March 12, 1946. L. N. HARBEKE 2,396,371

LAVATORY VENTILATOR

Filed July 18, 1944

Fig. 1

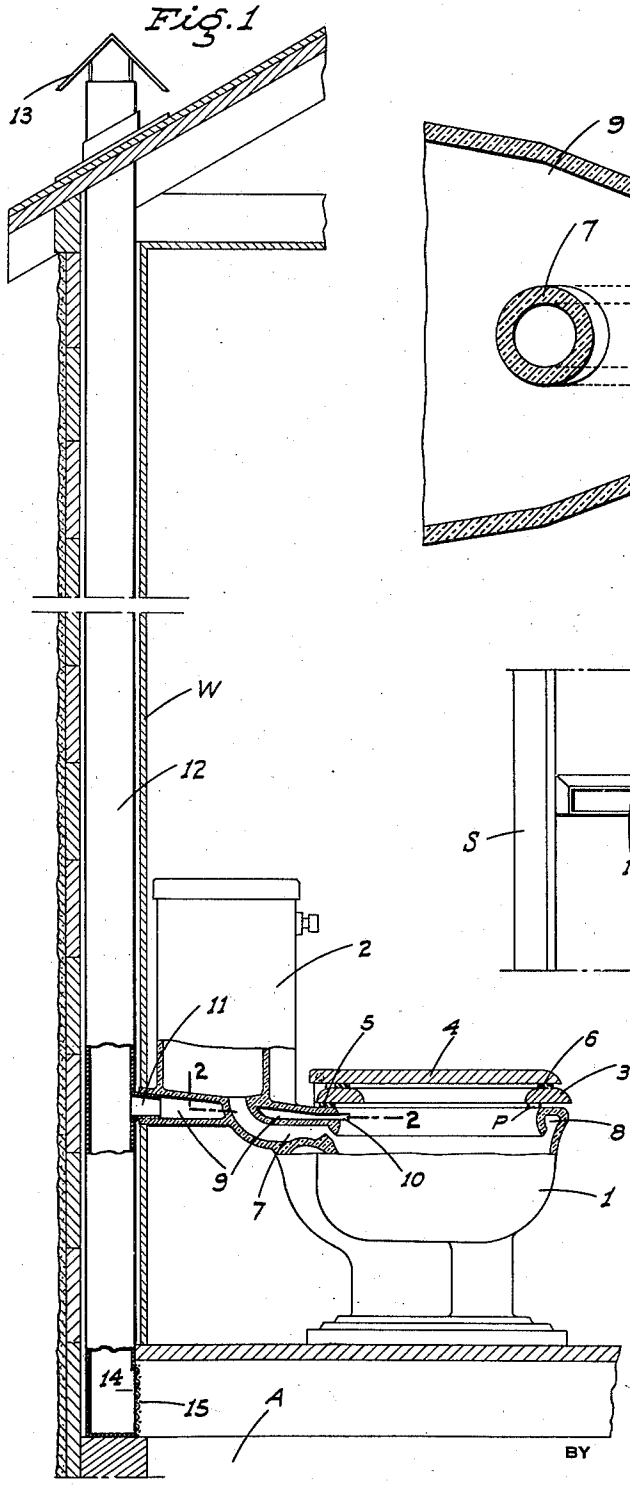


Fig. 2

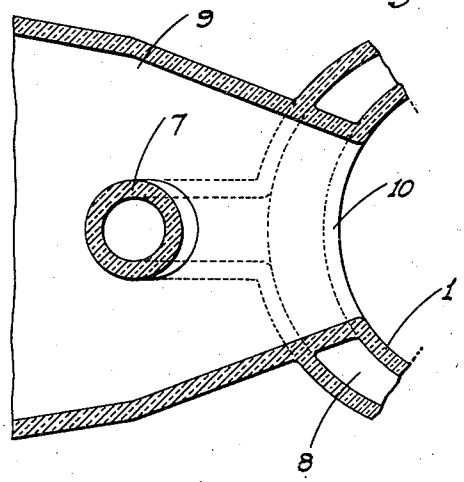
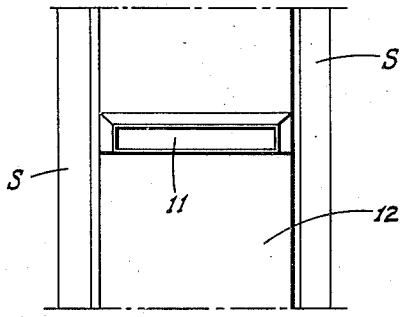


Fig. 3



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LAVATORY VENTILATOR

Louis N. Harbeke, Sacramento, Calif.

Application July 18, 1944, Serial No. 545,453

1 Claim. (Cl. 4—218)

This invention relates to lavatory or toilet ventilators, and particularly represents improvements over the structure shown in my Patent No. 2,161,863, dated June 13, 1939.

The objects of the present invention are to simplify and improve the construction and arrangement of the air passage from the toilet bowl and to provide for an increased and more positive draft from the bowl irrespective of temperature differentials within and exteriorally of the lavatory.

A further object of the invention is to provide a simple and inexpensive device, and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects I accomplish by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claim.

In the drawing similar characters of reference indicate corresponding parts in the several views:

Figure 1 is a side elevation, partly in section, of the improved lavatory structure.

Figure 2 is an enlarged fragmentary sectional plan on line 2—2 of Fig. 1.

Figure 3 is a fragmentary front view of the wall flue.

Referring now more particularly to the characters of reference on the drawing, a standard type of toilet bowl is indicated at 1 which, as is customary in modern practice, is arranged in unitary combination with a water tank 2. As is common practice, the bowl is provided with a hinged seat 3 and a hinged cover 4 for the seat. A continuous sealing gasket 5 is secured on the seat for engagement with the rim of the bowl; said gasket extending about the sides and back of the seat but leaving an opening or port P at the front. Another continuous sealing gasket 6 is fixed on the cover for engagement with the seat. These gaskets are preferably of resilient material, such as rubber or the like. A water supply passage 7 extends from the tank into the bowl at the rear and communicates with the usual water distributing channel 8 within the bowl at the rim; said passage 7 being formed with a short depending portion at the tank curving into a horizontal portion leading to the bowl.

The toilet combination with my improvement incorporated therein, and which is cast as an integral unit, includes a substantially horizontal ventilating passage 9 of rectangular cross section and relatively wide. This passage extends rearwardly from an intake port 10 opening into the bowl at the back and above the water intake. Said passage surrounds and bypasses the adjacent depending portion of the water passage 7 as shown in Fig. 2, and extends under the tank 2 to a termination a short distance rearwardly of the same, or to adjacent the wall W of the lavatory.

The passage gradually widens to its rear end and at such end has overlapping air-tight engagement with a lateral air intake fitting 11 formed on a vertical draft flue 12 intermediate the ends of the latter. This flue is preferably rectangular in cross section and is as large as is practicable to fit between adjacent studs S of the wall and between the inner wall W and the outer wall of the building, so that the flue is completely concealed. The flue is open at both ends, projecting at its upper end through the roof and there having a protecting hood 13. At its lower end the flue extends into any ventilated area A between the ground and the first floor level, which is not directly in direct communication with the living quarters of the building, the bottom opening 14 of the flue 14 preferably being screened as at 15.

In operation, by reason of the open ended flue a draft from the bowl will be had at all times. If the temperature outside is greater than that in the zone of the flue, the draft would be downward through the flue and air would discharge from the same at its lower end or into the area A. On cold days, on the other hand, when the air inside the building or in the zone of the flue is warmer than the outside, the flow through the flue would be from the area A upwardly.

Since the velocity of the air moving in either direction through the flue causes a decrease in pressure at the intake fitting 11, the air from the passage 9 and the toilet bowl will be drawn into the flue and carried along with such moving air. Due to the straight form of the air passage 9, which leads directly to the flue from the bowl without any angles or corners, the resistance to travel of the air along said passage from the bowl is minimized, and the desired action is obtained with a relatively low velocity of air in the flue.

Due to the cutting away of the gasket at the front there is never any stoppage of the flow of air into the passage 9, and any odors in the room itself will be carried off into the flue. Also the movement of air into the passage 9 will be across the bowl from the front, further insuring the efficiency of the action of the ventilating apparatus.

While I have here shown the ventilating air

passage as being incorporated in a certain design of unitary tank and bowl toilet combination, it will be understood and obvious that said passage can be incorporated in other styles and types of bowl and water-intake combinations.

From the foregoing description it will be readily seen that I have produced such a device as substantially fulfills the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claim.

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

A toilet structure including a water tank, a bowl, a flushing rim about the upper periphery of the bowl, a water supply pipe leading from the tank into communication with the bowl and flushing rim, such pipe including a vertical portion and a horizontal portion, a ventilating duct opening into the bowl above the horizontal portion of the pipe and through the flushing rim, the bottom of the tank forming a portion of the top wall of the duct, and the other walls of the duct spaced from and around the vertical portion of the water pipe and projecting to a point beyond the rear of the tank, the duct lying in a substantially continuous horizontal plane from end to end thereof.

LOUIS N. HARBEKE.