July 14, 1942. J. W. KERLIN 2,289,368

DEVICE FOR RENDERING TOILETS ODORLESS

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Fig. 3.

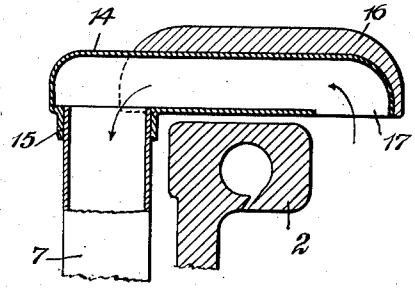
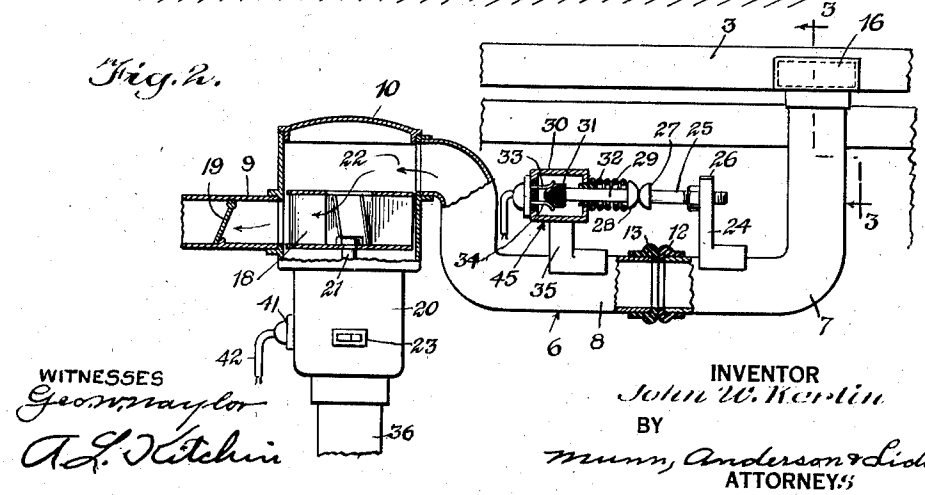


Fig. 1.

Fig. 2.



WITNESSES

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DEVICE FOR RENDERING TOILETS ODORLESS

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3 Claims. (Cl. 4—213)

This invention relates to an improved device for rendering toilets odorless and has for an object to provide a construction wherein odors are removed as fast as created so that the toilet and vicinity will always remain free of odors.

Another object of the invention is to provide a device adapted to be attached to commercial toilets now in use, wherein as soon as the toilet seat has been pressed down to its full functioning position a suction will be produced for drawing air and odor from the bowl of the toilet and discharging the same at a distant point.

A further object is to provide a tubular structure associated with the seat of a conventional toilet and means operated through the action of the toilet seat for setting in motion a fan or suction device each time the toilet seat is lowered, whereby gaseous fluid of various kinds may be drawn through the tubular structure and discharged at a distant point.

In the accompanying drawing:

Fig. 1 is a side view of the conventional toilet bowl and associated parts together with an embodiment of the invention shown in operative position;

Fig. 2 is a fragmentary view of certain parts in section illustrating the switch, fan chamber and associated parts, as shown generally in Fig. 1;

Fig. 3 is an enlarged fragmentary sectional view through Fig. 2 on the line 3—3.

Referring to the accompanying drawing by numerals, 1 indicates a toilet structure of any well known kind and including a toilet bowl 2 and a seat 3 hingedly supported at 4. An elongated resilient bumper 5 is arranged adjacent the front end of the seat 3 so as to hold the seat 3 elevated somewhat from its down or full functioning position. When anyone sits on the seat 3 it will swing downwardly and compress the bumper sufficiently to close a circuit and perform other actions hereinafter fully described.

As shown in Fig. 1, there is provided a tubular structure 6 composed principally of a primary pipe 7, auxiliary pipes 8 and 9, and a casing 10. The auxiliary pipe 9 preferably extends through the wall W so that the depending end 11 will discharge the air and odor exteriorly of the building. The primary pipe 7 is substantially L-shaped and at the lower end is provided with a rubber bumper 12 which is preferably formed of soft rubber and arranged as shown in Fig. 2. A complementary bumper 13 is carried by the free end of the auxiliary pipe 8. When the lid 3 is released the part will move to substantially the position shown in Fig. 1.

When anyone is sitting on the lid 3, or when the lid 3 is pressed in any manner, the part will assume the position shown in Fig. 2, wherein the rubber bumpers or gaskets 12 and 13 will be in tight contact. This will provide a continuous passage through the entire tubular structure 6.

The upper end of the primary pipe 7 is provided with an inlet tubular member or pipe 14 which slidingly fits over the upper end of the pipe 7 at 15. Preferably the inlet pipe 14 is rectangular though not necessarily so. This inlet pipe is countersunk in a suitable cutout 16.

The inlet pipe 14 is provided with an inlet opening 17 facing downwardly so as to readily receive air or other fluid from the upper part of the bowl 2. By reason of this construction it will readily be seen that when suction or rarefaction is produced in the primary pipe 7 and auxiliary pipe 8, air or other fluid will be drawn through the inlet opening 17 in the bowl 2 and discharged out through auxiliary pipe 9. In order that this may take place, a pump or suction device 18 is provided in the lower part of the housing 10. This pump or suction device is shown in Fig. 2 as a fan, which is adapted to draw air from auxiliary pipe 8 into the upper part of casing 10 and then force the air out through the auxiliary pipe 9 past the flap valve 19.

An electric motor 20 is connected through shaft 21 to fan 18 for rotating the fan in a direction to cause air to move as indicated by the arrows 22. Means have been provided for closing the circuit of motor 20 whenever the lid 3 is moved downwardly to substantially the position shown in Fig. 2. An extra or auxiliary switch 23 is also provided for opening the circuit of motor 20 so that this motor will not function regardless of the action of the seat 3 and associated parts. However, when the switch 23 is closed and the seat 3 is lowered, the circuit of the motor 20 will be closed and will remain closed as long as the seat 3 is in its lowered or fully functioning position. This will cause a continuous outflow of air or other fluid from the bowl 2 whereby the bowl and vicinity will remain free of odors.

As illustrated in Fig. 2, there is a slight space between the seat 3 and bowl 2 when the seat 3 is lowered to its full functioning position. This will permit the air from the room to pass into the bowl and eventually out through the tubular structure 6.

A bracket 24 is welded or otherwise readily secured to the primary pipe 7. This bracket has a bolt or plunger 25 screwed therein and is locked

against movement by the nut 26. Preferably the bolt 25 has a rounded head 27 which is preferably in continuous contacts with the head 28 of the rod 29. The rod 29 extends into a switch casing 30 and is provided with a wedge-shaped or cone-shaped contact end 31. A spring 32 acts on the head 28 and the switch casing 30 to hold the contact end 31 in the position shown in Fig. 1. A pair of resilient switch arms 33 and 34 are arranged in line with the contact end 31 so that whenever the bolt 25 is shifted from the position shown in Fig. 1 to that shown in Fig. 2, the rod 29 will be pushed to the left as shown in Fig. 2, so that the contact end 31 will engage the switch arms 33 and 34. The contact end 31, as shown particularly in Fig. 2, is provided with a block of insulation, and on this insulation is provided a metal covering which short circuits the switch arms 33 and 34 when the switch is closed.

The switch casing 30 is carried by a bracket 35 welded or otherwise rigidly secured to the auxiliary pipe 8, which pipe is rigidly secured to the pump casing 10. The pump casing 10 is connected in any suitable way with the casing of motor 20 which in turn is supported by the standard at 36. An electrical cable 37 is provided with a plug 38 designed to be plugged into an outlet 39 when the device is to be used. One wire from the plug 38 extends to the contact 34 while the other wire extends to a wire 40 connected with the plug 41. A wire 42 is also connected with the plug 41 and to wire 43 which is connected with the contact arm 33. The plug 41 is plugged into a suitable receptacle connected with the motor 20 so that when the plug 38 is in position and the switch 45 is closed, as shown in Fig. 2, current will be supplied to the motor 20 for rotating the fan 18. Thus the motor will continue to function as long as the switch 45 is closed and plugs 38 and 41 are in functioning position. Normally all of these parts are left in functioning position and when the seat 3 is released it will automatically move upwardly through the action of the resilient bumper 5, which may be of soft rubber. The spring 32 may be used to assist in swinging the pipe 7 until the parts are in the position shown in Fig. 1. This will permit the spring 32 to move the contact head 30 away from the contact arms 33 and 34 and thereby break the circuit of the motor 20.

By reason of the construction just described, it will be readily seen that when the toilet is not in use the motor 20 and associated parts are not functioning. However, as soon as the seat 3 is lowered, all of these parts will begin to function and will continue to function until the seat 3 has been again moved upwardly to the position shown in Fig. 1. It will be understood that the various parts will be proportioned to accomplish the results just described.

The inlet pipe 14 has been arranged substantially centrally of the seat 3 when viewed from the side, but it will be evident that the parts may be proportioned so that this inlet pipe could be arranged nearer the hinge 4 or further from the hinge 4.

I claim:

1. In combination with a toilet seat on a bowl, a ventilating device comprising a conduit having its inlet section fixed on and moveable with the seat, suction means external to the seat for stationary mounting and having an orifice portion adapted to align and connect with the said inlet section on the toilet seat when same is in normal operating position and disconnect therefrom when the said seat is raised, an electrical control attached to the stationary conduit to actuate said suction means and be mechanically operated by the seat when in normal position and the conduit is connected up with the said suction means.

2. In combination with a toilet seat on a bowl, a ventilating device of the class described comprising a conduit neck attached to a peripheral portion of the toilet seat with its inlet facing towards the opening of the seat and with its outlet portion pending away from the bowl and free, a ventilating or suction mechanism adapted for mounting adjacent the bowl in a stationary manner and having a vent and a suction conduit piece arranged for facile connection with the said inlet portion when the seat is in normal position and for disconnection when the seat is raised, an electrical control connected to the stationary conduit and adapted to be operated by actuating means connected with said conduit neck when the seat is in normal position and operate ventilating device for withdrawing air in and about the bowl and diverting same through the vent duct of the mechanism.

3. In combination with a toilet bowl seat, a ventilating device comprising an electrical control, a conduit section fixed on and movable with said seat, a fixed conduit section attached to a suction means, a movable conduit section to engage with a fixed conduit section to establish interconnection, actuating means connected with said movable conduit to contact electric control means attached to the fixed conduit to actuate said suction means, while said suction sections are engaged to cause said suction means to operate.

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