Feb. 19, 1929.

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S. KRALJEVICH

LUBRICATION OF INTERNAL COMBUSTION ENGINES

Filed April 7, 1927

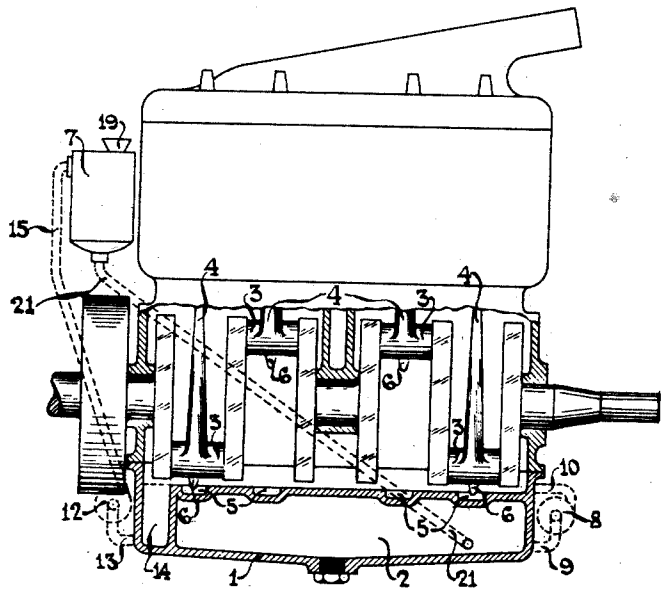


FIG. 1.

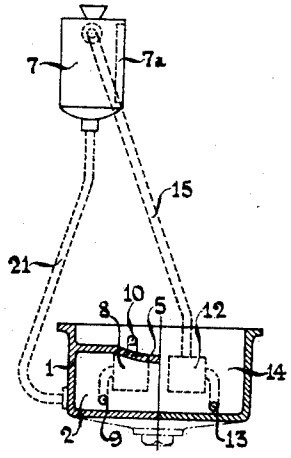


FIG. 2.

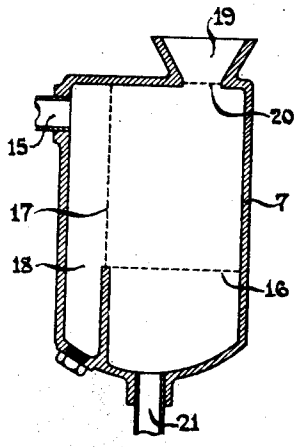


FIG. 3.

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UNITED STATES PATENT OFFICE.

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LUBRICATION OF INTERNAL-COMBUSTION ENGINES.

Application filed April 7, 1927. Serial No. 181,778.

This invention relates to the lubrication of internal combustion engines and particularly to the lubrication of internal combustion engines as adapted for use upon automobiles and provides improvements whereby a complete circulation of oil is obtained, and the latter is maintained in a clear and a cool condition.

According to the invention the means employed, comprise a filter in communication with an oil chamber located below the big ends of the engine connecting rods; a pump having its inlet connected with said chamber, and its outlet opening over the top thereof; a well adjacent said chamber; and a pump having its inlet connected with said well and its outlet in communication with said filter.

The filter contains a horizontal partition partly of gauze and partly solid, and a vertical partition located above and extending down to the latter, the space into which the connection from the pump opens, being bounded by the solid part of said horizontal partition, the vertical partition and the side and top of the filter casing.

The oil chamber located below the big ends of the connecting rods is closed and has in its top depressions adapted to receive oil and dippers carried by said big ends for the purpose of effecting lubrication of the cylinders.

The invention will be further described in conjunction with the accompanying drawing, wherein:—

Figure 1 is an elevation partly in section of an engine fitted with the improvements.

Figure 2 being a cross sectional view of the lower portion of the crank case, and showing the arrangement of the pumps and the filter, while

Figure 3 is a vertical section of the filter.

The crank case 1 is provided with an enclosed oil chamber 2, located and extending below all of the big ends 3 of the engine connecting rods 4, the top of said chamber containing depressions 5, into which dippers 6 carried by said big ends pass, as the pistons reciprocate in the cylinders, in the known way.

Oil is supplied by gravity to said chamber 2 through a pipe 21 from a filter 7 located above the level of the latter, and situated where it is readily seen and enabled to be got at, such as for instance on the dashboard of an automobile.

A pump 8 has its inlet 9 connected with the interior of said chamber 2 and its outlet 10 disposed to open over the top of the latter.

A further pump 12, has its inlet 13 connected with a well 14 adjacent the chamber 2 while its outlet 15 is connected with the filter 7, the latter containing a horizontal partition 16 partly of gauze and partly solid, and also a vertical partition 17 located above and extending down to said horizontal partition, the space 18 into which the pump outlet 15 opens, being bounded by the solid part of the horizontal partition, the vertical partition and the side and top of the filter casing.

A filling spout 19 fitted with a gauze strainer 20 is provided to the filter to enable oil to be placed therein.

In practice the chamber 2 is kept filled with oil, and upon a level of oil being seen in the filter 7, it is known that said chamber 2 is completely full.

Upon the pumps 8 and 12 being set in operation, oil is drawn from the chamber 2 and delivered onto the top thereof, some of the oil being held in the depressions 5 from which it is scooped up and thrown into the cylinders by the dippers 6, the remaining oil passing to the well 14 from which it is returned to the filter 7, by the pump 12.

On entering the filter 7 from the pipe 15 the returned oil passes through the gauzes at 16 and 17 and is strained thereby, before returning to the chamber 2 via the pipe 21.

The oil is therefore kept circulating, and cool and is strained each time it is returned to the filter 7.

If desired the filter 7 can be provided with a sight opening indicated at 7^a to enable the level of oil therein to be readily observed.

What I do claim and desire to obtain by Letters Patent of the United States of America is:—

1. An oil filter comprising a receptacle having an upright imperforate partition rising from the bottom to an intermediate point in its depth, segregating the lower part of said receptacle into side by side chambers, one of which is provided with an outlet and the other, forming a trap, being provided with a drain plug, a screen at an intermediate level of said receptacle forming a top for the chamber having the outlet, an upright screen forming a continuation of said imperforate partition, and an inlet pipe entering the trap chamber above the level of the upright imperforate partition.

2. An oil filter comprising a receptacle hav-

ing an upright imperforate partition rising from the bottom to an intermediate point in its depth, segregating the lower part of said receptacle into side by side chambers, one of which is provided with an outlet and the other, forming a trap, being provided with a drain plug, a screen at an intermediate level of said receptacle forming a top for the chamber having the outlet, an upright screen forming a continuation of said imperforate partition, an inlet pipe entering the trap chamber above the level of the upright imperforate partition, and a filling opening communicating with said receptacle at a point above the top of said chamber having the outlet, and on the side of the upright screen opposite the inlet pipe.

In testimony whereof I have signed my name to this specification.

STEVE KRALJEVICH.