June 19, 1923.

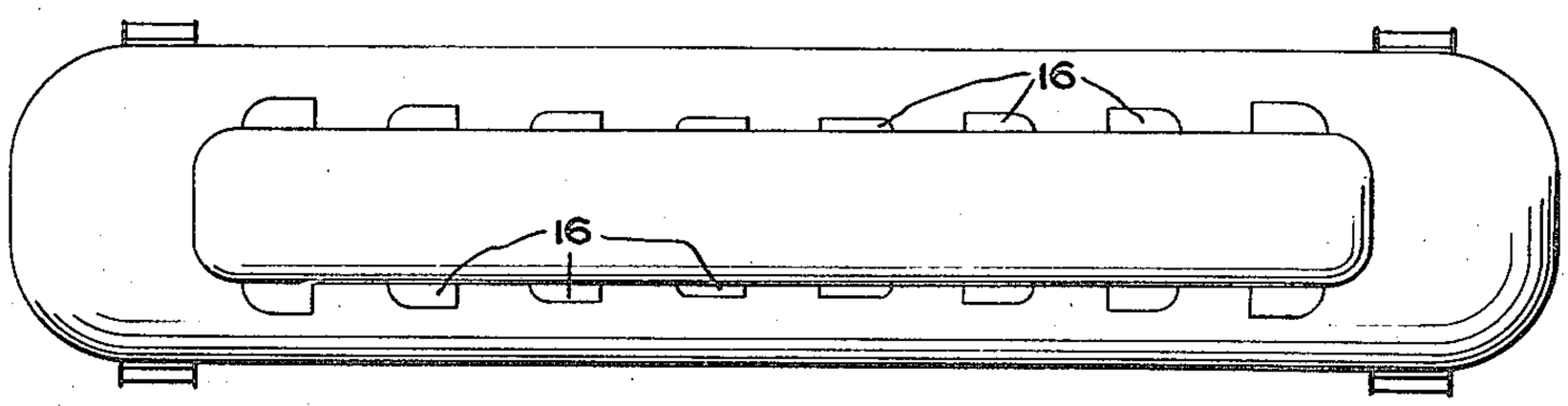
1,459,405

H. W. LEEDS

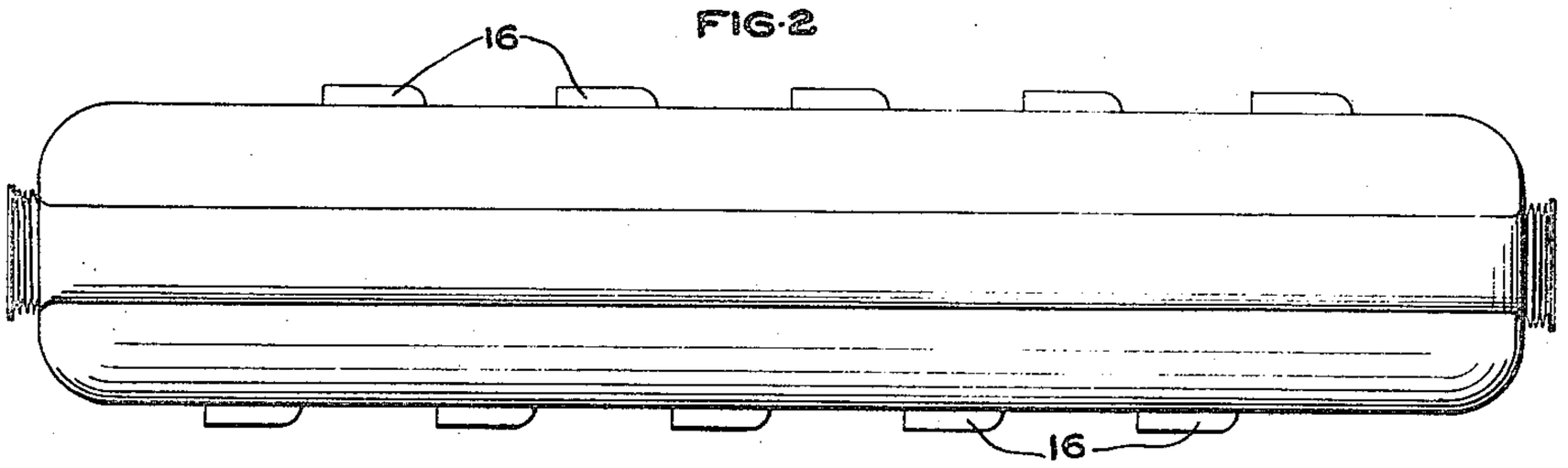
CAR VENTILATOR

Filed March 31, 1920

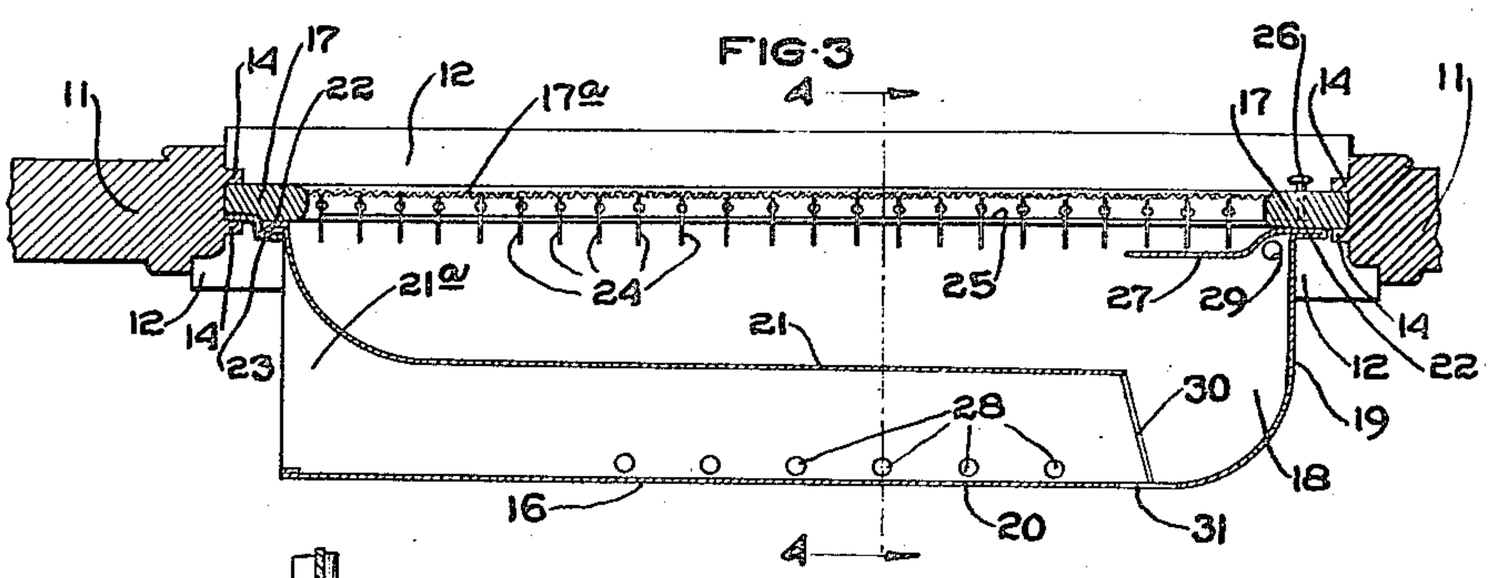
FIG·1



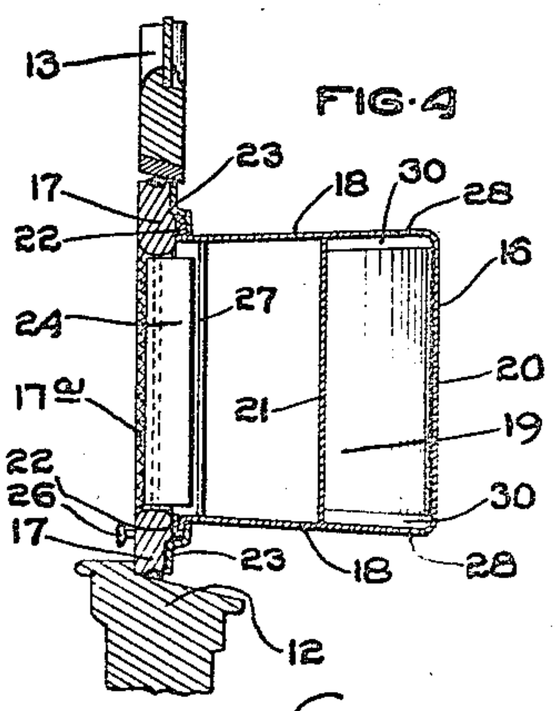

FIG·2




FIG·3




FIG·4




WITNESS:

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ATTORNEYS

Patented June 19, 1923. 1,459,405

# UNITED STATES PATENT OFFICE.

HOSMER W. LEEDS, OF SELIGMAN, ARIZONA.

## CAR VENTILATOR.

Application filed March 31, 1920. Serial No. 370,236.

*To all whom it may concern:*

Be it known that I, HOSMER W. LEEDS, a citizen of the United States, residing at Seligman, in the county of Yavapai and State of Arizona, have invented certain new and useful Improvements in Car Ventilators, of which the following is a specification.

The present invention relates to that general type of ventilator covered by my United States Letters Patent Nos. 948,144 and 1,211,602, and more especially to an improved ventilator adapted for use in passenger cars.

The principal objects of the invention are to provide an efficient ventilator which is compact in form; which is cleanly in its operation; which is adapted to be inserted readily in a car window or equivalent ventilating opening without materially obstructing the vision therefrom; and which may easily be removed and, if desired, reversely inserted in a window when the direction of movement of the car is changed. My improved ventilator is also adapted for use in the deck windows of railway cars, and is so constructed and arranged therein as to automatically and thoroughly ventilate the car when moving in either direction.

Further objects and advantages of the invention will appear as the nature thereof is understood from the accompanying description and drawing, wherein a preferred embodiment is set forth for purposes of illustrating the principle of the invention and not as unnecessarily limiting the scope of the appended claims.

In the drawing—

Fig. 1 is a top plan view of a railway car, illustrating the manner in which the ventilators may be adapted for use in deck windows;

Fig. 2 is a similar view of a railway car, showing ventilators in position in certain of the car windows;

Fig. 3 is a horizontal, enlarged section through a ventilator mounted in a car window; and

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

With reference to the drawing, the numeral 11 designates the jamb of a window at the base of which is the sill 12. The sash 13 is partly raised and permits the ventilator to be inserted in the aperture between the bottom of sash 13, the sill 12 and the vertical sash guides 14.

The ventilator comprises a hood 16 slidably mounted upon a screen frame 17. The forward end and that side of the hood 16 which is mounted on frame 17, are open. The upper and lower surfaces 18 of the hood converge slightly towards their point of junction with said frame. The rear closed end 19 of the hood merges in a gradual curve into the outer side wall 20.

A longitudinal partition 21 is vertically disposed in the hood parallel to side wall 20 for a major portion of its length. Said partition curves at its forward end toward and joins the inner side of hood 16, forming a funnel-like mouth as shown at 21ª in Fig. 3. The partition terminates at its rearward end at a point substantially opposite the beginning of curvature of side wall 20 into the rear wall 19, thus forming in hood 16 a tortuous, air-entraining duct leading from the funnel-like opening 21ª at the forward end of the hood to that side of said hood spanned by the screen mesh of frame 17.

An outstanding flange 22 projects vertically around the inner open side of the hood, and is preferably formed continuous and integral therewith.

A keeper strip 23 is positioned on frame 17 and extends along both of the horizontal frame members and one of the vertical members.

The groove thus formed by the keeper strips about three sides of frame 17 receives the previously mentioned flange of the hood, slidably inserted at that end of the frame having no keeper. In this way the hood is mounted securely upon frame 17, and is prevented from movement thereon by the window and screen guides 14 when said frame is positioned in a window.

A plurality of shutter leaves 24 are pivotally mounted between the horizontal members of frame 17 at such spaced intervals as to close effectively the screened opening in said frame as may be desired. Said shutters are each connected to a rod 25 or other suitable means whereby they may be operated as a unit from the interior side of the window by means of a small actuating lever 26 located in the screened frame.

A vertical partition 27 is positioned near the inner side of the hood, and extends for-

ward from the rear wall 19 to a point substantially opposite the rearward termination of partition 21. Partition 27 is disposed parallel to the inner side to the hood, and only spaced therefrom a sufficient distance to avoid interference with the operation of shutter leaves 24. The purpose of said partition is to direct forwardly the current of air entering through the hood, and to diffuse the same equally over the area of the screened frame.

Inasmuch as this type of ventilator is designed to be reversed in a window when desired, that part of it which was the bottom naturally would become the top. Therefore the top and bottom portions of the hood, including the construction therein, are duplicates of each other, and the following description of the bottom will suffice for the top. As previously stated, the upper and lower surfaces of the hood converge inwardly, thus causing any rain water, cinders, or the like entering the hood to gravitate toward the outer, lower side thereof.

A plurality of small apertures 28 are spaced in the bottom of the hood along said outer side and serve to discharge any foreign matter such as water, cinders, dust and the like carried by the air and entering the hood at its forward open end. Another small aperture 29 may be positioned in the bottom of the hood between the partition 27 and the rear wall 19 for the purpose of discharging therethrough any of the foreign matter which may have passed beyond apertures 28 and beyond a baffle plate 30 which extends across the bottom of the hood between the rearward termination of the partition 21 and the side wall 20, as shown. At this point, in the lower portion of said side wall, is provided a discharge opening 31. Said baffle plate 30 functions to obstruct and to deflect any foreign matter into the opening 31.

When the direction of motion of a car equipped with this type of ventilator is to be changed, the ventilators may be reversed in one of two ways. In the first, the screened frame to which the hood is attached may be turned end for end, in the window; alternatively the hood may be slid horizontally from its engagement with the keepers on the frame, reversed and again slid into the keeper grooves.

The ventilator is readily accessible for cleaning because the interior portion of the hood and inner side of the screened frame carrying the shutters are quickly exposed by simply sliding said hood from its retaining keepers in the frame.

This same type of ventilator is adapted for use in the deck windows of cars by arranging the hood openings to face toward the car center. Each successive pair of ventilators, as illustrated in Fig. 1 may be increased in width, as a result of which each ventilator receives an uninterrupted current of air. The ventilators located from the center to the rear of the car function as air intakes, while the remaining ventilators, located in the forward portion of the car create a suction which draws the air therefrom. Thus with such an arrangement of the ventilating means, the car is most efficiently ventilated when traveling in either direction.

While the above detailed description is based upon an embodiment designed particularly for use in passenger car windows yet it will readily be seen that such a ventilator may advantageously be employed in many other types of enclosed vehicles.

I claim:

1. In a ventilating device, a frame adapted for insertion in a vehicle window, and a hood engaged with the frame for end for end reversal thereon and forming with the opening in the frame an air passage having its inlet and outlet at a substantial angle to each other, whereby to adapt the one device for the intake or exhaust ventilation of a vehicle moving in either direction.

2. In a ventilating device, a frame adapted for insertion in a vehicle window, and a hood slidably engaged with the frame for end for end reversal thereon and forming with the opening in the frame an air passage having its inlet and outlet at a substantial angle to each other, whereby to adapt the one device for the intake or exhaust ventilation of a vehicle moving in either direction.

3. In a ventilating device, a screened frame adapted for insertion in a vehicle window, and a hood engaged with the frame for end for end reversal thereon and forming with the screened opening in the frame an air passage having its inlet and outlet at a substantial angle to each other, whereby to adapt the one device for the intake or exhaust ventilation of a vehicle moving in either direction.

4. In a ventilating device, a frame adapted for end for end reversal in a vehicle window, and a hood slidably engaged with the frame for end for end reversal thereon and forming with the opening in the frame an air passage having its inlet and outlet at a substantial angle to each other, whereby to adapt the one device for the intake or exhaust ventilation of a vehicle moving in either direction.

5. In a ventilating device, a screened frame adapted for insertion in a vehicle window, means mounted on said frame for regulating the effective size of the screened opening therein, said means consisting of a plurality of shutters operating as a unit and controlled by an actuating lever positioned in the side of said frame, a hood open at its front end and at one side and slidably mounted at its open side upon said screened frame whereby to adapt the one device for the intake or ex-

haust ventilation of a vehicle moving in either direction, and a partition extending longitudinally within said hood and forming therein a tortuous air-entraining duct which at its point of intake is funnel-like in shape and at its point of discharge opens upon said screened frame, said hood also provided with a baffle and with discharge openings for conducting away any foreign matter carried by the incoming air.

6. In a ventilating device, a screened frame adapted for end for end reversal in a car window, means mounted on said frame for regulating the effective size of the screened opening therein, said means consisting of a plurality of shutters operating as a unit and controlled by an actuating lever positioned in the side of said frame, a hood open at its front end and at one side and slidably mounted at its open side upon said screened frame for end for end reversal thereon whereby to adapt the one device for the intake or exhaust ventilation of a vehicle moving in either direction, and a partition extending longitudinally within said hood and forming therein a tortuous air-entraining duct which at its point of intake is funnel-like in shape and at its point of discharge opens upon said screened frame, said hood also provided with a baffle and with discharge openings for conducting away any foreign matter carried by the incoming air.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HOSMER W. LEEDS.

Witnesses:
J. N. KELLY,
A. W. AMES.