

March 2, 1948.

G. VAN DOEHREN

2,437,008

OIL FILTER SCREEN

Filed Aug. 7, 1946

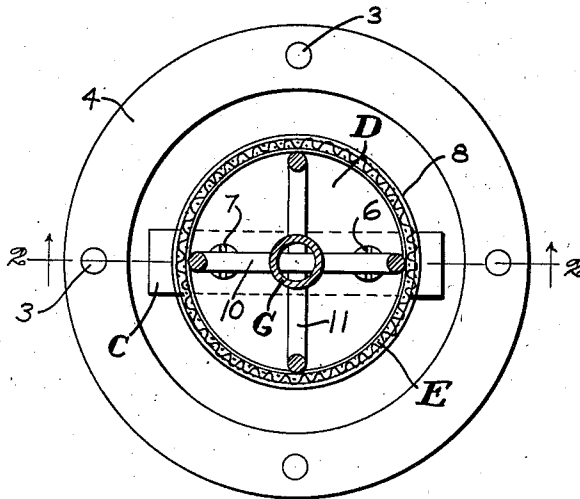


Fig. 1.

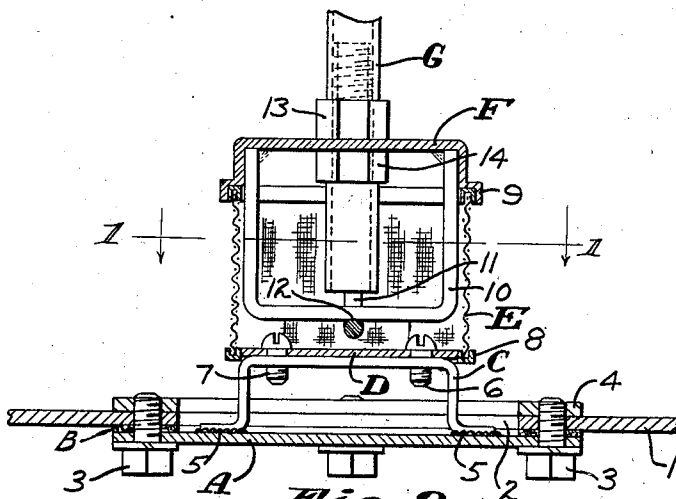


Fig. 2.

G. Van Doehren
INVENTOR.

BY *CA. Snow*
ATTORNEYS.

UNITED STATES PATENT OFFICE

2,437,008

OIL FILTER SCREEN

George van Doehren, Fredericksburg, Iowa

Application August 7, 1946, Serial No. 688,944

3 Claims. (Cl. 210-149)

1

This invention relates to an oil filter screen and more particularly and specifically to an oil filter screen adapted to be mounted in the crankcase of an internal combustion engine on the suction side of the oil circulating pump of the lubricating system.

The primary object of this invention is to provide an effective oil screen of the type described which is thorough and dependable in operation.

Another object of this invention is to provide an oil screen of the type described which may be easily and thoroughly cleaned with the minimum of effort.

Still a further object of this invention is to provide an oil screen of the type described which is of simple, sturdy and inexpensive design.

Still further objects and advantages of this invention will readily appear to those skilled in the art when examined in the light of the accompanying drawing, in which

Figure 1 is a horizontal cross section taken on line 1-1 looking in the direction indicated by the arrows.

Figure 2 is a vertical cross section taken on line 2-2 looking in the direction indicated by the arrows.

The filter comprising the present invention is illustrated and described in an embodiment suitable for use in combination with a crankcase or sump of any engine having a lubricating oil system.

Describing the embodiment of the invention as illustrated in the drawings, 1 designates the bottom of an engine crankcase or sump which bottom is provided with an aperture 2 through which the filter is insertable and removable in the manner now to be described.

A designates a metal disk which is removably secured to the crankcase bottom 1 by bolts 3 which extend upward through the disk A and through an oil tight gasket B to the sump bottom 1 and onward to engage a strengthening metal ring 4.

Suitably secured as by welding 5 to the disk A is an inverted U-shaped support C, the top of which is positioned above the bottom of the sump.

Secured to this support C by means of two screws 6 and 7 is a plate D about the periphery of the upper side of which is a U-shaped channel-way 8 in which rests the lower edge of a tubular filter screen E, the upper edge of which properly supports a cap F by virtue of an inverted U-shaped channel-way 9 about the periphery of

2

the under side of cap F which receives and rests on the upper edge of the screen.

Secured to the under side of cap F at a 90° relationship are two U-shaped braces 10 and 11 which extend downward adjacent to the screen walls to different depths within the screen where one brace 10, the shorter, crosses over and within brace 11 lying just above it in crossed position as at 12.

These braces 10 and 11 prevent the inward collapse of the screen E from the suction pressure of the inlet tube G which passes downward through the cover F and is secured to it by the nuts 13 and 14 and terminates at a spaced distance from plate D within the screen E.

In order to clean the screen E the screws 3 are removed and the metal disk A is lowered from its juxtaposition with the bottom of the crankcase and thereby lowering the support C and plate D through the aperture 2 and screen E by virtue of its operative fit with the cap F is lowered from the crankcase along with plate D and disk A to a free position outside the crankcase.

After the support, plate and screen have been removed from the crankcase, the screen E may be lifted from the channel 8 in plate D and cleaned or replaced before reinserting the filter to position within the crankcase.

Having thus described the invention what is claimed is:

1. For use in the crankcase of an engine having an oil circulating system means provided with an inlet tube in the crankcase, a strainer, comprising a support having a top elevated above the crankcase bottom, a plate on said support and having its upper face at its peripheral edge provided with a channel-way, a tubular screen having its lower end supported in said channel-way, a cover having at the peripheral edge of its under side an inverted U-shaped channel-way receiving and resting upon the upper end of said screen and closing the upper end thereof, and the inlet tube extending through said cover and having its inlet end terminating within said screen and in spaced relationship above said plate.

2. For use in the crankcase of an engine having an oil circulating system provided with an inlet tube in the crankcase, a strainer comprising a support having its top elevated above the crankcase bottom, a plate on said support, a tubular screen the lower edge of which rests in a channel-way about the periphery of the upper face of said plate, a cover for said screen having an inverted U-shaped channel-way about the

3

periphery of its under side which receives and rests on the upper edge of said screen and closing the upper end thereof, two U-shaped braces secured to the under side of said cover at 90° intervals and extending downward adjacent to the walls of the tubular screen to different depths within the screen so that one crosses over and within the other thus preventing the inward collapse of said screen caused by the suction pressure of the inlet tube which extends through the cover and terminates within the screen in spaced relationship above the plate.

3. In an engine having a crankcase and oil circulating means drawing oil from said crankcase, a flat disk having a support thereon the top of which is elevated above the bottom of the crankcase, said disk being removably secured to the bottom of the crankcase to cover an aperture therein, a plate secured on said support, a tubular screen removably mounted in a channel-way about the periphery of said plate, a cover having an inverted U-shaped channel-way about the periphery of the under side of said cover which

4

loosely and removably rests upon the upper edge of said screen thus enabling said screen, plate, and support to be removed from the crankcase through said aperture by removing the disk from the bottom of the crankcase, an inlet tube from the oil circulating means extending through said cover and its inlet end terminating in spaced relationship above said plate and within said screen.

GEO. VAN DOEHRN.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,019,171	Melville-Hamilton	Mar. 5, 1912
1,394,011	Hills	Oct. 18, 1921
1,759,447	Fisher	May 20, 1930
2,196,821	Arnold	Apr. 9, 1940
2,372,286	Mieras	Mar. 27, 1945