Jan. 18, 1927. 1,614,622

F. MAHNKEN

VENTILATED SEAT

Filed July 20, 1926 2 Sheets-Sheet 1

Fig. 1.

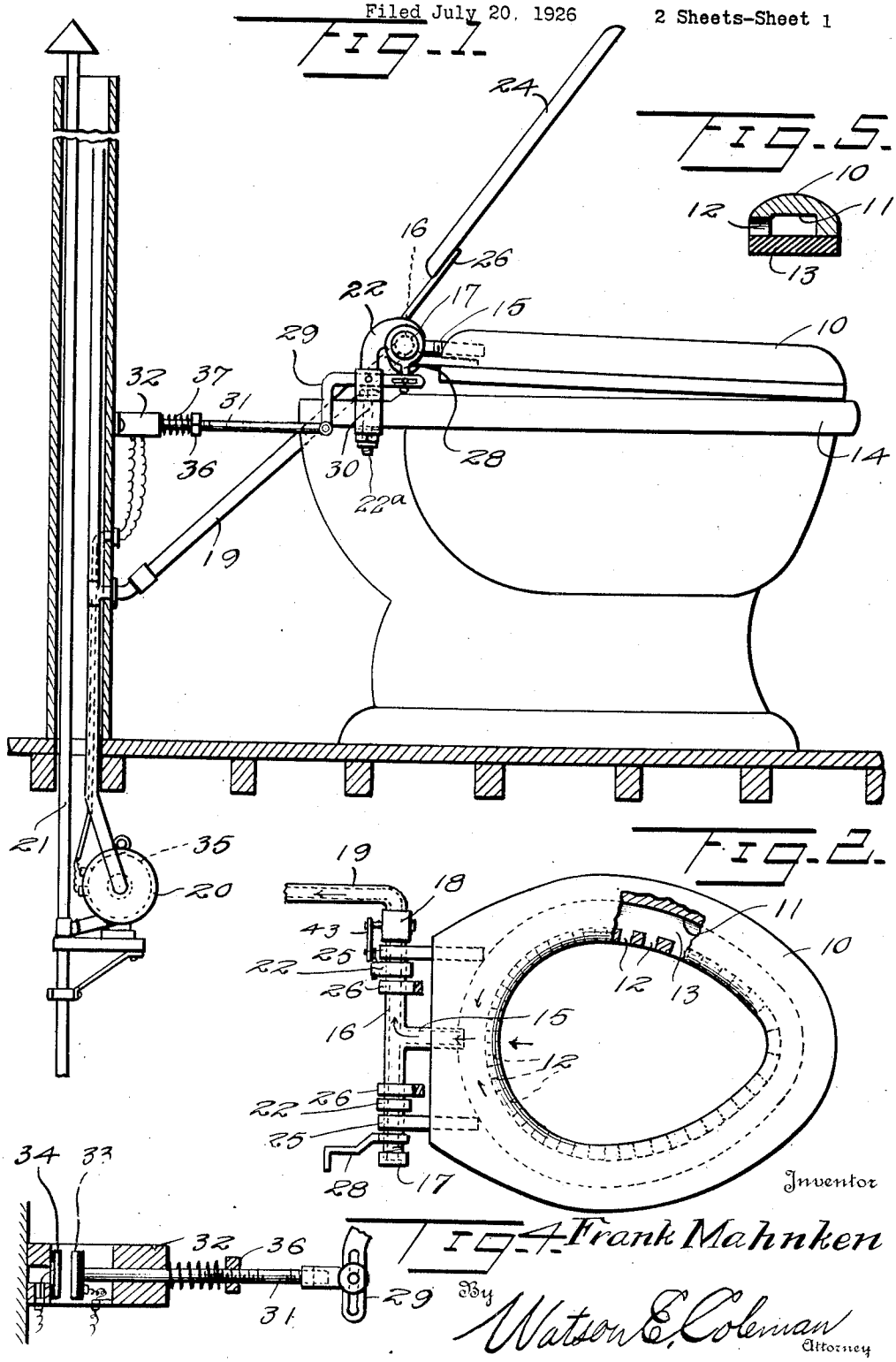


Fig. 5.

Fig. 2.

Fig. 4.

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Filed July 20, 1926 2 Sheets-Sheet 2

Fig. 3.

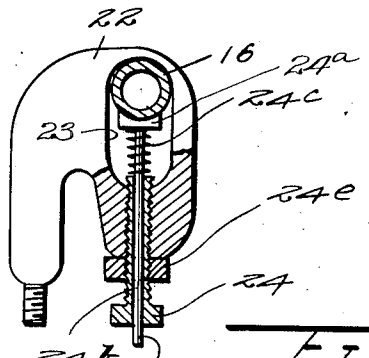


Fig. 6.

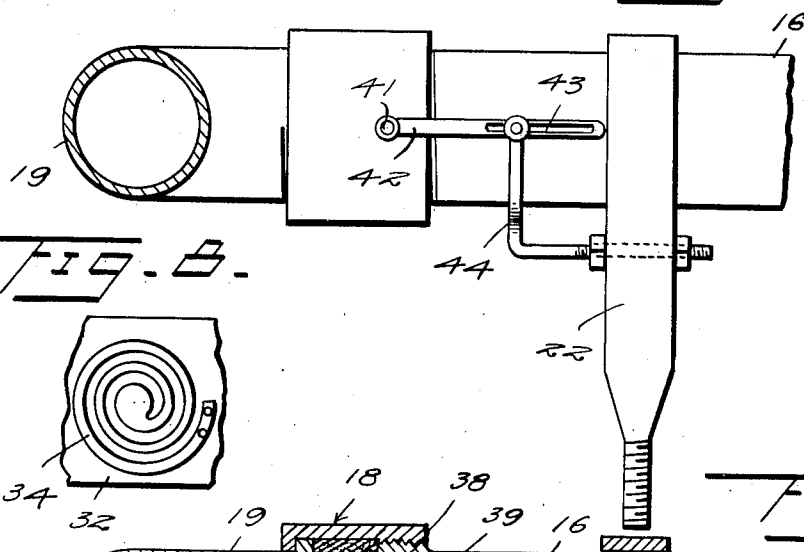
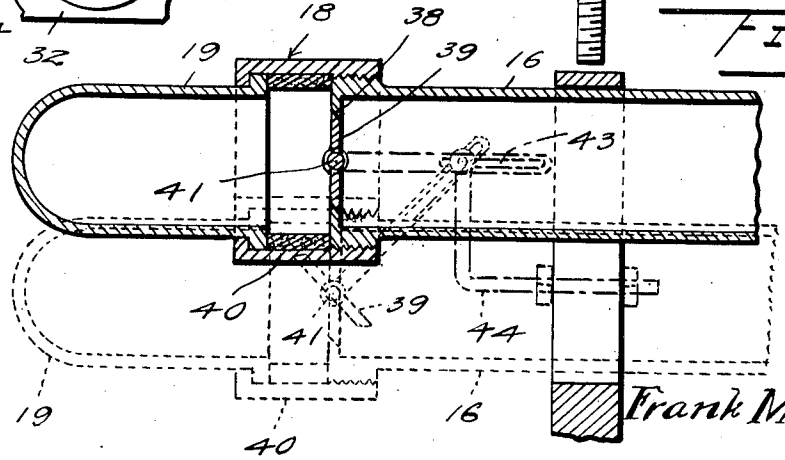


Fig. 8.

Fig. 7.



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Patented Jan. 18, 1927. 1,614,622

UNITED STATES PATENT OFFICE.

FRANK MAHNKEN, OF BEARDSTOWN, ILLINOIS.

VENTILATED SEAT.

Application filed July 20, 1926. Serial No. 123,730.

This invention relates to ventilated seats and more particularly to a means for providing forced ventilation of the seats of closet bowls.

An important object of the invention is to provide a device of this character which is automatic in its operation and in operation only when the seat is occupied.

A further object of the invention is to provide a device of such character that it may be constructed employing a seat similar to the seats now employed upon the closet bowl.

A further object of the invention is to provide a ventilating apparatus of this character wherein the ventilation is provided through the seat proper and the construction is such that movement of the seat from open to closed position is not interfered with.

A further object of the invention is to provide in a device of this character a ventilating conduit, the operation of which is controlled by a check valve which is likewise operated by the seat, so that a plurality of bowls may be connected in series with a single motor and at the same time the ventilating apparatus operates only with the occupied seat.

These and other objects I attain by the construction shown in the accompanying drawing, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a side elevation showing ventilating apparatus applied to the seat of a closet bowl in accordance with my invention;

Figure 2 is a plan view of the seat and its mountings partially broken away to show the chamber within the seat;

Figure 3 is a sectional view showing the pivot eyes in which the seat hinge is mounted;

Figure 4 is a sectional view through the controlling switch;

Figure 5 is a transverse sectional view through the seat;

Figure 6 is a detail rear elevation of a portion of the conduit showing the operating mechanism for the check valve;

Figure 7 is a vertical sectional view showing in solid lines the position of the valve, while the seat is elevated at its rear end and in dotted lines the position of the valve when the seat is depressed, the operating mechanism for the valve being designated in construction lines;

Figure 8 is a front elevation of the spring contact of the switch.

Referring now more particularly to the drawings, the numeral 10 indicates a closet seat which, in accordance with my invention, has formed in its under surface a cavity 11 providing an annular air chamber with which communicates notches 12 extending to the inner edge of the seat. The under surfaces of the cavity 11 and notches 12 are closed by a rubber gasket 13 which serves not only to close these under surfaces, but also as a gasket for engagement with the bowl 14 of the closet seat to seal the seat thereto. With the cavity 11 at the center of the back of the seat communicates the stem 15 of a tubular T, the head 16 of which has one end thereof closed by a cap 17 and the opposite end thereof communicating through a swiveled joint 18 with a conduit 19 leading to the intake of a suction fan 20, the exhaust of which communicates with a stack 21. At opposite sides of the stem are engaged pivot eyes 22 mounted in the usual manner upon the bowl 14 and having the eyes 23 thereof vertically elongated. Through the bottom walls of these eyes, adjusting screws 24 extend to limit the downward movement of the thrust blocks 24^a. The adjusting screws have axial bores 24^b and between the ends of the adjusting screws and the thrust blocks springs 24^c surround stems 24^d formed on these thrust blocks and directed through the bores of the adjusting screws. The adjusting screws may be locked in position by lock nuts 24^e. The head of the T is preferably provided with straps 25 engaging the seat and with other pivot straps 26 for engagement with the usual seat cover 27.

To the head of the T is secured an arm 28, the free end of which is engaged with one end of a bent lever 29 pivoted upon a suitably supported bracket 30 held in position by the attaching screw 22^a of one of the pivot eyes 22. This bracket is preferably mounted upon the bowl 14, as illustrated, and has its second end engaged with a rod 31, the opposite end of which is slidably directed through a guide 32 and provided with a contact 33 opposing the stationary spring contact 34. The contacts 33 and 34 are connected in the circuit of the motor 35 of the fan 20. The rod 31 has a threaded portion upon which is mounted a nut 36 between

which nut and the guide 32 a spring 37 surrounds the rod and constantly urges the rod in a direction shifting the end of the lever engaged by the arm 28 in a vertical direction. This tends to vertically shift the rear end of the seat 10 and to separate the contacts 33 and 34. When weight is applied to the seat, the downward movement thereof brings the gasket 13 in sealing engagement with the bowl 14 and through the arm 28, lever 29 and rod 31 brings the contacts 33 and 34 into engagement, closing the circuit of the fan and causing the air within the bowl to become exhausted.

In order that a plurality of bowls may be connected in series with the single ventilator fan for ventilation thereby, I form the end of the T head which engages with the swivel coupling 18 with a seat 38 for a butterfly valve 39. In the present instance, the swivel coupling is shown as an interiorly threaded sleeve 40 having engagement with each of the T head and the conduit 19. This sleeve is fixed to the T head 16 by the stem 41 of the valve which is directed therethrough and is provided exteriorly of the conduit with an arm 42, the free end of which is longitudinally slotted, as at 43. Secured to the adjacent pivot eye 22 is a fixed member 44, the extremity of which operates in the slot 43 of the arm 42. When the T head 16 is in its normal or elevated position, the arm is horizontally disposed and the valve 39 is closed. As the T head is depressed, the arm, by its engagement with the fixed member 44, has its free end elevated, with the result that the stem 41 of the valve is rotated and the valve moved to the open position. It will be obvious that during operation of the fan, ventilation of any seat except an occupied seat will be prevented.

Since the construction hereinbefore set forth is obviously capable of a certain range of change and modification without materially departing from the spirit of the invention, I do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

1. In combination with a closet bowl, pivot eyes having vertically elongated openings formed therein, a seat including a ventilator chamber communicating with the interior of the bowl, a conduit in communication with the chamber and engaged in said eyes, means in said eyes normally resiliently maintaining the conduit in elevated position within the eyes and yielding when the seat is occupied to permit the rear end of the seat to move downwardly, an exhaust fan communicating with the conduit, a valve in the conduit normally closing communication between the exhaust fan and the conduit and means operated by depression of the seat for opening said valve.

2. In combination with a closet bowl, pivot eyes having vertically elongated openings formed therein, a seat including a ventilator chamber communicating with the interior of the bowl, a conduit in communication with the chamber and engaged in said eyes, means in said eyes normally resiliently maintaining the conduit in elevated position within the eyes and yielding when the seat is occupied to permit the rear end of the seat to move downwardly, an exhaust fan communicating with the conduit, a valve in the conduit normally closing communication between the exhaust fan and the conduit, means operated by depression of the seat for opening said valve including a stem for said valve, an arm upon said stem and a fixed member carried by one of said eyes and having a terminal portion engaged in a slot formed in said arm.

In testimony whereof I hereunto affix my signature.

FRANK MAHNKEN.