

D McR. LIVINGSTON.
 RADIATOR ATTACHMENT.
 APPLICATION FILED NOV. 17, 1915.

1,226,344.

Patented May 15, 1917.

Fig. 3.

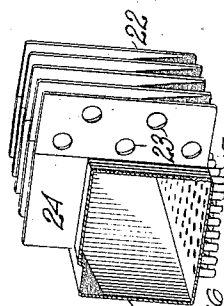


Fig. 1.

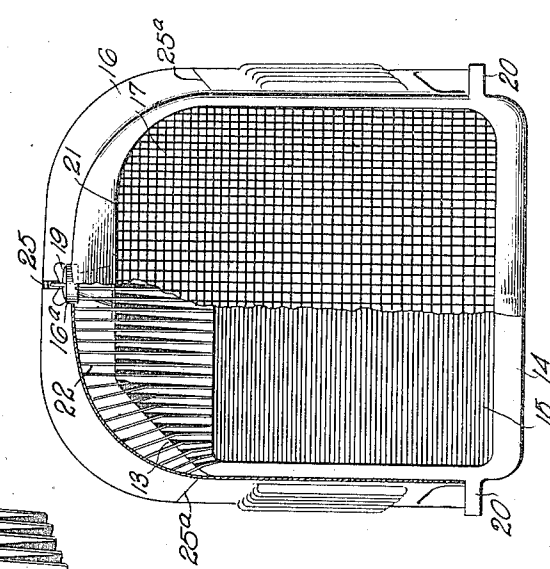
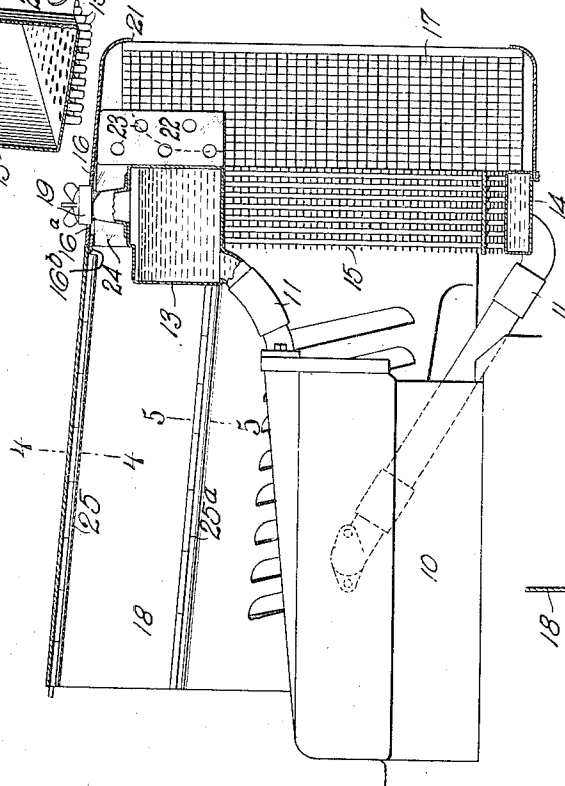


Fig. 4.

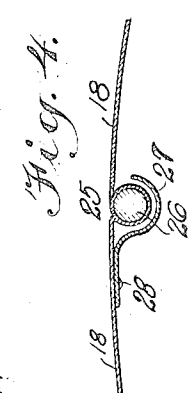
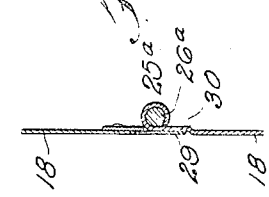


Fig. 5.



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RADIATOR ATTACHMENT.

1,226,344.

Specification of Letters Patent.

Patented May 15, 1917.

Application filed November 17, 1915. Serial No. 61,994.

To all whom it may concern:

Be it known that I, D McRA LIVINGSTON, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Radiator Attachment, of which the following is a full, clear, and exact description.

My invention relates to a mask for the radiator of an automobile, the general purpose of the invention being similar to that of the mask forming the subject-matter of United States Patent No. 1,156,017, granted to me October 5th, 1915. As explained with particularity in the said patent, the attachment masks the particular character of any given radiator, being constructed to cover the radiator and its casing, the mask permitting freedom in producing stream-line effects regardless of the design of the masked radiator.

My present invention has for its main purpose to improve my patented radiator mask referred to, whereby not only to prevent reduction of the radiator's efficiency by the mask, but to cause the mask to increase the efficiency of the radiator. The construction of the mask forming the subject matter of the present application, results in obtaining a pronounced cooling effect not only on the radiating section but also on the upper or main water box or tank of the radiator, the arrangement being such that the air will strike fully against the tank at the front, and a current of air under pressure will be caused to pass in contact with the radiator tank over the top and sides thereof between the same and the mask. To augment the cooling action of the air thus directed by my improved mask against the radiator tank, I provide on the latter radiating plates or fins extending forwardly from the front of the tank and rising approximately perpendicular to the top and side surfaces of the tank, the said radiating fins extending, in practice, preferably to the inner surface of the mask. In its entirety, in the preferred form, the attachment includes a hood for the engine, the said hood being formed of hinged panels and there being provided beneath the hinges at the top, means forming an effective gutter to carry forwardly past the engine any rain dripping through the said hinges whereby

the engine will be effectively prevented from receiving the drip.

The invention will be more particularly explained in the following description of the specific example given as an illustration of my invention.

Reference is to be had to the accompanying drawings forming part of this specification in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a longitudinal vertical section of an attachment embodying my invention, showing the same applied;

Fig. 2 is a front view with part broken away;

Fig. 3 is a fragmentary perspective view showing the improved radiating fins attached to the water tank and employed in connection with my improved mask;

Fig. 4 is a detail in cross section on the line 4-4, Fig. 1, and hereinafter referred to; and

Fig. 5 is a detail in cross section showing the form of the side hinges of the motor hood.

In the illustrated application of my invention I have indicated, conventionally, an automobile engine 10, of a known type, having the usual upper and lower water connections 11 to the upper water tank 12 and lower tank 14 respectively of the radiator, the said tanks and the radiator section being indicated more or less conventionally. The radiator section 15 indicated, is of a known type, in which the vertical lines of the water tubes are inconspicuous at the front, and, in the interest of clearness, I have indicated a radiator section, in Fig. 2, only conventionally by horizontal lines.

My improved attachment includes a radiator mask 16 in the form of an open frame having, preferably, a grid 17 at the front thereof, in simulation of the radiating section of a V-type radiator, the attachment in its entirety and in the preferred form including also, a hood 18 for the engine 10.

The radiator mask 16 is formed at the top with an opening 16' to accommodate the usual filling cap 19 and in the present example, the mask 16 is of such a form and size as to rest on the side brackets 20 of the radiator by which the radiator is supported on the frame of the automobile. Other means may be provided for sustaining the

mask in position, but, in any event, the said mask will be positioned at a height to space the same from the top and sides of the upper water tank 13 of the radiator to provide an ample air passage therebetween. The relative size and form of the mask 16 and its grid 17, are such that the opening occupied by said grid will extend at the top, as indicated at 21, to the height of the tank 13, thereby providing not only a direct opening through the grid 17 to the radiating section 16, but also, through the said grid 17 directly to the front of the said tank.

By the described arrangement air will be directed fully against the front of the tank and a current of air under pressure will be caused to pass over and at the sides of the tank in contact therewith and between the same and the innerside of the mask 16 and thence through hood 18. This is so because, as will be obvious, the air striking the front of the main radiator tank can have no outlet except rearwardly through the air passage between the radiator and the shell 16 since the forward extension on said shell beyond the radiating section and radiator tank affords no other avenue of air escape. Moreover, the plenum produced by the air striking the tank and by reason of the fact that the total frontal area presented by the cellular section to the air is greater than the area and capacity of the air cells, so that the resulting plenum produces an effective cooling current through the air passage beneath the spaced shell. I thus materially increase the efficiency of the radiator and particularly is this true when my invention is employed on cars having that type of radiators provided with a casing of enameled sheet iron or steel, which latter form, it being known, leaves much to be desired in efficiency as compared with radiators without these enameled casings. The shell also provides spaces for the passage of air between the sides of the radiator and the sides of the shell.

The mask 16, it will thus be seen, provides a shell between which and the radiator tank, a current of air is induced. In order to augment the cooling action of the air striking against the front of the radiator tank and passing over and at the sides thereof as described, I form upon or secure to the said tank radiating fins in the form of plates. At the front of the tank 13 plates 22 extend therefrom forwardly within the grid 17. The plates 22 may have transverse holes suitably disposed therein to increase the air contact. At the top and sides of the tank 13 in the rear of the plates 22 and preferably in line therewith, are radiating plates 24, which, preferably, are approximately perpendicular to the surface of the tank at the top and sides. These plates, 22, 24, preferably extend to a contact with the under

surface of the shell consisting of the mask 16 and may therefore be utilized to support or contribute to the support of the said shell to space the same from the radiator tank. The employment of these radiating plates 22, 24, as thus associated with the shell and tank, results in a substantially increased radiation.

I have shown the hood 18 separate from the structure 16 and having support from the latter, there being illustrated a projecting plate or flange 16^b at the inner side of the said structure 16 at the rear edge thereof accommodating the hood 18 flush with the said structure 16.

The hood 18 is formed in panels and I provide at the upper hinge joint 25, at the inside thereof, gutters to conduct forwardly any drip passing through the hinge joint, thereby protecting the motor from said drip. The joint 25 may be formed by bending knuckles on the respective panels about a hinge pin or rod 26. The gutter is preferably curved transversely as at 27 and a lateral extension or flange thereof is riveted as at 28, or otherwise secured to one panel, the curved gutter extending beneath the hinge joint to the opposite side as clearly seen in Fig. 4.

The side hinge joints 25^a of the hood are preferably formed as shown in Fig. 5, in which it will be seen that one panel of the hood extends downwardly beyond the adjacent hinge joint as at 29 and overlaps at the outside the offset or depressed upper edge 30 of the adjacent side panel of the hood. The hinge joint 25^a at each side of the hood will thus be located above the lower edge 29 of the upper panel and at the inside of the same. The joint may be formed by bending knuckles on the respective panels about a hinge rod or pin 26^a.

The shell, with its grid 17 and the hood 18, being independent of the particular structure and form of the radiator, may be made to effectively mask the radiator and be given lines to produce stream line effects. Thus, the esthetic value of the mask covered by my patent above referred to is preserved while the utility of the attachment is greatly increased.

Having thus described my invention I claim as new, and desire to secure by Letters Patent:

1. In a radiator, a water tank, and means to mask and cool said tank, said means comprising a covering shell open at the front and back, and spaced from the said tank to form an air passage over the top of the tank and at the sides thereof between said tank and the said shell, said passage being in free communication with the open front of the shell, the said shell extending forwardly beyond the tank, a grid in said shell at the front, and spaced radiating elements on said

tank at the front within said grid and at the top and sides of the tank in the said air passage, said shell and the said grid affording an entrance of air direct to and against the front of the tank.

2. In a radiator, a water tank, and means to mask and cool said tank, said means comprising a covering shell open at the front and back, and spaced from the said tank to form an air passage over the top of the tank and at the sides thereof between said tank and the said shell, said passage being in free communication with the open front of the shell, the said shell extending forwardly beyond the tank, and spaced radiating elements on said tank at the front at the top and sides of the tank in the said air passage formed by the tank and shell, said shell affording an entrance of air direct to and against the front of the tank.

3. In an apparatus of the class described including a water tank and a shell supported over the tank and spaced therefrom to form an air passage over the top of the tank and at the sides thereof, the said shell being open front and back in free communication with the said air passage and adapted to direct a current of air through the said passage; together with radiating elements on the tank and extending from the same forwardly toward the front opening of the shell, and extending upwardly approximately to the inner surface of the shell.

4. An apparatus of the class described including a radiator having a water tank at the top, a covering shell over said radiator and tank and spaced therefrom at the top and sides to form an air passage between the said shell and the said radiator and top tank, the shell being open front and rear in free communication with the said air passage to cause a current of air to pass there-through, and a motor hood at the rear of the shell in line with the latter, said hood having support at its front end on the shell so that the one is complementary to the other, and the interior of the hood being in free communication with the said radiator and the said air passage.

5. The herein described combination hood and mask to conceal the motor, radiator and radiator casing of an automobile, the same including a front shell to constitute a radiator mask, means to secure the said shell on an automobile and spaced from the radiator and its casing to form a passage between the said mask and the radiator casing to conduct air over the exterior of the radiator tank, a rear hood section having support at its front end on the shell at the rear of the latter and in free communication with the interior of the said shell, the front of the shell being open for the entrance of air, the opening extending to a

height to permit the entering air to strike the front of the radiator tank and force the received air to and through said passage over the radiator tank and to and through the said hood.

6. A combined motor hood and radiator mask for use on automobiles, comprising a hood section adapted to cover a motor and extend over the rear portion of a radiator, the hood having an open front, a separate radiator mask disposed in front of the hood and complementary thereto, means to support the hood and mask on an automobile and spaced at the top and sides from the radiator and its casing, the forward end of said hood and the rear portion of the mask forming together a continuous passage for air, and said mask projecting forwardly to extend beyond the radiator and formed open for permitting entrance of air, the top of the mask at the front end being at an elevation to permit air to pass there-into directly against the radiator tank and thence through said passage.

7. The combination with a radiator including a radiating section and a water tank, of a shell disposed thereover and extending forwardly therebeyond to form an air-confining means in front of the radiating section and tank, whereby to produce a plenum in front of the radiator, said shell being spaced from the radiator at the top forming an air passage between said shell and radiator, in communication with the said air-confining shell extension, and adapted to conduct rearwardly over the tank the air under pressure due to the produced plenum.

8. The combination with a radiator including a radiating section and a water tank, of a shell disposed thereover and extending forwardly therebeyond, to form an air-confining means in front of the radiating section and tank, whereby to produce a plenum in front of the radiator, said shell being spaced from the radiator tank at the top and from the sides of the radiating section, forming an air passage in communication with said air-confining shell extension adapted to conduct rearwardly over the tank and at the sides of the radiating section, the air under pressure due to the produced plenum.

9. A combined motor hood and radiator mask for use on automobiles, comprising a hood section adapted to cover a motor and extend over the rear portion of a radiator, the hood having an open front, a separate radiator mask disposed in front of the hood and complementary thereto, means to support the hood and mask on an automobile and spaced at the top and sides from the radiator and its casing, the said hood and mask forming together a continuous passage for air, said mask projecting forwardly

to extend beyond the radiator and formed
with a grid at the front thereof for permit-
ting entrance of air, the top of the mask at
the front being at an elevation to permit
5 air to pass thereinto and strike directly
against the radiator tank to pass thence
through said passage.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

D McRA LIVINGSTON.

Witnesses:

J. L. McAULIFFE,

PHILIP D. ROLLHAUS.