June 27, 1950 J. R. VONDRUSKA 2,513,220

WINDOW VENTILATOR

Filed Jan. 21, 1947

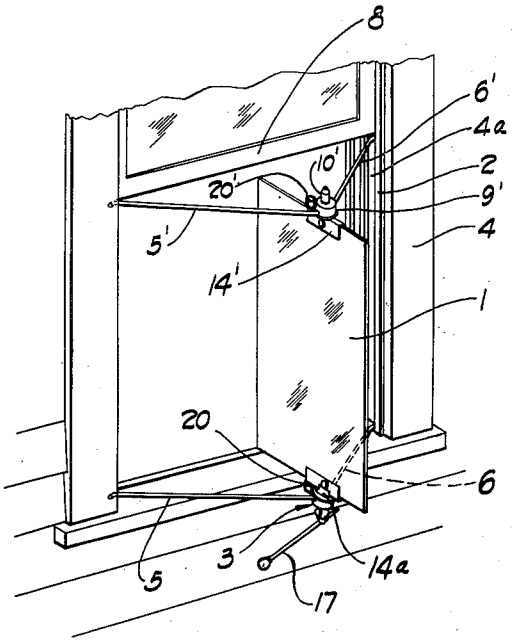


FIG. 1

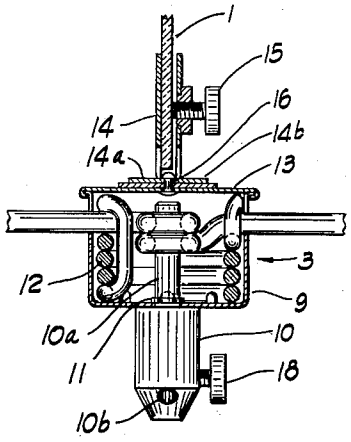


FIG. 3

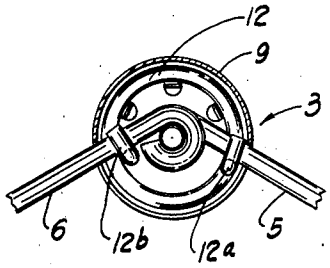


FIG. 4

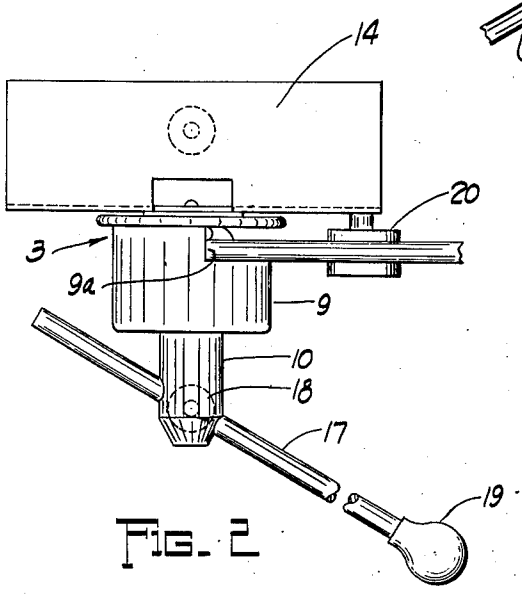


FIG. 2

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WINDOW VENTILATOR

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9 Claims. (Cl. 98—44)

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My present invention comprises a window ventilator device which is adapted for quick and easy installation in conjunction with window frames of standard type.

One object of my invention is to provide a window ventilator device which may be readily and easily installed without special skill and without requiring the use of special tools.

Another object of my invention is to provide a window ventilator deviee with novel means for supporting the same in conjunction with a window frame, whereby the device may be installed and removed as desired without manipulation of special fastening means and without mutilation of the window frame.

Another object of my invention is to provide a window ventilator device in which the ventilator member is supported for pivotal or rotational movement in the plane of the ventilator member, whereby the ventilator member is automatically shifted in its position by the action of air current to secure the most advantageous ventilation depending on the direction of the air current.

Another object of my invention is the provision of a ventilator device having novel supporting means for supporting the same in conjunction with a window frame, which supporting means are automatically adjustable for use with window frames of various sizes.

For the accomplishment of the foregoing objectives, I provide a window ventilator device in which the ventilator member may comprise a pane of glass or Plexiglas, or the like, and in which the supporting means for supporting the device in conjunction with a window frame comprises spring pressed laterally extending supporting arms, the outer ends of which are adapted to hook into or otherwise engage in the channel portions of a window frame which normally receive the window member. The ventilator member has pivotal or rotational association with the lateral supporting arms, whereby the ventilator member is mounted for pivotal or rotational movement in the plane of the ventilator member. The supporting means for supporting the ventilator device in conjunction with the window frame further comprises an adjustable arm which, in conjunction with the lateral supporting arms, is adapted to provide vertical support for the window ventilator device.

Other objects, advantages, and features of the invention will appear from the following detail description taken in conjunction with the accompanying drawing, in which:

Figure 1 is a perspective view of a portion of a

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building showing more particularly a window and window frame therein, and a window ventilator device of my invention installed in operative condition in conjunction with such window frame.

Figure 2 is an enlarged detail view of the lower supporting unit of the ventilator device of my invention.

Figure 3 is a vertical sectional view of the same, the adjustable arm providing vertical support being removed.

Figure 4 is a top plan view of the lower supporting unit showing more particularly the mounting of the spring pressed lateral supporting arms, looking into the interior of the housing containing the spring, and with the cover for said spring housing removed.

Now referring to the drawings and describing the invention in detail, the window ventilator device of my invention comprises a ventilator member 1, and upper and lower supporting units, generally designated by the numerals 2 and 3, by which the ventilator member is supported in conjunction with a window frame generally designated by the numeral 4, for pivotal or rotational movement of the ventilator member 1 with respect to the supporting means comprising the supporting units 2 and 3.

The lower supporting unit, as seen best in Figures 2, 3 and 4, comprises the lateral supporting arms 5 and 6, the outer ends of which are slightly curved or outwardly offset as shown so as to readily hook into or otherwise engage in the channel portions 4a of the window frame 4, in which channel portions 4a the window 8 is received for sliding movement of the window relative to the window frame. The lower supporting unit further comprises anchoring means for anchoring the inner ends of the supporting arms 5 and 6 and for applying a spring tension to said arms tending to urge the said arms 5 and 6 outwardly or away from one another toward the sides of the window frame 4, and the lower supporting unit also comprises a holding member for holding the ventilator member, which holding member is pivotally associated with the anchoring means for pivotal movement of the holder relative thereto.

The anchoring means comprises a cup-shaped housing 9, in the bottom of which is an aperture through which extends the reduced end 10a of a shaft 10 which is held in position as shown in Figure 3, by means of a snap ring 11 which fits into a circumferential groove in the reduced portion 10a of the shaft just above the bottom of the casing or housing 9. The side wall of

the housing 9 is cut away as indicated at 9a so as to permit the inner ends of the supporting arms 5 and 6 to extend through the cut out portion of the housing 9 into the interior thereof and the inner ends of the arms 5 and 6 are bent to hook-shape for pivotal connection with the reduced portion 10a of the shaft 10.

Within the housing 9 is mounted a coil spring 12, the opposite ends 12a and 12b of which are respectively engaged with the arms 5 and 6 so as to press the same and urge said arms outwardly away from one another, the limits of the outward movement of the arms 5 and 6 under the action of the spring 12 being an engagement of said arms with the edge of the wall of the housing 9 as shown best in Figures 3 and 4. The housing 9 is provided with a cover 13 which may be suitably secured to the housing 9 as by crimping the circumferential edge of the cover 13 over the flanged upper edge of the housing 9.

The holding member 14 for holding the ventilator member is pivotally secured to the cover member 13 of the housing 9 for pivotal rotational movement of the holding member 14 relative to the housing 9. This ventilator holding member 14 is in the form of a U-shaped channel clamp adapted to receive within the channel between its sides a portion of the pane of Plexiglas or like material forming the ventilator member 1, the channel clamp or ventilator holding member 14 being provided with a set screw 15 adjustably engageable with the ventilator member 1 for retaining the same in position within the holding member 14. Portions of the sides of the holding member 14 are struck downwardly as indicated at 14a and 14b in Figures 1 and 3 particularly so as to provide a supporting base or bearing for the holding member 14 on the cover 13 of the housing 9, the holding member 14 being pivotally secured to the housing 9 by means of a pivot pin 16 passing through the cover member 13 and the bottom of the channel of the holding member 14, and having one end upset beneath the cover 13 and the other end of the pivot member 16 upset above the bottom of the channel of the holding member 14.

The lower supporting unit 3 is provided with an adjustable arm 17 which is adjustably received in an angularly disposed passage 10b extending through the shaft member 10 at an angle to the axis thereof. A clamping screw 18 is threadedly associated with the shaft member 10, and the inner end of the clamping screw is adapted to engage a portion of the arm 13 received in the angular passage 10b.

Arm 17 is adjustable to different fixed positions relative to the shaft 10 and maintained in adjusted position by means of the set screw 18. One end of the arm 17 is provided with a rubber or other resilient engaging member 19 adapted to engage the wall of the building adjacent the window frame in which the window ventilator device is installed.

The upper supporting unit 2 of the window ventilator device is substantially the same as the lower supporting unit 3, except that the upper supporting unit 2 is disposed in inverted position and that it does not utilize any manually adjustable arm corresponding to the arm 17 of the lower unit for vertical support of the window ventilator device. The parts of the upper supporting unit corresponding to parts of the lower supporting unit are designated by corresponding numerals bearing a prime designation. The upper supporting unit thus includes the lateral supporting arms 5' and 6', the outer ends of which are laterally offset outwardly so as to hook into or otherwise engage in the side channels 4a of the window frame 4, as previously described. The inner ends of the arms 5' and 6' are anchored in a manner similar to the corresponding arms of the lower supporting unit for pivotal connection to a shaft 10' secured to the housing 9' within which is housed a spring similar to spring 12 of the lower supporting unit similarly engaging the arms 5' and 6' to tension the same for urging them outwardly toward the opposite side of the window frame. The window ventilator holder 14' of the upper supporting unit 2 is pivotally connected to the housing 9' in a manner similar to the pivotal connection of the holding member in the lower supporting unit and is adapted to engage and hold the upper edge of the ventilator member 1.

The ventilator holding members 14 and 14' are each provided with a respective rubber or other resilient bumper member 20 and 20' which act as stop members to limit the pivotal or rotational movement of the ventilator member 1 by engagement of the stop members 20 and 20' with the lateral supporting arms 5, 6, 5' and 6'.

From the foregoing it will be seen that the window ventilator device of my invention may be readily installed in conjunction with window frames of standard types of various sizes without the use of special fastening means or special tools. For this purpose, the ventilator member 1 having been clamped in the channel holding members 14 and 14' with the respective lateral supporting arms disposed as shown in Figure 1, it is only necessary to manipulate the arms 5 and 6 toward one another against the spring action and to manipulate the arms 5' and 6' toward one another against spring action, while inserting the respective outer ends of said arms in the side channels 4a of the window frame 4, and to thereupon adjust the relatively movable arm 17 for the desired vertical supporting engagement of the resilient end portion 19 of said arm with the wall of a building below the window frame 4 in conjunction with which the ventilator device is installed.

In practice, the window ventilator device of the invention may be installed so that the ventilator member 1 extends outside of the window frame, or outwardly of the building, as shown in Figure 1, or it may be installed so that the ventilator member 1 extends inside the building inwardly of the window frame, as desired.

In operation, the device, when installed, permits the pivotal or rotational movement of the ventilator member 1 by reason of the pivotal connection of the ventilator holders 14, 14' with respect to the housing 9 and 9'. Thus the ventilator member 1 may be rotationally positioned by hand, or by the action of air currents for changing the position of the ventilator member 1 to secure the desired ventilation. In order to facilitate the automatic rotational positioning of the ventilator member 1 by the action of air current, the said ventilator member 1 is preferably positioned in the holding members 14 and 14' so that a major area of the ventilator member 1 is positioned at one side or the other of the pivotal axes of said holding members as shown in Figure 1, whereby the ventilator member 1 tends to respond to the action of air currents in the manner of a weather vane to position the plane of the member 1 substantially parallel to the direction of the incoming air currents.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

1. A supporting unit for window ventilator devices, comprising, in combination, a pair of lateral supporting arms, anchoring means including a housing, a shaft member secured to said housing, said arms extending into said housing and pivotally anchored to said shaft member, a spring member in said housing and operatively engaging said arms to urge the outer ends of the same away from one another, and a ventilator holding member pivotally connected to said housing.

2. A supporting unit for window ventilator devices, comprising, in combination, a pair of lateral supporting arms, anchoring means including a housing, a shaft member secured to said housing, said arms extending into said housing and pivotally anchored to said shaft member, and a spring member in said housing and operatively engaging said arms to urge the outer ends of the same away from one another, another arm adjustably associated with said shaft member, and a ventilator holding member pivotally connected to said housing.

3. A supporting unit for window ventilator devices, comprising, in combination, a pair of lateral supporting arms, anchoring means including a housing, a shaft member secured to said housing, said arms extending into said housing and pivotally anchored to said shaft member, and a spring member in said housing and operatively engaging said arms to urge the outer ends of the same away from one another, another arm adjustably associated with said shaft member, a ventilator holding member pivotally connected to said housing, and means associated with said holding member and engageable with said lateral supporting arms for limiting pivotal movement of said holding member.

4. A ventilator device of the class described, comprising, in combination, a ventilator member, upper and lower supporting units pivotally connected with said ventilator member, each of said units comprising a pair of lateral supporting arms, and spring means cooperating with said arms to urge the outer ends of the arms away from one another, the outer ends of the arms having horizontally offset portions to engage detachably in the side window receiving channels of a window frame.

5. A ventilator device as claimed in claim 4, wherein the lower supporting unit includes an adjustable arm extending therefrom along a line inclined downwardly from the plane of the other arms of said unit at an acute angle thereto, said adjustable arm being adjustable along the said line of inclination.

6. A ventilator device of the class described, comprising, in combination, a ventilator member, upper and lower supporting units pivotally connected with said ventilator member, each of said units comprising a pair of lateral supporting arms, anchoring means for pivotally anchoring said arms, and spring means cooperating with said arms to urge the outer ends of the arms away from one another, the outer ends of the arms having horizontally offset portions to engage detachably in the side window receiving channels of a window frame.

7. A ventilator as claimed in claim 4, and an abutment member carried by the ventilator member and engageable with the lateral supporting arms for limiting pivotal movement of the ventilator member relative to said supporting units.

8. A ventilator device of the class described, comprising, in combination, a ventilator member, upper and lower supporting units pivotally connected with said ventilator member, each of said units comprising a pair of lateral supporting arms, anchoring means including a housing, a shaft member secured to said housing, said arms extending into said housing and pivotally anchored to said shaft member, a spring member in said housing and operatively engaging said arms to urge the outer ends of the same away from one another, and a ventilator holding member pivotally connected to said housing, the outer ends of the arms having horizontally offset portions to engage detachably in the side window receiving channels of a window frame.

9. A ventilator device as claimed in claim 8, wherein the lower supporting unit includes an adjustable arm extending therefrom along a line inclined downwardly from the plane of the other arms of said unit at an acute angle thereto, said adjustable arm being adjustable along the said line of inclination, and an abutment member carried by the ventilator member and engageable with the lateral supporting arms for limiting pivotal movement of the ventilator member relative to said supporting units.

JAMES R. VONDRUSKA.

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