April 12, 1927. 1,624,526

H. C. BOHMSACK

OIL FILTER

Filed May 21, 1926

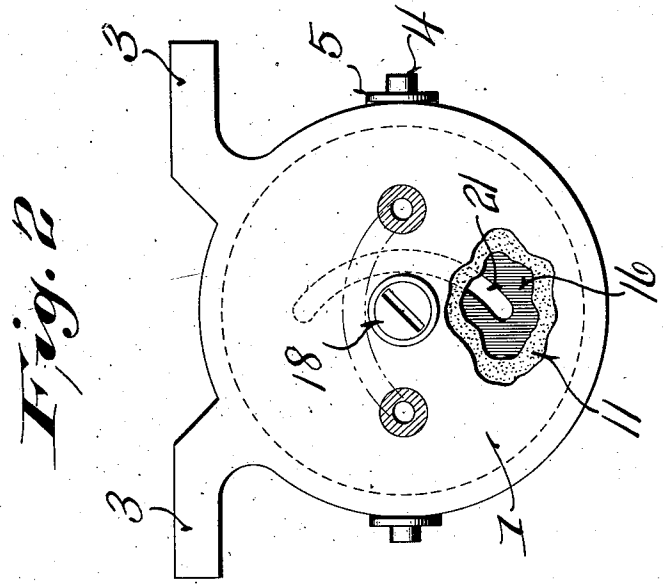


Fig. 2

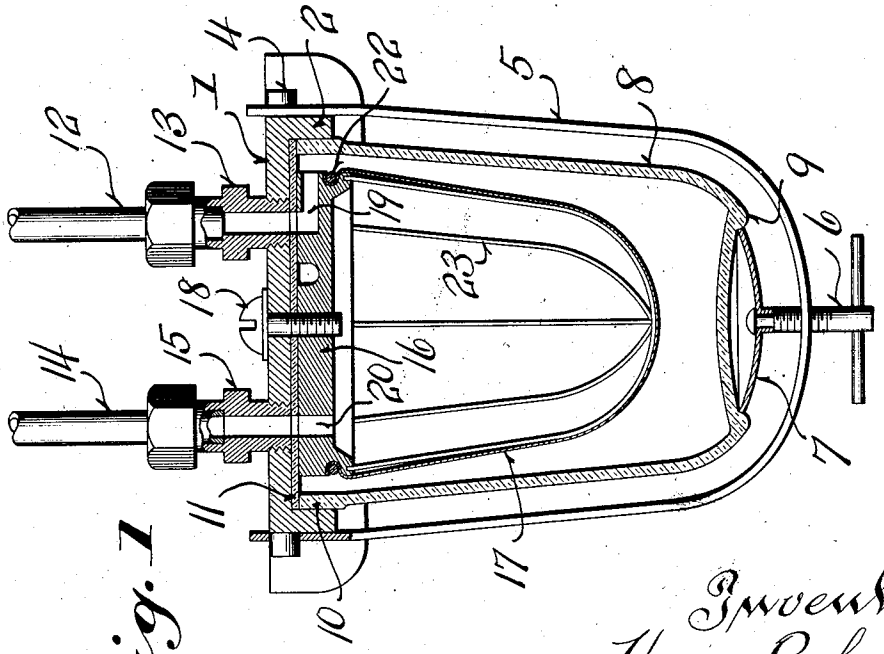


Fig. 1

Inventor:
Harry Bohmsack
By
Attorneys

Patented Apr. 12, 1927. 1,624,526

UNITED STATES PATENT OFFICE.

HARRY C. BOHMSACK, OF FORT ATKINSON, WISCONSIN, ASSIGNOR OF ONE-HALF TO HUGO W. PASSER, OF FORT ATKINSON, WISCONSIN.

OIL FILTER.

Application filed May 21, 1926. Serial No. 110,679.

This invention relates to oil filters and is particularly directed to a gasoline filter.

Objects of this invention are to provide a gasoline filter which may be placed in the gasoline supply system of an automobile and which will catch and retain all sediment, trash, or solid matter that may be carried by the gasoline without, however, obstructing the flow of the gasoline.

Further objects are to provide a gasoline filter which is of extremely simple and practical construction, and which is so made that the filter sack and container may be most easily removed for cleaning.

Further objects are to provide a gasoline filter which is so constructed that the gasoline may be by-passed by a simple manipulation of the device to thus permit the ready passage of the gasoline through the apparatus without requiring it to pass through the filter sack.

Further objects are to provide a novel form of filter in which means are provided for holding the filtering sack in an extended condition and, if desired, under tension so that the utmost freedom of flow for the gasoline is attained without, however, sacrificing any of the desirable filter characteristics of the apparatus.

An embodiment of the invention is shown in the accompanying drawings in which:—

Figure 1 is a vertical sectional view through the device.

Figure 2 is a plan view of the apparatus with parts broken away.

Referring to the drawings, it will be seen that the filter comprises a head 1, preferably of circular shape, and equipped with a downwardly extending marginal flange 2. This head is provided with a pair of integral feet or bracket members 3, by means of which they may be attached to the machine.

It is further provided with a pair of outwardly extending pins 4 for the reception of the retaining yoke 5. This retaining yoke is of strap metal and is substantially U-shape. It is provided with apertures at its upwardly extending arms for the reception of the pins 4. The lower portion of the yoke is provided with a threaded aperture through which a thumb screw 6 passes. This thumb screw has a cup-shaped metal disc 7 swivelly joined to its upper end.

The casing for the filter is of transparent material, preferably glass, and is indicated by the reference character 8. It is provided with a bottom annular flange or rib 9 within which the disc 7 is positioned. Preferably the upper marginal portion of this container or casing is thickened, as indicated at 10. This upper marginal portion fits within the flange 2, and is adapted to contact with a disc-like gasket 11 to secure a tight joint when the thumb screw is tightened.

The gasoline is led to the device by means of a supply pipe 12, which enters a fitting 13 screwed into the upper or head portion 1 of the apparatus. The gasoline leaves the device by way of the outlet pipe 14 which is similarly provided with a fitting 15 screwed into the head of the device.

The underside of the head carries a disc 16 from which the filtering sack 17 is suspended. This disc acts as a suspension member or support for the sack, and also as a valve or by-pass for the gasoline, as will appear hereinafter. It is pivotally or revolubly joined to the head by means of a central screw 18, thus permitting it to be rotated about the screw. It is provided with an inlet aperture 19, and an outlet aperture 20, adapted to align with the inlet and outlet apertures respectively, of the head. This disc 16 is also provided with an arcuate channel 21 which normally is in the full line position shown in Figures 1 and 2. However, when it is desired to by-pass the gasoline directly from the inlet to the outlet aperture the disc 16 is given a 90° turn, and thus places the arcuate channel or duct in communication with the two apertures, as shown by imaginary lines in Figure 2.

As stated, the disc 16 carries the filter sack 17 which may be of any suitable, flexible material, such, for instance, as chamois skin, fabric or other material pervious to gasoline. This sack is held in place within an annular groove in the disc 16 by means of the tensioning ring-like spring 22. Further, the disc carries a cage of small wires, as indicated at 23, which fits within the sack and holds the sack distended.

Under normal conditions, the parts are in the position shown in full lines in the drawing. The gasoline enters through the pipe 12 and passes through the aperture 19. This aperture it will be noted from Figure 1, is angular and passes through the marginal edge of the disc 16. The gasoline, therefore, is supplied externally of the filter sack 17.

It passes through the sack and into the interior thereof. From this point the gasoline passes outwardly through the aperture 20 and through the discharge pipe 14.

It is particularly noted from reference to Figure 1, that the area of the sack presented to the passing gasoline is extensive, and consequently practically no restriction of the flow of gasoline occurs. In proportion to the inlet and outlet openings the expense of the sack is very great, so that this freedom of flow is attained.

It is apparent that the transparent casing permits ready inspection of the filtering sack, and inasmuch as the solid materials are retained on the outer side of the sack or else collected within the container 8, such sediment or collected material may be readily seen upon a casual inspection of the apparatus.

When the device has collected a sufficient amount of material, it may be readily cleaned by merely loosening the thumb screw 6, and removing the container 8. This permits ready removal of the sack and allows it to be freely cleaned.

It is clear that when cleaning is to be done that it is preferable to rotate the disc 16 so as to by-pass the gasoline directly from the inlet to the outlet openings of the head 1. This cuts the gasoline off from the container 8, and thus allows ready cleaning of the device without requiring manipulation of any other valves.

It will be seen, further, that a very simple and sturdy type of device has been produced, and one which may be cheaply made and easily installed.

It is to be distinctly understood that although the invention has been described primarily as designed for the filtering of gasoline, that it may be used in filtering other liquids.

Although the invention has been described in considerable detail, such description is intended as illustrative rather than limiting as the invention may be variously embodied and as the scope of such invention is to be determined as claimed.

I claim:

A filter comprising a head having inlet and outlet apertures, a casing positioned below said head, means for forcing said casing against said head, a disc revolubly mounted beneath said head and within said casing, and carrying a filtering sack, said disc having an inlet aperture opening into said casing and having an outlet aperture opening into said sack, said disc also having a by-pass duct normally out of communication with the said apertures, and adapted to be placed in communication with the inlet and outlet aperture upon rotation of said disc, whereby said disc may be rotated to by-pass the liquid directly from the inlet to outlet apertures.

In testimony that I claim the foregoing I have hereunto set my hand at Fort Atkinson, in the county of Jefferson and State of Wisconsin.

HARRY C. BOHMSACK.