

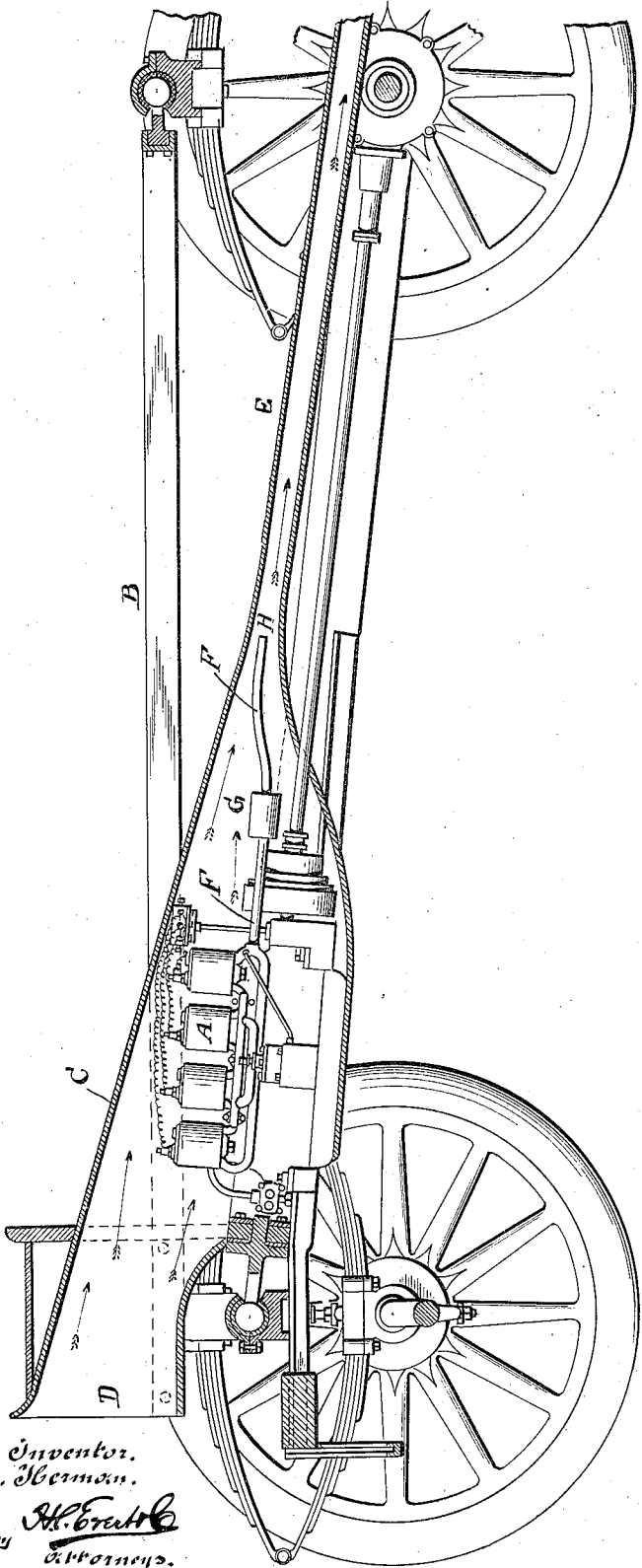
No. 862,250.

PATENTED AUG. 6, 1907.

R. HERMAN.

AIR COOLING SYSTEM FOR EXPLOSIVE ENGINES.

APPLICATION FILED APR. 25, 1906.



Witnesses:

C. H. K. K. K.

D. H. K. K.

Inventor.
R. Herman.

Attorneys.

UNITED STATES PATENT OFFICE.

REINHOLD HERMAN, OF CRAFTON, PENNSYLVANIA.

AIR-COOLING SYSTEM FOR EXPLOSIVE-ENGINES.

No. 862,250.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed April 25, 1906. Serial No. 313,526.

To all whom it may concern:

Be it known that I, REINHOLD HERMAN, a citizen of the United States of America, residing at Crafton, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Air-Cooling Systems for Explosive-Engines, of which the following is a specification; reference being had therein to the accompanying drawing.

This invention has for its object the provision of novel means for the automatic cooling of explosive engines by air, and relates more specifically to the air cooling of explosive engines employed as motors for motor-driven vehicles.

Heretofore, and before my invention, air-cooling methods for the cooling of the engines employed on motor-driven vehicles have been employed, but such systems or methods so far as I am aware have embodied a radiating or fan-intake system or principle of one novel form or another, and a serious objection to any of such systems has been that the air becomes warmed to such an extent before it reaches the engine that a considerable amount of its cooling-properties is lost.

My invention aims to overcome this difficulty and to provide means for creating a vacuum through the medium of the exhaust of the motor or engine, and, through the medium of the vacuum created, establishing a suction sufficient to create or cause a current of fresh cold air passing over the engine or motor at all times that the engine is running, irrespective as to whether the motor-vehicle is moving or not.

The invention broadly consists in providing a casing or hood surrounding the motor or engine, which hood or casing may have a single or a series of air-intakes at the front, and which hood is preferably narrowed down at a point in the rear of the engine or motor, and extended either to the rear end of the motor vehicle, or terminated at any desired point in the rear of the engine or motor. The exhaust from the engine is within the casing or hood, and each exhaust of the engine tends to create a vacuum within the casing or hood at the rear of the engine, which vacuum is instantly filled by an inrush of air from the front of the casing or hood, this air passing over, under, and around the engine or motor, and which being cool air not previously brought into contact with any heated parts of the mechanism, serves to maintain the engine cylinders in perfect working order.

In the accompanying drawings which illustrate a central longitudinal view of a chassis and running gear of a motor-driven vehicle, I have shown a practical embodiment of my invention, without in any manner intending to limit myself to the specific construction herein shown, as it will of course be evident that changes may be made in details to conform to various

makes and types of vehicles and engines without departing in anywise from the principle of the invention.

In the drawings, A indicates the motor or engine, shown somewhat conventionally, as of the four-cylinder type, which engine or motor is suitably supported from the chassis B. The type of chassis herein illustrated involves improvements which have been made the subject of separate applications, and consequently do not need to be herein referred to, as they are shown in this application for illustrative purposes only.

The motor or engine A, is inclosed in a casing or hood C, the exact form of which will depend on the type of engine or motor which is to be inclosed, the manner in which the engine may be supported from the vehicle-body, and the exact form or shape it may be desired to impart to the front portion of the hood. I therefore do not wish to limit myself to the shape of this hood or casing herein shown, as the shape shown is of a form particularly adapted to the chassis employed by me. This casing or hood may have an open intake end D, in which a screen or equivalent "motor-hiding" device may be placed, such screen however being of such nature that it will not interfere with a free inrush of air into the hood or casing.

As shown in the present illustration, this casing or hood C is contracted at a point in the rear of the engine or motor, into a narrowed extension E which may be a part of the casing, or a pipe connected thereto, and which is preferably extended so as to discharge, or terminate at the rear of the vehicle. The exhaust pipe F of the engine is located within the chamber G, back of the motor or engine, and terminates at the neck of the cone-shaped casing H, in the shape of a nozzle, the same as is applied to ejectors.

When the engine is running, it will be observed that with each exhaust thereof, a vacuum is created in the chamber G, and the suction due to the creation of this vacuum causes the air to be drawn in from the front of the casing or hood, such air being in its natural cool state, and is drawn in with great rapidity across the engine or motor, serving to effectually cool the same at all times that the engine or motor is working. In other words, there is substantially a constant current of cool air passing across and around the motor or engine during the entire time the latter is working, the course of the air being shown by the arrows in the drawings.

It will of course be evident that the discharge of the pipe E may be at any point desired, though I have found it entirely practical to extend same to the rear of the machine.

Attention is also called to the fact that all appurtenant parts including the exhaust pipe, muffler and ejector are within the zone of the constant current of cold air, thus preventing all of said parts from becoming

overheated, and as herein shown, part of the driving mechanism is also within the zone of this current of cold air.

Having fully described my invention, what I claim
5 as new and desire to secure by Letters Patent, is:—

In an automobile, a multicylinder-engine, and an inclosing hood therefor having an air intake in front of the engine and an air discharge in the back of the engine, the said hood being tapered at the rear of the engine and hav-

ing an extension projecting beyond the tapered part, and 10 the exhaust pipe of the engine being extended into said tapering portion of the hood and acting when the engine is working to create a constant current of air through the hood.

In testimony whereof I affix my signature in the pres- 15
ence of two witnesses.

REINHOLD HERMAN.

Witnesses:

A. M. WILSON,
E. E. POTTER.