

(No Model.)

J. HOLLERAN.

AUTOMATIC FLUSHING TANK FOR WATER CLOSETS, URINALS, &c.

No. 578,927.

Patented Mar. 16, 1897.

FIG. 1.

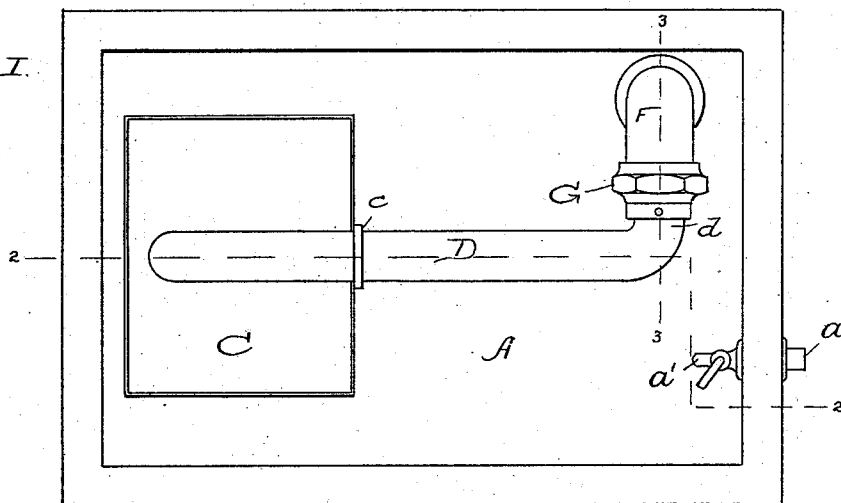


FIG. 2.

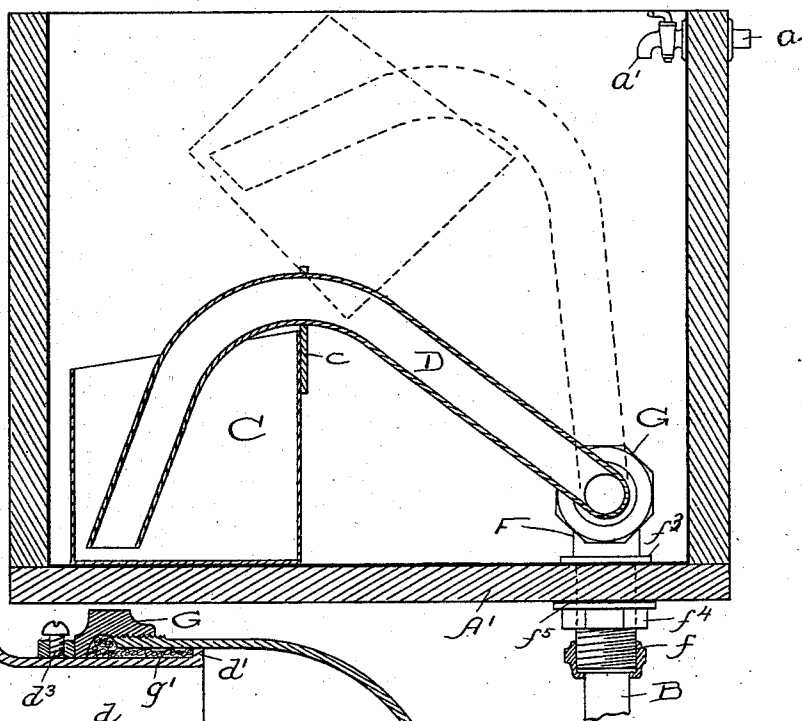
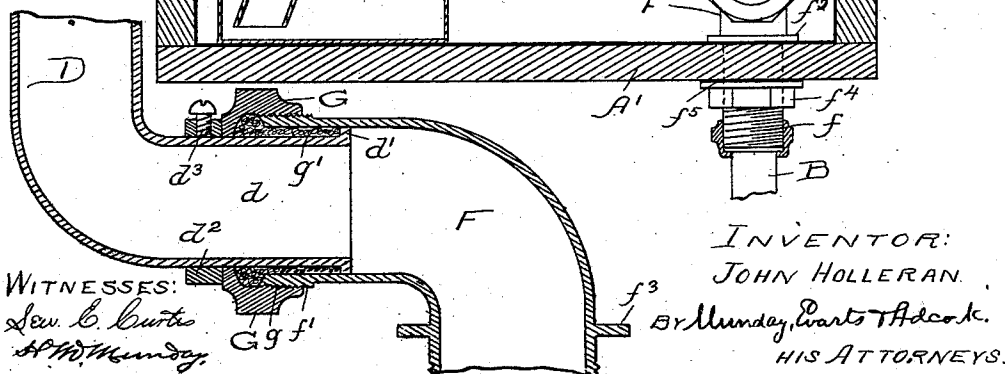


FIG. 3.



WITNESSES:

Geo. C. Curtis
H. W. Munday

UNITED STATES PATENT OFFICE.

JOHN HOLLERAN, OF NOTRE DAME, INDIANA, ASSIGNOR TO THE L. WOLFF
MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS.

AUTOMATIC FLUSHING-TANK FOR WATER-CLOSETS, URINALS, &c.

[SPECIFICATION forming part of Letters Patent No. 578,927, dated March 16, 1897.

Application filed February 1, 1895. Serial No. 536,934. (No model.)

To all whom it may concern:

Be it known that I, JOHN HOLLERAN, a citizen of the United States, residing in Notre Dame, in the county of St. Joseph and State of Indiana, have invented a new and useful Improvement in Automatic Flushing-Tanks for Water-Closets, Urinals, &c., of which the following is a specification.

My invention relates to automatic flushing-tanks for water-closets, urinals, &c.

The object of my invention is to provide an automatic flushing-tank of a simple and durable construction operating to discharge its contents at intervals.

My invention consists, in connection with the tank and a movable float in the tank adapted to fill with water when the water in the tank rises to a certain height, of a movable or pivoted siphon connected to the float and communicating at one end with the discharge pipe or outlet, said siphon having an inlet end projecting into the float to empty the same.

It also consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described, and specified in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of an automatic flushing-tank embodying my invention and illustrates one good form of reducing the same to practice. Fig. 2 is a vertical section on the line 2 2 of Fig. 1, and Fig. 3 is an enlarged detail section on line 3 3 of Fig. 1.

In the drawings similar parts are indicated by like letters of reference in all the figures.

In the drawings, A represents an overhead flushing-tank for a water-closet, urinal, or other like device, furnished with the usual water-supply or inlet pipe *a*, having a cock or faucet *a'* to regulate the constant flow of water to the tank.

B represents the customary discharge-pipe leading, for example, to a water-closet or urinal.

C is a movable float inside the tank A, open at the top so that it may fill with water when the water rises to a certain height in the tank A. This float consists, preferably, of a simple vessel of any suitable shape.

D is a hinged or movable siphon to which the float C is secured. The float C may be connected to the siphon D by any suitable means, as, for example, by soldering a strip of sheet metal *c* at one end to the vessel C and at the other end to the siphon-pipe D. To permit the siphon to move with the movable float, it is movably or pivotally connected with the discharge-pipe B, this being preferably done through the medium of an elbow-coupling F, the lower end of which extends through the bottom A' of the tank A and is furnished with screw-threads *f* to connect with the discharge-pipe B. The bent end *d* of the siphon D is hinged or pivotally connected to the upper or horizontal end of this elbow-coupling F by a stuffing-box G, having screw-threads *g* to engage the screw-threaded end *f'* of the coupling F. The bent end *d* of the siphon D is furnished with a shoulder or flange *d'* to properly retain and compress the packing *g'* between said shoulder and the stuffing-box G. To hold the end *d* of the siphon properly in place in the stuffing-box, I provide the same with a ring or collar *d²*, kept in place by a set-screw *d³*. Any other form of stuffing-box or packed joint or other connection that will permit the siphon to swing or move may, however, be used in place of the stuffing-box or packed joint shown in the drawings.

To form a tight joint between the elbow-coupling F and the bottom A' of the tank A, the coupling is furnished with the usual flange or shoulder *f³* and nut *f⁴* and packing *f⁵*.

The operation is as follows: As the water runs into the tank A through the supply-pipe *a* the float C will rise with the water in the tank A until the float reaches about the position indicated in the dotted lines in Fig. 2, when the water will begin to flow into the float vessel and fill the same, thus overcoming its buoyancy and causing it to sink or descend and thus causing the water in the tank to flow out through the siphon D and discharge-pipe B, which communicates with the lower or longer leg of the siphon. The siphonage of the water will continue until the water in the tank A falls to the level of the upper edge of the float vessel C and until the float vessel C itself is emptied. The tank A

will then again fill with water and the operation be repeated.

The pivoted or swinging siphon D serves to limit the extent to which the float may rise in the tank A and compels it to fill with water after the water rises to the desired height in the tank, the open-mouthed float being secured to the siphon at a less distance from its pivot than the top of the tank. The inlet end of the siphon extends into the float, so that after the water in the tank A has been siphoned out down to the level of the upper edge of the float the water will then be siphoned out of the float itself to restore its buoyancy and thus cause the operation to be repeated.

I claim—

1. The combination with a flushing-tank and its discharge-pipe, of a movable float-cup, a bent two-legged siphon extending over the top edge of the float-cup and having its open or free leg projecting down into the float-cup

near the bottom thereof, and an elbow-coupling having its upright arm extending through the bottom of the flushing-tank and connected to said discharge-pipe, and its inner arm extending horizontally inside said tank, said siphon having at its inner leg a bent arm pivotally connected to the horizontal arm of said elbow-coupling, said float-cup being attached to said pivoted siphon and movable therewith, substantially as specified.

2. The combination with tank A of float C, pivoted siphon D connected to said float and provided with a bent end *d* forming the pivot of the float, and coupling F pivotally connected to the float, stuffing-box G, said pivoted end *d* of the siphon having a shoulder or flange *d'* and packing *g'*, and collar *g*, substantially as specified.

JOHN HOLLERAN.

Witnesses:

H. M. MUNDAY,
EDMUND ADCKOCK.