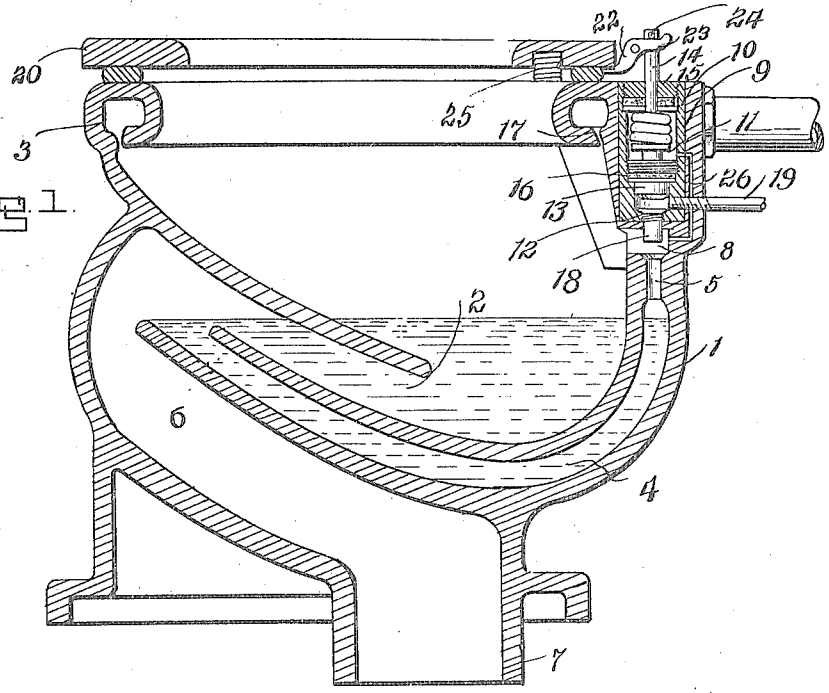
Oct. 2, 1928. 1,685,891

W. M. WATKINS ET AL.

WATER CLOSET VENTILATOR

Filed Feb. 15, 1927

Fig. 1.



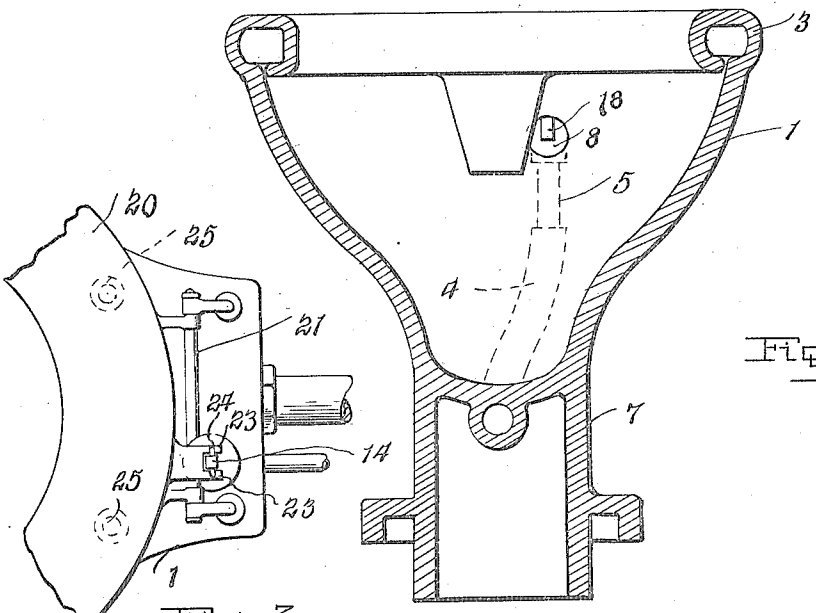


Fig. 2.

Fig. 3.

Inventor

G. C. Finley

W. M. Watkins

By Lacey & Lacey, Attorneys

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UNITED STATES PATENT OFFICE.

WILLIAM M. WATKINS AND GEORGE C. FINLEY, OF LONG BEACH, CALIFORNIA.

WATER-CLOSET VENTILATOR.

Application filed February 15, 1927. Serial No. 168,394.

The present invention is directed to improvements in water closet ventilators.

The primary object of the invention is to provide simple and efficient means operable to withdraw or remove foul gases or objectionable odors from the closet bowl to maintain the same in a constant state of ventilation.

A further object of the invention is to provide a device of this character so constructed as to be automatically placed in operation when the closet seat is occupied and maintained in an inoperative state when the seat is unoccupied.

A further object of the invention is to provide a device of this character constructed in such manner that the ventilating unit is supplied with water under pressure, the passage of water serving to withdraw gases from the bowl.

In the accompanying drawing:

Figure 1 is a vertical longitudinal sectional view through the device.

Figure 2 is a detail transverse sectional view, the ventilating duct being indicated in dotted lines.

Figure 3 is a fragmentary top plan view.

Referring to the drawing, 1 designates a bowl of conventional shape and formed with the usual trap 2 and hollow flush water rim 3.

The bowl is provided with a curved conduit 4 which extends under the trap 2 and has its upper or intake end provided with a restricted duct 5. The lower or outlet end of the conduit opens adjacent the discharge passage 6, said passage being normally sealed by the flush water in the bowl. This passage, as customary, communicates with the neck 7 which fits into a sewer pipe, not shown, and into which the contents of the bowl is discharged.

Formed in the rear wall of the bowl and so located as not to interfere with the entrance of flush water is an open-sided chamber 8, the open side of which communicates with the interior of the bowl at a point above the water line thereof.

The bottom of the chamber 8 is in communication with the upper end of the duct 5 in order that gases from the bowl can be drawn therefrom into the conduit 4 in a manner to be hereinafter explained.

Formed in the rear wall of the bowl immediately above the chamber 8 is a recess 9 into which is fitted a valve casing 10 provided with an annular chamber 11, the base of which is formed with a valve seat 12 normally closed by the cylindrical valve 13.

The valve 13 has its stem 14 slidably mounted in the vertically spaced packing glands 15 and 16 threaded in the chamber 11. Surrounding said stem and having its lower terminal resting upon the gland 16 is a coil spring 17. The lower end of the spring 17 rests upon the gland 16. The upper end of the stem 14 extends a short distance above the gland 15.

Seated in the top wall of the chamber 8 is the lower end of the injector nozzle 18, said nozzle having its upper end fitted in the seat 12, while the lower end thereof is positioned adjacent the entrance end of the duct 5. It is through this nozzle that the water is injected into said duct to create a suction therein to draw gases from the bowl. In order to conduct water to the nozzle 18 a pipe 19 is employed, the inner end of which extends through the rear wall of the bowl and is fitted in the valve casing 10, water to the pipe being furnished from a suitable source.

A seat 20 is pivotally connected to the bowl by a hinge unit 21 having an angle arm 22 fixed thereto, said arm having its rear end provided with spaced fingers 23 upon which rests the cross pin 24 carried by the extended end of the stem 14. The seat 20 has springs 25 carried thereby which serve to normally hold the seat in a raised position and at which time the valve 13 is seated, and it will be obvious that when the seat is occupied the valve 13 will be unseated.

Briefly, the operation is as follows:

When the seat 20 is occupied the valve 13 is unseated and water from the pipe 19 will pass into the nozzle 18 and will be discharged therefrom into the restricted duct 5 in jet form. The column of water passing through the conduit 4 will create a vacuum in the chamber 8 and bowl, thereby drawing the gases from the bowl and through the duct 5 to be discharged into the passage 6, and from thence into the sewer pipe. The supply of water to the nozzle will be stopped when the seat is unoccupied, and at which time the spring 17 holds the valve 13 positively seated.

In order that any water which passes through the gland 16 may be returned to the chamber 8, and thence to the bowl 1, a drain duct 26 is provided, as clearly shown in Figure 1.

Having thus described the invention, we claim:

A water closet bowl having a discharge passage and a conduit, said bowl having a recess formed therein, a valve casing mounted in the recess and having a seat in its lower end, a water supply pipe communicating with the casing above the seat, a valve cooperating with the seat, and normally cutting off the supply of water from the said pipe to the seat, said bowl having a chamber therein opening into the interior of the bowl, an injector nozzle fitted in the seat and extended into the chamber, said nozzle serving to discharge water into the conduit when the valve is unseated, to draw air from the bowl into the chamber for discharge into the conduit and a second conduit connecting the chamber and recess.

In testimony whereof we affix our signatures.

WILLIAM M. WATKINS. [L. S.]
GEORGE C. FINLEY. [L. S.]