Feb. 13, 1940. E. HENSCHLER 2,190,068

LAVATORY DEVICE

Original Filed May 13, 1938

Fig. 1.

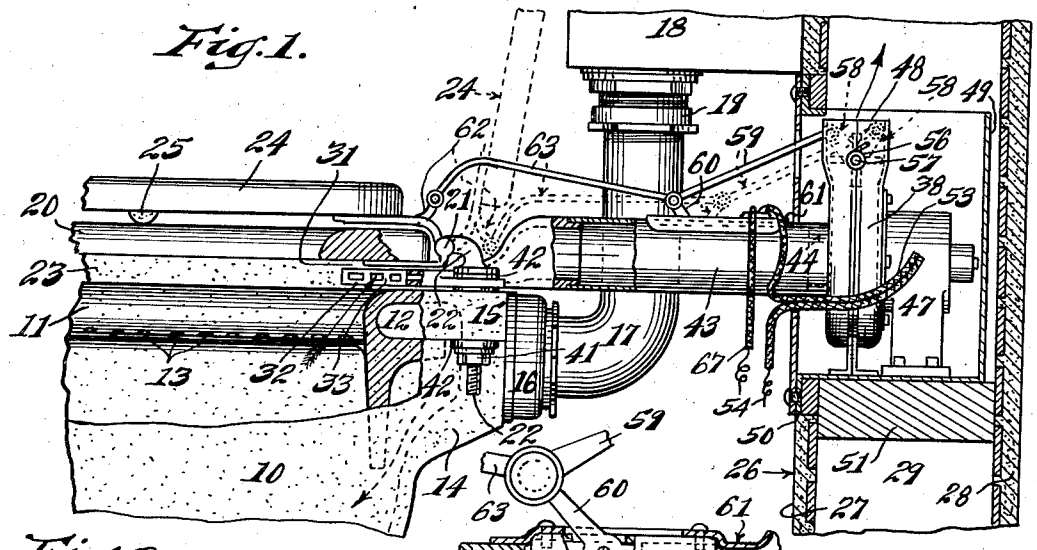


Fig. 2.

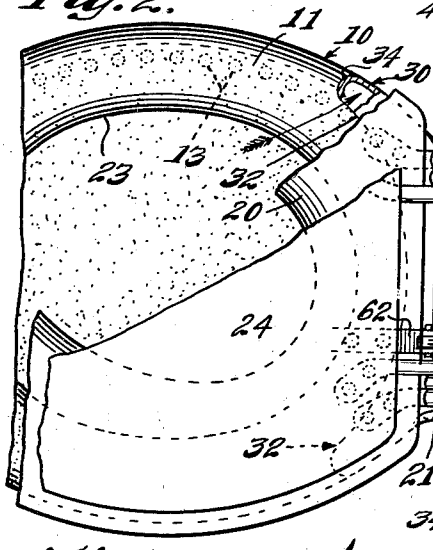
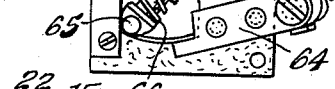


Fig. 5.



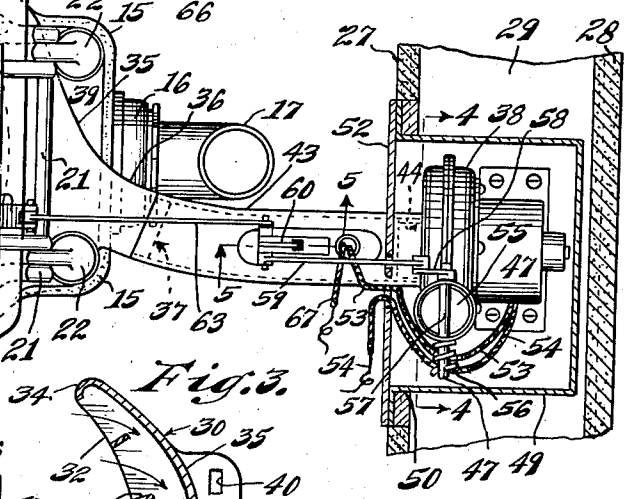


Fig. 3.

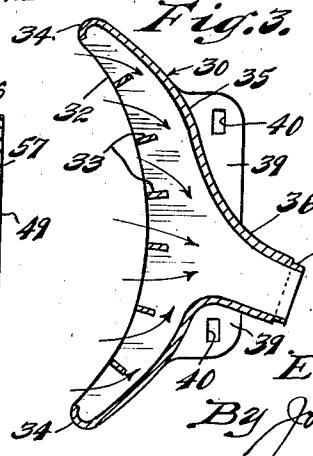
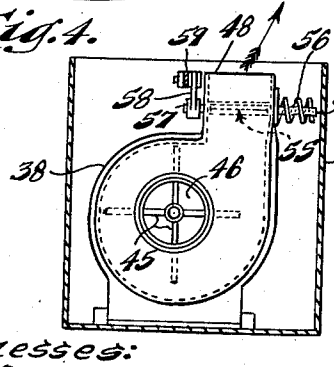


Fig. 4.



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UNITED STATES PATENT OFFICE

2,190,068

LAVATORY DEVICE

Ewald Henschler, Blue Island, Ill.

Original application May 13, 1938, Serial No. 207,681. Divided and this application September 24, 1938, Serial No. 231,516

5 Claims. (Cl. 4—213)

My invention relates to a lavatory device and, more particularly, to a novel device for application to a lavatory to exhaust vapors, etc., therefrom, and to a ventilating and suction intake manifold for use with such lavatory or ventilating device, which can be readily applied to a toilet seat with the usual fastening means for the seat and in such a manner as to entirely close the space between the seat and bowl, to efficiently conduct the vapors therefrom, and is a division of my prior application, Serial No. 207,681, filed May 13, 1938, now matured into Patent No. 2,167,152.

Among the objects of the invention are to provide a novel lavatory device for ventilating or exhausting vapors, etc., from the bowl of the lavatory; which comprises a novel structure capable of application to the bowl and seat structure without additional fastening means, and in such position as to be protected from the water; which can be applied without alteration of the structure of the flush apparatus, and which includes an exhaust or suction fan operated by an electrical motor also protected and hidden from view, the motor and fan being normally inoperative when the seat and cover are lowered or closed, and rendered operative when the seat is raised or opened, while the fan has a damper also closed when the cover is lowered to prevent reverse or back draft, and opened when the cover is raised and a switch is thrown to put the motor and fan in operation by closing a normally open electrical circuit to the motor, whereby to exhaust the vapors to a suitable stack as between walls of a building for conveyance to the outside atmosphere.

Other objects and advantages will appear and be brought out more clearly in the following specification, reference being had to the accompanying drawing, wherein:

Fig. 1 is a side elevation, partly broken away and in section, showing my device applied;

Fig. 2 is a plan view, also partly broken away and in section;

Fig. 3 is a detail horizontal sectional view of the suction intake manifold;

Fig. 4 is a sectional view taken on the line 4—4 of Fig. 2; and

Fig. 5 is an enlarged detail sectional elevation taken on the line 5—5 of Fig. 2, and showing one form of switch for controlling the operation of the motor.

Referring more particularly to the drawing, wherein the device is shown applied, 10 is a bowl having the rim 11 with a flush water passage 12 with discharge openings 13, horizontal rear inlet extension 14 with side flanges or vertically apertured ears 15 and connection or coupling 16 to a water supply or flush pipe 17 receiving its supply from any suitable valved controlled means, such as a low flush tank 18 coupled thereto as at 19.

The bowl is provided with a seat section 20 hinged by brackets or leaves at 21 to posts 22 clamped through apertured flanges or ears 15. Between the seat 20 and bowl rim 11 from which it is slightly spaced, is a rubber or like packing or cushion 23, while a seat cover section 24 is supported when closed on seat section 20 with interposed cushions 25, and also hinged at 21 by brackets or leaves on a pintle common to both sections to swing up and down toward and away from the flush control or tank 18 in the usual manner common in the art.

This structure is standard and may vary in details according to the type of flushing apparatus or fixture installed, but the tank is shown against a wall 26 of a building, with inner and outer or spaced portions or walls 27 and 28 forming a stack or air space 29 therebetween communicating with the atmosphere or otherwise ventilated.

In connection with my invention, the cushion 23 is omitted between the bowl 10 or rim 11 thereof and seat 20 at the back on the horizontal shelf extension and flange 14—15 in the space which receives, and below the hinge or pintle leaves or brackets attached to the seat 20 at the bottom, as shown, and pivoted to a common pintle 21 also provided for the hinge or pintle leaves or brackets attached to the bottom of the cover 24 and received on the bowl rim in the space between said bowl and seat. In this space is positioned a hollow suction intake manifold 30, which, however, may be thinner than the space so that the top face of the manifold is spaced from or in close proximity to the bottom face of the seat and hinge brackets or leaves of the seat, as shown at 31 in Fig. 1, so that no pressure will be exerted thereon by the seat, although this is optional.

The manifold may be of suitable non-rusting material such as aluminum, fibre, wood, white metal, brass, iron, hard rubber, Bakelite, synthetic or plastic composition, or otherwise, or may be of rubber or cushioning material of sufficient hardness not to compress or flatten out, or, if of rubber or soft, or formed to fit a recess or cut out in, or as part of the cushion 23, the seat may be supported from the bowl in spaced relation, in close proximity to, or just touching the

top of the manifold. A casting of rigid or hard material is preferred, such as aluminum.

As shown in Figs. 1, 2 and 3, said manifold has an open concaved forward or inner edge 32 set back in spaced relation from the inner edge of the bowl, ledge or rim 11 to prevent the water from entering or splashing into the same, but the top and bottom walls are reinforced by spaced division, walls, webs, or spacers 33 at said curved open inner side or forward edge 32, which may conform to the curvature of the bowl and seat, or be eccentric thereto. The ends are closed as by inwardly curved flanges 34, and the outer or rear side or edge is closed as at 35 and terminates in a tapered outlet or neck coupling portion 36 gradually increase in thickness to tubular form and round cross section and extending toward one side around or so as to clear the pipe 17. For this purpose, one side of the neck 36 extends at an obtuse angle and the other side at an acute angle, and the end may be reduced to form a nipple as at 37, or extended as far as necessary to connect with a suitable ventilating means or suction fan 38 as will be more fully explained.

The casting or manifold has side flanges or a bottom plate extension 39 at the back to rest on the top of ledge 14 or flanges 15 and provided with apertures or slots 40, preferably enlarged or elongated transversely to accommodate and receive the threaded stems of the forwardly curved posts or stud bolts 22 to secure the manifold in position by nuts 41, and washers 42 are interposed between the enlargements or flanged heads of the posts and flanges or plate 39, and between the latter and the flanges 15 or top of the bowl, which is usually of vitrious material. Such washers 42 are also interposed between the bottom of the flanges 15 and the nuts 41 threaded on the lower ends of the posts, to prevent contact of the metal with the bowl and securely clamp the seat and cover, as well as the manifold in position.

The neck or pipe 36 may be as short or as long as desired or necessary, but as shown, in order to connect the same to the suction fan or blower 38, a pipe extension or conduit section 43 is connected to neck 36 and nipple 37 and a nipple or sleeve extension 44 on the casing or housing of the fan 38 at the axis of rotation of its impeller 45 over the intake 46. The fan is driven by an electrical motor 47, and the fan has an outlet 48 which is shown extending eccentrically in an upward direction and into the stack or space 29 or may extend through the wall or communicate with the outside atmosphere in any other suitable way. The fan and motor are supported in an open top box or compartment 49 positioned through an opening 50 in the inner wall 27 and upon a horizontal partition support 51, the front of the box 49 being closed by a removable cover plate 52 providing access to the fan and motor and having an opening receiving the pipe 43 and insulated wires 53 and 54 from the motor 47. The outlet 48 is provided with a damper 55 normally held closed by a spring 56 connected at one end to a shaft 57 to which the damper plate is fixed and on the projecting end of which the spring is mounted, while the other end of the spring is anchored to the outlet.

An arm 58 is fixed to the opposite end of the shaft and is pivotally connected to a link 59 disposed through an opening in cover plate 52 to a switch lever arm or button 60 of a switch 61, set in a slot in pipe 43. An arm 62 attached to the underside of the seat or cover 24 projects upwardly and rearwardly and is also pivotally connected to arm 60 by a link 63 properly shaped or curved to translate arcuate or oscillatory movement of the arm 62 into similar or reciprocable movement of the arm 60 of the switch 61 shown of the 2-point type. One wire 53 from the motor 47 to one of a pair of spaced insulated stationary contacts 64 of the switch 61 is adapted to be bridged by a movable contact 65 of lever arm or toggle 60 including a spring 66. The other wire 54 and a wire 67 from the other contact 64 are connected to a source of electrical energy, not shown, such as a battery, generator or a plug for fitting in a socket of the house wiring. Obviously, when contact 65 engages contacts 64, the circuit is closed to the motor to operate the fan or blower and vice versa when the contact is in the opposite position, as shown in Figs. 1, 2 and 5, which is the normal position when the cover is closed and arm 60 is forward. However, when the cover is opened, it will, through arm 62 and link 63, move arm 60 back to close the switch and circuit to the motor. At the same time, the arm 60 will move link 59 rearwardly to swing the arm 58 and simultaneously open the damper or outlet control valve and reverse draft control check 55, so that the vapors, etc., will be exhausted, and proper and thorough ventilation insured. By reason of the cover plate 52, ready access may be had to the motor and fan for any purpose.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A suction intake manifold of the class described comprising a hollow member having a freely open front with spaced webs forming supporting and division walls disposed edgewise to the front and along the entire edge of the open front and an outlet at the back.

2. A suction intake manifold of the class described comprising a hollow flat casting of rustproof material having top and bottom walls, a concaved front edge, and a convex back edge with inturned end flanges, spaced vertical walls extending inwardly a short distance from the concaved edge between the top and bottom walls to form openings between the inner ends thereof and the back edge, an apertured attaching bottom portion at the back and a neck merging with the back edge, top and bottom and extending toward one side.

3. In a lavatory device, a suction intake manifold adapted to be supported between a seat and bowl, said manifold being of arcuate formation with a concaved front edge and a convex rear edge to conform to said seat and bowl and relatively flat with an outlet extending upwardly for connection with a suction pipe, said manifold having top and bottom walls forwardly converging and rearwardly diverging baffles between said walls adjacent the front edge and a rear wall and tapering toward its ends and apertured extensions at the sides of the outlet to receive the fastening means of the seat.

4. In a lavatory device, a suction intake mani-

fold adapted to be supported between a seat and bowl, said manifold being of arcuate formation to conform to said seat and bowl and relatively flat with an outlet extending upwardly for connection with a suction pipe, said manifold having top and bottom walls and a rear wall and tapering toward its ends and apertured extensions at the sides of the outlet to receive the fastening means of the seat, the front being open and having spaced substantially radial webs and inturned ends and spaced from the inner edges of the seat and bowl.

5. A suction intake manifold of the class described comprising a hollow member having slightly inturned closed end walls and a freely open front edge and spaced relatively thin webs between the top and bottom walls of the hollow member and extending substantially radially toward but spaced from the back thereof, said hollow member terminating in a gradually reduced neck portion forming an outlet having a joint seat.

EWALD HENSCHLER.