Jan. 12, 1932. C. M. SMALL ET AL 1,840,539

AUTOMATIC TOILET BOWL VENTILATOR

Filed Oct. 3, 1930

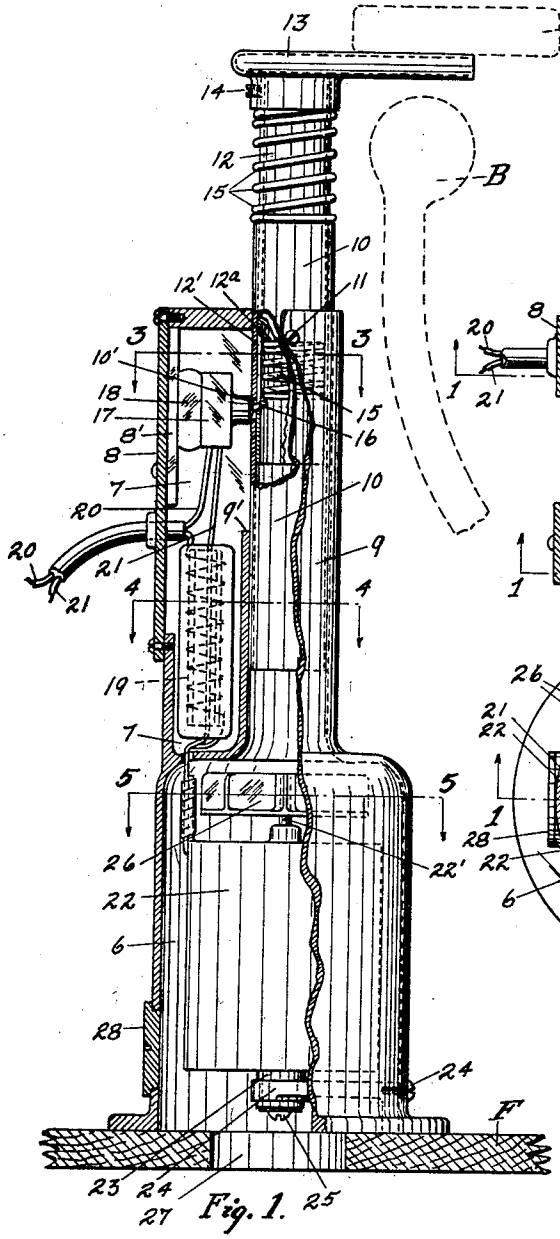


Fig. 1.

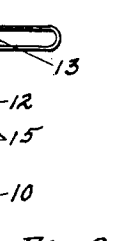


Fig. 2.

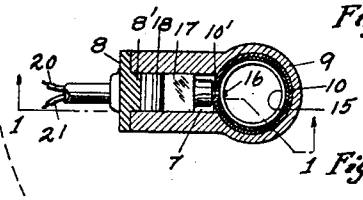


Fig. 3.

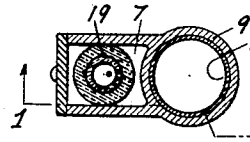


Fig. 4.

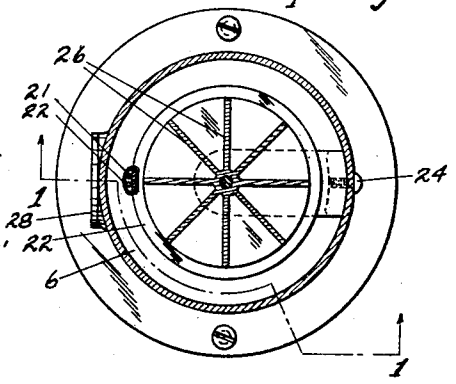


Fig. 5.

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UNITED STATES PATENT OFFICE

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AUTOMATIC TOILET BOWL VENTILATOR

Application filed October 3, 1930. Serial No. 486,132.

Our invention relates to automatic toilet bowl ventilators of the type to be automatically started to operate by sitting upon the bowl, and it has among its salient objects to provide a compact, self-contained and practical ventilator of the type referred to which can be mounted close to the bowl and opening through the floor with motor driven blower therein adapted to suck fumes and air from the bowl and to discharge it downwardly and out through the floor; to provide a device in which a motor and fan driven thereby are mounted within and axially of the main body or housing of the device and arranged to discharge the air and fumes downwardly after sucking them inwardly from the bowl; to provide a simple and practical means for automatically operating a current-controlling switch with every pressure upon the seat and every release of such pressure, whereby the motor is started and operated during the occupancy of the seat; to provide therein simple resistance interposed between the source of current supply and the motor which drives the fan, whereby the ordinary current common in residences can be used.

In order to explain our invention, we have illustrated the same on the accompanying sheet of drawings, which we will now describe.

Figure 1 is a side elevation of a ventilator embodying our invention, partly in section to show the interior construction and arrangement;

Figure 2 is an edge view of the suction nozzle;

Figures 3, 4 and 5 are cross sectional views taken on the lines 3—3, 4—4, and 5—5 of Fig. 1.

Referring now in detail to the drawings, our invention as here illustrated, comprises a main body or housing with a motor and fan chamber 6, switch and resistance chamber 7, with removable cover 8, and a tubular portion 9, extending to the top of the body and united with the portion forming the chamber 7, but with its side within said chamber 7 extending only part way up, as indicated at 9′. Adjustably mounted within said tubular portion 9, is a tube 10, extending down into the body and slightly above, with a set screw 11, for holding it in adjusted place. This tubular member 10 has telescoping within it, at its upper end, a tube 12, provided at its upper end with a suction nozzle 13, projecting from one side thereof, and adapted to be inserted between the top of a toilet bowl B, indicated in light broken lines, and the bowl seat S, also indicated in light broken lines, said nozzle being secured in place by means of a set screw 14. A coiled spring 15 is placed around the tube 12, under said nozzle and resting at its lower end upon the upper end of the tubular member 10, as clearly illustrated. The lower end of the telescoping tube 12, is provided with a slot 12′, with a struck-in lip 12ª at the upper end of the slot 12′, to form the upper abutment for a coiled spring 15, placed within said telescoping tube 12, and at its lower end, said spring bears upon the lever 16, of an electric switch 17, of common construction, projecting through an opening 10′ in said tubular member 10, and through said slot 12′, in the tube 12, as will be clear from Fig. 1. Said electric switch 17, is mounted upon a rubber piece 18, upon an inwardly projecting portion 8′ of the cover 8, so that when said cover 8 is secured in place, said switch will be yieldingly pressed into place, with its little lever 16 projecting into the tube 12 and under the spring 15. Also mounted within the chamber 7, with said electric switch 17, is a resistance coil 19, interposed in the circuit wires 20 and 21, from a suitable source of supply and extended to the switch 17, to the resistance 19, and thence to the motor 22, as shown in Fig. 1. The switch 17 controls the circuit to the motor 22, and the switch is operated as the tubular member 12 is moved down and up, as when the seat S, is depressed by the user. The spring 15 gives a yielding pressure upon the switch lever 16 so as to avoid weight resting upon said lever which would be too much for it to bear. The motor 22 is supported yieldingly upon a rubber pad or washer 23, upon a supporting arm 24, in the bottom of the chamber 6, and secured to the body by means of a screw 24. A screw 25 secures the motor to said arm 24. Mounted

upon the shaft 22′ of the motor, is a fan or blower 26, which forces air outwardly and downwardly within the chamber 6, and thus creates suction downwardly from the nozzle 13, through the tube 12 and down through the chamber 6 and out through an opening 27, in the floor F. In the side of the body, from the chamber 6, is an outlet opening with closure, designated 28, for use when it is not possible or convenient to put an opening through the floor. The tube 10, and the switch 17 and support 18 are all adjustable to compensate for bowls of different heights and are held in adjusted positions by the set screw 11.

Thus it will be seen that a practical, yet simple and economical ventilator is provided which can be easily installed in most places without much expense and little reconstruction; that the device is automatic, for when a person sits upon the seat S, the movement is just sufficient to depress the seat, S, nozzle 13, and spring 15, which rests upon and moves the lever 16 of the switch 17, and when the weight or pressure is released, the lower end of the slot 12′ in the tube 12, raises the switch and opens the circuit. The spring operated switch makes it practical and certain and puts only the necessary pressure upon the switch lever to move it.

We are aware that changes in details of construction and arrangement can be made without departing from the spirit of the invention, and we do not, therefore, limit the invention except as we may be limited by the hereto appended claims.

We claim:

1. An automatic ventilator for a toilet bowl including a body to be mounted along side of a bowl and having a motor therein, a fan driven by said motor and arranged to force air around said motor within said body to an outlet, a tubular portion extending from said body along side said bowl, a suction nozzle telescoping in said tubular portion, with its nozzle overlying said bowl, and circuit connection with switch to said motor, said switch being operatively connected for operation automatically with said telescoping members, whereby depression of said nozzle operates said switch.

2. In a ventilator for toilet bowl, a body for housing a motor and terminating in a reduced tubular portion, a motor in said body with blower fan mounted on said motor and driven thereby, a tubular member telescoping within said reduced tubular portion, a suction nozzle having a tubular part telescoping into said tubular member, spring means normally holding said suction nozzle raised, a source of electric energy connected with said motor, a switch, said switch being operatively connected with said nozzle for automatic operation with the depression of said nozzle, and an outlet from said body for discharge from said blower.

3. In a ventilator for toilet bowl, a body with motor and blower mounted therein, a suction nozzle therefrom with the nozzle positioned over the bowl and under the seat, said nozzle being yieldingly connected with said body, circuit connections for said motor, a switch having its lever projecting in the path of movement of said nozzle, and a spring interposed between said nozzle and said lever, whereby depression of said nozzle yieldingly actuates said switch to avoid undue weight upon said lever.

4. In a ventilator for a toilet bowl and seat, a ventilator body mounted along side of said bowl, a suction nozzle having a tubular portion telescoping into said body with its nozzle part under said seat over the edge of the bowl, a motor in said body, a blower driven by said motor within said body, said motor, blower and tubular portion being in axial alinement with each other, circuit connections to said motor, a resistance in said circuit, a switch in said circuit, said switch having a lever projecting into said tubular portion, and yielding means connecting said suction nozzle with said switch lever for actuating it with the depression of said nozzle, said body having a discharge opening.

Signed at Los Angeles, Los Angeles County, California, this 29th day of September, 1930.

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