P. J. BACHER.

FILTER.

APPLICATION FILED MAY 11, 1916.

1,193,970. Patented Aug. 8, 1916.

Fig. 1.

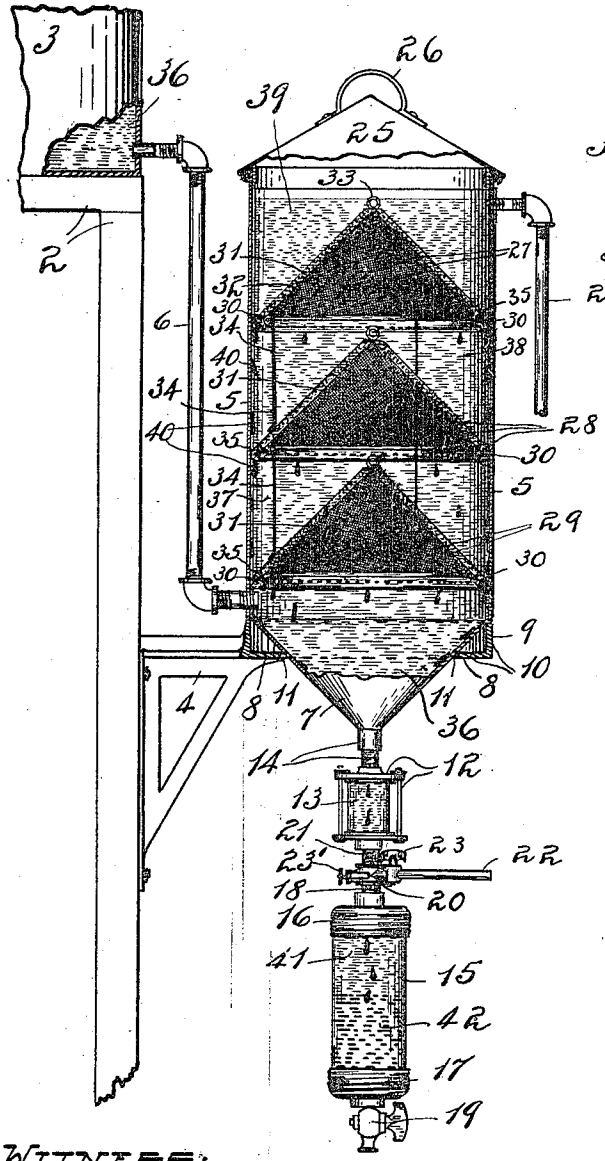


Fig. 2.

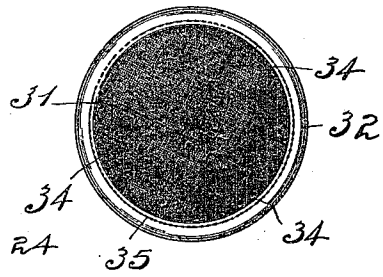
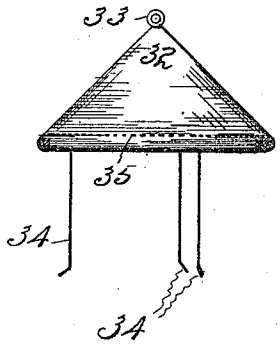


Fig. 3.



WITNESS:

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UNITED STATES PATENT OFFICE.

PHILIP J. BACHER, OF GALESBURG, ILLINOIS.

FILTER.

1,193,970. Specification of Letters Patent. Patented Aug. 8, 1916.

Application filed May 11, 1916. Serial No. 96,844.

To all whom it may concern:

Be it known that I, PHILIP J. BACHER, a citizen of the United States, and a resident of Galesburg, in the county of Knox and State of Illinois, have invented a new and useful Filter, of which the following is a specification.

My invention relates to filtering means and particularly to that type or class thereof used for filtering and separating the water and sediment from oils, such as gasolene.

As the nature of the invention is more fully disclosed it will be evident that my improvements may be used for various filtering operations, such as removing the saponaceous matter from the gasolene used in cleaning establishments, etc.

The primary object of the invention is to simplify and improve the construction and increase the efficiency of devices or apparatus of this nature.

In the accompanying drawings, which illustrate a preferred embodiment of my invention, Figure 1 is a sectional view, partly in elevation; Fig. 2, a plan of either of the upper screens, inverted; and Fig. 3, an elevation of either of the upper screens.

Considering the drawings in detail, 2 indicates a frame on which rests a supply tank 3.

4 indicates a bracket secured to the frame 2.

5 designates a filter-tank.

6 denotes a connecting or supply pipe.

7 designates a conical bottom the upper edge of which is secured in the bottom of the tank 5 by soldering or otherwise.

8 indicates a ring having a flange 9, these forming a cup 10. The lower edge of the tank 5 rests on the flange 9 and the bottom 7 seats in the opening 11 provided by the ring 8.

12 designates a frame in which is mounted a telltale or indicating glass 13 which communicates by means of couplings 14 with the bottom 7.

15 denotes a receiving cup, preferably of glass and fitted at its top and bottom with caps 16, 17, the former threaded onto a nipple 18 and the latter communicating with a pet-cock 19. One branch of a T-connector 20 engages the nipple 18, a second branch engages a nipple 21 which communicates also with the tell-tale 13, and the third branch communicates with a discharge pipe 22 carrying a pet-cock 23 and globe valve 23'.

24 indicates the overflow pipe, and 25 indicates a cover or top having a handle 26.

27, 28 and 29 denote filtering units, these being identical except in the particulars presently described. Each is formed of a hoop or ring 30 over which is fitted the edge of a conical wire-screen 31. A conical piece of buckskin, felt, flannel or the like, 32, through which gasolene or other light oil, but not water, will freely pass, is fitted over the screen 31 and its edges brought to surround the hoop 30, whereupon they are stitched through the meshes of the screen 31 as shown at 35 to their own body portions. A ring 33 is stitched into or otherwise engaged with the apex of each unit 27, 28 and 29, and the two last recited ones are provided each with legs 34, preferably secured to the wire-screen 31.

36 designates mixed water, gasolene, soap or the like, and dirt. 37 indicates this mixture after a part of the water, soap and dirt have been removed by the filter; 38 indicates it after it has passed through the filter 28, whereby most of the heavier portions have been removed, and 39 indicates the substantially pure gasolene after it has passed through the filter 27.

In operation, the pressure of the mixture 36 in the supply tank will be forced through the lower wire-screen 31, which will obstruct and probably prevent the passage of all the particles of dirt. A portion of the mixture will pass on through the absorbent separating material 32, which will become saturated with water but which will retain but a minute quantity of gasolene. This screen 32 removes also practically all of the saponaceous matter. Some of the water which is forced through the primary screen 32 will adhere thereto and run down its tapering face, dripping off at the lower edges thereof as indicated by 40. As the liquid is forced farther upward these separating and filtering processes will be repeated successively by the screens 28, 27 respectively, until when the liquid has passed through the upper screen it will be practically pure gasolene, whatever water comes in contact with the absorbent member thereof falling down onto the one next below, and so on, each becoming saturated and the surplus dripping off. The waste water 41 and heavy sediment 42 will pass into the receiver 15 and may be drained off by the pet-cock 19. Or the receiver 15 may be unscrewed from

the cap 16 and its contents dumped or poured out. Should it be desirable to drain the tank 5 it may be done by opening the pet-cock 19. The tell-tale 13 discloses a stoppage in the passage 14 and also the state or quality of the drippings therethrough.

Each filtering unit is of such size that it fits snugly against and within the inner wall of the tank 5. The legs 34 hold the filtering units at proper distances of separation. When it is desired to remove said units, for cleansing or for any other purpose, this may be readily done by means of the rings 33. The ring 10 supports the tank firmly and securely, forming a support for both its lower edge and for the conical bottom, and permits ready removal when for any purpose it is desired that it be removed.

Having thus described my invention I claim as new the following, to-wit:

1. A filter-unit comprising a hoop, a conical wire-mesh strainer fitted at its base thereto, legs soldered to said strainer, and a conical absorbent filtering-element fitted to said strainer, the edge portion of its base folded over said hoop and stitched to its own body portion and through said mesh.

2. In a filter, a filter-tank, means for furnishing liquid thereto, an outlet pipe for the sediment, an outlet pipe for the purified liquid, and a filtering unit removable from the tank and comprising a hoop, a conical wire-mesh strainer fitted at its base thereto, and a conical absorbent filtering element fitted to said strainer, the edge portion of its base folded over the hoop and stitched to its own body portion and through said mesh, and said folded edge resting in close contact with the inner wall of the tank.

3. A filter-unit comprising a hoop, a conical wire-mesh strainer fitted at its base thereto, and a conical absorbent filtering element fitted to said strainer, the edge portion of its base folded over said hoop and stitched to its own body portion and through said mesh.

In witness whereof I hereunto subscrib my name this 6th day of May, 1916.

PHILIP J. BACHER.