

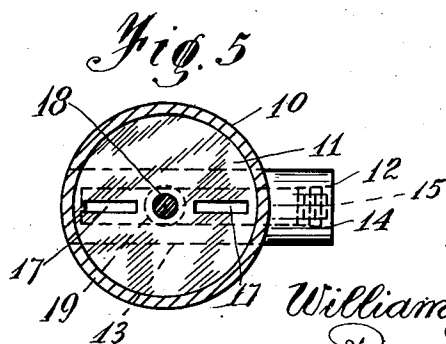
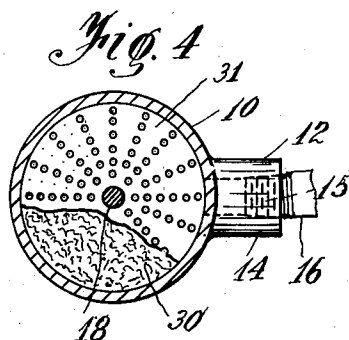
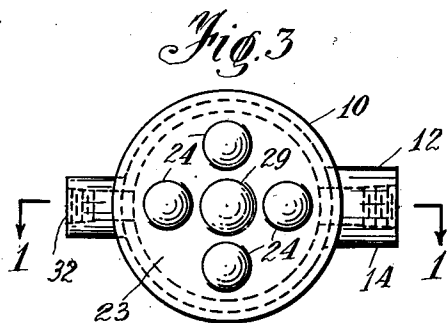
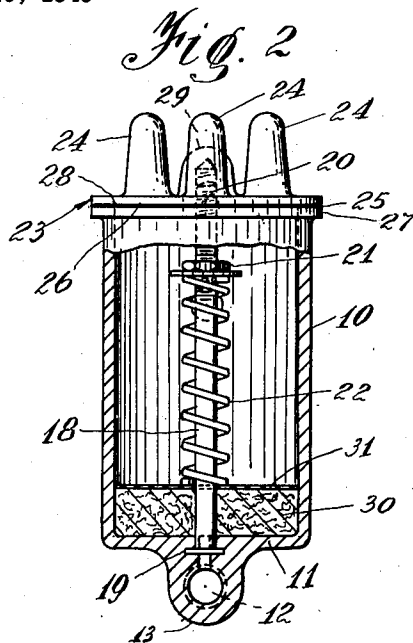
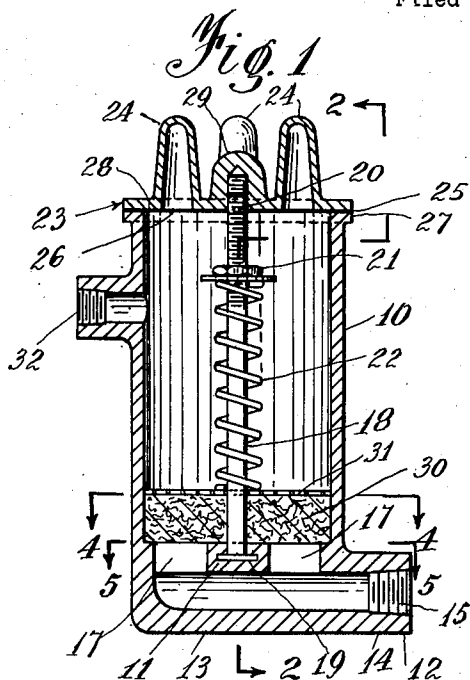
Feb. 12, 1952

W. J. LINN

2,585,797

FILTER AND VAPOR LOCK CONTROLLER

Filed Oct. 16, 1946



William J. Linn
by Ralph Douath
Attorney

UNITED STATES PATENT OFFICE

2,585,797

FILTER AND VAPOR LOCK CONTROLLER

William J. Linn, Pittsburgh, Pa.

Application October 16, 1946, Serial No. 703,565

3 Claims. (Cl. 210—122.5)

1

This invention relates to new and useful improvements in vapor lock controller, filter and condenser combined which is interposed between the fuel pump and the carbureter of an internal combustion engine.

As is well known, vapor lock is usually caused when the fuel in the carbureter approaches a boiling condition and since the fuel ordinarily used is gasoline containing hydrocarbons capable of boiling at low temperatures, the carbureter then fails to accurately meter the fuel and the air thereby restricting the supply of fuel mixture to the cylinders of the engine, thus causing to stall the engine.

One of the objects of the invention is to provide a simple device which will almost eliminate and control vapor lock.

Another object of the present invention is to provide a device which serves as a fuel filter which is adapted to separate and precipitate foreign matter carried by the gasoline.

Still another object of the invention is to provide a device with a filter which comprises a reservoir having an inlet and an outlet port and absorbent filtering material forming a yielding partition wall between said ports.

Yet another object of the invention is to provide a vapor lock controller with a cover which is provided with condensing means adapted to condense any vapors before leaving the device.

Another object of the invention is to provide a device which will control vapor lock by feeding only liquid fuel into the carbureter, thereby preventing stalling of the engine, especially when idling any length of time, and effect easy starting.

Still another object of the invention is to provide a device interposed between the fuel pump and the carbureter which serves as a fuel filter and which condenses accumulated fuel vapors, caused by excessive heat in the fuel line, before it enters the carbureter.

A further object of the invention is to provide a combination vapor lock controller, filter and condenser with a gasket of thermal insulating material interposed between the reservoir and the cover.

The present invention includes other objects residing in the particular construction and relation of parts which are more particularly pointed out in the following detailed description, and in the claims directed to a preferred form of construction, it being understood however, that various changes in the size, shape and relation of the parts may be made without departing from the spirit or scope of the invention as herein set forth.

2

In the drawing wherein like numerals of reference designate corresponding parts throughout the several views,

Figure 1 is a vertical sectional view of the device on line 1—1 in Figure 3.

Figure 2 is a vertical sectional view of the device on line 2—2 in Figure 1, partly in outline.

Figure 3 is a top view of the device.

Figure 4 is a horizontal section of the device taken on line 4—4 in Figure 1 with portion of the foraminous disc broken away to show the fibrous filtering material or bat.

Figure 5 is a horizontal sectional view on line 5—5 in Figure 1 showing the inlet ports of the device.

Referring now to the drawing, 10 represents a bowl or reservoir having a bottom 11 which is provided with an inlet opening 12 which extends across the under portion 13 of the bottom 11 and terminates outwardly forming an extension 14 which is provided with threads 15 to receive a tube 16 which connects the pump (not shown) with the inlet opening 12 of the device.

The bottom 11 is also provided with slotted ports 17 through which the liquid from the inlet opening enters the reservoir 10.

A rod 18 is centrally secured to the bottom 11 of the reservoir 10 by means of a head 19 preferably cast into the material. The upper end 20 of said rod 18 is threaded to receive a threaded nut 21 which serves to adjust the tension of the spring 22 which is coiled around the rod 18.

The cover 23 is especially designed to serve as a condenser for the vapors which accumulate at the top of the liquid fuel in the reservoir. This is accomplished by providing a plurality of up-standing hollow thimbles or protuberances 24, as clearly shown in Figures 1 to 3 inclusive.

A gasket 25 is interposed between the uppermost face 26 of the reservoir rim 27 and the lower face 28 of the cover 23. This gasket has a dual purpose, one to prevent leakage and one to heat insulate the cover from the reservoir.

The said cover 23 is secured to the reservoir 10 by providing a centrally disposed threaded boss 29 on the cover into which the threaded portion of the rod 18 screws.

A bat 30, which may be formed of felt or other porous or absorbent material suitable for filtering, may be used and placed on the bottom of said reservoir and on top of said bat 30 is placed a perforated disc 31 which is held in position by the coil spring 22 by means of which more or less compression may be exerted against the fibrous bat 30 by loosening or tightening the nut 21.

3

In operation, the liquid fuel is pumped out of the gasoline tank (not shown) by means of a fuel pump (not shown), after which it is piped to the inlet opening 12 of the device, flows through the slotted ports 17, seeps through the bat 30 and perforations of the perforated disc 31 into the reservoir 10 and through the outlet opening 32 and thence to the carbureter (not shown).

Should the fuel in the reservoir be under the influence of excessive heat and begin to vaporize, the rising vapors will contact the interior surface of the thimbles or protuberances 24 of the cover 23 which are usually cooled by the fan on the engine and additionally heat insulated by the gasket 25 thereby causing the vapors to return to the reservoir in liquid form thus eliminating vapor lock in the carbureter of the engine.

It is obvious that the invention is applicable to any internal combustion engine of the carbureter type, although its chief field of utility is in the automotive and aviation engine.

Although I have illustrated and described herein but one present, preferred embodiment of the invention, it will be apparent that it may be practiced in all other forms without departing from the spirit of the invention or scope of the appended claims.

I claim:

1. A filter and vapor lock controller adapted to be connected in the fuel supply line of an internal combustion engine comprising a hollow body having spaced inlet and outlet ports, an intermediate wall extending transversely of said body adjacent the inlet port between the inlet and outlet ports, at least one port in said intermediate wall for the passage of fuel, filtering means normally seated on said intermediate wall, a stem extending centrally through said body, intermediate wall and filtering means, compression means disposed about said stem and cooperating therewith to hold the filtering means yieldably against the intermediate wall, a cover member for said body threadingly engaging the stem, a plurality of hollow thimbles extending above the surface of the cover member and opening into the interior of the body, and an insulating and sealing ring between said cover member and said body.

2. A filter and vapor lock controller as claimed

4

in claim 1 in which the compressive means is a perforated plate held against the filtering means by a spring fixed to the stem.

3. A filter and vapor lock controller adapted to be connected in the fuel supply line of an internal combustion engine comprising a hollow body having spaced inlet and outlet ports, an intermediate wall extending transversely of said body adjacent the inlet port between the inlet and outlet port, at least one port in said intermediate wall for the passage of fuel, a filter pad normally seated on said intermediate wall, a stem extending through said body and pad from the intermediate wall, a perforated plate on the filter pad opposite the intermediate wall, spring means disposed about the stem and resting on the perforated plate, adjusting means on the stem controlling the pressure exerted by the spring against the perforated plate, a cover member for said body threadingly engaging the stem, a plurality of hollow thimbles extending beyond the plane of the upper surface of the cover member, and an insulating and sealing ring between said cover member and said body.

WILLIAM J. LINN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,061,755	Kneufer	May 13, 1913
1,102,685	Proper	July 7, 1914
1,506,967	Bosworth	Sept. 2, 1924
1,580,470	Duby	Apr. 13, 1926
1,582,859	Shepherd	Apr. 27, 1926
1,941,311	McLean	Dec. 26, 1933
2,072,393	Briggs	Mar. 2, 1937
2,145,535	Vokes	Jan. 31, 1939
2,197,471	Hooper	Apr. 16, 1940
2,268,884	Linn	Jan. 6, 1942
2,352,315	Gilbert	June 27, 1944
2,460,084	Hebo	Jan. 25, 1949

FOREIGN PATENTS

Number	Country	Date
29,951	Great Britain	A. D. 1912
348,657	Germany	Feb. 13, 1922
372,606	Germany	Mar. 29, 1923