

May 5, 1936.

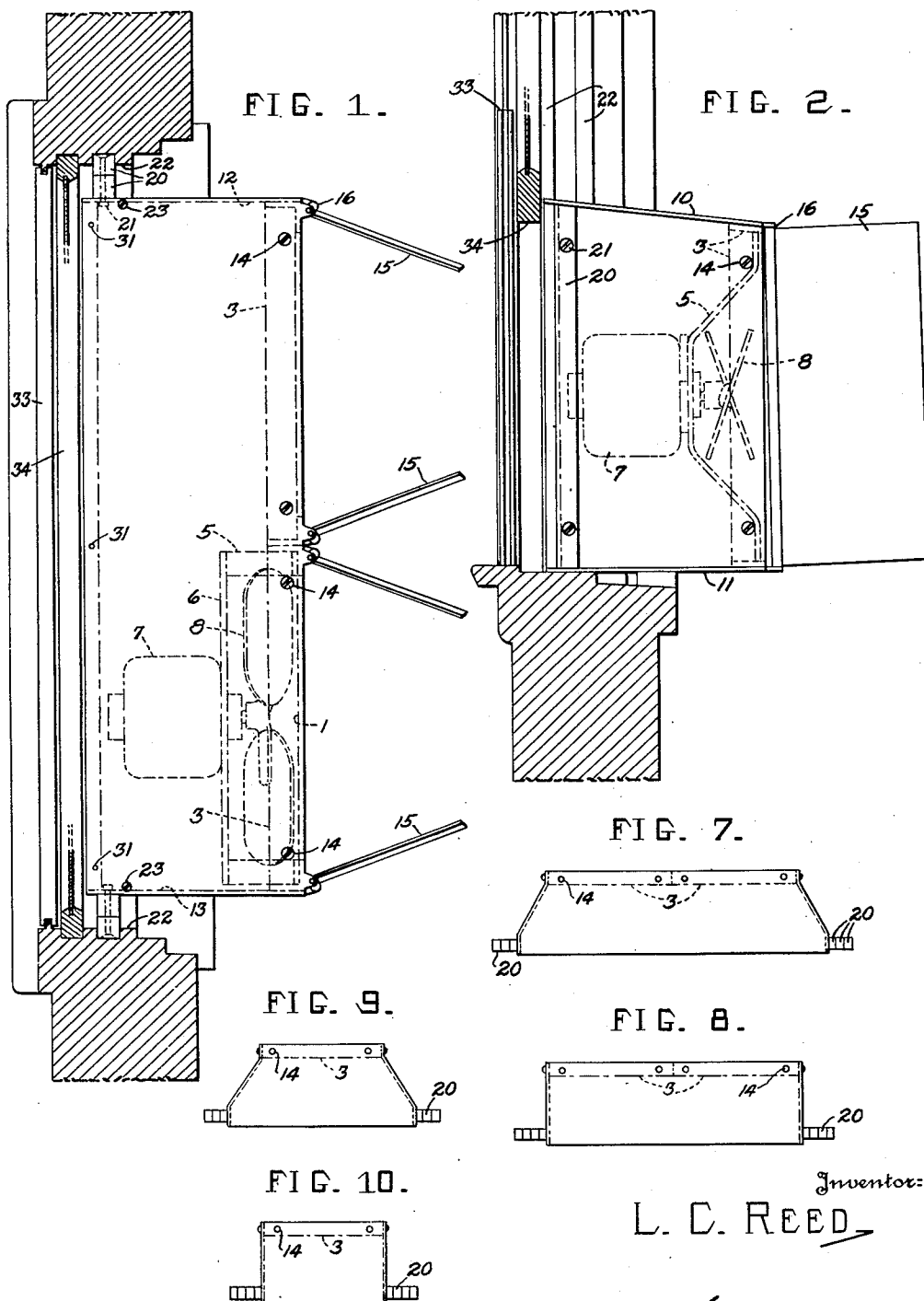
L. C. REED

2,039,346

WINDOW VENTILATOR

Filed March 22, 1935

2 Sheets-Sheet 1



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FIG. 3.

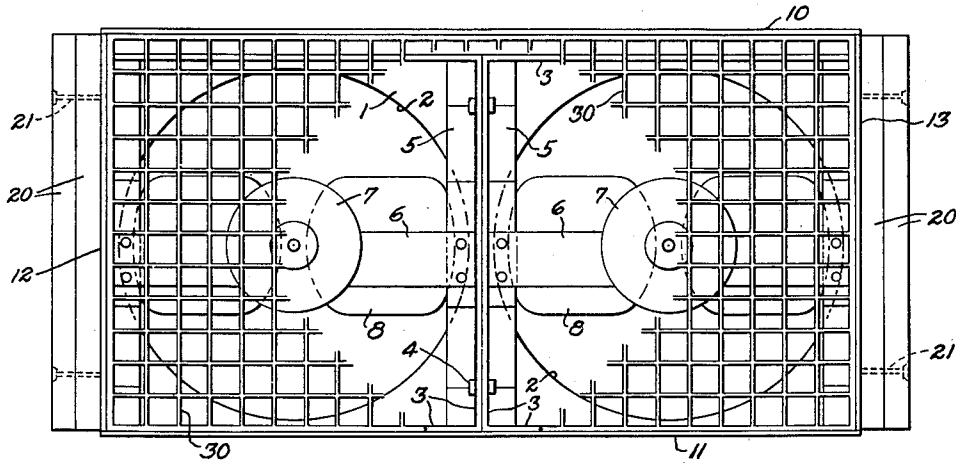


FIG. 4.

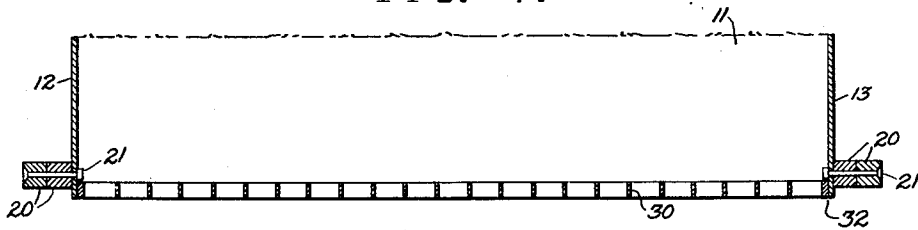


FIG. 5.

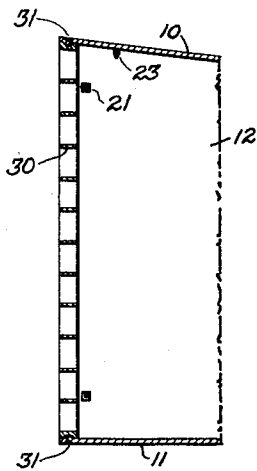
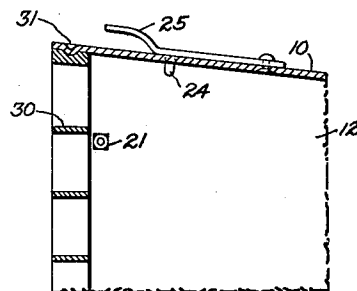


FIG. 6.



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UNITED STATES PATENT OFFICE

2,039,346

WINDOW VENTILATOR

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Application March 22, 1935, Serial No. 12,491

8 Claims. (Cl. 98—94)

This invention relates to window ventilators and the like, having for its object to provide a construction simple in parts, more efficient in use, and less costly to manufacture than those heretofore proposed.

With these and other objects in view the invention resides in the novel details of construction and combinations of parts as will be disclosed more fully hereinafter and particularly pointed out in the claims.

Referring to the accompanying drawings forming a part of this specification and in which like numerals designate like parts in all the views;

Fig. 1 is a horizontal sectional view through a window opening and illustrating the window ventilator in elevation;

Fig. 2 is a vertical sectional view through said window opening and illustrating an end elevational view of the ventilator;

Fig. 3 is a front elevational view of the ventilator removed from the window;

Fig. 4 is a horizontal sectional view of the ventilator casing;

Fig. 5 is a vertical transverse sectional view through the ventilator casing;

Fig. 6 is an enlarged vertical transverse sectional detail view illustrating a modification of the construction shown in Fig. 5; and

Figs. 7, 8, 9 and 10 are diagrams illustrating ventilator casings of various forms but each adapted to receive therein a ventilating fan unit of standard size.

In order that this invention may be better understood reference is made to my copending application for U. S. Letters Patent filed September 10, 1934, under the Serial No. 743,450 entitled Ventilation system wherein there is disclosed a unit fan construction intended to be manufactured in a standard size and adapted to be joined with similar unit fans in order to provide the correct amount of ventilation for a required window or wall opening. Such a unit fan construction is intended for use in the window ventilator disclosed in this application, the drawings of which indicate the use of a single unit fan or a pair thereof, it being understood however that a greater number of unit fans may be joined together in the manner hereinafter set forth to meet the requirements of proper ventilation.

That is to say, there is provided a square frame of sheet metal having a front wall 1 provided with a circular or other shaped opening 2 and sides such as 3 extending substantially at right angles from the front wall, which sides are provided with bolt holes spaced equi-distantly from

the corners of the frame so that a plurality of units may be secured together in registry as by the bolts 4. On two opposite sides, the frame is provided with similar brackets such as 5, joined by a cross plate or bar 6 which latter supports the electric motor 7 having the blades such as 8, the axis of the motor being concentric with the circular opening 2, whereby the current of air generated by the revolving blades may pass through said opening.

In Figs. 1 and 3 there is indicated an assemblage of two such fan units bolted together and mounted within the ventilator casing which latter comprises a top 10, a bottom 11, and two vertical side walls 12 and 13, the top 10 being disposed in a plane such as to permit rain to drain readily therefrom when the casing is applied to a window. The unit fan frames have their sides such as 3 bolted to the top, bottom and two sides of the casing as indicated at 14, utilizing the bolt holes in said sides previously referred to. The sides 12 and 13 are unsecured to the top 10 and bottom 11 to permit flexing of said sides inwardly of the casing for a purpose presently to appear.

The outdoor side of the casing is provided with a pair of doors or louvres such as 15 for each circular opening 2, each door being hinged to the casing as indicated at 16 with the pintle of the hinge having its axis inclined to the vertical to cause each door to have a gravitational movement about its hinge axis in a manner to normally cause the door to occupy a closed position with respect to the circular opening, but the angle of inclination is such that, when the fan blades 8 are rotating, the current of air created thereby will cause the door to swing into an open position as shown in Fig. 1. By this construction it will be understood that the doors will be open, therefore, only when the ventilating fans are operating to discharge air out of the room.

Each of the sides of the ventilator casing is provided adjacent the indoor edge with one or more vertically extending wooden or metallic strips or blocks such as 20 bolted to the side as at 21 and adapted to fit the groove or space between any two adjacent sash guides or separator strips such as 22 with which the usual window frame construction is provided. Hence it will be seen that the blocks 20 position the window ventilator casing, the bottom of the casing resting upon the bottom of the window opening. Since window openings are of various widths, this invention contemplates the provision of as many similar blocks 20 as will be necessary to fit a standardized size ventilator casing to the particular win-

dow, and further it is contemplated making the casings to contain one or more unit fans as well as forming the casings rectangularly as particularly shown in Figs. 8 and 10, or somewhat conical as shown in Figs. 7 and 9. Hence, in Fig. 1 there is shown the necessity of two filler blocks 20 on each side of the ventilator casing, whereas in Figs. 7 to 10 a greater number is indicated as of possible necessity.

10 To apply the ventilator casing to a window opening the free ends of sides 12 and 13 are pressed inwardly of the casing to permit the filler blocks to pass through the sash opening and then the sides are permitted to spring outwardly to bring said blocks into the grooves between the sash separator strips 22. In Figs. 1 and 5 a screw 23 is shown passed through the top of the casing adjacent each side edge thereof to serve as a lock to prevent accidental inward flexing of the sides of the casing after the casing has been positioned in the window opening, whereas in Fig. 6 a pin 24 carried by a spring latch 25 is shown as a modified lock for the same purpose. In this connection it should be stated that each of the sides 12 and 13 is positioned between the top 10 and bottom 11 of the casing to permit the flexing of the sides.

The room side of the casing comprises a removable grill 30 to prevent window curtains being drawn into the casing by a movement of air there-through, as well as to prevent other objects coming in contact with the revolving fan blades. This grill may be secured in place in any suitable manner, Fig. 6 illustrating a circular depression in the surface of the frame edge of the grill adapted to have a snap fit with a protuberance formed on the inner surface of the top and bottom of the casing, as indicated at 31 whereby ready insertion or withdrawal of the grill is permitted. By being disposed within the walls of the casing, the grill will prevent the inward flexing of the sides thereof, as indicated at 32. In Figs. 1 and 2 the usual screen 33 is shown on the room side of the lower window sash 34 but, since said screen may not be employed at all times, the grill 30 is provided for the purpose hereinbefore stated. Obviously the grill could be made of cast metal or other material with cellular openings as shown in the drawings or it could be formed of thin sheet metal with bent over flanges and stamped-out openings, both of which constructions are well known.

Whereas in Fig. 1 only one complete fan unit is shown in dotted lines for the sake of clearness, it will be understood that a duplicate thereof, as indicated by Fig. 3, could be provided adjacent thereto. Further, the motors of the fan units in any ventilator casing could be electrically connected for joint operation, or each motor could be separately connected to a source of current for individual control.

It is obvious that those skilled in the art may vary the details of construction, as well as the arrangement of parts without departing from the spirit of the invention and therefore it is desired not to be limited to the foregoing disclosure, except as may be demanded by the claims.

What is claimed is.

1. A ventilator comprising a casing having two opposite sides movable with respect to the remaining sides; and means carried by the movable sides for securing the casing in a window opening.
2. A ventilator comprising a casing having two opposite sides movable with respect to the remaining sides; means carried by the movable sides for securing the casing in a window opening; and means for preventing accidental displacement of the movable sides after the casing has been positioned in the opening.
3. A ventilator comprising a casing having two opposite sides movable with respect to the remaining sides; means carried by the movable sides for securing the casing in a window opening; and screw means for preventing accidental displacement of the movable sides after the casing has been positioned in the opening.
4. A ventilator comprising a casing having two opposite sides movable with respect to the remaining sides; means carried by the movable sides for securing the casing in a window opening; and spring controlled means for preventing accidental displacement of the movable sides after the casing has been positioned in the opening.
5. A ventilator comprising a casing having two opposite sides movable with respect to the remaining sides; means carried by the movable sides for securing the casing in a window opening; and means comprising a removable wall snugly fitting between all of the casing sides, said wall for preventing accidental displacement of the movable sides after the casing has been positioned in the opening.
6. A ventilator comprising a casing having two opposite sides movable with respect to the remaining sides; means within the casing for inducing air-flow therethrough; means carried by the movable sides for securing the casing in a window opening; and a removable grill constituting a wall fitting between all of the casing sides, said grill for preventing accidental displacement of the movable sides after the casing has been positioned in the window opening, as well as for preventing objects coming in contact with the air-flow inducing means.
7. A ventilator comprising a casing of standard size and having two opposite sides movable with respect to the remaining sides; and means for securing the casing in a window opening, said means comprising a plurality of spacing members carried by the movable sides, the number of such members being governed by the difference between the width of the casing and the width of the window opening.
8. A ventilator comprising a casing having two opposite sides movable with respect to the remaining sides; and means for securing the casing in a window frame, said means comprising spacing members carried by the movable sides and fitting between two adjacent sash separating strips of the window frame.

LYMAN C. REED.