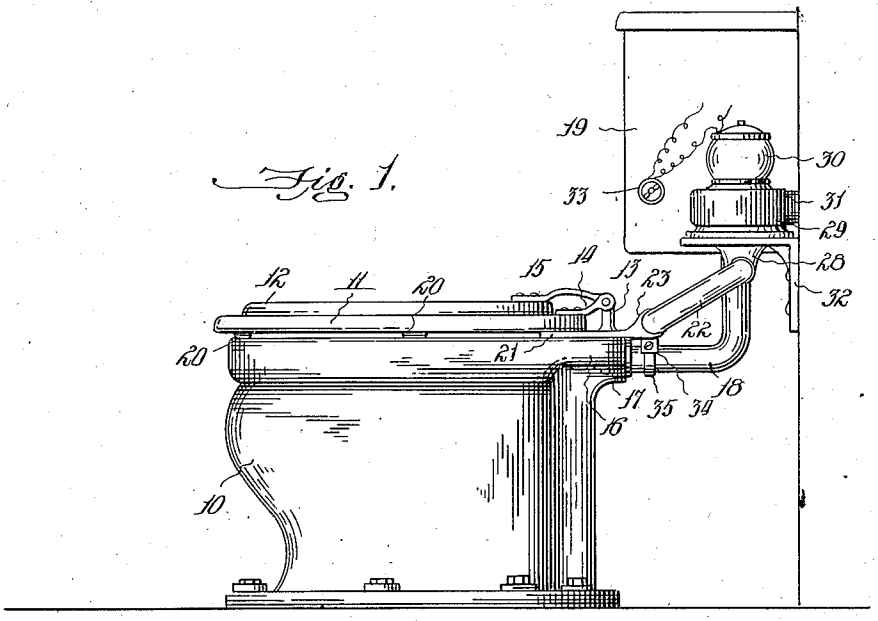
June 7, 1932. J. HERTZOG 1,862,085

VENTILATOR FAN FOR WATER CLOSETS

Filed Jan. 29, 1931

Fig. 1.



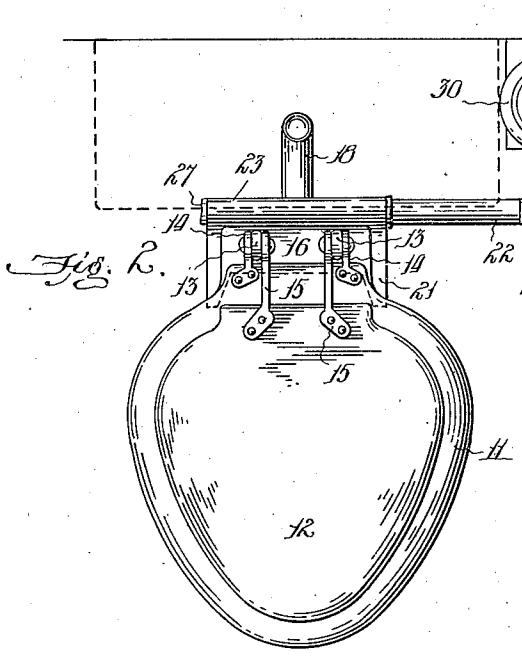


Fig. 2.

Fig. 3.

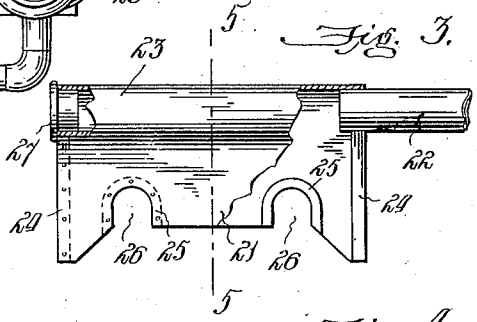


Fig. 4.

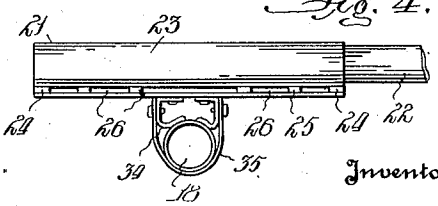
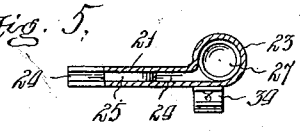


Fig. 5.



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UNITED STATES PATENT OFFICE

JOHN HERTZOG, OF LORAIN, OHIO

VENTILATOR FAN FOR WATER CLOSETS

Application filed January 29, 1931. Serial No. 512,190.

My invention is an improvement in ventilators for water closets, and relates more especially to apparatus for attachment to the bowl for the purpose of withdrawing obnoxious odors and discharging them into the outer atmosphere so as to maintain a sanitary condition in the room in which the water closet is located.

The primary object of my invention is to provide an apparatus of this general character which may be readily applied to any conventional type of water closet bowl by an unskilled mechanic, the suction pipe through which the odors from the bowl are drawn being secured in place by means of the hinges connecting the seat and lid to the bowl.

A further object of my invention is to provide an apparatus of this character which is adaptable for application to different types of water closets with either high or low flushing tanks, the construction of the suction pipes which are attached to the bowl being such that the suction fan and motor for operating the same may be located in the rear of the water closet bowl or at either side thereof whichever is more convenient.

My invention also contemplates a construction of the parts constituting the ventilating apparatus for water closets by which provision is made for certain adjustments with respect to the height of the bowl and location of the perforated suction pipe beneath the seat; all as hereinafter fully described and specifically set forth in the appended claims.

In the drawing:

Figure 1 is a side elevation illustrating the application of my invention, the suction fan and motor being located at one side of a low flushing tank.

Fig. 2 is a plan view of Fig. 1 with the flushing tank indicated in dotted lines.

Fig. 3 is a detail plan view of the suction chamber located below the seat of the closet.

Fig. 4 is a front elevation thereof, and

Fig. 5 is a sectional view of the suction chamber on the line 5—5 of Fig. 3.

My improved ventilating apparatus is adapted to be applied to any conventional type of water closet, and for the purpose of illustration I have shown in the drawing that form comprising a bowl 10, on which the seat 11 and lid 12 are hinged at their rear ends by means of spaced apart posts 13, 13 to which the hinge-leaves 14, 14 and 15, 15 for the seat and lid respectively are pivotally connected, the lower ends of said posts below the collars passing through a rearward extension 16 of the bowl and threaded at their ends to receive the clamping nuts 17, with the water supply pipe 18 from the flushing tank 19 discharging into the upper part of the bowl at the rear end thereof. In the construction of water closets of this type it is usual to leave a space between the seat and top of the bowl, the forward end of the seat opposite the hinges being supported by rubber blocks 20, and in order that my improved ventilating apparatus may be applied without altering the water closet one part of the apparatus or attachment is inserted between the seat and bowl and held in place by the hinge posts and extends beyond the water closet in the rear thereof for connection with the motor-driven suction fan.

In carrying out my invention I provide a suction chamber 21 into which the obnoxious odors from the bowl are drawn, the front end of said chamber which fits between the closed lid 12 and bowl 10 being flat to accommodate the usual space which is left between these parts of the water closet while the rear end of said chamber is tubular to receive an outlet or discharge pipe 22 at either end thereof. This suction chamber is constructed of a plate bent upon itself to provide a tubular rear end 23 from the lower portion of which the members of the plate extend forwardly and are separated by metal strips 24, 24 at opposite sides with additional U-shaped spacing strips 25, 25 around cut-outs 26, 26 at the front end to receive the hinge-posts 13, 13, with the front end of the suction chamber extended as shown in Fig. 3 to correspond approximately with the shape of the seat under which it projects as shown in Fig. 2, the aforesaid spacing strips being riveted to the upper and lower members of the bent plate. Both ends of the tubular portion 23 extending across the rear end of the suction chamber are left open to receive the

outlet or discharge pipe into either end thereof, the end opposite that into which the suction pipe is inserted being closed by a cap 27, it being understood that by this arrangement said suction chamber may be discharged at either side of the water closet to accommodate the location of the motor-driven suction fan. For securing the suction chamber more securely in place the underside thereof which projects beyond the bowl is provided with metal projecting brackets 34 curved inwardly at their lower ends to bear upon the discharge pipe 18 of the water closet bowl with a metal strap 35 extending around said discharge pipe and connected at its ends to the aforesaid brackets.

The discharge pipe from the suction chamber is connected to an inlet pipe 28 leading into a conventional type of suction fan 29 driven by an electric motor 30, the suction fan discharging into a pipe 31 connected to a stack (not shown) or extending through a wall of the room in which the water closet is located for discharging the obnoxious odors directly into the outside atmosphere, and for controlling the operation of the electric motor which drives the fan an ordinary form of switch 33 is employed and conveniently located as for instance at one end of the flushing tank. The combined fan and motor may be supported on a bracket 32 as shown in the drawing so as to be located at one side of a low flushing tank, or supported on a stand (not shown) located at any convenient place, as for instance directly in the rear of the bowl or at either side thereof.

In applying the apparatus to a water closet bowl it is only necessary to first remove the hinge-posts 13 and after the suction chamber is placed on top of the rear portion of the bowl said hinge-posts are replaced so that their lower ends will pass through the cut-outs 26 with the collar on said posts resting on the flat portion of the suction chamber reinforced by the U-shaped strips 25, 25 so that when the nuts 18 are threaded on the lower ends of the hinge-posts said suction chamber will be tightly clamped on the bowl, any required adjustment with respect to the bowl being permitted by reason of the cut-outs. The support, as bracket 32, for the combined fan and motor, is then secured in place on the wall and after mounting the combined suction fan and motor on the bracket the suction chamber is connected to the fan by pipe 22 and the outlet from the fan connected by pipes to the outside atmosphere, the said suction chamber being further held against displacement by the strap 35. It will thus be seen that the installation may be easily accomplished by an unskilled person to not require the services of a plumber inasmuch as no part of the plumbing is disturbed; consequently the apparatus may be marketed as an attachment that can be installed by the owner of a house, the adjustability of certain parts accommodating the ventilating apparatus to water closets of different types as to height, etc.

It will be understood that changes or modifications may be made in the essential parts constituting my invention, as for instance the shape of the suction chamber may be altered to suit different conditions with respect to the water closet fixtures, and instead of mounting the fan and its driving motor on a wall bracket it is obvious that where conditions require an adjustable stand (not shown) may be employed to rest on the floor adjoining the water closet.

I claim:—

1. A suction chamber for ventilating apparatus for water closets, to fit across the rear end of the seat at the under side thereof around the hinge posts, comprising a plate bent upon itself to provide a tubular portion at the rear end of the chamber for connecting a fan at either end thereof, the members of the plate being extended forward and separated at opposite ends by strips to form a flat shallow passage communicating with the tubular portion and open at its forward end with the front ends of the members cut back and having cut-outs near the opposite ends thereof to receive the hinge posts, and strips reinforcing the cut-outs around the edges thereof, said strips providing central and side inlet openings to the aforesaid passage.

2. A suction chamber for ventilating apparatus for water closets comprising a plate bent upon itself to provide a tubular portion at the rear end of the chamber with the members of the plate extended forwardly and separated by strips to form a flat shallow passage with cut-outs at the forward end thereof, strips reinforcing the cut-outs around the edges thereof, metal brackets secured to the underside of the suction chamber near the rear end thereof, and a metal strap attached to said brackets.

JOHN HERTZOG.