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R. S. SHELTON
VAPOR FUEL SYSTEM

2,982,528

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2 Sheets-Sheet 2

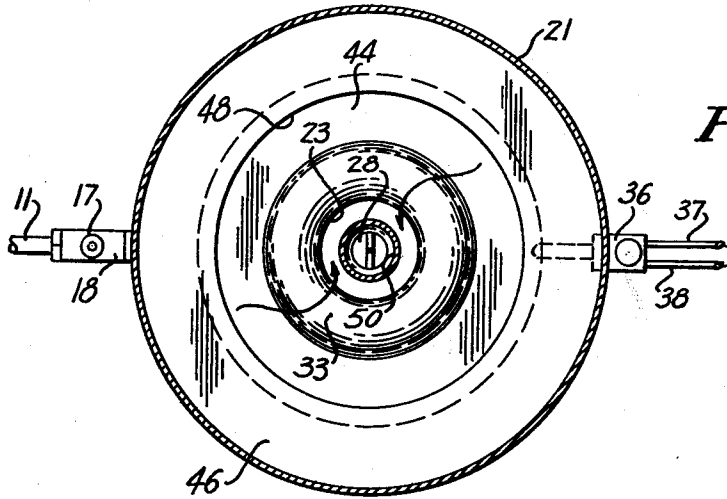


FIG. 4

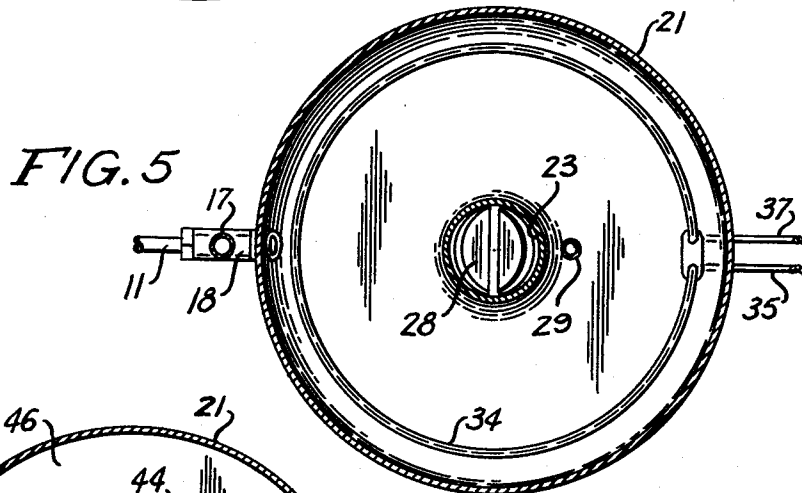


FIG. 5

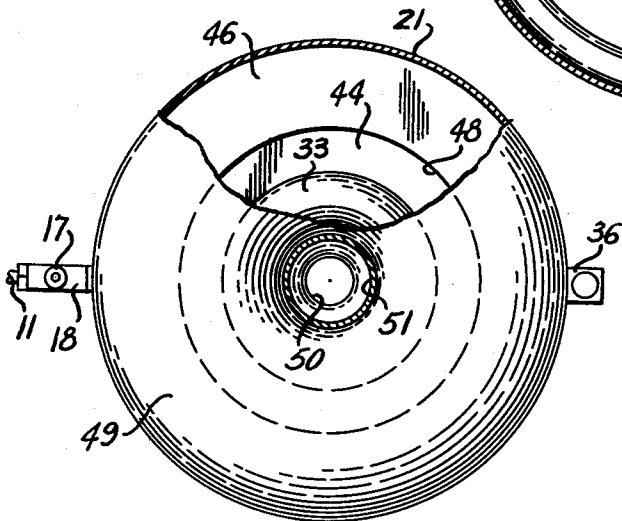


FIG. 3

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2,982,528

VAPOR FUEL SYSTEM

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1 Claim. (Cl. 261—130)

This invention relates to improvements in vapor fuel systems that are to be used for internal combustion engines.

An object of this invention is to provide a vapor fuel system that will provide a great saving in gasoline, since approximately eight times the mileage that is obtained by the conventional internal combustion engine is provided by the use of such a system.

Another object of this invention is to provide a vapor fuel system that is provided with a reservoir to contain liquid gasoline which is heated to provide vapors from which the internal combustion engine will operate.

With the above and other objects and advantages in view, the invention consists of the novel details of construction, arrangement and combination of parts more fully hereinafter described, claimed and illustrated in the accompanying drawing, in which:

Fig. 1 is an elevational view of a vapor fuel system embodying the invention;

Fig. 2 is an enlarged view, partly in section, showing the carburetor forming a part of the system shown in Fig. 1;

Fig. 3 is a transverse sectional view on line 3—3 of Fig. 2;

Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 2; and

Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 2.

Referring more in detail to the drawings, wherein like parts are designated by like reference numerals, the reference numeral 10 is used to generally designate a vapor fuel system embodying the invention.

The vapor fuel system 10 includes a conduit 11 which is connected to the gasoline tank for the internal combustion engine at one end and to a carburetor 12 at the opposite end. Interpolated in the conduit 11 is a gasoline filter 13 and an electric fuel pump 14. A wire 15 grounds the pump 14 and a wire 16 connects the pump 14 to a gasoline gauge 18 on which is mounted a switch 17 which is connected to the conduit 11 when it is connected to the carburetor 12. The gauge 17 is connected to a battery 19 of an internal combustion engine by a wire 20.

Switch 18 is of conventional construction and is of the type disclosed in United States Patents Nos. 2,894,093; 2,825,895; and 2,749,401. The switch is so constructed that a float in position in the gauge is acted on by the liquid therein. As the liquid rises the float will disengage a pair of contacts mounted in the gauge to cut off electric pump 14. As the float lowers due to the consumption of the liquid in the body the float will fall causing the contacts to be re-engaged to start pump 14 to replenish the liquid in the body.

The carburetor 12 includes a dome-shaped circular bowl or reservoir 21 which is provided with a centrally located flanged opening 22 whereby the reservoir 21 is mounted on a tubular throat 23. An apertured collar 24 on the lower end of the throat 23 is positioned on the

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intake manifold 25 of an internal combustion engine 26 and fastening elements 27 secure the collar to the manifold 25 in fixed relation thereto.

A vapor control butterfly valve 28 is pivotally mounted in the lower end of the throat 23 and the valve 28 controls the entrance of the vapor into the internal combustion engine 26 and thus controls the speed of the internal combustion engine 26.

A raw gasoline pump 29 having an inlet 30 is mounted in the bottom of the reservoir 21 so that the inlet 30 communicates with the interior of the reservoir 21. A spurt or feed pipe 31 connected to the pump 29 extends into the throat 23 so that by means of a linkage 32 that is connected to the pump 29 and to a linkage for the control valve 28 and the foot throttle of the internal combustion engine 26, raw gas may be forced into the throat 23 to start the internal combustion engine 26 when it is cold.

The upper end of the throat 23 is turned over upon itself to provide a bulbous hollow portion 33 within the reservoir 21.

An immersion heater 34 is positioned in the bottom of the reservoir 21 and a wire 35 grounds the heater 34. A thermostat 36 is mounted in the wall of the reservoir 21 and extends into the reservoir 21. A wire 37 connects the thermostat to the heater 34 and a wire 38 connects the thermostat 36 to a control 39 for the thermostat 36. A wire 40 connects the control 39 to the ignition switch 41 and the ignition switch 41 is in turn connected to the wire 20 that is connected to the battery 19 by a wire 42.

A pair of relatively spaced parallel perforated baffle plates 43 and 44 are connected to the bulbous portion 33 on the upper end of the throat 23 and a second pair of perforated baffle plates 45 and 46 extend inwardly from the wall of the reservoir 21 in parallel spaced relation to each other and to the baffle plates 43 and 44.

The baffle plates are arranged in staggered relation to each other so that the baffle plate 45 is intermediate of the baffle plates 43 and 44 and the baffle plate 46 extends over the baffle plate 44.

The baffle plate 45 is provided with a central opening 47 and the baffle plate 46 is provided with a central opening 48 that is of greater diameter than the opening 47 in the baffle plate 44.

The domed top 49 of the reservoir 21 extends into a tubular air intake 50 that extends downwardly into the throat 23 and a mounting ring 51 is mounted on the exterior of the domed top 49 of the reservoir 21 in vertical alignment with the intake 50. An air cleaner 52 is mounted on the mounting ring 51 by a coupling 53 as is the usual procedure and a spider 54 is mounted in the upper end of the mounting ring 51 to break up the air as it enters the ring 51 from the air cleaner 52.

In operation and with the carburetor 12 mounted on the internal combustion engine in lieu of a conventional carburetor, the ignition switch 41 is turned on. Current from the battery 19 will cause the pump 14 to bring gasoline into the reservoir 21 until the switch 18 cuts off the pump 14 when the gasoline A has reached the level B in the reservoir 21. The control 39 is adjusted so that the thermostat 36 will operate the heater 34 until the gasoline A has reached a temperature of 105° at which time the heater 34 will be cut off. When the gasoline A has reached the proper temperature, vapor therefrom will be available to follow the course indicated by the arrows in Fig. 2.

The internal combustion engine 26 is then started and if the foot control is actuated the pump 29 will cause raw gasoline to enter the intake manifold 25 until the vapors from the carburetor are drawn into the manifold 25 to cause the internal combustion engine 26 to operate,

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As the gasoline A is consumed the pump 14 will again be operated and the heater 34 will be operated by the thermostat 36. Thus the operation as described will continue as long as the internal combustion engine is operating and the ignition switch 41 is turned on. The reservoir 12 will hold from 2 to 3 quarts of gasoline and since only the vapors from the heated gasoline will cause the carburetor 12 to run the internal combustion engine 26, the internal combustion engine will operate for a long time before more gasoline is drawn into the reservoir 21.

The baffles 43, 44, 45 and 46 are arranged in staggered relation to prevent splashing of the gasoline within the carburetor. The level B of the gasoline A in the reservoir 21 is maintained constant by the switch 18 and with all elements properly sealed, the vapor fuel system 10 will efficiently operate the internal combustion engine 26.

The valve 28, controlling the entrance of vapors into the intake manifold 25, controls the speed of the internal combustion engine in the same manner as the control valve in a conventional carburetor.

There has thus been described a vapor fuel system embodying the invention and it is believed that the structure and operation thereof will be apparent to those skilled in the art, it is also to be understood that changes in the minor details of construction, arrangement and combination of parts may be resorted to provided they fall within the spirit of the invention and the scope of the appended claim.

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Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

A carburetor for use in a vapor fuel system comprising a circular domed body, a mixing throat centrally of said body, means on one end of said throat for connecting said throat to an intake manifold of an internal combustion engine, the opposite end of said throat having a hollow bulbous portion thereon integral therewith, said body having a domed top, a tubular air intake integral with said top and positioned centrally of said mixing throat, a plurality of apertured baffles mounted in said body in staggered spaced relation to each other, means secured to said top centrally thereof in vertical alinement with said mixing throat for connecting an air cleaner thereto, a heater in said body for vaporizing fuel in said carburetor, a pump for supplying said carburetor with fuel, means for controlling the operation of said pump to maintain the fuel in said carburetor, a thermostat for controlling said heater, means for setting said thermostat to control the temperature of said heater and means for delivering raw gasoline into the intake manifold.

References Cited in the file of this patent

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