

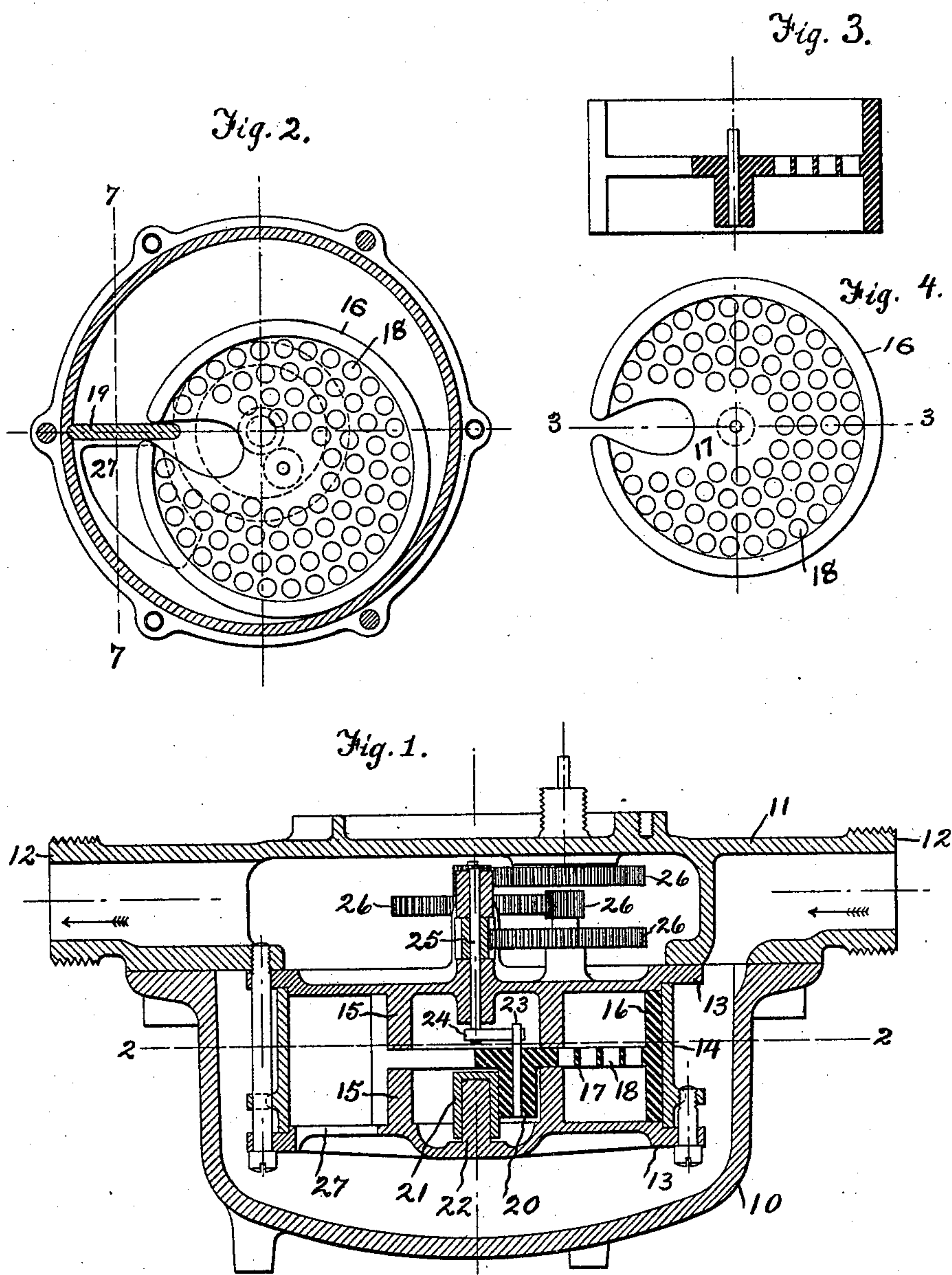
(No Model.)

2 Sheets—Sheet 1.

L. H. NASH.
WATER METER.

No. 582,302.

Patented May 11, 1897.



WITNESSES:

Charles M. Ireland
Geo. M. Copehaver.

INVENTOR

Lewis Hallock Nash

BY

Johnson & Johnson
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 5.

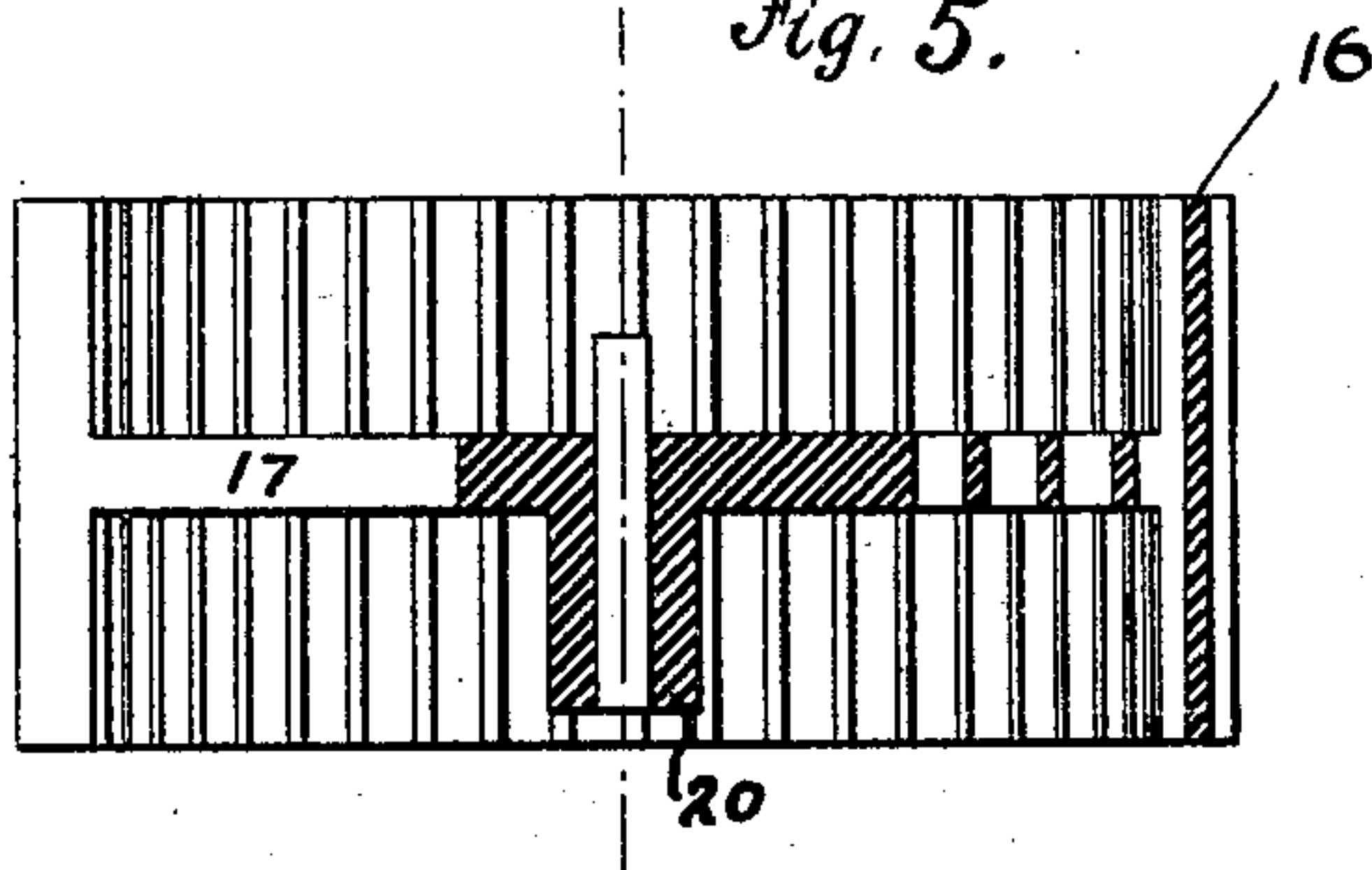


Fig. 6.

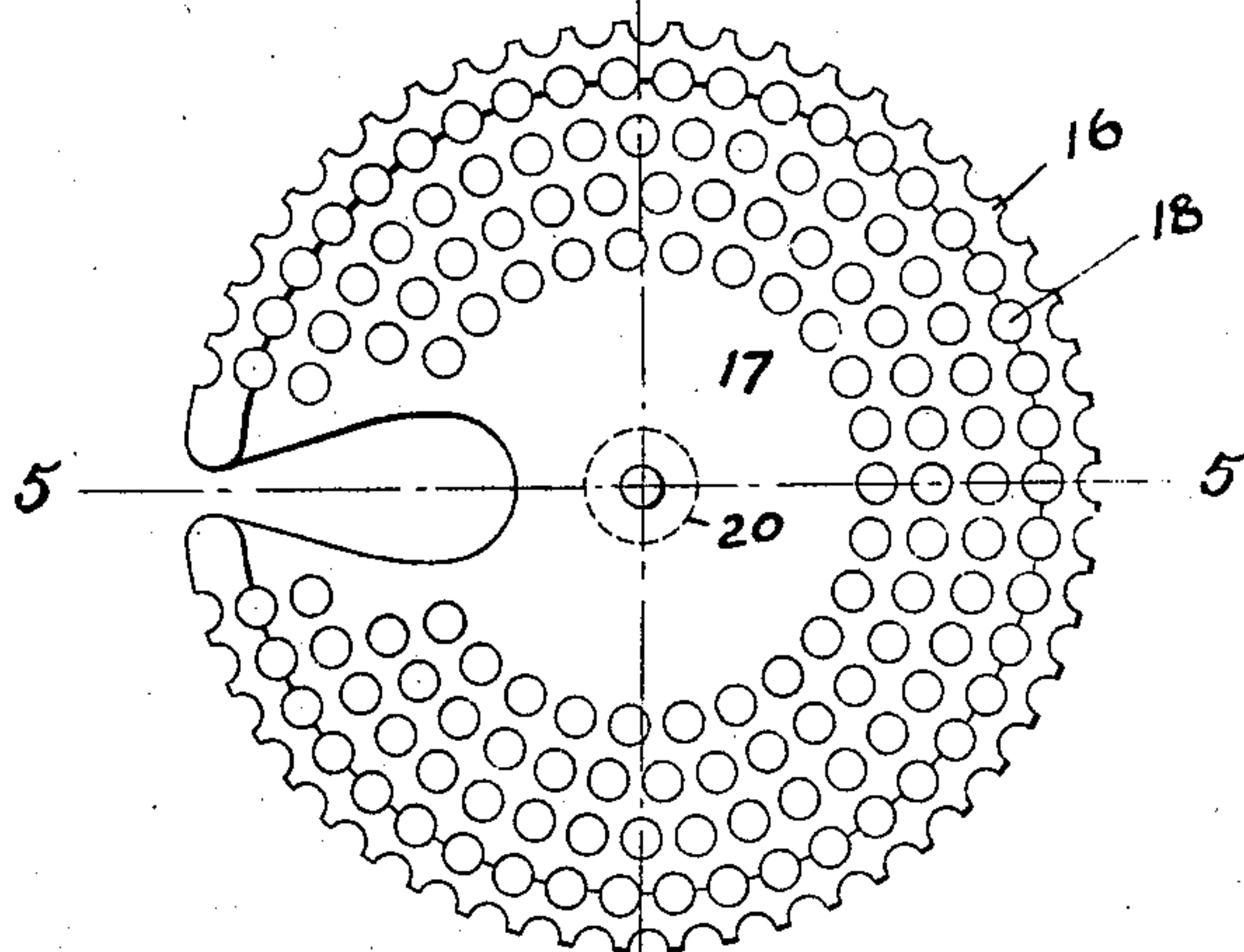
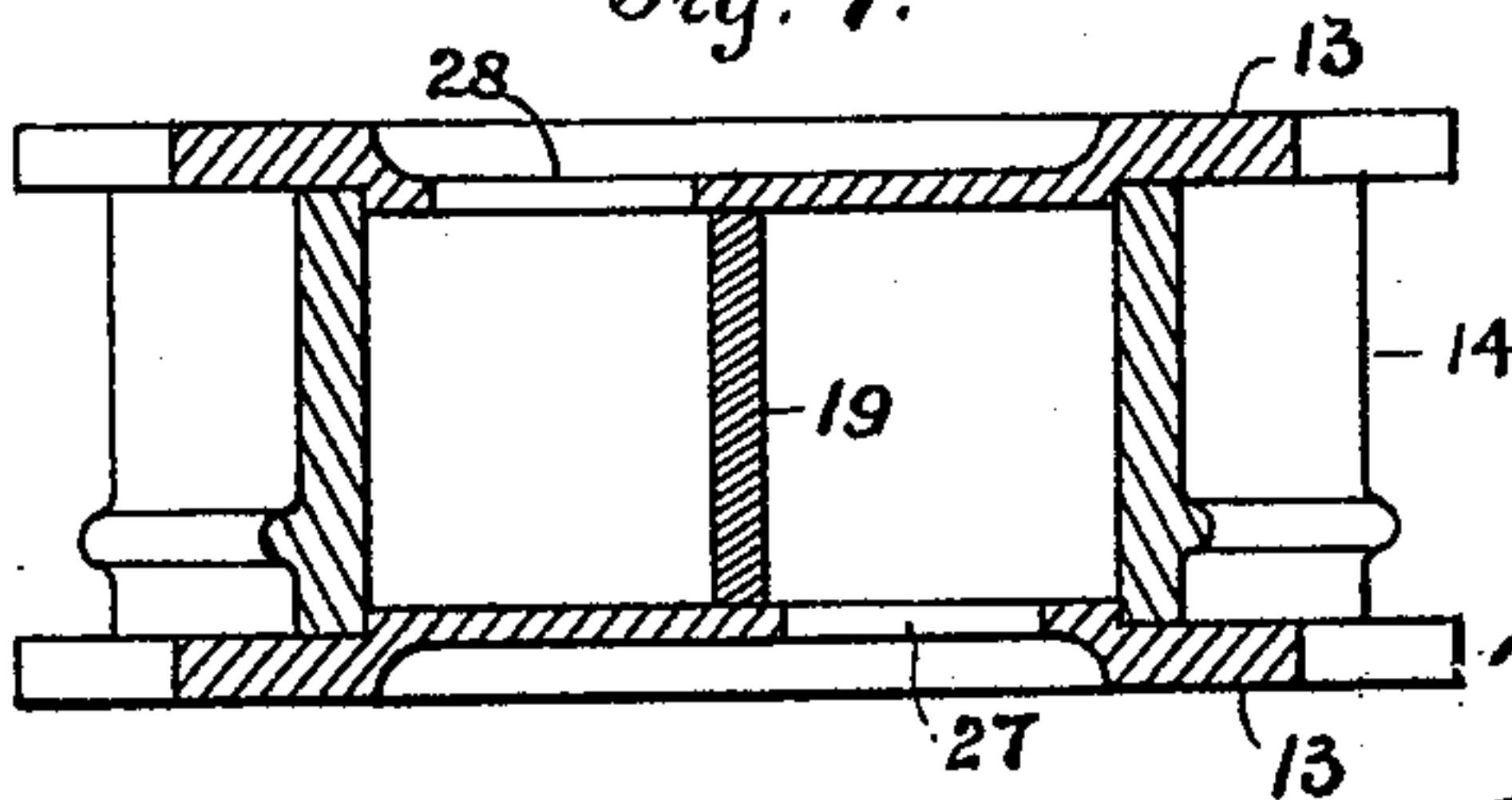


Fig. 7.



WITNESSES:

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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. 582,302, dated May 11, 1897.

Application filed June 6, 1896. Serial No. 594,501. (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 a class of water-meters commonly known by the trade-name "Empire;" and it consists of certain novel parts and combinations of parts particularly pointed out in the claims concluding this specification.

In the accompanying drawings, Figure 1 is a vertical section through a meter involving my invention. Fig. 2 is a horizontal section through the inner case on the line 2 2, Fig. 1. Fig. 3 is a vertical section through the piston on the line 3 3, Fig. 4. Fig. 4 is a top view of said piston. Fig. 5 is a vertical section through a modified form of piston on the line 5 5, Fig. 6. Fig. 6 is a top view of the same. Fig. 7 is a vertical section through the inner case on the line 7 7, Fig. 2.

The following is a description of the structures shown in the accompanying drawings, which drawings illustrate a meter involving my invention in the form which I at present prefer to employ.

Referring to Fig. 1, the outer case is made in two parts, 10 being the lower cap, bolted to an upper part 11, containing the spuds 12 12. The water passes in the direction shown by the arrows. The inner case is formed of the heads 13 13 and an intermediate cylindrical section 14, the parts being held together, as shown.

15 15 are cylindrical abutments within the measuring-chamber and concentric thereto.

16 is a piston composed of a ring having a partition or diaphragm 17, provided with perforations 18.

19 is a radial abutment in the measuring-chamber, the piston being slit to straddle this abutment. The piston is also provided with a stud 20, which operates in conjunction with roller 21, mounted on a centrally-placed pin 22.

23 is a pin projecting from the piston, making contact with an arm 24, mounted upon a

spindle 25, which is in driving relation with the dial mechanism 26.

The measuring-chamber is provided with an inlet-port 27 on one side of the radial abutment and an outlet-port 28 in the opposite head-plate and on the other side of the radial abutment. (See Fig. 7.)

It will be readily seen that the measuring-space on the outside of the piston is (except for the instant when it is at its neutral point) constantly receiving water on one side of the abutment and discharging water from the other side. As to the spaces within the piston above and below the web, it will be seen that when the inlet-port is in one head and the outlet-port in the opposite head this inner space could not be utilized as a measuring-chamber were it not for the fact that the said web is perforated to permit the passage of water through it. By providing the web with perforations, however, I am enabled to fully utilize the measuring-space within the piston while employing inlet and outlet ports in the opposite head-plate and without duplicating these ports.

Figs. 5 and 6 show a modified form of piston adapted to operate in the case shown in Fig. 1. In this form the surfaces of the piston are ribbed or corrugated or otherwise made irregular in shape, presenting contacting-joint-forming points as distinguished from plain joint-forming surfaces. The advantages of this construction are, among others, that the piston is made stronger without increasing its weight, that suction is avoided, and the passage and discharge of foreign substances facilitated. I have shown the cylindrical ring of the piston corrugated both exteriorly and interiorly, as this is the form which I prefer, but corrugations may be employed on one surface and omitted from the other.

In the foregoing specification I have incidentally referred to some of the modifications which might be adopted in the practice of my invention, but I have not endeavored to specify all the modifications which might be employed, the object of this specification being to instruct persons skilled in the art to practice my invention in the form at present preferred by me and to enable them to un-

derstand its nature, and I desire it to be distinctly understood that mention by me of a few modifications is in no way intended to exclude others not referred to, but which are
5 within the spirit and scope of my invention.

Many of the details and combinations illustrated and above described are not essential to the several inventions broadly considered. All this will be indicated in the concluding
10 claims, where the omission of an element or the omission of reference to the detail features of the elements mentioned is intended to be a formal declaration of the fact that the omitted elements or features are not es-
15 sential to the inventions therein severally covered.

What I claim is—

1. In a water-meter provided with an oscillating piston, the combination with an inlet
20 port or ports wholly in one head-plate and outlet port or ports wholly in the other head-

plate of a ring-piston having a free passage through its interior.

2. In a water-meter provided with an oscillating piston, the combination with an inlet
25 port or ports wholly in one head-plate and an outlet port or ports wholly in the opposite head-plate, of a ring-piston provided with a perforated web permitting a free passage of water through the interior of the piston. 30

3. In a water-meter, a case combined with an oscillating piston, one of the elements being provided with a ribbed, corrugated or irregular contacting-surface, the said ribs, corrugations or irregularities being rigid and
35 integral with said element and the other element having a plain surface.

LEWIS HALLOCK NASH.

Witnesses:

FRED S. KEMPER,
M. WILSON.