April 24, 1934. A. L. LEWIS 1,956,509

APPARATUS FOR VENTILATING AND COOLING AUTOMOBILES

Filed Oct. 26, 1931

Fig. 1.

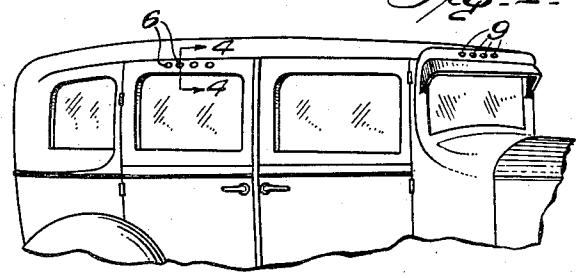


Fig. 2.

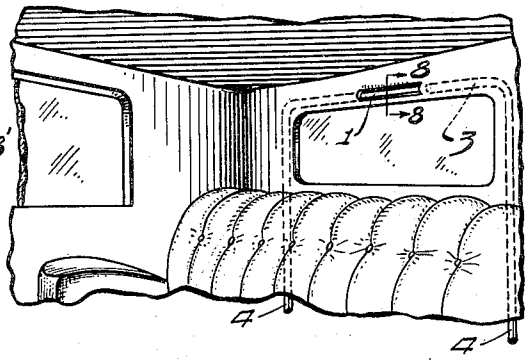


Fig. 3.

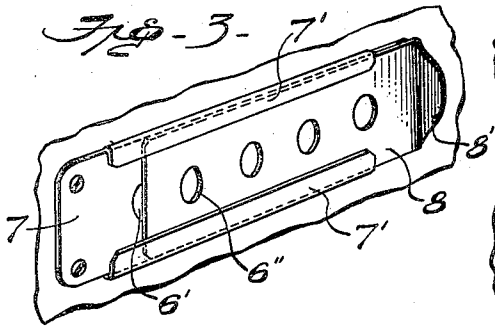


Fig. 4.

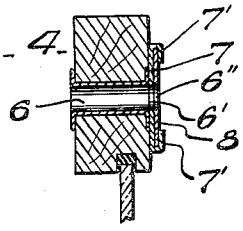


Fig. 5.

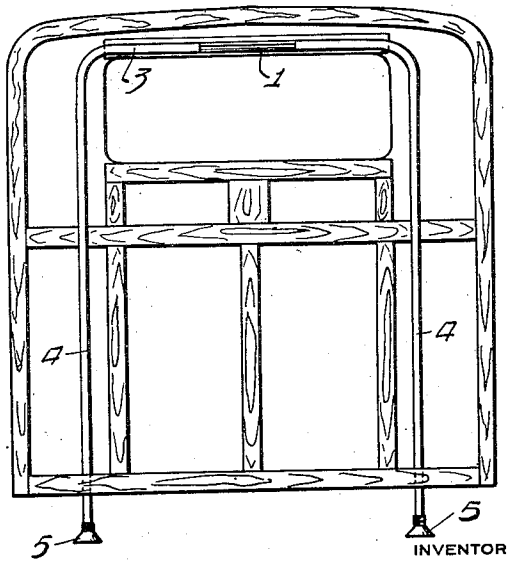


Fig. 6.

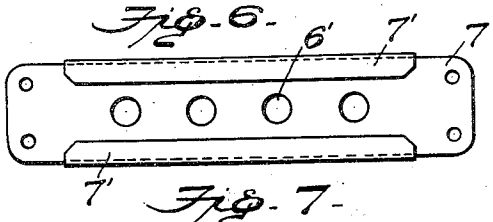


Fig. 7.

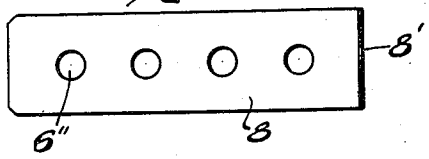
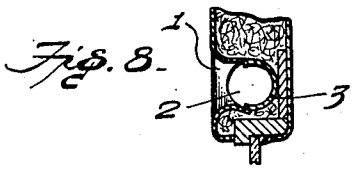


Fig. 8.



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Patented Apr. 24, 1934 1,956,509

UNITED STATES PATENT OFFICE

1,956,509

APPARATUS FOR VENTILATING AND COOLING AUTOMOBILES

Andrew L. Lewis, Petersburg, Va.

Application October 26, 1931, Serial No. 571,190

3 Claims. (Cl. 98—2)

My invention relates to apparatus for ventilating and cooling automobiles, and is particularly intended for changing the air in the upper portion of the car above the heads of the passengers.

Whenever any of the occupants of the car are smoking, the vitiated air rises, and if there is no outlet this air gradually descends until the heads of the passengers are enveloped in smoke and other impurities. This is particularly true of those passengers who occupy the rear seat. The motion of the car causes dead air to accumulate at the rear end, and persons who are sensitive to tobacco smoke suffer considerable inconvenience.

Other inventors have endeavored to remedy this trouble by providing an opening in an intermediate portion of the ceiling of the car. In such arrangement the removal of impure air depends upon the tendency of the warmer air near the top of the car to rise, but this is not sufficient to protect the passengers in the rear seat. The atmosphere at the rear end of the car has no means of escape, and those seated in that portion of the car are enveloped in dead air. It is the object of my invention to provide a ventilator that will continually change the air in the entire car near the ceiling and so remove impurities and provide fresh air above the heads of the passengers, thus protecting them from injurious drafts. This action is similar to that of an electric fan placed in a room on a level with the transom and blowing the air across the room and through the transom.

To this end I provide a conduit consisting of a metal pipe embedded in the rear wall of the car. Preferably the pipe is of U-shape, with its middle portion near the top of said well above the rear window and its ends projecting downward and opening into the atmosphere below the floor of the car. While this arrangement is preferable, I do not limit myself to this construction, since any conduit leading laterally or downward from an interior opening in the upper portion of the rear wall to a point removed therefrom where it opens to the external atmosphere will serve to prevent the strong direct draft that would be caused by an opening extending directly through the rear wall of the car. The U-shaped conduit, however, is preferable, since it adapts itself to the structure of the rear wall and does not interfere with the lighting of the car through the usual rear window. Being long and slender, the pipe is easily accommodated between the inner and outer surfaces of the rear wall and baffles are unnecessary. Instead of weakening the framework of the car, the metal frame formed by the conduit serves to strengthen it.

Referring to the drawing,

Fig. 1 is a perspective view of a four-door automobile provided with front and side openings for the admission of air;

Fig. 2 is an interior view looking rearward and showing the conduit for removal of impure air;

Fig. 3 is a detail showing in perspective the valved openings at the forward end of the car and in the upper portions of the rear doors above the windows;

Fig. 4 is a section on the line 4—4 of Fig. 1;

Fig. 5 is an elevation of the framework of the rear end of the car looking from the forward end and showing the ventilating conduit in its relation to the framework;

Fig. 6 is a side elevation of the flanged plate which is secured to the car above the windshield and to the rear doors above the windows;

Fig. 7 is a side elevation of the sliding plate which serves as a valve to open and close the openings, and

Fig. 8 is a section on the line 8—8 of Fig. 2.

The same numerals indicate like parts in all the views.

Numeral 1 designates an opening in the rear wall of the car above the window communicating with an opening 2 in the transverse portion 3 of the ventilating conduit. This conduit has extensions 4 terminating in funnel-shaped ends 5 below the floor of the car. Numeral 6 indicates openings in the rear side doors above the windows. Registering openings 6′ are formed in a plate 7 secured to the inner surface of the door. This plate has flanges 7′ at its upper and lower edges in which slides a plate 8 having openings 6″ and an up-turned end 8′ for sliding the plate to cover or uncover openings 6, 6′. Openings 9 are made in the front of the car above the windshield and these may be provided with plates 7, 8, similar to those on the rear doors.

Modifications of my invention may be made without departing from the spirit of the invention, and I do not limit myself to the exact construction shown and described, but the invention covers whatever is comprised within the scope of the claims. For instance, the invention is applicable to a two-door car, and in such case the inlet openings would, of course, be placed above the windows of these two doors.

What I claim is:

1. A ventilating and cooling device for automobiles, in combination with the closed vehicle body of an automobile having front and rear walls,

said device comprising a conduit within the plane of the rear wall of the vehicle body thereof, said conduit having a part located near the upper portion of said rear wall and opening into the interior of said body near the ceiling thereof and further having an extension therefrom discharging into the exterior atmosphere, an air introducing means arranged in the front wall of the vehicle body substantially on a horizontal level with said opening in the conduit and having inlet openings therein for directing air rearwardly horizontally through the vehicle body near the ceiling thereof toward said opening in the conduit, whereby a ventilating circulation may be established while the windows of the body are closed for forcing the impurities in the upper part of the vehicle into said conduit, and means for controlling the admission of air through said inlet openings of said air introducing means.

2. In a ventilating and cooling device for automobiles, the combination with the closed vehicle body of an automobile having front, rear and side walls, a conduit within the plane of the rear wall of said body having a horizontal portion located near the top of said rear wall and having opening therein in communication with the interior of said vehicle body, a further part of said conduit extending downwardly within said wall through the floor of said body and having an enlarged opened end discharging into the exterior atmosphere, the front and side walls of the vehicle body being provided with air inlet openings therein at points near the ceiling of said vehicle body substantially on a horizontal level with the opening of said conduit in the rear wall, the inlet openings in the front wall normally directing air rearwardly through the vehicle body horizontally, and air inlet control means cooperative with said inlet openings in said front and side walls, and including a valve member, whereby a ventilating circulation may be established while the windows of the body are closed, for forcing the impurities in the upper part of the vehicle into said conduit.

3. In combination with an automobile body having front and rear walls including a windshield forming part of the front wall, of ventilating means above the windshield normally directing air back through the vehicle horizontally, means for regulating the admission of air through said ventilating means, and an outlet in the rear wall of the automobile body substantially on a horizontal level with said front ventilating means through which outlet air passes from the interior of said body.

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