United States Patent [19]

Osmond

[11] **3,887,949**

[45] **June 10, 1975**

[54] **VENTILATED SEATING FOR A WATER CLOSET**

[76] Inventor: **John S. Osmond,** 2467 Louella Ave., Venice, Calif. 90291

[22] Filed: **Aug. 3, 1973**

[21] Appl. No.: **385,406**

[52] **U.S. Cl.** **4/217;** 4/209; 4/213; 4/216

[51] **Int. Cl.**.... **A47k 13/28;** A47k 13/30; E03d 9/05

[58] **Field of Search** 4/213, 217, 216, 209, 229, 4/230, 83, 129, 130, 140

[56] **References Cited**

UNITED STATES PATENTS

1,207,605	12/1916	Morton	4/217
3,501,784	3/1970	Maisch	4/217
3,659,296	5/1972	Stamper	4/217
3,689,944	9/1972	Clayton	4/213

Primary Examiner—Henry K. Artis

Assistant Examiner—James E. Bryant, III

[57] **ABSTRACT**

A water closet seat for universal application to toilets of standardized configuration and comprised of an adapter in the form of a blower housing affixed to the toilet bowl as the static hinge structure for the movable seat and cover therefor. A low power electrical system is involved without resort to extraneous parts and with a control switch protectively housed for response to the body weight of a person for automatic blower operation.

6 Claims, 5 Drawing Figures

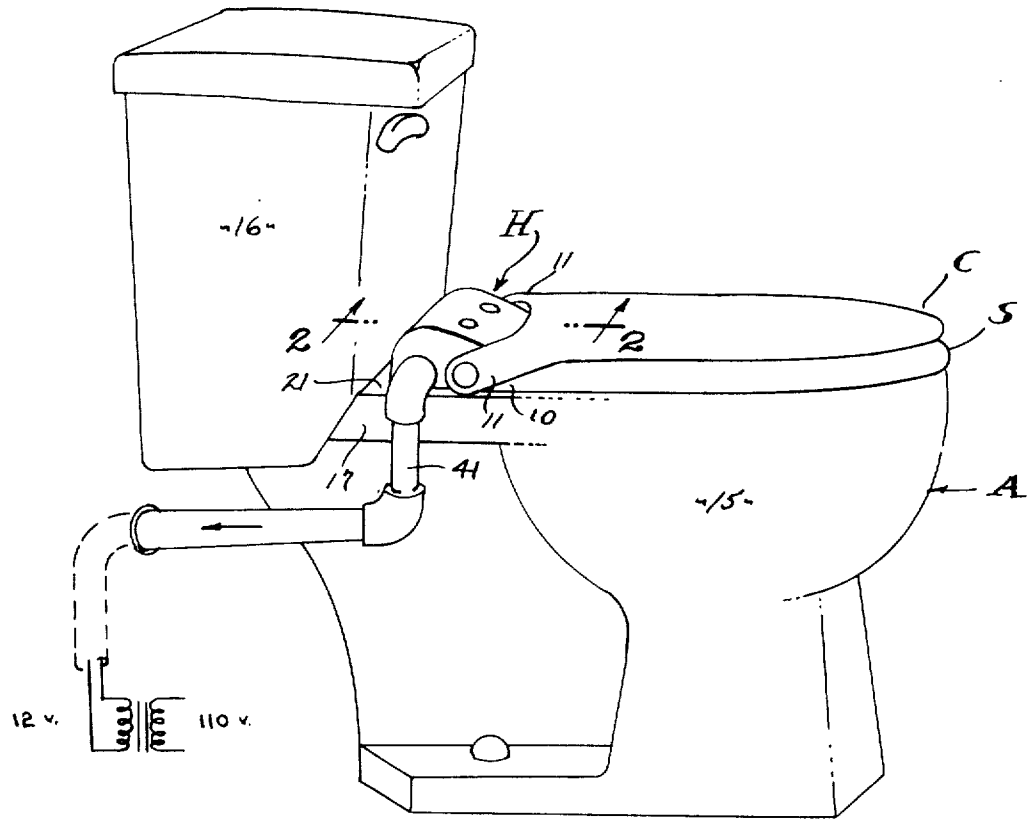


FIG. 1.

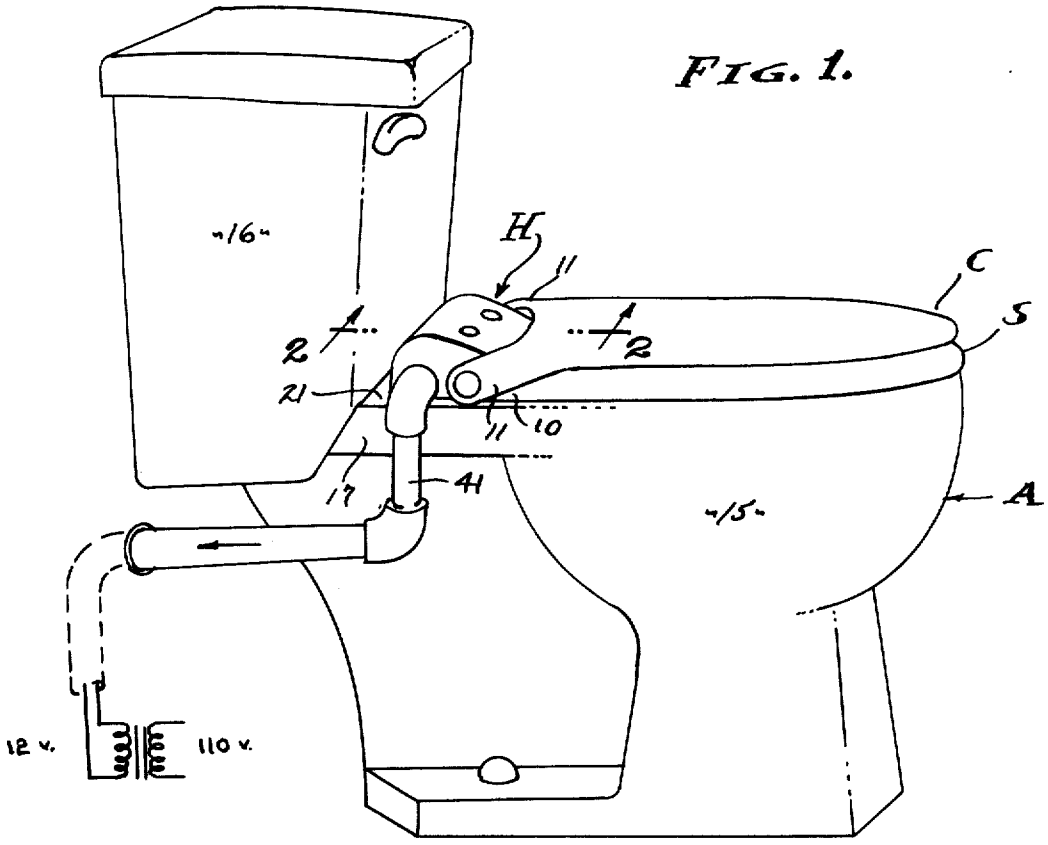

16
H
11
C
S
2
12
21
11
10
17
41
15
A
12 v.
110 v.

FIG. 2.

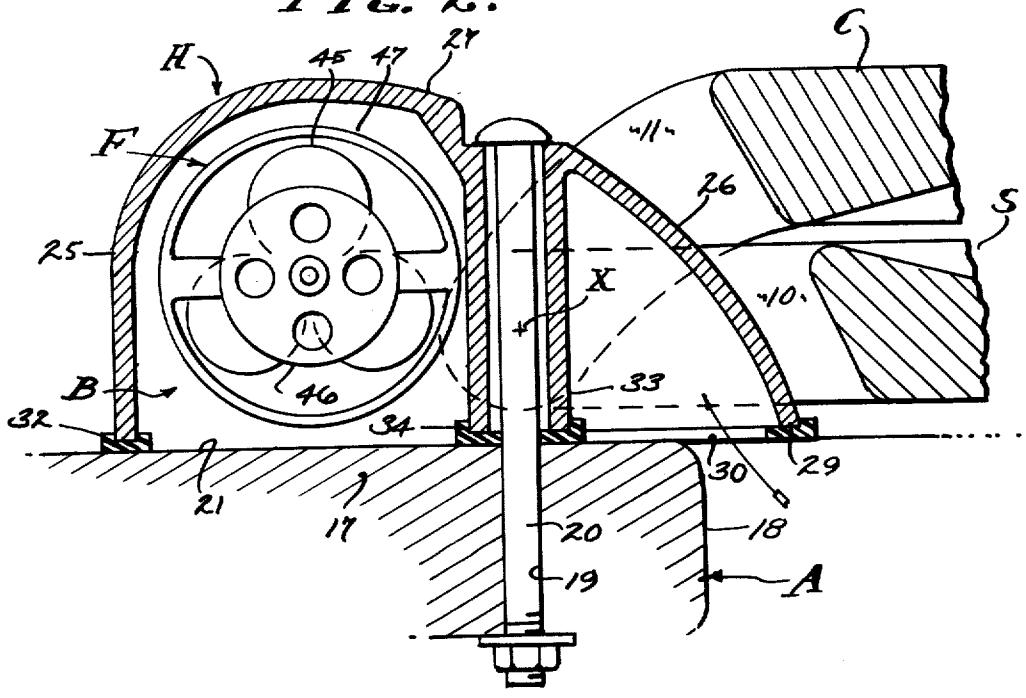

H
45
47
27
C
F
11
26
S
25
X
10
B
46
33
32
34
30
29
21
17
20
18
19
A

FIG. 3.

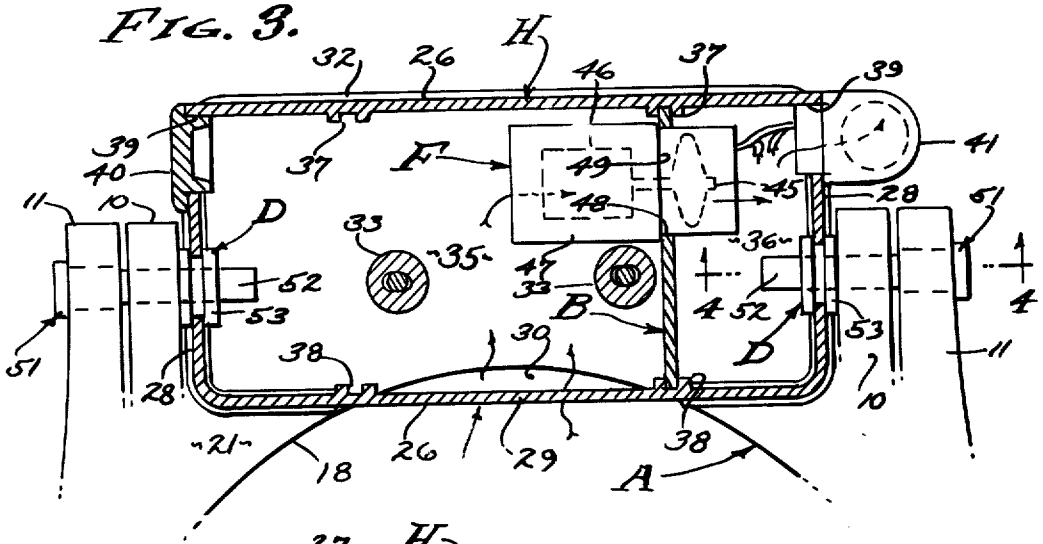


FIG. 4.

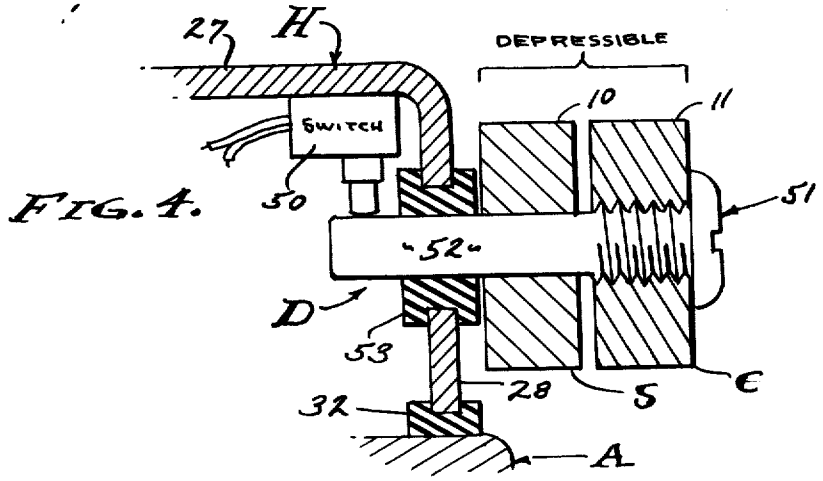
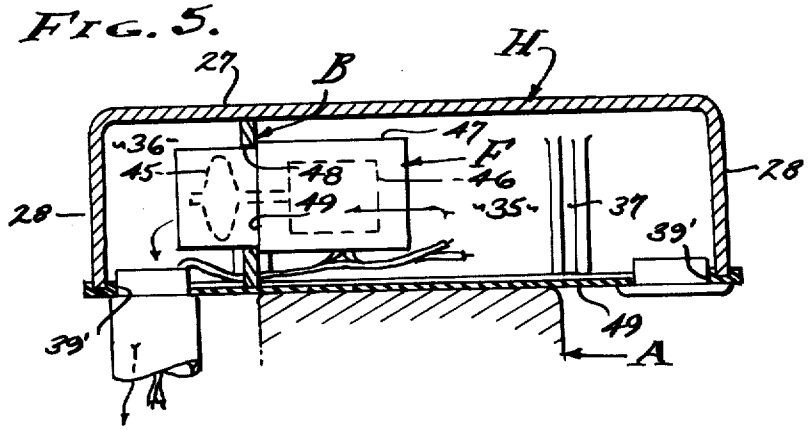


FIG. 5.



VENTILATED SEATING FOR A WATER CLOSET

BACKGROUND

This invention relates to water closets used in lavatories for the disposal of human excrement and the like. Water closets, or toilets, are made in the form of fixtures for permanent installation in bathrooms provided with usual ventilation such as windows and exhaust fans for removing odors. However, the discharge of flatus and the exposure of feces and urine as it is deposited within the toilet results in the rapid dispersion of obnoxious gases into the atmosphere, which not only fills the bathroom chamber but will carry into hallways and other rooms. Obviously, the gaseous permeation of the surrounding atmosphere is objectionable and to this end it is a primary object of this invention to eliminate the dispersion of obnoxious toilet odors. With the present invention the toilet odors are drawn from the despository source and ventilated to a remote discharge point.

There have been ventilated water closets and ventilated seating arrangements therefor, but not without complexity and resort to great expense. Accordingly, it is an object of this invention to provide a simple and practical means for ventilating a water closet, and which precludes the dispersion of odors into the lavatory or bathroom atmosphere. With the present invention, the usual number of components is involved in the seat construction, while the water closet per se remains unchanged. Therefore, it is a further object to provide a ventilated seat which is universally applicable to standardized toilet configurations entirely without modification or change thereto.

An object of this invention is to provide automatic blower operation in a ventilated seat of the character referred to, responsive to a person's body weight applied to the seat, and all without resort to the usual secondary switch operating mechanism, and without exposure of extraneous parts.

It is also an object to provide a toilet seat ventilator which is reversible with respect to right and left hand installation, re discharge of air, and to this end it is a matter of assembly, the parts remaining identical in either instance.

It is still another object of this invention to provide a sanitary and safe ventilated seating of the character thus far referred to, a low power electrical system being employed with static installation thereof in no way affected by the usual movements of the toilet seat and cover.

DRAWINGS

The various objects and features of this invention will be fully understood from the following detailed description of the typical preferred form and application thereof, throughout which description reference is made to the accompanying drawings, in which:

FIG. 1 is a perspective view of a water closet with the ventilated seating installed thereon to discharge to the right.

FIG. 2 is an elevational sectional view taken as indicated by line 2—2 on FIG. 1.

FIG. 3 is a plan section of the ventilated seating installed so as to discharge to the left.

FIG. 4 is a fragmentary sectional view taken as indicated by line 4—4 on FIG. 3.

FIG. 5 is a transverse elevational sectional view of the ventilated seating illustrating an embodiment wherein discharge is from the bottom thereof.

PREFERRED EMBODIMENT

From the drawings it will be seen that a water closet A of standardized configuration is adapted to receive the installation of the vented seat assembly which comprises generally, an adapter housing H, a seat S and a cover C. The seat and cover are of the usual construction with opposite side extensions **10** and **11** respectively, that project rearward to be pivoted on a transverse horizontal hinge axis X. The contour and design of the seat and cover can vary as required, characterized by the wide spacing of the side extensions **10** and **11.** In accordance with this invention, I provide the adapter housing H that incorporates the essential features including; a bulkhead B, a fan means F, and a control hinge D. It will be observed that these means included in the adapter housing H are statically mounted, it being understood that the fan means F has a revolving element and that the control hinge D has a movable switch element.

Generally, the water closet involves a bowl **15** and a tank **16** supported at the rear of a planar extension **17** of the bowl rim **18.** Rearward of the rim **18** there is a pair of spaced fastener openings **19** to which the adapter housing H is attached by the usual through bolts **20** with nuts and washers applied beneath said extension. As shown, there is a substantial platform-like space or area **21** between the rim **18** and tank **16,** and where the adapter housing H is accommodated. The extension **17** and its platform area is of substantial width which varies in different toilet designs, and the transverse inter-axis spacing of the openings **19** varies somewhat within standardized extremes.

Referring now to the adapter housing H, a downwardly open shell is provided for supported engagement upon the extension area **21** and includes a back **25** and a front **26** joined by a top **27,** and all of which extends between opposite ends **28.** The wall members **25–28** are integrally cast and shaped so as to fair one into the other, higher at the back, and the top and front tapered downwardly and forwardly with a lip **29** overlapping the rim **18.** In practice, the lip **29** is straight and the overlapped rim **18** is concaved, in which case a chord-shaped inlet **30** opens downwardly into the toilet bowl. The downwardly disposed edges of the wall members **25–28** are coplanar and carry an elastomeric gasket seal **32** for tight cushioned support against the vitreous enamel of the fixture. Transversely spaced tubular posts **33** are provided that depend from the top **27** to pass the through bolts **20.** The openings through the posts **33** are oversized and slot-shaped so as to accommodate the expected variations in hole pattern. The downwardly disposed faces of the posts are coplanar with the aforementioned downwardly disposed edges and carry an elastomeric washer or pad **34** that establishes the height of the housing while protecting the surface of the fixture.

In accordance with this invention, the adapter housing H establishes a chamber in which the assembled placement of the bulkhead B defines inlet and discharge plenums **35** and **36** respectively. The bulkhead B is selectively placed in one of two positions established by guides **37** and **38** at the insides of the back **25** and front **26** respectively, said guides being channels or

the like. Thus, the bulkhead B in the form of a plate conforming to the chamber cross section readily slides into and out of working position. As shown, the bulkhead guides **37** and **38** are each adjacent to the spaced posts **33** and divide the housing chamber into three sections, the center inlet plenum **35** and opposite like exhaust plenums **36.** It is to be understood that but one exhaust plenum **36** is formed in either instance.

The fan means F is provided to exhaust air from the toilet bowl and through the inlet **30** and plenum **35** to the exhaust plenum **36.** At opposite ends **28,** and preferably adjacent the back **25,** there are opposite exhaust openings **39** and one of which is plugged by a closure **40,** the opening **39** at the plenum **36** established by the selective location of bulkhead B remaining open. In carrying out this invention, a discharge duct **41** plugs into the discharge plenum opening **39** and extends to an appropriate discharge point, for example into a basement or attic area or out of doors. It is a simple matter to provide a kit for the assembly of the duct **41,** and through which electrical wiring supplies power to the fan means next to be described.

The fan means F can vary as to type and is preferably an axial flow fan **45** driven by an electric motor **46** mounted in an elongated tube **47.** The bulkhead B is provided with an opening **48** to pass the fan mounting tube, there being a shoulder **49** on the tube for establishing its working position. In practice, the tube **47** presses into opening **48** so that it can be directionally reversed with respect to the bulkhead as the installation requires. Thus, the fan means F can be directed to draw from plenum **35** and to discharge into plenum **36** for exhausting air through the duct **41.** A low voltage motor **46** is preferred, in which case a transformer reduces voltage at the source of power which is conducted by the aforementioned wiring through duct **41,** as is indicated.

A feature of the present invention is the static mounting of all working components and the elimination of control mechanisms that are usually employed. Accordingly, the control hinge D is provided which directly actuates a motor control switch **50**; devoid of intermediate mechanism. The rearward extensions **10** and **11** of seat S and cover C are provided with bearing openings that coincide with axis X to receive trunions **51** secured as by means of threads into the outermost extensions **11** in each instance. Each trunnion then has a pin **52** that projects through the end **28** of the adapter housing H, there being a depressible bushing **53** held in a bearing opening through said end and adapted to permit radial displacement of the trunnion pin **52** when a person's body weight is applied to the seat S or cover C. In practice, the bushing **53** is made of an elastomer that is yielding and which returns to a coaxial condition when said depressing weight is removed. The switch is normally open and mounted to the housing top **27** so as to close when the trunnion pin **52** is so depressed to move away from said switch.

In adapting this blower unit to various types and styles of toilets, clearance for the duct **41** can be accommodated. In FIG. **1** the planar extension **17** is substantially the width of the bowl **15** and there is a generous space between the hinge bolts **20** and the tank **16**; therefore, it is advantageous to provide the exhaust openings **39** in the opposite ends **28.** However, there are types of toilets that have narrowed planar extensions **17** and wherein the distance between the hinge bolts **20** and tank **16** is minimized; and in this case the cross section of the adapter housing is minimized as circumstances require and the exhaust openings **39'** are out of the bottom **49** formed as of plastic material, at its opposite end portions that project beyond the sides of said extension **17** (see FIG. **5**).

From the foregoing it will be seen that the usual number of components is provided, that the seat S and cover C are essentially unchanged, and that the adapter housing is a static installation of little or no greater height than a normally combined seat and cover. The closing of switch **50** is automatic when the toilet is used, and the exhaust draft is immediate to the discharge of excrement an odors arising therefrom, and consequently there is no contamination of the chamber atmosphere when the toilet is in use.

Having described only typical preferred forms and applications of my invention, I do not wish to be limited or restricted to the specific details herein set forth, but wish to reserve to myself any modifications or variations that may appear to those skilled in the art.

I claim:

1. Seating for adaption to a water closet comprised of a bowl for receiving and disposing of excrement and the like, the bowl having a concavely curved inner rim and a flattened hinge area extending outwardly and rearward from said rim at each side of the water closet and including, an means to immovably fix an adapter housing to said hinge area and having walls forming a chamber with a lip to engage upon the hinge area and overhang the said concavely curved rim of the bowl forming thereby a downwardly opening inlet from the bowl into said chamber and having hinge means disposed on a transverse axis, fan means within the said chamber exhausting air therefrom and through an exhaust opening and tube extending to a remote discharge point, there being a seat, and trunnions pivoting the seat to the adapter housing on said hinge means and wherein there is a bulkhead and means for selectively locating said bulkhead.

2. The seating for a water closet as set forth in claim **1,** wherein the bulkhead is located over the hinge area at one side of the water closet to thereby divide the adapter housing chamber into an enlarged inlet plenum and a diminished exhaust plenum, and wherein the fan means draws air through said bulkhead into said exhaust plenum and through said exhaust opening.

3. The seating for a water closet as set forth in claim **1** wherein there is means for selectively locating the bulkhead over the hinge area at either side of the water closet to thereby divide the adapter housing chamber into an enlarged inlet plenum and a diminished exhaust plenum, and wherein the fan means draws air through said bulkhead into said exhaust plenum and through said exhaust opening.

4. The seating for a water closet as set forth in claim **1,** wherein there is means for selectively locating the bulkhead over the hinge area at either side of the water closet to thereby divide the adapter housing chamber into an enlarged inlet plenum and a diminished exhaust plenum, and there is means to reversibly insert the fan means into said bulkhead to draw the air therethrough into said exhaust plenum and through said exhaust opening.

5. The seating for a water closet as set forth in claim **1,** wherein there is remotely useable exhaust openings

in the adapter housing with means to selectively plug either of the same.

6. The seating for a water closet as set forth in claim 1, wherein there is means for selectively locating the bulkhead over the hinge area at either side of the water closet to thereby divide the adapter housing chamber into an enlarged inlet plenum and a diminished exhaust plenum, wherein there are opposite and remote exhaust openings closed by selectively removable plugs inserted into the adapter housing and positioned to open from the exhaust plenum established by the selectively located bulkhead, and wherein the fan means draws air through said bulkhead and into said exhaust plenum and through said exhaust opening.

* * * * *