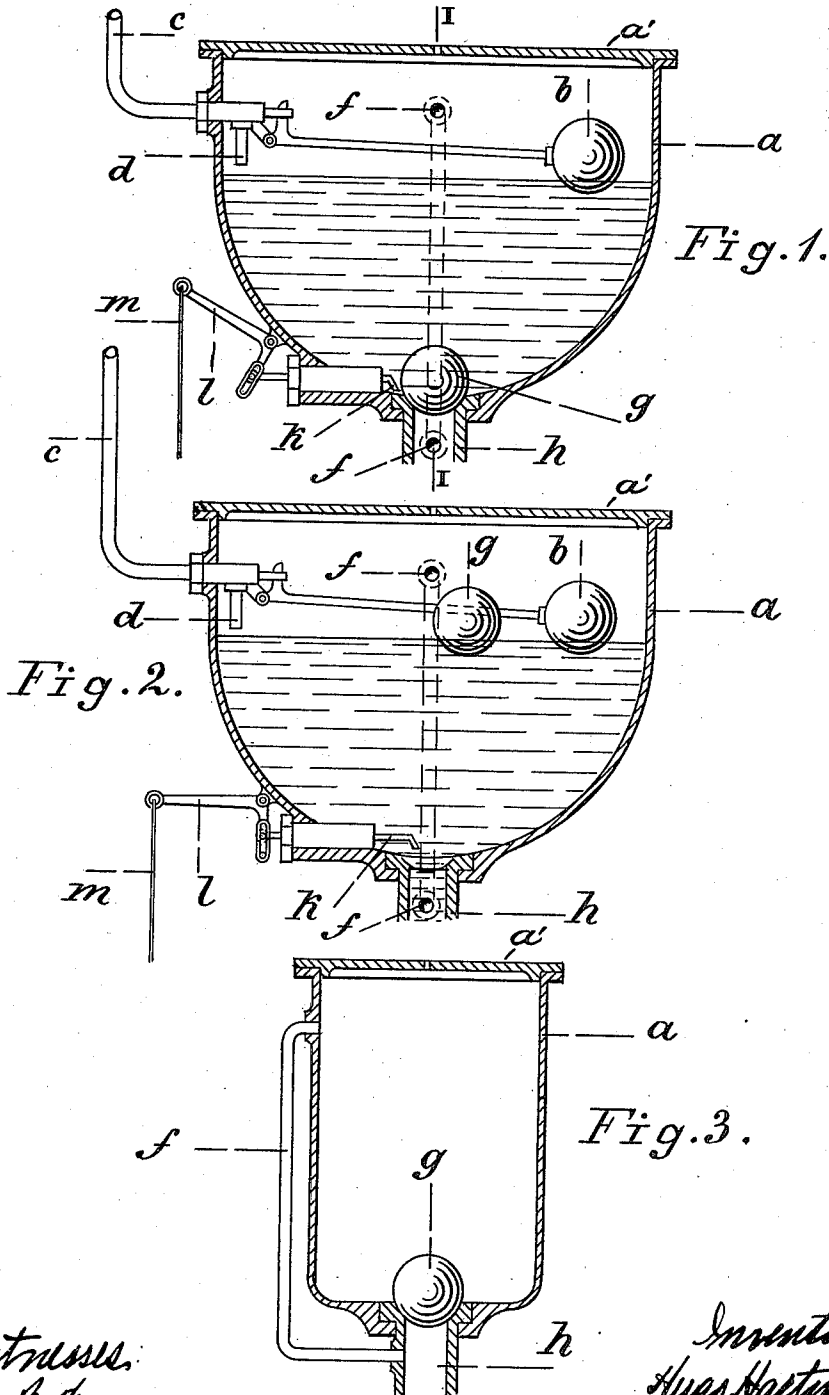


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FLUSHING TANK.
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1,030,174.

Patented June 18, 1912.



Witnesses:
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UNITED STATES PATENT OFFICE.

HUGO HARTMANN, OF BERLIN, GERMANY.

FLUSHING-TANK.

1,030,174.

Specification of Letters Patent.

Patented June 18, 1912.

Application filed July 31, 1909. Serial No. 510,547.

To all whom it may concern:

Be it known that I, HUGO HARTMANN, a subject of the Emperor of Germany, residing in Berlin, Germany, have invented certain new and useful Improvements in Flushing-Tanks, of which the following is a specification.

The object of my invention is to provide a flush tank wherein the outlet or discharge opening is closed by a ball-valve which, when the tank is filled, is held in position on the outlet opening by the pressure of water on the valve, but which when moved slightly to one side of the outlet opening, rises to the top of the water in the tank and floats thereon until the tank has emptied, when it automatically seats itself at the outlet opening and permits the tank to fill.

In the accompanying drawings: Figure 1 shows a vertical central section through a flush tank embodying my improvement with the ball-valve seated. Fig. 2 is a similar view showing the ball valve floating and the discharge opening of the tank open and Fig. 3 shows a vertical section on the line 1-1 of Fig. 1.

The tank *a* is oblong or of a general rectangular shape, as indicated in Figs. 1 and 3, the bottom of the tank sloping from all sides to the discharge opening above the discharge pipe *h*. The tank is preferably provided with a cover *a'* and the discharge pipe *h* is connected by means of a pipe *f* with the upper part of the tank above the normal water level therein. Water is admitted to the tank by means of a supply pipe *c* having a ball cock *d* operated by a float *b*. These water supply devices operate in the usual way, water being supplied to fill the tank to the level indicated below the mouth of the pipe *f* in the tank, which pipe *f* acts as an overflow pipe should too much water be admitted, but this pipe also acts to convey air from the pipe *h* to the top of the tank should there be air pressure in said outlet pipe *h*. The ball *g* may be made of any suitable material, such as india rubber, metal or wood. It is adapted to float to the top of the water in the tank when not held in place by a column of water above the discharge pipe, but its specific gravity is such that it is held in place on the discharge pipe by the column above it when the tank is full.

l indicates a pusher operated by a lever *l* connected with a rod or chain *m* and actu-

ated in the manner indicated. The pusher has an inclined surface next the ball, as indicated, and when the pusher is moved inward it operates to slightly lift the ball and also to move it to one side in such manner that the ball will be free from the pressure of the column of water above it and will rise to the upper part of the tank and float on the top of the water. If the ball were moved vertically upward or were not pushed to one side in the manner stated, the downward rush of the water would tend to return the ball to its seat.

It will be understood that after the tank has been emptied the ball *g* will automatically roll onto the valve-seat and close the opening therethrough. The float *b* having fallen, water is admitted through the ball-cock *d* and continues to flow into the tank until the proper water level has been reached, when the cock is automatically closed. During the filling of the tank the ball is held on its seat by the hydrostatic pressure and by reason of the fact that there is no rush or flow of water beneath it to make it rise. When the pusher is operated the ball is moved slightly upward and also sidewise, water then flows through the discharge opening but as the ball has been pushed diagonally sidewise and upward away from the opening, it is not drawn back to the valve-seat but rises to the top of the tank, as shown in Fig. 2.

It will be observed that the tank is not round or circular in cross section, but is oblong. This is an important feature of the invention because if the tank were made round, a whirling action would be produced in the tank around the discharge opening as a center which would prevent the ball from rising and floating in the manner indicated. Where the tank is made rectangular or oblong in cross section this whirling action is prevented.

I claim as my invention:

The combination of a flush tank having an outlet leading from the bottom thereof, such outlet being formed with a valve seat, and all portions of the bottom of the tank sloping downwardly toward said seat, a free buoyant ball valve within the tank adapted to be held on said seat by hydrostatic pressure of water in the tank and also capable of floating in such water after removal from said seat, and a pusher movable within the tank horizontally above the

valve seat and having an end operative
against one side of said ball valve at a point
above its seat to pry the valve from its seat
by a movement of the valve diagonally in a
5 direction upwardly and laterally and caus-
ing the buoyant valve to rise at one side of
the tank.

In witness whereof I have hereunto set my
hand in the presence of two witnesses.

HUGO HARTMANN.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."