(No Model.) 2 Sheets—Sheet 1.

B. DALE.

WATER CLOSET CISTERN.

No. 536,187. Patented Mar. 26, 1895.

Fig. 1.

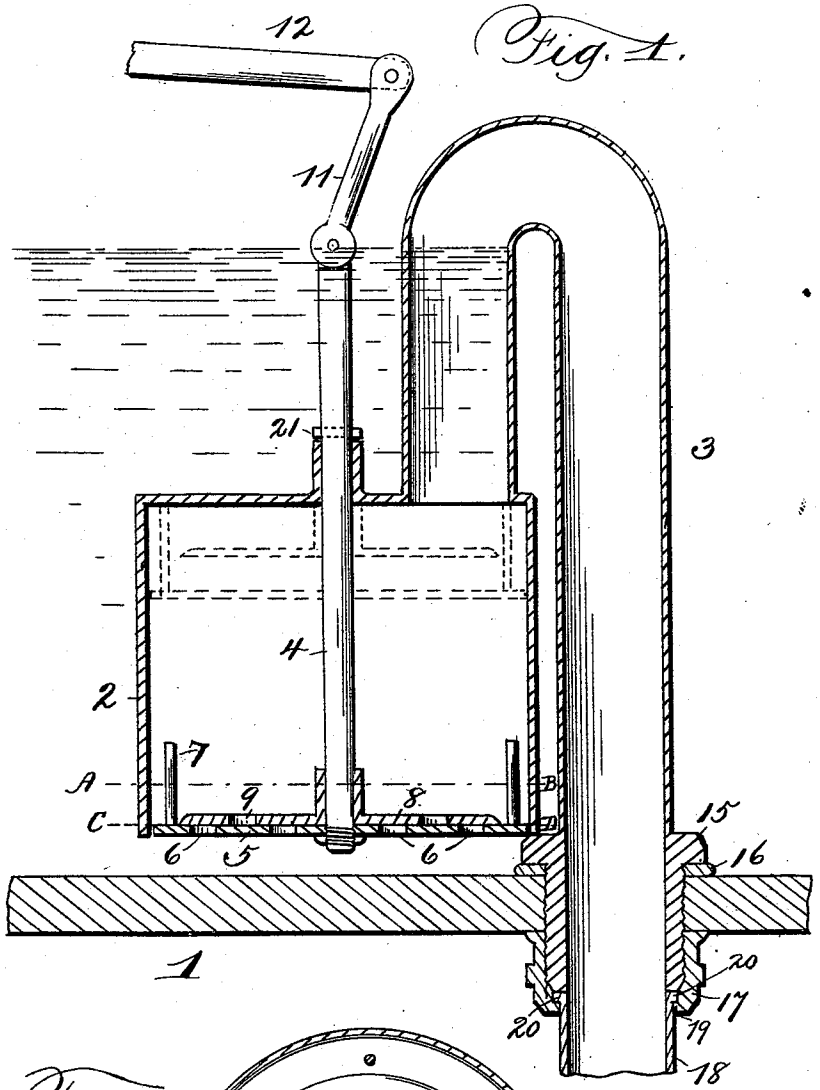
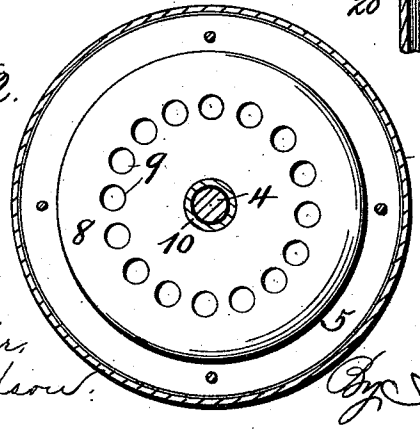


Fig. 2.



Witnesses:-
Wm. E. Boulter,
Lottie Richardson.

Inventor.
Bert Dale.
By H. B. Wilbur
Attorney

(No Model.) 2 Sheets—Sheet 2.

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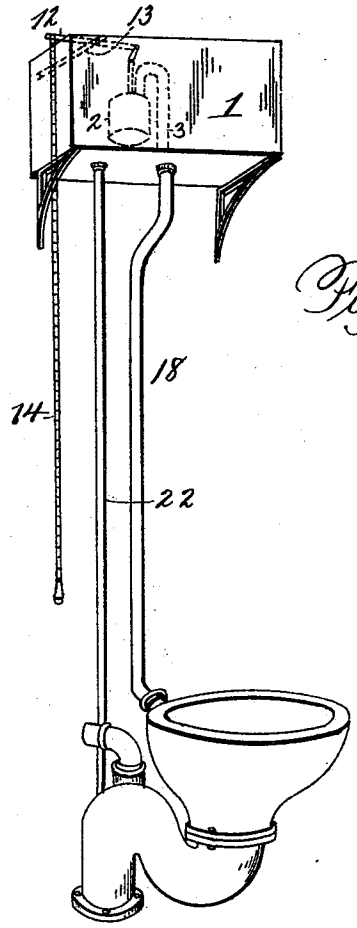

Fig. 4.

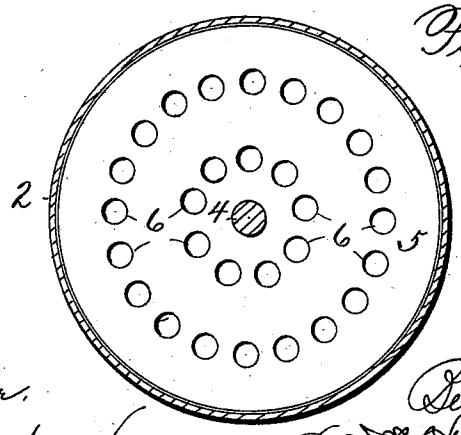

Fig. 3.

Witnesses:-
Wm. E. Coulter.
Lottie Richardson.

Inventor:-
Bert Dale.
By Wilson
Attorney

UNITED STATES PATENT OFFICE.

BERT DALE, OF MILWAUKEE, WISCONSIN.

WATER-CLOSET CISTERN.

SPECIFICATION forming part of Letters Patent No. 536,187, dated March 26, 1895.

Application filed June 20, 1894. Serial No. 515,159. (No model.)

To all whom it may concern.

Be it known that I, BERT DALE, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Water-Closet Cisterns; 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.

My invention has relation to water-closets and it relates more particularly to an improved valve for use in conjunction with a water-closet tank and a siphon for flushing the closet bowl whereby said siphon may be readily and effectively set in operation for such flushing, and whereby no leakage can occur to affect the proper operation of the parts, and among the objects in view is to provide simple, inexpensive and efficient devices adapted to start the operation of the siphon of a water-closet tank and effect the thorough flushing of the closet-bowl, and with the above and other objects in view, the invention consists in the novel construction, arrangement and combination of parts as hereinafter fully described, illustrated in the drawings and pointed out in the appended claim.

In the accompanying drawings: Figure 1 is a vertical sectional view of a portion of a water-closet tank and my improved flushing siphon and valve. Fig. 2 is a horizontal section on line A—B of Fig. 1. Fig. 3 is a similar view on line C—D— of Fig. 1. Fig. 4 is a perspective view of a water-closet provided with my improved devices.

1 indicates an ordinary water-closet tank adapted to contain my improved flushing devices.

2 indicates a metallic drum or casing which is arranged within the tank, and supported in a position a trifle above the bottom of the tank. The said drum is open at bottom and it is carried by the short leg of an ordinary U-shaped siphon 3 which is arranged within the tank. Passing loosely through the drum is the vertical rod 4 to the lower end of which is fixedly secured a disk 5 which is adapted to fit loosely within the drum to permit it to reciprocate vertically therein as presently set forth, and said disk is provided with a number of circularly-arranged openings 6, and with a series of vertical pins 7. Mounted loosely upon the rod 4 is a second disk 8 which is also provided with a series of circularly-arranged openings 9 which however do not register with the openings in the disk 5. Said disk 8 is of sufficient diameter to close the openings 6 when the parts are in the normal position seen in Fig. 1. The disk 8 is also provided with the central vertically arranged sleeve 10 surrounding the rod 4.

To the upper end of the rod 4 is suitably jointed (as by a knuckle-joint) a link 11, to which is jointed one end of a lever 12 which is pivoted intermediate its ends upon a transverse rod 13 carried by the tank, and to the opposite end of said lever is attached the usual operating chain, 14.

The siphon 3 is adapted to be secured to the tank bottom by any suitable means, as for instance it is screw-threaded exteriorly at its lower end where it passes through the bottom of the tank and is provided with a flange or shoulder 15 beneath which is fitted a leather washer 16, so that when the tightening nut 17 which screws upon the threaded end of the siphon is screwed up tightly no leakage can occur. The longer leg of the siphon is in communication with the flushing pipe 18 which is clamped tightly against the lower edge of the siphon leg by the nut 17 which has a flange 19 engaging under the flange or bead 20 of the flushing pipe.

21 is a short pin extending through the rod 4 and adapted to rest upon the upper end of the sleeve 10 when said rod is in its normal position and thus limit the downward movement of the said rod.

22 is the ordinary water supply pipe for the tank which latter in practice is to be provided with the usual ball supply cock or valve.

The operation of my improved devices may be briefly described as follows:—When the chain is pulled slightly and then released (although said chain may be kept pulled down until the closet is flushed without interfering with the proper operation of the parts), the link 11 and lever 12 pull the rod 4 upwardly and with it the disks 5 and 8 which are in close contact with each other, and which acting as a plunger force the water contained in the short leg of the siphon over into the long leg the siphon then commencing to act and

siphoning the water from the tank to flush the bowl. When the siphon is acting the water will be drawn through the bottom of drum 2 and through the openings in disk 5 which lifts the disk 8 on rod 4 into a position above disk 5, and also lifts the latter disk until said parts assume the position seen in dotted lines in Fig. 1 the sleeve 10 and pins 7 abutting against the top of the drum to hold the disks in the relative position seen in dotted lines. Said parts are held in that position until the water beneath said disks has been siphoned out of the tank when said disks will drop by gravity into their normal lowered position ready for action again when the tank is supplied with water.

In case there should be a leakage at the ball valve or cock, the disk 5 by fitting loosely within the drum permits the overflow, passing into the drum and the siphon taking the overflow, which, lifting the disk 8 off of disk 5 starts the said siphon into action.

It is well known that a siphon is the best means for flushing a closet bowl and by providing means whereby the starting of a siphon can be always relied upon and perfect results attained, I secure advantages not possible by the use of the usual means for flushing a closet bowl.

What I claim, and desire to secure by Letters Patent, is—

The combination with a water-closet tank of a siphon, a drum or casing carried by the short leg of the siphon and open at its bottom, a vertically movable rod passing through the drum, a disk secured to the lower end of the rod and having openings, vertically arranged pins carried by the said disk and adapted to strike against the head or top of the drum, a second disk loosely mounted on the rod above the first disk and having openings not registering with the openings in the first disk a sleeve carried by the second disk and adapted to strike against the top of the drum and a stop pin carried by the rod and an upwardly extending sleeve carried by the top of the drum, against which sleeve said pin is adapted to strike, as and for the purpose specified.

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

BERT DALE.

Witnesses:

LORENZ F. WAGNER,

FRED R. HORNING.