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INCINERATOR TOILET USING WATER

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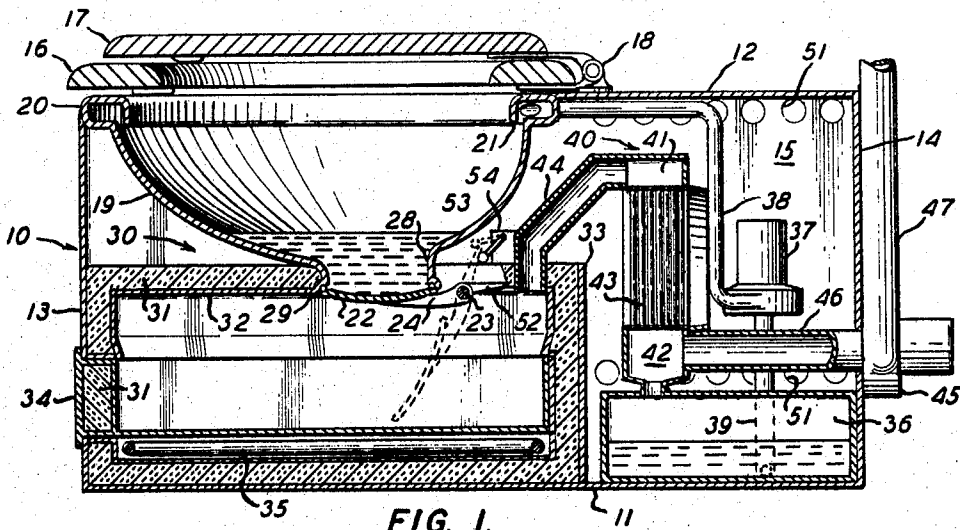


FIG. 1.

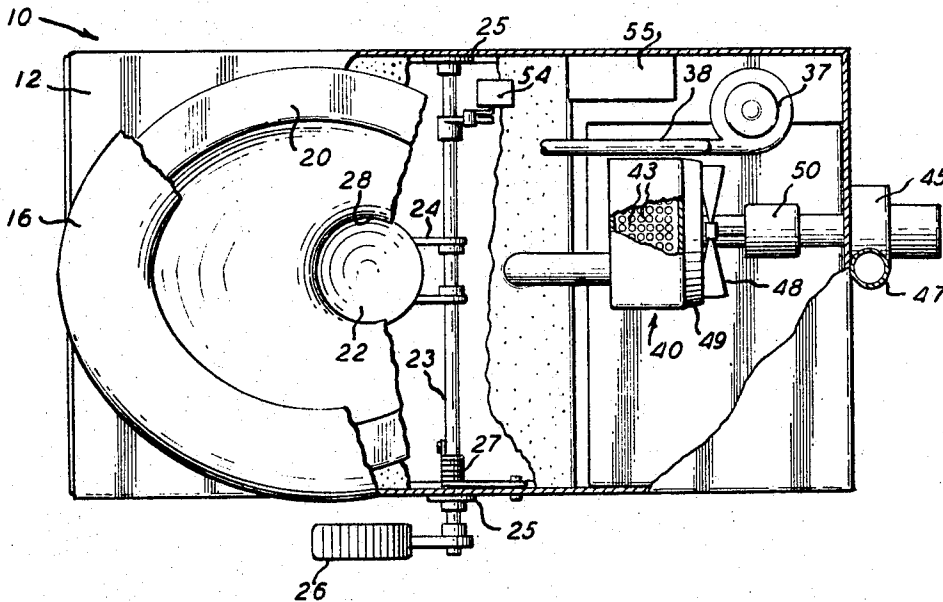


FIG. 2.

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INCINERATOR TOILET USING WATER

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2 Claims

ABSTRACT OF THE DISCLOSURE

An incinerator toilet which uses water to flush the toilet bowl. A normally closed valve plate in the bottom of the bowl empties water and waste into an incinerator chamber where the water is evaporated and the solid waste is subsequently reduced to ash. The vapor is vented by a forced draft, but some of the vapor is condensed and returned to a storage tank for reuse.

This invention relates to incinerator toilets and has reference to a construction wherein the bowl is flushed with water.

Incinerator toilets are used, primarily, in public conveyances such as trains, airplanes and buses. To be accepted by the public an incinerator toilet must have good appearance and obvious means for operating the same. The use of water lends familiarity to the user and assures acceptance of the incinerator concept.

In mobile conveyances, such as airplanes, weight and space are critical factors and flushing water, if not reused, would be required in large volumes which would take up space and add weight to the conveyance.

An object of the invention is to provide a conveniently operated sanitary incinerator toilet for use in public places.

Another object is to provide an incinerator toilet which uses water for flushing.

Another object is to provide means for repeated reuse of the flushing water.

A further object is to provide a combined water flush and incinerator toilet having minimum weight and space requirements.

These and other objects of the invention will become apparent from the following description and the accompanying drawing, in which:

FIGURE 1 is a vertical longitudinal sectional view of an incinerator toilet according to the invention.

FIGURE 2 is a broken plan view of the toilet illustrated in FIGURE 1. It is to be noted that the fan for cooling the condenser is illustrated in FIGURE 2 only.

In the drawing the numeral 10 designates a housing having a bottom 11, a top 12, front wall 13, rear wall 13 and side walls 15. On the upper front surface of the top 12 there is an open seat 16 and lid 17, both of which are attached to the top by a hinge 18, all in the usual manner.

Within the top 12 and beneath the seat 16 there is a bowl 19, and around the rim of the bowl there is a flushing ring 20. As shown only in FIGURE 1, the inner periphery of the ring is open, at 21, for communication with the interior of the bowl. On the bottom of the bowl 19 there is a relatively large normally closed valve plate 22 which is hingedly and rigidly supported on a transverse shaft 23 by parallel arms 24. As best shown in FIGURE 2, the shaft 23 is mounted in bearings 25 on the side walls 15 of the housing 10, and the shaft extends outwardly of one of the side walls where it is provided with a forwardly projecting foot pedal 26. A coil spring 27 is mounted around the shaft 23 and is connected with the shaft and the inner surface of the adjacent side wall 15.

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The opening 28 in the bottom of the bowl 19 has a heat resistant gasket 29 around its lower periphery for engagement with the upper surface of the valve plate 22.

An incinerator chamber 30 is located within the housing 10 and beneath the bowl 19 which empties therein. The incinerator chamber 30 fills the forward lower portion of the housing 10 and includes a thick layer of insulating material 31 and a metal lining 32. There is a vertical rear outer chamber wall 33, whereas the front 13, side walls 15 and bottom 11 of the housing 10 serve as the other outer surfaces of the chamber 30. Within the chamber 30, and spaced from the bottom thereof, there is a removable ash pan 34 which operates like a drawer. The details of the pan 34 are not herein described, but it is pointed out that there is a layer of insulating material 31 across its front inwardly of its outer surface. Beneath the pan 34 there is an electric heating element 35.

Within the housing 10, rearwardly of the incinerator chamber 30, and resting on the bottom 11, there is a water storage tank 36. Water is delivered to the flushing ring 20 by a motor driven pump 37 and connecting lines 38 and 39. Above the tank 36, and in communication therewith, there is a condenser 40 comprised of upper and lower receptacles 41 and 42 and exposed tubes 43 therebetween. The upper receptacle 41 is connected with the upper rear portion of the incinerator chamber 30 by a tubular duct 44, whereas the lower receptacle 42 is connected with a motor driven exhaust fan 45 by another duct 46. Air is vented upwardly from the exhaust 45 by a third duct 47. As shown only in FIGURE 2, the condenser tubes 43 are cooled by a fan 48 which has a cowl 49 therearound for directing the flow of air. The cooling fan 48 is driven by a motor 50 and air therefor is supplied through vent holes 51 in the housing side walls 15.

The bowl 19 is flushed by stepping on the pedal 26, which action causes the valve plate 22 to swing down into the incinerator chamber 30. At the same time a finger 52 on the shaft 23 moves up through a slot 53 in the top of the chamber 30 and operates a timer switch 54. The heating element is then energized and vaporizes the liquids in the incinerator chamber 30, after which the solids in the chamber are reduced to ash. The vapors are drawn through the first duct 44, the condenser 40 and the second duct 46 by the vent fan 45, and then forced to atmosphere through the third duct 47. At the same time, the cooling fan 48 causes some condensation of the vapor passing through the condenser tubes 43 and the resulting liquid drains into the tank 36. A housing 55 for an electrical sequence control is shown in FIGURE 2. A moment switch, not shown, associated with the shaft 23 closes long enough, after the valve plate closes, to operate the pump 37 and replenish the water in the bowl 19.

The invention is not limited to the exemplary construction herein shown and described, but may be made in various ways within the scope of the appended claims.

What is claimed is:

1. An incinerator toilet having a bowl, said bowl maintaining a constant quantity of water therein, an incinerator chamber therebeneath and having means for introducing heat into said chamber associated therewith, valve means opening said bowl into said chamber and water means flushing said bowl, said water means flushing said bowl including a water storage tank, means venting said incinerator chamber to the atmosphere, a condenser connected to said vent means and means communicating said condenser with said tank whereby the vapor passing through said condenser will drain into said storage tank.

2. An incinerator toilet as defined in claim 1 and wherein said water means flushing said bowl comprises a flushing ring disposed in and around said bowl and

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emptying therein and pump means connecting said storage
tank with said flushing ring.

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