(No Model.)

J. H. SAVILL.

FLUSHING TANK.

No. 501,368. Patented July 11, 1893.

Fig. 1.

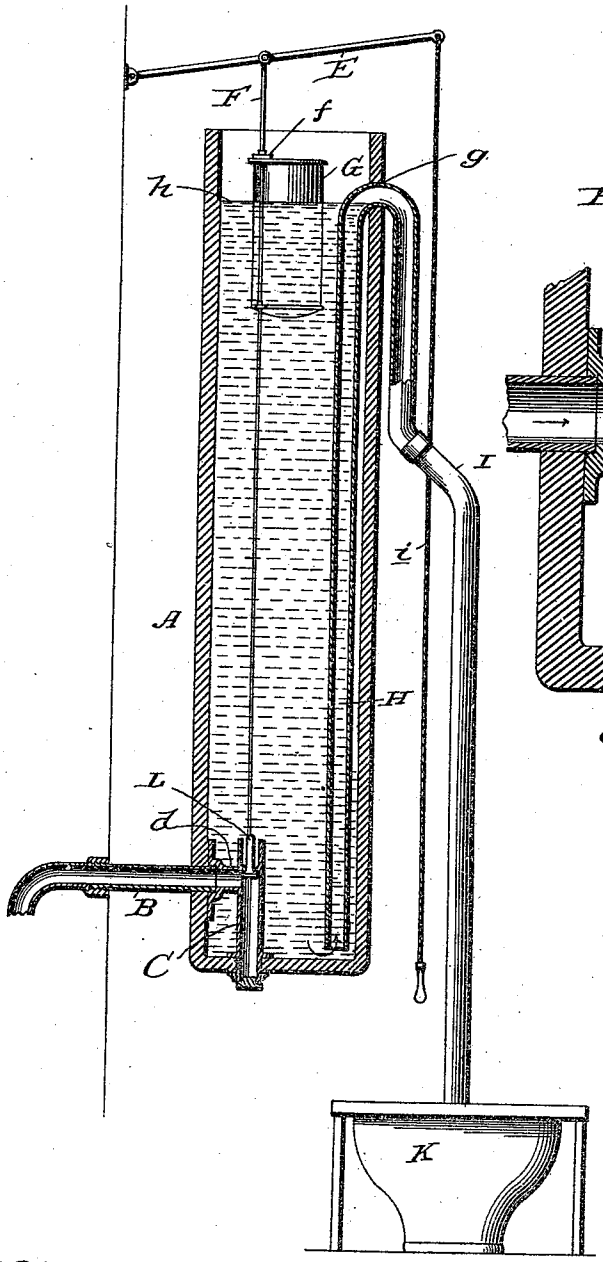
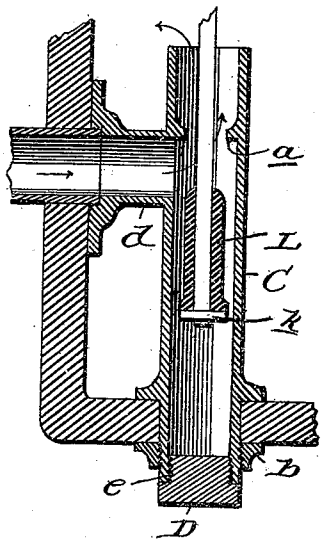


Fig. 2.



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JOSEPH H. SAVILL, OF PHILADELPHIA, PENNSYLVANIA.

FLUSHING-TANK.

SPECIFICATION forming part of Letters Patent No. 501,368, dated July 11, 1893.

Application filed January 25, 1893. Serial No. 459,717. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. SAVILL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Flushing-Tanks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in flushing tanks used in connection with water closets to flush the bowls and rims of hoppers, and it has for its prime object to improve that class of devices by rendering the parts capable of operation so that the entire tank of water will be exhausted by siphoning through the manipulation of the pull chain.

A further object of the invention is to render noiseless the operation; the parts being of a cheap and effective construction and not liable to get out of order.

Other objects and advantages will appear from the following description and claims when taken in connection with the annexed drawings, in which—

Figure 1, is a vertical sectional view of the tank; the siphon pipe, supply pipe, and valve pipe being in section and a hopper and flushing pipe in elevation, and Fig. 2, is an enlarged sectional detail view illustrating the valve pipe and repair plug with a part of the supply pipe and tank.

Referring by letter to said drawings:—A, indicates the flushing tank which may be of any ordinary or approved construction, and B, indicates a supply pipe which may be of the character usually employed and leads into the tank at a suitable point above the bottom.

C, indicates a vertical pipe which I shall denominate, the valve pipe, for the reason that the valve moves therein and said pipe is provided with an internal annular shoulder *a*, designed to close the supply when the valve has been depressed as better shown in Fig. 2, of the drawings. This valve pipe C, assumes a vertical position within the tank, taking through the bottom thereof as shown, where it is secured by a nut *b*, or other suitable fastening device. This pipe taps the supply pipe by means of a branch *d*, arranged at a suitable distance from its upper end, and it is screw tapped at its lower end as shown at *e*, to receive a threaded plug D. This construction will permit of quick and ready access being had to the interior of the pipe to repair or renew the valve or for other purposes. While I have shown the branch *d*, as formed integral with the valve pipe, yet it is obvious that this branch may be a separate part and connected by a suitable coupling according to the fancy or dictation of the manufacturer, and it is further obvious that other means might be employed for closing the lower end of this pipe without departing from the spirit of my invention.

E, indicates a lever which I have here illustrated as being hinged or pivotally connected at one end to a wall or other suitable support, but this lever may if desired be hinged or connected to the tank by a suitable bracket.

F, indicates a vertical rod. This rod is provided at its lower end with a long rubber valve of a form substantially as shown, and is adapted to form a joint within the annular seat *a*, of the tube when raised, and permit water to flow from the supply pipe into the tank when depressed as will be presently described. This rod is pivotally connected at its upper end to the lever E, at a suitable point in the length of the latter.

G, indicates a float. This float is provided with suitable guide eyes through which the rod passes, and the rod is provided with a stop *f*, for limiting the upward movement of the float within the tank.

H, indicates the siphon pipe. This pipe starts from within a short distance of the bottom within the tank and passes out through one of the side walls thereof as shown at *g*, after which it connects with the flushing pipe I, which leads to the bowl K, of a closet in the usual manner. The stop on the valve rod, the neck of the siphon, and the float, are so arranged with respect to each other, that when water rises in the tank to the point shown at *h*, the float will contact with the stop on the rod and close the valve L, thus checking the supply of water. The water seeking its level within the tank will of course pass into the siphon pipe H, and stop just before entering the neck thereof, thereby holding a predetermined quantity of water within the tank. To

flush the hopper it is simply necessary to pull the chain such as *i*, bringing down the valve rod F, so as to open the supply. This will cause the water within the tank to start over the neck of the siphon pipe and after thus being started the water will of course continue to draw from the tank and discharge down the flushing pipe until the water has been drawn to the level of the inlet of the siphon, when the siphon will be broken by drawing air at its inlet, after which the float will rise and coming in contact with the stop *f*, will close the supply valve. With a device of this construction it will be perceived that it is not necessary for a person to hold down the pull chain while exhausting the tank but simply give it a short pull until the siphon has been started.

Another feature of construction to which I attach importance, is the long rubber or elastic valve L, which may be secured to the rod by a single washer *k*, and renders the operation noiseless.

It has heretofore been proposed in siphon flushing tanks, to hood the tank and make the same air tight, and provide such air tight tank with a cock for controlling the pressure or quantity of air therein and governing the movements of the float on the valve rod by opening and closing the air cock; the principle of operation being that by manipulating the cock and holding a certain quantity of air in the tank, the float will be prevented from rising above a certain level owing to the pressure of air above and consequently checking the inlet of water, while by further exhausting the air, the float may rise to contact with a stop on the valve rod, and start the siphon. This construction is not only expensive but has been found objectionable for many reasons, and mainly because it cannot be operated by all persons, for should anyone open the air cock and then neglect or forget to close it, the tank would continue to fill and discharge indefinitely, and again if the cock should be opened, but not long enough to exhaust all of the air or nearly all of the air from the tank, it would not operate at all. These objections are overcome by my improvements and can be applied to any ordinary tank such as at present in use and without the use of an air chamber and other attachments.

Having described my invention, what I claim is—

1. The combination with the tank; of the supply pipe B, the vertical valve pipe C, open at both ends and having its lower end threaded, and also having the internal annular shoulder *a*, and the lateral branch *d*, connected with the supply pipe, the plug D, in the lower threaded end of the valve pipe, the valve rod, and the long rubber valve secured on the lower end of said rod, all adapted to operate, substantially as and for the purposes specified.

2. The flushing apparatus described, comprising the tank the supply pipe taking through one of the side walls thereof, the valve pipe open at opposite ends, and having an internal valve seat and connected with the supply pipe, a plug or cap for closing the lower end of said pipe, the valve rod having a stop, the long rubber or elastic valve on the lower end of said rod, the lever pivotally connected to the rod, a pull chain attached to one end of said lever, the float movable on the valve rod, a siphon pipe, leading from near the bottom of the tank with its neck carried to an altitude as described, and a flushing pipe connected with the siphon pipe, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH H. SAVILL.

Witnesses:
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