

May 7, 1929.

M. S. TOWNSEND

1,712,180

VENTILATOR FOR VEHICLES

Filed May 9, 1928

Fig. 1.

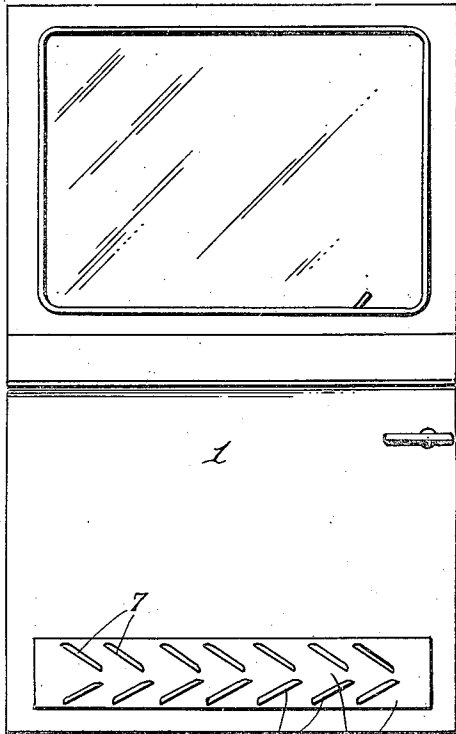


Fig. 2.

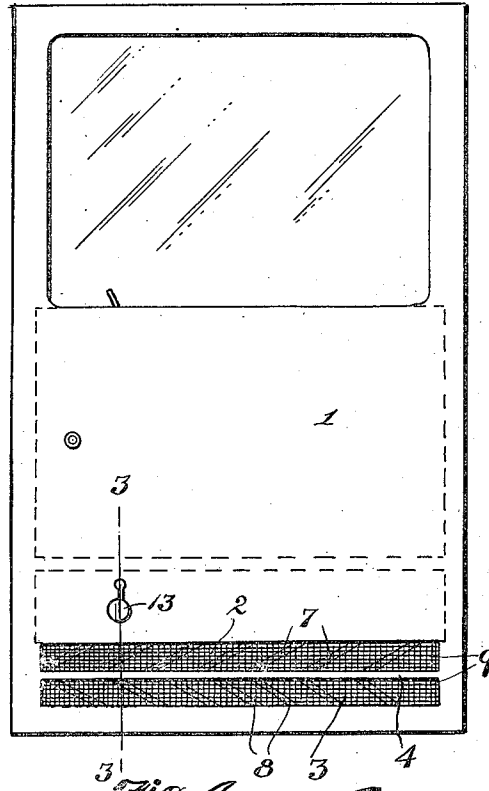
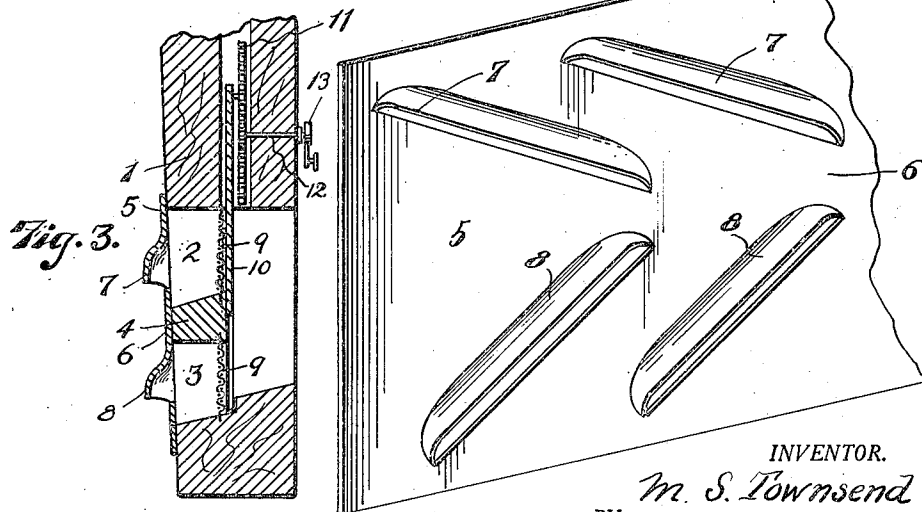


Fig. 4.



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VENTILATOR FOR VEHICLES.

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This invention relates to improvements in ventilators for vehicles, more particularly to automobiles of the closed-car type in the operation of which much discomfort is caused by the heat and gas fumes from the motor. The object of the instant invention is to provide a ventilating means that can be readily installed in the ordinary vehicle without marring the appearance of the car and which is efficient in its purpose. The invention consists in the novel construction, combination and arrangement of parts hereinafter described, pointed out in the appended claims and illustrated by the accompanying drawings.

In the drawings, in which similar reference characters designate corresponding parts,

Figure 1 is an elevation of the outer side of a door in which is mounted the ventilator,

Figure 2 is a similar view of the inner side of the door shown in Figure 1,

Figure 3 is a cross-sectional view of the lower part of the door shown in Figure 2, being taken on the line 3-3 thereof, and

Figure 4 is an enlarged perspective view, showing an end of the panel in which the louvred openings are formed.

Referring to the drawings in detail, 1 designates the door of an automobile of the closed door type, the front of the car being indicated by the arrow *a*. In the lower part of the door and extending transversely across the same is a recess including the narrow upper and lower openings 2 and 3, respectively, separated by the horizontal bar 4 seated at its ends in the frame of the door. Secured to the outer face of the door and extending over the two openings is the panel 5 having an intermediate flat part 6 abutting the cross-bar 4. In this plate are two series of louvre slats 7 and 8, respectively, the two series extending across the panel in parallel relation and separated by the intermediate flat part 6 of the panel.

The louvre slats of both series are inclined at an angle of about fifteen degrees from the horizontal, but this angle of inclination may be varied to meet different requirements. In the formation of the slats in both series, the material of each is shaped to project outwardly at the lower edge of the slat over the slot immediately below, as shown in Figures 3 and 4. By shaping the slats in this manner and inclined slightly from the horizontal, they prevent entrance through the slots re-

spectively guarded by the same, of rain that may be falling or water that may be flowing down the outer face of the door.

With the louvre panel constructed and mounted as indicated and the vehicle traveling at fair rate of speed the disposition of the louvre slats is such as to cause air to enter the vehicle through the slots guarded by the slats in the upper series 7 and an outflow of air through the slots guarded by the slats in the lower series 8, thereby causing a circulation of fresh air within the vehicle. The position of a slat in the upper series 7 is such that its raised lower part opens in a forward direction over the slot immediately below, so that the advancing air is engaged by the slat and directed through the slot. The position of a slat in the lower series 8 is such that its raised lower part opens to the rear and tends to prevent the entrance of the advancing air into the slot immediately below. The advancing air flowing past the slats of the lower series is directed outwardly as it passes each individual slat and by entraining the air behind the slat tends to create a partial vacuum or suction that draws the air outwardly through the slot immediately below the slat. By forcing a flow of air inwardly through the slots interspaced with the slats 7 in the upper series and drawing the air outwardly through the slots between the slats 8 in the lower series, fresh air is carried into the vehicle and the foul air is withdrawn. The bar 4 between the openings 2 and 3, separates the current of the inflowing air from the current of outflowing air and thereby the circulation is facilitated within the body of the vehicle, particularly adjacent to the floor of the vehicle where the gas fumes and heated air are apt to collect.

Secured across the inner sides of the transverse openings 2 and 3 are the screens 9, and inside of these screens is the shutter 10 slidably mounted in the door. Fastened to the inner side of the shutter is the rack 11 engaged by the pinion 12 fixed on the shaft 12 journaled in the door and provided at its inner end with the crank 13 operable from the interior of the vehicle. By means of the crank and the intervening mechanism the shutter can be adjusted to regulate the openings 2 and 3 to provide the desired ventilation.

As shown in the drawing, the size of the slats and slots is somewhat exaggerated to

illustrate the construction and operation of the louvred panel to a better advantage; in actual practice the dimensions are much smaller. The inclination of the louvred openings maintains the stream-like contour of the body of the vehicle and have no mar-

ring effect on the surface finish. While the ventilator is particularly designed for motor cars, yet it is obvious that it can be employed to ventilate railway cars. The louvred panel is a ventilating entirety of itself, and may be made and sold as such to be mounted in vehicles of different types by the manufacturers thereof.

What I claim is:

1. In a ventilating device for a vehicle, a side wall of the vehicle having two separated series of slots controlled by outwardly projecting louvre slats, each louvred slot of both series being oblique to the horizontal with the respective slat projecting from the vehicle wall to extend downward over the slot, the associated slots and slats in one of the series being arranged in the wall to open in a forward direction so that the slats of this series direct the air inwardly through their respective slots during the forward movement of the vehicle, and the associated slots and slats of the other series being arranged in the wall to open in a rearward direction so that the outwardly projecting slats of this series direct the passing air outwardly from their respective slots during the forward movement of the vehicle to create an outward suction of air through the slots of this series.

2. In a ventilating device for a vehicle, a side wall of a vehicle having upper and lower horizontal series of slots controlled by outwardly projecting louvre slats, the associated slots and slats of the two series being oppositely inclined from the horizontal so that they diverge in a forward direction, the inclination of the associated slots and slats in the upper series being such that the outwardly projecting slats of this upper series direct the air inwardly through their associated slots during the forward movement of the vehicle, and the inclination of the associated slots and slats in the lower series being such that the outwardly projecting slats of this lower series direct the passing air outwardly from their associated slots during the forward movement of the vehicle to create an outward suction of air through the slots of this lower series.

3. In a ventilating device for a vehicle, the combination with a side closure of a vehicle, of a panel mounted in the closure having slots controlled by louvre slats, the associated slots and slats being arranged in upper and lower series extending horizontally across the panel and separated by an intermediate part of the panel, each louvred slot of both series being oblique to the hori-

zontal with the respective slat projecting from the panel to extend downward over the slot, the associated slots and slats in the upper series being arranged in the panel to open in a forward direction so that the outwardly projecting slats of this upper series direct the air inwardly through their respective slots during forward movement of the vehicle, and the associated slots and slats of the lower series being arranged in the panel to open in a rearward direction so that the outwardly projecting slats of this lower series direct the passing air outwardly from their respective slots during the forward movement of the vehicle to create an outward suction of air through the slots of this lower series, the intermediate part of the panel serving to separate the inflowing air from the outflowing air on the inner side of the panel.

4. In a ventilating device for a vehicle, the combination with a side door of a vehicle having a transverse recess through its lower part, of a horizontal bar mounted in the door across the recess, a panel secured to the outer face of the door to extend over the recess and to abut the bar, said panel having slots controlled by louvre slats projecting from the outer face of the plate, the associated slots and slats being arranged in upper and lower series respectively registering with the recess in the door above and below the horizontal bar, the slots and slats of the upper series being arranged to open forward so that the outwardly projecting louvre slats of this upper series direct the air through their associated slots during the forward movement of the vehicle, and the slots and slats of the lower series being arranged to open rearward so that the outwardly projecting louvre slats of this lower series direct the passing air outwardly from their associated slots to create an outward suction of air through said slots, the cross bar serving to separate the inflowing air from the outflowing air on the inner side of the panel.

5. In a ventilating device for a vehicle, the combination with a side door for a vehicle having a transverse recess through its lower part, of a horizontal bar mounted in the door across the recess, a panel secured to the outer face of the door to extend over the recess and to abut the bar, said panel having upper and lower series of slots controlled by outwardly projecting louvre slats and with the upper and lower series respectively registering with the recess in the door above and below the cross bar, the associated slots and slats of the two series being oppositely inclined from the horizontal so that they diverge in a forward direction, the inclination of the associated slots and slats in the upper series being such that the outwardly projecting slats of this upper series direct the air inwardly through

associated slots during the forward movement of the vehicle, and the inclination of the associated slots and slats in the lower series being such that the outwardly projecting slats of this lower series direct the passing air outwardly from their associated slots during the forward movement of the vehicle to create an outward suction of air through the slots of this lower series, the cross bar serving to separate the inflowing air from the outflowing air on the inner side of the panel.

6. A ventilating device comprising a panel having upper and lower series of slots controlled by outwardly projecting louvre slats, each louvred slot of both series being oblique to the horizontal with the respective slat projecting from the panel to extend downward over the slot, the associated slots and slats in one of the series being arranged in the panel to open in one direction and the associated slots and slats of the other series being arranged to open in the opposite direction.

7. A ventilating device comprising a panel having upper and lower horizontal series of slots controlled by louvre slats projecting from the panel at the upper edges of the slots; the associated slots and slats of the upper series being upwardly inclined from the horizontal toward the front end of the panel to admit air to these slots during forward movement of the panel, the air being guided into the slots by the associated slats; the associated slots and slats of the lower series being declined toward the front end of the panel so that the slats of this series tend to prevent entrance of air into the associated slots during forward movement of the panel, these slats also operating to provide outward suction of the air at their respective slots during the forward movement of the panel.

In testimony whereof I hereunto affix my signature.

MARION SLADE TOWNSEND.