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2,553,172

WINDOW VENTILATING DEVICE

Filed Sept. 8, 1947

2 Sheets-Sheet 1

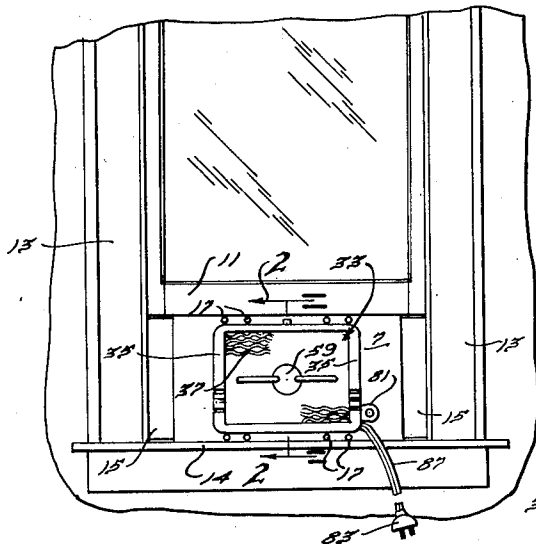


FIG. 1.

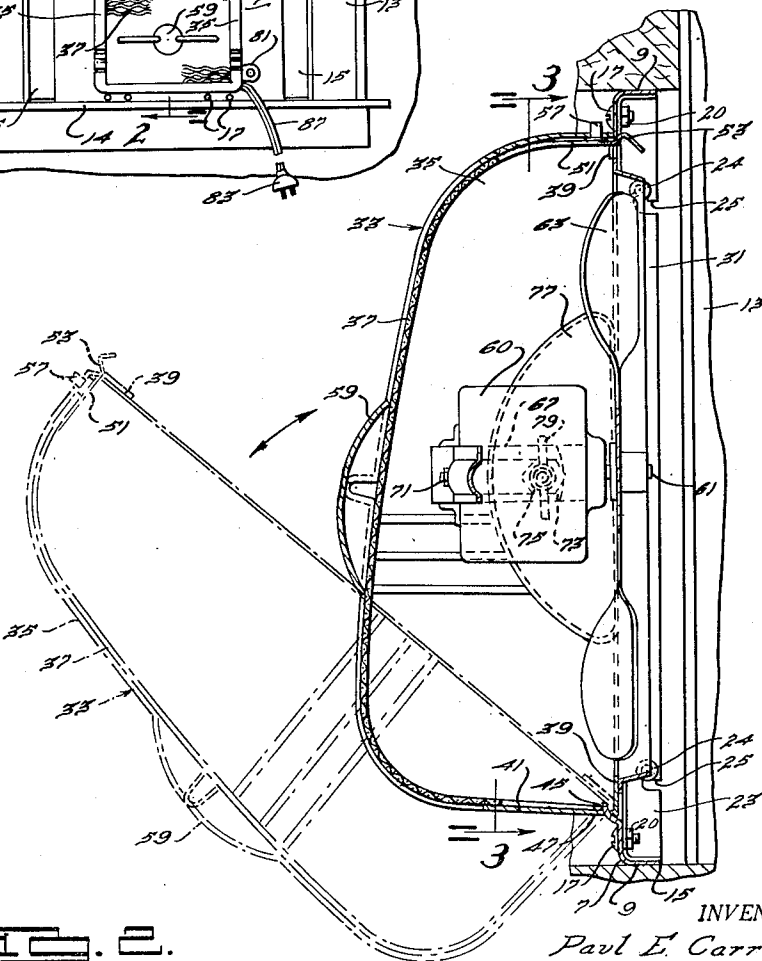


FIG. 2.

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FIG. 3.

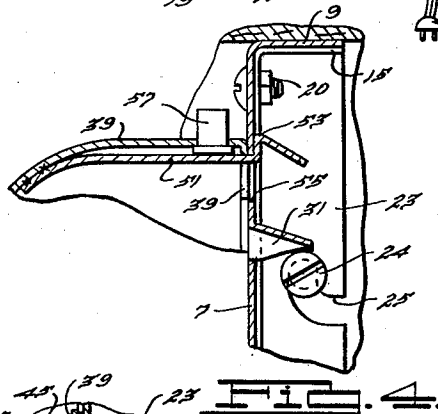
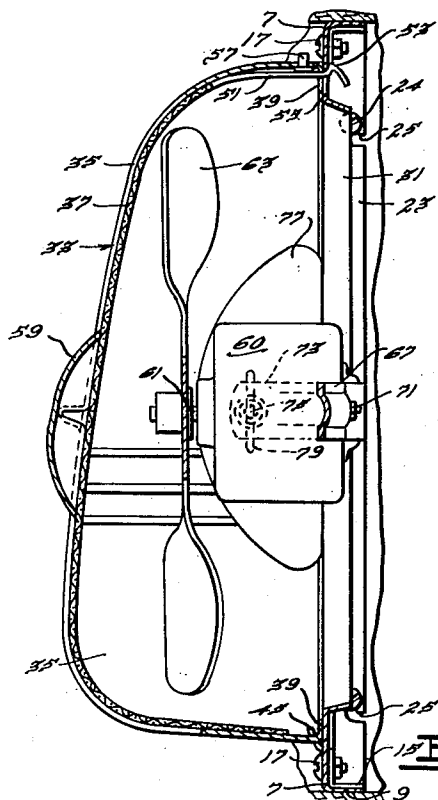
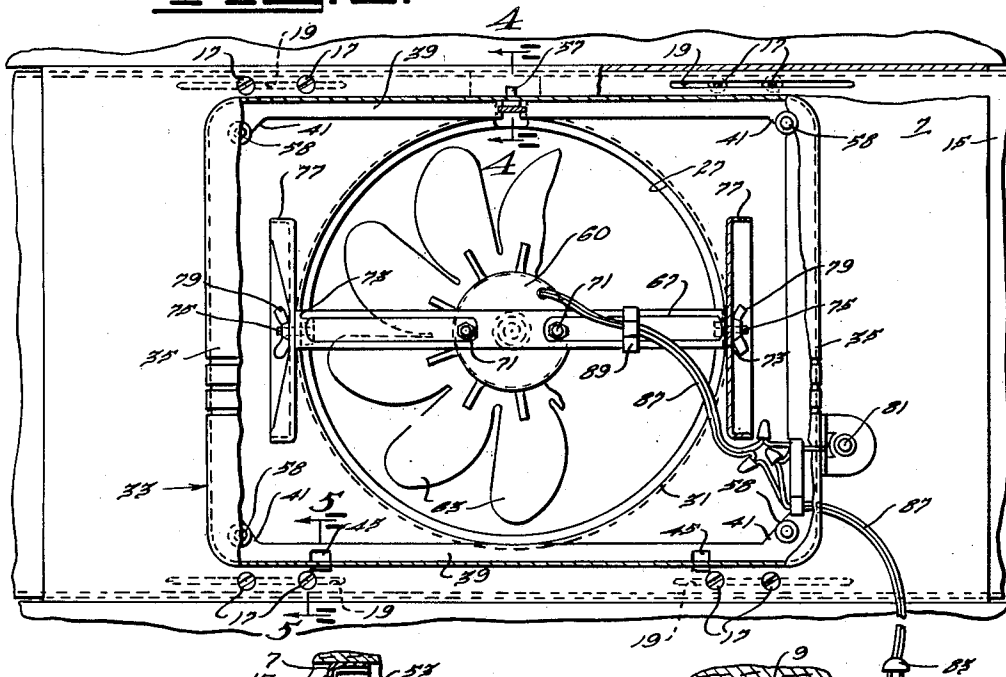


FIG. 5.

FIG. 6.

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WINDOW VENTILATING DEVICE

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2 Claims. (Cl. 98—94)

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This invention relates to ventilators and more particularly to an improved window ventilator which can be adjusted to either draw fresh air into a room or exhaust stale air therefrom.

The principal objects of this invention are to provide an improved window ventilator which can be mounted in a window opening and which is so constructed that it can be adjusted to fit into various sized window openings; to provide a window ventilator of the aforementioned type in which the fan and driving means therefor are supported by a panel-like member, and are enclosed by a grill which is adapted to be swung away from the panel member to permit access to the fan and driving means; to provide a window ventilator of the aforementioned type in which the fan and motor means therefor are rotatably supported by the panel member so that the fan may be selectively swung to either a position for drawing fresh air into a room or to a position for exhausting stale air from the room; to provide improved means for so rotatably supporting a fan and its motor means and for retaining the same in an adjusted position; to provide an improved ventilator of the aforementioned type which is especially neat in appearance, rugged in construction, and relatively inexpensive to manufacture.

These and other objects of this invention will become apparent from the following detailed description taken in conjunction with the accompanying drawings in which:

Figure 1 is a front elevational view of the ventilator of this invention mounted in a window;

Fig. 2 is an enlarged sectional view of the structure illustrated in Fig. 1 taken substantially along the line 2—2 thereof;

Fig. 3 is a sectional view of the structure illustrated in Fig. 2 taken along the line 3—3 thereof;

Fig. 4 is an enlarged sectional view of the structure illustrated in Fig. 3 taken along the line 4—4 thereof;

Fig. 5 is an enlarged sectional view of the structure illustrated in Fig. 3 taken along the line 5—5 thereof; and

Fig. 6 is a sectional view similar to Fig. 2 showing the fan and motor means therefor rotated 180° from the position illustrated in Fig. 2.

Referring now to the drawings, it will be seen that the ventilator includes a central panel 7, having upper and lower out-turned flanges 9, which is adapted to be disposed in a window opening defined by a sliding window sash 11, opposed window side frame members 13, and a window sill 14. In order to provide a ventilator which will

fit in various sized windows, a pair of transversely opposed, like end panels 15 are telescopically received between the upper and lower flanges 9 of the central panel 7. The end panels 15 are adjustably connected to the central panel 7 by means of bolts 17 which pass through elongated horizontal slots 19, adjacent the upper and lower edges of the end panels 15. Nuts 20 are carried on the bolts 17 for securing the end panels 15 to the central panel 7.

Therefore when the ventilator is inserted within a window opening, the end panels 15 can be moved inwardly or outwardly with respect to the central panel 7 so as to properly close and fit into the window opening, between the window side frame members 13. The window sash 11 can then be moved to abut the upper edge of the ventilator, as shown in Fig. 1, while the lower edge thereof rests upon the window sill 14. The outer ends of the end panels 15 are bent outwardly 90° to provide vertical flanges 23. The flanges 23 are provided, adjacent the upper and lower ends thereof, with open L-shaped slots 25 which are adapted for use in attaching the end panels to screws 24 threaded into the vertical window frame members 13. The central panel 7 is provided with a central circular opening 27 defined by an annular outwardly projecting flange 31, for a reason which will hereinafter appear.

A grill, generally indicated at 33, is hingedly connected to the inner face of the central panel 7, over the panel opening 27. The grill 33 comprises transversely spaced closed end walls 35 and a central grill portion 37, which is channel-shaped in cross section. The ends of the upper and lower legs of the central grill portion 37 are formed with vertical reinforcing flanges 39. The flanges 39 are secured, at their opposite ends, to the grill end walls 35 by gussets 41. The central panel 7, adjacent the lower grill reinforcing flange 39, is lanced to provide a pair of transversely spaced tabs 45 which are received in a pair of similarly spaced slots 47 in the lower leg of the central grill portion 37, so as to hingedly connect the lower leg of the grill to the panel 7.

Welded to the underside of the upper horizontal leg of the central grill portion 37 is a spring-like latch member 51, the free end of which is upwardly offset to provide a nose or latch portion 53. The central panel 7, adjacent the latch member, is provided with an aperture 55, so that when the grill 33 is in its normal vertical position the latch nose 53 will engage the outer face of the panel 7, above the aperture 55, and retain the grill in its closed position. In order to release the

latch to permit the upper edge of the grill to be swung away from the panel 7, about the tabs 45, as shown in dot and dash lines in Fig. 2, a button 57 is slidably mounted in the upper leg of the grill, and abuts the latch 51 disposed therebelow. By pushing downwardly on the button 57 the latch nose 53 will be moved out of engagement with the outer face of the central panel 7, and into alignment with the aperture 55 so that the entire grill can then be swung inwardly about the tabs 45. The central panel 7 has four rubber grommets or tabs 58 secured to its inner face so as to abut each of the grill corner gussets 41 when the grill is closed. The grill, as can be seen in the drawings, is provided with a central escutcheon cup 59.

Supported on the inner face of the central panel 7, within the grill, when the latter is closed, and in axial alignment with the panel opening 27, is an electric motor enclosed in a housing 60. A drive shaft 61 projects outwardly through one end of the housing 60 and is operatively connected to a plurality of radially spaced fan blades 63, in a conventional manner, so that the fan blades will be driven when the motor is operating. A transversely extending horizontal strap 67 is provided for supporting the motor on the panel 7. The strap 67 is offset inwardly in the center thereof to fit the contour of the motor housing 60 and is secured to the housing 60 by means of studs and nuts 71. The opposite ends of the strap 67 are bent outwardly at right angles so as to extend parallel to the drive shaft 61 and provide end portions 73. A bolt 75 has its threaded end extending outwardly through each of the strap end portions 73. A pair of channel section supporting brackets 77 are secured to the inner face of the panel 7, adjacent each end portion of the strap 67, and each of the bolts 75 is journaled in its adjacent bracket. Wing nuts 79 are carried on the ends of the studs 75 to secure the latter to the brackets 77. The motor 59 and the fan blades 63 are thus rotatably supported on the panel 7, and by loosening the wing nuts 79 it is possible to rotate the fan 180° from one position to another. That is the fan and motor can be rotated either to the position shown in Fig. 2, wherein stale air will be blown out of the room, or to the position shown in Fig. 6 wherein the fan will blow fresh air into the room. After the fan is in one or the other of these positions the wing nuts can be tightened to hold it in that position.

A conventional button type fan switch 81 is mounted on the inner face of the panel 7 adjacent the grill side wall 35, and is connected in series with the motor 60 and a conventional outlet plug 83, by means of electrical conduits 87. The conduit 87, connected to the motor 60, is secured to the supporting strap 67, adjacent the motor, by means of a clip 89, so that it is possible to rotate the motor 180° without breaking or tangling the same. Of course the fan and motor must be rotated back and forth in order to prevent winding of the conduit around the strap 67.

It will thus be seen that the fan blades can be rotated so as to either blow air into the room or push air therefrom, and that in order to change the position of the fan, the grill latch 51 is depressed and the grill pivoted away from the panel 7. The wing nuts 79 are then loosened and the fan rotated to the desired position before again tightening the wing nuts. The grill can then be swung into its closed position so that the latch 51 holds it in place. The ventilator is thus especially neat in appearance, easy to operate,

rugged in construction, relatively inexpensive to manufacture and can be easily inserted in any conventional window, and withdrawn therefrom when not in use.

I claim:

1. A window ventilator including a panel-like member adapted to be disposed in a window opening and having an aperture therein, motor means disposed in alignment with said panel opening, a housing surrounding said motor means, a drive shaft operatively connected to said motor means and projecting through one end of said housing, a plurality of radially spaced fan blades operatively connected to the projecting end of said drive shaft, strap means rigidly connected to said housing and extending outwardly on opposite sides thereof in a direction perpendicular to the axis of said drive shaft, bracket means connected with said panel member, means journalling the opposite ends of said strap means on said panel member bracket means so that said housing and strap means can be rotatably adjusted relative to said panel member, and means for releasably securing said strap means in an adjusted rotatable position relative to said panel member, a grill which is channel shaped in section adapted to enclose said fan and motor means and having spaced apertures adjacent one end thereof, integral tangs projecting from said panel member and into said grill apertures so as to hingedly connect said grill to said panel member and latch means on the opposite end of said grill, adapted to project through an aperture in said panel member so as to detachably connect the opposite edge of said grill to said panel member to permit said grill to be swung away from said panel member and thereby provide access to said fan motor means and rotatable supporting means, whereby said motor means and fan blades may be selectively rotated to a position wherein the fan blades will draw air through the grill and push it out through said panel opening and to a position wherein the fan blades will draw air in through said panel opening and push it out through said grill.

2. A window ventilator including a panel-like member adapted to be disposed in a window opening and having an aperture therein, motor means disposed in axial alignment with said panel member opening, a housing surrounding said motor means, a drive shaft operatively connected to said motor means and projecting through one end of said housing, a plurality of radially spaced fan blades operatively connected to the projecting end of said drive shaft, strap means rigidly connected to said motor housing and extending outwardly on opposite sides thereof in a direction perpendicular to the axis of said drive shaft bracket means connected with said panel member, means journalling the opposite ends of said strap means on said panel member bracket means so that said housing and strap means can be rotatably adjusted relative to said panel member, and means for releasably securing said strap means in an adjusted rotative position relative to said panel member, a grill having one edge thereof hingedly connected to said panel member and adapted to close said fan and driving means, latch means for detachably connecting the opposite edge of said grill to said panel member whereby to permit said grill to be swung away from said panel and thereby provide access to said motor means, fan blades, and rotatable supporting means, switch means mounted on said panel member exteriorly of said grill for controlling the operation of said motor means, electrical conduit means

connecting said motor means and switch means, said conduit means being secured to said strap means adjacent said motor means whereby said motor means and fan blades may be selectively rotated to a position wherein the fan blades will draw air through the grill and push it out through said panel member opening and to a position wherein the fan blades will draw air in through said opening and push it out through said grill.

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