S. BICKERTON.

DISINFECTANT APPARATUS.

APPLICATION FILED AUG. 9, 1915.

1,182,742.

Patented May 9, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

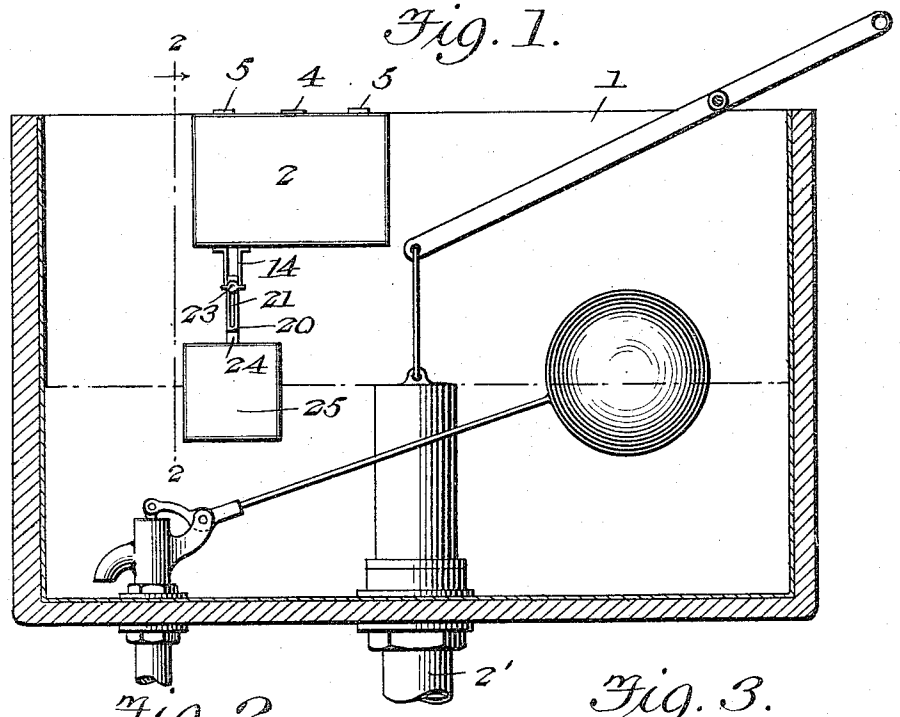


Fig. 2.

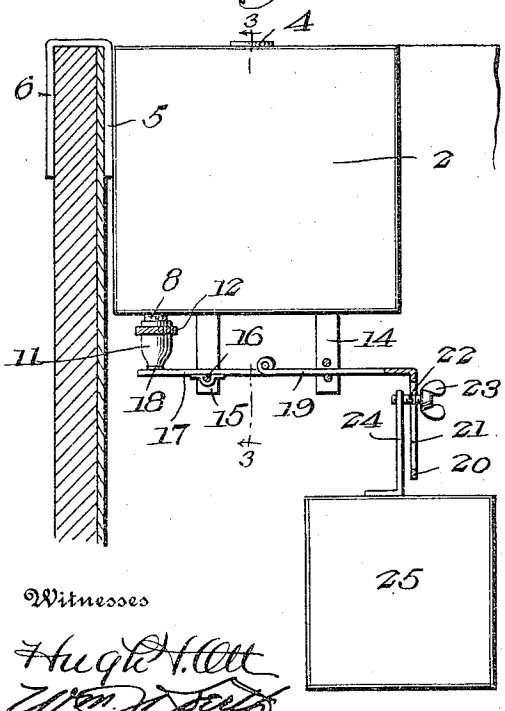
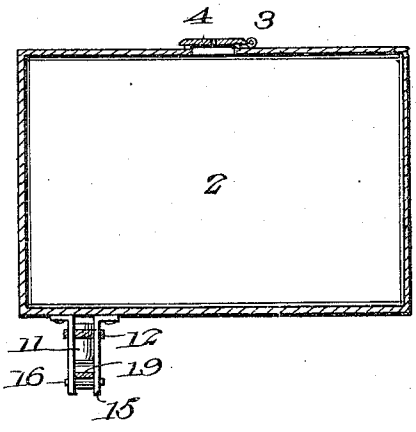


Fig. 3.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 5.

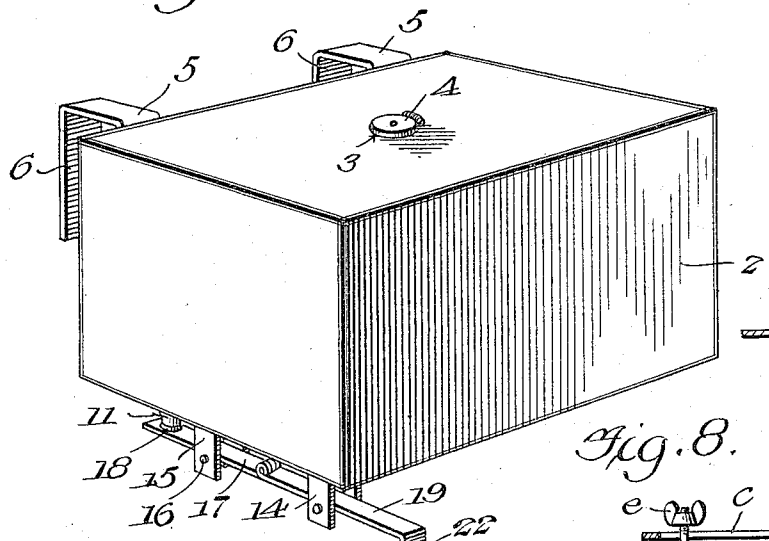


Fig. 8.

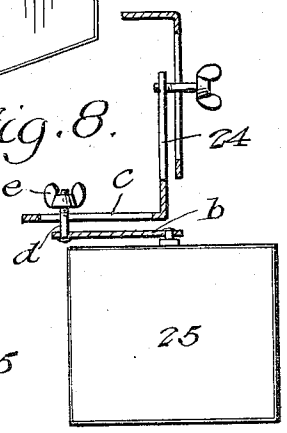


Fig. 4.

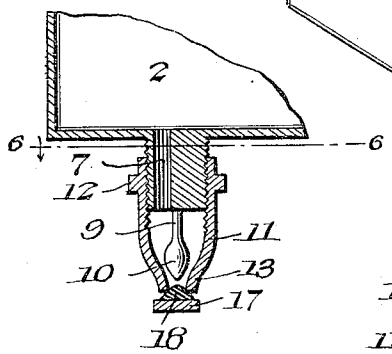


Fig. 7.

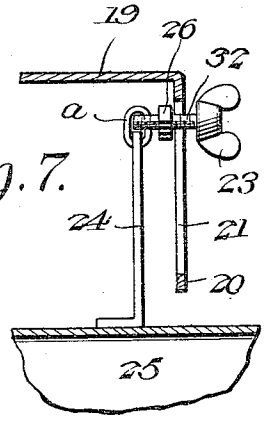
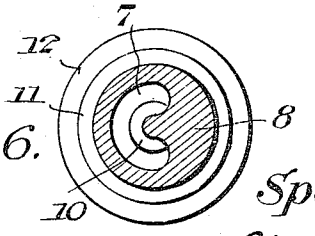


Fig. 6.



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UNITED STATES PATENT OFFICE.

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DISINFECTANT APPARATUS.

1,182,742. Specification of Letters Patent. Patented May 9, 1916.

Application filed August 9, 1915. Serial No. 44,543.

To all whom it may concern:

Be it known that I, SPENCER BICKERTON, a citizen of the United States, residing at Honolulu, in the county of Honolulu and Territory of Hawaii, have invented new and useful Improvements in Disinfectant Apparatus, of which the following is a specification.

The present invention relates to disinfectant apparatus for toilet tanks, the object being to provide an apparatus whereby a certain amount of disinfectant will be automatically fed to the tank to become mixed with the water in the tank when the valve of the tank is operated to permit of a quantity of water flowing therefrom to the bowl.

A further object of the invention is to provide a device of this character which shall be simple in construction, cheap to manufacture, automatic in operation and wherein the quantity of disinfectant flowing therefrom may be readily regulated.

With the above and other objects in view, the improvement resides in the construction, combination and arrangement of parts set forth in the following specification and falling within the scope of the appended claims.

In the drawings: Figure 1 is a sectional view through an ordinary toilet tank provided with my improvement, Fig. 2 is a transverse sectional view approximately on the line 2—2 of Fig. 1, Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2, Fig. 4 is an enlarged sectional view through the outlet opening of the disinfectant receptacle illustrating the manner of regulating the valve therefor, Fig. 5 is a perspective view of the improvement detached, and Fig. 6 is a detail sectional view on the line 3—3 of Fig. 4. Fig. 7 is a detail sectional view of a modification, and Fig. 8 is a similar view of a still further modification.

Referring now to the drawings in detail, the numeral 1 designates an ordinary closet tank which is provided with the usual outlet pipe 2′, said pipe being regulated by a float valve which is operated by a flexible member or a push button in the ordinary manner. The details of such construction not entering the subject matter of the present application are not illustrated in detail.

Arranged within the tank 1 is a box-like casing 2, the same having its normally closed top provided with an opening 3 which is normally closed by a spring pressed door 4. Secured to or formed upon one of the sides of the casing 2 are straps 5, the same being constructed of some flexible material adapted to be bent to provide hooks 6 which are arranged over one of the top edges of the tank 1, and if desired, the said hooks may be secured to the tank in any preferred manner.

The casing 2 at its bottom is provided with an outlet opening 7 which is surrounded by a depending boss 8, and preferably the opening is semi-cylindrical in form, as illustrated in Fig. 6 of the drawing. Depending from the boss, centrally thereof, is a finger 9 having its end formed with an enlarged substantially cone-shaped head 10. The exterior of the boss 8 is threaded to receive the enlarged interiorly threaded end of a substantially funnel-shaped sleeve 11. The exterior of the sleeve is provided with an annular enlargement 12, the outer periphery of which being milled or otherwise serrated, so that the said sleeve may be adjusted upon the boss to bring its reduced mouth 13 either toward or away from the conical head 10. The sleeve 11, it will be noted, being threadedly connected with the boss 8, may be moved vertically to bring its reduced opening toward or away from the conical head 10 of the member 9. The member 10 while in the nature of a valve also serves as a means for distributing or diffusing the disinfectant through the mouth of the member 11, and it will be noted that by providing the inlet opening 3 with the spring pressed door 4, the odor of the disinfectant cannot escape through the said opening 3. The door 4 has its outer face preferably provided with a facing of compressible material, so that a tight joint is insured when the door is in its normal closed position. Secured upon the under face of the casing 1 are hanger members 14—15. The hanger member 15 has pivotally secured thereto, as at 16, a flat bar 17 which is of a length to contact with the mouth 13 of the valve seat, and the upper face of the bar 17 may be provided with a cone-shaped compressible member 18 which will be received within the mouth 13 and contact with the inner and lower walls of the same to provide a second valve for the valve seat.

The bar 17 has its end between the hangers 14 and 15, hingedly connected with a second bar 19, the said bar 19 forming an extension for the bar 17, and the said bar

17 forming an extension for the bar 19. The said bar 19 is loosely mounted upon the second hanger 14. This bar 19 has its free end formed with an angular depending portion or arm 20, and the said arm is centrally and longitudinally slotted, as at 21, to receive the shank 22 of a head adjusting member 23. The threaded shank 22 engages within a threaded opening in a vertically disposed arm 24 carried by a float 25. The hinged connection between the bars 17 and 19 is such that the said bars will open from the hinge only in one direction; that is, in an upward direction or in other words, the float 25 must sink in the tank before the hinge can be broken but when the said hinge is broken, the bars or valve members 17 and 19 will have their opposite ends moved downwardly of the tank to bring the compressible member 18 out of engagement with the mouth 13 of the sleeve 11 to permit of the disinfectant flowing from the tank 1 through the outlet opening 7 and through the mouth 13 of the said sleeve 11. Preferably the head of the adjusting member 23 contacts with one of the sides or faces of the angular extension or arm 20 of the bar 19, the opposite face or side of said arm, but a jam nut 26 and a loose connection may be arranged between the arm 24 of the float of the shank 22 of the adjustable member 23.

As stated, when the float is permitted to sink in the tank, owing to the water of the tank being drawn therefrom, the disinfectant is permitted to enter the tank 2 and to mix with the water in the tank. When the float is raised by the inlet of water to the tank, the outlet for the disinfectant casing will be closed.

In Fig. 7 the float 25 is connected with the thumb nut 32 through the medium of a link *a*. This link or loose connection permits of the float swinging or moving laterally of the tank without influencing the valve.

In Fig. 8 the float 25 is provided with a pivoted or swinging arm *b*, the member 24 being provided with an offset arm *c* which is slotted and through which passes a screw *d* connected with the arm *b*, the said bolt or screw being provided with a thumb nut *e*. By this arrangement the float 25 may be disconnected from the remainder of the structure and if desired the arm *c* may be of some buoyant material which may be employed in lieu of the float.

From the above description, taken in connection with the accompanying drawing, the simplicity of the device, as well as the advantages thereof will, it is thought be perfectly apparent to those skilled in the art to which such invention appertains without further detailed description.

Having thus described the invention, what I claim is:

1. In a disinfectant distributer of the class set forth, the combination with a toilet tank containing water, of a casing containing a disinfectant connected with the tank, an inlet opening for the casing, a spring door for normally closing the opening, an inlet opening for the casing, a depending member having a cone-shaped head arranged upon the casing at the outlet opening thereof, a cone-shaped sleeve adjustably secured to the casing and surrounding the outlet opening and the cone-shaped member, hanger members upon the casing, a hinged member upon the hangers, one of the sections of the hinged member being pivotally secured to one of the hangers and the other section being loosely supported by the other hanger and one of said sections adapted to contact and close the mouth of the adjustable funnel-shaped sleeve, and a float adjustably secured to the other section of the hinged member.

2. In a disinfectant distributer of the class set forth, the combination with a closet tank containing water, and means for permitting the outlet and the inlet for the said water, bendable straps upon the casing adapted to be inserted over one of the edges of the tank, an inlet opening upon the top of the tank, a spring pressed door having a facing of compressible material for normally closing the opening, an outlet opening, and an exteriorly threaded boss surrounding the outlet opening, a depending finger having a conical head connected with the boss, a funnel-shaped sleeve adjustably mounted upon the boss, hangers upon the casing, a flat member pivotally secured to one of the hangers of said member and having a cone-shaped compressible valve adapted to contact with and close the mouth of the sleeve, a second flat member loosely connected with the other hanger and hingedly connected with the first mentioned flat member, said member having its free end provided with an angular depending slotted arm, a longitudinally adjustable member connected with the said arm, a float, and a connection between the float and said longitudinally adjustable member.

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

SPENCER BICKERTON.

Witnesses:
J. N. CLARKE,
R. VON S. DOMKOWICZ.