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AUXILIARY FAN ATTACHMENT.

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Fig. 1.

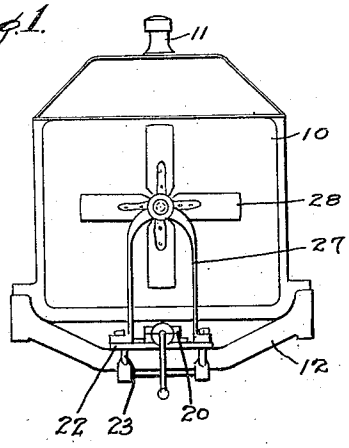


Fig. 2.

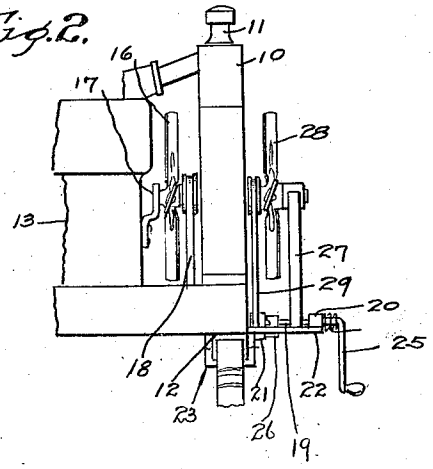
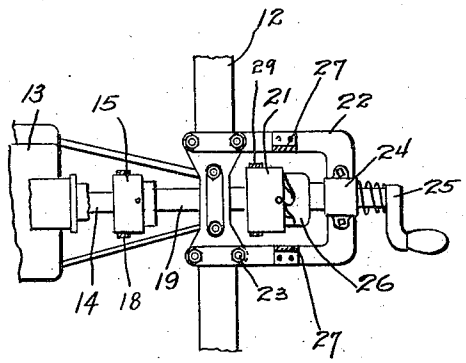


Fig. 3.



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AUXILIARY FAN ATTACHMENT.

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To all whom it may concern:

Be it known that we, FRANK C. GEORGE and CHESTER O. WILLIAMS, citizens of the United States, and residents of New Salem, county of Rush, and State of Indiana, have invented a certain new and useful Auxiliary Fan Attachment; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like letters refer to like parts.

This invention relates to a cooling device for use on motors driving heavy loads at low speed such as tractors, trucks and the like. It is common practice to use fans on water cooled motors which are driven between the water radiator and the motor so that air is sucked through the radiator, thereby cooling the water, and forced past the engine so as to remove the heated air therefrom and cause it to be cooled. This fan arrangement is sufficient for the purpose of cooling motors which travel at comparatively high speed without much pull, but where the motor is geared low so that it races at a high rate while slowly pulling a heavy load the air current is not sufficient to properly cool the motor and in most cases it is found that the water in the radiator soon is heated to a boiling condition and overflows, which not only inconveniences the operation of the motor but is liable to cause damaging results in overheating. This is especially true of motors which are used for operating tractors.

The main feature of this invention relates to an auxiliary fan adapted to be mounted in front of the radiator in addition to the fan between the radiator and the motor. The addition of an auxiliary fan on the front of the radiator produces the same result as far as the motor is concerned as though it were traveling at a high rate of speed, by producing a strong current of air directed against the front of the radiator. By this simple attachment which may be readily added to any motor without materially changing any part thereof as will hereinafter be more fully shown and described, the difficulties above referred to may be overcome.

The full nature of this invention will be understood from the accompanying drawings and the following description and claims.

Figure 1 is a front elevation of an automobile radiator showing the auxiliary fan attachment mounted thereon. Fig. 2 is a side elevation of the front portion of a motor and radiator showing the auxiliary fan attachment mounted thereon. Fig. 3 is a plan view looking down on the shaft and bracket arrangement with the radiator and fan removed.

There is shown in the drawings an automobile radiator 10 having a water cap 11, which is mounted on the front frame 12. Mounted back of the radiator there is a motor 13 which drives a crank shaft 14. Rigidly mounted on the crank shaft 14 there is a pulley 15 which drives a fan 16, mounted on the bracket 17 secured to the forward part of the motor by means of the belt 18. The pulley 15 in the ordinary construction used on Ford motors is provided with a diametrically extending internal pin, which it is not deemed necessary to show herein, which pin is engaged ordinarily by a ratchet clutch for starting the motor with the crank. The above described construction is common to most motors and especially that of the Ford.

In order to add the auxiliary fan attachment to the ordinary construction as above described the ratchet clutch and crank is removed and a shaft 19 having a slotted end is inserted through a bearing 20 in place of the crank so that the slot in the end of the shaft 19 engages the pin above referred to, in the pulley 15. Shaft 19 is continued outwardly past the front of the radiator and is provided on its outer end with a pulley 21, being of substantially the same construction as the pulley 15, and having a diametric pin extending therethrough. A frame 22 is secured on the frame 12 by the spring clip 23 and is provided on its outer end with a bearing 24 through which the crank 25 which has previously been removed from the motor extends, so that its ratchet clutch 26 will engage the diametric pin in the pulley 21 for cranking and starting the motor. Rigidly secured on the frame 22 there is an upright frame 27 which supports a fan 28 in the position shown in Figs. 1 and 2, directly in front of the radiator. The fan 28 is driven by a belt 29 which in turn is driven by the pulley 21.

It will, therefore, readily be seen from the above that a motor driven at a high speed, and slow movement will not only receive double the amount of air current but

will have a current of air driven directly against the front thereof substantially the same as if it was rapidly moving. It may be noted, however, that this invention is not restricted to the special type of motor shown herein or the specific construction of the frames and shaft extension.

The invention claimed is:

1. In combination with an internal combustion engine, a radiator mounted in connection therewith, a fan adapted to be driven by said engine mounted between said radiator and engine and a crank shaft driven by said engine adapted to drive said fan, of an auxiliary fan mounted in front of said radiator, and having its axis substantially in alinement with the axis of said first fan, and a belt driven by said crank shaft adapted to drive said auxiliary fan.

2. In combination with an internal combustion engine and a radiator in connection therewith, and a crank shaft adapted to be driven by said engine extending forward past said radiator, of an auxiliary fan attachment including a horizontally extending frame mounted in front of said radiator, an upright frame mounted on said horizontally extending frame, an auxiliary fan mounted on said upright frame immediately in front of said radiator adapted to direct a blast of air in a straight line through the openings in said radiator, and means driven by said crank shaft for driving said auxiliary fan.

3. The combination with an internal combustion engine, a radiator mounted in connection therewith, a fan rotatably mounted between said engine and radiator and adapted to be driven by said engine, and a crank shaft driven by said engine, of a horizontally extending frame in front of said radiator, an upright frame carried by said horizontally extending frame, and a second fan carried by the upright frame a distance above said crank shaft on the opposite side of the radiator from the first mentioned fan and in alinement with the first mentioned fan, and means to drive said second fan from said crank shaft.

In witness whereof we have hereunto affixed our signatures.

FRANK C. GEORGE.
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."