C. A. PORT.

GASOLENE FILTER.

APPLICATION FILED JULY 9, 1912.

1,083,757. Patented Jan. 6, 1914.

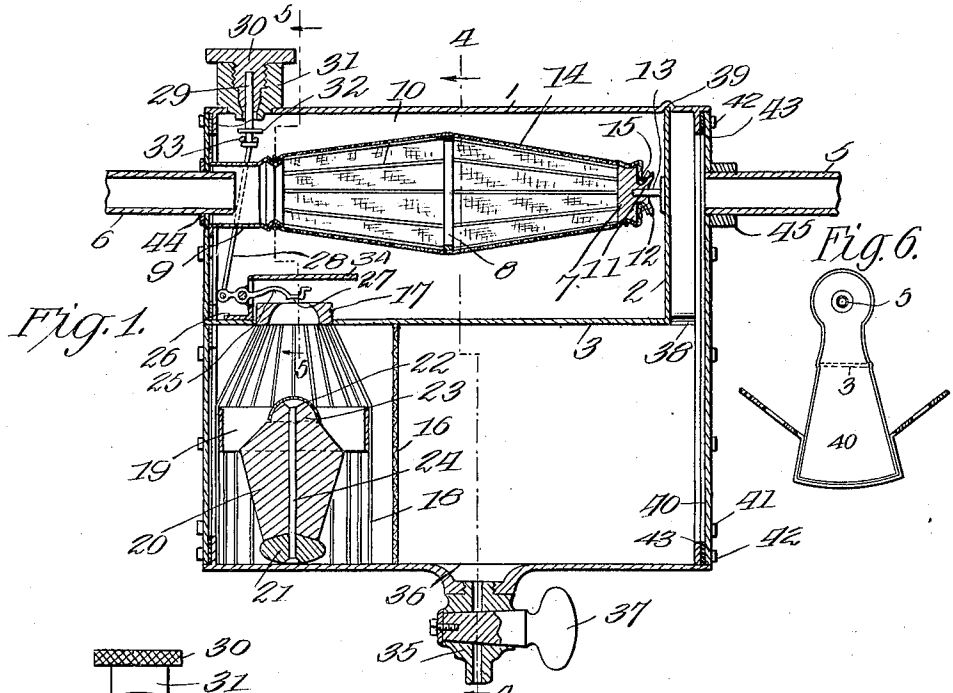


Fig. 1.

Fig. 6.

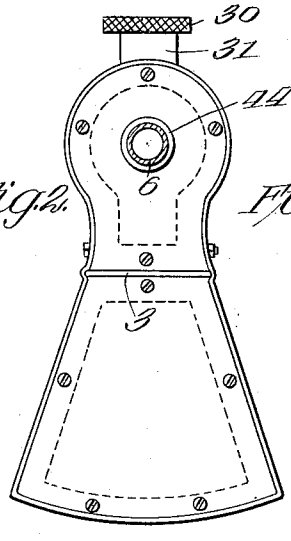


Fig. 2.

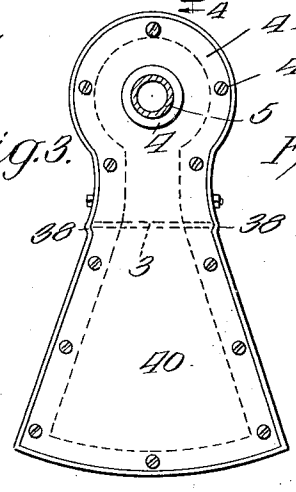


Fig. 3.

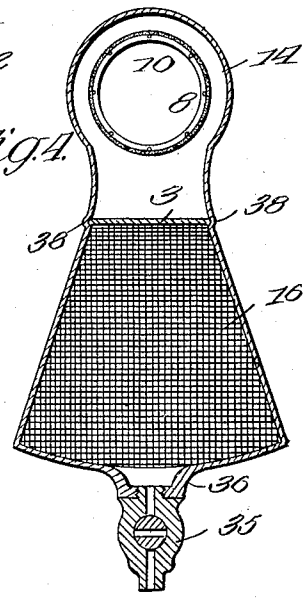


Fig. 4.

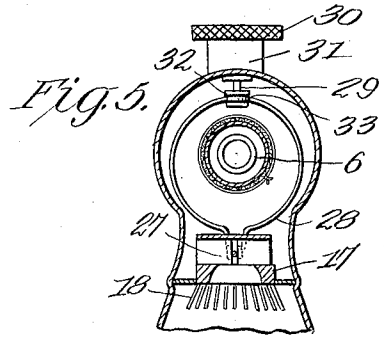


Fig. 5.

WITNESSES

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GASOLENE-FILTER.

1,083,757. Specification of Letters Patent. Patented Jan. 6, 1914.

Application filed July 9, 1912. Serial No. 708,438.

To all whom it may concern:

Be it known that I, CHARLES A. PORT, a citizen of the United States, and a resident of Pagosa Springs, in the county of Archuleta, State of Colorado, have invented a new and useful Improvement in Gasolene-Filters, of which the following is a specification.

My invention is an improvement in gasolene filters, and has for its object the provision of a simple, inexpensive device of the character specified adapted to be interposed between the source of supply and the carbureter for thoroughly and automatically purifying the liquid fuel, and wherein means is provided for shutting off the supply of fuel when the filter needs cleaning.

In the drawings: Figure 1 is a longitudinal vertical section of the improved filter; Fig. 2 is an end view looking at one end; Fig. 3 is an end view from the opposite end; and Figs. 4 and 5 are sections on the lines 4—4 and 5—5, respectively, of Fig. 1.

The present embodiment of the invention comprises a casing 1 of approximately keyhole shape in cross section and divided by a partition into two compartments. The partition consists of a vertical portion 2 and a horizontal portion 3, the vertical portion being near the inlet end of the casing and the horizontal portion being at about half the height of the casing.

The casing has an inlet opening at one end, into which the inlet pipe 5 is inserted, and an outlet pipe 6 engages an opening in the opposite end of the casing. The pipes 5 and 6 are near the top of the casing, and the portion 2 of the partition is between them.

A filter frame is arranged between the portion 2 of the partition and the opposite end, the said frame comprising an end disk 7, a central ring 8, and an end tube 9 connected by longitudinal ribs 10. The ring 8 is larger than the disk or tube, giving the frame a barrel shape, and the disk is provided with an annular peripheral groove 11. The outer face of the disk is provided with a knob or button 12, having its side wall undercut, and having an opening for a pin 13 extending from the portion 2 of the partition.

The frame is covered by a covering 14 of silk or other suitable material, the said covering being of tubular form, and the one end is secured to the tube and the other in the groove between the outer faces of the knob and disk by a cord 15. The tube is secured to the adjacent end wall in any suitable manner around the outlet pipe 6.

A screen 16 is arranged in vertical position between the portion 3 of the partition and the bottom of the casing, and a valve seat 17 is arranged in an opening in the partition between the screen and the end wall having the outlet opening. A float valve is arranged below the seat in a cage formed from spaced approximately vertical wires 18.

The wires are connected by a ring or collar 19 at a little above their centers, and the said wires are bent inwardly above the ring or collar and are secured to the under face of the seat at their upper ends. The valve has a cork body 20, and a weight 21 is arranged at the bottom to hold the valve in proper position.

The valve proper is a shell 22 on a rounded head 23 on the body, and a rivet or pin 24 holds the weight in place. The pin or rivet passes through the body and the weight, and is headed at each end, as shown. The valve coöperates with the seat to close the communication between the compartments formed by the partitions 2—3.

The valve is unseated by a trip lever 25 pivoted to a bracket 26 on the portion 2 of the partition and having one end provided with a laterally offset portion 27 for engaging the valve to press the same downward. A link 28 connects the other end of the lever to the lower end of a stem 29, held at its upper end in a screw 30, threaded into a nipple 31 in the top of the casing.

The stem has spaced ribs or collars 32 and the link has a ring 33 engaging the stem between the collars. A shield, plate, or hood 34 is arranged above the opening through the valve seat, and the bottom of the casing is hopper-shaped, as shown more particularly in Figs. 1 and 4, and a valve casing 35 is threaded into an opening in a depression 36 at the center of the bottom.

A valve 37 controls the casing, the said valve being designed to free the casing from the impurities collected on the bottom of

the casing. The side walls of the casing are grooved longitudinally, as shown at 38, to receive the side edges of partitions 2—3, and the top is similarly grooved at 39 to receive the upper edge of partition 2.

The end walls 40 of the casing are held to internal marginal flanges 41 on the side walls by means of screws 42, and gaskets 43 are arranged between the end walls and the flanges. The top, side walls and bottom of the casing are integral and continuous. A gasket 44 and 45 is also arranged around pipes 5 and 6. The link 28 is in the form of a ring, encircling tube 9 (Fig. 5).

In operation, the improved filter is arranged between the supply tank and the carbureter. The fuel enters by pipe 5 and is deflected downwardly by portion 2 of the partition. The heavy impurities, as solid matters, are immediately thrown to the bottom, as the fuel passes through screen 16, and the partly purified fuel then passes upwardly through the valve seat opening. Above partition 2—3 the fuel must pass through the filter in the upper compartment and is thus thoroughly purified before it reaches the atmosphere. When the specific gravity of the material below the portion 3 of the partition 2—3 exceeds a predetermined point, determined by the weight of the float valve, the said valve is lifted, closing the opening through the seat and shutting off the supply of fuel. The operator is thus notified that the filter needs attention, and by opening valve 37 the heavy portion of the contents are drawn off. The screw 30 is then turned to operate lever 25 to open the valve and the fuel may again pass to the engine.

I claim:

1. A device of the character specified, comprising a casing having an inlet and an outlet near its top and in opposite ends, and having an outlet in its bottom, and a valve for controlling the said bottom outlet, a partition comprising a horizontal portion extending transversely of the casing from the outlet end to near the inlet end and a vertical portion at the said inlet end, a substantially cylindrical filter in the casing above the horizontal portion of the partition, one end of the filter encircling the outlet, said horizontal portion of the partition having an opening and a valve seat encircling the opening, a float valve below the partition for coöperating with the seat, a cage encircling the valve and extending between the bottom of the casing and the seat, a screen arranged transversely of the casing near the cage and below the partition, means on the valve for constraining it to move vertically, and means for depressing the valve to open the same, said means comprising a trip lever pivoted intermediate its ends above the partition and having means at one end for engaging and encircling the valve, the casing having an internally threaded nipple above the other end of the lever, a screw threaded into the nipple, and a link connecting the other end of the lever to the screw.

2. A device of the character specified, comprising a casing having an inlet and an outlet near its top and in opposite ends, and having an outlet in its bottom, and a valve for controlling the said bottom outlet, a partition comprising a horizontal portion extending transversely of the casing from the outlet end to near the inlet end and a vertical portion at the said inlet end, a substantially cylindrical filter in the casing above the horizontal portion of the partition, one end of the filter encircling the outlet, said horizontal portion of the partition having an opening and a valve seat encircling the opening, a float valve below the partition for coöperating with the seat, a cage encircling the valve and extending between the bottom of the casing and the seat, a screen arranged transversely of the casing near the cage and below the partition, means on the valve for constraining it to move vertically, and means for depressing the valve to open the same.

3. A device of the character specified, comprising a casing having an inlet and an outlet near its top and in opposite ends, and having an outlet in its bottom, and a valve for controlling the said bottom outlet, a partition comprising a horizontal portion extending transversely of the casing from the outlet end to near the inlet end and a vertical portion at the said inlet end, a substantially cylindrical filter in the casing above the horizontal portion of the partition, one end of the filter encircling the outlet, the horizontal portion of the partition having an opening, a float valve below the opening, means for constraining the valve to move vertically, a screen between the inlet and the opening of the partition, and means extending outside of the casing for unseating the valve.

CHARLES A. PORT.

Witnesses:
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MARC WAYNICK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."