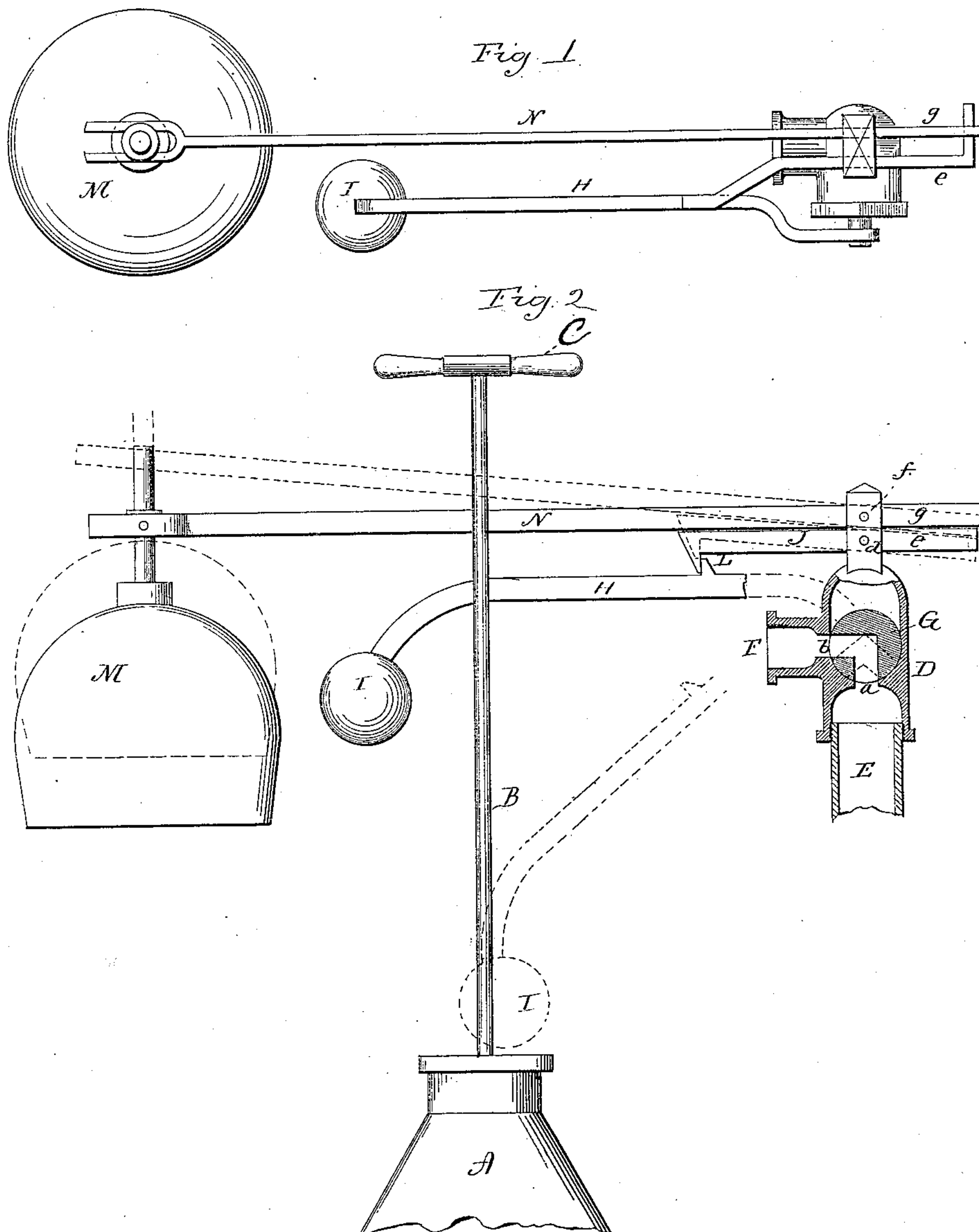


(No Model.)

H. S. LORD.  
WATER CLOSET VALVE.

No. 330,843.

Patented Nov. 17, 1885.



Witnesses.  
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# UNITED STATES PATENT OFFICE.

HENRY S. LORD, OF HARTFORD, CONNECTICUT.

## WATER-CLOSET VALVE.

SPECIFICATION forming part of Letters Patent No. 330,843, dated November 17, 1885.

Application filed June 8, 1885. Serial No. 167,934. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY S. LORD, of Hartford, in the county of Hartford and State of Connecticut, have invented a new Improvement in Water-Closet Valves; and I do hereby declare the following, when taken in connection with accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top or plan view; Fig. 2, a sectional side view.

This invention relates to an improvement in valves for that class of water-closets in which the waste or escape from the bowl is produced by the lifting of a plunger-valve, opening a large escape passage from the bowl, and such, for illustration, as that known as "The Hartford Sanitary Closet;" but other closets employ the same, the object of the invention being to overcome difficulties existing in valves as heretofore constructed, and which construction renders the valve liable to stick or choke, so as to prevent a positive cutting off of the supply of water when the water shall have reached a certain level in the basin; and the invention consists in the construction of the valve, as hereinafter described, and more particularly recited in the claim.

A represents the upper portion of the plunger, to which the spindle B and handle C are applied, the handle being above the seat, and in convenient position for lifting the plunger, and as in the usual construction of this class of water-closets.

D is the valve-casing, into which opens the inlet E, and from which opens the outlet F. Between the inlet and the outlet a plug-valve, G, is arranged. This may be a common plug-valve. Through the plug is a water-way, *a b*, and so that standing as in Fig. 2 the way is clear from the inlet E to the outlet F, and so that water flowing through the valve in this position will pass to the basin for flushing purposes in the usual manner for water-closet valves; but when turned to the position indicated in broken lines, Fig. 2, the inlet-passage is cut off, and no water will pass therefrom to the basin. To the plug outside the case the lever H is attached, and by which the plug may

be turned or rotated. This lever H is weighted, as at I, the weight being sufficient to turn the plug when the lever is free, so as to close the passage through the valve. The lever H is arranged above the plunger, and so that lifting the plunger will lift the lever. This may be simply bearing upon the top of the plunger or any suitable connection between it or its spindle and the lever, but so that while the lever must rise with the plunger the plunger may descend independent of the lever. Above the lever H a latch, J, is hung, adapted to engage a shoulder, L, on the lever H when the lever is raised, as indicated in Fig. 2. The latch is hung upon a pivot, *d*, its tail *e* extending beyond the pivot. The lever being raised, as indicated in Fig. 2, it will be automatically caught by the latch J, and thus hold the plug in the open position to permit the flow of water to the basin. When the lever is engaged and the water has escaped from the basin, the plunger may be returned to its place to close the outlet from the basin, and so that the basin will fill by the inflow through the valve.

M is the float, arranged in the usual manner, so that as the basin fills to a certain point the float will ride upon the surface and rise as the water rises. From the float a lever, N, extends toward the valve, hung upon a pivot, *f*. The arm *g* on the opposite side of the pivot stands over the tail *e*, and so that as the float rises, and thereby turns the lever N, the arm *g* will depress the tail *e* of the latch J, and so as to raise it from its locking engagement with the lever H, as indicated in broken lines, Fig. 2, thereby freeing the lever H, so that it may fall and close the valve, and consequently stop the flow of water. Normally the float is in the raised position indicated in broken lines, the plunger and the lever H in the down position, closing the valve G, the basin filled so as to support the float in the up position. When the plunger is raised to permit the escape from the basin, the float falls, leaving the latch J free. Then, as the plunger continues its forward movement, the lever H correspondingly rises until caught by the latch J. There it will stand, holding the valve open until such time as the basin shall be again filled to raise the float. The flow will therefore continue so long as the plunger is raised from its seat; but



when the plunger is closed then the basin gradually fills until the float rises, so as to release the lever H, and the valve will be closed.

Under this construction the small passage required in valve arrangements to produce the automatic closing of the valve is avoided. The passage open is large and free, and that passage is closed not by the pressure of the water, but by a positive movement, so that while a full opening and corresponding flow of water are insured an equally positive closing of the valve and stopping of the flow are attained.

It will be understood that any suitable valve adapted to be opened or closed by the movement of the lever H may be substituted for the plug-valve G, it only being essential that there shall be a valve between the water-supply and the passage to the basin adapted to be positively opened or closed by the movement of the lever H.

In illustrating the plunger as the means for opening the escape from the basin, I do not wish to be understood as limiting the invention to such a plunger, it only being essential that there shall be such an opening device, the operative mechanism therefrom being adapted to engage the lever H, so as to open the valve when the escape from the basin is open.

While I prefer to provide the lever N with a weight, any counter-balance may be applied, of sufficient power to cause the lever to turn when free, so as to close the valve; and by the term "weighted," as applied to this lever, I wish to be understood as including any equivalent therefor.

I am aware that a weighted valve-lever has been arranged to be actuated by a float-lever, and engaged in the open position, but from which it is tripped by the same lever, and whereby the entire operation of the valve is automatic; but such a device is not adapted to a water-closet valve where an inlet-valve must be opened by some device by which the escape from the basin is opened, and it is this latter construction, as hereinbefore described, and hereinafter particularly pointed out, that constitutes the essential feature of my invention.

I claim—

In a water-closet-valve arrangement, the combination of the valve arranged in the passage from the water-supply to the basin, a lever, H, in connection with said valve, and by the movement of which the said valve may be opened and closed, a latch, J, adapted to engage said lever in the open position, the valve by which the escape from the basin is opened or closed, the device by which the said escape-valve is opened, adapted to turn the said lever H to open the valve in the supply, the float M, and weighted lever N, to which the said float is attached, the said lever N, adapted to engage said latch J and turn it from its engagement with the lever as the float rises, substantially as described.

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Witnesses:

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