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VENTILATING MEANS FOR AUTOMOBILES

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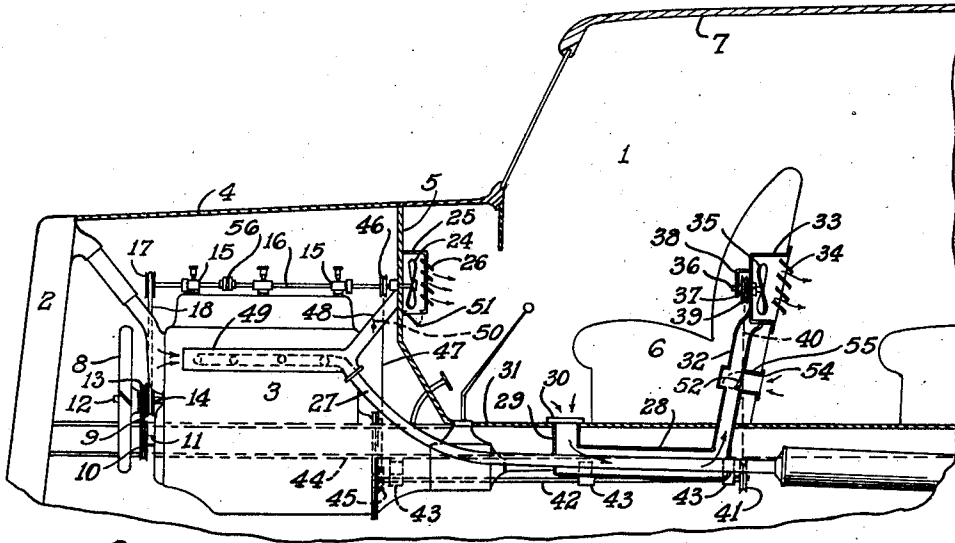


Fig. 1.

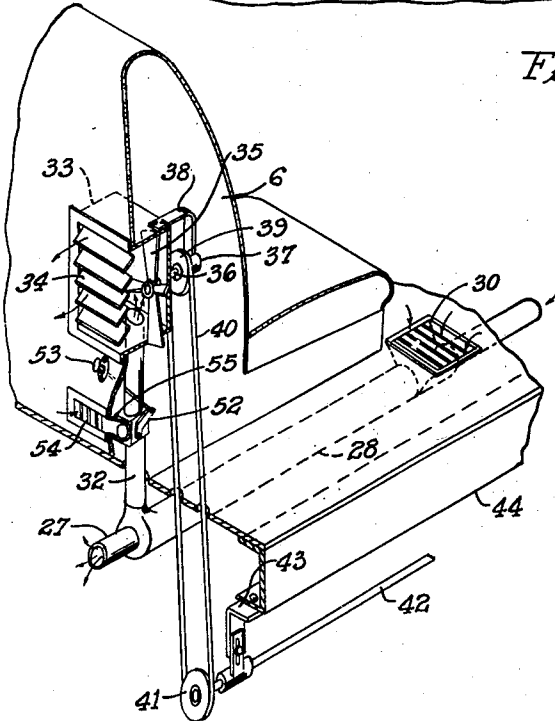


Fig. 2.

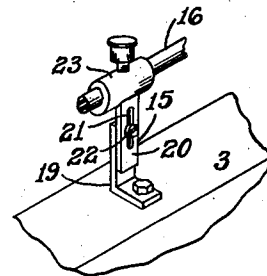


Fig. 3.

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VENTILATING MEANS FOR AUTOMOBILES

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2 Claims. (Cl. 237—12.3)

This invention relates to new and useful improvements in ventilating means for automobiles.

Proper ventilation is just as necessary in a vehicle as in a home. It is therefore one of the principal objects of my invention to provide simple and efficient means operated by the cooling-fan drive of an automobile, for promoting a circulation of air through the latter in a manner that will contribute to the health and comfort of the occupants.

It is a further object of my invention to provide means for taking the ventilating air in cold weather from jackets surrounding the exhaust manifold, which heat that air sufficiently to keep the interior of the car comfortably warm in the winter time.

Other important and incidental objects will be brought out in the following specification and particularly set forth in the subjoined claims.

The invention is illustrated in the accompanying drawing, of which Figure 1 is a longitudinal, sectional view taken through an automobile, showing my ventilating and heating means therein. Figure 2 is a perspective view of the front seat in section, showing the heating and ventilating means provided therein. And Figure 3 is a perspective view of one of the adjustable fan shaft brackets on the engine block.

Coming now to a detailed description of the invention, the numeral 1 in the accompanying drawing designates an automobile of a well-known type, including among other units, a radiator 2, an internal combustion engine 3, hood 4, cowl 5, front seat 6, and closed body 7.

Suitably mounted between the radiator 2 and the engine 3, is a conventional cooling fan 8 driven by a belt 9 from a pulley 10 on the crank shaft 11. This fan is mounted on a shaft 12 which carries, besides the pulley 13 that receives the belt 9, an auxiliary pulley 14.

For the purpose of driving my ventilating fan mechanism from the pulley 14, I mount on the engine block 3, brackets 15 which carry a horizontal fan shaft 16. Secured to the front portion of this shaft is a pulley 17 which is driven from the pulley 14 by a belt 18.

As shown in Figure 3, each bracket 15 is adjustable, comprising an angle base 19 bolted to the motor block 3. A sliding member 20, formed with an elongated slot 21 through which a guide screw 22 projects into the base member, carries a bearing member 23 for the fan shaft 16. By means of these adjustable brackets 15, the fan shaft 16 may be properly supported by different

sized motor blocks, after being passed through a hole in the cowl 5.

Attached to that part of the shaft 16 which projects through the cowl, is a ventilating fan 24. The latter is covered by a box 25 secured to the cowl and provided in its inner face with louvers 26 which may be adjusted to give the desired direction to the air flow generated by the fan.

For the purpose of heating, as well as ventilating, the closed body 7 of the car, I have provided the following means. Referring to Figures 1 and 2, the numeral 27 designates the exhaust manifold of the explosive engine 3. Surrounding this manifold, under the front seat 6, is a jacket 28 that has an upwardly projecting portion 29 which is covered by a grille 30 in the floor 31 in front of the seat 6.

Through the grille 30 air enters the jacket 28 to be heated by the manifold 27 and discharged into a tube 32 which leads from the jacket to a box or casing 33 set in a recess in the rear upper portion of the seat 6.

Adjustably mounted in the outer face portion of the box 33 are louvers 34 which may be set to give the desired direction to the heated air entering the box 33 from the tube 32 and blown outwardly by a fan 35. This fan is secured to a shaft 36 journaled in a bearing 37 in the casing wall and projecting through the latter for support at its front end by a bracket 38 attached to the casing.

Mounted on the front end of the shaft 36 is a pulley 39 which is driven by a belt 40 from a pulley 41 secured to the rear end of a horizontal shaft 42 carried by adjustable brackets 43 attached to the channel frame 44 of the car beneath the seat 6. Secured to the front end of the shaft 36 is a pulley 45 directly under a pulley 46 mounted on the shaft 16 between the engine 3 and the cowl 5. By means of a belt 47 passing around the pulleys 45 and 46, the fan 35 is rotated by the same shaft that operates the fan 24, this being the shaft 16 which is in turn rotated by the regular fan shaft 12 of the automobile.

For the purpose of supplying heated air in the winter time to the fan box 25, I connect the latter, by a pipe 48, to a jacket 49 surrounding the front part of the exhaust manifold 27. Mounted in the pipe 48 is a butterfly valve 50 which may be turned to close it against the admission of hot air to the fan box 25 in summer or any other desired time. When the butterfly valve is closed, air from the car interior may be admitted to the fan box by dropping a hinged bottom 51 on the latter.

The tube 32 may also be closed against the admission of heated air to the fan box 33 by a two-way valve 52 actuated by a pull rod 53 that projects through a hole in the rear portion of the seat 6. When this valve is closed, air may be admitted to the tube 32 through a grille 54 in the back of the seat 6 below the louvers 34, and communicating with the tube 32 above the valve 52 through a short tube 55. When the valve 52 is in a vertical position, as shown in Figure 1, the tube 32 is open to the hot air jacket 28 and closed to the cool air admission tube 55.

If it is desired at any time to render the entire ventilating fan mechanism inoperative, it may be done by disconnecting the coupling 56 carried by the shaft 16.

It will now be seen that I have provided air circulation means operated by the cooling-fan shaft for achieving efficient ventilation of an automobile through the medium of heated air in winter and cool air in the summertime.

Having described my invention, I claim:

1. The combination with a seat of a closed automobile, a box mounted in the rear portion of said seat, a fan mounted for rotation in said box, means for rotating said fan, an exhaust manifold under said seat, a jacket surrounding said manifold, a grilled opening for said manifold to receive

external air for heating by said manifold, a vertical tube connected between the said jacket and the fan box for delivering heated air to said box, a horizontal tube communicating with the vertical tube, and being open at its outer end to the external air around said seat, and a valve in the vertical tube for closing it against the passage of heated air from said jacket to the fan box, and for opening it to the horizontal tube whereby cooler air may be admitted therethrough to the fan box in the summertime.

2. The combination with a seat of a closed automobile, an enclosure in said seat, a fan mounted for rotation in said enclosure, means for rotating said fan, an exhaust manifold under said seat, a jacket surrounding said manifold, means for said manifold to receive external air for heating by said manifold, a tube connected between said jacket and the fan enclosure for delivering heated air to said enclosure, a second tube communicating with the first tube, and being open at its outer end to the external air around said seat, and a valve in the first tube for closing it against the passage of heated air from said jacket to the fan enclosure, and for opening it to the second tube whereby cooler air may be admitted therethrough to the fan enclosure.

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