H. BEULKE.

OIL SEPARATOR.

APPLICATION FILED JUNE 24, 1914.

1,117,547. Patented Nov. 17, 1914.

Fig. 1

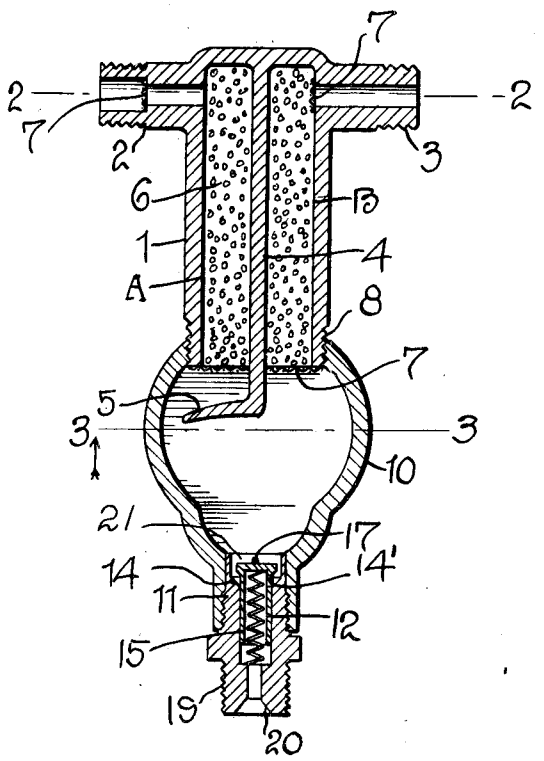


Fig. 2

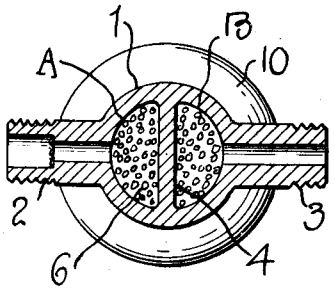
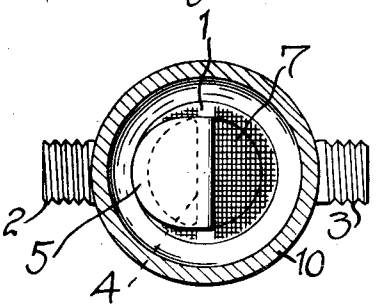


Fig. 3



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OIL-SEPARATOR.

1,117,547. Specification of Letters Patent. Patented Nov. 17, 1914.

Application filed June 24, 1914. Serial No. 847,161.

To all whom it may concern:

Be it known that I, HERMAN BEULKE, a citizen of the United States, residing at New Castle, in the county of Lawrence and State of Pennsylvania, have invented certain new and useful Improvements in Oil-Separators, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain improvements in oil separators and has relation more particularly to a device of this general character especially designed and adapted for use in connection with air or the like; and the object of the invention is to provide a novel and improved device of this general character wherein oil or the like, which may be initially admixed with an inflating fluid, may be effectively separated before the fluid enters into the object to be inflated.

Furthermore, the invention has for its object to provide a novel and improved device of this general character adapted to be interposed in an air line or the like and provided with means whereby oil or the like will be effectively separated from the fluid passing therethrough, and whereby such separated oil is collected in such a manner as to be readily and conveniently drawn.

The invention consists in the details of construction and in the combination and arrangement of the several parts of my improved separator whereby certain important advantages are attained and the device is rendered simpler, less expensive and otherwise more convenient and advantageous for use, all as will be hereinafter more fully set forth.

The novel features of the invention will be carefully defined in the appended claims.

In order that my invention may be the better understood, I will now proceed to describe the same with reference to the accompanying drawings, wherein—

Figure 1 is a longitudinal sectional view taken through a separator constructed in accordance with the embodiment of my invention; Fig. 2 is a sectional view taken substantially on the line 2—2 of Fig. 1; and Fig. 3 is a sectional view taken substantially on the line 3—3 of Fig. 1, looking in the direction of the arrow.

As disclosed in the accompanying drawings, 1 denotes a hollow body substantially cylindrical in form and closed at one end and being provided adjacent its closed end with the oppositely disposed nipples 2 and 3 adapted to be suitably connected within an air line or the like, the nipple 2 being adapted to be engaged with that portion of the line leading from the air compressor while the nipple 3 is adapted for connection with that part of the line leading to the object, such as a pneumatic tire, to be inflated.

It has been found in practice that the air being forced to the object to be inflated often contains an admixture of oil which proves of great detriment to the inflated object and it is for the purpose of separating this oil from air or the like that my present invention is designed. The bore of the member 1 is divided into two compartments by the longitudinal partition 4 formed integrally with the side walls and closed end thereof and of a length to project beyond the free or open end of the body, such projected portion of the partition 4 terminating in the lip 5 disposed at substantially right angles to the partition 4 and underlying one of the compartments within the member 1 and preferably the compartment into which the air or the like is first admitted through the nipple 2.

The compartments within the member 1 are adapted to contain a suitable filtering substance 6, such as gravel or the like, and in order to maintain such filtering substance within the member 1, I intersect the bores of the nipples 2 and 3 and the open end of the body 1 with suitable foraminous or reticulated bodies, as indicated at 7.

The lower peripheral portion of the body 1 is threaded, as indicated at 8, in order to permit the reservoir or collecting member 10 to be detachably engaged with the member 1, as is believed to be self-evident.

It will be observed that as the air or the like enters within the member 1, the filtering substance in the first chamber or compartment A will tend to separate the oil therefrom and such oil will drop upon the angular lip 5 which underlies the compartment A and terminates in close proximity to the adjacent wall of the reservoir or collecting member 10, and such separated oil will flow

to the lower portion of said reservoir or collecting member. While the filtering substance within the compartment A will tend to substantially entirely purify the fluid passing therethrough, it will be observed that the fluid will be subject to the influence of the filtering substance within the second compartment B before it passes through the nipple 3 before entering the object to be inflated.

While the oil collected within the reservoir or member 10 may be drawn therefrom through a conventional pet cock or the like in communication therewith through the base thereof, I prefer to employ the means illustrated in the accompanying drawings wherein the lower portion of the reservoir or member 10 has detachably engaged therewith the tubular plug 11, in the bore whereof is positioned the valve member 12 adapted to coact with the valve seat 14 formed within the plug 11 and which is adapted to be maintained closed through the pressure of the air or the like passing through the member 1. By this arrangement, it will be seen that as soon as the pressure of the air or the like passing through the member 1 is reduced, the valve 1 will automatically open under the influence of the expansible member 15, herein disclosed as a coil spring so that the collected oil may be readily discharged from within the reservoir or collecting member 10. In order to limit upward movement of the valve 12 relative to the seat 14, I intersect the bore of the plug 11 above the valve 12 with the pin 17, said pin coacting with the valve 12 in a manner which is believed to be self evident.

It is to be observed that the valve member is tubular with its lower end open, and in order that the collected oil may be readily discharged from within the collecting member 10 I provide the valve 12 with the opening 14′ serving for a purpose which is believed to be clearly obvious and in order that the collected oil may be readily drawn through the valve member 12 I have the upper portion of the bore of the plug 11 enlarged, as is particularly indicated at 21.

As herein disclosed, I show the outer peripheral portion 19 of the plug 11 threaded and the outer end of the plug provided with the seat 20 whereby it will be perceived that a convenient connection may be created should it be desired to connect back to the crank case of the operating motor or to any other line suitable for providing a drain for the oil.

From the foregoing description, it is thought to be obvious that a separator constructed in accordance with my invention is of an extremely simple and comparatively inexpensive nature and is particularly well adapted for use by reason of the convenience and facility with which it may be assembl d, and it will also be obvious that my invention is susceptible of some change and modification without material departure from the principles and spirit thereof and for this reason I do not wish to be understood as limiting myself to the precise arrangement and formation of the several parts herein shown in carrying out my invention in practice.

I claim:

1. A device of the character described comprising a hollow body closed at one end, a partition within the body dividing the same into two compartments, said partition projecting beyond the open end of the body and terminating in an angular extension underlying one of the compartments, said member being provided with an inlet and an outlet adjacent its closed end, a filtering medium within each of the compartments, a perforate body disposed across the open end of each compartment to retain the filtering medium therein, and a collecting member detachably connected with the open end of the hollow member.

2. A device of the character described comprising a hollow body closed at one end, a partition within the body dividing the same into two compartments, said partition projecting beyond the open end of the body and terminating in an angular extension underlying one of the compartments, said member being provided with an inlet and an outlet adjacent its closed end, a filtering medium within each of the compartments, a perforate body disposed across the open end of each compartment to retain the filtering medium therein, and a collecting member in threaded engagement with the open end of the hollow member.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

HERMAN BEULKE.

Witnesses:
MARJORIE A. SMITH,
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