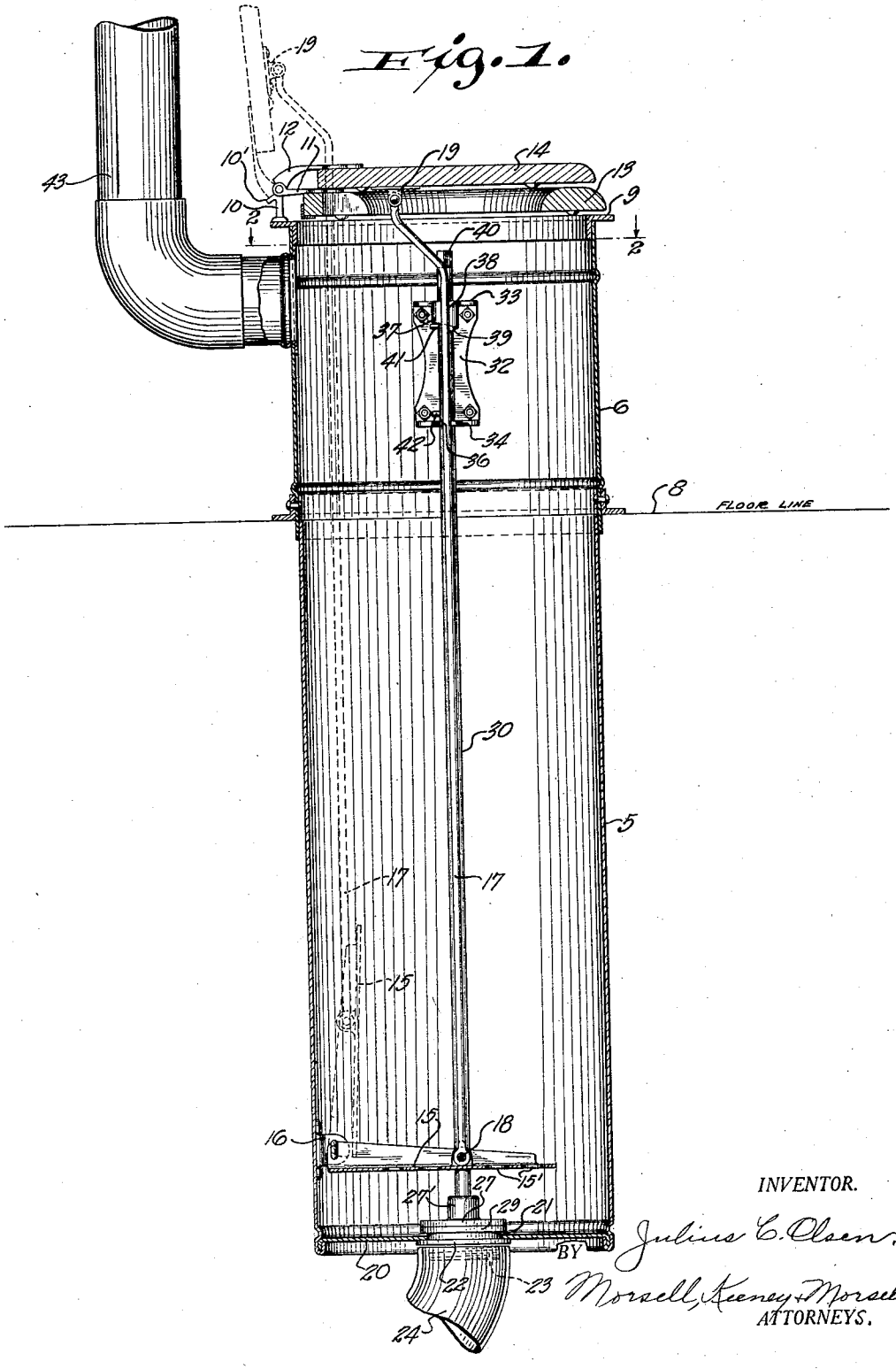
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CHEMICAL TOILET

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Fig. 1.



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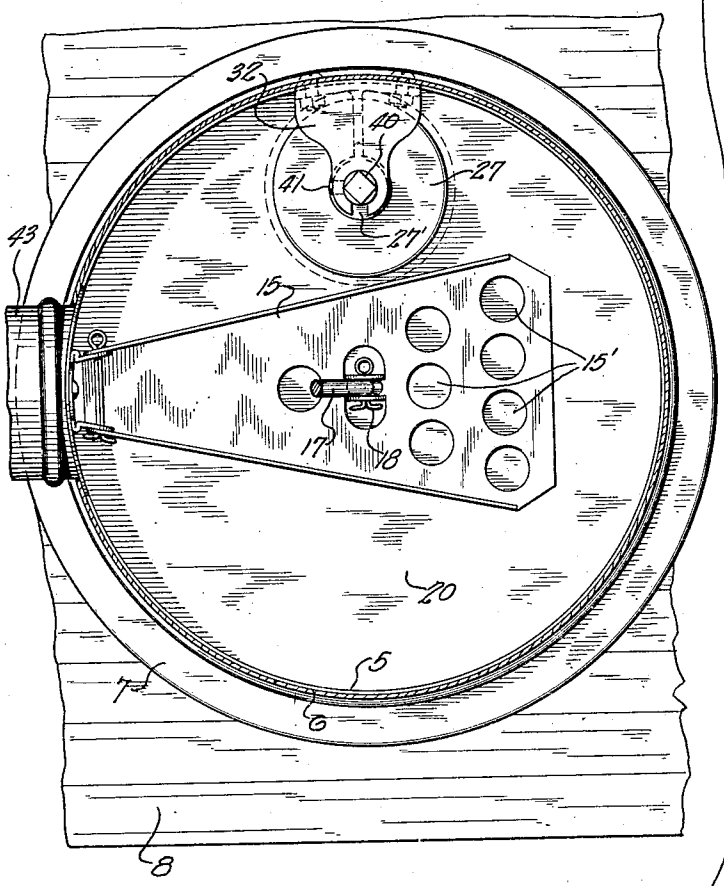
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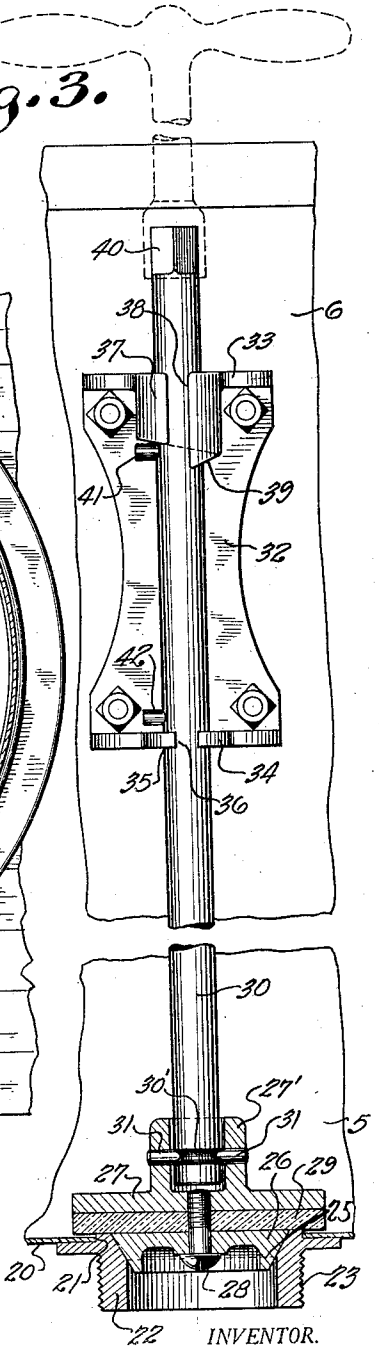
CHEMICAL TOILET

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Fig. 3.

Fig. 2.





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UNITED STATES PATENT OFFICE

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CHEMICAL TOILET

Application filed May 4, 1927. Serial No. 188,744.

This invention relates to improvements in chemical toilets.

It is the primary object of the present invention to provide a toilet suited for installation in homes and buildings situated in rural districts where sewerage systems are not present.

A further object of the invention is to provide a waterless, sewerless, odorless and sanitary toilet.

A further object of the invention is to provide a toilet adapted to be charged with chemicals to destroy all bacteria and germ life, rendering the device safe and sanitary, yet very economical.

A further object of the invention is to provide a toilet which can be readily periodically drained by opening a valve, means being provided for holding the valve in open position.

A further object of the invention is to provide a toilet in which the tank discharge opening is controlled by a valve which can always be caused to seat very tightly, even after the valve facing or packing has become worn.

A further object of the invention is to provide a chemical toilet provided with an agitator operatively connected with the seat so as to be automatically operated when the seat is moved.

A further object of the invention is to provide a device of the class described equipped with a ventilating system.

A further object of the invention is to provide a chamical toilet which is of simple construction, is inexpensive to manufacture, is strong and durable, and is well adapted for the purposes described.

With the above and other objects in view, the invention consists of the improved toilet, and its parts and combinations as set forth in the claim, and all equivalents thereof.

In the accompanying drawings, in which the same reference characters indicate the same parts in all of the views:

Fig. 1 is a vertical sectional view of the improved chemical toilet;

Fig. 2 is a cross-sectional view thereof, taken on line 2—2 of Fig. 1, and on a larger scale; and

Fig. 3 is an enlarged detail view, partly in section, showing the valve and the valve operating mechanism.

Referring now more particularly to the drawings, it will appear that the numeral 5 indicates an elongated cylindrical tank member adapted to be positioned below a floor line, and connected at its upper edge portion with the lower portion of an upper cylindrical tank member 6, said latter tank member being adapted to extend above a floor line. An annular angle iron member 7 is riveted externally to the lower portion of the tank member 6 and the horizontal flange thereof is adapted to rest on the floor 8, as shown.

An annular angle iron member 9 is secured within the upper end portion of the tank 6, with the horizontal flange projecting exteriorly, and one or more brackets 10 are secured to said angle iron member and said brackets carry pivotal hinges 11 and 12 which are secured to a seat 13 and a cover 14, respectively. The bracket is formed with an angular portion 10′ forming a stop for the hinge 12 when the cover is in open position, as shown in dotted lines in Fig. 1.

A paddle shaped agitator 15, formed with apertures 15′, is pivotally connected at its inner end portion with a bracket 16 secured to the inner wall of the lower portion of the tank 5, and the lower portion of an elongated operating rod 17 is pivotally connected, as at 18, with a medial portion of the agitator. The upper end portion of said rod is bent slightly and is pivotally connected with a bracket 19 depending from the cover 14. By this construction, when the cover is raised or lowered, the agitator is automatically operated to agitate the tank contents.

The lower end portion of the lower tank 5 is formed with a bottom 20 having an opening 21 therein near one side. Secured to the bottom 20 and extending into said opening is a depending coupling 22, externally threaded, as at 23, to receive thereon an elbow section 24. The inner surface of the inner end portion of said coupling is beveled, as at 25, to tightly receive a tapered valve member 26.

Said tapered valve member seats as shown in Fig. 3, and is secured to an upper valve plate 27 by means of a screw 28. A sealing disc 29 of leather is interposed between the valve members 26 and 27 and covers the inner end portion of the coupling 22. The upper valve plate is provided with an apertured boss 27′ into which extends the lower end portion of a valve rod or stem 30. The boss portion 27′ is provided with a pair of opposed pins 31 which enter an annular recess 30′ in the lower portion of the stem 30. By this means, the stem is prevented from withdrawal from the valve plate boss, but the valve and stem are movable with respect to each other and due to the fact that the conection is not rigid, the valve will always accurately seat.

Secured to the inner side wall of the tank 6, near the upper end thereof, is a bracket 32 having an upper right angular plate portion 33 and a lower right angular plate portion 34. The lower plate portion 34 is formed with a circular opening 35 having a communicating slot 36, while the upper plate portion 33 is formed with a depending apertured lug 37 having a slot 38 communicating with the aperture or bore therethrough. Also, the bottom portion of the lug 37 is formed with a cam surface 39.

As shown clearly in the drawings, the valve rod or stem 30 extends vertically upwardly within the tanks adjacent the side walls thereof and through the apertures of the bracket plate 34 and the lug 37. The upper end portion of the rod is formed with a squared portion 40 to permit the insertion of a key thereon for turning the rod and operating the valve. Also the rod is provided with a pair of projecting pins 41 and 42, which, in the normal position of the valve and valve rod, are so arranged that the pin 41 is disposed immediately below the cam surface 39 of the lug 37, while the pin 42 is slightly above the plate 34.

The toilet is adapted for installation in any convenient part of a building with the lower tank 5 extended below the floor line. The elbow 24 connects with a drain pipe which extends to a suitable container located exteriorly of the building, as a dry well or barrel. The lower portion of the tank is adapted to contain suitable chemicals to destroy bacteria and germ life, and periodically the valve 26 is opened, as will be explained in detail, to drain the tank, and a fresh charge of chemicals can thereafter be added. An elbowed ventilating pipe 43 extending from an opening in the rear of the upper portion of the tank 6 is further provided and said pipe may extend through the roof of the building.

To seat or close the valve, a key is applied to the squared upper end portion of the valve rod 30. The key and rod are turned in a clockwise direction in Fig. 3 and the contact between the pin 41 and the cam surface 39 of the lug 37 will cause the rod to be forced downwardly. The pressure will tightly seat the tapered valve portion 26 and also the intermediate leather member will be compressed to tightly seal the opening. To open the valve, the key and rod are turned in a reverse direction until the pin 41 is in register with the slot 38. Then, the rod and valve may be lifted vertically upwardly. If the valve is to be left open for some time, for drainage, the rod is lifted until the lower pin 42 is above the lug 37 and then the rod is given a half turn and the rod is supported in raised position by said pin resting on the upper surface of the lug 37. It will thus be seen that the valve arrangement provides an effective means for tightly closing the tank drainage opening and it is very easily operated.

From the foregoing description it will be seen that the improved chemical toilet is of simple and novel construction, and is well adapted for the purposes described.

What I claim as my invention is:

In a tank having a drain opening, a valve for said opening, said valve having a lower tapered valve plate, an upper cupped valve plate, and an intermediate compressible layer, a valve rod loosely secured at its lower end portion in said cupped valve plate, a bracket secured to said tank, said bracket having a slotted boss portion through which the rod movably extends, the lower surface of said boss being eccentrically curved to form a cam surface, and a pin projecting laterally from said rod for engagement with said cam surface, said pin also being registrable with said boss slot to permit a lifting movement of the valve rod.

In testimony whereof, I affix my signature.

JULIUS C. OLSEN.