

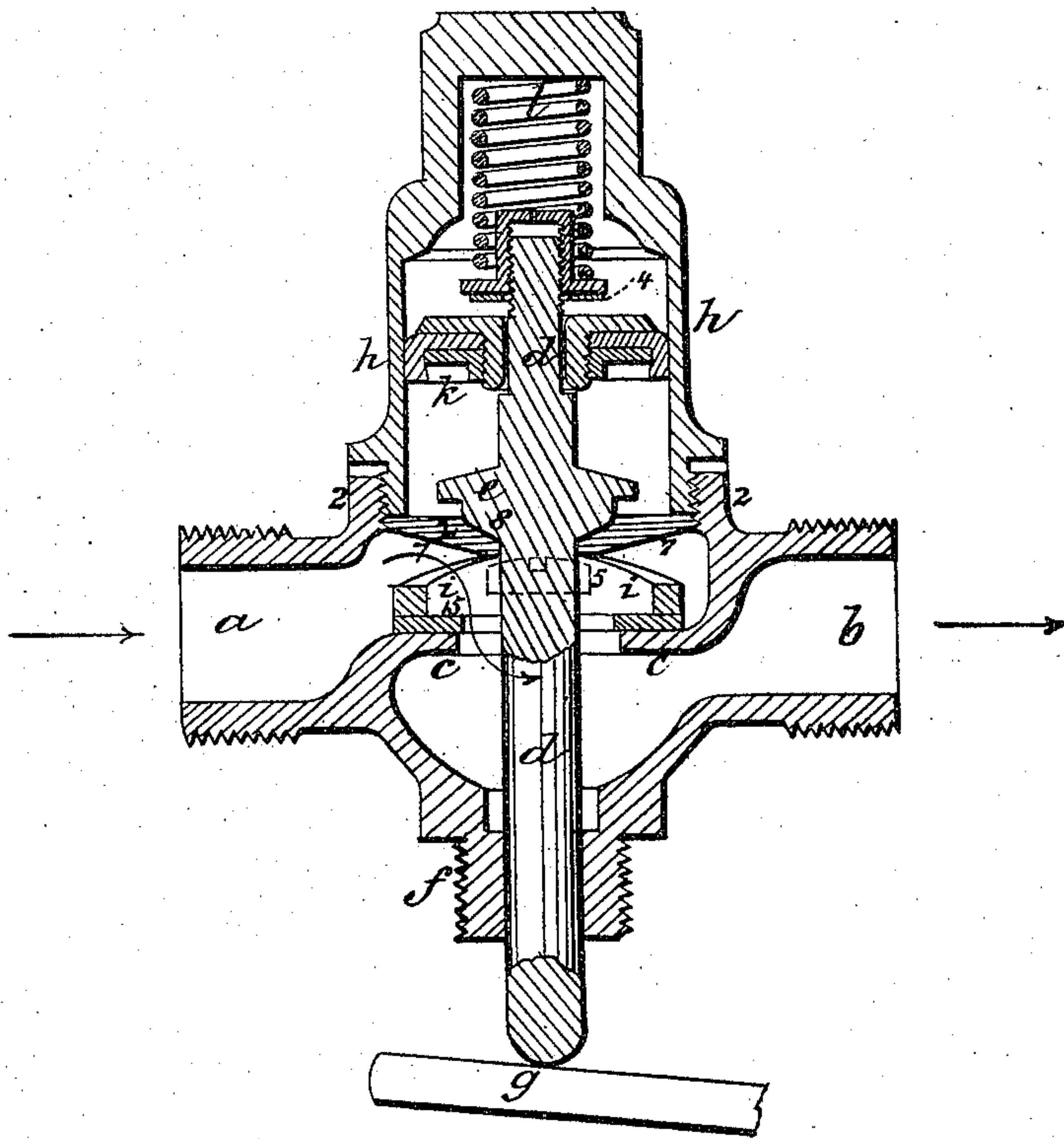
*H. H. Craigie,*

*Water Closet.*

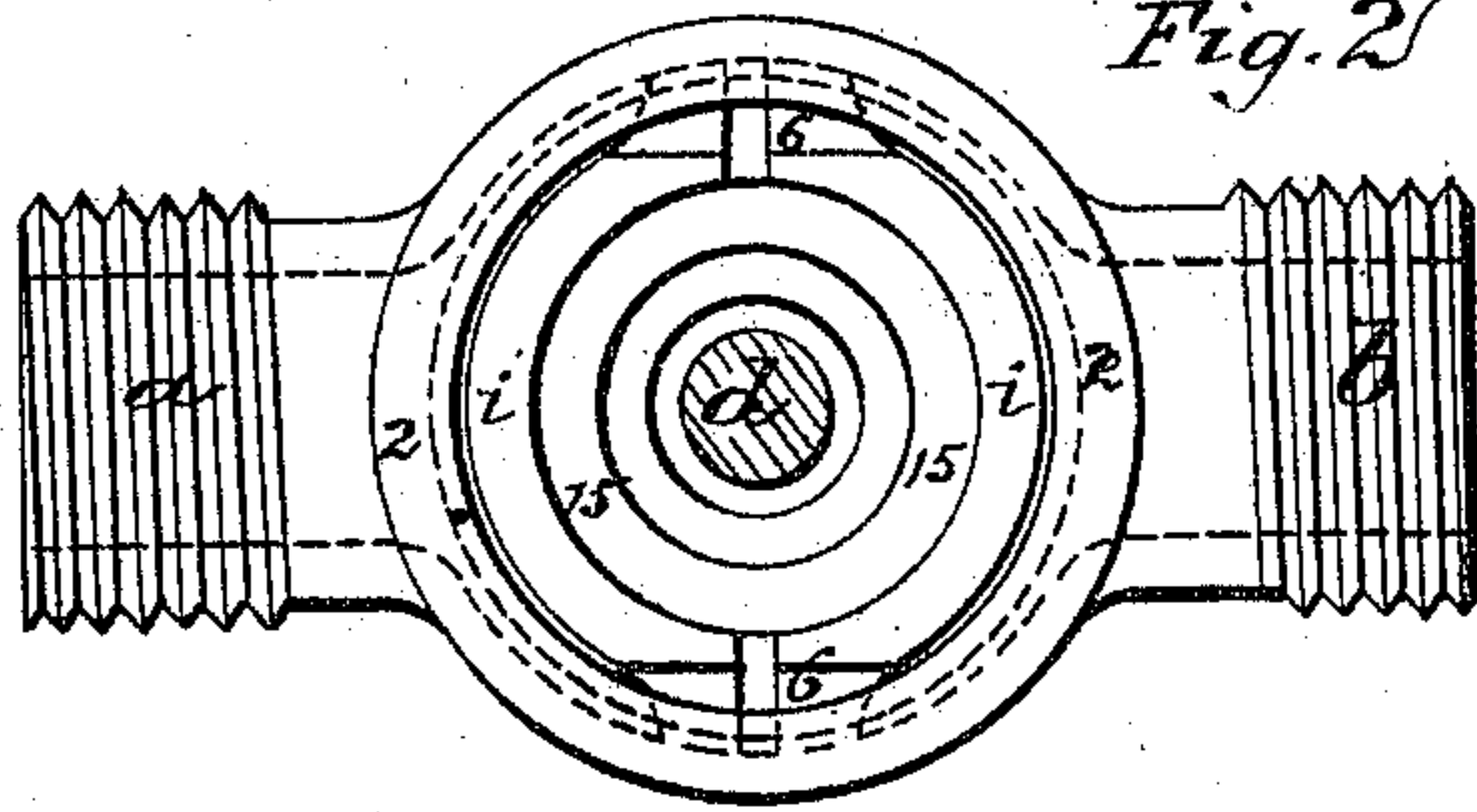
*No. 89,856.*

*Patented May 11, 1869.*

*Fig. 1.*



*Fig. 2.*



*Witnesses.*

*Geo. D. Waer*

*Chas. H. Smith*

*Inventor.*

*H. H. Craigie.*



# United States Patent Office.

HUGH H. CRAIGIE, OF NEW YORK, N. Y.

Letters Patent No. 89,856, dated May 11, 1869.

## IMPROVEMENT IN COCKS FOR WATER-CLOSETS.

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern:

Be it known that I, HUGH H. CRAIGIE, of the city and State of New York, have invented, made, and applied to use, a certain new and useful Improvement in Cocks for Water-Closets; and I do hereby declare the following to be a full, clear, and exact description of the said invention, reference being had to the annexed drawing, making part of this specification, wherein—

Figure 1 is a vertical section of said cock or valve as open, and

Figure 2 is a plan of the same, with the valve and its cap removed.

Similar marks of reference denote the same parts.

Valves have been made with a diaphragm, containing an opening, that forms a valve-seat; and to this a valve has been applied, with an elastic face; but it is found that valves of this general class are subject to sudden concussion of the valve on the seat, produced by the ram-action of the water flowing through the seat. This concussion is injurious to the valve and to the pipes, as well as being very disagreeable, in consequence of the noise.

The nature of my said invention consists in a movable ring applied to hold a leather or elastic washer to the seat, so that the valve itself can be made entirely of metal; and I form said valve with a cylindrical base, that enters the elastic seat, and closes the water-way before the valve comes down upon its seat, and, by this means, the flow of the water is first stopped, so that the momentum thereof cannot produce any concussion of the valve on the seat, but said valve will close gradually, and become entirely tight upon the elastic face of the diaphragm valve-seat.

In the drawing—

*a* is the inlet-pipe connection;

*b*, the outlet or connection to the water-closet;

*c* is the diaphragm forming the valve-seat around the water-way opening;

*d* is the valve-stem;

*e*, the valve;

*f* is a screw, by which the cock may be connected to the water-closet hopper; and

*g*, the lever, or a portion thereof, by means of which the valve-stem *d* and valve *e* are pushed up, to open the cock.

*h* is a cap, screwed upon the upper part, 2, of the valve-case, and forming a cylinder, in which the piston *k* moves.

This piston *k* is upon the valve-stem *d*, and a small amount of play is allowed of the valve-stem through the piston, so that, when the valve *e* is moved to open it, the elastic washer 4, on the stem *d*, is moved away

from the piston *k*, opening a water-way for water to flow freely out of the cylinder *h*, through an opening between the piston *k* and stem *d*; but, when the power that has opened the valve *e* is released, the spring *l* immediately moves the stem *d*, bringing the elastic washer 4 upon the piston, and closing the inlet to the cylinder *h*; hence said valve *e* can only close gradually as water leaks into the cylinder *h* through a small opening, as at 5.

The operation of these parts, that control the motion of the valve in closing, corresponds, generally, to that set forth in Letters Patent allowed to me June 3, 1868.

The elastic or leather washer 15, that sets upon the seat *c*, is secured by means of the ring *i*, that is made with projecting lugs, 6, that pass beneath the screw-part, 2, of the valve-case, the downward inclines 7 being formed at these points, so that, when the ring *i* is turned around, the lugs 6, coming against the inclines 7, cause the ring *i* to hold the washer 15 firmly to place.

The valve *e* is formed with a cylindrical projection, 8, below it.

It will now be understood that, as the valve *e* closes, the cylinder 8, entering the opening of the washer 15, stops the flow of water through the seat, and there can be no concussion, and the valve will continue to move, by the action of the spring and the pressure, until it sets down upon the seat formed by the elastic washer 5; hence there cannot be the ram-action and hammering before mentioned.

The ring *i* might be screwed down upon the washer 15, suitable openings being left for the passage of the water.

What I claim, and desire to secure by Letters Patent, is—

1. The ring *i* and elastic washer 15, in combination with the diaphragm seat *c* of the valve, the parts being constructed and applied substantially as set forth.

2. The cylindrical projection 8 of the valve *e*, in combination with the elastic washer 15 and valve-seat, for the purposes set forth.

3. The combination of the elastic washer 15, valve *e*, cylindrical projection 8, piston *k*, cylinder *h*, and washer 4, to control the closing of the valve, substantially as set forth.

In witness whereof, I have hereunto set my signature, this 30th day of October, A. D. 1868.

H. H. CRAIGIE.

Witnesses:

CHAS. H. SMITH,

GEO. T. PINCKNEY.