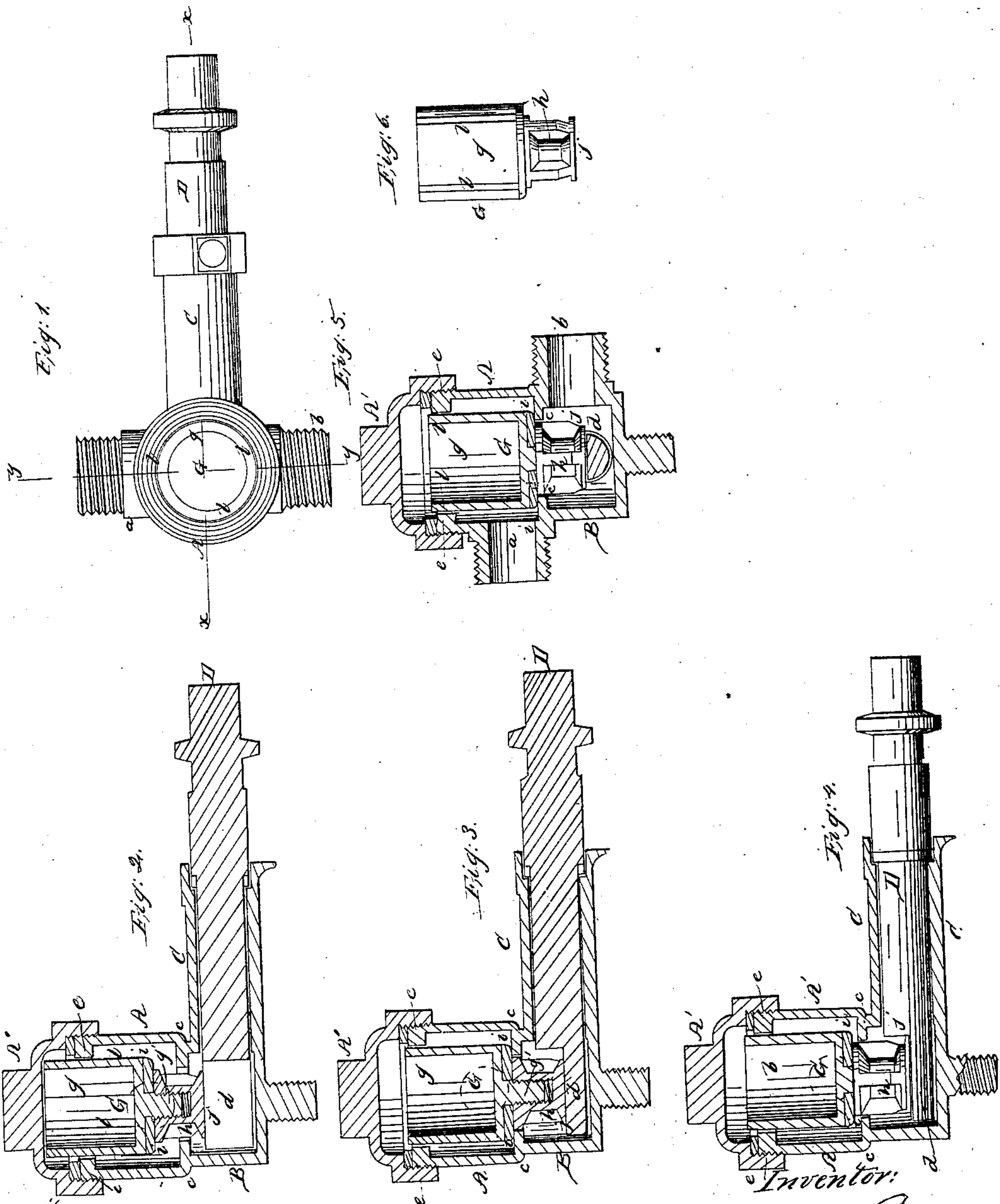


J. Regester,
Water-Closet Valve.

N^o 57,570.

Patented Aug. 28, 1866.



Witnesses:
R. J. Campbell,
Edw. Schaefer

Inventor:
Joshua Regester
by Atty.
Marion, Smith & Lawrence

UNITED STATES PATENT OFFICE.

JOSHUA REGESTER, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN VALVES FOR WATER-CLOSETS.

Specification forming part of Letters Patent No. 57,570, dated August 28, 1866.

To all whom it may concern:

Be it known that I, JOSHUA REGESTER, of the city and county of Baltimore, State of Maryland, have invented a new and Improved Valve for Water-Closets; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of the valve and its box with the cover removed. Fig. 2 is a longitudinal section, taken in the vertical plane indicated by red line *xx*, in Fig. 1, showing the valve fully open. Fig. 3 is a similar section, showing the valve fully closed. Fig. 4 is a similar section, showing the valve in the act of closing. Fig. 5 is a transverse section, taken through the valve and its water-ways, in the vertical plane indicated by red line *yy* in Fig. 1. Fig. 6 is a side view of the valve removed from its box.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improvement in the construction of valves which are to be applied to water-ways leading to the basins of water-closets, and which are designed for cutting off the flow of water to the basins after they have been used.

The invention consists in arranging within a valve-box through which water flows to a basin a cupped valve which is supported upon the half-round end of a rocking bar to which a lever is applied, and which is so constructed that the force of water in the service-pipe shall not act upon it with undue pressure and render it difficult to lift it from its seat; and while this is the case, provision is made for effecting the gentle but certain closing of the valve by its own gravity and the weight or pressure of water above it, as will be hereinafter described.

The invention also consists in obviating the uneven wearing away of the lifting-edges of the rocking bar, which is used for lifting the valve from its seat, by so constructing the valve-stem that a solid flat bottom surface is caused to act upon said lifting-edges, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

The valve is arranged to work in a box or water-way, which consists of an upper cylindrical chamber, A, into which water flows from a pipe, *a*, and a lower cylindrical chamber, B, from which water flows through the pipe *b*. The pipe or connection *a* is located above the valve-seat *c*, and the pipe-connection *b* is located below the valve-seat, so that the valve must be raised from its seat before water is allowed to flow through the valve-chambers.

A tubular bearing, C, is formed on one side of the lower portion, B, of the valve-box, for receiving a rocking bar, D, the inner end of which is semi-cylindrical, as shown at *d*, and supports the valve, and serves as a means for lifting this valve from its seat when the bar is rocked either toward the right or left. This bar D is suitably packed in its tubular bearing, so as to prevent leakage, and to its outer end the hand-lever should be applied for rocking it.

The upper end of the valve-chamber A is provided with a cup-shaped screw-cap, A', which, when removed, will allow access to the valve, and when screwed upon its chamber, as shown in the drawings, will prevent the escape of water.

The upper end of the chamber A has an inside flange, *e*, which, with the flange or valve-seat *c*, forms a support for keeping the valve in its proper position and allowing it to rise or fall freely.

The valve G consists of an upper cylindrical cup, *g*, having a short screw-stem, *g'*, projecting from the center of its closed bottom, for receiving the ribbed neck or bottom guide, *h*, and the packing *i*, which latter may be a circular piece of leather confined between the two portions *g* and *h*, as shown in the drawings. This packing or valve-face *i* is not greater in diameter than the cupped portion *g*, and offers no resistance to the influx of water into the lower chamber of the valve-box.

The neck or lower portion of the valve has an upper cylindrical portion corresponding in diameter to the inner diameter of the flange *c*, and the bottom of this neck also has a cylindrical portion formed on it, as shown at *j*, the bottom of which rests upon the half-round portion *d*, and is made flat and solid, as shown in the drawings, for the purpose of preventing

grooves from being formed on the lifting-edges of said half-round portion. This neck is ribbed, as shown, for the purpose of affording a bearing against the edge of the flange *c* when the valve is raised from its seat.

The cylindrical cupped portion *g* has flattened places *l* formed on its circumference, for the purpose of allowing water to flow gently above it and into the space within it, for the purpose of compelling the valve to take its seat when released from the lifting-edges of the portion *d*. It is not intended that the flattened places *l* on the portion *g* shall allow the water to rush above this portion and force it down suddenly to its seat, as this would cause a thump and jar which would injure the joints of the pipes.

When the bar *D* is turned one-quarter around, as shown in Fig. 2, the valve will be raised from its seat, and water will flow through the valve-box, as shown by the red arrows in Fig. 5. When the valve is released from the lifter *d* its weight will cause it to descend slowly until the passage is closed by the cylindrical portion just below the packing *i*, as indicated in Fig. 4, when the flow of water upward through the small spaces *l* will cause the water to force the valve to its seat and hold it down, as shown in Fig. 3.

It will be seen that instantly the valve begins to rise from its seat water will begin to flow very slowly through the small space which surrounds the upper portion of the neck of the valve. This will give motion to the stream before the full head of water is let

on by further raising the valve. In closing this valve the same thing occurs. The cylindrical portion of the valve-neck, which enters the valve-opening, is made so short that when the force of water is cut off by it the packing *i* has a very short distance to move to reach its seat; consequently there will be no sudden shock or sudden closing of the valves.

I am aware that Thomas Grundy secured a patent June 26, 1860, on an improvement in water-closets, and therefore I do not claim a solid plunger working in an inverted cup, as shown in his said patent. Nor do I claim lifting a plunger by an eccentric, as also shown in said patent; but,

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. Constructing a valve, *G*, of the parts *g*, *h*, and *i*, and arranging it within a box through which water flows, substantially as described.
2. The combination of the enlarged cupped portion *g*, having flattened spaces *l*, and the reduced cylindrical guide *h* with the packing *i*, said parts being arranged within a chamber, *A*, and above the outlet-chamber, substantially as described.
3. The stem *D*, constructed with the part *d* on it, as described, in combination with the device *h j*, in the manner and for the purpose described.

JOSHUA REGESTER.

Witnesses:

DAVID ARTHUR,
SAML. W. REGESTER.