

F. M. KEETON.
 RADIATING MECHANISM FOR AUTOMOBILES.
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969,107.

Patented Aug. 30, 1910.

Fig. 1

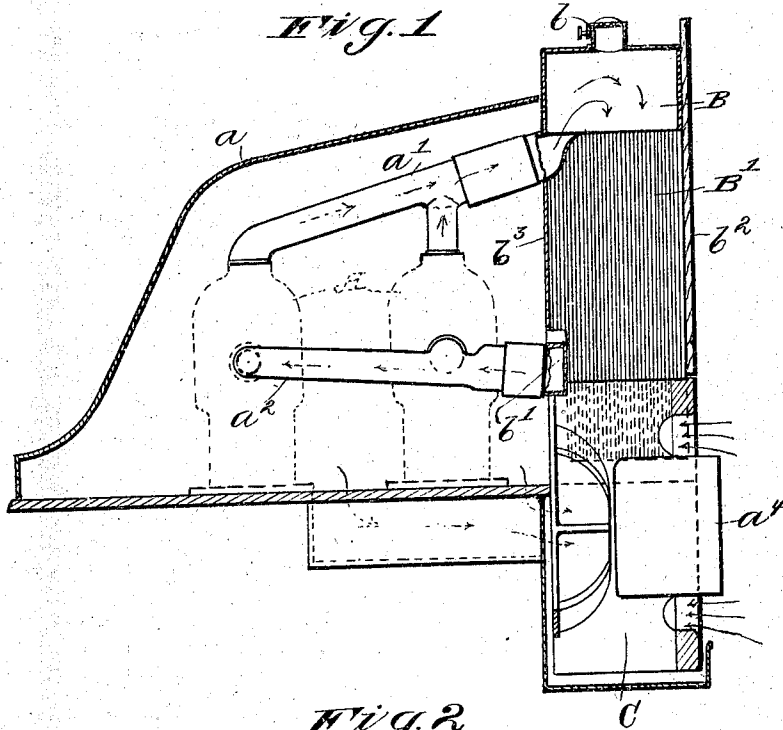
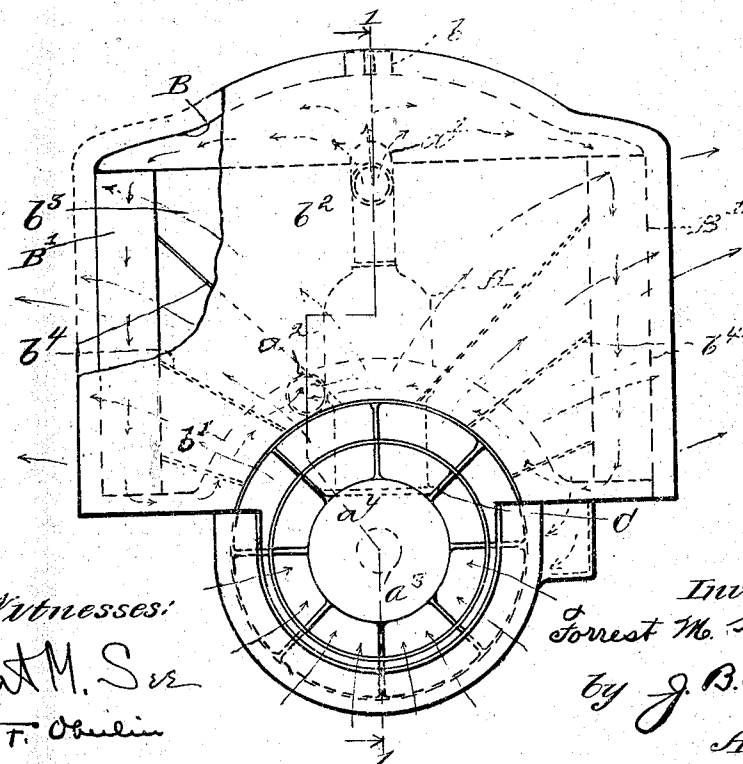


Fig. 2



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UNITED STATES PATENT OFFICE.

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RADIATING MECHANISM FOR AUTOMOBILES.

969,107.

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To all whom it may concern:

Be it known that I, FORREST M. KEETON, a citizen of the United States, and a resident of Massillon, county of Stark, and State of Ohio, have invented a new and useful Improvement in Radiating Mechanism for Automobiles, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

So far as I am advised, in the radiating mechanism heretofore provided in automobiles employing water in cooling the motor, the current of air through the radiators that invariably constitute a part of such mechanism, is induced either by the movement of the automobile or, where assistance is given by the use of a fan, the current set up by such fan is still drawn through the radiator, so that the current is an induced, and not a direct, current.

The object of the present invention is to provide in contradistinction from such prevailing arrangement, a radiating mechanism wherein a cooling current of air is positively forced through the radiators. Not only does this permit of a much more satisfactory and pleasing disposition of parts, but by freeing the cooling effect of the mechanism from dependence upon movement of the vehicle and correlating the same with the rate of rotation of the motor, all danger of overheating the motor is overcome, even though it be run at full load with the vehicle standing still.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—Figure 1 is a longitudinal vertical section of the forward part of an automobile, showing my improved radiating mechanism as incorporated therein; and Fig. 2 is a rear elevational view of the same.

From an inspection of the figures just described, the motor A will be seen to oc-

cupy its usual position, longitudinally of the vehicle frame, and forwardly of the dash.

Since my improved radiating mechanism, as will now be set forth, is located entirely to the rear of the engine, the hood or bonnet *a*, which as usual covers the motor, can be made of a graceful sloping form, as shown. Turning then to such radiating mechanism, the upper portion thereof will be seen to comprise a chamber B transversely disposed of the motor, and connected to receive the heated water therefrom through water outlet pipes *a'*. On the upper face of this chamber the usual opening *b* is provided for adding water to the radiating system as this becomes necessary. Depending downwardly from such transverse chamber, one on each side, are radiators, B' the detailed construction of which need not be noted, forming as it does, no part of the present invention. A second transverse chamber *b'*, in effect simply a connection, bridges the lower ends of said radiators, and is adapted to conduct the cool water therefrom to the water inlet openings of the motor A through pipes *a''*. Such lower chamber *b'* curves upwardly at its center to permit the location therebeneath of a centrifugal fan C, which is mounted upon the crank shaft *a'''* of the motor, and is made of sufficiently heavy construction to, at the same time, serve for a fly wheel. The engine clutch *a''''* is mounted on such shaft immediately to the rear of said wheel fan. Fan C is constructed so as to draw the air both from the rear and front and force the same radially outward, as clearly indicated by the direction arrows on the figures of the drawing. A semi-cylindrical casing, however, incloses the lower half of the periphery of the fan, while the dash *b''* on the rear side and a plate *b'''* on the front form a chamber of the area lying between the radiators B' and the upper and lower chambers B, *b'*. The current of air produced by the fan is accordingly discharged into this chamber, and thence forced outwardly through the radiators on either side, since these afford the only means of escape. In order to properly distribute the current over such radiators, substantially radially disposed plates or partitions *b''''* are provided, as shown in Fig. 2.

In operation it should be understood that the hood or bonnet surrounding the motor is not so tightly closed upon the machine

base but that air may be freely drawn in and over the motor, and thence supplied to the front end of the fan. Entrance to the rear end, however, of such fan is wholly unobstructed, so that the major portion of the current supplied by said fan to the radiators, is drawn from the rear. Obviously the fan, operating as it does at a rate of speed corresponding to that of the engine, and also irrespective of whether such engine be connected to drive the car or not, the cooling current of air may be proportioned strictly to the requirements of the engine in the way of cooling. Such cooling moreover is positive and certain in its operation. At the same time, the disposition of radiators is such, that a very neat and artistic structure is possible, avoiding the unseemly appearance usually presented by having the radiating mechanism located at the front end of the car as in the prevailing construction.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In radiating mechanism for automobiles and the like, a chamber disposed transversely of the motor and connected to receive the heated water therefrom, radiators extending downwardly from said chamber, one on each side, a fan disposed below but in symmetrical relation to said radiators and adapted to force a current of air outwardly through the same, and deflecting plates disposed substantially radially with respect to said fan and adapted to distribute such current over said radiators.

2. In radiating mechanism for automobiles and the like, a chamber disposed transversely and to the rear of the motor and connected to receive the heated water therefrom, radiators extending downwardly from

said chamber, one on each side, a transverse chamber bridging the lower ends of said radiators and adapted to conduct the cooled water therefrom to said motor, and a centrifugal fan mounted upon the crank-shaft of said motor below but in symmetrical relation to said radiators, said fan being adapted to draw air from the rear and force the same outwardly through said radiators.

3. In radiating mechanism for automobiles and the like, a chamber disposed transversely and to the rear of the motor and connected to receive the heated water therefrom, radiators extending downwardly from said chamber, one on each side, a transverse chamber bridging the lower ends of said radiators and adapted to conduct the cooled water therefrom to said motor, a centrifugal fan mounted upon the crank-shaft of said motor below but in symmetrical relation to said radiators, said fan being adapted to draw air both from the front and rear and force the same outwardly through said radiators, and deflecting plates disposed substantially radially with respect to said fan and adapted to distribute such air over said radiators.

4. In radiating mechanism for automobiles and the like, a chamber disposed transversely and to the rear of the motor and connected to receive the heated water therefrom, radiators extending downwardly from said chamber, one on each side, a transverse chamber bridging the lower ends of said radiators and adapted to conduct the cooled water therefrom to said motor, and a centrifugal fan mounted upon the crank-shaft of said motor below but in symmetrical relation to said radiators, said fan being adapted to draw air from the front and force the same outwardly through said radiators.

Signed by me this 21st day of June, 1909.

FORREST M. KEETON.

Attested by—

ANNA L. GILL,

JNO. F. OBERLIN.