June 22, 1937. J. J. FOLEY 2,084,613

VENTILATOR CONSTRUCTION

Filed July 28, 1933 2 Sheets-Sheet 1

Fig. 1

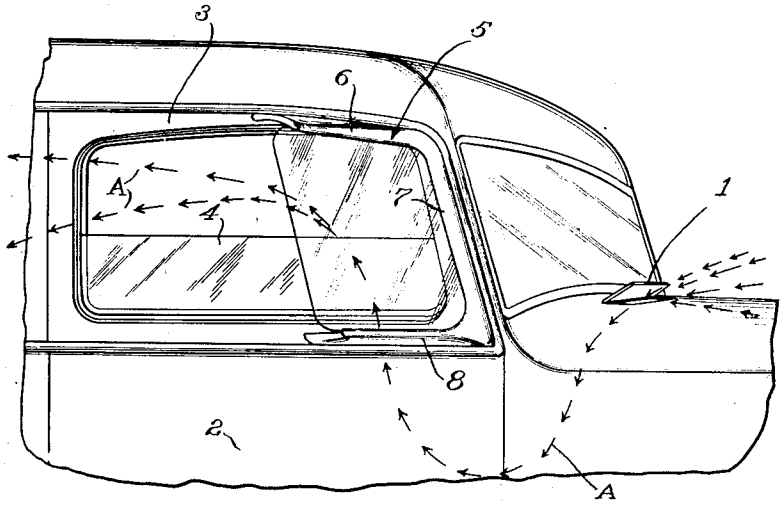


Fig. 2

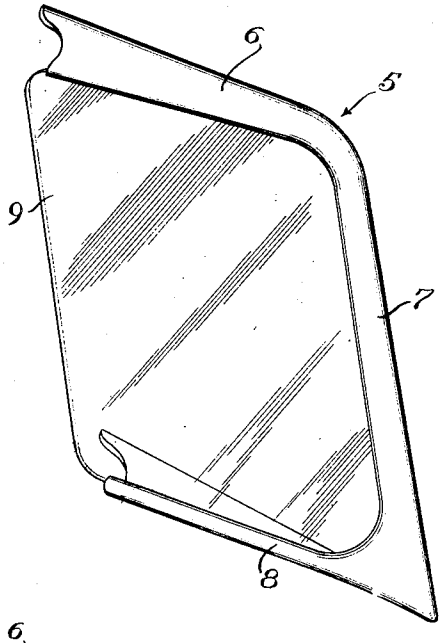
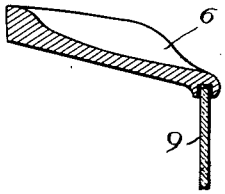


Fig. 3



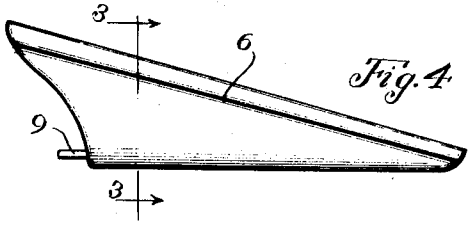


Fig. 4

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VENTILATOR CONSTRUCTION

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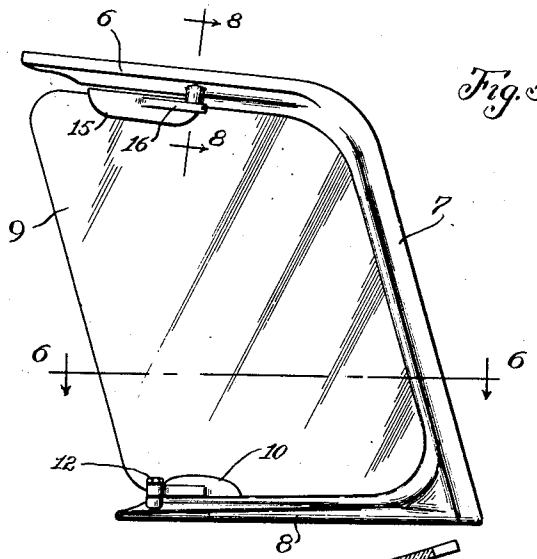


Fig. 5

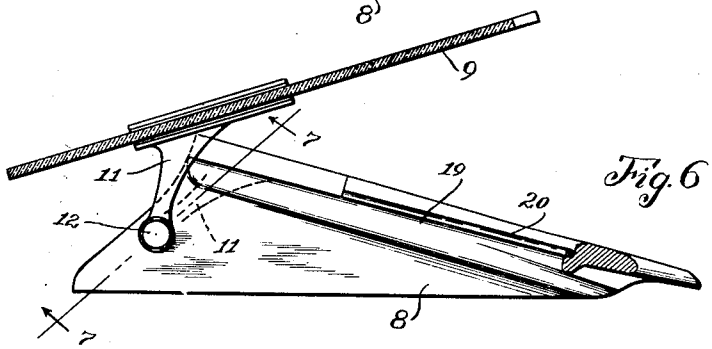


Fig. 6

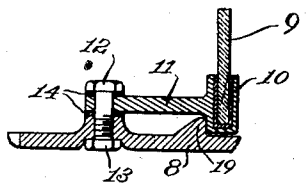


Fig. 7

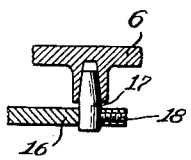


Fig. 8

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UNITED STATES PATENT OFFICE

2,084,613

VENTILATOR CONSTRUCTION

Joseph J. Foley, Chicago, Ill.

Application July 28, 1933, Serial No. 682,564

3 Claims. (Cl. 296—84)

My invention relates to a ventilator construction.

One of the objects of my invention is to provide an improved ventilating system for automobiles by means of which the warm, stale air may be drawn out of the interior of the car without creating unpleasant drafts.

A further object of my invention is to provide such a construction in which the degree of suction caused by the ventilator may be controlled by raising or lowering the window adjacent the ventilator.

A further object of my invention is to provide such a construction in which air drawn in through the cowl ventilator passes down around the feet of the occupants of the car and is thence drawn out through the opening above the sliding window glass.

A further object of my invention is to provide a construction of the type indicated above in which, when desired, an adjustment may be made whereby the air, instead of being sucked out of the car, will be caught and forced into the car in order to cause a rapid circulation of air within the car.

Further objects and advantages of the invention will be apparent from the description and claims.

In the drawings, in which two forms of my invention are illustrated,

Figure 1 is a perspective view of the front end of a car showing my improved ventilator;

Fig. 2 is a perspective view of the suction ventilator attachment;

Fig. 3 is a section on the line 3—3 of Fig. 4;

Fig. 4 is a plan view of the ventilator attachment;

Fig. 5 is a side elevational view showing a modified form in which the glass in the ventilator is adjustable to scoop air in when desired;

Fig. 6 is a section on line 6—6 of Fig. 5;

Fig. 7 is a section on the line 7—7 of Fig. 6; and

Fig. 8 is a section on the line 8—8 of Fig. 5.

Referring to the drawings in detail, and first to Figs. 1 to 4, inclusive, the construction shown therein comprises the front part of a car having an adjustable cowl ventilator 1, a door 2 having a window frame in its upper portion in which a glass pane 4 is vertically slidable, and a suction ventilator attachment 5 for drawing air out of the car above the upper edge of the adjustable sliding pane 4.

A ventilator may be provided on both front doors, or on all of the doors, if desired, or on any panel having a window frame in which a glass pane is adjustable to control the amount of suction.

In the construction shown, with the cowl ventilator open, there will be a circulation of air, as indicated by arrows A, in through the cowl ventilator 1, down around the feet of the occupants of the car, and thence upwardly and outwardly through the opening above the sliding glass pane 4, this circulation being effected by the suction action of the ventilator attachment 5 caused by the travel of the car.

If the cowl ventilator is closed, the suction created by the ventilator attachment still causes the warm, stale air to be drawn out of the interior of the car, fresh air being supplied at innumerable points in the body construction, such as the openings around the doors and windows, etc. With the cowl ventilator closed and the ventilator constructions provided on the front doors, the air within the car gradually moves forward as a mass and is drawn out above the upper edges of the sliding glass panes. In this construction, it will be noted that there are no moving parts to get out of order, no adjustments to be made, and no strain on the ventilator glasses to result in breakage. It will also be noted that there are no dangerous chilling drafts occasioned by this system of ventilation, but rather a gradual movement of the air within the car toward the low pressure area created by the ventilator attachments.

Each of these ventilator attachments comprises a unitary glass supporting frame which is rigidly secured to the window frame in any suitable manner, as by means of screws which may either be screwed in from the outside of the frame or may be inserted from the inside of the door and screwed into the frame. This unitary frame comprises an upper portion 6 extending along the upper portion of the window frame for supporting the glass and sealing between the upper edge of the glass and window frame, a front portion 7 extending along the front portion of the window frame and sealing between the front edge of the glass and window frame, and a lower portion 8 extending along the lower portion of the window frame and sealing between the lower edge of the glass and window frame. It will be noted that the upper and lower portions of this unitary frame prevent dust, draft, rain, snow, flying particles, and insects from entering the car. It will also be noted that the circulation of air effected by this suction ventilator keeps the windshield and windows

from clouding or frosting. It will also be understood that circulation is such that the occupants of the back seat are not exposed to disagreeable drafts and to smoke blowing back to the rear of the car.

With this construction, the car can be driven in a driving rain without closing the windows on either side, although if the wind is directly from the side and it is a strong wind, it may be necessary to close the window on one side. In ordinary rains, however, the windows on both sides can be left open because of the outwardly-deflected air currents created by the action of the ventilators.

The construction shown in Figs. 5, 6, 7, and 8 can be used just as the construction previously described. However, there are some car users who, on occasion, like to have a current of air directed against their faces and bodies and for such users the adjustable type of ventilator may have an appeal. For this purpose, the glass 9 in the ventilator attachment is made adjustable so that it may be swung from a sealing engagement with the frame to the full-line position shown in Fig. 6, in which, instead of causing air to be sucked out of the car, it will scoop air into the car. For this purpose, the glass pane 9 is mounted in a pair of hinge clips which are substantially in axial alignment. The lower hinge clip comprises a channel portion 10 in which the lower edge of the glass is firmly seated and secured, and a hinge arm 11 having a pivoted frictional connection with the lower frame portion, as shown in detail in Fig. 7. This hinge connection comprises a screw 12 extending through an opening in the hinge arm and frame portion and threaded into a nut 13 seated in a pocket in the lower side of the frame portion 8. Suitable friction washers 14 may be provided for the purpose of holding the glass in any position to which it may be adjusted.

The upper clip hinge comprises a clip portion 15 for embracing the upper edge of the glass and a hinge arm 16 having a pivotal connection with the upper frame portion. This pivotal connection, shown in detail in Fig. 8, comprises a pivot pin 17 having a tapered portion engaging a correspondingly-tapered opening in the frame portion 6 and a set screw 18 for holding the taper pin in the hinge arm. The taper pin may be adjusted to give the desired frictional engagement with the tapered opening to further assist in holding the pane in adjusted position.

By swinging the pane outwardly to the position shown in Fig. 6, the occupants of the car can cause air to be scooped in to direct strong currents of air into the interior of the car when desired.

In both the forms shown, the glass may be seated in suitable channels in any usual or suitable manner. In the form of Figs. 5, 6, 7 and 8, the frame may be provided with a flange 19, against which the glass swings and closes snugly when in suction-creating position. A suitable packing strip, such as a small rubber tube 20, may be provided for the glass to bear against to make a weather-tight engagement and to prevent rattling.

Further modifications will be apparent to those skilled in the art and it is desired, therefore, that my invention be limited only by the prior art and the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A ventilator construction for automobiles comprising a window frame, a window vertically slidable therein, a transparent panel, and means for mounting said panel adjacent and outside the plane of said window so as not to interfere with the sliding movement of the window, said mounting means comprising a unitary three-sided frame including a top side, a bottom side and a front side, said top and bottom sides being in general triangular and tapering from rear to front, the front side extending between apices of the triangular top and bottom sides and being unitary with respect to said top and bottom sides, said top, bottom and front sides extending along and in substantially weather-tight relation with respect to the top, bottom and front sides, respectively, of the window frame, said transparent panel being mounted in substantially weather-tight relation with respect to all three of the sides of said unitary frame.

2. A ventilator construction for automobiles comprising a window frame, a window vertically slidable therein, a transparent panel, and means for mounting said panel adjacent and outside the plane of said window so as not to interfere with the sliding movement of the window, said mounting means comprising a unitary three-sided frame including a top side, a bottom side and a front side, said top and bottom sides being in general triangular and tapering from rear to front, the front side extending between apices of the triangular top and bottom sides and being unitary with respect to said top and bottom sides, said top, bottom and front sides extending along and in substantially weather-tight relation with respect to the top, bottom and front sides, respectively, of the window frame, said transparent panel being mounted in substantially weather-tight relation with respect to all three of the sides of said unitary frame, said panel having pivotal connection with said upper and lower sides, respectively, of the frame construction for pivotal movement about a substantially vertical axis from a first position, in which the front edge of the panel is in weather-tight relation with respect to said front side of the frame construction and the rear edge of the panel is spaced from the plane of the window, causing air to be drawn outwardly from the car when the window is open, and preventing the entrance of air between said front side of the frame and the panel, to a second position in which the front edge of the panel is spaced outwardly from said front side of the frame to enable the entrance of air between said front side of the frame and the panel and into the car when the window is open.

3. A ventilator construction for automobiles comprising a window frame, a window vertically slidable therein, a transparent panel, and means for mounting said panel adjacent and outside the plane of said window so as not to interfere with the sliding movement of the window, said mounting means comprising a unitary three-sided frame including a top side, a bottom side and a front side, the front side extending between the top and bottom sides and being unitary with respect to said top and bottom sides, said top, bottom and front sides extending along and in substantially weather-tight relation with respect to the top, bottom and front sides, respectively, of the window frame, said transparent panel being mounted in substantially weather-tight relation with respect to all three of the sides of said unitary frame, said panel having pivotal connection with said upper and lower sides, respectively, of the frame construction for pivotal movement about a substantially vertical axis from a first position,

in which the front edge of the panel is in weather-tight relation with respect to said front side of the frame construction and the rear edge of the panel is spaced from the plane of the window, causing air to be drawn outwardly from the car when the window is open, and preventing the entrance of air between said front side of the frame and the panel, to a second position in which the front edge of the panel is spaced outwardly from said front side of the frame to enable the entrance of air between said front side of the frame and the panel and into the car when the window is open.

JOSEPH J. FOLEY.