

June 11, 1935.

R. G. LIPTROTT

2,004,444

WINDOW VENTILATOR

Filed Oct. 3, 1930

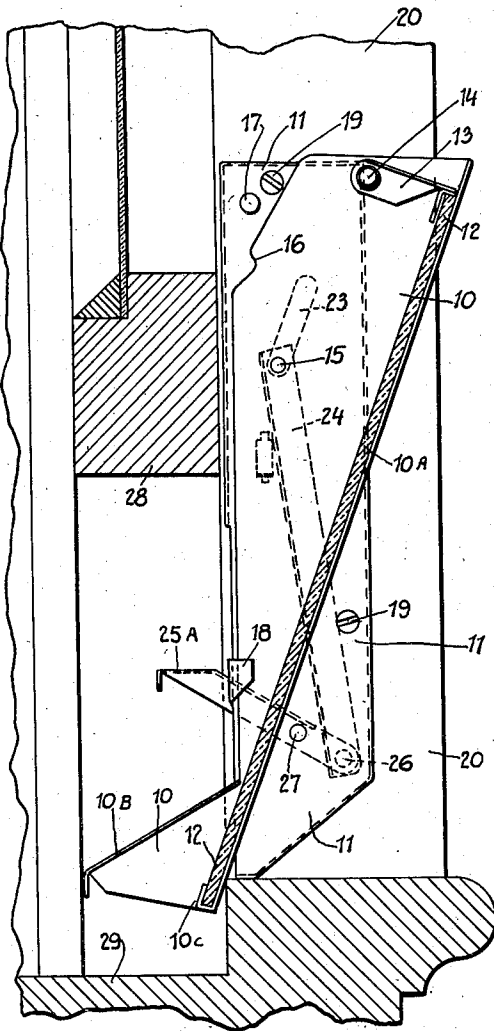


Fig. 1.

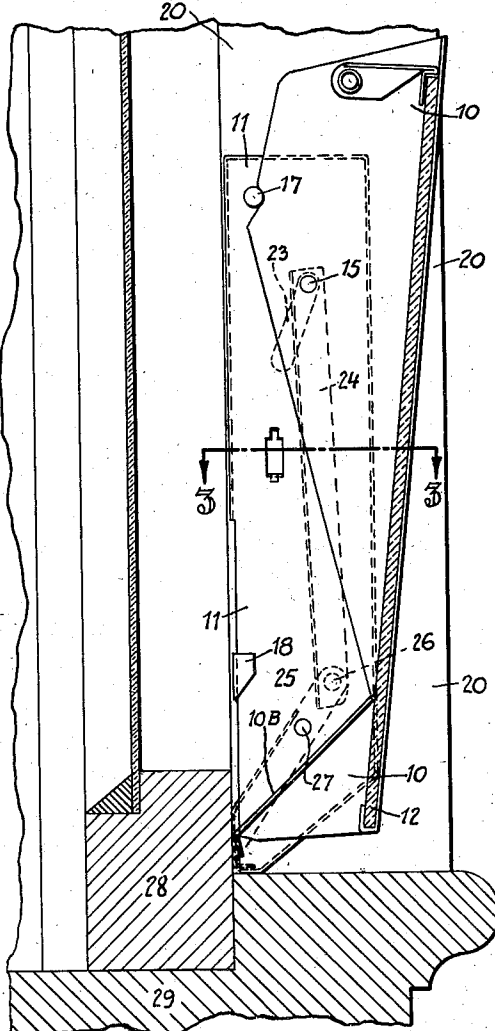


Fig. 2.

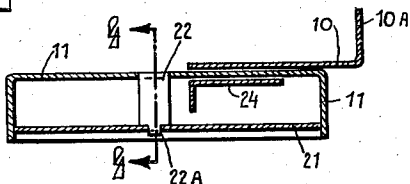


Fig. 3.

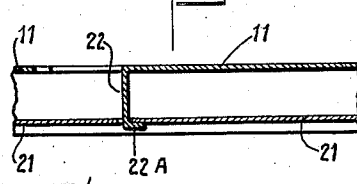


Fig. 4.

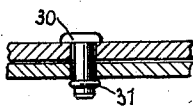


Fig. 5.

INVENTOR.
RICHARD G. LIPTROTT.

BY
Ray Belmont Whitman
ATTORNEY.

UNITED STATES PATENT OFFICE

2,004,444

WINDOW VENTILATOR

Richard G. Liptrott, Brooklyn, N. Y.

Application October 3, 1930, Serial No. 486,107

7 Claims. (Cl. 98—99)

This invention relates to ventilators for windows and like openings, and more especially to an automatic device adapted for use with a window of the sliding sash type.

5 An object of the invention is to provide a ventilator adapted for supplying a shielded passageway through a portion of the window space, such as the bottom, when the window has been raised, said passageway, however, hindering air draughts from flowing directly therethrough, and preventing the elements, such as rain and snow, from passing therethrough.

10 Another object is to provide a device of this character which will be moved beneath the window automatically as the same is raised and will also automatically be moved out of the way when the window is lowered.

15 A further object is to provide such a device that will freely and surely clear the window sill as it is moved in and out with the closing and opening of the window and which will give the utmost of protection against the entrance into the room through the ventilator of the elements not desired.

20 All these and other objects, as suggested herebelow, are attained by the methods and means now to be described, and illustrated in the accompanying drawing, in which—

25 Figure 1 is a side elevational view partly in section, of one embodiment of the invention positioned beneath the window opening when the window is raised in ventilatable position.

30 Fig. 2 is a view similar to Fig. 1 but showing the ventilator in its inward or out-of-the-way position with the window closed.

35 Fig. 3 is a cross-sectional view through the line 3—3 of Fig. 2.

40 Fig. 4 is a cross-sectional view through the line 4—4 of Fig. 3.

45 And Fig. 5 is a detailed view showing a readily-removable rivet-like construction adapted to hold the parts of the ventilator in relatively movable relation, and to save time in assemblage.

50 Like numerals refer to like parts throughout the several views.

55 The device consists preferably of a pair of completely-assembled units similar to that illustrated in the drawing and secured on each of the two vertical window sash sides at the bottom thereof. These units are adapted to hold a piece of plate glass or other suitable material at its ends and in such manner that the glass extends across the window opening, to limit said opening, when the window is raised, essentially to the horizontal

area between the bottom of the window and the adjacent surface of the glass of the ventilator.

Each ventilator unit consists of a pivoted and sliding main member 10 and a stationary main member 11.

5 Member 10 is a flat plate shaped substantially as shown and having inwardly-extending (i. e. toward the center of the window) flanges 10A and 10B, the flange 10A terminating in a U-shaped portion 10C, adapted to hold the ventilator glass 12 in readily replaceable position therein. An inwardly-extending flange bracket 13, shaped somewhat as shown, is pivoted at 14, and adapted when swung into the position shown in Fig. 1 resiliently to hold the top of the plate glass 12 in engagement against the surface of the flange 10A, while at the same time preventing the glass from being lifted upwardly. When, however, it is necessary to lift the glass out, this may be accomplished by removing the removable pivoting pin 14 to permit removal of bracket 13. Or part 13 may be partly resilient and so dimensioned that it can be swung up out of the way with the glass in position to permit same to be removed, as for purposes of cleaning. Flange 10B is beveled as shown and adapted to be cammed inwardly by the lower window sash on its downward journey to swing the glass in, out of the way. Member 10 also has an outwardly-projecting pivoting and sliding pin 15 projecting parallel to but away from the glass 12. A notch 16 in conjunction with the upper adjacent edge portion of member 10 serves as a cam surface for directing the movement of member 10 around pin 17, which projects inwardly from each outer or stationary main member 11, parallel with and toward the glass 12 in such manner that members 10, as the window is raised, will first swing outwardly and then downwardly to clear the window sill.

40 The stationary member 11 is an essentially rectangular-shaped plate having its bottom edge slanted, as shown, and being completely flanged outwardly, (or away from the center of the window when in position), around both its ends and both sides except for a space extending from a stop lug 18, to the bottom of said member. Member 11 is secured to the window sash with countersunk screws or other flush fastening means 19—19, and with its flanges bearing outwardly against said sash 20.

50 A plate 21, Fig. 3, is positioned within the flanges of each stationary member 11 and held in spaced relation by spacing lugs 22 struck from the material of member 11 and projecting with the flanges, and having lugs 22A, adapted to be 55

bent over after passing through suitably positioned holes in plate 21 to hold same in position.

Member 11 has a slot 23 positioned somewhat as shown and in which pin 15 moves.

5 A pair of levers 24—25 are pivoted together at 26, the upper end of lever 24 being attached to and moving with pin 15 in slot 23, and when so moved causing lever 25 to pivot around a pivoting pin 27 in member 11 to raise and lower the
10 opposite end 25A of lever 25. This outer or operating end of lever 25 terminates in a flanged slanted portion 25A adapted to be engaged by the lower surface of the sliding window sash 28 when same is lowered to closed position, against
15 the window sill 29.

The pivoting pins used to hold the several parts in movable engagement with each other, as explained above, are preferably as shown in detail in Fig. 5, and each consists essentially of a headed
20 rivet-like member 30 having a groove around its periphery near the end opposite its head. There may be a split circular wire 31 of springy material adapted to be sprung into said groove in such
25 manner that (since its outer diameter when in position is greater than that of the hole in which the pin fits) it will prevent the pin from coming out, while yet permitting its ready removal by merely first springing out the wire from the pin. It will be noted that if the groove is slightly
30 deeper than half the diameter of the wire, the edge of the member or plate which is being held adjacent the wire will bear on a slanted or beveled surface of the circular wire and so cam the wire into its groove when pressure is applied to
35 separate the plate. Thus this construction is essentially self-locking.

The operation of the device is as follows:

When the window is in closed position, and the ventilator units have been previously attached to
40 the sides of the window frame with the glass inserted in position, the ventilator has been swung into the room out of the way of the window, as in Fig. 2. When the window is raised, however, to the position shown in Fig. 1, the weight of the
45 complete ventilator causes it to drop downwardly and outwardly along the slots 23 of members 11 of the ventilator when it will take up the position shown in Fig. 1. This movement, at the same time, simultaneously and automatically lowers
50 lever 24 which pivots 25 to raise the operating surface 25A thereof, to the substantially horizontal position shown. The stop member 18 in stationary member 11 limits outward movement of
55 movable members 10 through engagement with its forward edge. It is of course understood that the levers 24 and 25 are dimensioned to move freely between members 11 and their plates 21. When the angle of the flanges 10A or 10B is steep, the lower part of the member 10 is not forced
60 inward from the base of the closed window very far. In some cases, however, e. g., when there is a handle on the base of the lower window sash it may be necessary to force the lower part of member 10 farther inward with less steep flanges in
65 order to leave room to grip the handle. This throws the upper part of member 10 outward so that the notch 16 fits against pin 17 with the result that when the sash is raised suddenly, the member 10 does not fall against the window ledge, but rides around the pin 17 and the lower part
70 is directed outwardly as it falls downward and takes the position shown in Fig. 1.

It will thus be seen that the mere raising of the window permits the ventilator to assume a position beneath the sash and over the top of the

sill, such that a maximum of ventilating effect with a minimum of weather exposure is obtained. And a mere lowering of the window automatically moves the ventilator inwardly out of the way of the window and in such manner that it surely and
5 positively clears the window sill in its movement.

Also the fastening shown in Fig. 5, not only permits ready assemblage of the parts of this invention but has a wide application in other
10 fields, wherever a rivet or pivoting pin is desired.

It is to be understood that the present disclosure is for the purpose of illustration only, and that the invention is not limited thereto. To those skilled in the art, many modifications of the invention will be readily apparent, and it will
15 also be obvious to such skilled persons that part of the method and means may be used without other parts thereof, many such combinations of the parts readily suggesting themselves. Therefore, it should be, and is to be distinctly understood that for a definition of the limitations of the invention, reference must be had to the appended claims.

Having now described the invention what is claimed as new and for which Letters Patent
25 of the United States is desired, is:

1. The combination in a window ventilator of a wind deflecting member, a pair of side members adapted to support said member, each of said side members including a stationary plate
30 and a movable plate, said stationary plate being provided with a slot the movable plate having a supporting pin adapted to slide and pivot in said slot, and also lever means attached to said stationary plate and adapted to be operated by the
35 closing of the window to move said pin, thereby lifting and moving inwardly the movable plates with their wind-deflecting member as the window is lowered.

2. The combination in a window ventilator of 40 a wind-deflecting member, a pair of side members adapted to support said member, each of said side members including a stationary plate and a movable plate, each of said stationary plates being provided with a slot, the movable
45 plate having a supporting pin adapted to slide and pivot in said slot, and also lever means attached to said stationary plate and adapted to be operated by the closing of a window, to move said pin, said slots being positioned to guide the
50 wind-deflecting member with its end-holding members from a position beneath the window upwardly and inwardly to a position to one side of the window and clearing by a substantial margin the window sill.

3. The combination in an automatic window ventilator of means for moving the ventilator from a position beneath the window to a position to one side thereof when the window is lowered, including side brackets, elements provided with slots slanting downwardly and outwardly a member moved by the bottom of the window, a second member moved by the first member, said second member being attached to the opposite end of the first member and there
65 being a pivot in said first member between its ends, and an operating pin positioned at the upper end of the second member and adapted to move in one of said slots slanted downwardly and outwardly to lift said brackets upward and inward.

4. The combination in a window ventilator of a pair of movable plates, a wind-deflecting plate positioned therebetween, and a pair of station- 75

ary plates, one for each movable plate and comprising movable levers, a flange around each stationary plate enclosing said levers, and a cover plate within the flange and permitting movement of the levers thereunder.

5 5. The combination in an automatic window ventilator of means for moving the ventilator from a position beneath the window to a position to one side thereof when the window is lowered, including side brackets, members provided with slots slanting downwardly and outwardly, a pivoted member moved by the bottom of the window, a second member moved by the first member, an operating pin positioned at the upper end of the second member and adapted to move in one of said slots to lift said brackets upwardly and inwardly, and other means, comprising a member adapted to cam against the bottom of the window for moving the ventilator inwardly.

20 6. The combination in a window ventilator of a wind-deflecting member, a pair of side members adapted to support said member, each of said side members including a stationary plate and a movable plate, each of said stationary plates being provided with a slot the movable plate having a supporting pin adapted to slide and pivot in said slot, and also lever means attached to said stationary plate and adapted to be operated by the closing of the window to move said pin, thereby lifting and moving inwardly the movable plates with their wind-deflecting member as the

window is lowered, said stationary plate being provided with a pin and said movable plate provided with an arcuate cam surface adapted to bear against said pin for causing an outward movement simultaneously with a downward movement of said deflecting member when said means are released. 5

7. In a device of the character described, the combination comprising a deflecting member adapted to be swung outwardly from the bottom, said bottom preceding in said swinging motion, a pair of side members adapted for supporting said deflecting member, each of said side members including a stationary plate and a movable plate, said stationary plate being provided with a slot, a supporting pin associated with each of said movable plates and adapted for sliding and pivoting in said slot, and lever means attached to said stationary plate and adapted for being operated by the lowering of the window to move said pin, thereby lifting said movable plates to a position where they may pivot on said pins as trunnions and swing inwardly over the window sill, said stationary plates closing the spaces between the ends of said deflecting member and the frame of said window and covering when the window is shut, all movable parts except said deflecting member, said movable plates and said pins. 10 15 20 25 30

RICHARD G. LIPTROTT.