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1,671,373

T. B. MARTIN

DOUBLE COOLING FAN FOR AUTOMOBILES OR THE LIKE

Filed Oct. 24, 1927

FIG. 1.

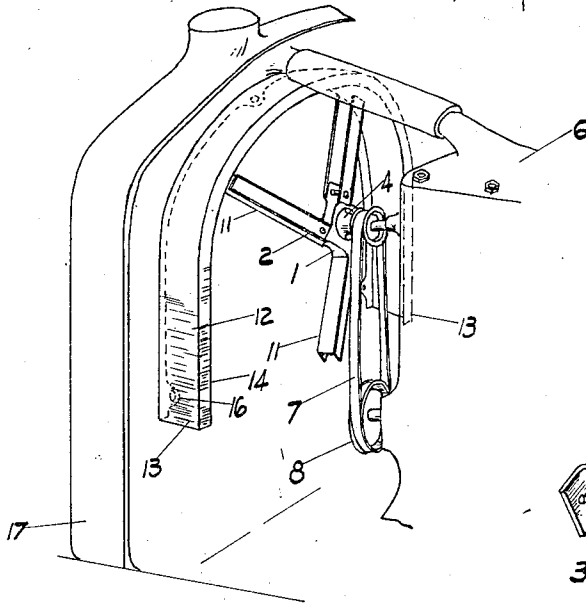


FIG. 4.

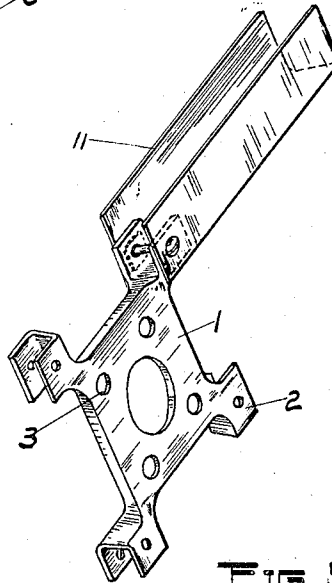


FIG. 2.

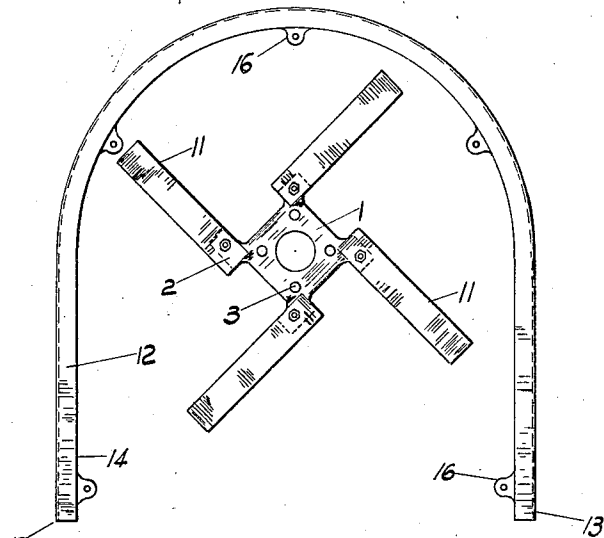


FIG. 5.

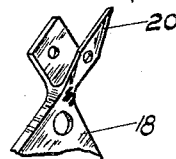
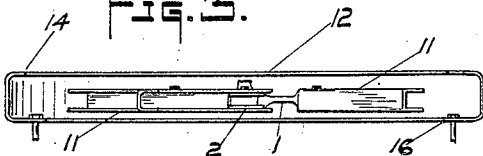


FIG. 3.



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DOUBLE COOLING FAN FOR AUTOMOBILES OR THE LIKE.

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This invention relates to internal combustion motors, and more especially to a fan for cooling such motors.

An object of the invention is to provide a fan adapted not only to draw air through the radiator, but to draw it away from the motor toward the radiator.

Another object is the provision of a fan for an automobile motor, which will direct the air circulated thereby away from the body of the automobile instead of towards it as does the ordinary type of automobile motor fan.

Another object is the provision of a fan of the above described nature, adapted to be readily secured to the fan pulley of any ordinary motor, in the place of the fan regularly supplied therewith.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Figure 1 is a perspective view of the fan of my invention, and its associated hood in position for use between the radiator and motor of an automobile.

Fig. 2 is an elevation of the fan and hood of Figure 1.

Fig. 3 is a bottom view of the fan and hood of Figure 2.

Fig. 4 is a perspective view of the base of my improved fan having one of the double blades secured thereto.

Fig. 5 is a perspective view of a portion of a modification of the fan base.

One form of the fan of my invention comprises a base 1, having a plurality of radially extending double flanges 2, extending from the edge thereof at regular spaced intervals from each other. The base is further provided with a plurality of apertures 3, through which bolts may be inserted to secure the base to a fan pulley 4 mounted for rotary movement upon the front end of a motor 6, and driven through the belt 7 from a pulley 8 on the crank shaft of the motor 6. A double blade 11, preferably of U-shaped or channel cross section, is adapted to be rigidly mounted upon each of the double flanges 2, with the open side thereof leading when the fan is rotated.

A substantially U-shaped hood 12 is mounted stationary above the fan, and the hood 12 is closed at the top, and has its ends 13 extending downwards. A flange 14 is provided upon the edge of the hood 12, and a plurality of ears 16 on the forward edge of the hood 12, provide ready means of attaching the hood 12 to the radiator 17. It is understood however, that the hood would be equally effective, were it mounted by a system of brackets directly upon the motor 6; the only requirement being that sufficient clearance be left between the hood 12 and the ends of the fan blades 11, so that rotation of the same is not interfered with.

It will be understood from the structure thus described, that when the fan blades 11 are rotated, they will pick up air at their inner ends. This air will be drawn both through the radiator 17 to cool the water therein, and from the motor 6. The air will be caught in the channels of the rapidly rotating blades 11 and thrown outwards by centrifugal force. When the air is discharged from the outer ends of the blades 11, its path is directed downwards away from the motor 6, by the flanged hood 12. This hood 12 being open at the bottom, permits the escape of the air under the motor 6.

It will thus be seen that the warm air drawn from the radiator 17 and the motor 6, will not be directed back toward, and into the driver's compartment of the automobile as is ordinarily the case. In stead, it will be thrown out beneath the automobile, with the result that the driver will not be bothered by excessive heat circulating around his feet. It is also readily understood that my novel type of fan blade handles so much more air than that of the conventional type of fan, that the desired results may be obtained and still not interfere with the normal cooling of the radiator 17 and the motor 6.

In Figure 5 is shown a fan base 18 of a modification of the fan of my invention. It is provided with a pair of flanges 20 in angular relationship to each other, so that a fan blade of V-shaped cross section may be utilized instead of one of U-shaped cross section as in the first described embodiment.

It will be understood that various changes in the details of construction may be made without departing from the spirit or scope

of the invention as defined by the appended claims.

I claim:

5 1. In combination with an internal combustion motor having a radiator, a fan comprising a plurality of double blades for drawing air from said radiator and motor, and a flanged hood adjacent said fan for directing the air circulated thereby, away from the motor, and means for rotating said fan.

10 2. A fan for an internal combustion motor having a driven fan pulley, said fan comprising a base adapted to be mounted for rotation with said pulley, a plurality of radially extending flanges carried by said base, a channel-shaped fan blade secured to each of said flanges, and a stationary hood mounted above said fan, closed at the top and having its ends extending downwards.

15 3. A fan for an internal combustion motor having a driven fan pulley, said fan comprising a base adapted to be mounted for rotation with said pulley, a plurality of

radially extending flanges carried by said base, a channel-shaped fan blade secured to each of said flanges, a stationary hood mounted above said fan, said hood being closed at the top and having its ends extending downwards, and a flange on said hood for directing the output of said fan away from the motor. 25 30

4. A fan for an internal combustion motor having a driven fan pulley and a radiator, said fan comprising a base adapted to be mounted for rotation with said pulley adjacent the radiator, a plurality of radially extending flanges carried by said base, a channel-shaped fan blade secured to each of said flanges, a hood mounted upon said radiator, said hood being closed at the top and having its ends extending downwards, and a flange on said hood for directing the output of said fan away from the motor. 35 40

In testimony whereof I have signed my name to this specification.

THOMAS B. MARTIN.