UNITED STATES PATENT OFFICE

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COOLING APPARATUS FOR MOTOR VEHICLES.

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In the cooling system of motor vehicles there is always, especially in hot weather or at heavy loads, a steady loss of water due to the fact that steam produced by boiling or evaporation of the water accumulates at the top of the radiator and escapes.

The invention has for its object to reduce said loss of water, at the same time overcoming other difficulties inherent to the production of steam within the radiator, as, for instance, such a high heating of the cooling water inlet that it cannot be touched by the hand in refilling the radiator.

The invention is characterized, chiefly, by the provision above the water level in the upper water space of the radiator of a water re-cooling device having a forwardly directed, preferably rearwardly tapering air inlet pipe which forms an outer extension of a cooling tube of the recouling device.

In the accompanying drawing one embodiment of the invention is illustrated by way of example. Fig. 1 is a vertical section of a re-cooling device according to one embodiment. Fig. 2 is a side elevation of the same device, and Fig. 3 is a rear view thereof.

With reference to Figs. 1—3 of the drawing, the numeral 1 indicates the water inlet pipe of the radiator of an automobile. The radiator itself is not shown as this is not necessary for the understanding of the invention. The pipe 1 which may be ball-shaped, as shown, or may be of any other shape is closed at its top by a threaded cover 2, Fig. 2 and is open at its bottom, forming an externally threaded nipple 10 to be screwed into the radiator.

Inserted in the hollow ball 1 is a tube 3 extending horizontally therethrough between two opposite openings formed in the wall of the ball, said tube being open at both ends so as to present a free passage to the atmospheric air therethrough. Tight engagement between the ends of the tube 3 and said openings may be secured by any suitable means. The tube 3 is, preferably, of conical shape and is adapted to have its wider end directed forwardly. Connected to the ball 1 so as to form an outer extension of the tube 3 at the wider end thereof is an air inlet pipe 4, preferably tapering towards the tube 3.

Said pipe 4 may be screwed into an internally threaded sleeve 5 supported by a pair of arms 6 pivoted at 7 to opposite sides of the hollow ball 1. In the running of the vehicle the pipe 4 catches the air causing it to pass through the tube 3 at a successively accelerated speed thereby effecting an efficient cooling thereof.

Any steam that may be accumulated within the ball 1 is caused to condense upon the outer surface of the tube 3 and is thus returned to the water in the upper water space of the radiator. At the same time the ball 1 and its cover 2 are maintained sufficiently cold to permit grasping them by the hand, as for unscrewing the cover when the radiator is to be refilled. In refilling the radiator the pipe 4 may be used as funnel. To this end it is sufficient to unscrew the pipe 4 to such an extent as to bring its inner end outside of the outer surface of the ball 1 whereupon the arms 6 with the sleeve 5 and the pipe 4 may be swung upwardly to the position shown by the dotted lines in Fig. 1.

What I claim is:

1. In a water cooling system for motor vehicles the combination with a radiator, of a water inlet pipe, a through-extending tube open at both ends inserted in said inlet pipe, and a funnel shaped air inlet pipe extending forwardly from said tube.

2. In a water cooling apparatus for motor vehicles the combination with a radiator, of a water inlet pipe, a rearwardly tapering through-extending tube open at both ends, inserted in said pipe to be passed by the atmospheric air in the running of the vehicle, and a funnel shaped air inlet pipe extending forwardly from the wider end of said tube.

3. In a water cooling system for motor vehicles the combination with a radiator, of a substantially spherical water inlet pipe, a through-extending tube open at both ends inserted in said inlet pipe, a funnel shaped pipe having means pivoted to said water inlet pipe whereby the same may be set in a position to form a forwardly directed air inlet pipe in connection with said tube or an upwardly directed water filling funnel in com-
munication with the interior of said water inlet pipe.
4. The combination with an automobile radiator and a spherical water inlet pipe thereof having a water inlet opening at its top, of an open-ended horizontal tube extending through said pipe in the longitudinal direction of the automobile, an internally threaded sleeve having arms pivoted to opposite sides of said pipe whereby the sleeve may be set in a position in front of the forward mouth of said tube or in a position above the water inlet opening of the pipe, and a funnel shaped pipe having means at its narrower end whereby it may be screwed into said sleeve.
In testimony whereof I have signed my name.

JOHAN ANSHELM GRANSTEDT.