

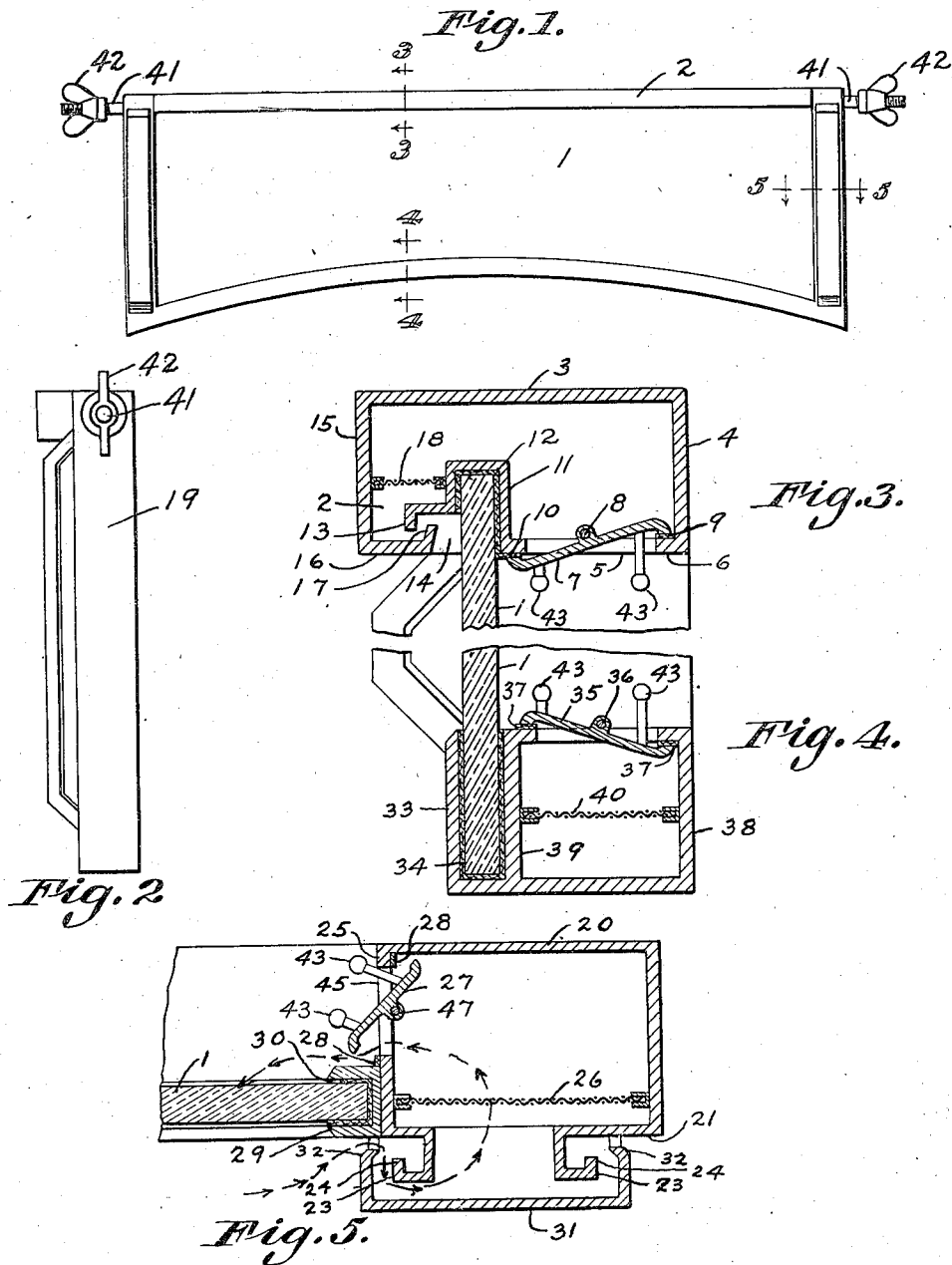
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VENTILATOR

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## UNITED STATES PATENT OFFICE

2,019,904

## VENTILATOR

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4 Claims. (Cl. 98—92)

This invention refers to ventilators and more particularly to a special type adapted to use and direct air currents to suit special situations and requirements. The objects of this invention include an arrangement for controlling incoming and outgoing air currents in their intensity; to direct them in such a manner as to eliminate draughts and currents through restricted openings adapted to unequal or erratic flow of air currents; to be arranged to provide for a glass window a flow of air currents that will tend to prevent frosting or deposition of condensation or moisture thereon; and an arrangement for keeping the air currents free of dust and lint, and yet split the air into individual currents. Other objects will become apparent as the invention is more fully set forth.

Ventilators for windows and automobile windshields of the conventional form are provided with an opening leading to the outside and passage therefrom that leads abruptly and quickly to the inside. This brings the incoming air at the same temperature approximately as that of the outside and causes draughts of intensity to flow from the ventilator. In this ventilator the air is controlled as it enters by means of an adjustable valve door or trap, then directed through relatively long passages along the sides of the window, and then along the bottom of the window where its egress is controlled in amount and direction in an adjustable degree.

In the drawing, which illustrates by way of example, an embodiment of this invention:

Figure 1 is a front view of an automobile windshield provided with a ventilator embodying this invention.

Figure 2 is a side view of Figure 1.

Figure 3 is a sectional view taken along the line 3—3 of Figure 1.

Figure 4 is a sectional detail taken along the line 4—4 of Figure 1.

Figure 5 is a sectional detail taken along the line 5—5 of Figure 1.

Similar reference characters refer to similar parts throughout the drawing.

In the construction, 1 represents a conventional windshield glass secured in a frame having an upper mullion 2 that is hollowed out as indicated in Figure 3. The section indicates the formed construction with the top plate 3; the depending rear 4 having an opening 5 located on the underside 6 and provided with a flat valve door 7 hinged centrally on a rod 8. The valve trap preferably opens and closes as indicated, and has felt washers 9 and 10 provided as seats on which to close

tightly and quietly. Adjacent to the valve is a recessed portion 11 arranged to contain and hold the glass 1; felt or other resilient material 12 being provided to make it tight and secure. An extending lip 13 projects from the portion 11 and provides a baffle over an opening passage 14 arranged in the front portion of the mullion which is provided with a front wall 15, a bottom plate 16 and lip 17 as indicated. A screen 18 preferably of wire is mounted in the section to provide a means for cleaning the air currents and breaking them up into direct and straight flowing currents.

The sides 19 of the frame are also hollowed into the form shown in section in Figure 5, having a box-like form with rear wall 20, an outside wall 21, a channel 22 with lips 23 and 24 and an inside wall 25 with valve opening 45. A screen 26 is provided as indicated, and a valve trap 27 with felt seats 28 and mounted on rod 47. An extension channel 29 is attached to provide a suitable holding arrangement for the glass 1, and has felt 30 as shown. In front of the lips and spaced away from same is a front plate 31 and has the bevelled walls 32 to direct the air currents into the frame from a double entrance on both sides 25 of the window.

The bottom mullion of the frame has a construction as indicated in the sectional view Figure 4, having a channel 33 for the glass 1, felt 34, a trap valve 35 mounted on rod 36 and with felt seats 37, a rear wall 38, side walls 39 and a screen 40.

The top of the frame is provided with rods 41 and thumb screws 42 for securing the windshield in place on an automobile in a conventional manner.

The arrows on the drawing indicate the general flow of air currents in the mullions and frame, and the mechanism 43 shows a method for opening and closing the valve traps.

The air enters the mullion at the openings behind the plates 31 and at 17, entering the box-like sections of the mullion at the top and sides, following the direction indicated by the arrows and then passing through the valve trap openings to the back of the glass 1. The valve traps control the amount of air passing through, and their position and shape direct the air currents to the front of the glass at several points depending on the pitch of the angle they are moved to.

The air currents come in through the whole length of the top mullion and the sides, but not the bottom portion of the frame. The openings for the ingress and egress of the air currents run the whole length of these parts. The entrance

openings are so arranged that the air currents have to pass against baffle arrangements provided by the double lips 23, 24, and 16, 17 to prevent rain, sleet, and snow getting through, while the screens 18 and 26 strain the air currents of their dust and small particles, as well as control erratic drafts that might otherwise develop. The arrangement spreads the air currents over the inside of the glass and being at the same temperature as the outside, lessens the stresses of temperature on the same. At the same time, moisture and condensation is prevented from settling on the glass. The arrangement, while shown for automobile windshields or windows, is also suitable for other types of windows. As the air currents pass through the inside of the frame, there is less injury done to the outside surfaces thereof. The valve traps by their form and movement are able to provide a varied system of flow of the air current as it passes out, and may force same against the glass or allow it to pass out away from it.

While but one form of the invention is indicated in the drawing, it is not desired to limit this application for patent to this particular form or in any other way otherwise than limited by the prior art, as it is appreciated that other forms of construction could be used, that would employ the same principles and come within the scope of the appended claims.

Having thus described the invention, what is claimed is:—

1. A windshield ventilator for automobile windshields and the like comprising in combination an upper mullion having a hollowed sectional construction with a plurality of walls joined and disposed at different angles to each other, one of said walls having a portion arranged to form and provide an interior panel holding channel distinct from the main portion or frame of the mullion and having a plurality of openings along the length of the channel and adjacent thereto, side mullions connected with the first mentioned mullion at either end thereof and having a hollowed construction with the interior thereof connected with that of the upper mullion, the walls of the side mullions being disposed at different angles to each other and having openings longitudinally therein, means for controlling the amount and direction of incoming air currents of said mullions, projecting channels on one of the walls of the side mullions and in front of the openings thereof, lips attached thereto and flaring away from the channels, front plates mounted on said side mullions and spaced longitudinally therefrom and attached at their end portions to the side mullions, and arranged to provide relatively long openings for the ingress of air current to and in a plurality of directions to the projecting channels through the mullions and against the surfaces of the panel held by the channels, and a bottom mullion connected with the said side mullions said bottom mullion being without a direct ingress for incoming air to the ventilator.

2. A windshield ventilator for automobile windshields and the like comprising in combination an upper mullion having a hollowed sectional construction with a plurality of walls joined and disposed at different angles to each other, one of said walls having a portion to form and provide an interior panel holding channel distinct and auxiliary to surrounding exterior walls and having a plurality of openings along the length of the channel and adjacent thereto, side mullions connected with the first mentioned mullion at

either end thereof and having a hollowed construction with the interior thereof connected with that of the upper mullion, the walls of the side mullions being disposed at different angles to each other and having openings longitudinally, therein, means for controlling the amount and direction of incoming air currents of said mullions, projecting channels on one of the walls of the side mullions and in front of the openings thereof, lips attached thereto and flaring away from the channels, front plates mounted on said side mullions and spaced longitudinally therefrom and attached at their end portions to the side mullions, and arranged to provide relatively long openings for the ingress of air current to and in a plurality of directions to the projecting channels, and a bottom mullion connected with the said side mullions; and means for securing a glass panel to the mullions, and a plurality of centrally hinged flat valve traps for controlling the amount and directions of currents towards the panel from the mullions, and means for splitting up the air currents as they pass through the mullions.

3. In an automobile windshield, a ventilator comprising in combination an upper mullion having a hollowed sectional construction with a plurality of walls joined and disposed at different angles to each other, one of said walls having a portion to form and provide an interior panel holding channel distinct and auxiliary to surrounding exterior walls and having a plurality of openings along the length of the channel and adjacent thereto, side mullions connected with the first mentioned mullion at either end thereof and having a hollowed construction with the interior thereof connected with that of the upper mullion, the walls of the side mullions being disposed at different angles to each other and having openings longitudinally therein, means for controlling the amount and direction of incoming air currents of said mullions, projecting channels on one of the walls of the side mullions and in front of the openings thereof, lips attached thereto and flaring away from the channels, front plates mounted on said side mullions and spaced longitudinally therefrom and attached at their end portions to the side mullions, and arranged to provide relatively long openings for the ingress of air current to and in a plurality of directions to the projecting channels, and a bottom mullion connected with the said side mullions; and means for securing a glass panel to the mullions, and a plurality of centrally hinged flat valve traps for controlling the amount and directions of currents towards the panel from the mullions, and means for splitting up the air currents as they pass through the mullions, and means for controlling the positions of the valve traps independently of each other, means for mounting and supporting the frame made from said mullion parts, and baffles for guiding the incoming air currents sinusously at their entrance and before they pass into the main interior section of the mullions.

4. A windshield ventilator comprising in combination a glass panel, a top mullion having an exterior hollow box-like frame structure enclosing within its walls an interior recessed portion adapted to embrace and hold the glass panel on its edge portion, the enclosing walls being arranged with barriers to permit the ingress of air and cause the same to pass over the recessed portion and over the edge of the panel from the front of the mullion to the back thereof, a flap valve at the rear of the mullion and hinged cen-

trally to permit the movement thereof into open and closed positions whereby the egress of air from the mullion may be directed or controlled against the said glass panel surface opposite to that from which the air enters the mullion, a pair of sides attached at right angles to the end portions of the mullion and having a box-like structure substantially as described and with auxiliary channels for holding the side edge portions of the

glass panel and having flap valves for directing and controlling air against the rear surface of the panel, and a bottom mullion having a hollow box-like structure with a flap valve longitudinally arranged to direct and control air against the rear surface of the panel and means for attaching the windshield in place.

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