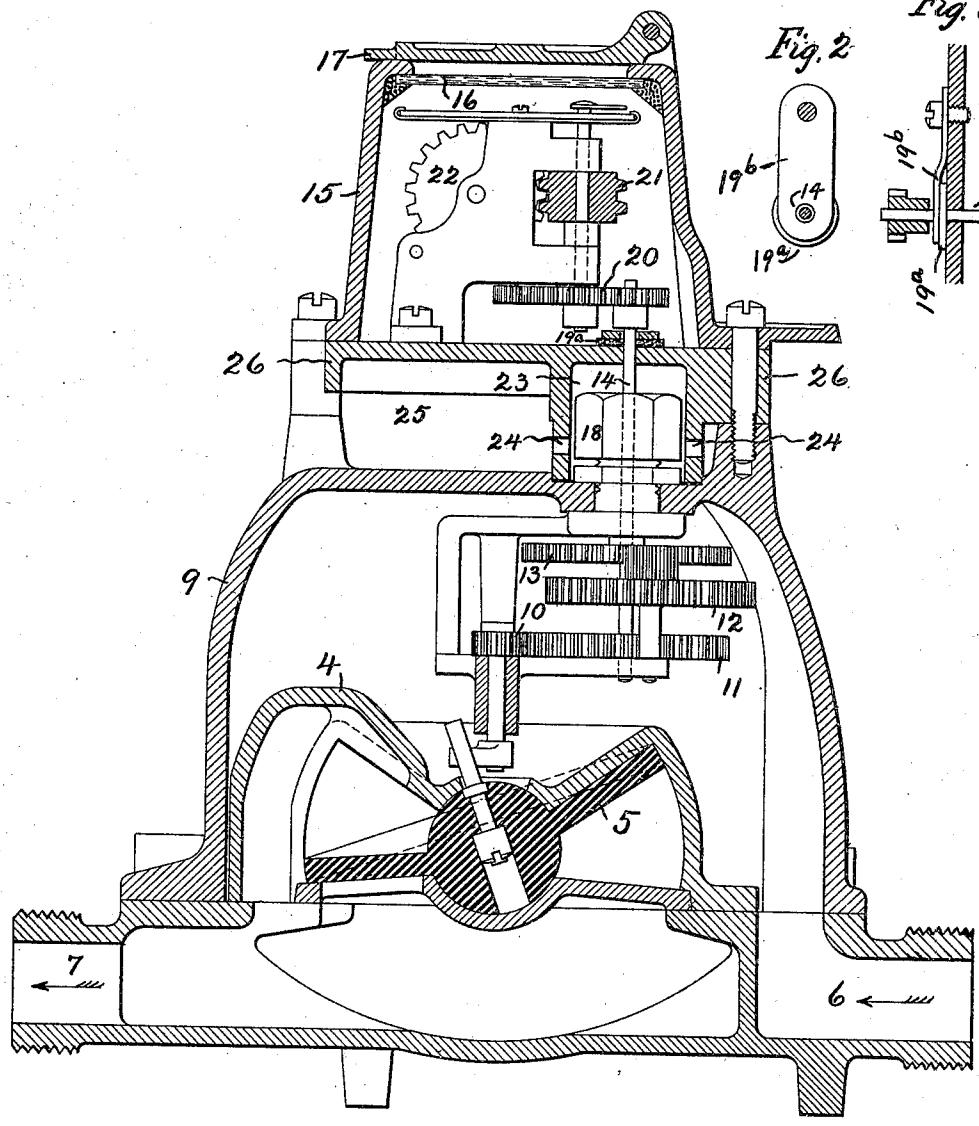


Fig. 2

Fig. 3

WITNESSES:

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UNITED STATES PATENT OFFICE.

LEWIS HALLOCK NASH, OF SOUTH NORWALK, CONNECTICUT, AND FREDERICK S. KING, OF BROOKLYN, NEW YORK, ASSIGNORS TO THE NATIONAL METER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

WATER-METER.

SPECIFICATION forming part of Letters Patent No. 696,692, dated April 1, 1902.

Application filed July 7, 1897. Serial No. 643,782. (No model.)

To all whom it may concern:

Be it known that we, LEWIS HALLOCK NASH, residing in South Norwalk, county of Fairfield, State of Connecticut, and FREDERICK S. KING, residing at Brooklyn, in the county of Kings and State of New York, citizens of the United States, have invented certain new and useful Improvements in Water-Meters, of which the following is a specification.

Our invention relates to water-meters; and it consists of certain novel parts and combinations of parts particularly pointed out in the claim concluding this specification.

In the accompanying drawings we have shown our invention applied to a form of meter at present in extensive commercial use; but it will be understood that it is applicable to other forms of meters and that various modifications and changes may be made in the construction and arrangement of parts of the apparatus designated in the claim without departing from the spirit of our invention and without exceeding the scope of the concluding claim.

In the accompanying drawings, Figure 1 is a vertical section through a meter-case and the meter-chamber, and Figs. 2 and 3 are detail parts of the same.

The following is a description of the structure illustrated in the accompanying drawings:

4 is the measuring-chamber proper of a nutating-piston water-meter, 5 being the piston of such a meter.

6 is the inlet-spud, and 7 the outlet-spud.

9 is the exterior case inclosing the measuring-chamber proper and containing a train of speed-reducing gearing 10 11 12 13.

14 is a spindle projecting through the top of the exterior case and up into the dial-case 15, which is provided with the ordinary glass plate 16 on its top and the hinged cover 17 above it.

18 is a gland-nut forming a nut to prevent the water in the meter-chamber having access to the space above it.

The spindle 14 extends up through the bottom of the dial-case 15 and is provided with a stuffing-box at the point of entrance, which is shown in detail in Figs. 2 and 3, Fig. 2 being a top view thereof and Fig. 3 a side view.

19ª, Fig. 3, is a washer, of porpoise leather or other suitable material, held in place by a spring 19ᵇ, suitably attached to the bottom plate of the dial-case 20.

21 and 22 are elements of the registering device.

23 is a chamber containing the stuffing-box 18, said chamber being provided with perforations 24, admitting air thereto and furnishing a means of escape for any water which may leak through the stuffing-box 18.

25 is a chamber external to the chamber 23, between the top of the meter-case and the bottom of the dial-case, open to the air.

26 26 represent a plate or intermediate part bolted between the meter-case and the dial-case and provided with extensions forming the walls of the chamber 23.

Heretofore the dial mechanisms of water-meters have been subject to quite rapid deterioration, and as the chambers in which they are contained are sealed when the meters are put into use the lubricants applied when the parts are first assembled cannot be renewed until the meter is opened for repairs. While this difficulty is present in registering mechanisms of all constructions, it has been found to be particularly troublesome in the case of registering mechanisms of the straight-reading type. We have discovered that if the case containing the registering mechanism be elevated above the measuring-chamber with an intervening air-space between and the entrance of the spindle to the case containing the registering mechanism be provided with an air-tight joint the life of the parts is very materially increased and much of the trouble heretofore experienced is avoided. Our present belief is that this result is due to the fact that by making the dial-chamber air-tight the lubricant applied in the first instance is maintained in a fluid

and effective condition for a longer time than is the case where the dial-chamber is not air-tight and that the oxidation of the metal is retarded; but whatever may be the reason we have by extensive and continued use definitely determined that the registering mechanism will operate much better and the lubricant maintain its lubricating properties for a much longer time when the spindle at its point of entrance to the dial-chamber is provided with a substantially air-tight joint and that by this expedient forms of registering mechanisms may be satisfactorily employed commercially which without it cause a great amount of trouble and expense. The nut 18, being inclosed in a separate chamber, cannot be tampered with. The spring 19^b, constantly exerting pressure on the washer 19^a, keeps it permanently tight and automatically compensates for wear.

What we claim is—

In a water-meter the combination of a meter-chamber, a substantially air-tight chamber containing the registering mechanism, an open intermediate space between said chambers, and a spindle communicating the motion of the piston to the dial mechanism passing through said intermediate space with a yielding joint-forming substance where the spindle enters said dial-chamber.

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