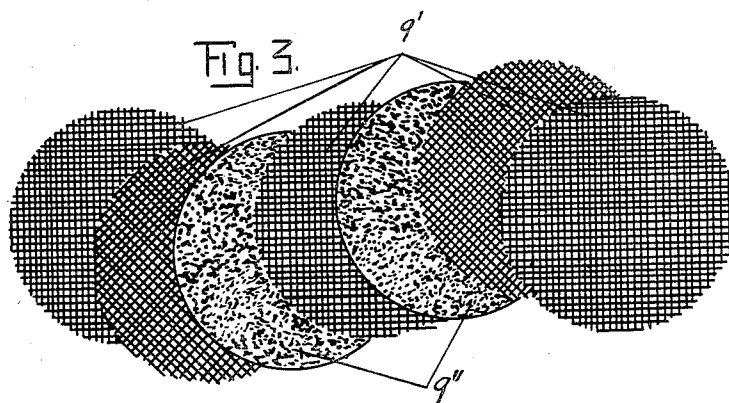
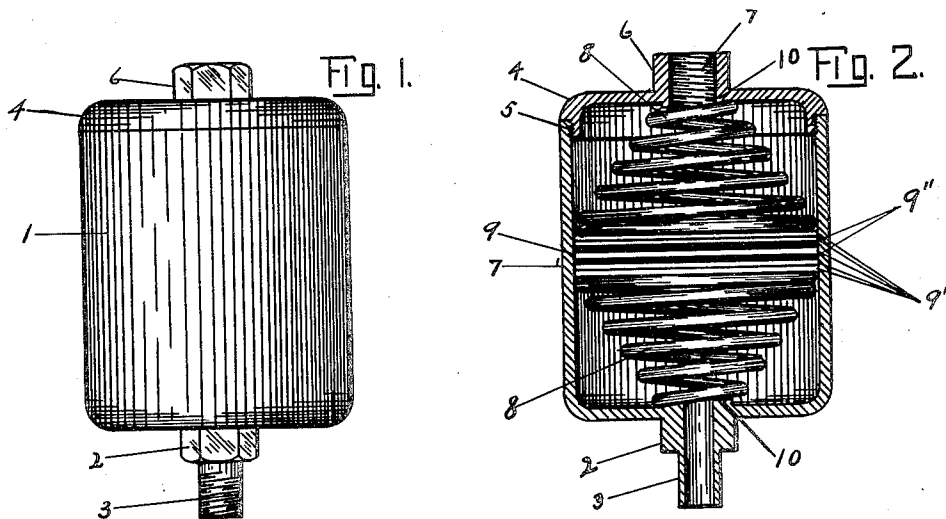


J. R. PROPER.
 FILTER.
 APPLICATION FILED JUNE 12, 1913.

1,102,685.

Patented July 7, 1914.



WITNESSES:
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FILTER.

1,102,685.

Specification of Letters Patent.

Patented July 7, 1914.

Application filed June 12, 1913. Serial No. 773,365.

To all whom it may concern:

Be it known that I, JAMES R. PROPER, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Filter, of which the following is a specification.

My invention relates to that class of filters in which fibrous material is confined within an inclosed case.

The object of my invention is to produce a simple, efficient and serviceable filter which may be manufactured at small cost, and at the same time produce a filter of such construction that the filtering element can be readily removed for cleansing, repairing or reversing as may be desired. I attain these objects by the construction illustrated in the accompanying drawings in which—

Figure 1, is an elevation of the assembled device. Fig. 2, is a view in longitudinal section of the case, the internal mechanism being shown in elevation for the purpose of more ready comprehension. Fig. 3, is a display illustrative of the component parts of the filtering element, and the manner in which they are stacked or arranged.

Like numerals denote like parts in each of the views.

1, is the body portion of the case, which is provided with the hexagonal hub 2, and the threaded nipple 3, projecting therefrom.

4, is the cover or cap portion of the case, and is secured thereto by screw threading as shown at 5. The cover portion of the case 4, is provided with a hexagonal hub 6, which is provided with a female thread as shown at 7.

8, designates the conical-shaped springs, which compress and hold the filtering element in position.

9', is the gauze screens between which the filtering disks 9'', are confined and compressed.

The body portion and the cover portion respectively 1, and 4, of the case, are provided with internally projecting hubs 10, for the purpose of centralizing the small ends of the springs 8, the larger ends of said springs, being of such diameter as will neatly fill the case diametrically.

The gauze screens 9', are made of wire gauze or perforated metal and are of such diameter as will neatly fill the case diametrically, as are likewise the filtering disks 9'',

which may be formed of any suitable loosely woven or felted material, or any other applicable material or substance.

In assembling the element 9, I prefer to start with two screens, then a disk of filtering material and then a screen alternately until a suitable number are stacked to suit the requirements, preferably finishing with two screens.

The springs 8, are of such length that they are considerably compressed within the case, when the said case is screwed together.

To assemble the device, one of the conical shaped springs 8, is placed within the body portion 1, of the case, the small end of the spring encircling the hub 10, then the assembled element composed of alternate screens and filtering disks 9' and 9'', is placed in position within the case and resting upon said spring. The second spring 8, is next placed in position with the large end thereof resting upon the said filtering element 9, and the cover 4, is next placed in position so that the small end of the uppermost spring 8, encircles the hub 10, which projects inwardly from the said cover, and the said cover screwed to place. It will be readily understood that when necessary to replace or repair the filtering element, it can be easily and readily accomplished by unscrewing the cover portion and removing the internal parts. To operate the device, it is only necessary to install it either in a pipe-line or attach it to a faucet through which the liquid to be filtered is passed. The device is especially adapted to filtering fuel for hydrocarbon engines, being installed in the pipe-line between the supply tank and the carbureter.

One of the advantages of the foregoing construction, where the device is installed in the fuel-feed system of hydro-carbon engines, especially on motor-cycles, automobiles, &c., is that the severe vibration to which it is subjected, does not materially affect the filtering element, on account of the resiliency of the conical springs between which it is held, again the compression of the filtering material between the springs, causes the edges of said filtering element to expand and fit the cylindrical case perfectly, thereby precluding the possibility of leakage around the edge thereof. I am aware that a spring has been used to hold a filtering element against a stationary seat,

such construction being shown in patent to Murphy No. 638,742, therefore I do not broadly claim such construction, but I am not aware that a filtering element has been
5 compressed and held resiliently within a cylindrical case between two springs.

Therefore what I claim and desire to secure by Letters Patent is—

10 A filter consisting of two cup-like members screw-threaded together to form a hollow cylindrical case, a screw-threaded tubular connection located centrally of, and extending outwardly from the end of each of the cup-like members, and communicating
15 with the interior thereof, a disk-like filtering element diametrically located within

said cylindrical case, and approximately central of the length thereof, conical springs in said case and seating against the ends thereof, and arranged to bear against the
20 opposite sides of and compress and expand said element, and to hold the said element resiliently in position, all arranged and operating substantially as shown and for the purpose set forth. 25

In testimony whereof, I have hereunto set my hand at Los Angeles California this ninth day of May 1913.

JAMES R. PROPER.

In presence of—

GEO. D. McCLURE,
H. D. SCHROEDER.