

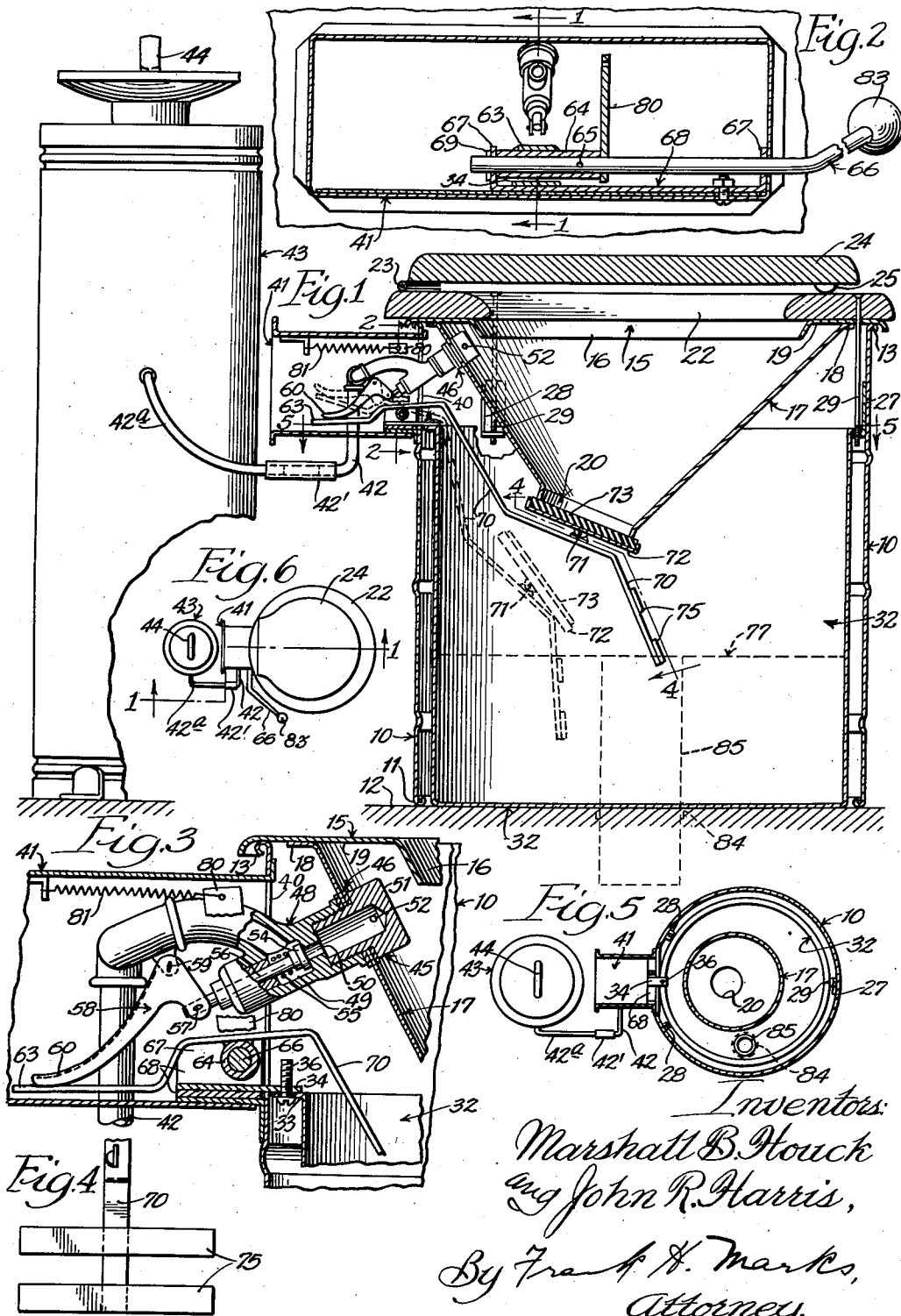
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CHEMICAL TOILET

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CHEMICAL TOILET

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This invention relates to sanitary closets or toilets and more particularly to those of the chemical flush type.

It is an object of our invention to provide a closet of the type referred to which is portable.

It is another object to provide a flush type sanitary chemical closet adapted to agitate the accumulated excrement without necessitating movement of the seat cover.

A further object is to provide a toilet construction in which soil is washed from a flush compartment valve into a soil receptacle while the accumulated soil is broken up, without contact of the washed valve with the accumulated soil.

Another object is to provide a toilet apparatus affording a manually operated pump pressure tank for supplying flushing liquid.

It is a further object to provide a complete toilet apparatus which is of light construction for portability and is adapted for expeditious and efficient association with a sewage system.

Further objects and advantages of the invention will appear as the description proceeds.

The invention will be understood upon reference to the following description and accompanying drawing, in which:

Fig. 1 is a sectional view through an illustrative form of apparatus embodying features of the invention, taken as indicated by the line 1—1 in Fig. 6.

Fig. 2 is a fragmentary vertical sectional view taken as indicated by the line 2—2 in Fig. 1.

Fig. 3 is an enlarged fragmentary section-elevation of the flushing mechanism appearing in Fig. 1.

Fig. 4 is a fragmentary elevation of the agitator appearing in Fig. 1.

Fig. 5 is a plan sectional view taken as indicated by the line 5—5 in Fig. 1.

Fig. 6 is a reduced plan view of the structure appearing in Fig. 1.

Referring now more particularly to the drawing, the apparatus comprises a stand such as a drum or other supporting casing or frame 10 whose bottom edge 11 is adapted to rest on the ground 12 or other support and whose top edge 13 is surmounted by a ring-like plate 15 having an inner flange 16 projecting down into the drum 10. A bowl 17 has its rim 18 welded or otherwise suitably joined to the under side 19 of the plate 15 about the flange 16. The bowl may be of a generally conical shape as shown and has an opening 20 at the bottom and preferably somewhat to the rear of the center thereof. A wooden or other suitable seat 22 surmounts the plate 15 and hingedly carries at 23 a cover 24 provided with the usual rubber or other bumper button 25.

Lugs 27 and 28 are welded or otherwise mounted in the drum 10 and threadedly and de-

tachably receive screws 29 countersunk in the seat 22 and passing through the plate 15 to secure the seat, plate and bowl firmly on the upper part of the drum.

A soil receptacle 32 is disposed in the drum 10 and is provided with a rim flange 33 overlying the lug 27 and an oppositely disposed lug 34 supported by the drum. The screw 29 engaging the bracket 27 passes through said flange, and a screw 36 passes through the flange and engages the lug 34, thereby holding the receptacle in place.

The drum 10 has an opening 40 preferably at the rear and at this opening is secured, by spot welding or otherwise a housing 41 which may serve as an odor vent and through which extends a pipe 42 which may be connected as by a detachable rubber tube 42' and a detachable flexible metal tube 42a to a flush liquid pump type pressure tube 43 having a pump handle 44, said pipe being connected to a valve 45 anchored at 46 to the bowl 17. The flush liquid may be a soil-sterilizing, decomposing and deodorizing chemical, if desired. The valve 45 preferably comprises a body or casing 48 with an inlet chamber 49 and an outlet 50 leading to the interior of a cap 51 having discharge ports 52 arranged to enable the liquid issuing therefrom to be effectively sprayed over the entire bowl area adapted to be soiled.

The valve includes a head 54 adapted to be held by a spring 55 in outlet-closing position as shown in Fig. 3, and is mounted on a stem 56 pivotally connected at 57 to a preferably forked handle 58, pivotally anchored at 59 to the piping 42 or other suitable relatively stationary part. The handle has an actuating part 60 disposed adjacent an arm 63 welded or otherwise secured to and extended from a collar 64 secured as at 65 to a rod 66 swivelly mounted in the bearing arms 67 of a yoke 68 welded or otherwise suitably mounted in the housing 41. A cotter pin 69 or other detachable part cooperates with the collar 64 in holding the parts in assembly. An arm 70 which may be integral with the arm 63 extends oppositely therefrom and down into the vessel 32 and swivelly supports at 71 a shallow cup 72 in which is securely carried a yieldable rubber or other suitable valve head 73 adapted to engage the bowl 17 and seal the opening 20 thereof. The swivel support at 77 automatically insures proper sealing engagement when the valve head 73 is pressed against the bowl 17. The arm 70 below the valve head 73 carries one or more cross bars 75 adapted to project into and swish through a body of soil and sodium hydroxide or other suitable chemical generally indicated at 77 for decomposing and sterilizing the soil and neutralizing odors, and carried in the lower part of the vessel 32.

Welded or otherwise secured to the collar 64 is an arm 80 urged by a spring 81 toward the rear of the housing 41. The rod 66 extends out of the housing 41 and projects forward and preferably upward at a side of the drum 10 and terminates in a knob 83 located where it may be conveniently depressed by the person using the apparatus, whether seated or standing. When the knob is depressed, the rod 66, arm 80, collar 64 and arms 63 and 70 move in unison against the action of the spring 81, the arm 63 acting on the handle portion 60 to turn the handle 58 about its pivot 59 so as to pull the valve head 54 away from the outlet 50 against the action of the valve spring 55, allowing flush liquid under pressure from the pressure tank 43 to be discharged through the ports 52 in such manner as to clean soil from the entire inner surface of the bowl 17. At the same time the valve head 73 moves away from the opening 20 in the lower part of the bowl, so that the flush liquid and soil may pass directly into the chemical 77. The valve head or plug 73 assumes a more inclined position as it recedes from the opening 20, and preferably is positioned to receive some of the discharges from the bowl and thus be cleaned of soil. The structure shown at 75 constitutes a breaker or agitator which operates to reduce the clumps of soil in the chemical to a flowing mass or at least to a size which is more readily attacked and decomposed by the chemical into a flowing mass.

Eccentrically mounted in the bottom of the vessel 32 by welding or otherwise as shown at 84 is a short tube 85 which may be at any suitable point so long as it does not receive directly the discharge from the bowl 17. The tube projects up to a height which determines the depth of the chemical and soil in the vessel 32, the overflow passing out through said tube. In practice a height of about six inches has been found satisfactory, but of course the height may be made greater or less as desired without departing from the principles of the invention. The tube projects below the bottom of the inner container or vessel 32 about four inches, more or less, and is adapted to project into an opening in the ground or a pipe leading from an outside sewage system or to any system desired to be used with the apparatus. Chemical is added to the vessel 32 at frequent intervals.

When the knob 83 is released, the spring 81 returns the arm 80 and connected parts to the positions shown in full lines, and the spring 55 returns the valve plug 54 and handle 58 to the positions shown in full lines.

The flush liquid flows under pressure from the valve 45 immediately upon depression of the knob 83, and may cease flowing immediately upon closure of the bowl opening 20, so as to collect slightly therein, and remain until the knob is next depressed, or the arrangement may be such that the valve 45 closes sufficiently before the opening 20 is closed to insure passage of all of the flush liquid into the vessel 41. As long as the knob is depressed the flush liquid will continue to flow until the contents of the pressure tank are exhausted.

It will be observed that the mechanism is so arranged as to be entirely closed off from the interior of the bowl which thereby shields the mechanism from being soiled.

The tank 10, bowl 17, vessel 32, housing 41, tank 43, valve handle 58 and other parts are preferably made of sheet metal but of course may be made of other suitable material. The

outside of the apparatus and the inside of the bowl 17 may be coated in white or any color desired. By releasing the screws 29, the seat and bowl may be removed and separated from each other, so that repair and replacement are facilitated.

The apparatus is of light weight and the pressure tank 43 is detachable from the piping 42, so that the apparatus is readily portable and thereby lends itself especially to the requirements of camping parties and the like. It is also useful in trailer camps, places of temporary shelter, outhouses and the like.

It is evident from the foregoing that the structure is substantial and durable and is made of parts which involve substantially no machining and are inexpensively manufactured and assembled. There are relatively few moving parts, all of which are readily accessible for inspection and attention.

We are aware that numerous changes may be made, and details of construction varied through a wide range without departing from the principles of our invention, and we therefore do not purpose limiting the patent granted hereon otherwise than as necessitated by the prior art.

We claim:

1. A sanitary closet comprising a bowl adapted to be flushed and having a discharge opening, a receptacle adapted to contain soil-sterilizing chemical and to receive soil flushed from said bowl, and having a soil discharge outlet substantially above the bottom of said receptacle, means for flushing said bowl with fresh liquid, and means leading from said outlet to and extending below said receptacle for connection with a sewage system or the like.

2. A sanitary closet comprising a bowl having a discharge opening, a valve therefor, a receptacle therebelow, means for conducting flush liquid to said bowl, means providing a vent for odors from said receptacle, and mechanism disposed in the second-mentioned means for controlling said valve and the first-mentioned means.

3. A sanitary closet comprising a drum, a bowl in said drum, a seat over said bowl, and means common to said bowl and seat and clamping said seat on said bowl and said bowl on said drum.

4. A sanitary closet comprising a drum, a bowl in said drum, a seat over said bowl, a receptacle arranged to receive soil from said bowl, and means common to said seat and receptacle for securing them to said drum.

5. A portable sanitary closet apparatus comprising a manual pump pressure tank, a flush compartment, means including a valve controlling flow of liquid from said tank to said compartment, and an inner compartment for accumulated soil from said flush compartment.

6. A sanitary closet comprising a seat, a cover for said seat, a bowl below said seat and having a discharge opening, a valve for said opening, means for conducting flush liquid to said bowl, a receptacle for the discharge from said bowl and adapted to contain soil-sterilizing chemical, means for agitating the discharge in the chemical, mechanism for controlling said valve and agitating means, and an actuating member for said mechanism and operative independently of said cover.

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