

No. 682,568.

Patented Sept. 10, 1901.

F. RHIND.
FLUSH TANK.

(Application filed June 28, 1900.)

(No Model.)

FIG. I.

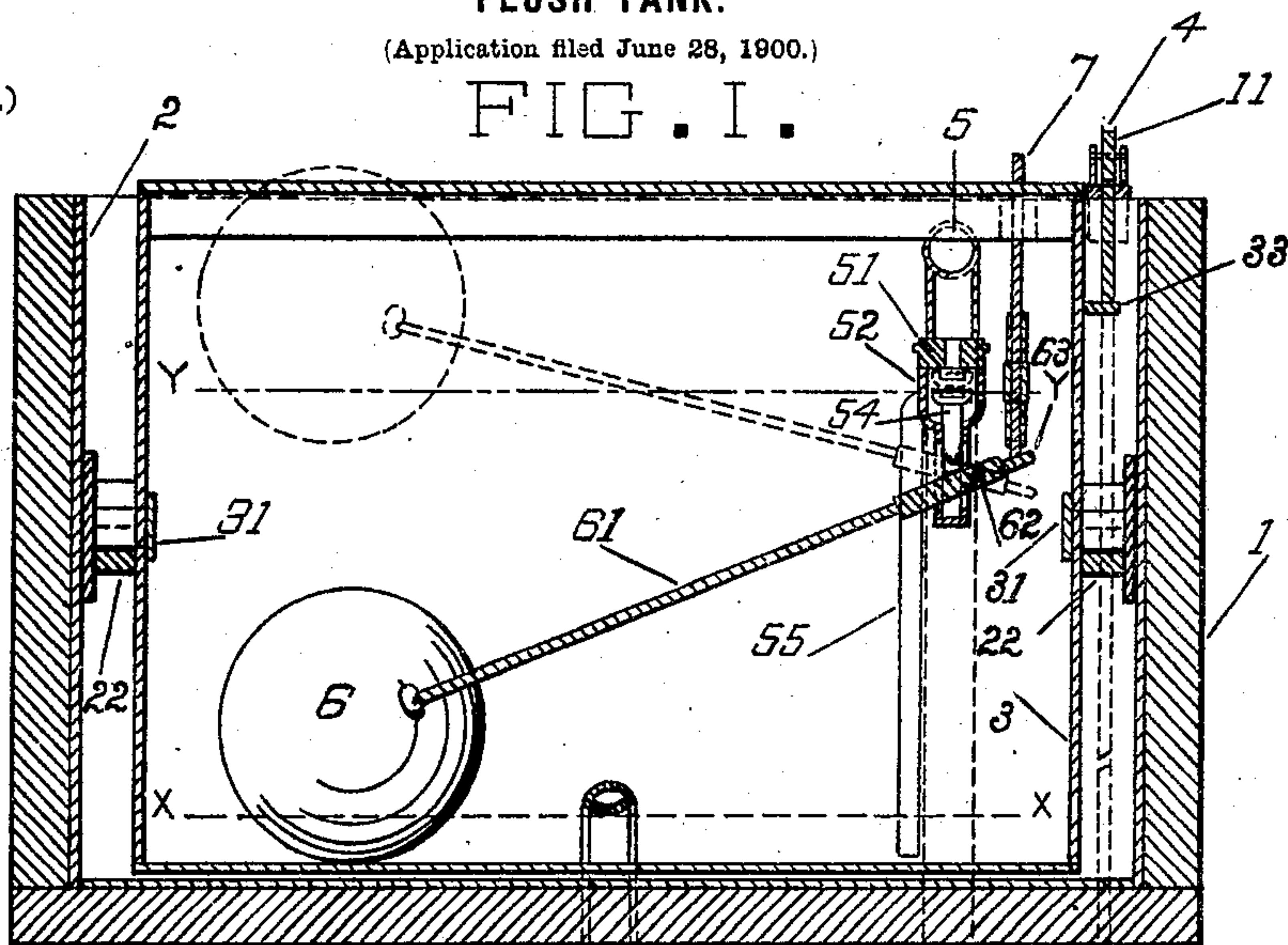
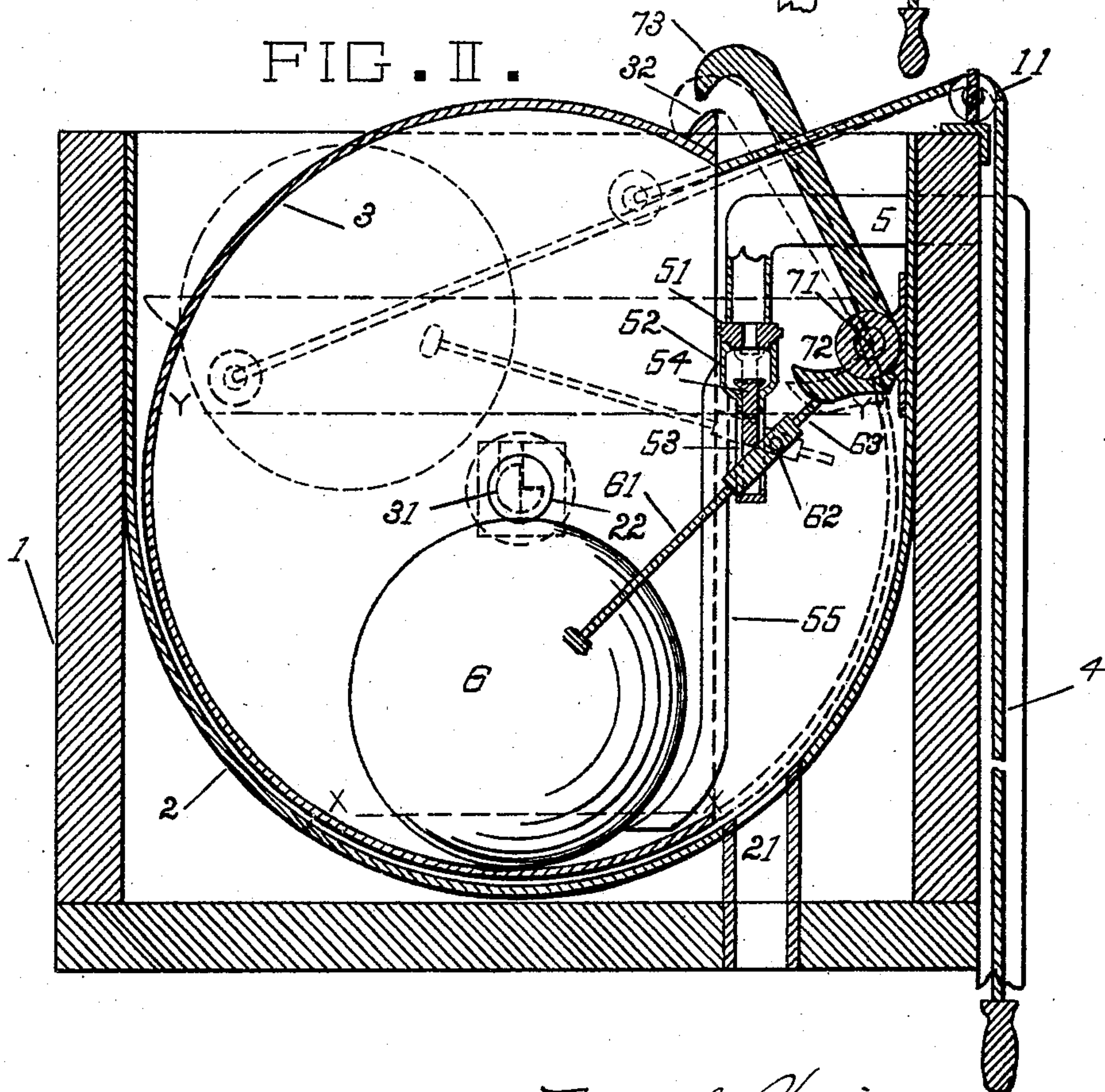


FIG. II.



WITNESSES:

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FRANK RHIND, OF BRIDGEPORT, CONNECTICUT.

FLUSH-TANK.

SPECIFICATION forming part of Letters Patent No. 682,568, dated September 10, 1901.

Application filed June 28, 1900. Serial No. 21,893. (No model.)

To all whom it may concern:

Be it known that I, FRANK RHIND, a citizen of the United States, residing at No. 61 Broad street, Bridgeport, Connecticut, have invented a new and useful Improvement in Flush-Tanks, of which the following is a specification.

My invention relates chiefly to a tank adapted to be automatically filled and to be discharged by hand. It is intended to make such tanks noiseless, simple, and durable.

In the accompanying drawings, Figure I is a longitudinal section, and Fig. II a cross-section, of a tank embodying my invention.

1 designates a casing provided with pulley 11; 2, a lining having discharge-orifice 21 and bearings 22; 3, a tank provided with trunnions 31, lug 32, and pin 33; 4, a chain or cord; 5, a supply-pipe provided with valve-seat 51, valve-case 52, slotted at 53, valve 54, and auxiliary tube 55; 6, a ball having stem 61, pivot 62, and pin 63; 7, a trip-lever pivoted at 71, having toe 72 and hooked end 73.

In the example of my invention illustrated the casing 1 may be of the ordinary rectangular form. It has a metal lining 2, pierced by a discharge-opening 21, to which is connected the usual discharge-pipe. It will be noted that the lower portion of the lining 2 is of semicircular section and carries internally-projecting bearings adapted to detachably receive the trunnions 31 of the tank 3. It will also be noted that the bearings 22 have relatively narrow mouths and enlarged circular bearing-surfaces, while the trunnions 31 are segmental in cross-section, as clearly shown in Fig. II of the drawings. The tank 3 is something more than a semicylinder and rotates freely within the lining 2 on its trunnions 31. A pin or hook 33 on the tank 3 serves as a point of attachment for a chain or cord 4, which passes over the pulley 11 on the casing 1 and downward within easy reach of the operator. A water-supply pipe 5 has at its open end a valve-seat 51, to which is secured a valve-case 52, slotted at 53 and containing a vertically-adjustable valve 54. An auxiliary tube 55 leads laterally from the case 52 and downward substantially to the bottom of the tank 3. A float-ball 6 has its stem 61 pivoted at 62, preferably to the valve-

case 52, passing through the slot 53 in the valve-case and bearing against the lower end of the valve 54. A pin 63 at the end of the stem 61 is adapted to bear against the toe 72 of the trip-lever 7, which is pivoted to the lining 2 at 71. The hooked end 73 of the lever 7 is adapted to engage with the lug 32 of the tank 3.

The operation of my device will be readily understood from an inspection of the drawings.

In Fig. I the parts are shown in the position they occupy when a fresh supply of water begins to be admitted to the tank. The water-level is shown by the dotted line xx , the ball 6 rests on the bottom of the tank 3, the valve 54 is withdrawn from its seat 51, and the trip-lever 7 is raised from its operative position. When the water which is discharged from the lower end of the auxiliary tube 55 rises in the tank 3 to the height shown by the dotted line yy , the ball 6 floats to the position shown in dotted lines and the valve 54 is closed. When the tank 3 is tilted by means of the chain 4 to the position shown in full lines, Fig. II, the trip 7 drops into the position shown in dotted lines and engages with the lug 32 on the tank, thereby holding the tank in its partially-inverted position. As the water is discharged through the outlet 21 in the lining 2 the ball 6 lowers, opening the valve 54. When the ball 6 reaches its lowest position, as shown in full lines in the drawings, its rearwardly-projecting pin 63 trips the lever 7 and releases the tank 3, which then drops to its receiving position. Suitable devices, as rubber strikers, (not shown,) may be provided to prevent jar when the tank 3 is turned. It will be seen that the pulling of the chain 4 cannot act to lift the tank 3 from its bearings, as from the shape of the bearings 22 and trunnions 31 the tank can only be raised when in its extreme tilted position.

Among the advantages of my device the following may be named: removability of the tank, so that both tank and lining may be gotten at for repair; simplicity of movement, in that a single pull of the chain is all that is required of the operator and in that the float-ball controls both the water-supply and

the retention of the tank in its emptying position; perfect noiselessness, in that the water is delivered into the tank at its bottom, whereby splashing is avoided, and in that
5 when the tank is emptied the water is not "dumped" violently into a receiving-chamber having angular corners; but the tank 3 being concentric with the lining 2 and of nearly the same diameter the tank is slipped
10 out from under the water, permitting the water to pass noiselessly out through the discharge-orifice 21. It will be noted that this orifice is preferably placed, as shown, just at
15 the edge of the inverted tank, which arrangement is found in practice to conduce materially to the noiseless exit of the water.

I am of course aware that many mechanical alterations may be made from the form of my invention here shown.

20 What I claim is—

1. In a flush-tank in combination an invertible receiving - tank, a chamber into which said tank empties, an engaging portion adapted to hold said tank in its inverted
25 position and automatically-operative means for disengaging said portion from said tank

when said tank has been substantially emptied.

2. In a flush-tank in combination an invertible receiving - tank, a chamber into 30 which said tank empties, manually - operative means for inverting said tank, a float and an engaging portion adapted to hold said tank in its inverted position and to be disengaged from said tank by the lowering of 35 said float as the tank empties, substantially as described.

3. In a flush-tank in combination an invertible receiving - tank, a chamber into which said tank empties, a supply-pipe, a 40 valve acting to close said supply-pipe, manually - operative means for inverting said tank, an engaging portion adapted to hold said tank in its inverted position and a float arranged to open said valve and to disengage 45 said portion from said tank by its downward motion as said tank empties, substantially as described.

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Witnesses:

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