May 13, 1952 V. D. PLANTICO 2,596,789

OIL FILTER FOR CRANKCASE SAFETY DEVICES

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Fig. 1.

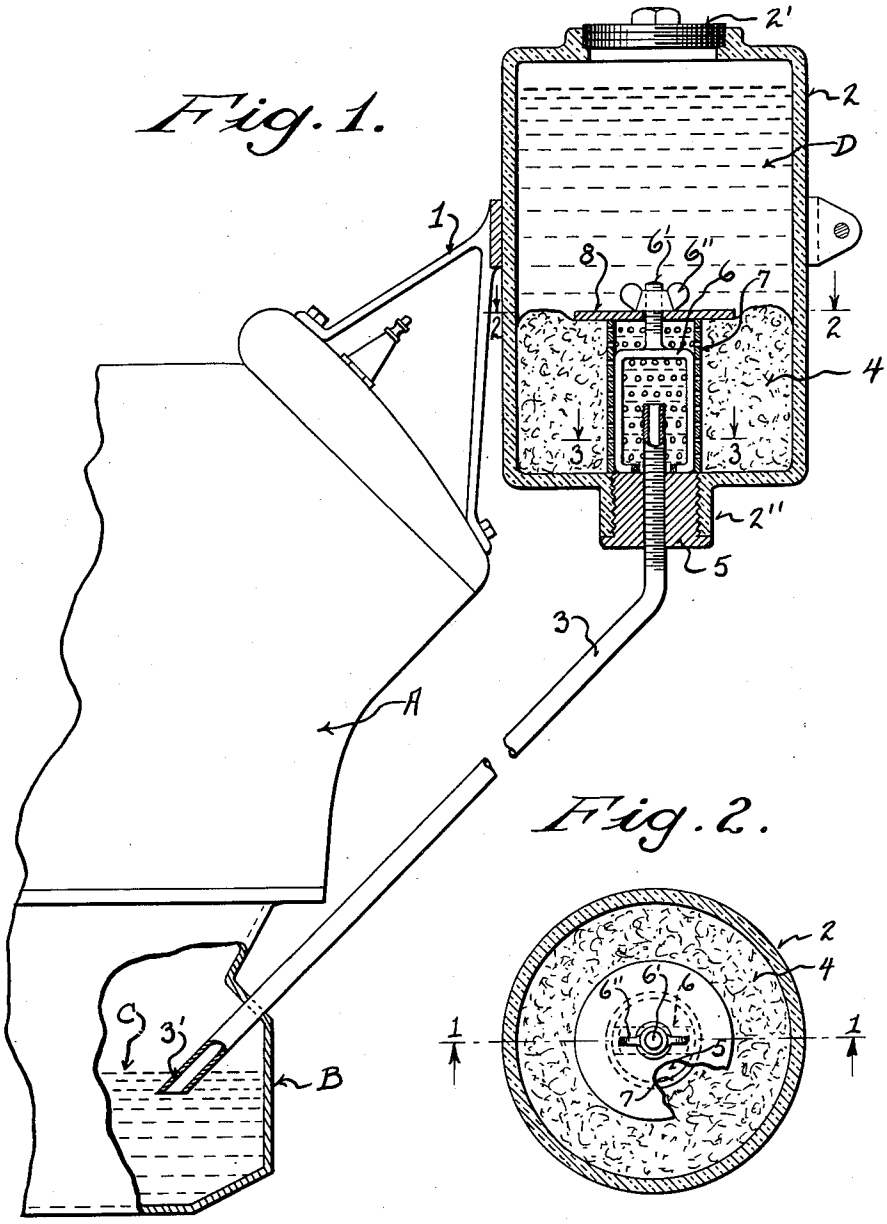
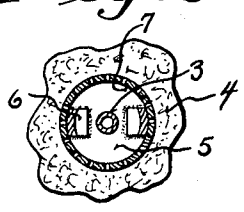


Fig. 2.

Fig. 3.



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OIL FILTER FOR CRANKCASE SAFETY DEVICES

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1 Claim. (Cl. 210—131)

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My invention refers to crank case oil safety devices such as disclosed in my patent application filed December 30, 1946, Serial No. 719,309, now abandoned, and the primary object of my invention is to provide a removable filter pad for an auxiliary reservoir, whereby the auxiliary oil supply is kept clear of any foreign matter.

In practice it has been found that pressure develops in the crank case of an engine which tends to force more or less foul oil back into the pure reservoir oil and thereby contaminate the same. My present invention, therefore, has for its specific object to provide a removable filter pad for the reservoir which is pressed down about the mouth of the reservoir feed pipe, whereby impregnated oil from the crank case is not only filtered as it is discharged into the reservoir, but as it is supplied from said reservoir to maintain a standard level therein. Thus the oil receives two distinct filtrations.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the novel construction, combination and arrangement of parts, substantially as hereinafter described, and more particularly defined by the appended claim, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claim.

In the accompanying drawings is illustrated one complete example of the physical embodiment of the present invention constructed according to the best mode so far devised for the practical application of the principles thereof.

In the drawings,

Figure 1 represents a sectional elevation of an auxiliary reservoir attached to an engine embodying the features of my invention.

Figure 2 is a plan sectional view of the same, the section being indicated by line 2—2 of Figure 1.

Figure 3 is another fragmentary plan sectional view through the filter pad and core connections, the section being indicated by line 3—3 of Figure 1.

Referring by characters to the drawings, A indicates the housing of an internal combustion engine having the usual crank case oil pan B.

Extending from the top portion of the housing A is a bracket 1 having fitted therein a reservoir 2 provided with a cap closed filling mouth 2', the same being of sufficient area for the insertion of the hand in said reservoir.

The bottom neck 2'' of the reservoir has fitted therein a feed pipe 3, which pipe extends through

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an aperture in the crank case and terminates with a bottom discharge end 3' within the said crank case. As noted, the bottom end 3' of the pipe terminates just below the crank case oil level.

Owing to the discharge mouth 3' being submerged below the standard oil line in the crank case, when said oil line drops below the mouth 3' air will enter the pipe 3 and the pure auxiliary oil D in the reservoir will by gravity be discharged in the crank case until the oil level C rises to its normal level, whereby the flow from the auxiliary reservoir is checked by the development of a partial vacuum in the space above the oil D in the reservoir 2.

Owing to the fact that air pressure upon the crank case oil is developed, a small volume of said crank case oil is forced upwardly through the feed pipe 3 into the auxiliary reservoir 2.

Due to the fact that said reservoir oil may be clogged with impurities when it is forced into the auxiliary reservoir it should be subjected to a thorough filtration.

For the above noted purpose I provide a spongy filtration pad 4, which pad is fitted into the bottom of the reservoir 2. The bottom neck 2'' of the reservoir is in threaded engagement with a stopper 5, and the upper discharge end of the feed pipe 3 is in threaded connection with said stopper, it being understood that the mouth of the discharge end of the pipe 3 projects a considerable distance above the said stopper intermediate the thickness of the pad 4.

The stopper 5 has suitably secured thereto legs of a bracket 6, and the upper end of said bracket has projecting therefrom a screw threaded shank 6'. Fitted over the legs of the bracket from the bottom of the reservoir to a point adjacent the top face of the pad 4 is a perforated fiber cylinder 7, which perforated cylinder forms a core for the pad. The pad is compactly nested and held within the lower portion of the reservoir by a washer 8, which engages the upper surface of the pad and the adjacent end of the sleeve 7, and said washer and associated parts are firmly anchored in their proper position by means of a thumb screw 6'' which engages the threaded shank 6'.

From the foregoing arrangement of the pad it will be noted that crank case oil under pressure may be forced through the mouth of the feed pipe which is nested within the porous sleeve, and said oil if contaminated with impurities will be forced through the filter pad before it is discharged into the pure oil contained in the reser-

voir, whereby it is mixed therewith. Hence, the back pressure oil is initially filtered, and when the oil level in the crank case drops below the discharge mouth of the feed pipe 3 this volume of auxiliary oil will feed by gravity into the crank case, and as it is fed it will again be filtered through the pad 4. When the pad becomes fouled by filtering operations it can readily be removed through the filling opening 2', and a fresh pad substituted therefore.

While I have specifically defined my preferred form of filter pad assemblage, I may under certain conditions vary the structural details without departing from the spirit of the invention.

I claim:

An oil filter of the type to be utilized in an auxiliary oil supply system for maintaining a level of oil in the crank case of internal combustion engines and to filter oil traveling to and from the crank case comprising, a reservoir above the crank case having an open bottom neck, a stopper for the neck, a pipe extending through the stopper and into the crank case, a skeleton bracket fixed to the stopper and extending above the upper end of the pipe, a perforated sleeve mounted upon the bracket and terminating above the bracket, a filter pad fitted about the perforated sleeve and extending outwardly to the outer walls of the reservoir, a threaded shank

extending upwardly from the bracket and terminating above the sleeve, a compression washer mounted upon the shank and in abutting engagement with the pad and closing the upper end of the sleeve, and a nut in threaded engagement with the shank for securing the same to the washer.

VICTOR D. PLANTICO.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,218,975	Brison	Mar. 13, 1917
1,228,837	Schulse	June 5, 1917
1,383,746	Newton	July 5, 1921
1,440,554	Rose	Jan. 2, 1923
1,701,154	Gunn	Feb. 5, 1929
2,279,699	White	Apr. 14, 1942
2,470,943	Page	May 24, 1949
2,543,165	Harlan	Feb. 27, 1951

FOREIGN PATENTS

Number	Country	Date
17,856	Great Britain	1911
862,916	France	Mar. 19, 1941