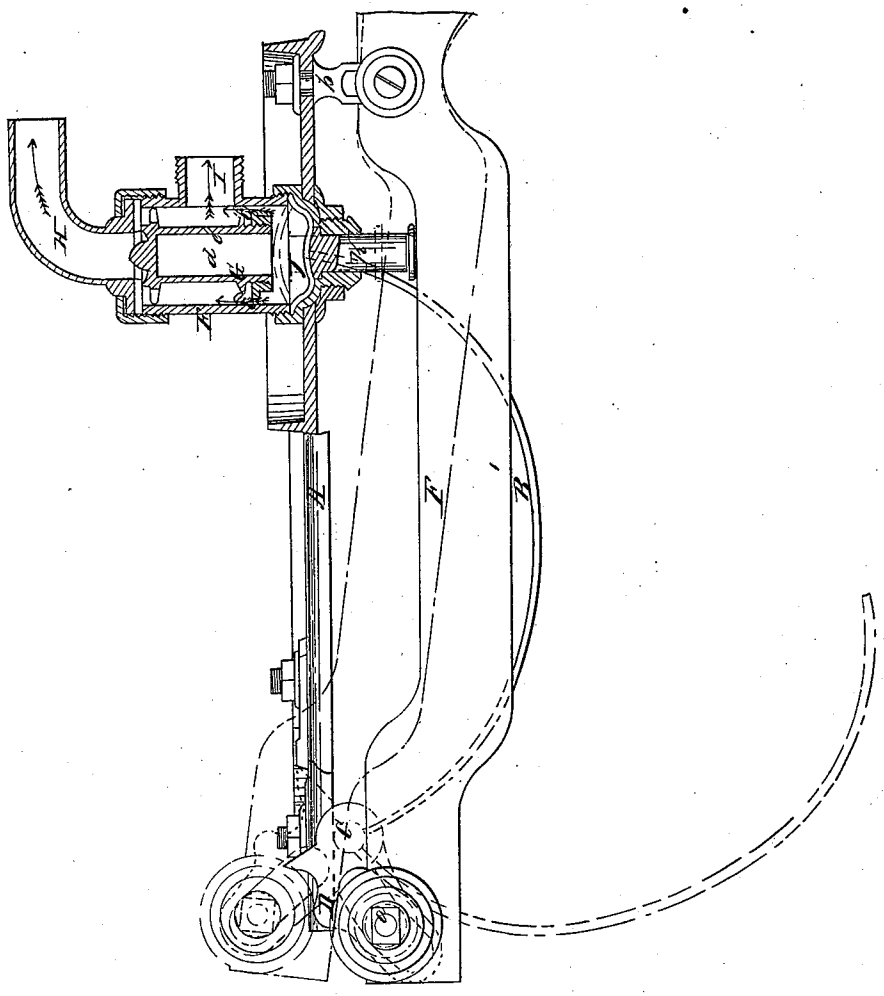
# F. H. Bartholomew,

## Water-Closet Valve.

No. 38,648. Patented May 26, 1863.



Witnesses.
Wm S Partridge
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# UNITED STATES PATENT OFFICE.

F. H. BARTHOLOMEW, OF NEW YORK, N. Y.

## IMPROVEMENT IN VALVES FOR WATER-CLOSETS.

Specification forming part of Letters Patent No. **38,618**, dated May 26, 1863.

*To all whom it may concern:*

Be it known that I, F. H. BARTHOLOMEW, of the city, county, and State of New York, have invented a new and useful Improvement in Valves for Water-Closets; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, making a part of this specification, said drawing being a longitudinal central section of my invention.

The object of this invention is to obtain a valve for water-closets which will not admit of the water being wasted in the cleaning out of the pan at the bottom of the basin, the parts being arranged in such a manner that the lever by which the pan is opened will so actuate a certain member or part of the valve as to cause the water in the induction-pipe, after the lever is released and the pan closed, to close the valve gradually, and while the latter is closing admit of a requisite quantity of water escaping through the eduction-pipe into the pan to cleanse the latter. By this arrangement, as will be hereinafter fully shown and described, the valve is not actuated directly by the pan-lever, the latter only serving in its operation as a means for enabling the induction-water or water from the induction-pipe to close the valve or keep it in a closed state after the lever has been actuated and assumed its normal position, and at the same time admit of a sufficient quantity of water passing through the valve-opening during the gradual closing of the valve.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a portion of the metallic plate or base which receives the lower part of the basin of a water closet; and B is a curved wire designed to represent the pan, which when in an upward position closes the lower end of the basin. This pan is attached to a shaft, C, the bearings of which are underneath the plate A, said shaft having a slotted arm, D, on its outer end, in which a pin, *a*, at one end of a lever, E, is fitted. The opposite end of the lever E is pivoted in a pendant, *b*, attached to plate A, as plainly shown in the drawings. The above parts are old and well known, and therefore do not require a minute description. On the base or plate A there is secured a cylinder, F, in which the valve G is fitted and works. To the upper end of the cylinder F the eduction-pipe H is attached, which conducts the water to the basin and pan; and I is the induction-pipe through which the water passes into the valve-cylinder F at the side thereof, as shown in the drawings. The lower end of the eduction-pipe H forms the seat of the valve G. This valve is tubular, open at its lower end, and has a packing, *c*, of leather or other suitable material, around its lower part, said packing being below the junction of the induction-pipe I with the valve-cylinder F and preventing the flow of water down in the cylinder below the valve. The tube *d* of the valve has a small hole, *e*, made in it to allow a small stream to pass into the lower part of the cylinder below the valve, and this hole *e* is the only means by which the water can get below the valve. In the lower part of the valve-cylinder F there is fitted a diaphragm, J, which may be constructed of any suitable flexible material—such as leather, rubber, &c. This diaphragm has a rod, K, attached to it, which rod passes through the bottom of the cylinder F and is directly over the lever E.

The operation is as follows: When the closet is not in use, the pan B is of course closed or over the bottom of the basin, and the valve G is also closed or kept in contact with its seat at the lower end of the eduction-pipe H in consequence of the pressure of the water against the lower end of the valve G. After the closet has been used the person raises the lever E, thereby throwing down the pan B and forcing upward the diaphragm J, which expels the water from the lower part of the cylinder F, as indicated by the red arrows, the water under the upward pressure forcing inward or toward the tube *d* of the valve G the packing *c*. The valve G, it will be understood, during this upward movement of the lever and diaphragm remains closed; but when the lever is released and allowed to fall the valve G and diaphragm J will also fall under the downward pressure of water from the induction pipe I. The water will then rush up through the eduction-pipe H and into the basin and pan, while a stream of water will pass through the hole *e* in the tube *d* of the valve and exert an upward pressure, which gradually raises the valve until it is closed, enough water escaping into the eduction-pipe during the gradual clos-

ing of the valve to admit of the basin and pan being thoroughly cleansed. By this arrangement it will be seen that there can be no waste of water under any adjustment of the lever E, as is the case with all of the ordinary water-closet valves which are actuated directly from the lever, for the latter are frequently wedged up or held in such a position as to permit the water to run an indefinite period of time. This, it will be seen, cannot be done if my invention be applied to the water-closet.

I would remark that a piston might be used instead of a diaphragm, J, but the former would be but an equivalent of the latter.

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

The valve G and diaphragm J, or its equivalent, placed within a suitable cylinder or box, F, in combination with the pan B and the lever E or other pan-actuating mechanism, arranged to operate substantially as and for the purpose herein set forth.

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Witnesses:
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