May 23, 1950 L. F. KLINE 2,508,952

FLOATING SCREEN

Filed March 18, 1947

FIG. 1.

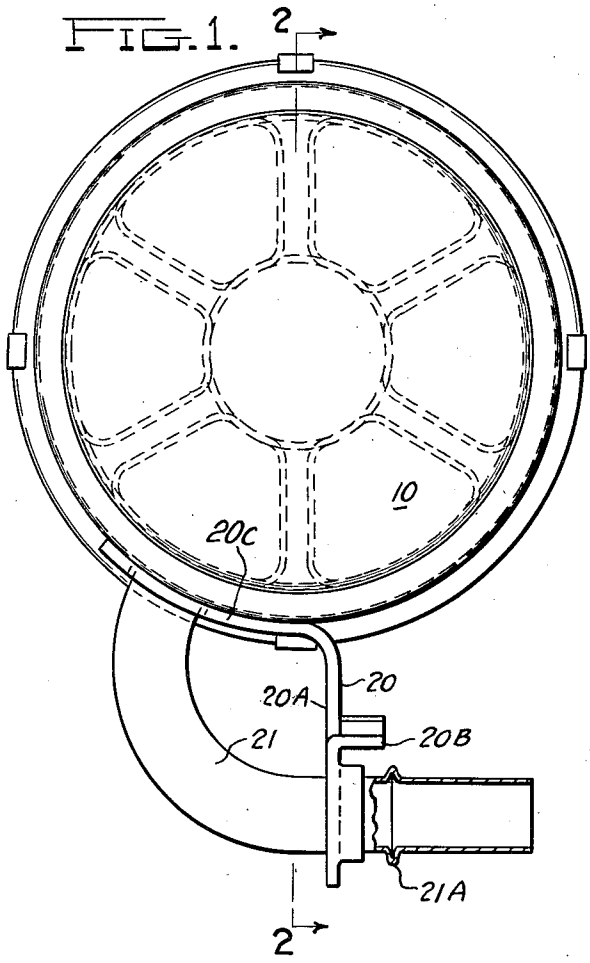


FIG. 2.

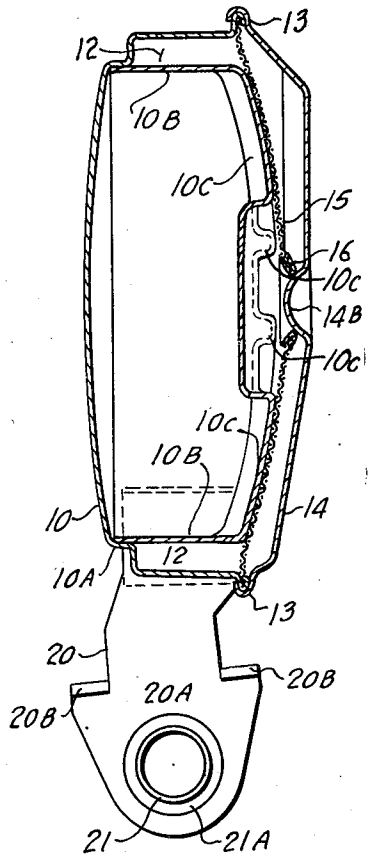
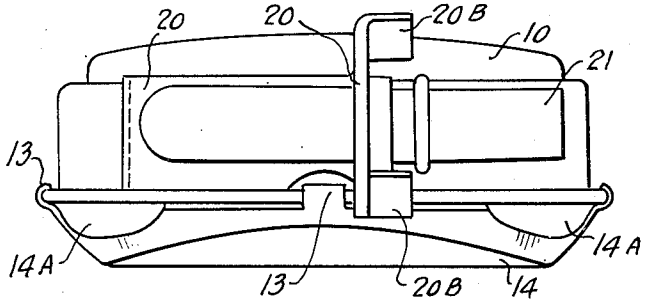


FIG. 3.



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FLOATING SCREEN

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1 Claim. (Cl. 210—97)

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The present invention relates to floating oil screens and has among its objects to provide a screen that is more efficient in operation and less expensive to construct than the forms heretofore known and used.

Another object is to simplify the construction and installations of such screens.

Other objects and advantages will be apparent to those skilled in the art upon reference to the following description and the accompanying drawings in which:

Figure 1 is a plan view of a screen embodying the present invention.

Figure 2 is a section on line 2—2 of Figure 1.

Figure 3 is a view in elevation as from the bottom of Figure 1.

As indicated in the drawing, the screen comprises an outer bell member 10 provided with a shoulder 10A within which is fixed a shell 10B so as to provide a float chamber surrounded by a channel 12. Fixed to the edge of bell 10 as by crimping as at 13 is a guard or cover 14 dished downwardly and provided with openings 14A and also with a central circular boss or dimple 14B. The cover 14 is spaced from the shell 10B which is provided with ribs 10C extending radially of the shell and outwardly toward the cover 14.

Fixed within the space between the cover 14 and shell 10B is a screening element 15 of flexible mesh material. This element 15 will be in the form of a disc having its edge secured in the crimp 13 and having at its center an opening in which is fixed a grommet 16 of such size as to form a valve with the boss 14B. The element 15 is pressed downwardly by the ribs 10C in shell 10B so that the grommet 16 coacts with boss 14B and closes the central opening in the screen. The ribs 10C, however, do not extend to the center of shell 10B but stop short thereof a sufficient distance to permit the central portion of the element 15 to lift from boss 14B if and when it becomes plugged.

Fixed to the outside of bell 10 and opening thereinto is a tube 21 communicating with the annular space 12. The tube 21 will be bent as shown so that its inbent end portion will extend in a direction perpendicular to a radius of the bell and will be supported by a plate 20.

This plate 20 will be formed so that a portion 20C will conform to the outside of bell 10 while one end will be bent outwardly and at right angles to the inbent portion of tube 21 which will pass through and be fixed to the plate. The

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plate, tube and bell will preferably be brazed or otherwise permanently fixed together. Plate 20 will be provided with suitable ears 20B serving as stops for the screen assembly and the tube 21 will be upset to provide a circumferential rib or flange 21A adapted to coact with a retaining nut (not shown), allowing the screen assembly to swing about the axis of the inbent portion of the tube.

In operation, the device will be supported by the free end of tube 21 in the inlet of the oil circulating system of an engine with the screen assembly adapted to float in or on the body of oil in the crankcase, with the inlets 14A submerged in the oil. Since the oil enters by suction, it will normally pass through screening element 15 into the annular space 12 and out through tube 21. When, however, the element 15 becomes plugged with dirt and such, continued suction will open the valve formed by grommet 16 and boss 14B and allow oil flow without screening.

I claim:

A floating oil screen for use in the oil sump of an internal combustion engine, said screen comprising a bell portion enclosing a float chamber, the side wall of said chamber being spaced from said bell to provide an annular chamber, an oil screening element covering the open end of said bell and annular chamber, a perforated guard plate arranged over said screening element and provided with an upwardly extending boss, said screening element being provided with an opening opposite to and adapted to be normally closed by said boss and outlet means leading from said annular chamber.

LEROY F. KLINE.

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