

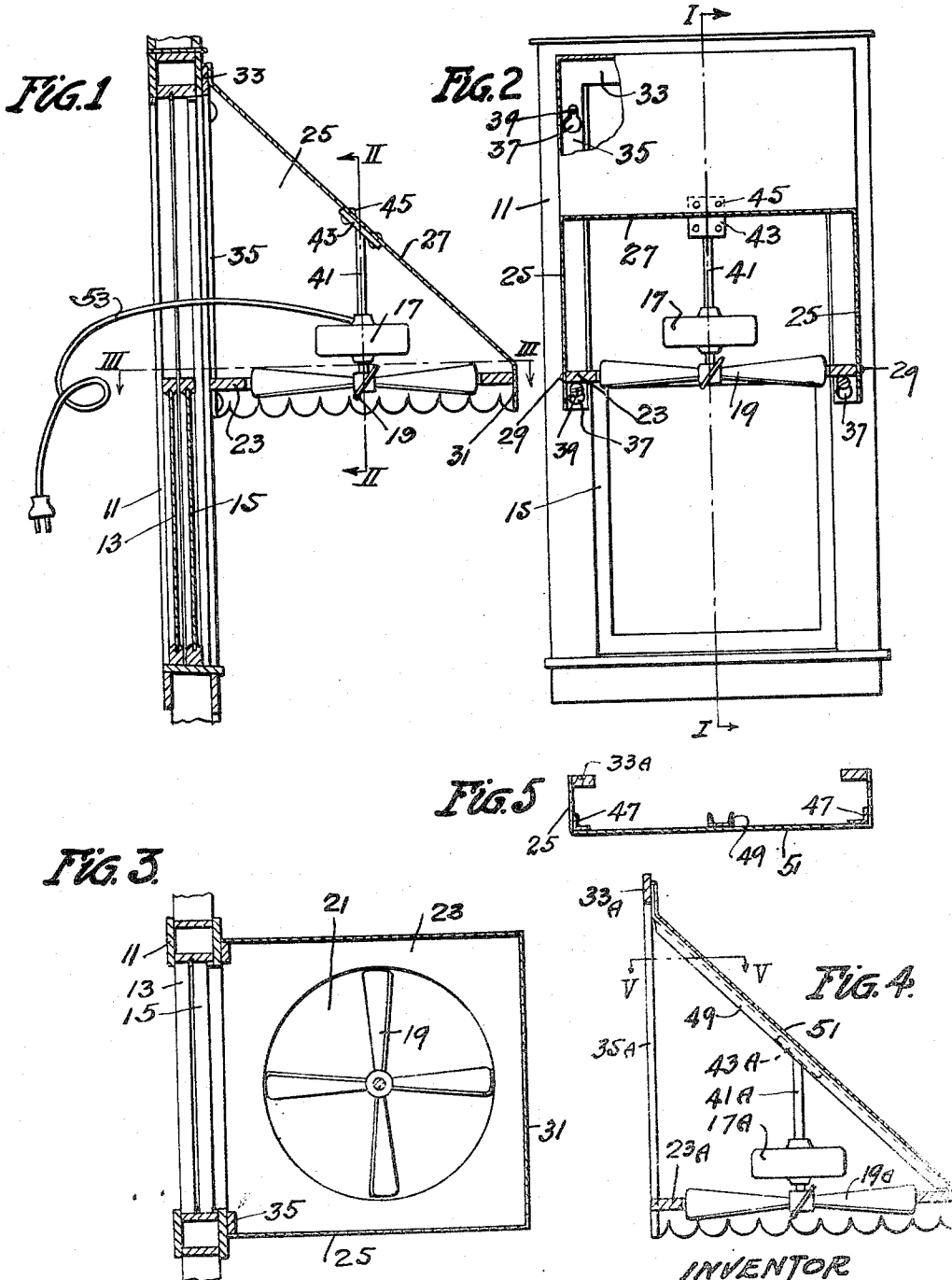
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AWNING FAN

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AWNING FAN

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3 Claims. (Cl. 98—94)

This invention relates to means for accomplishing room ventilation, and has particular reference to a device of this character which is of unitary construction and designed so that it may be quickly attachable or detachable in order that it may be quickly and easily placed when the need therefor arises and may be as readily removed and stored as during the winter months.

It further relates to such a device which is inherently adapted to draw off the warmer air of the room and which will cooperate readily with the ordinary window construction in accomplishing not only the major purposes of the device, but in its regulation to conform with conditions existing.

The objects of the invention are:

To make a device which is of unitary construction which may be readily attached for use, and detached for storage, and which is simple in construction and effective in operation.

The means by which the foregoing and other objects are accomplished and the method of their accomplishment will readily be understood from the following specification upon reference to the accompanying drawing, in which:

Fig. 1 is a sectional side elevation of the device installed.

Fig. 2 is a sectional front elevation taken on the line II—II of Fig. 1.

Fig. 3 is a sectional plan taken on the line III—III of Fig. 1.

Fig. 4 is a sectional side elevation showing a modified form of construction; and

Fig. 5 is a section taken on the line V—V of Fig. 4.

Referring now to the drawing in which the various parts are indicated by numerals:

11 is a typical window frame having usual upper and lower sash 13, 15 respectively, the upper sash 13 being shown in all the views in fully lowered position.

17 indicates a typical form of fan motor with vertical shaft driving a usual type of horizontal fan 19, this fan being disposed in a circular opening 21 through a horizontal diaphragm or plate 23.

In Figs. 1, 2 and 3 the diaphragm or plate 23 is secured to and supported by a metal awning construction having side walls 25 and a sloping top or roof 27, the side walls depending past the diaphragm or plate 23 and being secured thereto as by fasteners such as nails or screws 29, or otherwise as may be desired, and the top

wall being downwardly bent at its outer edge to form a valance 31, likewise depending below the diaphragm and secured thereto. The side and roof walls of this awning structure are secured to a peripheral frame work comprising a horizontally disposed top bar 33 and depending side bars 35, these bars being assembled and joined in unitary manner to form a frame structure adapted to lie flat against the window frame 11. The side bars have keyhole openings 37 therein which are adapted to be seated over the heads of screws or bolts 39 secured into the window frames and after such placing to be slid downward into interlocking engagement with such screws for the support and anchorage of the structure to the window frame.

The fan 17 has an upwardly extending post 41 with an inclined upper end plate 43 rigidly secured to the roof portion 27 of the awning, as by rivets 45, or otherwise as may appear desirable.

In Figs. 4 and 5 a structural metal frame work of side angle bars 47, and center channel member 49 connecting the upper bar 33—A and the diaphragm or plate 23—A, and a covering of canvas or other cloth 51, has been substituted for the metal awning construction described, the plate 43—A of the supporting column 41—A of the fan motor 17—A being secured to and supported by the channel 49. In either form of the device the awning and fan assembly are a unitary structure or unit adapted to be engaged and disengaged from the window.

The window is prepared for the reception of the ventilating unit by placing the four bolts or screws 39 in suitable position to register with the keyhole openings of the unit to be used therewith, this being done by positioning the unit as it is to be supported and marking through the keyhole openings or by placing and marking through a templet on which the bolt locations have been cut, or the position of these screws may be determined by direct measurement. The screws or bolts are then secured in the window frame with sufficient space left beneath the heads thereof to accommodate the thickness of the side bars 35 and the window is ready for placing of the awning. This placing is done in obvious manner by bringing the larger portion of the keyhole openings 37 over the fastener heads and against the window frame and then allowing the unit to descend by its own weight or forcing it down into interlocking engagement.

In making use of the device the upper sash of the window is lowered and the motor connected

as through a suitable wiring connector 53 to an electric circuit, ordinarily within the room itself. The current is turned on and the fan placed in operation drawing air from the inside of the room adjacent the ceiling and discharging it through the diaphragm or plate outside of the building, the adjacency of the diaphragm to the ends of the fan blades insuring that the air will be drawn from the room rather than merely circulated around the outside ends of the blades as would otherwise be entirely possible. Preferably the connector 53 is of such length that the upper sash of the window may be raised to substantial closure without disconnecting it.

The awning largely, if not entirely, conceals the working parts of the device or even their existence and protects the working parts against exposure to the elements. Under usual conditions of window uniformity the unit may be shifted between any of several windows should it be so desired.

It will be understood that the appearance and detail of the device, particularly the attaching means may be varied without departing from my invention.

I claim:

1. In ventilating means for use with a window opening having frame members, a unit comprising an awning structure, a motor driven fan carried thereby and means for detachably securing said unit to said frame member; said awning structure including side bars spaced apart and a transverse top bar secured thereto, a roof secured to said top bar, extending forwardly and downwardly therefrom and terminating in a substantially vertical valance, side walls secured to said side bars and said roof and depending from said roof substantially to the bottom level of said valance and a diaphragm having a circular opening therethrough, said diaphragm being intimately secured to said roof valance and the lower portion of said side walls; said fan unit including a supporting bracket secured to said roof, and a vertical shaft motor supported by and depending below said bracket, said motor shaft carrying fan blades substantially at the level of said diaphragm, said diaphragm opening being

concentrically disposed with relation to said fan shaft and of size to loosely surround said blades.

2. A ventilating unit, as for use to withdraw air through a window opening; said unit including a housing structure and a motor driven fan carried thereby; said structure comprising a vertical centrally open frame, a plate member secured adjacent the bottom of said frame and extending outward therefrom, a roof secured adjacent the top of said frame, extending forwardly and downwardly therefrom and secured to the outer edge of said plate, and side walls secured to said roof, the sides of said frame, and the side edges of said plate; said fan comprising a vertical shaft motor, fan blades carried by said shaft and extending outward therefrom and means supporting said motor from said structure with said fan blades substantially at the level of said plate; said plate having a circular opening therethrough concentric with said shaft and loosely surrounding the ends of said blades.

3. The combination with a window casing of air withdrawing means including a housing structure adapted to be detachably secured to said casing, and a motor driven fan carried by said structure; said structure comprising a vertical, centrally open frame, a plate member secured adjacent the bottom of said frame and extending outward therefrom, a roof secured adjacent the top of said frame, extending forwardly and downwardly therefrom and secured to the outer edge of said plate, and side walls secured to said roof, the sides of said frame, and the side edges of said plate; said fan comprising a vertical shaft motor, fan blades carried by said shaft and extending outward therefrom and means supporting said motor from said structure with said fan blades substantially at the level of said plate, said plate having a circular opening therethrough concentric with said shaft and loosely surrounding the ends of said blades; said frame having openings therethrough and said casing having complementary projecting members adapted for interlocking engagement with said openings to detachably secure said frame to said casing.

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