June 26, 1923. 1,459,934

E. A. STILES

VALVE

Filed May 16, 1921

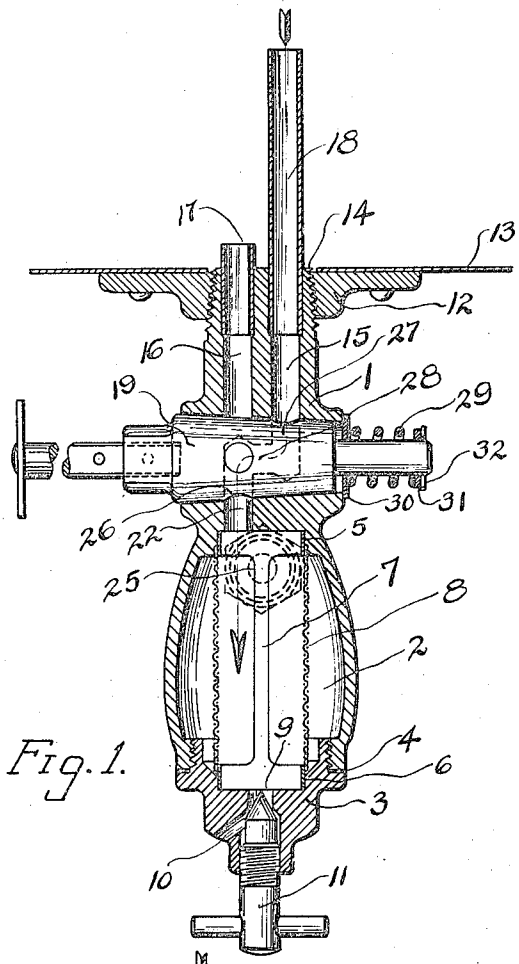

Fig. 1.

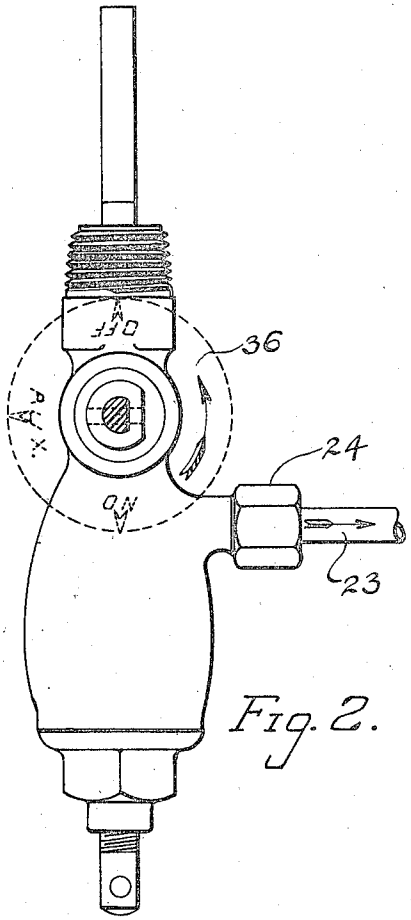

Fig. 2.

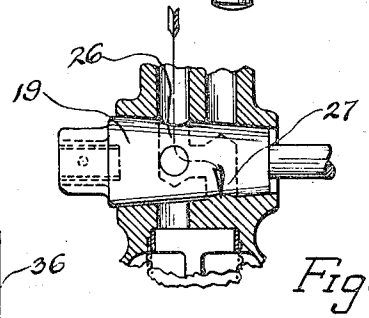

Fig. 3.

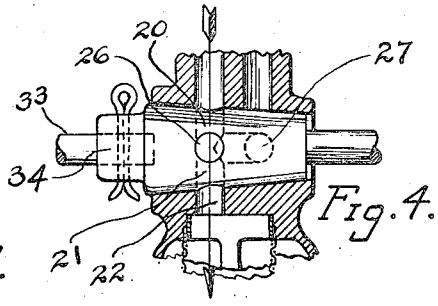

Fig. 4.

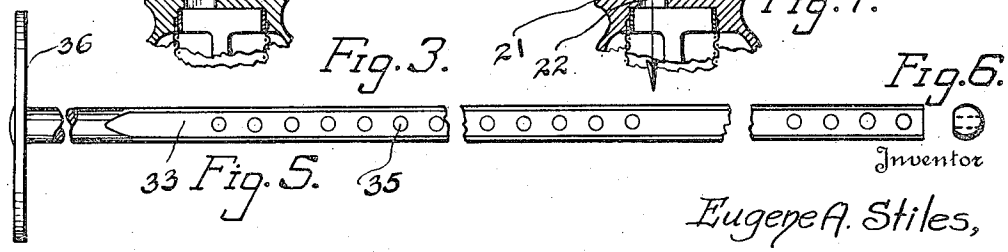

Fig. 5.

Fig. 6.

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UNITED STATES PATENT OFFICE.

EUGENE A. STILES, OF KOKOMO, INDIANA, ASSIGNOR TO KOKOMO BRASS WORKS, OF KOKOMO, INDIANA, A CORPORATION OF INDIANA.

VALVE.

Application filed May 16, 1921. Serial No. 469,934.

To all whom it may concern:

Be it known that I, EUGENE A. STILES, a citizen of the United States of America, residing at Kokomo, in the county of Howard and State of Indiana, have invented certain new and useful Improvements in Valves, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to valves for controlling the fuel supply of automotive vehicles.

It has for its object the provision of a fuel control means, whereby a normal fuel supply or an auxiliary fuel supply may be obtained from a common supply tank, or a complete closure made by the use of a single valve.

A further object of the invention is to provide a screen and settling chamber 10 to collect any dirt and water that may be in the fuel and to provide means permitting this foreign matter to be removed from the device.

A further object of the device is to provide a control rod and a construction permitting its ready adaptation to cars requiring different lengths due to the different distances from the fuel tank to the point of control.

With the above and other objects which will appear more fully in the specification, the invention consists in the parts and combinations thereof and the mode of operations or their equivalents as hereinafter described and set forth in the claim.

In the drawing,

Figure 1 is a longitudinal vertical sectional view of the valve and a portion of the bottom of the fuel tank;

Fig. 2 is a side elevation taken at right angles to Fig. 1;

Figs. 3 and 4 are fragmentary sections showing the plug in different positions of adjustment from that shown in Fig. 1; and

Figs. 5 and 6 are side and end views respectively of the control rod.

The valve consists of a body 1 having at its lower end a fuel chamber 2 with an opening in the bottom, screw threaded to receive a cap nut 3 adapted to form a tight joint with the member 2 by the aid of a gasket 4. The upper end of the fuel chamber 2 has a recess 5 and the upper end of the cap nut 3 has a recess 6, the recesses 5 and 6 being adapted to receive the ends of a shell-like metal frame 7 which supports a fine mesh screen 8. The recesses, frame and screen will preferably be cylindrical, though any other suitable form may be used.

In the lower end of the cap nut is a central bore 9 having a side outlet 10, the bore 9 at its lower end being internally screw threaded to receive a screw 11 having a tapered point adapted to close the outlet.

The upper end of the valve body 1 may be attached to the bottom of the fuel supply tank in any suitable manner, a preferred form of attachment, shown in Fig. 1, comprising an apertured plate 12 secured as by riveting to the bottom 13 of the fuel supply tank, the plate being screw threaded to receive the threaded end 14 of the body.

The upper end of the body has two passages 15 and 16 in each of which is secured a tube. One tube 17 terminates slightly above the bottom of the tank thus preventing scale or other heavy dirt from flowing with the fuel through the valve. The other tube 18 extends a sufficient distance above the bottom of the tank, that when all of the liquid fuel in the tank above the top of this tube 18 has been used, an emergency supply of fuel will still remain in the tank, which may be withdrawn through the shorter tube 17 by proper adjustment of the valve plug 19.

The tapering plug 19 is provided with four ports. Two of the ports 20 and 21, as shown in Fig. 4 are in line with each other, so that when the plug is set in the position shown in Fig. 4, the tube 17 and passage 16 are connected directly by the ports 20 and 21 with the short passage 22 below the plug in the body 1 of the valve. This passage 22 opens into the interior of the screen 8. A delivery tube 23 is secured by any suitable connection 24 to the side of the body 1, the opening 25 being formed in the side wall of the chamber 2 outside of the screen so that the fuel in passing from the tank through the valve to the delivery tube 23 must pass through the screen 8.

The plug 19 has two other ports 26 and 27 which are offset from each other by a distance equal to the space between the passages 15 and 16 so that when the valve is in the position shown in Fig. 1, the port 27 is in line with the passage 15 and the port 26 is in line with the passage 22. The ports

26 and 27 are in communication as shown at 28.

Under normal conditions, the valve will be set in the position shown in Fig. 1 so that the fuel in the tank above the top of the tube 18 may flow through the passage 15, ports 27 and 26 and passage 22 into the interior of the screen 8, thence through the screen 8 and the outlet 25 into the tube 23 leading to the carbureter.

When the fuel has been exhausted down to the tube 18 the valve is turned into the position shown in Fig. 4, whereupon the fuel remaining in the tank above the level of the top of the tube 17 may be used as an emergency supply. If the plug 19 is turned into the position shown in Fig. 3, the passage 22 will be closed and the fuel supply thus completely cut off. The tapering plug 19 may be held in its seat by a spring 29 shown in Fig. 1 as bearing against a washer 30 on the body 1 and at its other end against a washer 31 held in place by a pin 32.

As a convenient means for controlling the valve plug 19, I provide a control rod 33 adapted to be secured within a socket 34 in the end of the plug 19 and extending to any convenient point that will be easy of access. This control rod is preferably flattened on one side and drilled at intervals at 35 approximately at the length required for each type of car. These holes are so positioned that one will be in proper location and the excess length of rod may be cut off and the hole used for a cotter pin connection to the plug. This avoids the necessity of drilling holes when the device is to be installed.

As shown in Fig. 2, an indicating disk 36 may be secured to the end of the rod 33, the disk having appropriate marks thereon to indicate the proper positions for various conditions of adjustment.

Dirt or water passing down into the center of the screen 8 will settle in the chamber and the dirt will remain in the bottom of this screen. Only clean fuel will pass through the screen into the fuel chamber. The chamber will be large enough to hold all the water likely to be found in the fuel. From time to time the drain passage 10 may be opened or when necessary the cap nut 3 may be unscrewed so that the screen 8 may be cleaned and the interior of the chamber 2 wiped out.

From the above description, it will be obvious that there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportion, details of construction, and arrangement of parts, without departure from the principles involved or sacrificing any of the advantages of this invention.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific details shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claim.

I claim:—

A valve comprising a body having a plug rotatably mounted transversely thereof, the body having at one end thereof two longitudinal passages arranged substantially parallel and spaced from each other, and having at the other end a chamber provided with a cap nut, the cap nut and the opposite end of the chamber having co-operating recesses to receive and hold in position therebetween a screen member, the cap nut having a discharge passage communicating with the lower end of the interior of the screen member and having a closure for the discharge opening, the chamber having an outlet tube adjacent to its upper end and outside of the screen member, and the said plug having ports therein for establishing communication interchangeably between the two parallel passages and the interior of the screen member.

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

EUGENE A. STILES.

Witnesses:
PAUL BURKE,
MAYME MCCLANAHAN.