March 21, 1939. E. S. MORRIS 2,151,138

VENTILATING ATTACHMENT FOR TOILETS

Filed Feb. 17, 1937

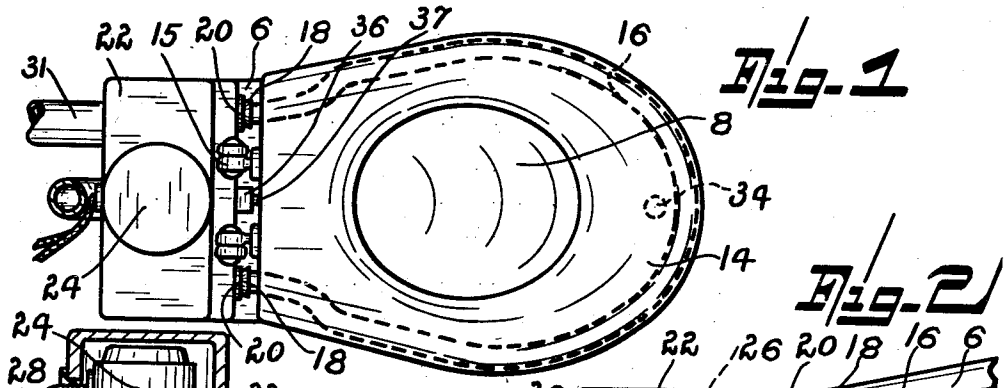


Fig. 1

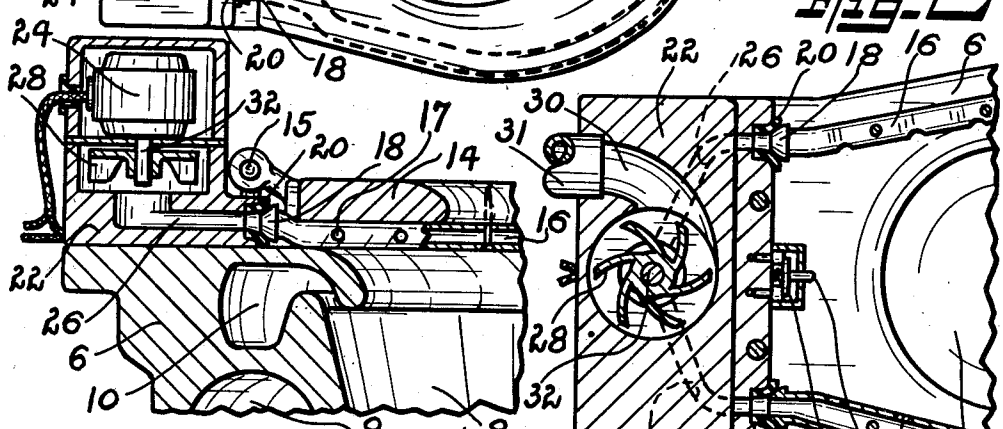


Fig. 2

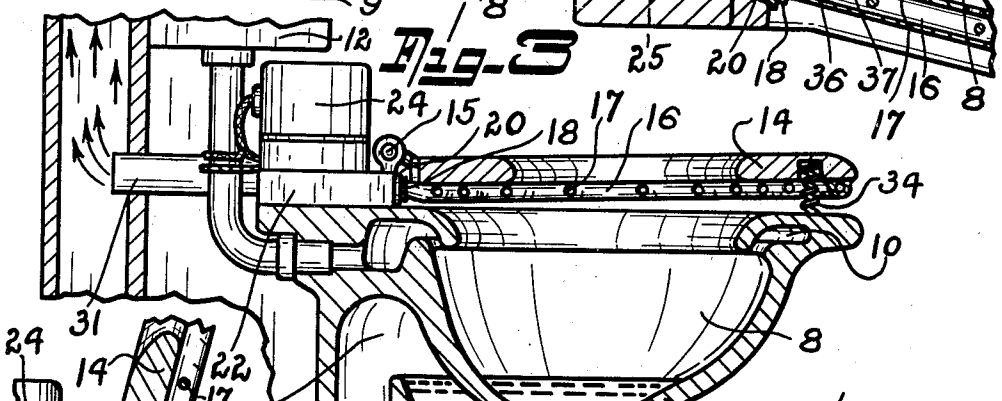


Fig. 3

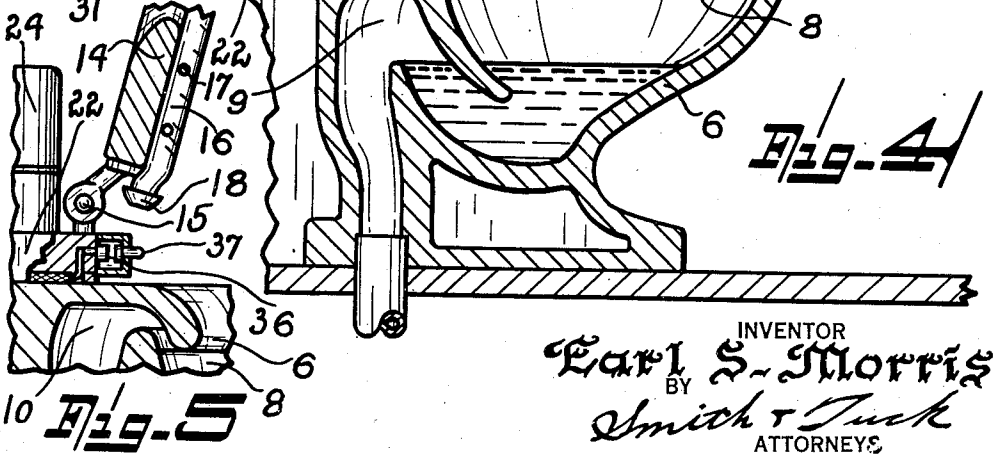


Fig. 4

Fig. 5

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VENTILATING ATTACHMENT FOR TOILETS

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1 Claim. (Cl. 4—213)

My present invention relates to the art of ventilating equipment and more particularly to a ventilating attachment for toilets.

The present tendency toward closed rooms with air conditioning has somewhat modified the generally accepted location of bathrooms and toilets. Formerly, it was considered necessary to place them on an outside wall so that ventilation could be obtained by means of a window. The tendency is increasing, however, to make the more desirable outside wall space available for living rooms and to place the toilets and bathrooms inside of the house, or buildng. This is particularly true of hotel, apartment, and modern home structures. This changing mode has encouraged the development of ventilating means which draws the unwanted gases and odors directly from the toilets and expels them without permitting entry into the air which is to be recirculated. Many satisfactory toilet bowl assemblies have been provided for this purpose. However, there are many instances where owners desire to retain their older toilet installations and to equip them with ventilating means. It is for this particular use that I have created my present device.

My invention is arranged so that with the minimum of installation cost, and without any modification of the toilet bowl itself, I can adapt my equipment to almost any toilet now manufactured. The only noted modification is that the toilet seat itself is raised slightly. The ventilating fan and motor occupies the space, at present unused, at the rear of the toilet bowl and under the flushing tanks where it is entirely out of the way and substantially out of sight.

The principal object of my present invention is, therefore, to provide an attachment for use with toilet installations already in place, which will provide adequate ventilation for the toilet bowl.

A further object of my invention is to provide a ventilator of the type described wherein the switching means is automatically operated by the user both in starting and stopping the ventilating fan.

A still further object of my invention is to so arrange my attachment that the toilet seat may be fully raised, as is quite common, and lowered into operating position, without affecting my equipment which is again automatically connected ready for service.

Other and more specific objects will be apparent from the following description taken in connection with the accompanying drawing, wherein

Figure 1 is a top plan view of a toilet embodying my attachment, the same being shown with the flushing tank removed.

Figure 2 is a fragmentary plan view showing the rear of the toilet with my equipment in place, the same being shown in section to better illustrate the construction.

Figure 3 is a fragmentary elevation of the rear of a toilet bowl showing my equipment in place.

Figure 4 is a vertical, sectional view through a toilet with my device installed thereon so as to more fully illustrate the relationship of the various parts with my attachment.

Figure 5 is a fragmentary view in elevation, partly in section, showing my switching means and the end of my ventilating duct so as to more clearly illustrate the cone-like centering means that assures accurate alignment when the seat is in its position of use.

Referring to the drawing throughout which like reference characters indicate like parts **6** designates the toilet bowl in general having the bowl proper **8**, the usual trap **9** and the water channel **10** which in turn is fed from the flushing tank **12**. Normally, disposed upon bowl **6** is the hinged seat **14**. This is provided with the hinge at **15** so that the same may be raised to the vertical position for cleaning and for use as a urinal. In my present arrangement I provide a pivot member that raises pivot point **15** an amount equal to the thickness of the ventilating duct **16**, normally the raising of pivot **15** does not exceed three-quarters of an inch which is not objectionable.

The ventilating duct **16** may be made of any suitable material. It may be a firm rubber tubing or metal. If metal is used it should, preferably, be formed as a tube or pipe substantially U-shaped so that there will be no sharp recesses where the tube lies against seat **14**. Such an arrangement would be objectionable in that it would be difficult to clean. Throughout its length ventilator **16** is perforated as at **17** so as to provide suction inlets to tube **16** to the end that the odors may be uniformly drawn from bowl **8**. Duct **16** should preferably be placed well toward the outer margin of the toilet bowl and seat so that there will be a minimum danger of any material or water being splashed into or otherwise entering the suction perforations or opening **17**.

In the drawing, for sake of simplicity, I have shown only one form of toilet seat as **14**, in which an entirely enclosed front portion is used. It will naturally follow that if the divided seat is employed, my ventilating tube **16** should then be composed of two tubes which would extend

around to the end of each leg of the seat. The single tube 16, or the two tubes, if the divided seat is used, may be secured to seat 14 in any convenient manner. If a reasonably wide base is provided on tube 16 it may be satisfactorily glued to the seat, otherwise it can be screw fastened thereto. The rearward ends of tube 16 are formed with a centering cone arrangement probably best illustrated in Figures 2 and 5 at 18. This provides for a positive union with the rubber bushings 20 which are formed within the base 22 of my attachment.

My attachment consists essentially in three members, the ventilating conduit, just described, the base member 22 and the motor 24. Base 22 has, formed within it, two passageways as 25 and 26 which lead to the spinner of a rotary fan 28, and provide the intake to the fan. The fan following the principles of impeller type fans expels the gases drawn through conduit 16 and passageways 25 and 26 out through passageway 30 into pipe 31 which may be led to any convenient point of discharge. Impeller 28 is preferably secured directly to the armature shaft 32 of motor 24. In this way the bearings provided in the motor serve also as bearings for the fan, making a simple, inexpensive and compact arrangement.

My base member 22 can best be secured to the toilet by using the same bolts that support pivot 15, it being necessary only to provide through openings in base 22 to accommodate them.

It is, of course, desirable to have the fan operate only during periods when the toilet is being used. To this end I have provided that the seat 14 is normally supported, with its front end in a raised position, by resilient means as a compression spring 34 or by making duct 16 of resilient rubber. Thus the normal weight of a person using the toilet will be sufficient to press it down in engagement with the toilet rim. This movement is used to operate the electric switch 36 which is not shown in great detail as there are many commercial switches that are adaptable for this use. The type used for burglar alarms, and the like, behind door casings, are probably the most satisfactory as a small amount of movement of the operating button 37 serves to trip the spring actuating switch mechanism and thereby safely breaks or forms electric contact.

The foregoing description and the accompanying drawing are believed to clearly disclose a preferred embodiment of my invention but it will be understood that this disclosure is merely illustrative and that such changes in the invention may be made as are fairly within the scope and spirit of the following claim.

I claim:

A toilet ventilating apparatus adapted for use with a bowl and its pivoted seat spaced thereabove comprising a tubular ventilator having intake ports and mounted on the seat between said seat and bowl, resilient means for holding the ventilator out of contact with the bowl, a conical discharge head for the ventilator, a base block on the bowl and having an impeller chamber, an outlet duct and an inlet duct for said chamber through said block, a conical nipple at one end of the inlet duct forming a socket for said head, an impeller in said chamber, an electric motor for said impeller, an operating circuit for the motor, and a switch in said circuit controlled by the position of said seat.

EARL S. MORRIS.