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CARBURETOR AIR INTAKE ARRANGEMENT

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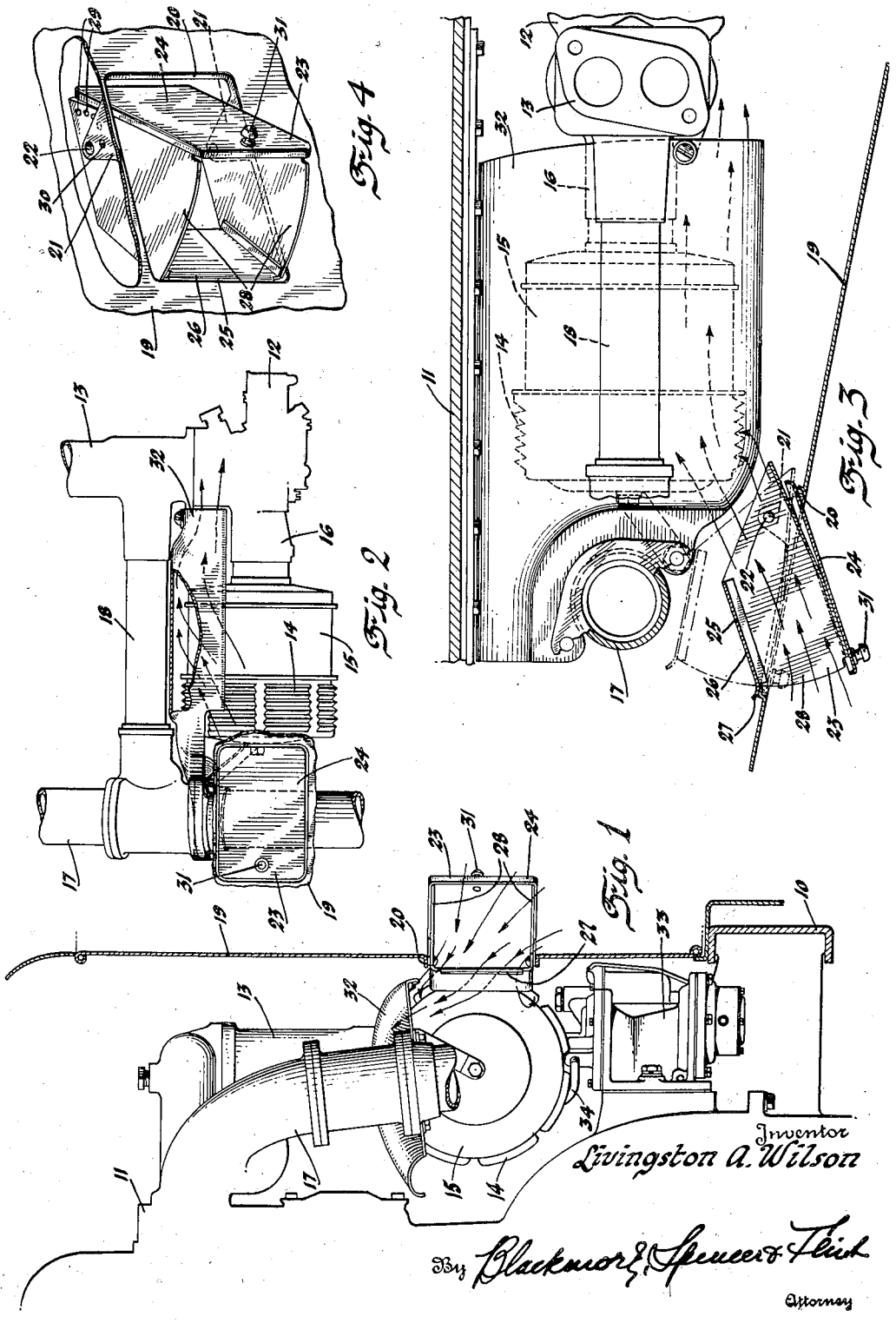


Fig. 4

Fig. 2

Fig. 3

Fig. 1

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CARBURETOR AIR INTAKE ARRANGEMENT

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1 Claim. (Cl. 180—54)

In automotive vehicles of the type which is in general use at the present time, the carburetors of the propelling engines and other parts of the fuel and induction systems are located within substantially closed compartments from which the volume of air required by the engines is withdrawn through the carburetors. When the temperature of the air within the engine compartment exceeds a certain degree, as it does under certain conditions, the performance of the engine becomes more or less unsatisfactory due to decrease in volumetric efficiency and occurrence of "vapor-lock" in the fuel system. The principal object of this invention is to provide means whereby, at the will of the driver, relatively cool air from the outside of the engine compartment may be supplied to the intake of the carburetor of the propelling engine and passed over the carburetor and other parts of the fuel system of an automotive vehicle so as to increase the volumetric efficiency of the engine and prevent the occurrence of "vapor-lock" in order to increase the efficiency of the engine under these conditions.

Other objects of the invention will be apparent from a perusal of the following specification, in which there is described the preferred embodiment of my invention which is illustrated in the accompanying drawing, in which:

Figure 1 is a fragmentary vertical section taken through the engine compartment of an automotive vehicle in which is embodied my invention.

Figure 2 is a fragmentary side elevation, with parts broken away and in section, of the construction shown in Figure 1.

Figure 3 is a fragmentary horizontal section taken through the engine compartment of the vehicle shown in the preceding figures.

Figure 4 is a perspective view showing a portion of the engine hood and the combined door and deflector shown in the preceding figures.

In the drawing, the reference character 10 indicates the frame of an automotive vehicle on which is mounted the propelling engine 11, to which a carburetor 12 to which fuel is supplied by a pump 33 through a pipe 34 is connected by a riser 13. Air is admitted to the carburetor through the louvered openings 14 in the combined air cleaner and intake silencer 15, which is connected to the air intake conduit 16 of the carburetor. The exhaust gases are led from the engine to the atmosphere through a pipe 17, which has a branch 18 through which a portion of the heated exhaust gases may be led into a jacket which surrounds a portion of the riser 13 so that the combustible mixture passing therethrough may be heated when desired. The engine 11 and the attachments heretofore mentioned are inclosed within a compartment, of which the hood 19 forms a part.

So that relatively cool air from the outside of the engine compartment may be supplied to the intake of the carburetor and passed over the carburetor, the fuel pump and other parts of the fuel system located within the engine compartment when desired, there is provided in the lower panel of the hood 19 at about the level of the carburetor intake conduit, and just forward of the combined air cleaner and intake silencer an opening 20. To ears 21 which are formed on the hood at the upper and lower edges of the opening 20, there is pivotally connected by rivets 22 a forwardly and outwardly opening combined door and deflector 23 which is adapted to scoop up more or less of the relatively cool air which passes the hood 19 when the vehicle is in motion and direct it onto the combined air cleaner and intake silencer, the carburetor, the fuel pump and other parts of the fuel system located within the engine compartment. The combined door and deflector 23 consists of a door panel 24 and a channel-shaped element 25 consisting of a web 26, on whose forward edge there is provided a flange 27 which limits opening movement of the combined door and deflector and flanges 28, whose free edges adjacent their forward ends are connected to the upper and lower edges of the door panel 24. On the rear end of one of the flanges 28 through which the pivots 22 pass, there is formed an arcuate series of depressions 29 into any one of which a teat 30, which is formed on the adjacent ear 21, is adapted to be seated so as to hold the combined door and deflector in fully closed position in which the door panel 24 functions as a closure for the opening 20 or in fully opened position, or in any one of several intermediate positions. To facilitate opening and closing of the combined door and deflector, there is provided on the door panel 24 a knob 31.

To prevent air heated by the branch 18 of the exhaust pipe 17 and heat radiating therefrom, from reaching the air intake openings 14 in the combined air cleaner and intake silencer so as to aid in maintaining the air entering the intake of the carburetor at a relatively low temperature, there is interposed between the pipe 18 and the combined air cleaner and intake silencer a shield or deflector 32 on the forward end of which there is provided a downwardly inclined flange which

tends to prevent air which has been heated by the radiator and blown rearwardly by the fan from reaching the combined air cleaner and intake silencer and the carburetor.

It will, of course, be understood that the combined door and deflector 23 is made adjustable so that the amount of cold air admitted therethrough may be regulated in accordance with the temperature conditions within the engine compartment, and that the combined door and deflector may occupy practically any position from and including that in which it is shown in solid lines in the drawing when a maximum volume of cold air will be directed onto the combined air cleaner and intake silencer, the carburetor, the fuel pump and other parts of the fuel system located within the engine compartment to and including that in which it is shown in dot and dash lines in Figure 3, in which the opening 20 is completely closed and no air from outside the engine compartment may enter it therethrough.

The structure shown in the drawing and hereinbefore described for holding the combined door and deflector in open, closed and intermediate positions may be replaced by any suitable mechanism, such as a spring connected to the combined door and deflector and to the hood so that it passes through the line in which the axes of the pivots 22 are located as the combined door and deflector is moved from open to closed position or vice versa and, consequently, holds the combined door and deflector in opened or closed position.

Although I have shown and described a preferred embodiment of my invention, it is to be understood that this has been done by way of example and not by way of limitation, and that the scope of my invention is to be determined only by the appended claim.

I claim:

In an automotive vehicle which includes a compartment within which there is located an engine, a carburetor, and an exhaust passage through which a heated medium passes located in juxtaposition to the carburetor: an opening through which air is adapted to enter the compartment adjacent the carburetor, a deflector so associated with the opening that it directs air which enters the opening from without the engine compartment onto the carburetor, and a shield so located that it prevents access of heat from the exhaust passage to the carburetor and serves to guide the air from the deflector toward the carburetor.

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