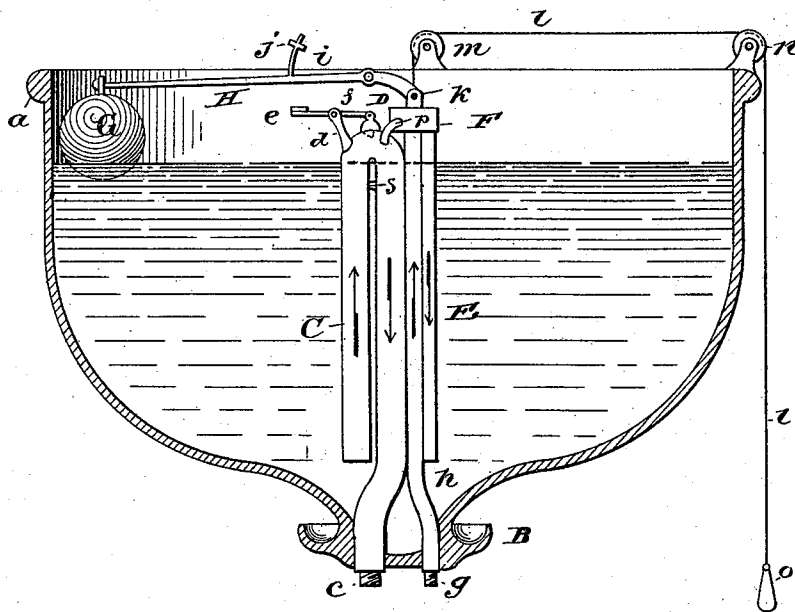


(No Model.)

E. C. STOVER.
FLUSHING TANK.

No. 487,940.

Patented Dec. 13, 1892.



Attest;
W. M. Benjamin.
J. Kennedy.

Inventor;
Edward C. Stover
by W. P. Preble Jr
his attorney.

UNITED STATES PATENT OFFICE.

EDWARD C. STOVER, OF TRENTON, NEW JERSEY.

FLUSHING-TANK.

SPECIFICATION forming part of Letters Patent No. 487,940, dated December 13, 1892.

Original application filed June 16, 1891, Serial No. 396,437. Divided and this application filed December 22, 1891. Serial No. 415,880. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. STOVER, a citizen of the United States, and a resident of the city of Trenton, in the county of Mercer and State of New Jersey, have invented certain new and useful Improvements in Flushing-Tanks, of which the following is a specification, the same being a division of an application filed by me June 16, 1891, Serial No. 396,437.

My invention consists in a flushing-tank provided with a suitable supply-pipe, which is cut-off by the filling of the tank in the usual manner, and with a suitable siphon and with devices which mechanically force open the supply-valve against the action of the float after the tank is filled, and thereby prime said siphon by the pressure exerted by the additional water thus let into said tank and with auxiliary devices which project a downward jet of water from the supply-pipe into the longer leg of the siphon.

One form of my invention is shown in the accompanying drawings, in which A is the body of the tank, provided with suitable legs *a* for fastening the same to the wall.

As earthenware and glass vessels containing cold water are apt to condense the moisture of the surrounding atmosphere on the outer surface of the vessel the drip-saucer B is provided near the center of the bottom of the tank and preferably cast integral therewith, as such construction strengthens the tank at the point where the supply-pipe and the discharge-pipe enter the same; but if desired, a separate drip-saucer may be employed, the bottom of the tank being simply tapered, so that the products of condensation above referred to will flow into said saucer and be there retained and be prevented from following the pipes down to the closet and discoloring the same or discoloring the adjacent wall.

C is the siphon, the longer leg of which is connected by a suitable coupling *c* to the flushing-pipe. The shorter leg of the siphon is open near the bottom of the tank. The siphon is broken at any desired point automatically by means of the valve D, mounted upon the lug *d* on the top of the siphon and opened by a device carried on the arm of the float, as

hereinafter described, striking the stop *e* at the outer end of the lever *f*. Of course as soon as the valve D is opened the rushing of air into the siphon through said valve prevents any further action of said siphon and allows the tank to fill up again. The time of opening the valve may be automatically set, as hereinafter explained, so that it takes place when the tank is half empty or two-thirds empty, or at such other time as may be found desirable. The supply-pipe E is connected by a suitable coupling *g* with a suitable source of supply, such as the main pipe from the street, and discharges the water into the tank near the bottom at *h*, the bend of the pipe at the upper part of the tank being closed and controlled by what is known as a "ball-valve" F, so constructed and controlled by means of the ball G, that when the valve is closed no water can enter the tank through the pipe E, and when the valve is opened or raised the water coming up in the longer leg of the supply-pipe is turned back from the valve down into the tank through the shorter leg, except when projected into the longer leg of the flushing-siphon, as hereinafter described. When the tank is full, the ball-valve F is kept closed by reason of the float or ball G, to which it is connected by the arm H, being supported by the water under it, the said arm H being pivoted at some point between F and G, as usual. As the water is drawn out of the tank the falling of the float G raises the ball-valve F and permits the water again to enter the tank through the supply-pipe E. The arm or lever H carries a projecting rod *i*, on which a pin or finger *j* is adjustably mounted in line with the stop *e* at the outer end of the lever *f*, so that when the ball G has fallen to a predetermined point—in other words, when the water in the tank has been exhausted by the siphon G to the extent desired—the siphon is broken by the opening of the valve D and the water ceases to flow out through the siphon, while at the same time, by reason of the opening of the ball-valve F, water comes in to supply the tank through the supply-pipe. The ball-valve G is also adapted to be opened independently of the float by means of a chain *l*, which passes over the pulleys *m* and

n and is provided with a pull-knob *o*. The connection between the ball-valve *F* and the lever *H* is made by the toggle-joint *k*, which not only permits the ball-valve to be raised without disturbing the position of the ball *G* but also enables the falling of the ball *G* to raise the valve *F* in a straight line, so that it does not bind on the sides of the supply-pipe in which it is set. The rising of the ball *G* when lifted up by the water in the tank, always closes the valve *F*, no matter how the same was opened.

When it is desired to flush the closet, the pull-knob *o* is pulled in the ordinary way and the valve *F* is thereby raised, thus re-establishing communication between the two legs of the supply-pipe, and the water passing through the said supply-pipe into the tank gradually raises the water-line both in the tank and in the siphon *C* until the longer leg of the siphon is prime, when the flushing at once takes place and continues until the water in the tank has been reduced to the predetermined amount, when the siphon is broken, as before explained. It will thus be seen that the first effect of opening the valve *F* by means of a pull-knob *o* is to tend to overflow the tank instead of to empty it, as is generally the case in flushing-tanks. In fact, were it not for the siphon the tank would undoubtedly overflow, and it will thus be seen that in the arrangement shown the longer leg of the siphon becomes primed as the result of the attempt of the water entering by means of the supply-pipe seeking an avenue of escape situated somewhat below the top of the tank, the entrance

of water being no longer shut out by the ball *G*, which is temporarily rendered inoperative on the valve *F*.

The priming of the siphon is quickened and aided by means of the pipe *p*, projecting downward into the longer leg of the siphon.

The valve *F* once opened by means of the pull-knob *o*, which, as before stated, deprives the float or ball *G* of its control of the valve *F*, remains open until the ball *G*, by falling below the predetermined point and opening the siphon, as before explained, again takes control of the valve *F* and shuts it in rising in the manner usual to ball-valves.

An aperture *s* is provided for after flushing the closet or other article to be flushed.

I claim—

A flushing-tank provided with a suitable supply-pipe, which is cut off by the filling of the tank in the usual manner, a supply-valve which opens and closes said supply-pipe, devices which mechanically force up the supply-valve and open the supply-pipe against the action of the float after the tank is filled, a suitable siphon connected with the flushing-pipe, and devices connecting the longer leg of the siphon with said supply-pipe, whereby a downward jet of water is projected from the supply-pipe into the longer leg of the siphon, substantially as shown, and for the purposes specified.

EDWARD C. STOVER.

Witnesses:

J. KENNEDY,
W. P. PREBLE, Jr.