

M. J. RYAN.

FAUCET.

APPLICATION FILED DEC. 3, 1904.

927,880.

Patented July 13, 1909.

Fig. 1.

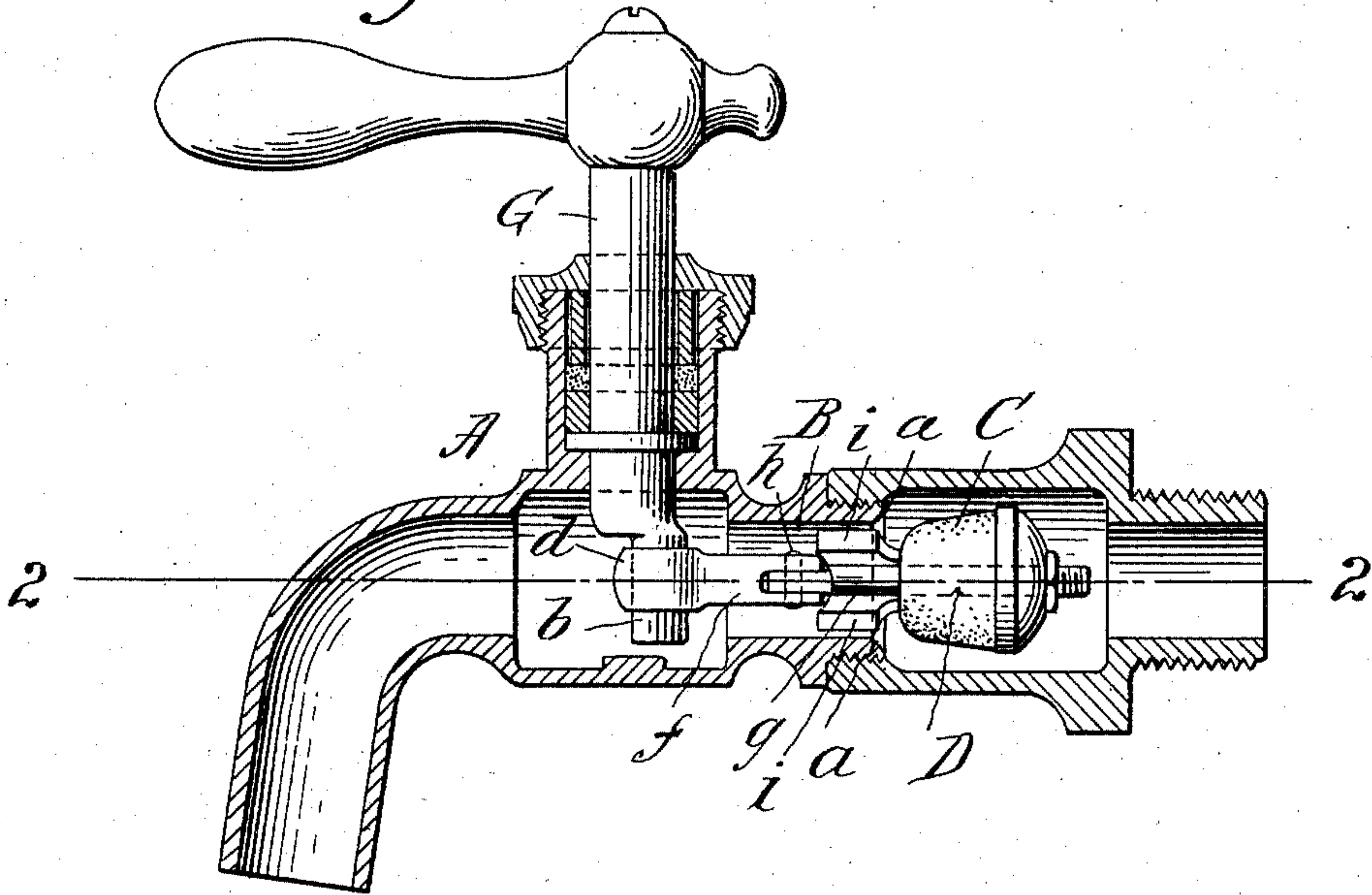


Fig. 2.

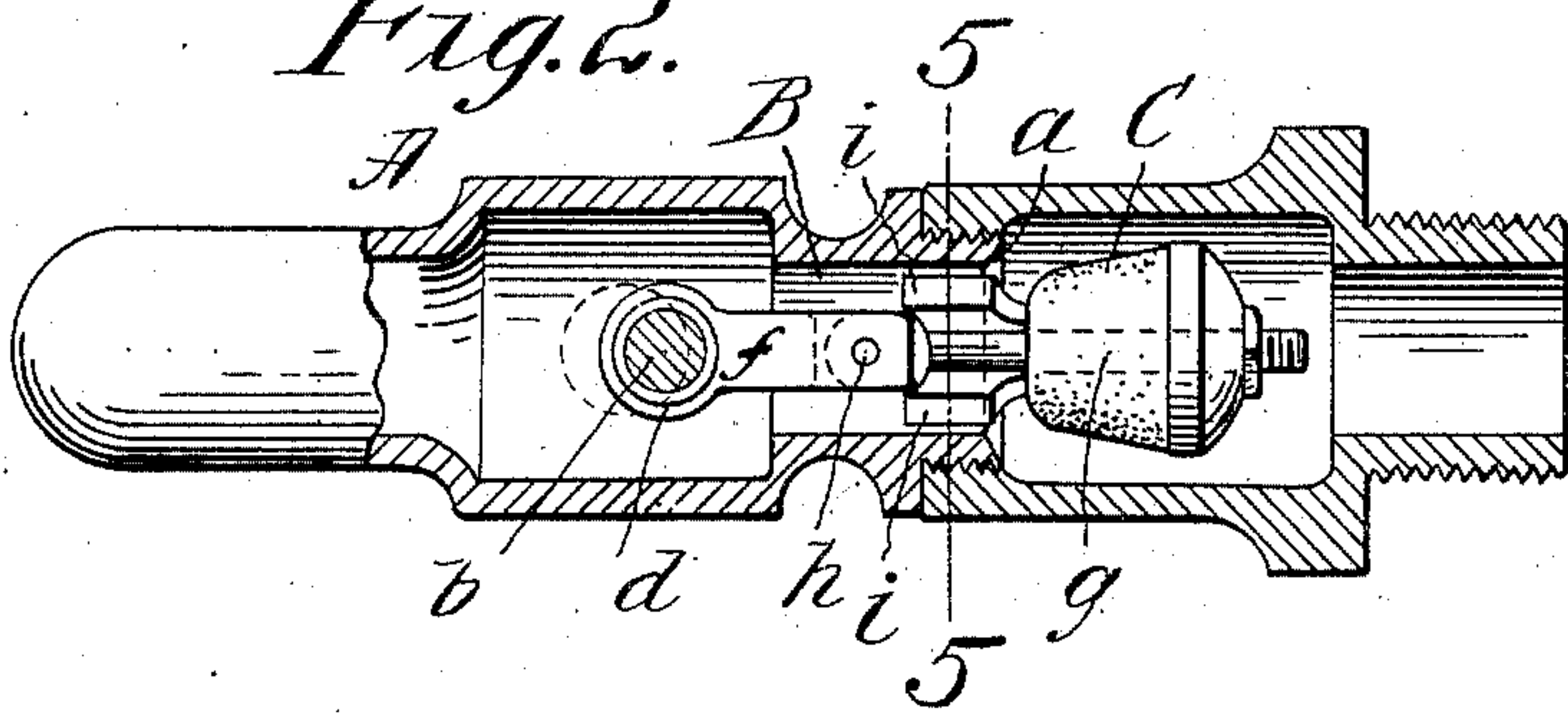


Fig. 3.

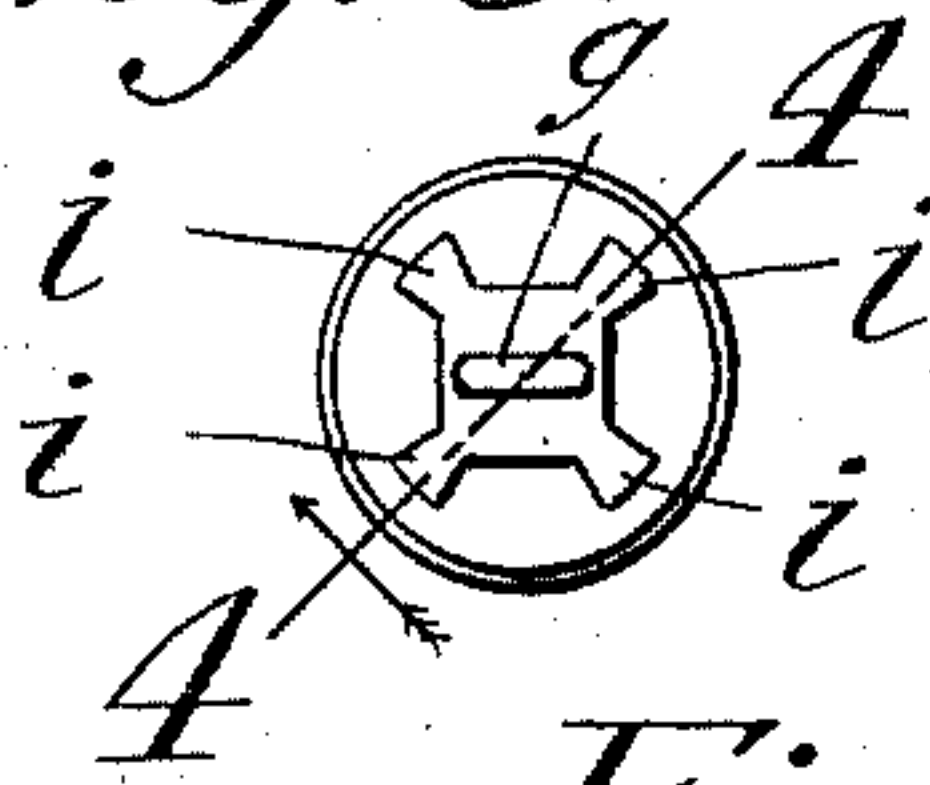


Fig. 4.

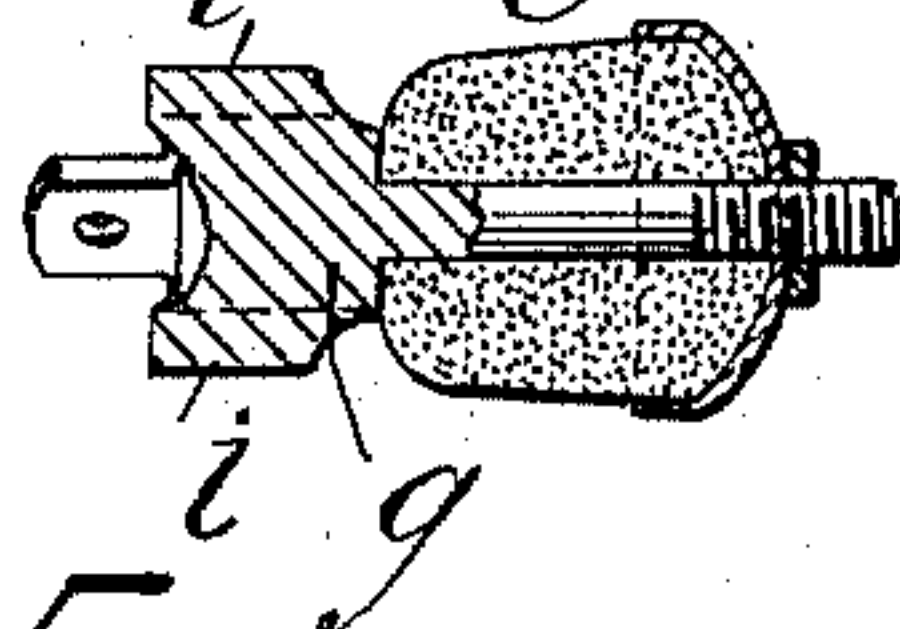
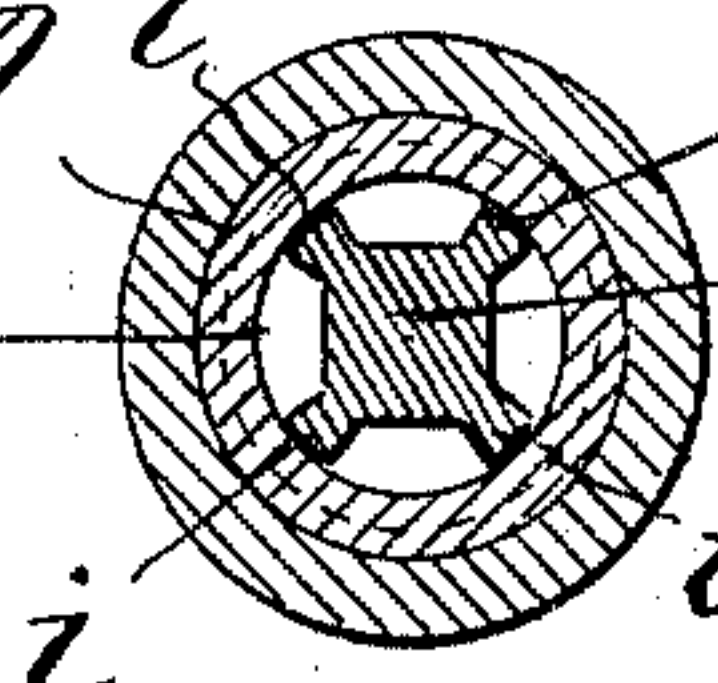


Fig. 5.



Witnesses:

James Fisher

M. G. Crozier.

Inventor:

M. J. Ryan

by W. F. Bellows
Attorney.

UNITED STATES PATENT OFFICE

MICHAEL J. RYAN, OF HAYDENVILLE, MASSACHUSETTS.

FAUCET.

No. 927,880.

Specification of Letters Patent.

Patented July 13, 1909.

Application filed December 3, 1904. Serial No. 235,383.

To all whom it may concern:

Be it known that I, MICHAEL J. RYAN, a citizen of the United States of America, and resident of Haydenville, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Faucets, of which the following is a full, clear, and exact description.

This invention relates to faucets or other species of valves in which the valve and the stem thereof are arranged for movement relatively to the valve-seat and adjacent waterway in a line substantially right-angular to the axis of the operating shaft or rotatable member, which enters the valve-body vertically at the top thereof and has an operating bar or handle,—connections being provided between the handle shaft and the valve-stem whereby rotational movement of the handle-shaft will cause an axial opening and closing movement to the valve and its stem. In valves of this class as heretofore constructed, the cam or eccentric connection usually employed between the operating shaft of the valve and the valve-stem for imparting the endwise opening and closing movements of the latter have necessitated a degree of lateral motion of the valve-stem and looseness of the valve, so that there has been an objectionable mode of action of the valve occasioned by shaking thereof and water hammering.

The object of this invention is to provide in the valve of the type mentioned, constructions, whereby the movements of the valve-stem and valve are entirely rectilinear, so that the valve can have no lateral movement and will come to its seat evenly and firmly at all points around the same.

The invention consists in the combination with the valve-body having a chamber therein, continued in the outlet nozzle, and a waterway, the wall of which is cylindrical between the aforesaid chamber and a chamber nearer the valve inlet, in which latter-named chamber the valve is located, of the handle-provided rotatable shaft which vertically enters the body at the top thereof and which has its inner extremity constructed with an eccentric or other appropriate form of cam, and the valve-stem made in two sections pivoted together, one thereof being extended to a thrust-receiving engagement with the eccentric or cam, and the other section carrying the valve and having at the portion thereof within the cylindrical

formed waterway, a plurality,—three or more, of radiating members having guiding bearings, and transverse motion preventing engagements against the internal wall surface of such cylindrical waterway.

The valve constructed in accordance with this invention is illustrated in the accompanying drawings, in which,—

Figure 1 is a vertical, central, longitudinal, section through the faucet. Fig. 2 is a horizontal, longitudinal, sectional view, substantially on line 2—2, Fig. 1. Fig. 3 is an end view; and Fig. 4 is a longitudinal section through the wing-provided valve-carrying section of the two-part valve-stem. Fig. 5 is a cross-sectional view as taken on line 5—5, Fig. 2.

Similar letters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the body of the faucet having therein the usual central chamber forwardly continued in the outlet nozzle and rearwardly continued in the horizontal cylindrical waterway B at the rear end of which is the valve-seat *a* for the valve C which is located within the chamber between said waterway and the inlet or coupling end of the faucet,—the stem D of the valve being arranged horizontally and longitudinally of the body, and right-angular to the operating shaft G, which is fitted through a gland in the most common manner at the top of the faucet body and has its lower extremity located within the central chamber in the faucet body. The lower extremity of the handle-provided shaft G is formed with the eccentric *b* or other approved form of cam.

The valve-stem D, as shown, is formed of the two sections *f* and *g*, one being in endwise continuation of the other, and pivotally united at *h*; and the forwardly extended section *f* has its forward end in the form of a ring *d* or eccentric strap encircling the eccentric. The other section *g* of the valve-stem on which the valve is mounted, has at its portion forward of the valve and which is located within the cylindrical waterway B, three or more (in the present instance four) radial wings *i*, the outer edges of which are of greater width than their inner edges thereby giving the valve stem sufficient surface bearing and permitting the same to closely fit and serve as guides against the cylindrical surface of said way B, so that notwithstanding the lateral swinging

motion which the valve-stem section *f* must have, as imparted by the oscillation of the eccentric, the valve-carrying section *g* has a true axial rectilinear opening and closing
5 movement.

I am aware that other expedients have heretofore been proposed in faucets of this type to carry out the stated object of this invention, but the same have been specific-
10 ally unlike the devices employed by me hereunder, and in most instances have been ineffective in the accomplishment of the desired object; and

Having thus described my invention, what
15 I claim and desire to secure by Letters Patent is:—

In a faucet, the combination with a valve casing having a chamber and a waterway leading thereto, said waterway being cut
20 away at one end to provide a valve seat and a water passage, of an operating shaft having its cranked end located in said chamber, a block slidably mounted in said waterway, said block having at its inner end a
25 stem formed integrally therewith, and at its

outer end an integrally formed apertured lug, the face of said block immediately adjacent said apertured lug being cut away to provide a concave face, said block being formed with a plurality of sliding members
30 of equal length, radially disposed thereon; said members having their outer or wearing faces of greater width than their inner ends to provide bearing surfaces for the block, a valve mounted on the stem, the ends of said
35 projections adjacent the valve and valve seat being cut away to provide water passages, and a shoulder for seating said valve, and a link having one end fitting within said concave face and pivoted to the apertured lug
40 within said waterway, and its outer end engaging with the cranked end of the operating shaft.

Signed by me at Springfield, Mass., in presence of two subscribing witnesses.

MICHAEL J. RYAN.

Witnesses:

WM. S. BELLOWS,
G. R. DRISCOLL.