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F. G. LUMLEY

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WINDOW VENTILATOR

Filed April 10, 1929

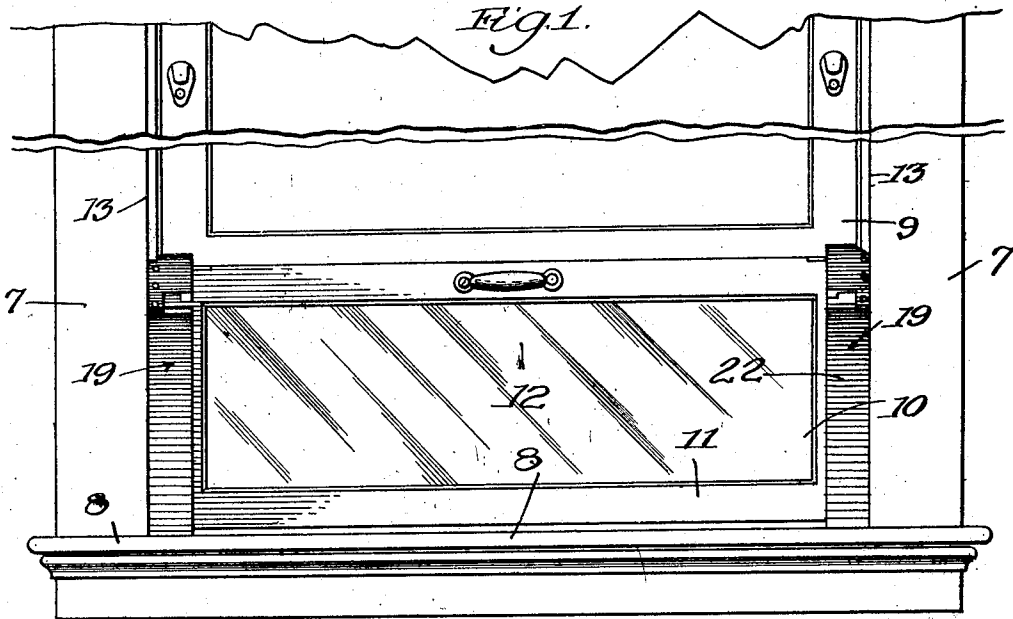


Fig. 3.

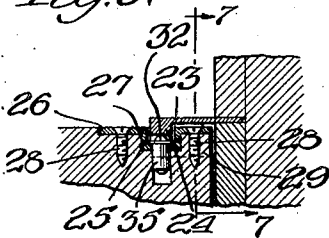


Fig. 4.

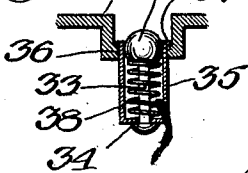


Fig. 5.

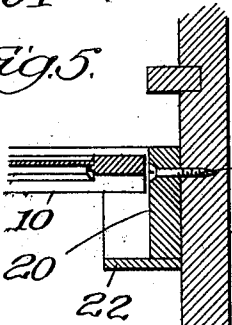


Fig. 6.

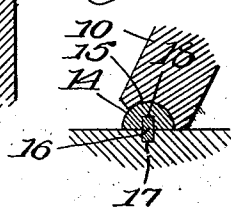


Fig. 2.

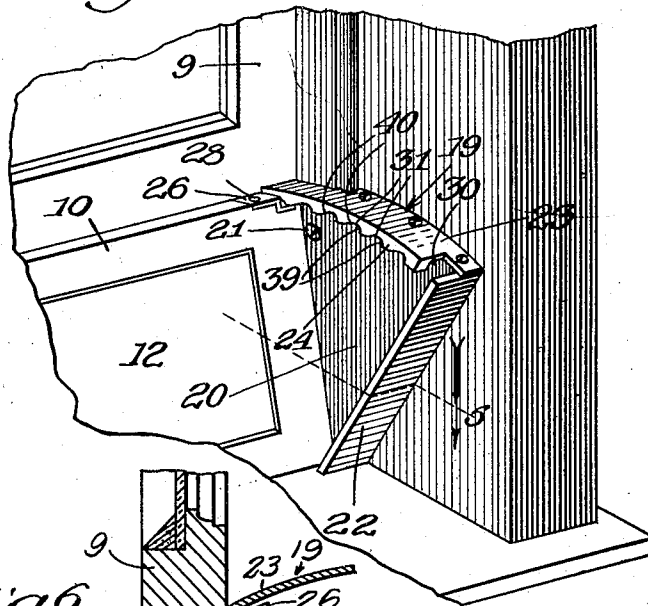


Fig. 7.

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WINDOW VENTILATOR

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My invention relates more particularly to ventilators for use in connection with windows having vertically movable sash.

My objects, generally stated, are to provide a novel, simple and inexpensive construction of ventilator means; to provide a ventilator, the deflector of which may be readily applied to, and removed from, position at the window opening and which may be adjusted with ease and preferably without previously manipulating fastening devices such as nuts or screws, to regulate the effective opening of the window below the inner sash; to provide a construction, the deflector of which may be adjusted to a position in which the window opening is entirely closed in the open position of the sash, and which will not interfere with the free movement of the sash; to provide a construction, the deflector of which will have the capabilities just described, but cannot be swung into the plane of movement of the sash and interfere with the vertical movement of the latter and cannot accidentally fall outwardly through the window opening; to provide a simple means for pivotally supporting the deflector for swinging movement and which will insure a dirt and rain-proof joint between the deflector and the sill of the window-frame; and other objects as will be manifest from the following description.

Referring to the accompanying drawings:—

Fig. 1 is a face view of a window-structure equipped with my improved ventilator means.

Fig. 2 is a broken perspective view of one of the lower similar corner-portions of the window-structure showing the adjustable deflector member of the ventilator in closed position.

Fig. 3 is a broken view in sectional elevation through the deflector, at one end thereof, and the adjacent stationary structure.

Fig. 4 is an enlarged detailed view of a portion of the structure of Fig. 3.

Fig. 5 is a broken section taken at the line 5 on Fig. 2 and viewed in the direction of the arrow.

Fig. 6 is a transverse broken sectional view through the window sill and the superposed deflector member; and Fig. 7, a broken sectional view taken at the line 7 on Fig. 3 and viewed in the direction of the arrow.

In the particular arrangement shown, a window casing is represented at 7, the sill portion of which is shown at 8, the window casing being provided with vertically movable relatively offset window-sash, as is usually in window-structures, the lower sash, represented at 9 only being shown.

The window ventilator comprises a deflector member 10 of plate-like form, it being shown as formed of a rectangular frame 11 with an inset pane 12 of glass. The member 10 in use extends into the space between the sides 13 of the window casing and rests at its lower edge on the window sill 8, the mounting of the member 10 being such that it may be rocked upon its lower edge as a fulcrum, toward and away from the sash 9, to close the opening below this sash when in partially raised condition, as for example, as shown in Fig. 1, or render it open to the room to a greater or less extent, as desired.

The fulcruming of the member 10 on the sill 8 is at a bead-forming portion 14 of the sill which extends lengthwise of the latter, is rounded on its upper surface, and extends into a groove 15 in the bottom of the member 10 and extending lengthwise of the latter preferably throughout its length, the bead 14 being preferably formed by a strip member separate from the sill 8 as shown and seated on the latter and secured in place by a strip 16 set into a groove 17 in the sill and extending upwardly into a groove 18 in the bead 14, the fulcruming means thus provided forming a dust and water tight joint be-

tween the member 10 and sill 8, while permitting of the ready removal of the member 10 from operative position when desired as hereinafter described.

At each side of the window-frame 7 and between its side members 13 and the ends of the member 10, are brackets represented generally at 19 shown as in the form of segment-shaped plates 20, secured flatwise against the side members 13, as by screws, one of which is represented at 21.

The front edges of the plates 20 are formed with inwardly extending flanges 22 disposed in the path of movement of the member 10 in the rocking of the latter in a direction away from the window-opening, namely toward the interior of the room, and thereby form stops for the member 10. The upper edges of the plates 20 are provided with inwardly extending arcuate flanges 23, the inner edge portions of which are provided with depending arcuate flanges 24, outwardly beyond which the ends of the member 10 extend. The upper edge of the member 10 extends above the under surface of the flanges 24, except at portions of the member 10 registering with the flanges 24, these portions of the member 10 being recessed as represented at 25 of one end of the member 10, with a metal insert 26 grooved at 27 to receive the flange 24, these inserts being secured to the member 10 as by the screws 28. The member 10 is thus provided at opposite ends with grooves on its upper surface, into which the flanges 24, respectively, depend, thereby holding the member 10 against lengthwise movement while permitting it to be rocked on its fulcrum, as desired.

The bracket members 19 are provided at the upper ends of their rear terminal portions, with stops (the stop for the bracket plate shown in Figs. 2 and 3 being represented at 29, Fig. 7,) these stops extending into the path of movement of the deflector member 10 in the movement of the latter toward the window opening, and are so positioned as to stop the member 10 when its upper edge extends just short of the vertical plane in which the inner face of the sash 9 extends. Preferably the rear side of the deflector at its ends is recessed as represented at 29^a to compensate for the thickness of the stops 29. Thus, the member 10 may be swung to practically close the window opening below the partially raised sash 9, (Fig. 2) and without danger of the member 10 either dropping out of the window should the sash be raised above the position shown, or obstructing the free vertical movement of this sash.

The front end portions of each flange 23 is notched as represented at 30, to permit the member 10 to be readily lifted out of position in the window frame, and replaced therein, as desired.

Means are provided for releasably holding the deflector member 10 in any one of the different positions to which it may be swung on its fulcrum, the particular means shown comprising a series of notches 31 in the under side of each flange 24, and balls 32 carried by the member 10, one at each end thereof, which are spring pressed upwardly to enter these notches and thereby hold the deflector member 10 in adjusted position, the tension of the springs being such that the operator may, with comparative ease, rock the deflector member 10 into any one of the positions of adjustment provided for by the notches 31.

The balls 32 are located in the faces of the recesses 27 and thus within the confines of the front and rear faces of the member 10, so that the latter may be swung to a position in which the window opening below the sash 9 is practically closed as shown in Fig. 2.

The balls 32 are shown as carried on the upper ends of stems 33 which extend through openings 34 in the bottoms of cup members 35 located in opening 36 in the inset members 26 and held in place by flanges 37 on the cup members 35 engaging the marginal edges of the opening 36, coil springs 38 for pressing the balls 32 into the notches 31, surrounding the stems 33 and located between the balls 32 and the bottoms of the cups 35.

It is desired that the structure present a minimum amount of resistance to the swinging of the deflector member toward the window opening and still present sufficient resistance to hold this deflector member, at all times, against accidental movement out of adjusted position. Accordingly, I prefer to form the notches 31 of the shape shown, namely, to present relatively abrupt walls at the portions thereof farthest from the window opening, as represented at 39 and their opposing walls represented at 40 much less abrupt, the reason for providing relatively abrupt walls 39 being to insure the desired resistance to swinging movement of the deflector member 10 away from the window opening in case of a high pressure of wind against the member 10.

To permit the sash 9 to be either raised or lowered from the position shown in Fig. 1, the window-lifts or handles would be located on the sides of the sash at such a height above the top of the deflector 10 that they will extend above the latter when the deflector is in the position shown in Fig. 1 and the sash is lowered to close the window opening.

While I have illustrated and described a particular construction embodying my invention, I do not wish to be understood as intending to limit it thereto as the same may be variously modified and altered without departing from the spirit of my invention.

What I claim is new and desire to secure by Letters Patent is:

1. In a window-construction, the combi-

nation of its vertically movable sash, a deflector pivotally supported at its lower portion, and stop means for preventing said deflector from being swung into the path of movement of said sash upon lowering said sash from a position in which it is raised above said deflector and positioned to permit said deflector to close the window opening below said sash when the latter is raised part way.

2. In a window-construction, the combination of its vertically movable sash and sill, said sill having a bead at its lower portion extending lengthwise thereof, said sill containing a groove below said bead and said bead having a tongue extending into said groove, and a deflector presenting a groove at which said deflector is fulcrumed on said bead.

3. In a window-construction, the combination of its vertically movable sash and sill, said sill having a bead at its lower portion extending lengthwise thereof, said sill and bead being grooved on opposing faces, a strip extending into the grooves in said sill and bead, and a deflector presenting a groove along its lower edge at which said deflector is fulcrumed on said bead.

4. In a window-construction, the combination of its frame, a vertically movable sash therein, members located at opposite sides of said frame and presenting an arc-shaped guide surface having a depending portion, and a deflector at the bottom of the window opening and fulcrumed at its lower portion to be swung toward and away from the plane of said window opening, said deflector having spaced apart portions presenting an upwardly opening recess at its upper portion into which said depending portion extends.

5. In a window-construction, the combination of its frame, a vertically movable sash therein, members located at opposite sides of said frame and presenting arc-shaped guide surfaces having depending portions, and a deflector at the bottom of the window opening and fulcrumed at its lower portion to be swung toward and away from the plane of said window opening, said deflector having at each end, at its upper portion, spaced apart portions presenting upwardly opening recesses into which said depending portions, respectively, extend.

6. In a window-construction, the combination of its frame, a vertically movable sash therein, members located at opposite sides of said frame, a deflector at the bottom of the window opening and mounted at its lower portion to be swung toward and away from the plane of said window opening, and means for releasably holding said deflector in its different positions of adjustment comprising spring pressed members on said deflector located between the opposite faces of said

deflector and notches on said first named members with which said spring pressed members are engageable.

7. In a window-construction, the combination of its window frame, a sash vertically movable therein, bracket members at opposite sides of the window-opening in said frame and having arc-shaped portions and stops at their inner ends, said portions having notches, a deflector located at the bottom portion of said window opening, a bead on the window sill of said frame, said deflector containing a groove at which said deflector is fulcrumed on said bead to be swung toward and away from the window opening, said deflector having spaced apart portions straddling said arc-shaped portions, and spring means on said deflector adapted to engage said notches, said bracket members being slotted at their inner ends to permit said deflector, together with its spring means, to be bodily removed from, and replaced in, said bracket members.

8. In a window-construction, the combination of its frame, a vertically movable sash therein, members located at opposite sides of said frame and presenting an arc-shaped guide surface having a depending portion, and a deflector at the bottom of the window opening and fulcrumed at its lower portion to be swung toward and away from the plane of said window opening, said deflector having spaced apart portions presenting an upwardly opening recess at its upper portion into which said depending portion extends, said depending portion containing in its lower edge a series of notches, and means on said deflector releasably engaging the notched portion of said depending portion.

9. In a window-construction, the combination of its frame, a vertically movable sash therein, members located at opposite sides of said frame and presenting an arc-shaped guide surface having a depending portion, and a deflector at the bottom of the window opening and fulcrumed at its lower portion to be swung toward and away from the plane of said window opening, said deflector having spaced apart portions presenting an upwardly opening recess at its upper portion into which said depending portion extends, said depending portion containing in its lower edge a series of notches and spring means on said deflector releasably engaging the notched portion of said depending portion.

10. In a window construction, the combination of its frame, a vertically movable sash therein, members located at opposite sides of said frame, a deflector at the bottom of the window opening and mounted at its lower portion to be swung toward and away from the plane of said window opening, and means for releasably holding said deflector in its different positions of adjustment comprising spring means on said deflector located be-

tween the opposite faces of said deflector and notches on said first-named portions with which said spring means are engageable.

11. In a window construction, the combination of a vertically movable sash, a deflector, means pivotally supporting the deflector adjacent its lower edge whereby the upper portion of the deflector may be swung away from the plane of movement of the sash and also toward and relatively close to the sash to respectively expose and substantially close the space between the said upper portion and sash, the pivotal axis of said deflector being outwardly of said plane of movement whereby the deflector in said space-closing position will be inclined to shed rain.

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