

**No. 624,224.**

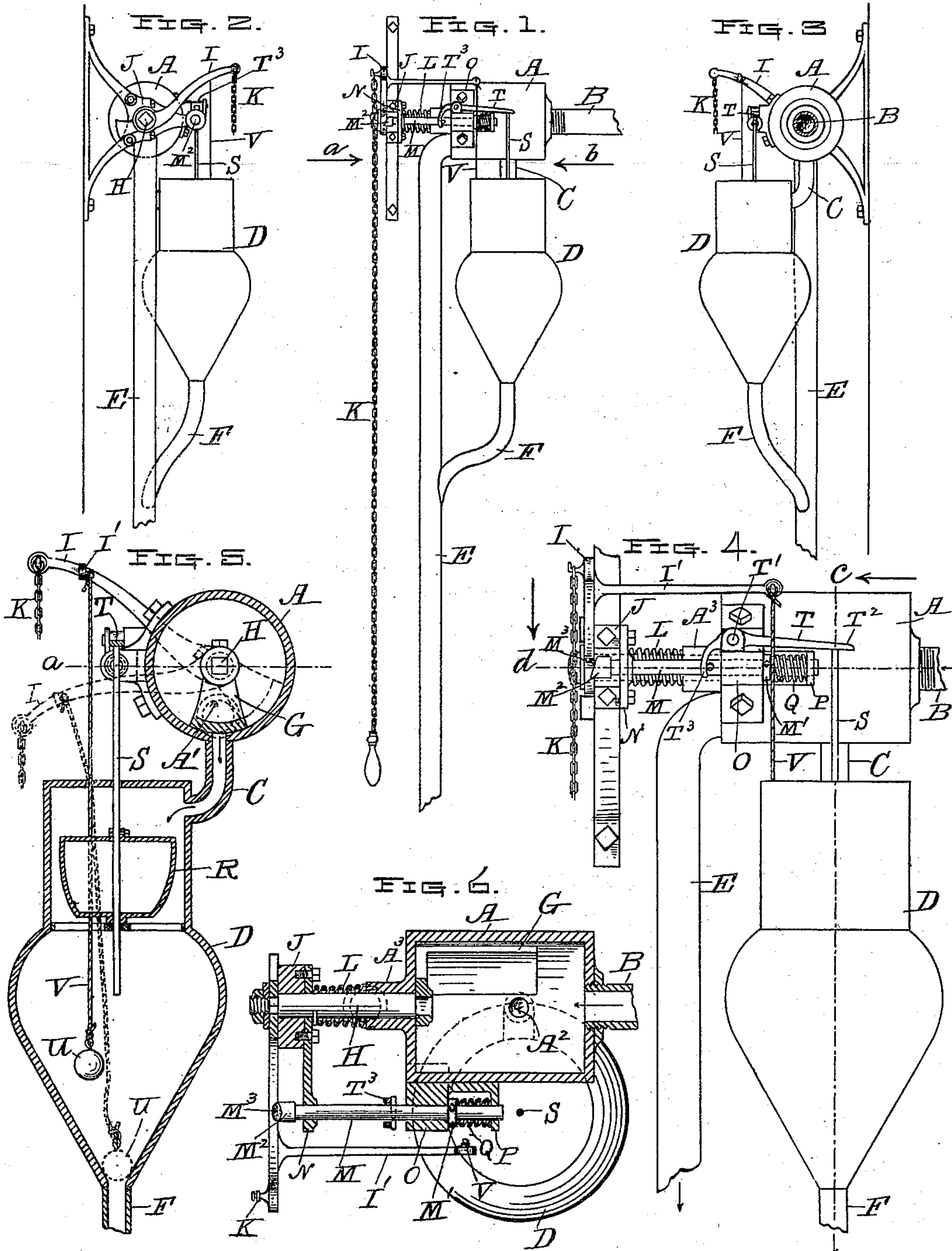
**Patented May 2, 1899.**

## A. LÁ BONTÉ.

## APPARATUS FOR FLUSHING WATER CLOSETS.

(Application filed Jan. 20, 1899.)

(No Model.)



Witnesses;

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# UNITED STATES PATENT OFFICE.

ADOLPHUS LÁ BONTÉ, OF WORCESTER, MASSACHUSETTS.

## APPARATUS FOR FLUSHING WATER-CLOSETS.

SPECIFICATION forming part of Letters Patent No. 624,224, dated May 2, 1899.

Application filed January 20, 1899. Serial No. 702,789. (No model.)

*To all whom it may concern:*

Be it known that I, ADOLPHUS LÁ BONTÉ, of the city and county of Worcester, in the State of Massachusetts, have invented certain new and useful Improvements in Apparatuses for Flushing 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, forming a part of this specification, and in which—

Figure 1 represents a front view of said improved flushing apparatus. Fig. 2 is a side view thereof looking in the direction of arrow *a*, Fig. 1. Fig. 3 is an opposite side view from Fig. 2 looking in the direction of arrow *b*, Fig. 1. Fig. 4 is an enlarged front view of Fig. 1, the following two figures also being upon the same enlarged scale. Fig. 5 is a vertical transverse section taken on line *c*, Fig. 4, looking toward the left, as is indicated by the arrow; and Fig. 6 is a horizontal section taken on line *d*, Fig. 4, looking down, as is also indicated by an arrow.

The object of my invention is to provide a simple and effective means for flushing water-closets to take the place of the usual open tanks or cisterns employed therefor; and it consists of a small tight cylindrical tank or receptacle connected with the water-supply pipe and with a small tight after-flush or refilling tank, also provided with a valve connected with means whereby it may be opened by pulling upon a cord or chain, as usual, to flush the closet and closed automatically and also whereby a portion of the water in flushing the closet may be discharged from said cylindrical or receiving tank into the refilling-tank and automatically discharged therefrom to refill the closet after each flush, as will be hereinafter more fully set forth.

To enable others to better understand the nature and purpose of my invention, I will now proceed to describe it more in detail.

Referring to the drawings, A represents the tight cylindrical receiving-tank previously alluded to, which is connected with the supply-pipe B and by means of the pipe C with the after-flush or refilling tank D. Said cylindrical tank A is provided with an outlet A', (see dotted lines, Fig. 5,) connected with the flush-pipe E, and with an outlet A<sup>2</sup>, connected with the pipe C, above referred to. The bot-

tom of the refilling-tank is also connected by a small pipe F with said flush-pipe E.

Within the cylindrical tank A is arranged a segment-shaped valve G, adapted to fit the inner peripheral and end surfaces thereof, as is shown in Figs. 5 and 6, so as to open and close both openings in said tank together—as, for instance, when the valve occupies a vertical position, as is shown by full lines in Fig. 5, both outlets from the tank are closed and opened when said valve is moved to one side into an oblique position, as is shown in Fig. 6 and by dotted lines in Fig. 5. Said valve G is rigidly secured at its inner end to a crank-rod H, whose outer end is rigidly fastened to one end of the crank-lever I. The crank-rod H is fitted to turn at its inner end in a hub A<sup>3</sup> on the cylindrical tank A and in a stationary bearing J at its outer end. Therefore it will be seen that when the crank-lever I is elevated or lowered the valve G will be moved with it. When in their normal positions, said crank-lever is in an elevated position and the valve in a vertical position over the outlets in tank A, as is shown by full lines in Fig. 5. The crank-lever is drawn down to flush the closet by means of a chain K, attached to its outer end, and elevated again to its normal position after said chain is released by means of a torsion-spring L, fitted over the crank-rod H between its bearings A<sup>3</sup> J, said spring being fastened at one end to said crank-rod and at its other end to one of said bearings and so arranged that a constant upward force is imparted to hold the crank-lever in an elevated position, except when pulled down by drawing upon the chain K. Although I prefer in practice to produce said reaction of lever I when released to close the valve in tank A by means of a torsion-spring, I do not limit myself thereto, as the same result may be obtained in various other ways.

As is well known, it is desirable in practice to have what is commonly termed an "after flush" or smaller flow of water into the closet to refill the same after each main flush, and for this purpose I employ the supplementary tank or refiller D, previously alluded to. This tank and mechanism connected therewith act, in conjunction with the mechanism of tank A, to automatically shut off the water from the



main-flush pipe and produce the aforesaid after flush when the chain K is pulled, in the following manner: A horizontal rod M is fitted to slide longitudinally in stationary bearings N O P and is provided with a spring Q, fitted over its inner end between the bearings O P, one end of said spring bearing against a shoulder M' on the rod and its other end against the bearing P, so as to produce a constant yielding pressure to force the rod longitudinally in the direction toward crank-lever I. The outer end of said rod is provided with a beveled head M<sup>2</sup> (see Figs. 1, 4, and 5) of the proper length to just catch over the top of the crank-lever I when the latter is forcibly drawn down, as aforesaid, to hold said lever in said depressed position, as is shown in Fig. 6 and by dotted lines in Fig. 5. It is thus beveled, as is shown at M<sup>3</sup>, to permit the lever being drawn down past and under the same. When said lever is drawn down and comes in contact with said bevel, the rod is forced back longitudinally to allow the lever to pass down past the end and then sprung back into place by its spring Q over the lever to hold it down until it is automatically moved back longitudinally to permit the lever to spring up again and shut off the water, as previously described. The rod M is automatically drawn back to release crank-lever I by the water lifting a float R in the refilling-tank D, said action of the water as it rises in the tank causing said float R to be elevated, and thereby through a vertical rod S connected therewith operating a small lever T, which engages with and pulls back said rod M, as aforesaid. In this instance said lever T is pivoted at T' to the stationary bearing O and the vertical rod S engages with the outer end T<sup>2</sup> thereof, while the inner forked end T<sup>3</sup> of said lever engages with projections on the rod M, as is best shown in Figs. 4 and 6.

The refilling-tank D is provided at its juncture with the discharge-pipe F with a suitable valve U—in this instance a ball-valve—which is connected with an arm I' on crank-lever I by means of a cord or chain V. The outlet in said refilling-tank D is opened by the elevation of said crank-lever, which lifts the ball U therefrom, as is shown by full lines in Fig. 5, and closed by the depression or lowering of the lever, so as to allow said ball to drop into said outlet, as is shown by dotted lines in said Fig. 5.

The operation of the apparatus is in brief as follows: Upon pulling the chain K to flush the closet, lever I being depressed, the ball U is permitted to descend and close the outlet in refilling-tank D, said operation also causing the valve G in tank A to be moved from the position shown by full lines to that shown by dotted lines in Fig. 5, thereby uncovering the outlets in said tank A and allowing the water to flow out through the main pipe E to flush the closet (not shown) and through the

smaller pipe C to fill the after-flush tank D. Said flow of water continues simultaneously through the two pipes until the tank D has become sufficiently filled to raise its float R the proper height for the upper end of its vertical rod S to trip the lever T and cause the horizontal rod M to be drawn back, so as to disengage its head M<sup>2</sup> from the crank-lever I, when said lever I is at once sprung up into its normal elevated position by the action of torsion-spring L, thereby shutting off the discharge from tank A and opening the valve at the bottom of the refilling-tank D, which permits the water to discharge therefrom, and thus produces the after flush or refilling of the closet ready to be used again.

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

1. The combination of supply-pipe B and flush-pipe E, with the tank A, connected with said supply and flush pipes; valve G, arranged in said tank; crank-rod H, fitted to turn in suitable bearings and to the inner end of which said valve G is secured; crank-lever I, secured to the outer end of said crank-rod and having means connected therewith for operating it; means for exerting a force upon crank-lever I to turn it back when released, to close the valve in tank A; the refilling-tank D, connected by suitable piping with tank A and the flush-pipe E; float R, in said tank D, provided with a vertical rod S adapted to engage with the outer end of lever T; said lever T, pivoted to a suitable bearing and adapted to engage at its inner end with a rod M fitted to slide longitudinally in suitable bearings; said rod M, provided with a head M<sup>2</sup> adapted to engage with crank-lever I; spring Q, adapted to force rod M toward said crank-lever I, and valve U, operatively connected with crank-lever I, so as to open and close the outlet in the refilling-tank D when said crank-lever is operated, substantially as and for the purpose set forth.

2. The combination of the water-supply pipe; the tank combined therewith, having two ports, one for discharging the water into the main-flush pipe and the other into the refilling, or after-flush pipe; said main and after flush pipes; a valve arranged in said tank adapted to open and close said ports when operated; mechanism connecting said valve with the chain and pull to open the ports and for automatically closing them, or vice versa; the refilling or after-flush tank; its float, arranged therein and connected with the aforesaid flushing mechanism, and the valve of said refilling or after-flush tank, also connected with said flushing mechanism, substantially as and for the purpose set forth.

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Witnesses:

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