

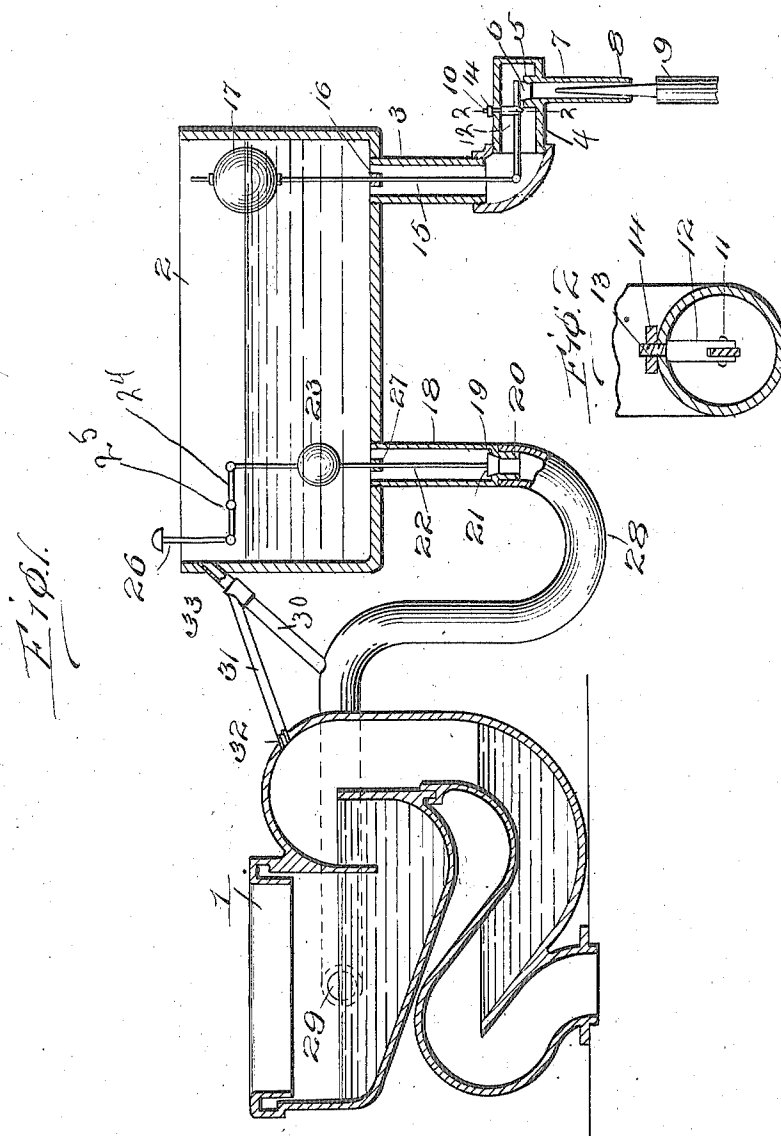
V. H. HOBSON.

FLUSH BOX.

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947,663.

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UNITED STATES PATENT OFFICE.

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FLUSH-BOX.

947,663.

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To all whom it may concern:

Be it known that I, VALENTINE H. HOBSON, a citizen of the United States, residing at Richmond, in the county of Madison and State of Kentucky, have invented certain new and useful Improvements in Flush-Boxes; and I do hereby 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 flush boxes, and particularly to flush boxes arranged for being filled and discharged noiselessly.

The object in view is the provision of means for admitting and discharging water from the flush box that is arranged continuously beneath the water being discharged.

Another object of the invention is the provision of an intake valve in a comparatively large pipe and positioned beneath the tank, in combination with a discharge valve arranged in substantially the same plane as the intake valve, and continuously submerged, whereby the water flowing into the tank and from the tank does so from comparatively large pipes which are in free communication with the tank, by which noise of the filling and discharging of the tank is eliminated.

Another object of the invention is the arrangement of air pipes for destroying the vacuum in the bowl of the closet seat, and in the discharge pipe leading from the tank to the bowl of the closet seat.

A still further object of the invention is the arrangement of an intake valve that is continuously submerged, having a float arranged to occupy a position on the surface of the water, in combination with a discharge valve continuously submerged, and arranged with a float which is normally submerged, and by reason of being submerged normally the pressure of water in the tank will hold the valve closed until the same has been mechanically unseated, whereupon the flow will resist any reseating thereof until the water in the tank has fallen below the float.

With these and other objects in view the invention comprises certain novel constructions, combinations and arrangement of parts as will be hereinafter more fully described and claimed.

In the accompanying drawings: Figure 1 is a sectional view through an embodiment

of the invention. Fig. 2 is a fragmentary sectional view approximately on line 2-2 of Fig. 1.

Referring to the drawing by numerals, 1 indicates a closet bowl of any desired or preferred kind, and 2 a receptacle or tank for containing water for flushing bowl 1. Connected to tank 2, preferably near one end thereof, is a comparatively large pipe 3 that has secured thereto, preferably at right angles, a second large pipe 4. In pipe 4 is formed a valve seat 5 which is arranged to accommodate valve 6. Seat 5 is in free communication with pipe 7 into which is fitted a nozzle 8, constituting an injector which in turn is connected to a supply pipe 9. The end of nozzle 8 is positioned any desired distance from valve 6 so that the momentum or force of the water being discharged from nozzle 8 will be largely eliminated by being compelled to fill pipe 7 before the water can pass out past valve 6. In this way no wear, or comparatively little wear, will be caused to valve 6. Valve 6 is carried by a pivotally mounted rod or lever 10 which is pivotally mounted at 11 to a support 12. Support 12 is preferably formed with a threaded reduced portion 13 which receives a nut 14 for clamping the same in position. At the end of lever 10, opposite valve 6, is pivotally connected a reciprocating rod 15 which passes upward through a guiding spider 16 into tank 2 and is supplied with a float 17 which normally remains partially submerged, but always near the upper surface of the water so that whenever the level of the water is lowered the float will be lowered, and consequently movement will be conveyed to valve 6 for opening the same, and thus permitting a new supply of water to be forced into the tank.

Secured to tank 2 at any desired place, preferably the end opposite to which the pipe 3 is secured, is a pipe 18 which is of comparatively large size similar to pipe 3, and is formed with a seat 19 near the lower end thereof and a projection 20. The seat 19 is arranged to accommodate a valve 21 which has connected thereto a reciprocating shaft 22 which carries a float 23. Shaft 22 passes upward from float 23 and is pivotally mounted to a lever 24 that in turn is pivotally supported at 25 and carries at its outer end a rod 26 having a thumb member on the end whereby when the same is depressed shaft 22 will be elevated and also float 23.

Shaft 22 passes through a spider 27 which guides the same in its movement. When the tank has been flushed the same is not entirely emptied but a small amount of water remains therein and is of the same height or level as the water in bowl 1. After the tank has been flushed the float 23 will be above the level of the water and by its weight will force valve 21 upon its seat 19 for shutting off the discharge. Immediately upon the water in the tank falling below its accustomed level float 17 will begin to move downward and valve 6 will be gradually opened so that water is continuously flowing into the tank during its discharge, but the discharge is sufficiently rapid and of sufficient volume to empty the tank even though water is flowing in at the same time. After the tank has been flushed valve 21 will move against its seat and as the tank is filled again the weight of the water and suction at this point will resist any action of float 21 which tends to lift the valve from its seat. However, upon manually forcing down rod 26 valve 21 will be raised and float 23 will in such instance be sufficiently buoyant to maintain the valve raised until the float is no longer supported by the water.

Secured to the extension 20 is a discharge pipe 28 which in turn leads to bowl 1 and is discharged at point 29 therein, though any other desired point could be arranged for receiving the end of the pipe.

In order that no vacuum or suction will be created in pipe 28 an air pipe 30 is provided which is connected with pipe 28, and also with tank 2 above the water line. This pipe also takes care of any overflow of tank 2. If the discharge were made into bowl 1 without any further change therein after the bowl 1 had been filled to a certain extent the discharge of water therefrom would cause a suction or vacuum which would suck out substantially all of the water in the bowl and at the same time make considerable noise. In order to overcome this noise and the sucking action by the discharge of the water from the bowl an air pipe 31 is provided that is connected with the bowl at 32 and pipe 30 at 33, whereby air is supplied to the confined space of the bowl, and consequently only the excess of water in bowl 1 will be permitted to pass therefrom. However, if it should be desirable in any instance to cause a sucking action in bowl 1 for drawing out all the water therein pipe 31 could be eliminated and the ordinary action of the water would result.

What I claim is:

1. In a closet flushing system, a flush box, means including an injector for filling said flush box, means for discharging the water therefrom into a bowl, and means for preventing any noise during the emptying of said bowl.

2. In a flushing system, a flush box, means including a submerged injector for filling said flush box with water without creating noise, and means for discharging water from said flush box without noise.

3. In a closet flushing system, a bowl, a flush box, filling means including an injector, means for connecting said bowl and said flush box for guiding water from said flush box to said bowl, means for regulating the flow of water through said guiding means, and means connecting said flush box and said bowl for preventing any noise in the discharge of water from said bowl.

4. In a closet flushing system, a flush box, means for directing water therefrom, a valve for regulating the discharge of water therefrom positioned below said flush box, a pipe of comparatively large size inclosing said valve and in free communication with said tank, a rod connected with said valve, a float connected to said rod, means for moving said rod for moving said valve off its seat, said float being so positioned on said rod as to hold said valve off its seat when manually moved therefrom until the level of the water in said tank has moved downward a predetermined distance, and an inlet valve automatically opened upon the discharge of water from said tank.

5. In a closet flushing system, a tank, means for leading water therefrom, a continuously submerged valve positioned below said tank for regulating the discharge of water therefrom, a pipe surrounding said valve, and in free communication with said tank for containing water for maintaining said level in a continuously submerged condition, whereby no air can be discharged through said valve, an intake valve positioned below said tank, a comparatively large pipe in free communication with said tank and inclosing said valve whereby said valve is continuously submerged, and a float connected with said valve for holding said valve closed when the water level in said tank has reached a predetermined degree, and for opening said valve when the water level in said tank has fallen from its normal height.

6. In a closet flushing system, a flushing tank, means for directing water therefrom, a continuously submerged valve for regulating the discharge of water from said tank, a pipe surrounding said valve and containing water for continuously submerging said valve for preventing any air from being drawn through said valve, an intake valve continuously submerged in water, a pipe surrounding said valve and in free communication with said tank for containing water for surrounding said valve, a discharge nozzle connected to a source of water supply, and a comparatively large pipe for inclosing the end thereof and receiving the discharge therefrom whereby the force of the discharge

of water from said nozzle will not press
against said valve.

7. In a closet flushing system, a bowl, a
flush box, means for connecting the bowl and
5 flush box for guiding water to the former,
means for regulating the flow of water
through the guiding means, an air pipe con-
necting the guiding means and the flush box,

and a second pipe connecting the air pipe
and the bowl.

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

VALENTINE H. HOBSON.

Witnesses:

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