July 16, 1929. R. H. MARTINEZ 1,721,401

TANK

Filed Feb. 29, 1928

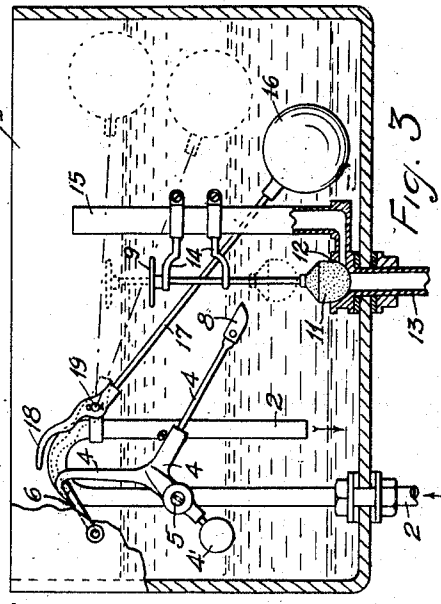


Fig. 3

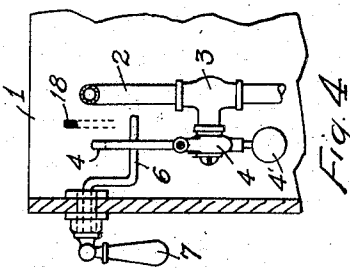


Fig. 4

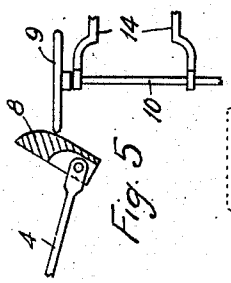


Fig. 5

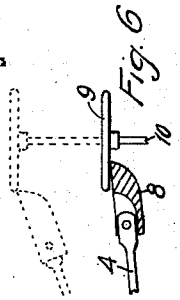


Fig. 6

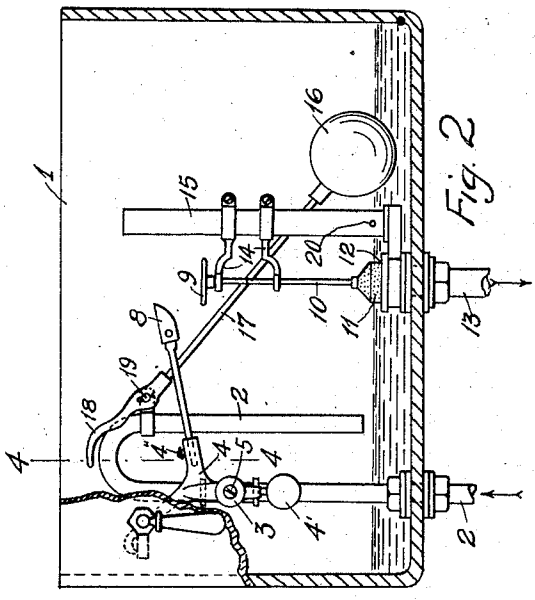


Fig. 2

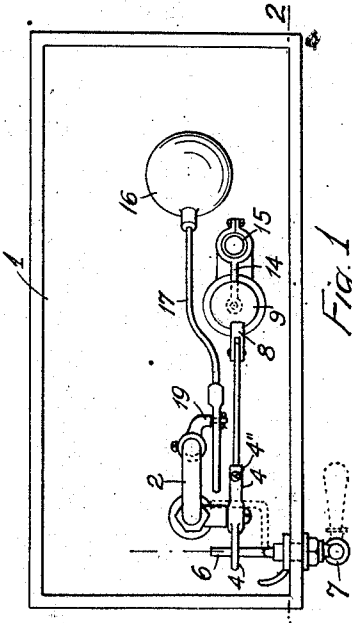


Fig. 1

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UNITED STATES PATENT OFFICE.

ROBERTO HEYDRICH MARTINEZ, OF HABANA, CUBA.

TANK.

Application filed February 29, 1928, Serial No. 258,068, and in Cuba December 19, 1927.

This invention relates to tanks and especially to low closet tanks, and has for its main object to provide an arrangement of devices such as to cause the filling of the tank at will, and the subsequent automatic total discharge of same within a short space of time, the tank remaining completely dry, until a new discharge is delivered.

An object therefore of my invention is to provide a tank from which leakage of water into the bowl can not occur as occurs in tanks known up to the present time, and in which a complete and automatic discharge takes place.

A further object of the invention is to provide a device for this purpose, which includes a spring cock, and which device is of a simple and durable construction, and easily operated.

In the drawings:

Figure 1 is a top plan view of the tank of the present invention.

Figure 2 is a vertical longitudinal section on line 2—2 of Fig. 1.

Figure 3 is a view similar to Fig. 2 illustrating various operative positions of the parts.

Figure 4 is a fragmentary sectional view in detail, taken on the line 4—4 of Figure 2, and

Figures 5 and 6 are detail views of parts of the discharging mechanism of the tank.

In the drawing the numeral 1 designates a closet tank of a low type, 2 being the inlet pipe of same, in which pipe is intercalated a spring cock 3. Secured to the stem of this cock is an angular lever 4, pivoted at 5 axially of said spring cock and provided with a counter weight 4′. The short arm of this lever is connected with a rod 6 bent in a bayonet shape, which is operated from the outside by the handle 7 connected to the same, and giving to same an eccentric gyratory movement; the long arm of the lever is adjustable by means of a set screw 4″, and bears on its end a pawl 8, pivoted in such a way as to swing upwardly, but not downwardly, as seen in Figures 5 and 6, and which cooperates with the disk 9, secured to the upper end of the rod 10 of a ball valve 11, the latter resting on a seat 12 in the discharge pipe 13 of the tank. The rod is held and guided thru brackets 14 secured to the outlet pipe 15 of the tank.

The float 16 of the tank is provided with the rod 17 which ends in a trigger 18 and is pivoted at 19 to the inlet pipe 2, and connected in a way which will be explained further along, to an eccentric rod 6 to which the handle 7 is connected.

The operation of the mechanism described is as explained in the following:

Supposing the parts to be in an inactive or idle position as shown in Figure 2, that is to say the tank empty, and the pawl 8, raised over and in spaced relation to the disk 9 of the rod 10 of the valve 12.

If the handle 7, secured to the rod 6 is made to turn in one direction, this rod will ride against the short arm of the lever 4 and will move the same upwardly, turning the long arm of said lever which bears the pawl 8 downwardly, said pawl when coming in engagement with the disk 9 turning upwardly and riding past the disk 9, as seen in Figure 5, permitting said long arm to descend to a lower level than said disk, as shown in Figure 3; at the same time the spring cock 3 to which the lever 4 is fastened will be opened, the water flowing into the tank 1 thru the inlet pipe 2.

As the tank is being filled the float 16, held by the rod 17, on the end of which is secured the trigger 18, which presses the rod 6, will rise, until trigger releases the short arm of the lever 4, and same by the reaction of the spring of the cock 3 and the counter weight 4, will return to its initial position closing said cock, and in this movement the pawl 8 which has no downward movement, will engage the disk 9, as shown in full line in Figure 6, raising the rod of the valve 11, as shown in dotted lines in the same figure, and producing the immediate discharge of water from the tank, thru the pipe 13 controlled by said valve. As it will be seen the tank 1 will necessarily remain substantially empty, until it be desired to produce a new discharge, which will be done in the manner already explained.

If thought convenient, outlet passages 20 may be provided, to the discharge pipe 13, for the outlet to the bowl of the small amount of water which remains in the tank 1, after the discharge.

I claim:

1. A flushing tank having connected to it a water supply pipe and a water outlet pipe, inlet and discharge valves controlling the flow of water through said pipe, respectively, said inlet valve being of the self-closing type, an angle lever connected to the stem of the inlet valve, a shaft mounted for rotative movement

and having an arm extending therefrom for engagement with one arm of said angle lever whereby, upon manual rotation of said shaft, in one direction, the arm will coact with one arm of the angle lever to lock the same and to effect opening of said valve, the arm of the shaft constituting means for maintaining the angle lever in position with the inlet valve open, an abutment element upon the stem of the outlet valve, and a pawl pivotally mounted upon the other arm of the angle lever and free to move upon its pivot in one direction and restrained against movement in the other direction and constituting means for coaction with the abutment upon the stem of the discharge valve, in the automatic movement of the angle lever with the stem of the inlet valve when the angle lever is released by the movement of the arm upon said shaft, out of engagement therewith, whereby to provide for automatic opening of the discharge valve upon closing of the inlet valve, a pivoted rod, a float mounted upon the rod on one side of its pivot and means at the other side of the pivot for the arm for engagement with the arm upon the said manually operable shaft to effect disengagement of the shaft arm from the arm of the angle lever upon rise of the float in the tank, the pivotal mounting of the pawl providing for its passage past the abutment upon the stem of the discharge valve in the movement of the angle lever with the stem of the inlet valve when the valve is moved to open position.

2. A flushing tank having connected to it a water supply pipe and a water outlet pipe, a self-closing inlet valve controlling the flow of water through the supply pipe, a discharge valve for controlling the flow of water from the tank through the outlet pipe, a manually rotatable shaft, an arm extending therefrom, a lever movable with said inlet valve and having an arm engageable by the arm upon the rotatable shaft when said shaft is manually rotated in one direction and constituting means whereby the valve may be moved to open position, the engagement of the arm of the lever with the arm upon the shaft serving to prevent self-closing of the inlet valve, and abutment upon the stem of the discharge valve, means upon the said lever for engagement with the abutment in the movement of the lever, when released by disengagement of the arm upon the shaft from the arm of the lever, to effect opening of the discharge valve, and for coaction with the abutment upon the stem of the discharge valve for moving the valve to open position when the inlet valve is moved to closed position, a float, and means movable by the rise of the float in the tank to coact with the arm upon the rotatable shaft to disengage the same from the arm of the said lever.

3. In tanks connected to a water supply and water outlet, inlet and discharge valves controlling respectively said supply and outlet, a lever connected to said inlet valve having means normally holding it in a position to close said inlet valve, means carried by said lever for opening said discharge valve when said inlet valve is closed, manually operable means for moving said lever to open the inlet valve, the lever having means for coaction with a part of the manually operable means to latch the valve in said position and simultaneously move said discharge valve to open position, a float within the tank, and means actuated through rise of the float in the tank for releasing said lever to provide for simultaneous closing of the inlet valve and moving of the discharge valve to open position, the said means comprising an abutment element associated with the discharge valve and a pawl associated with said lever and engageable with the abutment to effect the movement of the said discharge valve to open position upon movement of the lever at the time of its release.

In testimony whereof I have signed my name to this specification.

ROBERTO HEYDRICH MARTINEZ.