

Oct. 9, 1934.

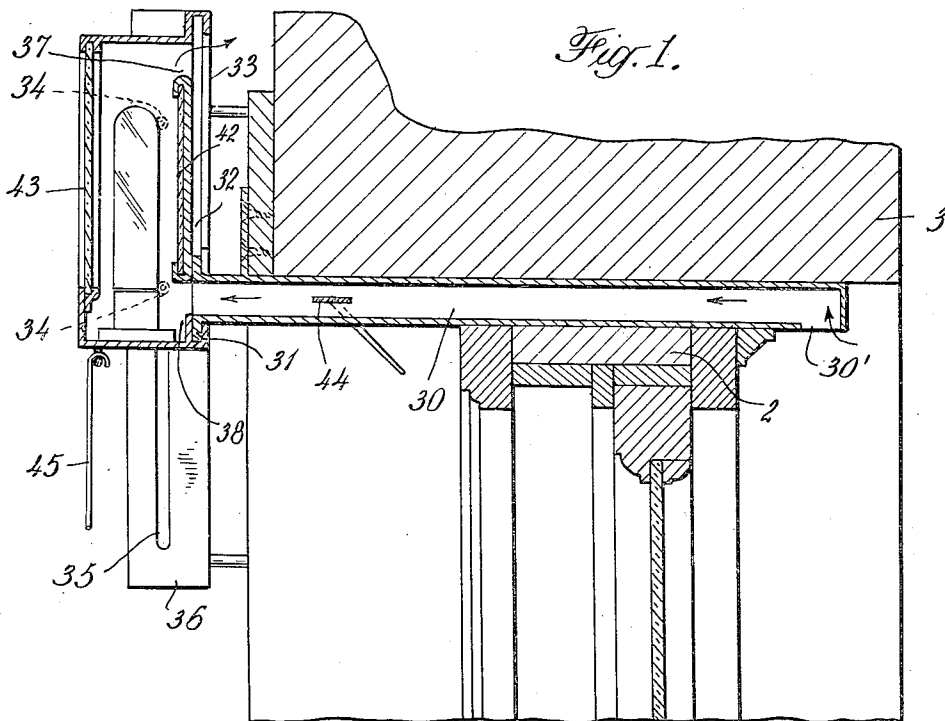
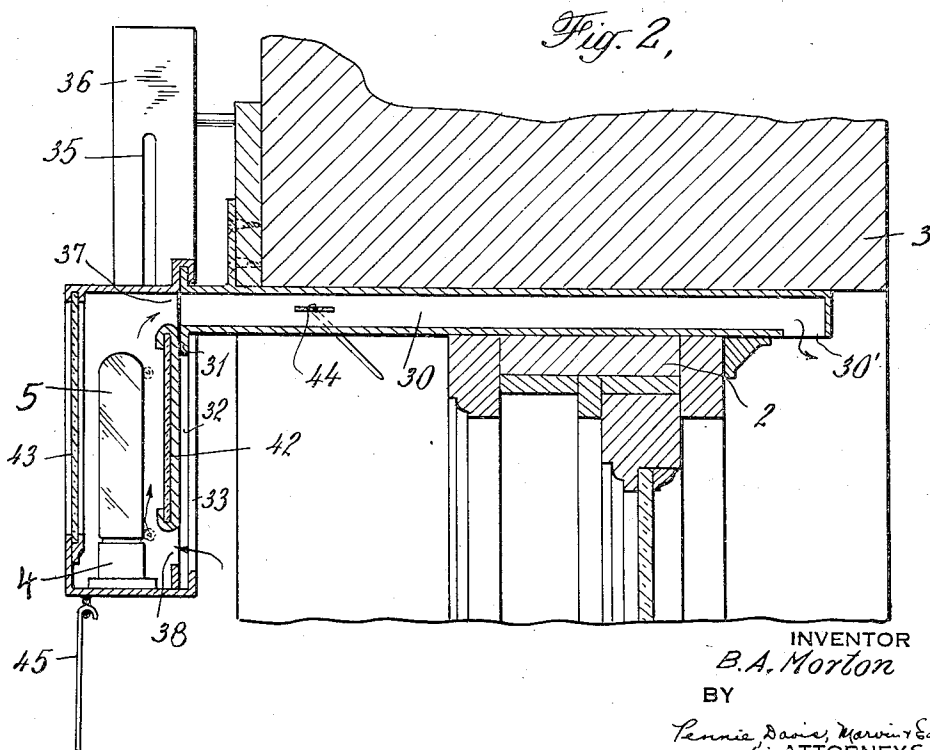
B. A. MORTON

1,976,032

VENTILATING DEVICE

Filed May 2, 1930

2 Sheets-Sheet 1



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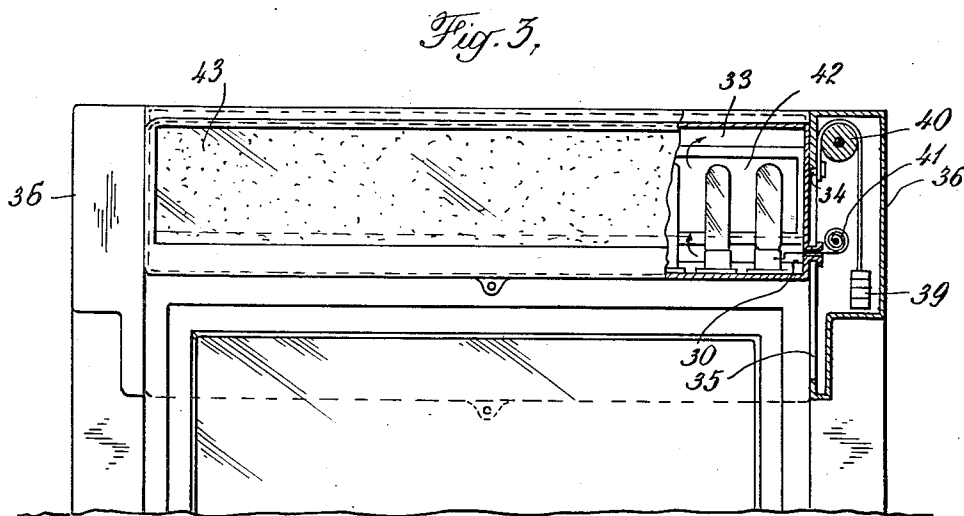
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UNITED STATES PATENT OFFICE

1,976,032

VENTILATING DEVICE

Benjamin A. Morton, New York, N. Y.

Application May 2, 1930, Serial No. 449,170

3 Claims. (Cl. 98—88)

This invention relates to devices for ventilating rooms, and its chief object is to provide a device which will furnish improved ventilation and improved control thereof, and will at the same time add directly to the illumination of the room.

Another object of the invention is to provide a device of this nature which will not only ventilate the room in an improved manner but by which also the temperature of the air in the room can be regulated in any desired manner.

A particular object of the invention is to provide a device of this character which may be incorporated in an ordinary window without any structural changes therein and which will be cheap to make and sell, yet simple in operation and durable in service.

A number of embodiments of the invention are shown in the accompanying drawings by way of illustration, but the invention itself is limited only by the scope of the sub-joined claims. In these drawings:

Fig. 1 is a vertical section of the device;

Fig. 2 is a similar view with some of the parts thereof in another position;

Fig. 3 is a front elevation of the device of Fig. 1 partly in section.

In Figs. 1 to 3, there is shown a device which is adapted to operate alternatively as either a foul air evacuator or as a fresh air feeder, without requiring in either case the use of shutters or the like. The device here shown comprises a relatively shallow, broad duct 30, which extends across the full width of the window between the lintel and the wall, and has an opening 30' along one edge communicating with the outside air. The inner edge of the duct member is flanged as at 31, and the side edges of these flanges fit into grooves 32 in a box or casing 33, which is thus adapted to be moved up and down bearing on the end of the duct. The box 33 bears a lug 34 on each side wall and this lug is adapted to slide in guideways 35 in a supporting member 36, attached to the wall alongside the window at each end of the box. There is a port 37 at the top edge of the back wall of the box 33, and a similar port 38 at the bottom edge thereof. Preferably these ports extend longitudinally the full width of the box. To each lug 34 there is attached a sash-weight device 39, the cord of which passes over a pulley 40; or, if desired the cord may be replaced by a tape passing around a spring pulley device. On the floor of the casing, a plurality of lighting-element sockets 4 are attached and connected electrically, preferably in multiple, in order that the illumination and heat given off by the box

may be varied at will to suit varying conditions. The lead and return wires of this system are wound, intermediate the casing and the wall, on a reel 41, whereby the effect on the wires of the vertical movement of the casing is accommodated by the winding and unwinding of a few turns of excess wire on the reel. The casing includes a reflector 42, which is adapted to serve as a light and heat reflector by being placed suitably close to the lamps 5 and being made of a smooth surface metal such as duralumin, burnished aluminum, or silver plated copper. The plate may be further provided with vertically extending corrugations, whereby the light it reflects is diffused throughout the room, instead of entering the same as a concentrated band of glaring light illuminating only one spot or region. The front of the casing is occupied by a glass light-diffusing member 43, whereby all the light rays emitted from the lamps are directed into the room, the reflector also acting as the back-plate of the draft inducing system. A shutter or valve 44 may be provided, where shown, to regulate the amount of air sucked into or discharged out of the box.

With the casing in the position shown in Figs. 1 and 3, the lamps heat the air in the casing and produce upwardly moving convection currents, which tend to pass through opening 37. Due to the draft-inducing cross-sectional structure of the casing, air is thereby positively drawn into the duct 30 from outside into the bottom of the casing, and upon entering the casing, becomes heated and is discharged into the top of the room through port 37.

By manipulating the push-pull rod 45 to lower the casing into the position shown in Fig. 2, the tops of the lighting elements, and the port 38, are now placed below the level of the duct 30 and the port 37 is thereby connected with the duct 30; hence, the convection currents rising from around the lighting elements will enter the duct 30 instead of entering the room, and the upward motion of these currents will now act to suck the current of foul air from out of the room up through the casing and discharge it positively to the outside through the duct 30.

I claim:

1. A window ventilation device, comprising a duct, the inner end of said duct being flanged, a box having grooves fitting the lateral edges of said flanges at the sides of the window, a support for the box at each end thereof, the box having an opening at the upper edge and at the lower edge of the back side thereof, the lateral

sides of the box having means whereby the box can be moved vertically to register first the upper opening and then the lower opening with the inner end of said duct, and means within the box for positively inducing the inflow of fresh air when the lower opening is registered with said duct and the outflow of foul air when the upper opening is registered with said duct.

2. A window ventilation device, comprising a duct, the inner end of said duct being flanged, a box having grooves fitting the lateral edges of said flanges at the sides of the window, a support for the box at each end thereof, the box having an opening at the upper edge, and in the lower edge of the back side thereof, the lateral sides of the box having means whereby the box can be moved vertically to register first the upper opening and then the lower opening with the inner end of said duct, and means within the box for positively inducing the inflow of fresh air and the outflow of foul air, the support at each side comprising a member having a sash-weight device connected at one end to said means

at the lateral sides of the box and a reel bearing wires forming an electric circuit connected at one end to a source of electricity and at the other ends to the means for inducing the flow of air through said box.

3. A ventilation device comprising a stationary duct having suitable outlets communicable to the interior and the exterior of a room, a container having one wall transparent, said container having openings adjacent its top and bottom for communication with said room and said duct, means within said container for illuminating the room and thereby contemporaneously inducing the flow of outside air into the room and alternately inducing the outflow of room-air into the outside and means for mounting the container to permit said container to be moved from one vertical position to another to place first one opening and then the other in communication with said duct to cause the change in flow of the air.

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