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2,223,262

OIL COOLING SYSTEM FOR MOTOR VEHICLES

Filed April 18, 1940

Fig. 1.

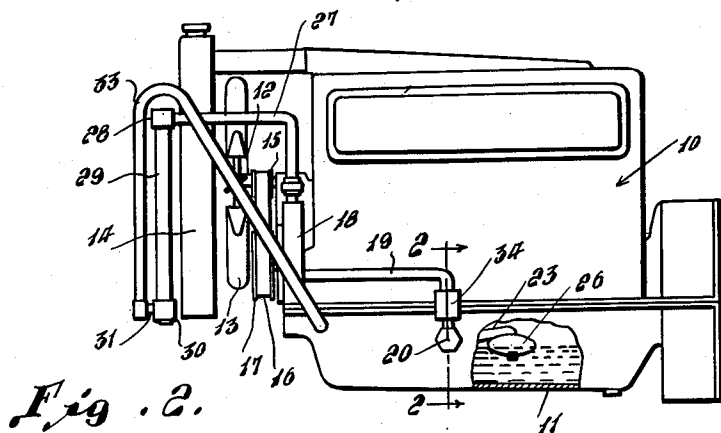
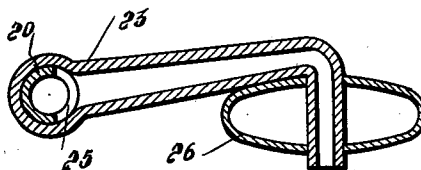
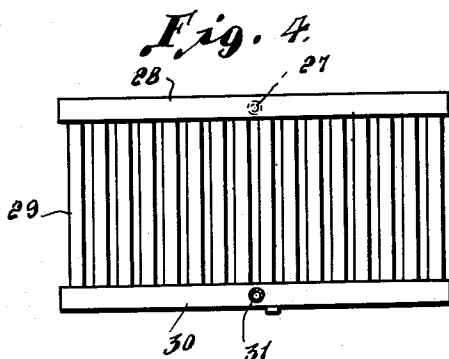
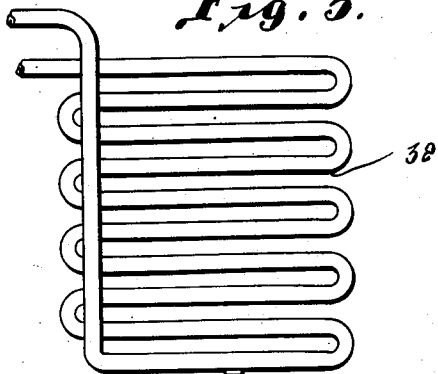


Fig. 3.



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OIL COOLING SYSTEM FOR MOTOR
VEHICLES

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2 Claims. (Cl. 184-104)

This invention relates to an oil cooling system for the internal combustion engine of a motor vehicle.

It is particularly aimed to provide a novel means whereby the oil is maintained in circulation and passed through a radiator in order to cool the same, the oil being removed from the oil pan of the engine at the zone of greatest heating and being returned to such pan.

The more specific objects and advantages will become apparent from a consideration of the description following taken in connection with accompanying drawing illustrating an operative embodiment.

In said drawing:

Figure 1 is a view in side elevation of an internal combustion engine embodying my improvements, the same being partly broken away to disclose details;

Figure 2 is an enlarged vertical sectional view taken on the plane of line 2-2 of Figure 1;

Figure 3 is a vertical sectional view taken on the plane of line 3-3 of Figure 2;

Figure 4 is a front elevation of one section of the oil radiator, and

Figure 5 is a front elevation of the other section of the oil radiator.

Referring specifically to the drawing wherein like reference characters designate like or similar parts, 10 represents a conventional internal combustion engine such as is used on motor vehicles for propulsion. As usual, such motor or engine has an oil pan at 11 and the motor drives a shaft 12 for a fan 13 which is disposed behind the radiator 14 of its water cooling system.

In accordance with my invention, a pulley 15 is keyed to said shaft 12 and a belt 16 is trained thereover which is also trained over a pulley 17 which operates a pump 18.

Said pump 18 is mounted on the casing of the engine 10 and has a pipe or conduit 19 at its inlet end which communicates with and is coupled to a lateral inlet pipe 20, mounted at 21 in the wall of the pan 11 and extending and terminating interiorly of such pan.

The inner end of pipe 20 is closed by a screw cap 22 which positions an intake nozzle 23 on pipe 20 in abutment with a shoulder 24 thereon. Nozzle 23 is swiveled on the pipe 20 and the latter has a port or opening 25 therethrough in registry with the bore of the pipe. Such pipe carries a float 26 at its outer end, adapted to float on the oil within the pan 11 in order that the oil pumped through the nozzle 20 will always be taken from

the top, which is the zone of maximum heating of the oil.

Pump 18 causes the oil to pass through an outlet pipe 27, which delivers to the top header 28 of a vertical tube or equivalent radiator 29 suitably located and usually mounted in front of the radiator 14. From the lower header 30 of the radiator 29, the oil is transferred through a short pipe 31 into a horizontal tube serpentine radiator 32, traveling upwardly therein and being returned to the oil pan 11 through a return pipe or conduit 33.

A check valve 34 is preferably provided within the pipe 19, to permit pumping of the oil from the pan 11 therethrough and to prevent the return of oil to such pan.

It will be realized that in accordance with the invention, the oil is taken from the zone of greatest heating thereof and passed through radiators which are cooled in the atmosphere, the oil passing in fine streams in various directions and being returned to the oil pan. It is to be emphasized, that the float 26 rises and falls with the oil level in the pan 11 to thus insure intake of the warmest oil at the nozzle 20.

I claim as my invention:

1. In combination with an internal combustion engine and its oil pan, a pump operable by said engine, means to withdraw oil from the pan to cool it and return it to said pan through operation of the engine, said means including a radiator exteriorly of the engine, a conduit member disposed primarily exteriorly of the engine extending into said pan to receive oil from the latter, and having an opening within the pan, a pivotally mounted inlet nozzle on said conduit member having a float to engage the oil in the pan, a closure for the inner end of said conduit member positioning said nozzle, a chamber means supported on said conduit member exteriorly of the pan, and a valve in the chamber member to prevent back flow of oil.

2. The combination of claim 1 wherein the conduit member has an enlargement exteriorly of the engine to which the chamber means is connected, said conduit member being screw threaded into the engine, a nut on the screw threaded portion of the conduit between the enlargement and engine and bearing against the latter, said conduit member within the engine having a shoulder abutted by the inlet nozzle on the opposite side to the closure.

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