H. Y. SCARBOROUGH & J. G. KING.

SANITARY CLOSET.

APPLICATION FILED AUG. 11, 1913.

1,161,532.

Patented Nov. 23, 1915.

2 SHEETS—SHEET 1.

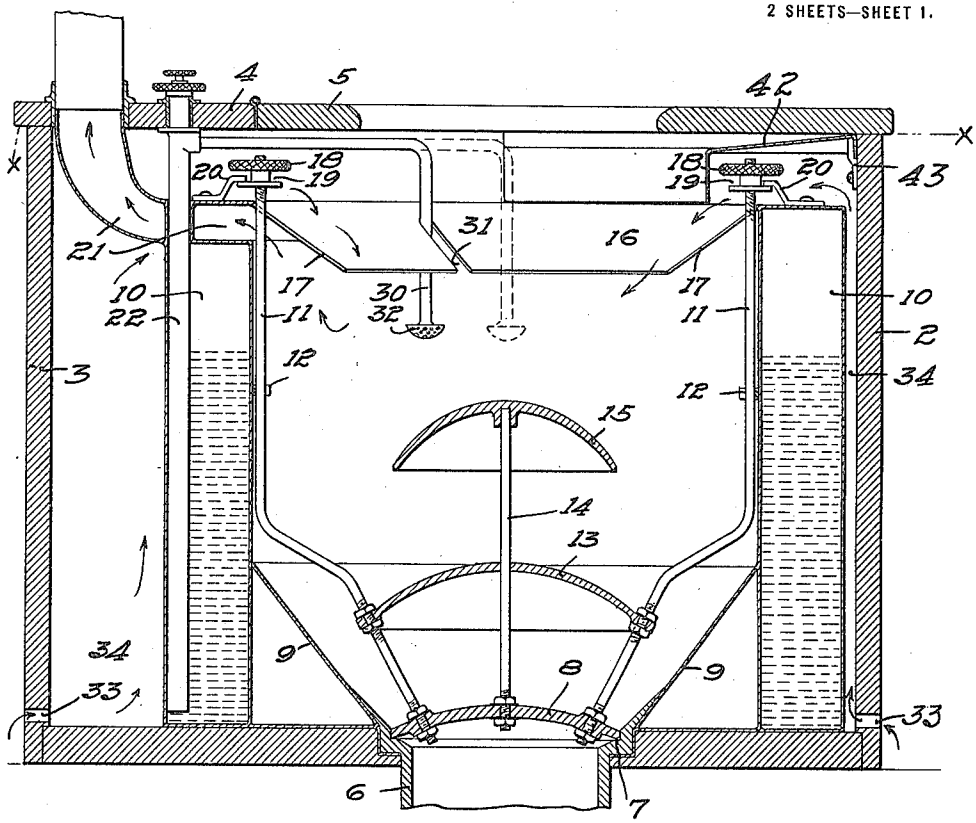


FIG. 1.

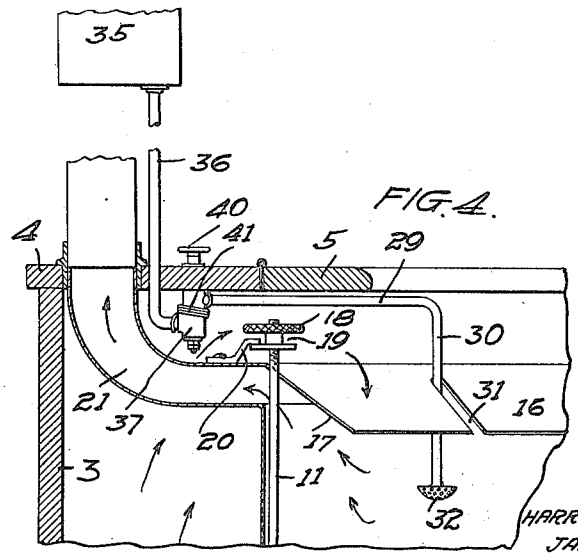


FIG. 4.

WITNESSES
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2 SHEETS—SHEET 2.

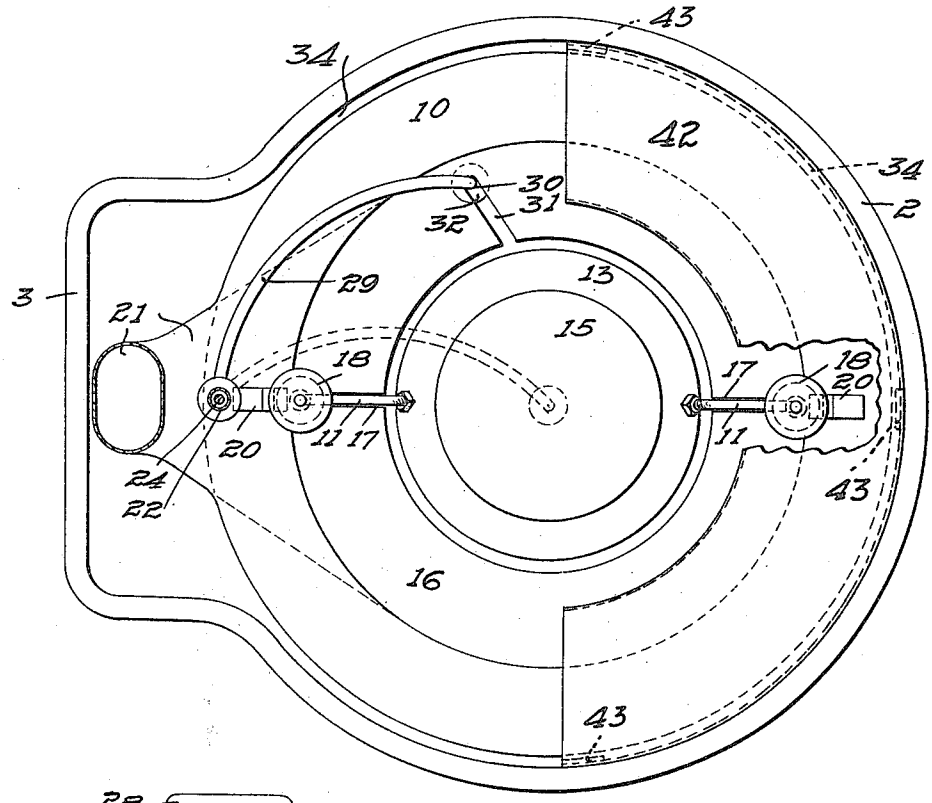


FIG. 2.

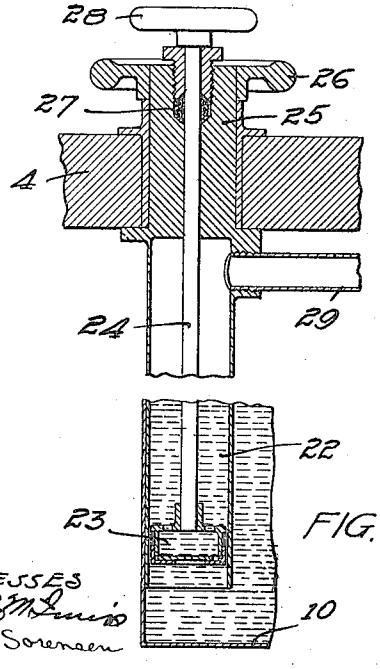


FIG. 3.

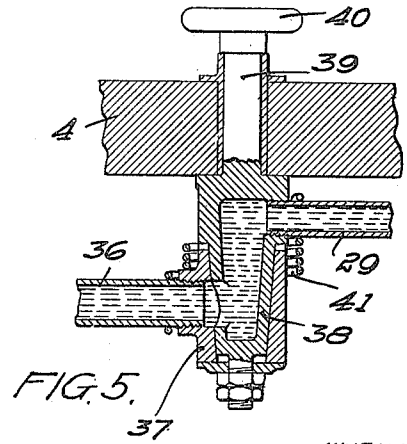


FIG. 5.

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UNITED STATES PATENT OFFICE.

HARRY Y. SCARBOROUGH, OF MINNEAPOLIS, MINNESOTA, AND JAMES G. KING, OF SUPERIOR, WISCONSIN, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, TO AUTOMATIC CHEMICAL CLOSET COMPANY, OF MINNEAPOLIS, MINNESOTA, A CORPORATION OF MINNESOTA.

SANITARY CLOSET.

1,161,532. Specification of Letters Patent. Patented Nov. 23, 1915.

Application filed August 11, 1913. Serial No. 784,232.

To all whom it may concern:

Be it known that we, HARRY Y. SCARBOROUGH and JAMES G. KING, citizens of the United States, residents, respectively, of Minneapolis, county of Hennepin, State of Minnesota, and Superior, county of Douglas, State of Wisconsin, have invented certain new and useful Improvements in Sanitary Closets, of which the following is a specification.

The object of our invention is to provide a closet adapted for use in residences, schools, hospitals, railway stations and other places having no sewer connections, and particularly applicable for railway coaches and other vehicles.

A further object is to provide a closet of sanitary construction and one which will be odorless under all conditions, and in which all germ life found in human excreta and urine will be destroyed and all danger of infection therefrom eliminated.

The invention consists generally in various constructions and combinations, all as hereinafter described and particularly pointed out in the claims.

In the accompanying drawings forming part of this specification, Figure 1 is a vertical sectional view of a closet embodying our invention, Fig. 2 is a horizontal sectional view on the line x—x of Fig. 1, Fig. 3 is a detail sectional view, showing the device for forcing the sterilizing and deodorizing chemical into the closet, Fig. 4 is a detail sectional view, illustrating a modified construction, Fig. 5 is a detail sectional view, illustrating a modified means for delivering the chemical to the closet receptacle.

In the drawing, 2 represents an outer casing of suitable material, preferably wood, provided with an extension 3 at the rear having a top 4 whereon the seat cover 5 is hinged. A discharge pipe 6 is provided in the bottom of the casing 2, having a flanged upper end and a seat 7 for a valve, preferably in the form of a convex disk 8, which is adapted to drop down upon the seat and the pipe 6 within the flange thereon and form a tight joint with the pipe, preventing the discharge of the contents of the closet until the disk 8 is raised. Radiating upwardly and outwardly from the pipe 6 is a wall 9, substantially funnel-shaped and operating to direct the contents of the closet toward the opening in the discharge pipe when the valve disk 8 is raised. A tank 10 is placed within the casing and spaced from the walls thereof and encircles the funnel 9 and contacts with the upper edge thereof. This tank is preferably circular in form and is adapted to contain a deodorizing and sterilizing agent composed of some suitable chemical preparation, a suitable supply being maintained in the tank at all times. Rods 11 are mounted to slide vertically in guides 12 on the inner walls of this tank and are provided with inwardly turned lower portions having threaded ends which are mounted in the disk 8 and pass through a similar convex disk 13 arranged above the disk 8 and spaced therefrom and concentric therewith. An upright rod 14 is mounted on the disk 8 and projects upwardly through the disk 13 and is provided with a preferably convex disk or cap 15. These disks are made of any suitable shape and are preferably made of porcelain, or of metal coated with porcelain, and are located directly beneath the seat opening, and when the desired quantity of chemical solution is discharged into the receptacle or the space inclosed by the tank 10, the lower disk may be partially or wholly submerged.

At the top of the tank 10 is an inwardly inclined wall or flange 16, also beneath the seat opening and provided with transverse slots 17 in which the rods 11 are vertically slidable, the central opening in the wall 17 being of sufficient diameter to allow the disks to be raised entirely out of the closet, the offset portions of the rods 11 sliding through the slots 17 during the vertical movement of the rods in the operation of removing the disks. The upper ends of the rods 11 are preferably threaded and provided with thumb nuts 18 having grooves 19 therein to receive clips 20 which are secured to the top of the tank 10. When these thumb nuts are screwed upwardly on the rods the lower disk 8 will be forced down firmly upon its seat and the discharge opening hermetically sealed.

The disk 15 and the flange 16 coöperate to conceal the contents of the receptacle and prevent it from swashing about and over the side walls of the tank when the closet is used in a railway coach or other vehicle, and the disk has the further function of break-

ing up and distributing the fecal matter and urine falling thereon or rising up under the disk from the bottom of the receptacle, thereby insuring a quicker and more positive action of the chemical solution.

The disk 13 has substantially the same functions as the disk 15, except that it does not aid in concealing the contents of the receptacle. Its chief function is to assist in breaking up the swash of the contents of the closet.

In the upper portion of the tank 10 we provide a ventilating pipe 21 communicating with a chimney or other ventilating stack, not shown. For delivering a suitable quantity of the chemical solution into the receptacle of the closet, we provide a pump 22 extending down through the ventilating pipe 21 to a point preferably near the bottom of the tank and having a plunger 23 and an operating rod 24. A hub 25 is provided at the upper end of the pump cylinder on which is mounted a hand wheel 26 by means of which a limited rotary movement may be imparted to the pump cylinder. The rod 24 extends up through this hub and a suitable packing 27 is provided with a hand grip 28 by means of which the pump rod and plunger may be operated. A pipe 29 has one end mounted in the cylinder of the pump and extends horizontally therefrom, inwardly under the cover 5 and has a downwardly turned inner portion 30 which projects through a slot 31 in the wall 16 and is provided at its lower end with a sprayer 32. This sprayer normally stands in the position indicated by full lines in Fig. 1, at one side of the center of the convex disk 15, and whenever it is desired to spray this disk the pump cylinder is rotated, swinging the depending end portion 30 of the pipe 29 inwardly to a point where the sprayer is concentric substantially with the disks beneath. The pump plunger is then operated and a suitable quantity of chemical solution is pumped into the receptacle and the contents thereof are instantly sterilized and deodorized. The chemical solution falling upon the upper disk will wash away any excreta that may have adhered thereto, and will thoroughly disinfect the surface of the disk and destroy all germ life in the closet receptacle. The solution will also throw off a gas from the disk surface which will neutralize any gas which may arise from the contents of the closet and prevent corrosion of the vent pipes and other metallic parts of the closet.

We prefer also to provide air intake openings 33 in the lower walls of the casing leading to the air chamber 34 between the casing and the solution tank, the connection with the stack establishing a circulation of air through the openings 33 around the receptacle of the closet and under the seat portion thereof and into the pipe 21 leading to the stack.

Instead of using a force feed in connection with the chemical solution, we may provide a gravity tank 35, (see Fig. 4) located a suitable distance above the closet and having a feed pipe 36 communicating with a casing 37 and a plug valve 38 arranged therein, said valve having a stem 39 and a hand wheel 40 for rotating it from an open to a closed position or vice versa, and connected with a pipe 29 to move it and the sprayer back and forth in the slot 31 toward and from a position above the axis of the convex disks. When this valve is rotated to an open position, the chemical solution will flow down by gravity to the sprayer and be discharged thereby upon the disks beneath, cleansing and thoroughly deodorizing and sterilizing them and the contents of the receptacle. As soon as the desired quantity of solution has been delivered, the valve will be returned to its closed position by the spring 41, shutting off the flow of the solution from the tank.

We prefer to provide a guard or shield 42 beneath the forward portion of the cover 5, supported by suitable means, such as clips 43, and arranged to cover the air space 34 and the reservoir, and inclined inwardly and downwardly to direct material falling thereon toward the receptacle of the closet. This guard is readily removable whenever it is desired to have access to the means for raising and lowering the valve disk.

We claim as our invention:—

1. A closet comprising a receptacle having a seat opening and a discharge opening and adapted to contain a chemical solution in which the excreta is disintegrated, a valve for said discharge opening, the liquid accumulation in said receptacle operating to flush the same when said valve is opened without the employment of other flushing means, and means interposed between said valve and said seat opening and vertically movable in said receptacle for concealing the contents thereof.

2. A closet comprising a receptacle having a discharge opening and a seat opening, a valve for closing said discharge opening, a rod centrally mounted thereon, and a disk carried by said rod centrally with respect to said seat opening and beneath the same.

3. A closet comprising a receptacle having a discharge opening and a seat opening, a valve for closing said discharge opening, means above said valve and spaced therefrom and having a convex upper surface beneath said seat opening and operating to conceal the contents of said receptacle, and lifting rods connected to said valve and means for raising them and exposing said discharge opening.

4. A closet comprising a receptacle hav-

ing a discharge opening and a seat opening, a funnel encircling said discharge opening, a disk having a seat within said funnel and closing said discharge opening, a second disk above said first named disk and spaced therefrom, and lifting rods attached to said disks for raising and lowering them.

5. A closet comprising a receptacle having a discharge opening and a valve disk therefor, lifting rods attached to said disk and vertically movable within said receptacle, an inwardly and downwardly inclined wall in the upper part of said receptacle having transverse slots therein, and a central opening, the lower portions of said rods being inwardly inclined and adapted to pass through said slots, when said rods are raised to remove said disk from said receptacle.

6. A closet comprising a receptacle having a seat opening and a discharge opening, a valve disk for said discharge opening, a second disk spaced from said first named disk and arranged above the same, lifting rods having connections with said disks, a standard centrally mounted in said disk and projecting above the same, and a third disk having a convex upper surface mounted on said standard and disposed beneath said seat opening.

7. A closet comprising a receptacle, having a seat opening and a discharge opening and valve therefor, a wall encircling said seat opening on the under side thereof, and means disposed between said seat opening and said discharge opening, and coöperating with said wall, to conceal the contents of said receptacle.

8. A closet comprising a receptacle, having a seat opening and a discharge opening, a valve for closing said discharge opening, and a pair of lifting rods connected with said valve and extending upwardly to a point adjacent to said seat opening for raising said valve out of said receptacle and means interposed between said valve and said seat opening and movable with the former for concealing the contents of said receptacle.

9. A closet comprising a receptacle having a discharge opening, a valve for closing said opening, means for opening said valve, a disk carried by said valve and positioned in the upper portion of said receptacle, a closet seat adjacent to said disk, said disk being beneath the opening in said seat and concealing the contents of said receptacle.

10. A closet comprising a receptacle having a discharge opening, a closet seat, a wall encircling the seat opening on the underside thereof, a disk supported beneath the opening in said seat and adjacent thereto and to said wall and coöperating with said wall to break up the swash of the contents of said receptacle, and a valve for said discharge opening.

11. A closet comprising a receptacle having a discharge opening and a seat opening, a valve for closing said discharge opening and having a vertical movement to clear said opening, lifting rods attached to said valve for raising or lowering it, a rod mounted on said valve, and a disk carried by said valve rod beneath and adjacent to said seat opening.

12. A closet comprising a receptacle having a discharge opening, a valve for closing said opening, means for raising or lowering said valve, and a pair of disks supported within said receptacle above said valve and spaced apart, and a seat for said receptacle having an opening adjacent to one of said disks.

13. A closet comprising a receptacle, having a seat opening, and a discharge opening and valve therefor, a wall encircling said seat opening on the under side thereof, and a disk having a convex upper surface disposed between said seat opening and said discharge opening and coöperating with said wall to conceal the contents of said receptacle.

14. A closet comprising a seat opening and a discharge opening, a funnel-shaped wall encircling said discharge opening and flaring upwardly and outwardly therefrom, a valve for closing said discharge opening, and lifting rods extending upwardly in said receptacle adjacent to the side walls thereof, and having their lower portions connected to said valve, said rods and valve being removable bodily from said receptacle.

In witness whereof, we have hereunto set our hands this 7th day of August, 1913.

HARRY Y. SCARBOROUGH.
JAMES G. KING.

Witnesses:
GENEVIEVE E. SORENSEN,
EDWARD A. PAUL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."