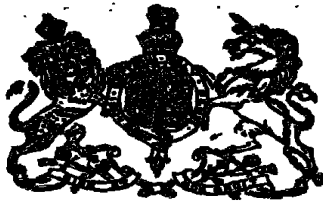


N° 6976



A.D. 1902

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Complete Specification Left, 17th Dec., 1902—Accepted, 26th Feb., 1903

PROVISIONAL SPECIFICATION.

"Improvements in and connected with Motor Vehicles".

I, **WILHELM MAYBACH**, of 13, Karl Strasse, Cannstatt, in the Kingdom of Wurttemberg, German Empire, Manager, do hereby declare the nature of this invention to be as follows:—

5 My invention relates to improvements in motor vehicles and more especially to an arrangement for sucking air through the cooling apparatus of the motor and consists in providing the motor with an air-tight protecting case, in the front wall of which the water cooler is situated, while in the rear-wall a ventilator is mounted, by means of which air is drawn through the casing. The exhalations from the motor also escape by way of the ventilator.

10 It is common knowledge to surround the motor of motor vehicles with a protecting casing and also to arrange a ventilator behind the cooling apparatus for the purpose of sucking air through the cooler. In all constructions however, the air heated by passing through the cooling apparatus as well as the exhaust from the motor and the vapourised lubricating oil leave the protecting casing
15 by openings provided in the walls and become a source of nuisance to the occupants of the vehicle.

20 According to my invention this disadvantage is overcome by pumping the hot air together with the exhalations of the motor out of the protecting casing surrounding the same, so that this air leaves the casing from a point below say the foot-board of the vehicle.

The arrangement has furthermore the advantage that the formation of a vacuum behind the motor, *i.e.* behind the lower part of the same and the whirling movement of the air caused by this vacuum which movement causes a whirling up of the dust, is perfectly avoided.

25 The ventilator which may conveniently take the form of vanes on the periphery of say the fly-wheel, may be so adjusted that when the motor runs at normal speed, the velocity of the air leaving the projecting casing is equal to the speed of the vehicle; in this case the ventilator has only to do the work necessary for sucking the air through the cooling apparatus and does not find any resistance
30 in pumping the air out of the protecting casing.

Dated this 21st day of March, 1902.

BOULT, WADE & KILBURN
Agents for the Applicant.

COMPLETE SPECIFICATION.

35 **Improvements in and connected with Motor-vehicles.**

I, **WILHELM MAYBACH**, of 13 Karl Strasse, Cannstatt, in the Kingdom of Wurttemberg, German Empire, Manager, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

40 My invention relates to improvements in motor vehicles and more especially to an arrangement for sucking air through the cooling apparatus for the motor

[Price 8d.]



Maybach's Improvements in and connected with Motor Vehicles.

and consists in the arrangement of an air-tight protecting box or casing around the motor, in the front wall of which box the water cooler is situated, while in the back-wall of the same a ventilator is arranged, by means of which air is sucked into the protecting box of the motor and pumped out of the box together with the exhalations of the motor.

It is known already to surround the motor of motor vehicles with a protecting box and it is also known to arrange a ventilator behind the cooling apparatus which ventilator has the purpose of sucking a great quantity of air with great velocity through the cooling elements, in case the velocity of the air produced by the speed of the vehicle is not sufficient for cooling the cooling water. In all constructions however the air heated by passing through the cooling apparatus as well as the exhalations of the motor and the emanations of the lubricating oil leave the protecting box through openings provided in the side-walls and in the doors of the protecting box and in consequence hereof incommode the people sitting in the carriage.

According to my invention this disadvantage is overcome by pumping the hot air together with the exhalations of the motor out of the protecting box surrounding the same, so that this air leaves the box at the rear of the same underneath at a point below the body of the carriage.

The arrangement has furthermore the advantage that the formation of a vacuum behind the motor, *ie.* behind the lower part of the same and the whirling movement of the air caused by this vacuum which movement causes a whirling up of the dust, is perfectly avoided.

Apparatus constructed according to one method of carrying out this invention is shown in part section in the accompanying drawing.

The motor *a* is shown surrounded by a protecting box *b*. In the front-wall of this box the well-known water-cooler *c* is arranged, while in the back wall a ventilator *d* is situated. This ventilator sucks fresh air from the front side of the carriage through the water-cooler *c* and brings the same together with the exhalations of the motor under the carriage body, where the exhalations can no more incommode the people sitting in the carriage.

In the construction shown in the drawing the ventilator is formed by arranging vanes *e* on the circumference of the fly-wheel of the motor. Should the position of these vanes be so adjusted relatively to the normal speed of the motor that the velocity of the air leaving the protecting box is equal to the speed of the carriage, the ventilator has only to do the work necessary for sucking the air through the cooling apparatus as no resistance is offered to the expulsion of the air from the protecting box.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

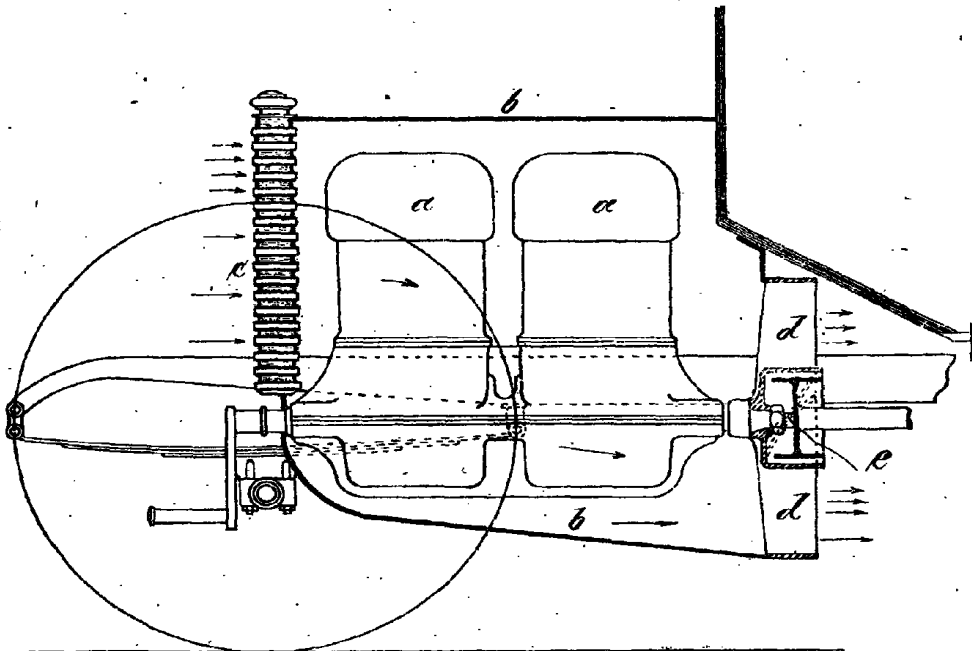
1. In motor vehicles the arrangement of a motor surrounded by a protecting box, a water-cooler situated in the front wall of this box and a ventilator situated underneath the body of the carriage in the back wall of the protecting box, substantially as described and for the purpose set forth.

2. In motor vehicles, the arrangement of a motor surrounded by a protecting box, a water cooler situated in the front wall of this box, a fly-wheel for the motor situated underneath the body of the carriage in the back wall of the protecting box, said fly wheel being provided with ventilator vanes on its circumference, substantially as described and for the purpose set forth.

3. The complete cooling apparatus substantially as described and illustrated in the accompanying drawings.

Dated this 17th day of December 1902.

BOULT, WADE, & KILBURN
Agents for the Applicant.



[This Drawing is a reproduction of the Original on a reduced scale.]

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