April 23, 1935. A. G. DE LA CROIX 1,998,657

VENTILATED APPARATUS

Filed Aug. 20, 1934

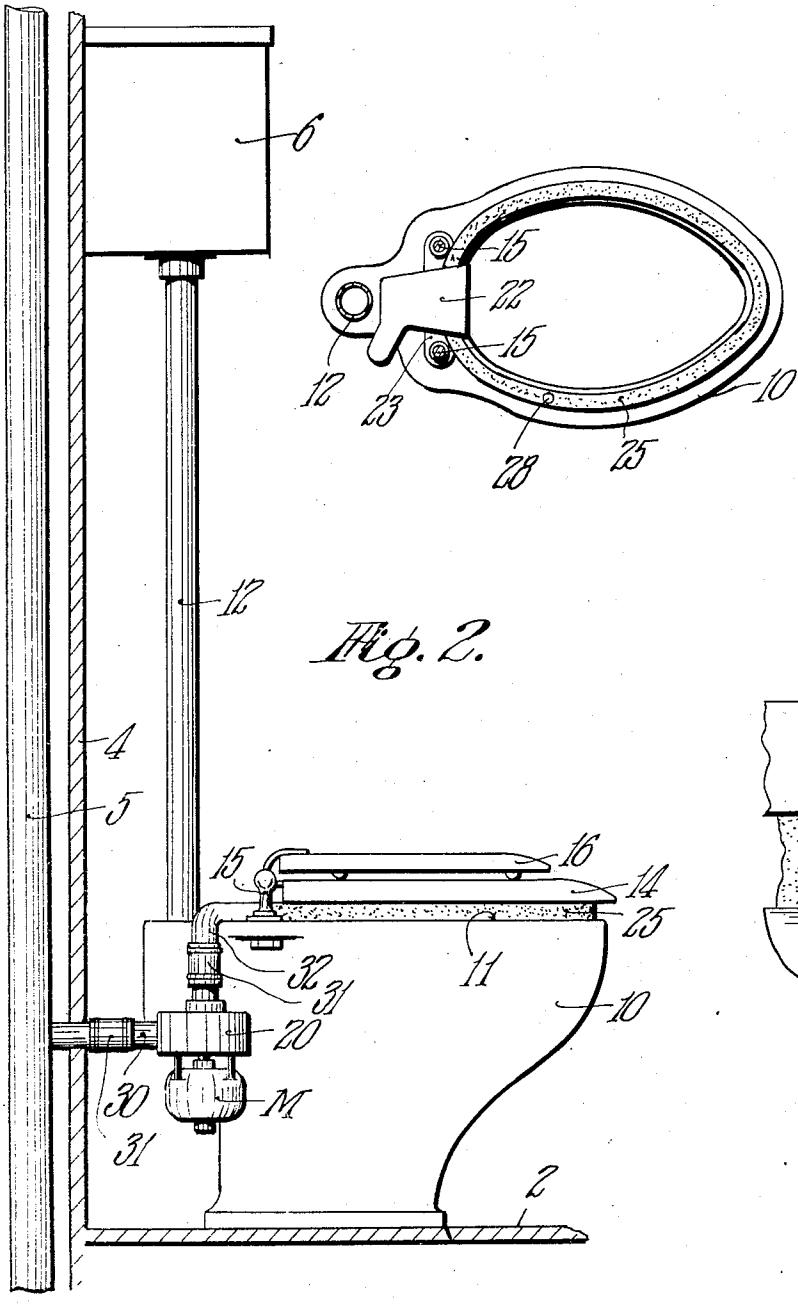
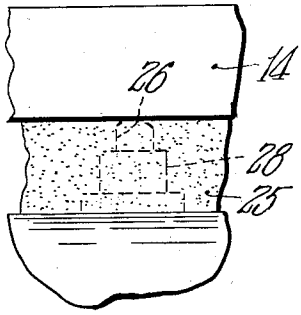


Fig. 1.

Fig. 2.

Fig. 3.



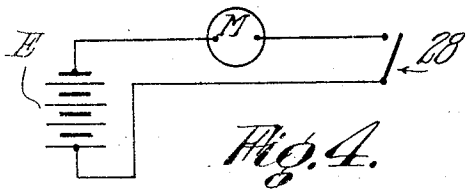


Fig. 4.

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VENTILATING APPARATUS

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2 Claims. (Cl. 4—213)

This invention relates to improvements in ventilating apparatus and is directed more particularly to the provision of novel ventilating means for toilet closets and the like.

One important object of the invention is the provision of toilet ventilating apparatus whereby the toilet bowl may be readily ventilated so that the foul air is quickly withdrawn therefrom and is accomplished by the provision of a novel combination and arrangement of parts as will hereinafter appear.

It is a further object of the invention to provide a ventilating means which is automatically operated when the toilet is in use and it is a distinctive feature of the invention that the apparatus may be easily installed to co-operate with an ordinary toilet or it may be associated with a toilet bowl in the course of manufacture thereof.

Various other novel objects and advantages of the invention will hereinafter appear in the following description which is taken in connection with the accompanying drawing, wherein:

Fig. 1 is a plan view of a toilet bowl having the apparatus of the invention associated therewith;

Fig. 2 is a side elevational view of a toilet having the apparatus of the invention associated therewith;

Fig. 3 is an enlarged elevational view to explain certain features of the invention; and

Fig. 4 is a wiring diagram to explain certain features of the invention.

Referring now to the drawing more in detail, the invention will be fully described.

At 2 is represented a rigid supporting surface such as a floor or the like and 4 represents a wall extending upwardly from the floor. A water supply such as a tank 6 is provided as usual and this is secured in some way to the wall 4 or is associated conveniently with a toilet bowl which is shown at 10. A pipe 12 extends from the tank 6 to the bowl 10 to supply water thereto for the usual flushing function.

A seat 14 of usual form having an opening therein is provided at the upper side of the bowl 10 and this is arranged to swing up and down relative to the upper side 11 as on hinge posts 15 at the rear portion of the bowl. A cover 16 is provided which is arranged for pivotal movements relative to the seat and bowl. This cover 16 is adapted to overlie the opening in the seat 14 and it may be hinged to the hinge posts 15 or to another post or posts, all as may be desired.

A suction fan or blower 20 is provided which is preferably relatively small in size so as to take up but a small amount of space and is provided with suction and discharge openings, commonly referred to as an inlet and outlet. A motor M is associated with the fan or blower 20 for operating the same and is preferably directly connected to the suction fan.

The motor M is connected to a source of electrical energy such as a battery B when the motor is a direct current motor or when an alternating current motor, the source of energy may be the usual A. C. line. The battery is shown more particularly to indicate a source of energy.

A duct 22 is provided which has an opening extending into the bowl 10, preferably at the rear side thereof as shown. This duct is connected to the fan 20 by means of a conduit or pipe 32 and the outlet side of the fan may be connected to another conduit such as 30. As a special feature of the invention, flexible or yieldable connections 31 are provided in connections 30 and 32. These may consist of rubber or other hose and function to dampen or absorb vibrations and noise during the operation of the motor and fan.

A vent pipe 5 is usually disposed near the toilet bowl and commonly behind a wall such as the wall 4 and the outlet of the blower may be connected thereto by the conduit 30. Otherwise, the conduit may be extended through a wall, ceiling or floor so that the fan exhausts outside the room in which the bowl 10 is located.

According to the preferred form of the invention, a sealing ring 25 of rubber, cork or some other more or less resilient or yieldable material is provided between the seat 14 and the rim 11 of the bowl 10. The ring 25 tends to prevent air from escaping between the seat and bowl and may be formed at its rear side to abut the duct 22 or to pass over it.

As a means of holding the duct 22 in position, the duct 22 may be provided with ears or lugs 23 which may be caught beneath the hinge posts 15 as shown in Fig. 1.

A switch 28 is shown in the wiring diagram of Fig. 4. This switch may be of any well-known form adapted to open and close a circuit and is provided with a depressible plunger 26 which is spring-pressed upwardly. By depressing the plunger 26 of the switch it is moved to circuit-closing position. As a feature of the invention, it is desired that the switch be closed by the seat 14 as weight is applied thereto.

This may be accomplished by associating the switch 28 with the sealing ring 25 as shown in Fig. 3 wherein it will be observed that as weight is applied to the seat the sealing member will

be compressed and the plunger 26 acted upon.

As one sits on the seat 14 the seat is pressed against the sealing member which yields to some extent and thereby the switch is operated so that the circuit is closed and the fan operated. When the seat is relieved of its weight, the circuit is broken and the fan ceases to operate. Thus the operation of the apparatus is automatic and dependent on the weight of a person on the seat.

The invention is adapted for broad application and instead of the specific form of apparatus shown and described it is well within the scope of the invention to provide the bowl with a built-in duct and compartment for the motor and blower.

While I have described the invention in great detail and with respect to a preferred form thereof, it is not desired to be limited thereto since many changes and modifications may be made therein without departing from the spirit and scope of the invention.

What it is desired to claim and secure by Letters Patent of the United States is:

1. A toilet apparatus of the class described comprising in combination, a bowl having an inlet and an outlet, means for supplying water to said bowl through said inlet, a seat pivoted to said bowl adapted to swing towards and away from said bowl, a sealing ring of yieldable material between said seat and bowl, a switch device in said sealing ring including a depressible plunger adapted to be depressed to close a circuit as the seat is swung onto said bowl, a motor driven suction fan having an outlet and an inlet, a duct having a mouth opening into said bowl at the rear side thereof and lugs at opposite sides of said mouth secured to said bowl, a hollow connection between said duct and inlet of the suction fan, pipe connections at the outlet side of said fan for conducting gases away from said fan and bowl and an electrical circuit including the motor of the suction fan and switch device, all adapted and arranged whereby when said seat is swung onto said bowl said electrical circuit is closed to operate said fan.

2. A toilet apparatus of the class described comprising in combination, a bowl having an inlet, outlet, and opening in its upper side, means for supplying water to said bowl through said inlet, flanged hinge posts extending upwardly from the upper side of said bowl, a duct having a mouth directed towards the opening in said bowl at the rear side thereof, lugs at opposite sides of said mouth secured beneath the flanges of the said hinge posts, a seat pivoted to said hinge posts adapted to swing towards and away from said bowl, a sealing ring of yieldable material between said seat and bowl, a switch device in said sealing ring including a depressible plunger adapted to be depressed to close a circuit as said seat is swung onto said bowl, a motor-driven suction fan having an outlet and an inlet, a hollow connection between said duct and inlet of the suction fan, pipe connections at the outlet side of said fan for conducting gases away from said fan and bowl and an electrical circuit including the motor of said suction fan and said switch device, all adapted and arranged whereby when said seat is swung onto said bowl said electrical circuit is closed to operate said fan.

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