A. McGARY & J. P. SUNDERLAND

CLOSET.

APPLICATION FILED AUG. 4, 1913.

1,277,232. Patented Aug. 27, 1918.

Fig. 1

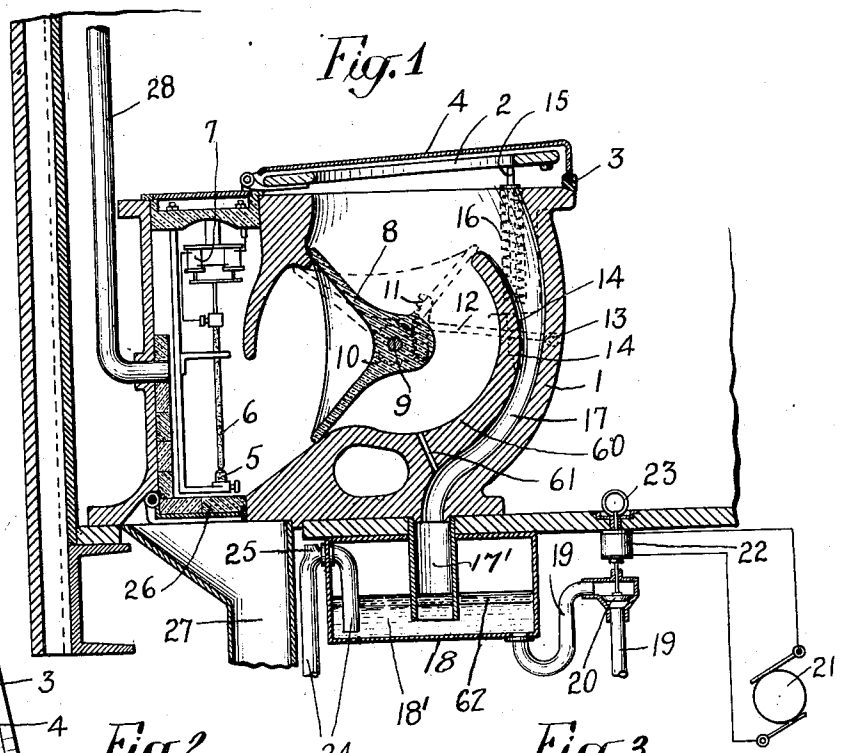


Fig. 2.

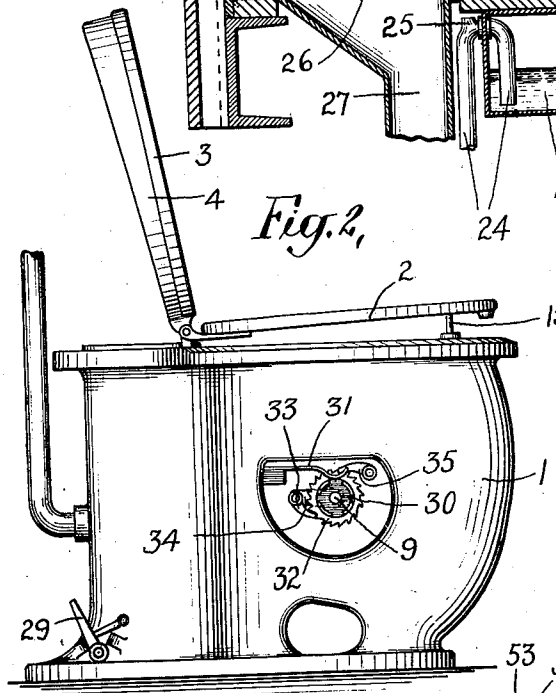


Fig. 3.

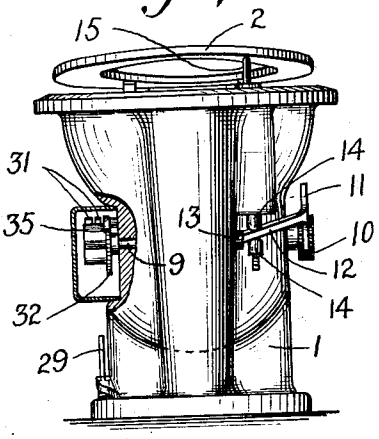
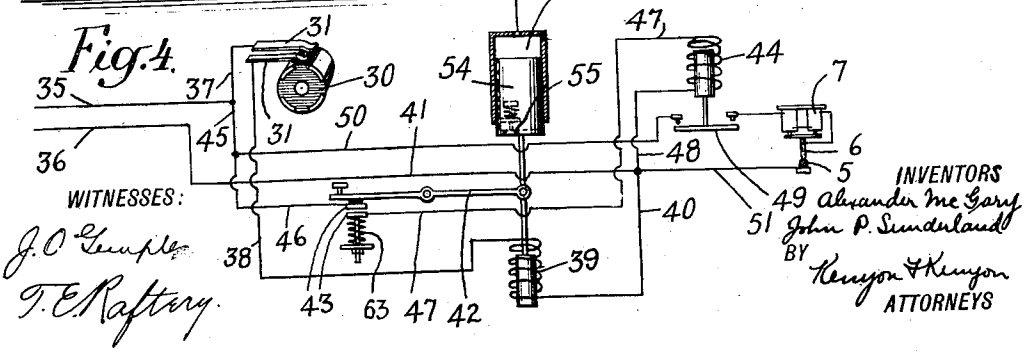


Fig. 4.



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CLOSET.

1,277,232. Specification of Letters Patent. Patented Aug. 27, 1918.

Application filed August 4, 1913. Serial No. 782,782.

To all whom it may concern:

Be it known that we, ALEXANDER McGARY and JOHN P. SUNDERLAND, both citizens of the United States, and residents of the borough of Bronx, city, county, and State of New York, have invented certain new and useful Improvements in Closets, (Case B,) of which the following is a specification.

Our invention relates to improvements in closets. One object of the invention is to provide an improved closet arrangement in which an improved arrangement is provided for the disposal of the urine. Further objects, features and advantages will more clearly appear from the detailed description given below, taken in connection with the accompanying drawings which form part of this specification.

In the drawings Figure 1 is a vertical section of a closet embodying our improvements in one form. Fig. 2 is a side view thereof. Fig. 3 is a front view thereof, partly in section, and Fig. 4 is a diagram of the electrical circuit connections.

Certain features disclosed in this application are not herein claimed but are covered in our divisional application Ser. No. 802,638.

Referring to the various figures, 1 represents a suitable bowl portion provided with a hinged seat 2 and a hinged cover 4 adapted to cover the seat 2, and provided with a rubber band 3 on its lower edge for making a tight fit on the top of the body portion 1. 5 and 6 represent substantially vertically arranged electrodes of an electric arc situated below but at one side of the seat 2 and provided with the usual or suitable electrical regulating apparatus 7.

Metallic aluminum powder mixed with iron oxid in the proportions of three parts of aluminum to one of iron oxid may be placed in the positive carbon electrode as a core in order to intensify the heat produced by the arc.

Tiltingly mounted within the bowl portion and below the seat 2, is a pan 8 mounted on a shaft 9. The shaft 9 has rigidly secured thereto a gear 10 engaged by a rack 11 on the end of a lever 12 pivoted at 13, and being engaged by abutments 14 secured to a spindle 15 normally pressed upwardly by a spring 16 to engage the under side of the seat 2.

17 represents a separate passage for the urine leading to the trap 18. A layer of liquid disinfectant 62 is preferably placed on top of the urine in the trap, a pipe 17′ extends from the lower end of the urine passage 17 downwardly to the urine container 18′ of the trap 18 to a point below the level of the liquid in the container as normally maintained by the upward turning of the outlet pipe 19 to a point above the bottom of the container. The trap 18 is provided with an outlet pipe 19 adapted to be closed by a valve 20. The closet is especially designed to be used on moving vehicles, especially railroad cars, and in such cars or vehicles as are provided with an electric generator driven by the movement of the train, valve 20 may be regulated thereby. 21 represents such a generator driven by the movement of the train, and 22 a magnet energized thereby. The magnet 22 when energized is adapted to raise the valve 20 and thus open the outlet 19. When the vehicle stops the generator fails to furnish energy, and consequently the valve 20 closes the outlet 19 by gravity. 23 represents a handle by which the valve 20 may be opened by hand if desired.

Extending down into the trap 18 nearly to the bottom thereof, is an overflow pipe 24 adapted to permit the trap to overflow when the same has become substantially full. Pipe 24 is U-shaped and is provided with a vent 25 at the top thereof to prevent siphoning.

A trap door 26, operated by the handle 29, is provided below the arc device comprising the electrodes 5 and 6, which is adapted to discharge any material not burned into the chute 27. A vent pipe 28 leads from the apparatus just above the arc device so that any obnoxious vapors are carried away from the closet.

On the end of the shaft 9 is loosely mounted a commutator or rotary switch 30 engaged by spring contacts 31. The commutator 30 is fixed to a ratchet 32 adapted to be intermittently rotated by a pawl 33 pivoted to an arm 34 fixed to the shaft 9. The pawl 35 prevents backward rotation of the ratchet and commutator.

Normally the space in which are placed the arc devices 5 and 6 is closed to the closet by the pan 8 which closely engages the body portion, as shown in Fig. 1. When the seat is occupied the spindle 15 is depressed,

thereby moving the lever 12 so that the pan 8 is rotated to the position shown in dotted lines in Fig. 1. This action does not rotate the commutator 30 as the pawl slips over the ratchet teeth during this movement. However, upon one leaving the seat, allowing the spring 16 to raise the same, the commutator 30 is given a quarter revolution, causing a momentary electrical connection between the contacts 31 so as to close an electrical circuit from mains 35 and 36 for the purpose of energizing the arc device. This circuit may be traced as follows (see Fig. 4): from main 35, conductor 37, contacts 31, conductor 38, solenoid 39, conductor 40, and conductor 41 back to main 36. The solenoid 39 operates the pivoted lever 42, which acts to close the electrical contacts 43, the lower contact 43 being adapted to be depressed against the action of the spring 63. The closing of the contacts 43 energizes a solenoid 44, the circuit being as follows: from main 35, conductor 45, conductor 46, contact 43, conductor 47, solenoid 44, conductor 48, and conductor 41 back to the other main 36. The energizing of the solenoid 44 operates a switch 49 which connects the electrodes 5 and 6 in circuit to produce the arc, the circuit being as follows: from main 35, conductor 45, conductor 50, switch 49, the arc device, conductor 51, and conductor 41 back to the opposite main 36.

Connected with the core of the solenoid 39 is a dashpot 52 having a vent hole 53 in the top thereof, and a piston 54 operating in the dashpot, the piston being provided with a one-way valve 55 in the bottom thereof to permit the air to be easily exhausted or pushed out of the dashpot, but to prevent air from entering the dashpot except through the vent 53. Accordingly when the solenoid 39 is energized the piston 54 is quickly raised in the dashpot, excluding air therefrom, and at the same time the contacts 43 are closed and the lower contact 43 considerably depressed. Upon the breaking of the circuit through the solenoid 39 at the contacts 31, the piston 54 gradually drops by gravity so that after a predetermined interval of time the contacts 43 are separated and the circuit through the solenoid 44 broken so that the current through the heating device is turned off.

Accordingly when the seat is occupied the pan 8 is given a quarter revolution to an upright position. Upon one leaving the seat, permitting the same to rise, the pan is given a quarter revolution in the opposite direction to the position shown in full lines in Fig. 1, whereupon its contents is discharged into the heater. At the same time the pawl 33 rotates the commutator a quarter revolution, thus momentarily electrically closing the contacts 31 to turn the current through the heating device and generate an arc as above described. After a predetermined interval of time has elapsed, measured by the drop of the piston by gravity in the dashpot 52, the circuit through the heater is automatically opened. This interval of time may be so adjusted that the circuit will be opened after all the excreta has been practically consumed.

In case liquid matter should be deposited in the closet without a depression of the seat, the same will flow into the bowl-shaped portion 60, from which it will run into the urine passage 17 by means of one or more small passages 61.

Although we have described our improvements in great detail and in respect to one particular embodiment thereof, nevertheless we do not desire to be limited to such details except as clearly set out in the appended claims, since many changes and modifications may well be made without departing from the spirit and scope of our invention in its broader aspects.

Having fully and clearly described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In a device of the class described, a trap for receiving the urine and comprising a container and a conduit discharging thereinto at a point below the normal level of the urine and a conduit through which the urine may flow out of the trap when substantially full, said conduit extending nearly to the bottom of the trap, whereby a disinfectant may be placed on top of the urine in the trap without being withdrawn from the trap with the urine.

2. In a device of the class described, a trap for the urine having an outlet, drawing from a point below the normal level of the urine and extending to a height above the lower end of the inlet conduit, said trap comprising a container and a conduit discharging thereinto at a point below the normal level of the urine, means for opening and closing said outlet, and an overflow adapted to discharge only when the trap is substantially full and drawing from the bottom of the trap.

3. In a device of the class described, a trap for the urine and comprising a container and a conduit discharging thereinto at a point below the normal level of the urine, an overflow pipe extending into the trap nearly to the bottom thereof and through which the urine may flow when the trap is substantially full, said overflow pipe extending to a height above the lower end of the inlet conduit and having a vent at the top whereby siphoning is prevented.

4. In a closet for moving vehicles, the combination of a trap for receiving urine, an outlet for said trap, and means for automatically closing said outlet when the vehicle stops.

5. In a closet for moving vehicles, the combination of a trap for receiving urine, and means for closing the outlet to said trap upon a stopping of the vehicle.

6. In a closet for moving vehicles, the combination of a trap for receiving urine, and means for automatically opening the outlet to said trap responsive to the movement of the vehicle.

7. In a closet for moving vehicles, the combination of a trap for receiving urine, an electric generator driven by the movement of the vehicle, a magnet energized by said generator, and means for opening and closing the outlet to said trap controlled by said magnet.

8. In a closet for moving vehicles, the combination of a trap for receiving urine, an outlet for said trap, means for opening and closing said outlet responsive to the movement of the vehicle, and means for limiting the height of liquid in the trap when the said outlet is closed.

9. In a closet for moving vehicles, the combination of a trap for receiving urine comprising a container and a conduit discharging thereinto at a point below the normal level of the urine, an outlet for said trap adapted to be opened and closed, said outlet drawing from a point below the normal level of the urine and extending to a height above the lower end of the inlet conduit, and means for limiting the height of liquid in the trap when the said outlet is closed without breaking the surface of the liquid within said container.

10. In a device of the class described a trap comprising a urine container and an inlet pipe discharging thereinto at a point below the normal level of the liquid therein, a layer of disinfectant in said container and adapted to float on the surface of the urine contained therein, a conduit through which the liquid may flow from said container, said conduit drawing from a point below the normal liquid level and extending to a height above the lower end of the inlet pipe whereby the disinfectant on top of the urine in the trap will not be broken or withdrawn from the trap with the urine.

11. In a device of the class described a trap comprising a urine container and an inlet pipe extending thereinto to a point below the normal level of the liquid therein, a conduit through which the liquid may flow out of said container, said conduit extending from a point below the normal liquid level, and a pipe leading from the bottom of the container and extending to a point above said bottom, and means controlling the passage in the said last mentioned pipe.

12. In a device of the class described a trap adapted to be used with a closet on a moving vehicle comprising a urine-container and an inlet pipe extending thereinto to a point below the normal level of the liquid therein, a conduit through which the liquid may flow out of said container, said conduit extending from a point below the normal liquid level, and a pipe leading from the bottom of the container and extending to a point above said bottom, and means dependent on the speed of the vehicle for controlling the passage of said outlet pipe.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

ALEXANDER McGARY.
JOHN P. SUNDERLAND.

Witnesses:
GORHAM CROSBY,
EDWIN SEGER.