D. LANDAU & A. GOLDEN.

AUTOMOBILE RADIATOR.

APPLICATION FILED JAN. 13, 1909.

947,496.

Patented Jan. 25, 1910.

Fig. 1.

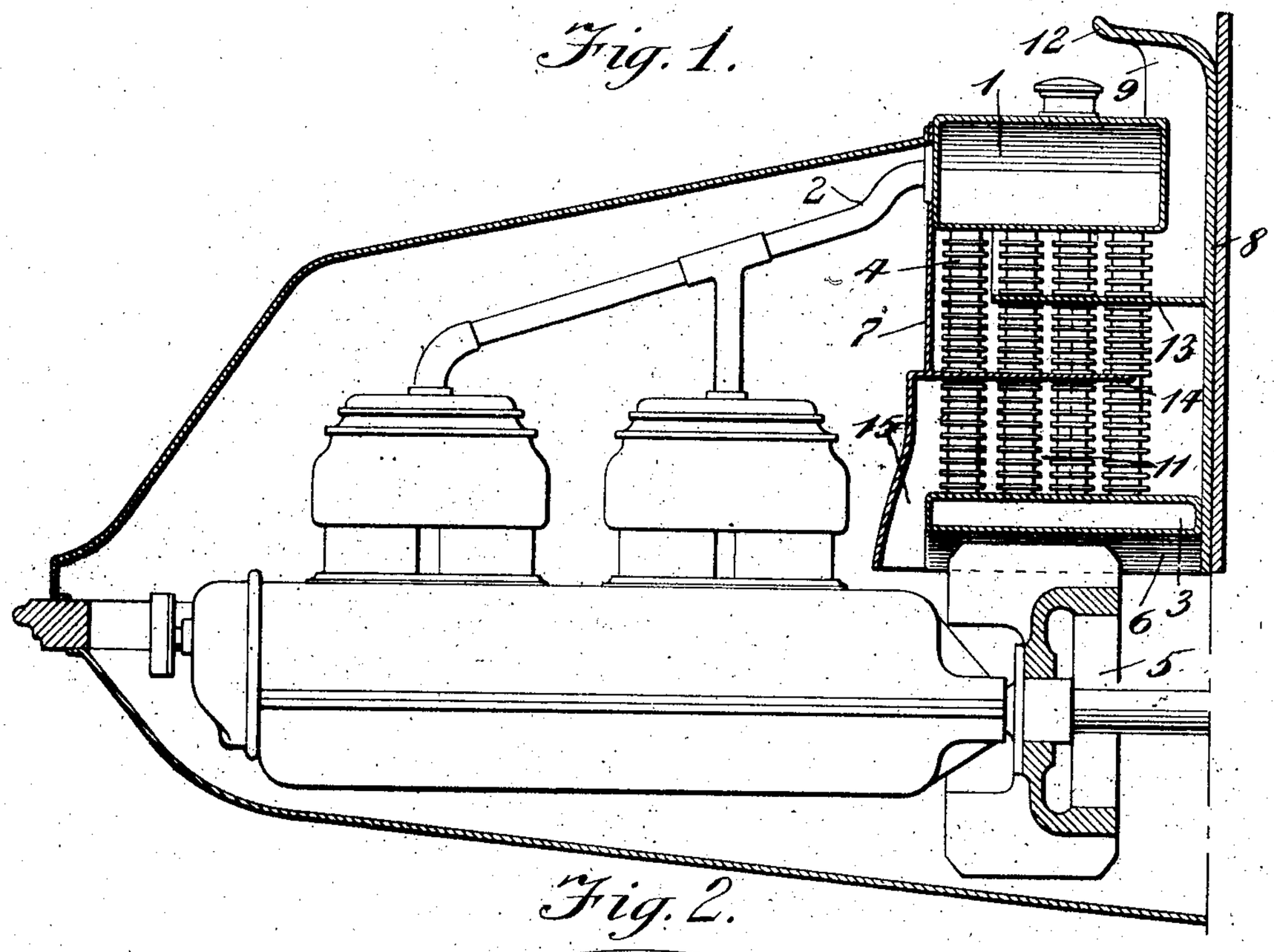
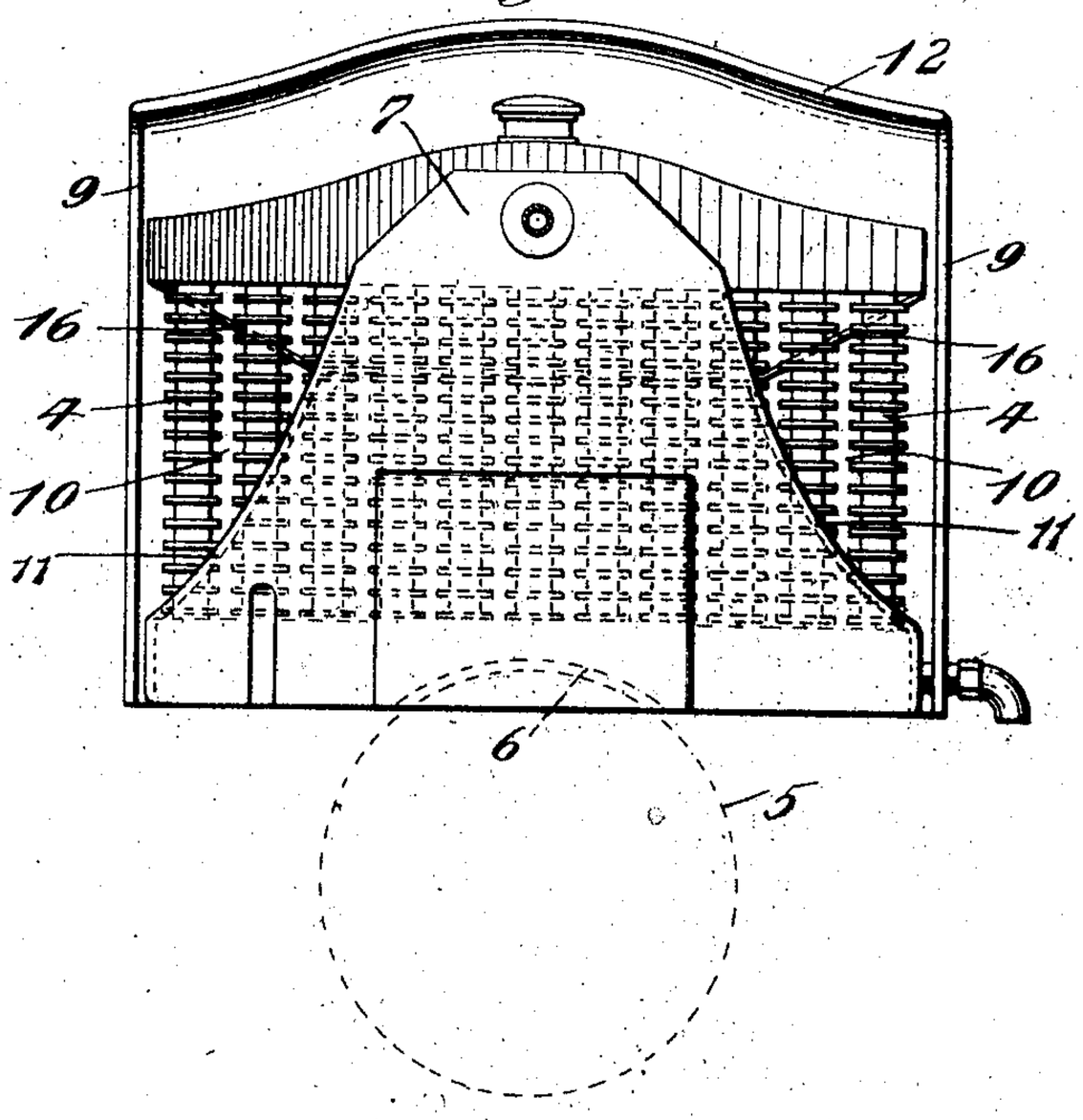


Fig. 2.



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UNITED STATES PATENT OFFICE.

DAVID LANDAU AND ASHER GOLDEN, OF NEW YORK, N. Y.

AUTOMOBILE-RADIATOR.

947,496. Specification of Letters Patent. Patented Jan. 25, 1910.

Application filed January 13, 1909. Serial No. 472,067.

To all whom it may concern:

Be it known that we, DAVID LANDAU and ASHER GOLDEN, citizens of the United States, and residents of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Automobile-Radiators, of which the following is a specification.

This invention relates to improvements in radiators for automobiles.

In the drawings:—Figure 1 is a longitudinal section of the radiator casing and engine bonnet; the engine being shown in full lines. Fig. 2 is a front elevation of the radiator and casing.

The principal objects which the invention has in view are: to compel the circulation of air through the radiating tubes; to simplify the construction whereby the radiator, and the casing are one structure, which may be readily inserted and separated from the body structure.

In the drawings is illustrated an engine of the usual type, provided with a water cooling system to which the radiator is connected. The radiator is provided with the compartment 1 to receive water from the pipe 2, which is connected with the water heads and jackets of the engine. The radiator is provided at the bottom with the compartment 3. The compartment 1 and the compartment 3 are connected by the radiating tubes 4, which may be of any design.

The radiator tubes 4 together with the compartments 1 and 3 are secured rigidly to the face plate 7 and the back plate 8 of the housing or casing. The sides are housed in by the side plates 9 that are extended forward to any desired position, the purpose being to cover the sides of the tube compartment and concentrate the air entering to the t bes, so that the same will follow the path designed. In other words, referring to Fig. 2 of drawings, the space indicated by the number 10 is exposed to the air entering from the front of the car, and not that which would enter from the side. The air entering from the front is compelled to pass beyond the side plate 11 and around the rear edge of the same, and thence forward through the bottom part of the tubes on the way to the fan 5.

The air which is drawn in at the top by reason of the hood 12 is carried to the rear of the water compartment 1 and downward until it strikes the plate 13 by which it is guided to travel forward and around the forward edge of the same. When in its downward passage it strikes the horizontal plate 14 it is guided to travel around the rear edge of that plate from whence it travels forward until it meets the face plate 7 by which it is guided downward through the passage 15 around the front end of the compartment 3 on its road to the fan 5 whence it is expelled backward under the car body. Thus the air is compelled to travel several times through the tubes 4 thereby absorbing proportionately more of the heat from the tubes. Also the speed of travel of the same is accelerated by the applied force of the fan 5, and the rush of the car.

By interposing the face plate 7 between the bonnet of the engine and the radiator tubes, the radiation from the engine is carried off without impinging upon the radiator. The end portions of the plates 13 are inclined as shown at 16 to control the air caught by the hood 12 and deflect the same to the center, so that it will pass behind the face plate 7. It will be noticed that by this arrangement an increased capacity of radiation is furnished by protecting the tubes from the heat of the engine. Also the appearance of the car is enhanced in that the radiator is not exposed, except as a part of the general structural design and is in keeping with the same. Also it will be observed that the heated air from the engine and radiators is not permitted to pass back into the body of the car.

Having thus described this invention, what is claimed is:—

1. An automobile radiator comprising, a series of radiator tubes; a casing for said series of tubes having a front and back; and a plurality of plates extended alternately from the back and front of said casing to form a tortuous passage for the air about said tubes.

2. An automobile radiator comprising, a series of radiator tubes; a casing for said tubes having front, back and side plates arranged to provide inlets at the top and sides, said inlets open to the front only; and a plurality of plates extended alternately from the back and front of said casing to form a tortuous passage for the air about said tubes.

3. An automobile radiator comprising, a series of radiator tubes; a casing for said

series of tubes having a front and back; and a plurality of horizontally disposed plates of less width than the casing and alternately connected to the front and rear wall of said casing.

4. An automobile radiator comprising, a series of radiator tubes; a casing for said tubes having front, back and side plates arranged to provide inlets at the top and sides, said inlets open to the front only; and a plurality of horizontally disposed plates of less width than the casing and alternately connected to the front and rear wall of said casing.

5. An automobile radiator comprising, a series of radiator tubes; a casing to hold the radiator having a face plate to separate the engine space from the radiator; and a plurality of plates extended alternately from the back and front of said casing to form a tortuous passage for the air about said tubes.

6. An automobile radiator comprising, a series of radiator tubes; a casing to hold the radiator having a face plate to separate the engine space from the radiator; and a plurality of horizontally disposed plates of less width than the casing and alternately connected to the front and rear wall of said casing.

Signed at New York, in the county of New York and State of New York this 22nd day of December A. D. 1908.

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