June 24, 1930. H. L. BLAUN ET AL 1,767,043

DOUBLE FLUSH VALVE

Filed June 29, 1929

Fig. 1.

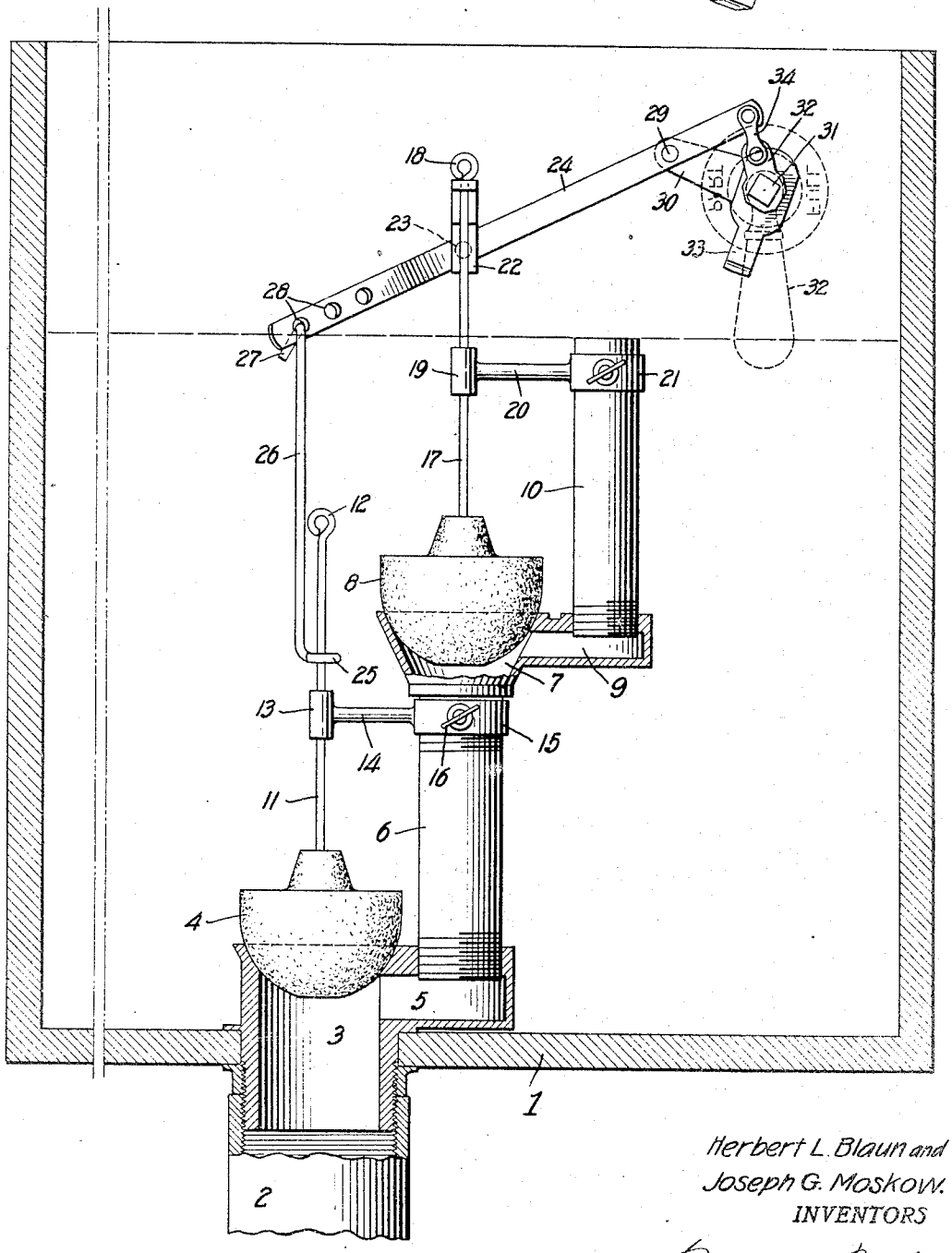
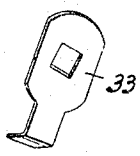


Fig. 2.



Herbert L. Blaun and
Joseph G. Moskow.
INVENTORS

BY Moses & Nolte
ATTORNEYS

Patented June 24, 1930 1,767,043

UNITED STATES PATENT OFFICE

HERBERT L. BLAUN AND JOSEPH G. MOSKOW, OF GLENWOOD LANDING, NEW YORK

DOUBLE-FLUSH VALVE

Application filed June 29, 1929. Serial No. 374,680.

This invention relates to means for flushing water closets, and has for its principal object the provision of an improved and simplified double flush device for this purpose.

The invention will best be understood by reference to the accompanying drawings, wherein is illustrated the present preferred embodiment thereof, and in which—

Figure 1 is a fragmentary vertical section through a flush tank in which tank is installed the device embodying the invention.

Figure 2 is a perspective view of a stop element comprising one portion of the invention and employed for limiting the movement in one direction of the operating handle thereof.

Like reference characters indicate like parts in the drawings.

Referring to the drawings, a flush tank 1 is provided with a discharge pipe 2, connected in the usual manner to said tank and to the closet bowl. Communicating with the discharged pipe is a primary valve chamber 3, formed in the upper portion of the wall defining which chamber is a concave seat for a primary valve 4, of the customary hemispherical type. Communicating with valve chamber 3 is an auxiliary chamber 5, in communication with which latter chamber is a secondary valve pipe 6, provided at its upper end with a frustro-conical chamber 7, the wall of which chamber forms a seat for a secondary valve 8. Communicating with this frustro-conical chamber is an overflow chamber 9, connected to which latter chamber is an overflow pipe 10.

The primary valve 4 is provided with a valve stem 11, having a loop 12 formed in its upper end. This stem is slidable in a bearing lug 13, connected by an arm 14 to an annulus 15, adapted to be clamped (as by a thumb-screw 16) to the secondary valve pipe 6 and adjustable upon said pipe in order that the bearing lug 13 may serve as a stop to limit the upward movement of the primary valve 4.

The secondary valve 8 is provided with a similar valve stem 17, having a loop 18 at its upper end. This latter valve stem is likewise slidable in a bearing lug 19, connected by an arm 20 to an annulus 21, adapted to be clamped in a manner hereinbefore described to the overflow pipe 10. The valve stem 17 passes through an aperture formed in an arm of a bracket 22, secured by a set screw 23 to a valve-actuating lever 24.

Embracing valve stem 11 is a loop 25 formed in the lower end of a lever rod 26, the upper end of which rod is bent to form a hook 27, adapted to be inserted in one or other of a plurality of apertures such as 28 near one end of the valve-actuating lever 24.

The lever 24 is pivotally supported on a stud 29, mounted in a bracket 30, which is attached to the front wall of the flush tank 1. Passing through this wall is a shaft 31 carrying at its outer end a handle 32 (indicated in dotted lines in Figure 1). The inner end of this shaft 31 is squared, and there are mounted on this squared portion an arm 32 and a stop element 33. Pivotally attached to the arm 32 and to the valve-actuating lever 24 is a link 34. Imprinted upon the outer front wall surface of the flush tank are the legends "Full" and "Part", for the purpose of denoting the direction in which handle 32 is to be turned in order to effect either a complete or a partial discharge.

The mode of operation of the device is as follows: When the handle 32 is turned in a clockwise direction (as viewed in Figure 1), the rotation of the shaft 31 causes the arm 32 and the link 34 to depress the short arm of the lever 24, thereby raising the bracket 22, which, by contact with the loop 18, raises the valve-stem 17 and the secondary valve 8, permitting the discharge, through secondary valve seat 7, secondary valve pipe 6, auxiliary chamber 5, primary valve chamber 3, discharge pipe 2 and to the water closet bowl, of the volume of water between the level indicated by dash line in Figure 1, i. e., the level of the top of the overflow pipe 10, and the level of the top of the frustro-conical chamber 7.

In the course of the aforesaid clockwise turning of the handle 32, the arm portion of the stop element 33 contacts with the bracket 32 and thus limits the movement of the handle before the loop 25 of the lever rod

26 has reached the loop 12 of the primary valve stem 11. Thus, the volume of water controlled by the secondary valve 8 is bypassed around the primary valve 4, which latter valve remains seated.

When it is desired to completely discharge the contents of the flush tank, the handle 32 is turned in a counter-clockwise direction (as viewed in Figure 1). Thereupon the arm 32 and the link 34 operate to depress the short arm of the lever 24 to a point where secondary valve 8 is first unseated; and, as the downward movement of the short arm of the lever continues, loop 25 of lever rod 26 ultimately contacts with loop 12 of the primary valve stem 11, thereby unseating primary valve 4 and discharging the water down to the lever of primary valve chamber 3.

The greater downward movement of the short arm of the lever 24 which is necessary in order to effect a complete discharge of the flush tank is made possible by reason of the fact that whereas in carrying out the "part" discharge function of the device, the stop element 33 contacts with the bracket 30 after a movement of about 60 degrees (as illustrated in Figure 1). In carrying out the "full" discharge function the lever 24 is arrested by engagement with the hub of arm 32; the handle 32 being rotated about 90 degrees. Before this latter point has been reached, the primary valve 4 has been unseated.

It will be understood that the flush tank may be equipped with any well-known type of float and valve mechanism (not shown) for controlling the refilling thereof.

The invention comprises a double flush device of rugged and simple construction which is effective in operation, not likely to get out of order, and which can be economically manufactured and installed.

We have described what we believe to be the best embodiment of our invention. We do not wish, however, to be confined to the embodiment shown, but what we desire to cover by Letters Patent is set forth in the appended claims.

We claim:

1. In a device of the character described, the combination of a flush tank, a valve for discharging a major portion of the contents of said tank, a second valve for discharging a minor portion of said contents, actuating means common to said valves, and a handle rotatable in either direction for controlling the movements of said actuating means.

2. In a device of the character described, the combination of a flush tank, a valve for discharging a major portion of the contents of said tank, a second valve for discharging a minor portion of said contents, actuating means common to said valves, a handle for controlling said actuating means, and means whereby rotation of said handle in one direction unseats the second-mentioned valve only.

3. In a device of the character described, the combination of a flush tank, a valve for discharging a minor portion of the contents of said tank, a second valve for discharging a major portion of said contents, actuating means common to said valves, a rotatable handle for controlling the movements of said actuating means, and a stop element carried by said handle and constructed and arranged to limit the rotative movement of said handle in one direction whereby said first-mentioned valve is opened while said last-mentioned valve remains seated.

4. In a device of the character described, the combination of a flush tank, a plurality of discharge valves for said tank, actuating means common to said valves, a rotatable handle for controlling the movement of said actuating means, and means governed by said rotatable handle whereby one or both of said valves may be opened by said valve-actuating means.

In testimony whereof we have affixed our signatures to this specification.

HERBERT L. BLAUN.
JOSEPH G. MOSKOW.