

No. 756,892.

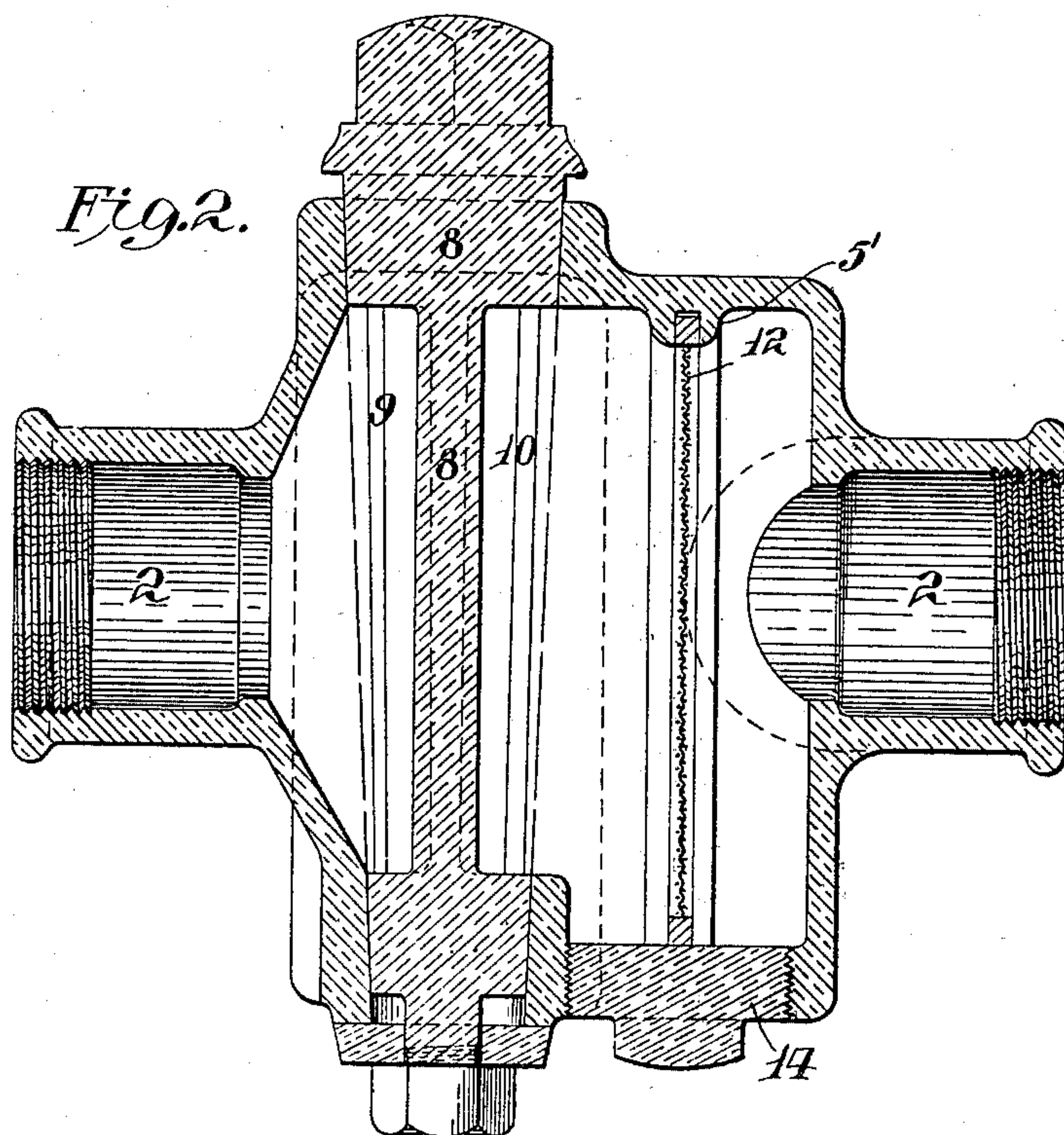
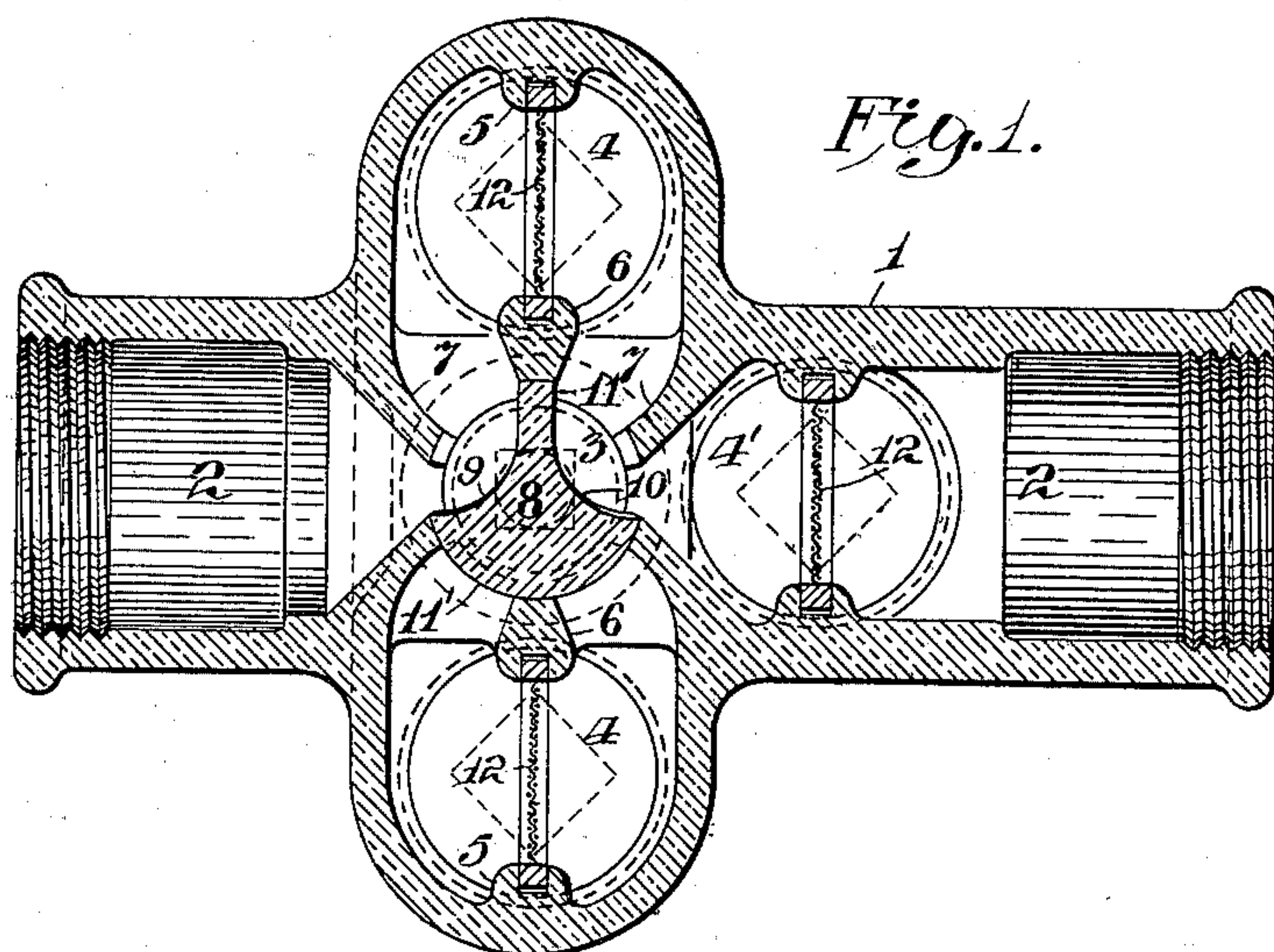
PATENTED APR. 12, 1904.

J. C. QUINN.
STRAINER.

APPLICATION FILED JUNE 3, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses
Edgeworth Turner
A. G. Kimball

John C. Quinn Inventor
By *Edgeworth Turner* Attorneys
Edgeworth Turner

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2 SHEETS—SHEET 2.

Fig. 4.

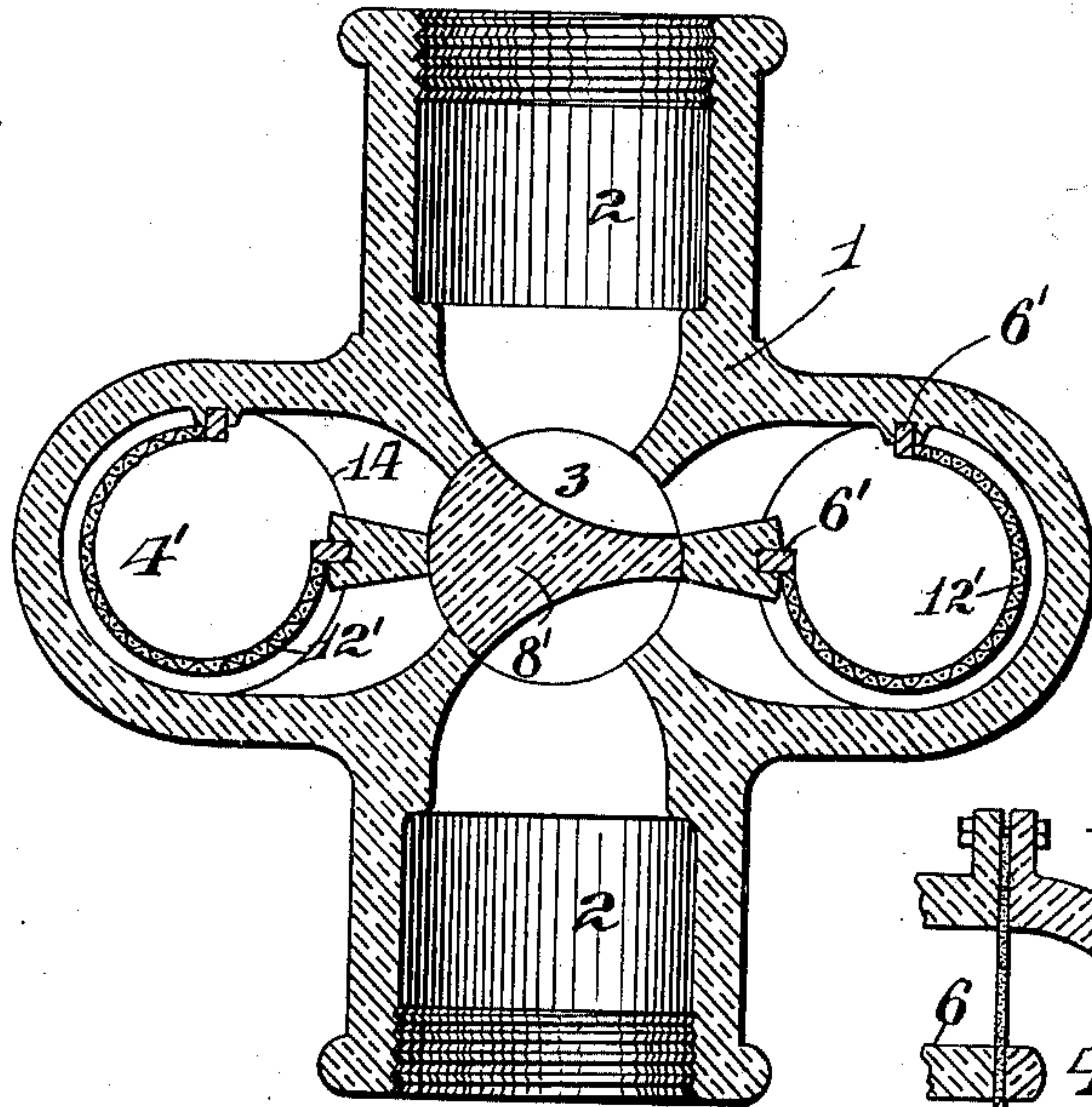


Fig. 3.

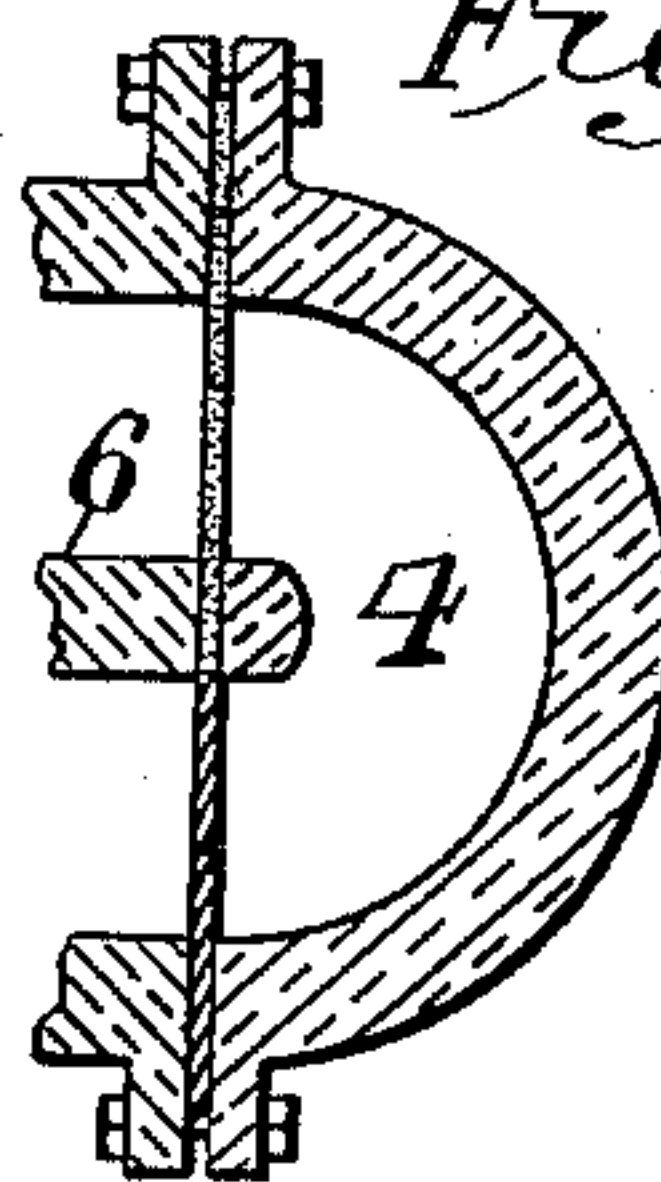
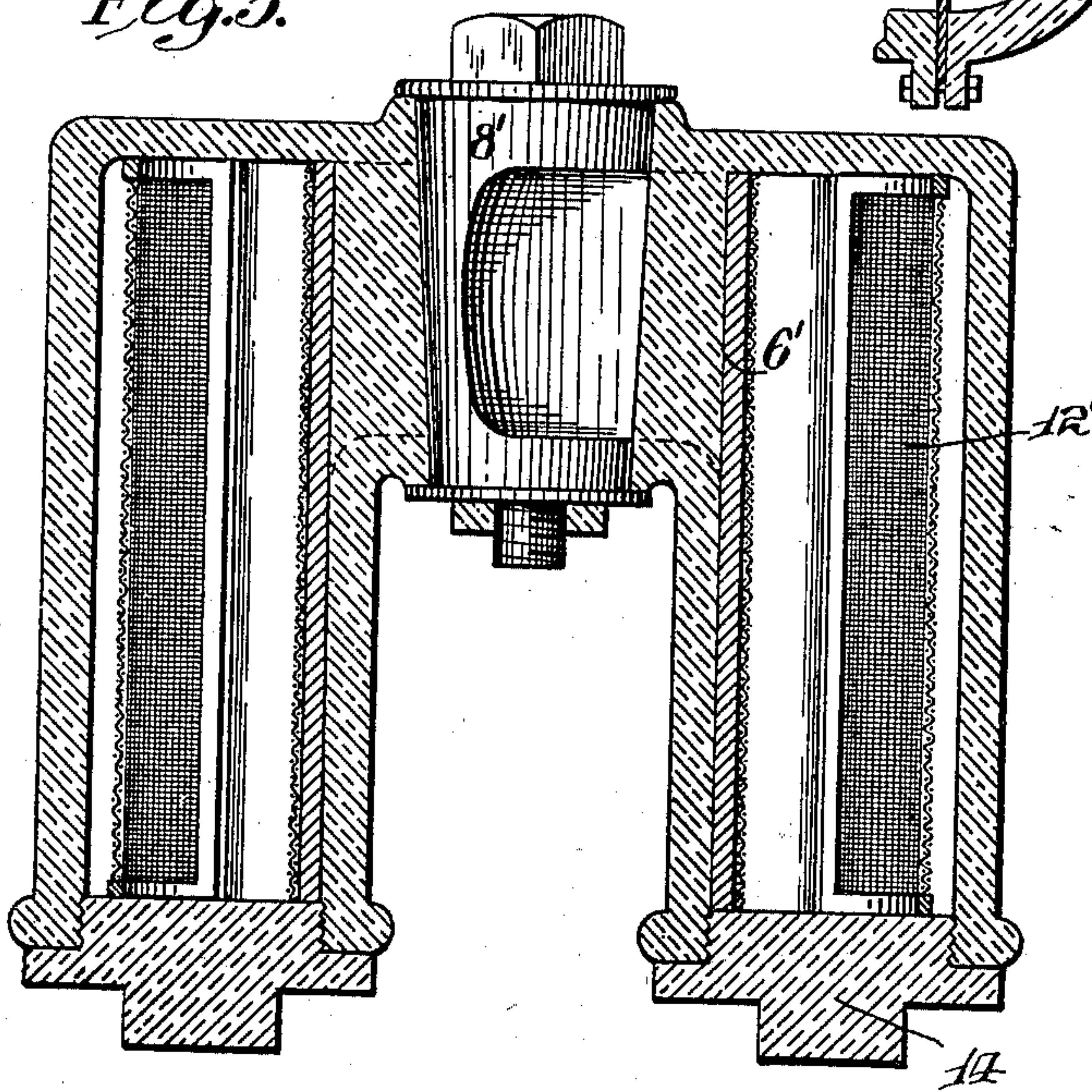


Fig. 5.



Witnesses
Edgeworth Irvine
A. H. Kimball

John C. Quinn Inventor
By *his* Attorneys
Wetmore & Fenner

UNITED STATES PATENT OFFICE.

JOHN C. QUINN, OF NEW YORK, N. Y., ASSIGNOR TO EDWARD D. MEIER,
OF NEW YORK, N. Y.

STRAINER.

SPECIFICATION forming part of Letters Patent No. 756,892, dated April 12, 1904.

Application filed June 3, 1903. Serial No. 159,916. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. QUINN, a citizen of the United States, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Strainers, of which the following is a specification.

My invention relates to filters or strainers for fluids, and more particularly has reference to an improved device especially adapted for straining oil or fluid for oil-engines, oil-burners, lubricators, and other apparatus requiring a constant flow of fluid for their operation and which is so constructed that it may be easily and quickly cleansed of its impurities without cessation of the flow or of the pressure.

The invention contemplates the provision of a main path or conduit for the flow of the fluid to be purified and two or more branch paths, each of which may contain a strainer-plate and is adapted to be disconnected or isolated from the flow by a simple valve mechanism, so that it may be opened for the purpose of cleansing, and the invention also involves other new and useful features, all of which will be fully described, and pointed out in the appended claims.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a horizontal central section of my improved strainer. Fig. 2 is a vertical section thereof. Fig. 3 is a modification. Fig. 4 is a horizontal section of my preferred form. Fig. 5 is a transverse vertical section thereof.

The casing of the improved strainer is composed of a single casting 1, having a central conduit 2 therethrough, provided with threaded ends or other means of connection. The straining-chambers 4 4 are formed in the casing, being symmetrically disposed on opposite sides of the main passage and are divided into compartments by means of the strainer-plates 12, which are mounted on one side in a grooved rib 5 and on the other in a corresponding groove in a partition or wall 6. Each compartment has connection with a central space or valve-chamber 3 through the ports or passages formed by the partition 6

and the dividing-walls 7, and are by this means adapted to be put in connection, respectively, with the opposite ends of the main passage. The tapered valve-plug 8 is located within the central space 3 and is of the usual construction, except that it is cut away, as indicated at 9 and 10, so as to form a web 11, which may register with either wall 6, as shown in Fig. 1, and thus provide a passage for the oil into one compartment and out of the other, and when one chamber is thus in connection with the passage 2 the other is disconnected therefrom by the blank portion 11' of the plug.

Various modifications of the valve mechanism may obviously be made which will perform the above function, and while all of such are intended to be included by the claims I prefer the arrangement indicated, because the integral walls 6 and 7 may be conveniently utilized for forming the central valve chamber or seat 3.

When the device is in operation conveying and straining the oil or other fluid, it is obvious that the flow may be directed into and through either straining-chamber and discontinued from the other by simply turning the plug one hundred and eighty degrees from the position shown.

In Fig. 1 of the drawings I have indicated a third straining-chamber 4', similar to chambers 4 4, but located centrally in the main passage. As this chamber only receives oil that has passed through one of the other chambers, cleansing is seldom required, but may be effected by turning the valve-plug ninety degrees and stopping the flow through the main passage.

Each straining-chamber is provided with an aperture in its bottom, normally closed by the screw-plug 14, which may be removed when the chamber is disconnected from the flow for the withdrawal of the strainer-plates. The latter may be composed of any filtering or straining material suitable for the fluid in question; but for the purpose in hand I prefer a woven-wire sieve, as indicated, which is mounted in a suitable frame to fit snugly in the grooves at the side of the chambers and also, if desired, in the grooves 5' in the

top walls. Ordinarily, however, the two side grooves will be sufficient to hold the strainer-plates in place and the screw-plugs 14 may be screwed up far enough to engage the plates and put them into close contact with the top and bottom of the chambers. For additional security a strip of felt may be interposed between the edges of the plates and the chambers, if desired. In the event of the fluid to be strained being of thin consistency or under high pressure it may sometimes be desirable to make a more perfect leak-tight fit between the strainer-plates and the walls of the chambers, and in such event my invention is intended to include a construction in which a side of the chamber is removable instead of the bottom and the strainer-plate or sheet of filtering material is clamped between the casing and such removable side or cover, as indicated in Fig. 3.

In Figs. 4 and 5 the casing is formed with a depression between the chambers, so that the valve-plug and its seat may be made of substantially the same length as the diameter of the main passage 2, and in this form of construction the chambers may be of any desired capacity, according to the nature of the fluid to be strained and the pressure to which it is subjected, without unnecessarily increasing the weight of the apparatus. The strainer-plates may also be arranged to present a relatively larger area to the fluid by being of greater width than the diameter of the casing and curved to fit in the grooves 6' 6', as indicated by 12' in Fig. 4.

Having described my invention, what I claim is—

1. In a strainer, a main passage or conduit provided with branch passages for the flow of fluid therethrough, straining-partitions across said branch passages and valve mechanism common to both branch passages for intercepting the flow from one of them.

2. In a strainer, a main conduit provided with branch passages for the flow of fluid therethrough, disposed on opposite sides thereof, straining apparatus in said branch passages and a single valve mechanism between said passages for intercepting the flow from one of them.

3. In a strainer, a main conduit and a valve-chamber intermediate the ends thereof, straining-chambers connected with said valve-chamber and adapted to constitute branch paths for the flow of fluid through the conduit, a valve in the valve-chamber whereby one of said strainer-chambers may be disconnected therefrom.

4. In a strainer, a conduit or passage for the flow of fluid, chambers adapted for alternate connection with the passage in the path of flow, removable straining-partitions contained in said chambers and a single valve mechanism for disconnecting one chamber from, and inserting the other into, the path of flow.

5. In a strainer, a main conduit or passage and straining-chambers adapted to form branch passages for the flow of fluid, straining apparatus contained in said chambers and removable covers for said chambers whereby the straining apparatus may be exposed, in combination with a valve mechanism common to the branch passages for disconnecting one of said chambers from the path of flow.

6. In a strainer, a passage for the flow of fluid, chambers on either side thereof, strainer-plates of greater surface width than the diameter of said chambers and contained therein, and single valve mechanism for directing the flow of fluid through one of said chambers and disconnecting the other chamber from the passage.

7. In a strainer, a main passage for the flow of fluid comprising a valve-chamber, straining-chambers provided with straining-partitions dividing them into compartments, a connection from each compartment to the valve-chamber and a valve in said valve-chamber for interposing either straining-partition in the path of flow and isolating the other therefrom.

8. In a strainer, a main passage for the flow of fluid comprising a valve-chamber, straining-chambers disposed transversely to said passage and provided with grooves, strainer-plates removably mounted in said grooves and dividing the chambers into compartments, a connection from each compartment to the valve-chamber and a valve for connecting the compartments of any chamber with the said passage on respectively opposite sides of the valve.

9. In a strainer for fluids, a single casing comprising straining-chambers and a main passage, walls for separating said chambers from the main passage, and partitions for dividing said chambers into compartments, a valve-seat formed by the inner edges of said partition and a valve-plug therein, adapted to connect the compartments of either chamber respectively with the main passage on opposite sides of the valve-seat.

10. In a strainer for fluids, a casing containing a main passage and a valve-chamber of substantially the same length as the diameter of said main passage, straining-chambers connected with said valve-chamber and of greater length than the diameter of said main passage and a valve-plug in said valve-chamber for disconnecting one of said straining-chambers therefrom.

11. In a filter or strainer, the combination with a casing, of two filtering or straining devices arranged therein, said casing provided with an inlet and discharge, and a valve-plug fitted to said casing, arranged to connect one or other of the said devices with the said inlet and discharge, and at the same time to close the other said device from connection therewith.

12. In a filter or strainer, the combination

with a casing, of two filtering or straining devices arranged therein, said casing provided with an inlet and discharge, and a valve-plug fitted to said casing, arranged to connect one
5 or other of the said devices with the said inlet and discharge, and at the same time to close the other said device from connection therewith, said casing provided with means permitting access to either one or other of said
10 filtering or straining devices, independently of the other.

13. A filter or strainer comprising a casing having therein a valve-seat, and two chambers arranged upon opposite sides thereof, and hav-
15 ing inlet and discharge passages, and ports and passages leading from the valve-seat to the two said chambers, and to the said inlet

and discharge of a valve-plug fitted to said valve-seat, and arranged in its different positions, to connect the passages leading to one
20 or other of said chambers to the inlet and discharge, and at the same time close the passages to the other of said chambers; independent filtering or straining devices for the two said chambers, and means admitting access thereto,
25 the one independently of the other.

In testimony whereof I have signed my name to the specification in the presence of two subscribing witnesses.

JOHN C. QUINN.

Witnesses:

OSCAR W. JEFFERY,
H. G. KIMBALL.