J. S. WELBORN.

FLUSHING MECHANISM FOR CLOSET TANKS.

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970,866.

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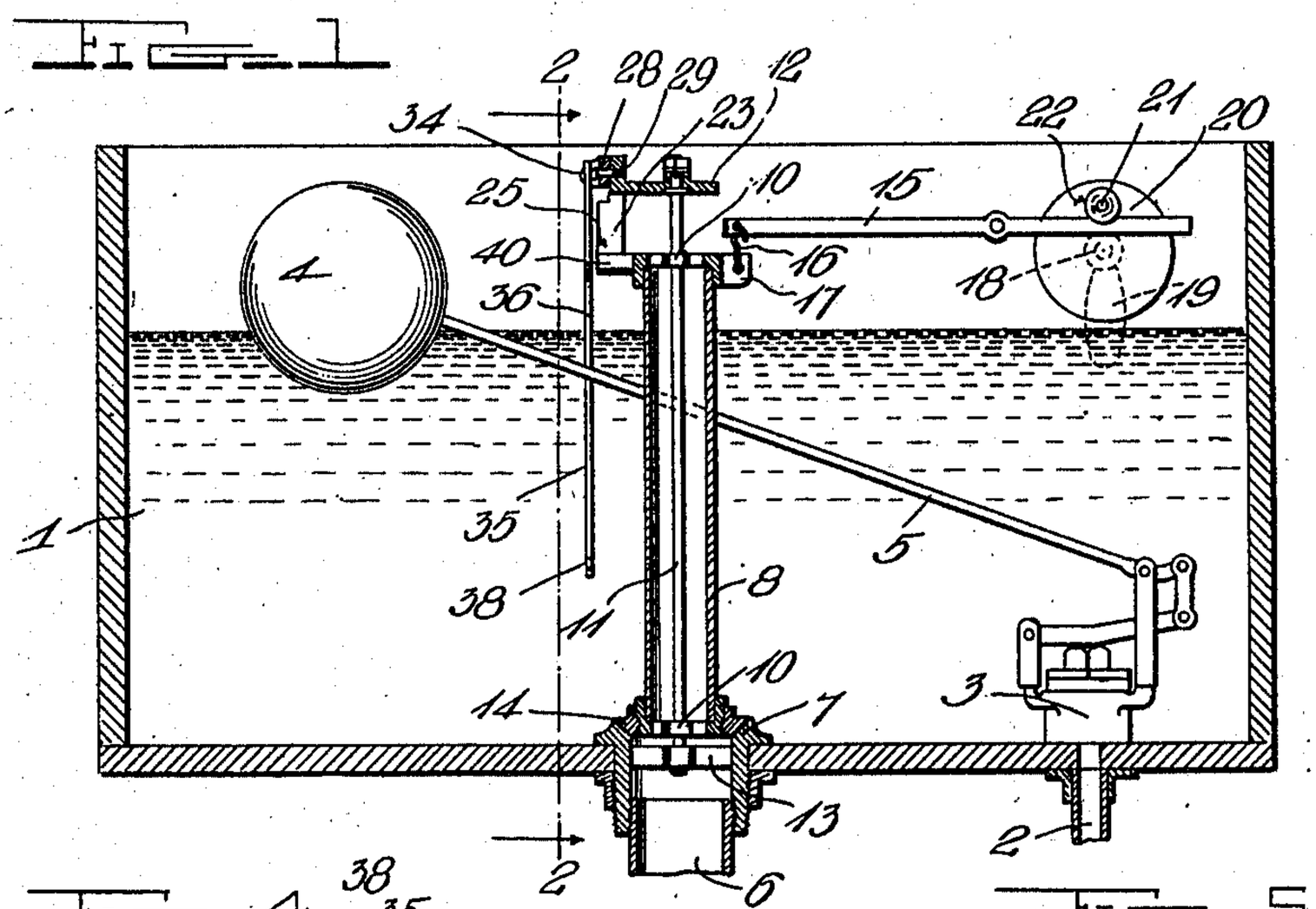


FIG. 4

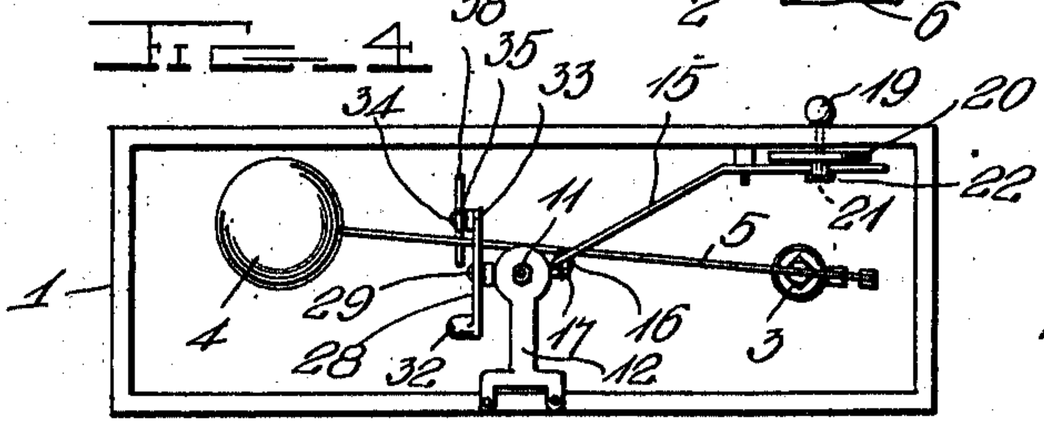


FIG. 5

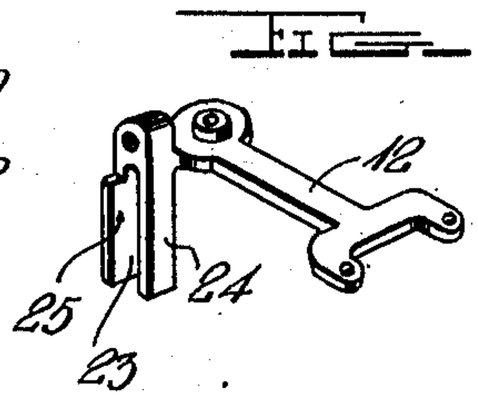


FIG. 2

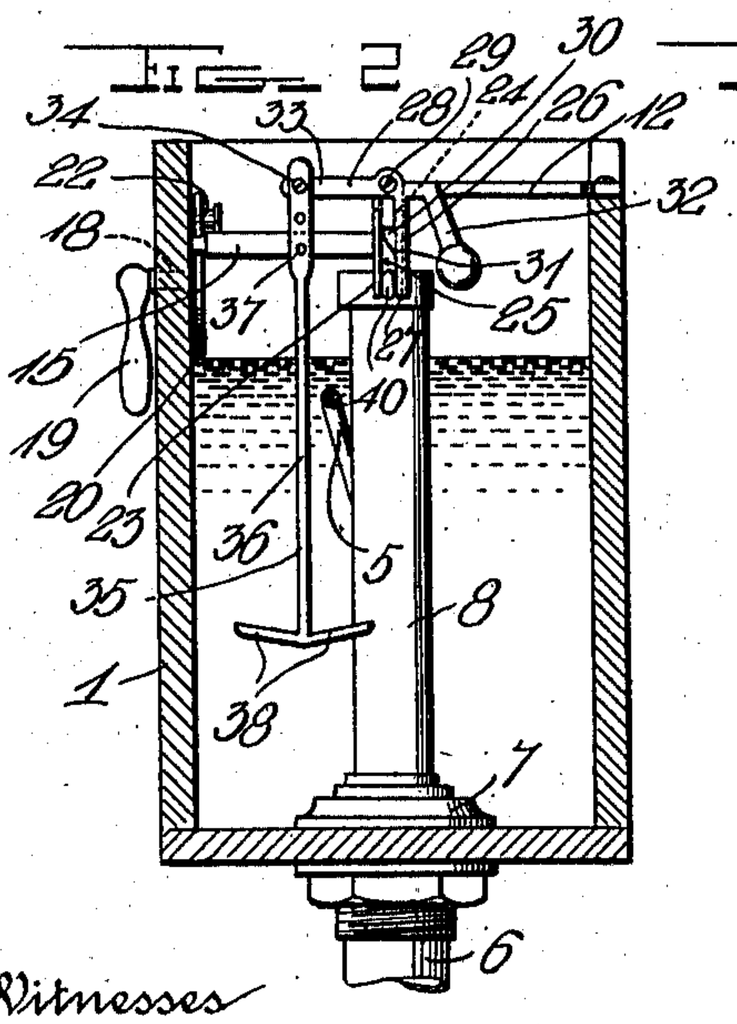
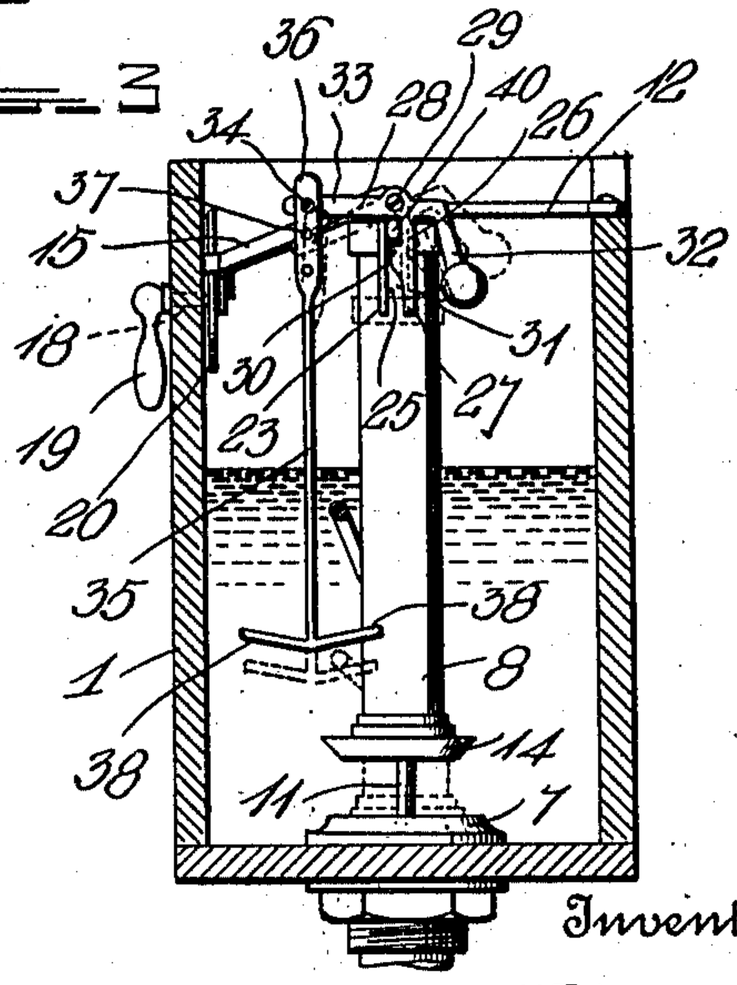


FIG. 3



Witnesses

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FLUSHING MECHANISM FOR CLOSET-TANKS.

970,866. Specification of Letters Patent. **Patented Sept. 20, 1910.**

Application filed May 19, 1910. Serial No. 562,154.

To all whom it may concern:

Be it known that I, JOHN S. WELBORN, a citizen of the United States, residing at High Point, in the county of Guilford and State of North Carolina, have invented certain new and useful Improvements in a Flushing Mechanism for Closet-Tanks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to flushing mechanisms for closet tanks, and has especial reference to automatic mechanism for closing the outlet valve and refilling the tanks, such as are illustrated in my prior Patent, No. 945,206, issued January 4, 1910, to which the present invention is an improvement.

One object of my invention is to provide a simple, easily constructed, and positively actuated mechanism adapted to automatically trip the catch upholding the outlet valve during the discharge of the tank to allow the valve to close.

A further object of my invention is to provide means whereby the rotation of the outlet valve may be effectively prevented, while at the same time serving to retain in operative position the valve upholding catch.

With the foregoing and other objects in view the invention consists of certain novel features of construction, combination and arrangement of parts as will be hereinafter described and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a longitudinal sectional view of a flush tank having my improved mechanism arranged therein. Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1 showing the operating mechanism dropped to allow the outlet valve to close; Fig. 3 is a similar view showing the outlet valve in open position; Fig. 4 is a top plan view of the flush tank; and Fig. 5 is a detail view of the bracket 12 and other parts.

Referring particularly to the drawings, the numeral 1 designates a flush tank to which is connected the usual water supply pipe 2 having arranged in suitable position an inlet valve 3 which is automatically controlled by means of the usual float 4, which is connected to open or close the inlet valve through the operating rod 5. A suitable discharge pipe as 6 is arranged substantially central of the bottom of the tank and a valve seat 7 is arranged at the top of said discharge pipe, extending within the flush tank 1.

My improved flushing mechanism is adapted to operate with the discharge pipe 6 and the inlet pipe 2 by means of the mechanism to be hereinafter described.

An outlet valve 8 comprising a tubular body portion projects upwardly in the tank to a height corresponding with the upper surface of the water when the tank is filled. In the upper and lower ends of the tubular body portion of the valve are arranged apertured guide bars or spiders 10 which are slidably engaged upon the supporting or guide post 11, the upper end of which is secured in a suitable bracket 12 fastened to the upper rear edge of the tank, and the lower edge of which is secured in a cross bar 13 arranged across the discharge pipe below the valve seat 7. On the lower end of the tubular body portion of the valve is suitably arranged a rubber packing ring or gasket 14, which, when the valve is in closed position, is adapted to form a fluid tight engagement with the valve seat 7, thus preventing the discharge of water from the tank. The upper and lower ends of the tubular body portion of the valve are open to allow the water within the flush tank to escape through said outlet valve in the event that the inlet valve 3 is not entirely closed and thus preventing the tank from overflowing at any time.

Pivotally mounted in a suitable position upon the tank is a valve operating lever 15 which is connected by means of a link 16 with an apertured projecting lug or ear 17 upon the upper end of the outlet valve, whereby when said lever is rocked the valve will be lifted to allow the flushing water to discharge. Any suitable means may be provided for rocking or actuating this lever 15, said means being herein shown as comprising a short shaft 18 which is pivotally mounted in the front wall of the tank above the water level and has secured on its outer end a handle, as 19, and on its inner end a circular plate or disk 20 upon which is eccentrically mounted a rearwardly extending

stud or spur 21, on which is arranged a bearing sleeve 22 which when the handle 19 is turned in either direction, will be brought into engagement with the free end of the lever 15 thereby rocking the latter and causing the same to lift the outlet valve.

Integrally formed upon the bracket 12 adjacent the guide or supporting post 11 and depending therefrom are spaced parallel guiding members 23 and 24, the foremost of which, as 23, is extended laterally to some distance beyond the outer edge of the rearmost guide 24 to provide a wall 25 against which the upholding catch 26 is adapted to engage, so that said catch will be normally retained in an operative position to automatically hold the outlet valve in its raised position. The catch 26 as herein shown is preferably formed upon the depending arm 27 of a lever 28 which is pivotally mounted, as at 29, upon the bracket 12 directly above the spaced guide members 23 and 24. The catch 26 may be of any desired shape or conformation, and preferably consists of the flat or locking edge 30 and the inclined lower edge 31, the functions of which will be hereinafter more fully set forth. The lever 28 is preferably formed with a weighted, depending arm 32, and a forwardly extending arm or connecting bar 33, adjacent the forward end of which is provided a laterally extending pin or stud 34, by means of which the lever is pivotally connected to the tripping or actuating bar 35. This tripping or actuating bar 35 preferably comprises a body portion 36, extending substantially parallel with the outlet valve 8, in which adjacent its upper extremity is formed a plurality of adjusting apertures 37 in any of which the stud or pin 34 upon the lever 28 may extend. The lower end of the tripping or actuating bar 35 is bent or flanged, as indicated at 38, said flanges projecting laterally in opposite directions to form substantially an inverted T. The arms or flanges 38 are a suitable length to extend almost to the side of the tank, and are prevented from swinging to any great extent by reason of this position, the ends of the arms or flanges 38 contacting with the side of the tank whenever the movement of the water or other means causes the tripping or actuating bar to move.

The operating rod 5 connecting the float of the actuating means for opening or closing the inlet valve 3, extends between the body portion 36 of the tripping or actuating bar and the periphery of the tubular portion of the outlet valve so that it is guided in its upward and downward movements to open or close the inlet valve 3.

In practice, when it is desired to discharge the water from the flush tank, the handle 19 is rotated to rock the actuating lever 15 whereby the outlet valve 8 is lifted in the manner hereinbefore described, bringing the laterally-projecting rounded lug or stud 40 into engagement with the inclined lower edge 30 of the catch 26, thereby forcing said catch laterally to rock the lever 27, the weighted arm 32 serving to return the catch to its former or normal position immediately upon the passage of said lug or stud beyond the catch 26, said lug thereupon resting upon the flattened upper edge 30 of the catch, as indicated in Fig. 3. This upward movement of the outlet valve 8 allows the water in said tank to discharge through the outlet pipe 6, and as the water in said tank diminishes the float 3 will be automatically lowered, moving the operating rod downwardly with it. When the water in the flush tank has been almost discharged the operating rod 4 will engage the arm or flange 38 at the lower end of the T-shaped tripping or actuating lever 35 to move said actuating bar downwardly, thereby rocking the lever 27 to release the catch 26 from beneath the laterally extending lug 40 upon the upper end of the outlet valve, allowing said outlet valve to drop, bringing the packing ring or gasket 14 into engagement with the valve seat 7 and closing the outlet pipe. The downward movement of the float 4 and the operating rod 5 serves to open the inlet valve 3 to allow the refilling of said flush tank through the inlet pipe 2. It will be apparent that as the water enters the flush tank the float 4 will be automatically lifted and will close the inlet valve after sufficient water has been admitted into the tank.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claim.

Having described my invention what I claim is:

In a flushing tank, an outlet valve seat, a guide rod secured at its lower end in said seat, a bracket to secure the upper end of said rod, a pair of spaced parallel guide members depending from said bracket, one of said guide members being extended to a point beyond the outer edge of the other of said guide members, a lever pivotally mounted upon said bracket above said parallel guide members, said lever having a weighted rear arm and a depending catch adapted normally to extend across the space between the guide members and contacting with the extended portion of the extended guide member, a tubular outlet valve having a laterally projecting lug adjacent its upper

end adapted to extend between said parallel guide members and engage said catch, and a tripping bar adjustably connected to the forward end of said lever to release said catch, said tripping bar being formed with laterally projecting flanges adjacent its lower end.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN S. WELBORN.

Witnesses:
HENRY G. CAROL,
GEORGE R. FRYE.