

A. A. BOWSER.

SEPARATOR.

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1,176,732.

Patented Mar. 28, 1916.

Fig. 1.

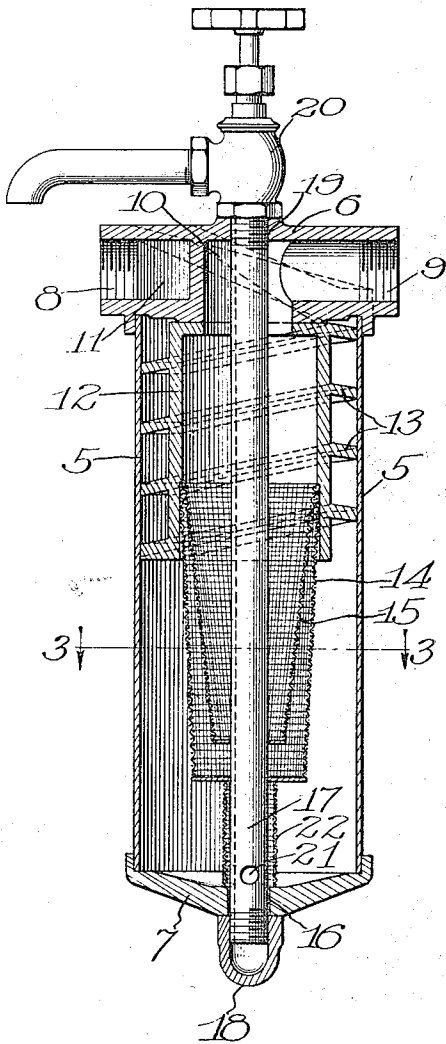


Fig. 2.

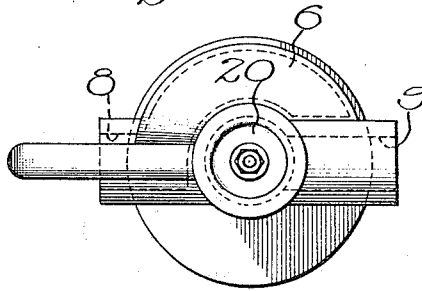
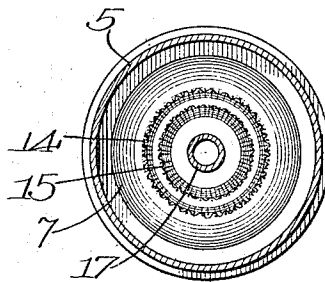


Fig. 3.



Witnesses:

G. W. Thomas Jr.

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UNITED STATES PATENT OFFICE.

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1,176,732.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALLEN A. BOWSER, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Separators, of which the following is a specification.

This invention relates to separators and has for its primary object to provide an improved, simple construction, combination and arrangement of parts for effecting the separation of the ingredients of a mixture in a rapid and efficient manner.

More particularly the object of this invention is to provide means for separating fluids of different specific gravities.

Another object of the invention is to provide a separator of improved construction adapting it for direct connection with a nozzle.

A further object of the invention is to provide means for discharging a liquid of greater specific gravity adjacent the nozzle connection of the separator.

For the attainment of these ends my invention consists in the construction, combination and arrangement of parts generally shown in the accompanying drawing and described in the specification, but more particularly pointed out in the claims.

In the accompanying drawing, Figure 1 is a longitudinal section of the preferred embodiment of my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a cross sectional view on the line 3—3 of Fig. 1.

Referring more particularly to the drawing, a cylindrical member 5 is provided with end members 6 and 7, the former of which is formed with an inlet opening 8 and an outlet opening 9. The outlet opening 9 communicates with a central chamber 10 and the inlet opening 8 communicates with a chamber 11 disposed about the central opening 10 and being inclined downwardly from the inlet opening 8. A cylindrical partition 12 provided with a helical ridge 13 is adapted to be inserted within the cylindrical member 5, the ridge 13 forming in conjunction with the cylindrical partition 12 and the cylinder 5 a helical passage forming a continuation of the chamber 11. The cylindrical partition 12 extends a portion only of the length of the cylinder 5 and depending from the lower portion of the partition are filter screens 14 and 15. These

screens are preferably of different fineness of mesh, the finer screen being inside of the other. The bottom member 7 is formed with an opening 16 through which an axially extending tube 17 is adapted to extend, the lower end of the tube being threaded to receive an acorn nut 18, the other end of the tube being threaded into the opening 19 in the top member 6, a portion of the tube extending therethrough to provide a means for connecting the angle valve 20 thereto, thus binding the top and bottom members 6 and 7 together about the ends of the cylinder 5.

The tube 17 extends through the bottoms of the filter screens 14 and 15 and longitudinally of the central opening of the separator and adjacent the lower end of the tube there is provided a number of openings 21 which are adapted to provide communication between the interior of the tube and the lower portion of the separator. A filter screen 22 surrounds the tube 17 at this lower portion to prevent the openings 21 from becoming clogged or large particles from being carried into the tube.

When a mixture of fluid is introduced into the separator the helical passage imparts to it a whirling movement whereby the fluid of greater specific gravity is thrown by centrifugal force outwardly and the lighter fluid remains nearer the cylindrical partition and nearer the filter screens. The filter screens are of such fineness of mesh that the inner screen will permit the passage of the lighter fluid therethrough but will prevent the heavier fluid from passing. The heavier fluid gravitates to the bottom of the separator and is drawn off from the separator through the tube 17 and the cock 20. When there is a comparatively large amount of the heavier fluid the angle valve or cock 20 may be left open at which time the heavier fluid will be discharged continuously through the pipe 17, but if there is a comparatively small amount of the heavier fluid in the fluid mixture, it may be drawn off at any time by the opening of the valve.

With this construction it is evident that the heavier fluid is discharged adjacent the top of the separator in close proximity to the nozzle or inlet connection and the discharge may be regulated as desired.

In case the filter fills up with water the discharge is closed and the shut off cock

of the filter is opened, and when the inlet is opened the water is forced out through the hole at the bottom of the pipe and up through the cock connected with the filter, the water on account of its specific gravity being collected at the bottom of the filter, and the only opening to the pipe in the center of the filter being at the bottom of the separator the water is forced out through the top.

While this separator is particularly adapted for the separation of water from gasoline it is evident that it may be employed in any connection where it is desired to separate fluids of different specific gravities.

What is claimed as new is—

In a separator, the combination with a

cylindrical separator vessel provided with a cylindrical partition wall extending a portion of the length of said vessel, said partition being adapted to provide an inlet passage extending around the inner wall of the vessel and a discharge passage within, filter screens between said passages, and a tube disposed within the discharge passage and providing a passage from the bottom through the top of the vessel.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 27th day of March, A. D. 1911.

ALLEN A. BOWSER.

Witnesses:

G. C. MILLER,
CHAS. M. SMITH.