L. W. COPPOCK.

COOLING DEVICE FOR INTERNAL COMBUSTION ENGINES.

APPLICATION FILED AUG. 20, 1913.

1,111,526. Patented Sept. 22, 1914.

2 SHEETS—SHEET 1.

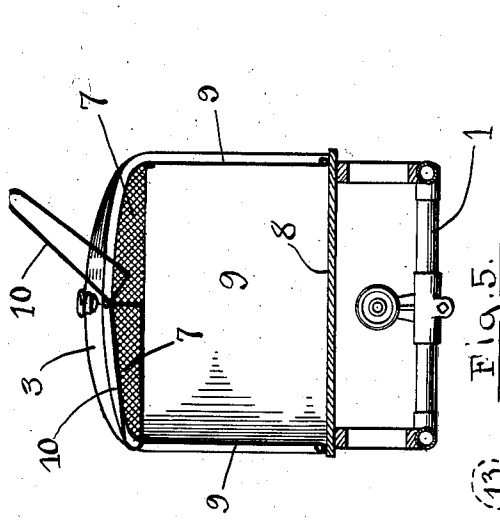


Fig. 5.

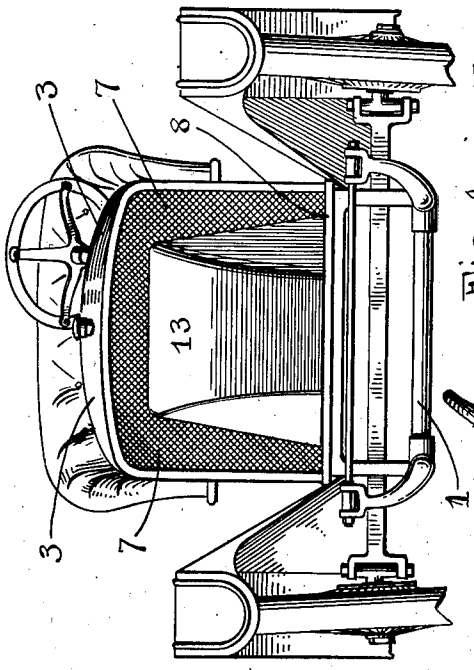


Fig. 4.

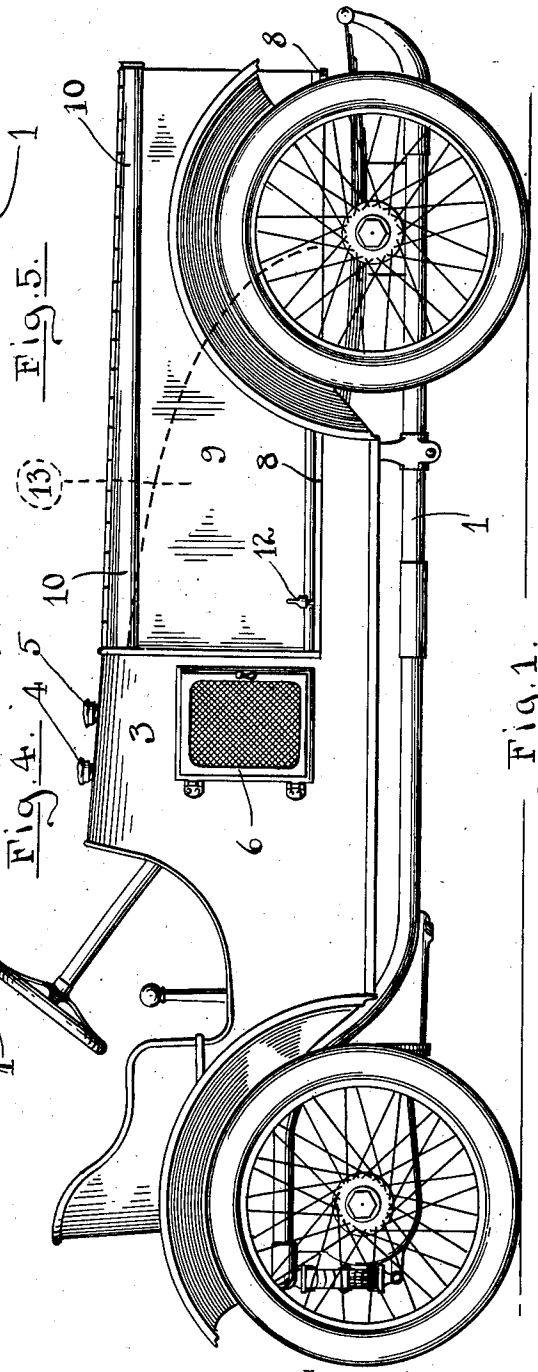


Fig. 1.

Witnesses

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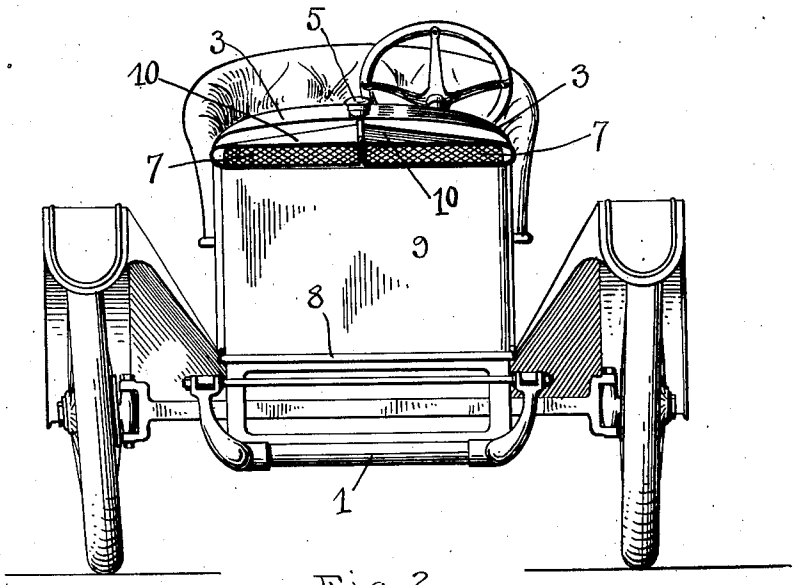


Fig. 2.

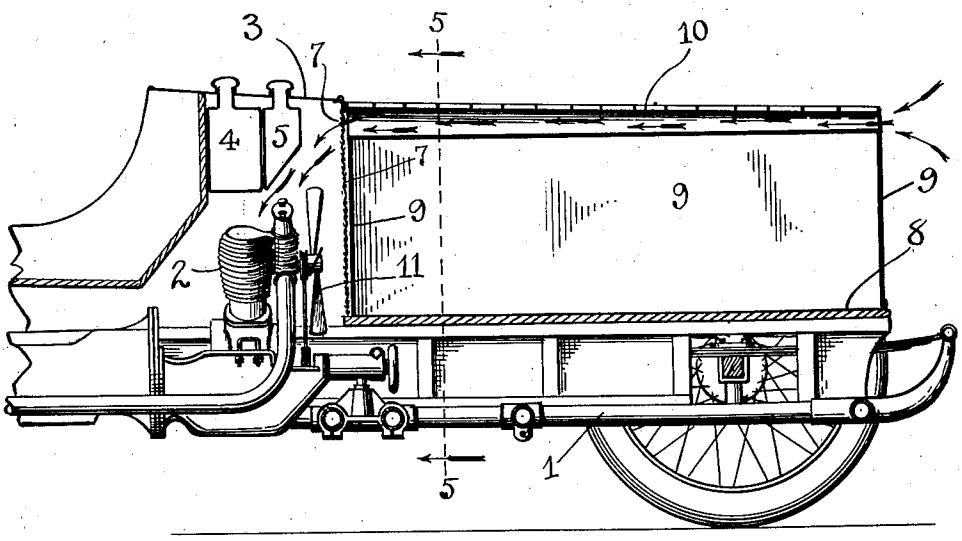


Fig. 3.

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UNITED STATES PATENT OFFICE.

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COOLING DEVICE FOR INTERNAL-COMBUSTION ENGINES.

1,111,526. Specification of Letters Patent. Patented Sept. 22, 1914.

Application filed August 20, 1913. Serial No. 785,785.

To all whom it may concern:

Be it known that I, LEMBERT W. COPPOCK, a citizen of the United States of America, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Cooling Devices for Internal-Combustion Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to cooling devices for internal combustion engines, and more particularly to air circulation for cooling such engines in automobiles, and its object is to provide means whereby the air may be caused to circulate around an engine located behind a package box or like receptacle placed at the forward part of the machine, and to provide the device with certain new and useful features, hereinafter more fully described and particularly pointed out in the claims.

This invention is particularly adapted for light delivery vehicles where the most convenient location for the package box is at the forward part of the machine. This location not only places the box in an accessible place, but adds greatly to the general appearance of the vehicle giving it the effect of having a long engine hood and making possible a rakish graceful design, which is quite desirable. In this particular type of vehicle it is preferable to locate the engine back of the package box, where, in ordinary construction, it would be very difficult to obtain a suitable air circulation.

My invention consists essentially of an air passage through the hinged lid of the package box, this passage being open at front and rear, and permitting the air induced by the movement of the machine and preferably aided by a circulating fan on the engine to pass therethrough and circulate around the engine and in various features of construction and arrangement, as will more fully appear by reference to the accompanying drawings in which:

Figure 1 is a side elevation of a motor vehicle embodying my invention; Fig. 2 is a front elevation of the same; Fig. 3 is a sectional elevation of the forward part of the vehicle; Fig. 4 is a front view showing the package box removed and a false hood substituted in its place; and Fig. 5 is a transverse sectional elevation on the line 5—5 of Fig. 3.

Like numbers refer to like parts in all of the figures.

1 is the frame of the machine having a motor 2 supported therein, approximately midway between the front and rear ends thereof. The motor is covered by a hood or apron 3 under which are also located the oil and gasolene tanks 4 and 5 and in the side of which is provided a door 6 having a wire mesh panel which permits the free escape of air therethrough. This door is also for the purpose of inspecting and adjusting the engine. Immediately in front of the engine and at the forward termination of the hood 3 is a wire mesh partition 7, and extending forward from this partition is a floor 8 supported by the frame of the machine. Upon said floor a package box 9 is located and detachably fastened in place. This package box preferably consists of four rectangular walls formed of sheet metal, the floor 8 forming the bottom of the box and the height of the walls being somewhat less than the height of the wire partition 7, thus leaving a space above the rear wall of the box and the top of the hood 3. The lid 10 of the box is preferably divided longitudinally into two sections which are hinged together and adapted to be folded upward, and each section is formed preferably of two metallic walls spaced apart and open at the ends, leaving a passage therethrough, communicating at the rear with the space beneath the hood and at the front with the open air. It is obvious that this arrangement permits the air to pass freely into the forward open end of this passage and out of the rear end thereof through the wire mesh partition and around the air cooled motor as indicated by the arrows in Fig. 3. This air circulation may also be aided by a fan 11 near the motor and rotated thereby. After circulating around the motor the air may either pass outward through the wire mesh in the doors 6, or backward under the body of the car, or both.

It is often desirable to use this particular style of motor vehicle either as a delivery rig or as a pleasure car, and for this purpose the package box 9, together with the lids 10, are removable, the box being attached to the floor by any convenient form of fastening, such as turn buckles 12, and

a false hood 13 may be substituted in its place if preferred. This hood may be of any desirable shape, but its rear end adjacent the wire mesh partition 7, must be smaller than said partition to expose sufficient thereof to permit the air to pass through the same and circulate around the engine. This hood is shown attached in Fig. 4 and is indicated by broken lines in Fig. 1.

What I claim is:—

1. A motor vehicle, comprising a frame, a detachable package box at the forward part of the frame, a lid on said package box, said lid having a longitudinal air passage therethrough, and a motor located at the rear of said package box.

2. A motor vehicle, comprising a frame, a motor mounted on said frame, a hood over said motor, a detachable package box on said frame in front of said hood and a lid on said box having a longitudinal air passage therethrough open at the front and communicating at the rear with the underside of said hood.

3. A motor vehicle, comprising a frame, a motor mounted on said frame, a hood over said motor, a wire mesh partition at the forward end of said hood, a detachable package box mounted on said frame in front of said partition, and a lid on said package box having a longitudinal passage therethrough open at the front and communicating with the said partition at the rear.

4. A motor vehicle, comprising a frame, a motor mounted on said frame, a hood over said motor, a vertical wire mesh partition at the forward end of said hood, a floor on said frame extending forward of said partition, a package box detachably mounted on said floor, said box being lower than said partition, and a lid on said box having an air passage therethrough communicating with said partition.

5. A motor vehicle, comprising a frame, a motor on said frame, a hood over said motor, a floor extending forward of said hood, a package box consisting of four vertical rectangular walls detachably mounted on said floor, and a lid for said box having a longitudinal passage therethrough communicating with the underside of said hood.

6. A motor vehicle, comprising a frame, a motor mounted on said frame, a package box on said frame ahead of said motor, a lid on said package box, said lid being longitudinally divided into two portions, said portions hinged together and each portion provided with a longitudinal air passage therethrough.

7. A motor vehicle, comprising a frame, a motor mounted on said frame, a hood over said motor, a wire mesh partition at the forward end of said hood, a floor extending forward of said partition, a package box consisting of four rectangular metallic walls detachably mounted on said floor the height of said walls being less than that of said partition and a lid on said package box, said lid being divided longitudinally into two portions, said portions hinged together and each provided with a longitudinal air passage communicating with said wire mesh partition.

In testimony whereof I affix my signature in presence of two witnesses.

LEMBERT W. COPPOCK.

Witnesses:

HAROLD O. VAN ANTWERP,

MAE RANKIN.