

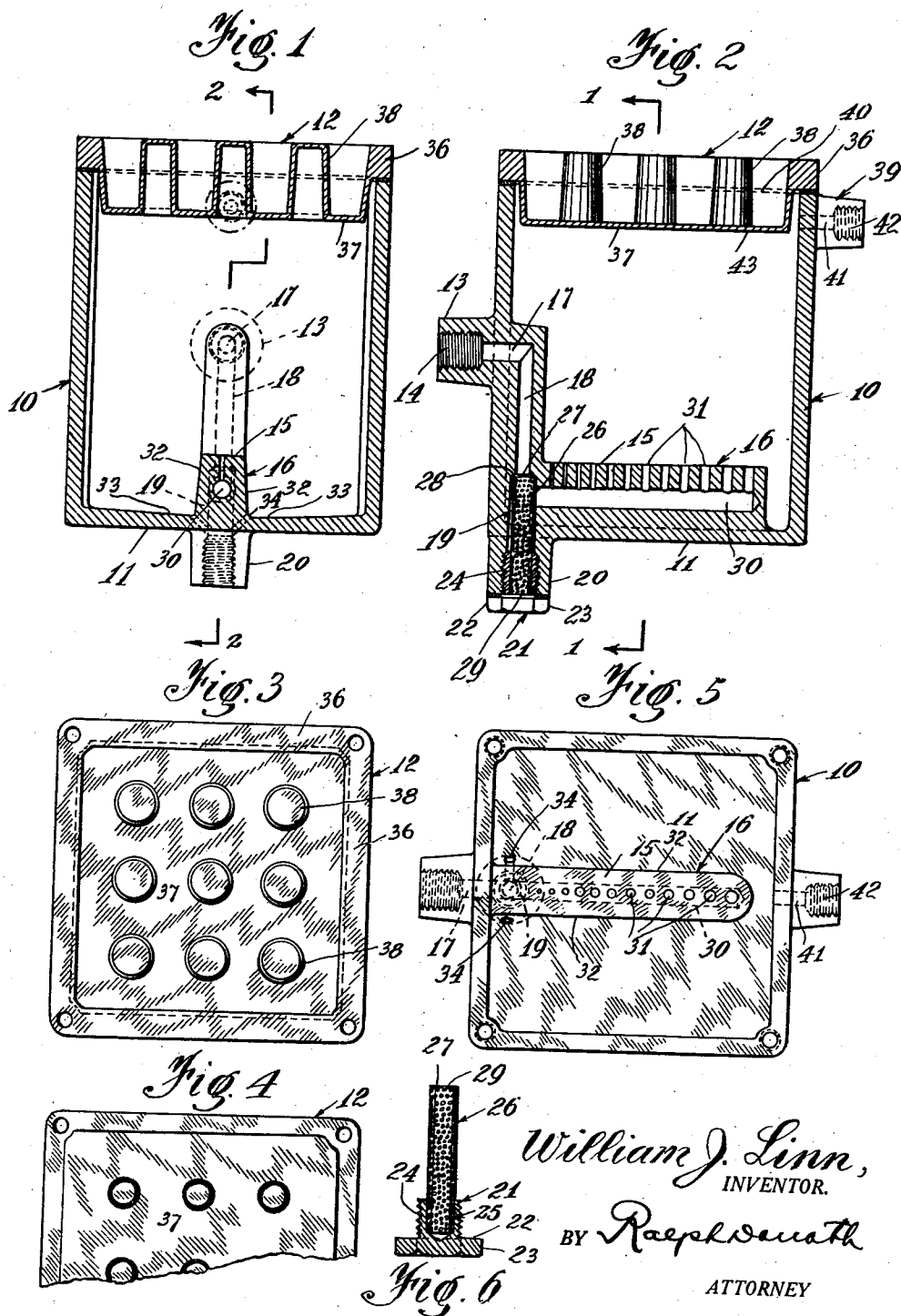
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VAPOR LOCK ELIMINATOR

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VAPOR LOCK ELIMINATOR

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1 Claim. (Cl. 257—64)

This invention relates to new and useful improvements in a vapor lock eliminator which is interposed between the fuel pump and the carburetor of an internal combustion engine.

One of the objects of the invention is to provide a vapor lock eliminator which has no moving parts.

Another object of the invention is to provide a vapor lock eliminator with means for condensing vaporized fluid into liquid fluid.

Still another object of the invention is to provide an apparatus which will prevent vapor lock in carburetors by feeding only liquid fuel to the latter, so as to effect easy starting and prevent the engine from stalling, especially when idling for any length of time.

Still a further object of the invention is to provide an apparatus interposed between the fuel pump and the carburetor of an internal combustion engine which condenses accumulated fuel vapors, usually caused through excessive heat in the fuel line, before it reaches the carburetor.

Yet another object of the invention is to provide the inlet of the apparatus with a series of jets through which the fuel, coming from the fuel pump, is sprayed into the interior of the receptacle thereby causing any vapor accumulated in the fuel line to condense.

Further objects of the invention are to provide an apparatus of the character described which is simple in its construction and arrangement, has no moving parts, is efficient in its use, readily installed, and inexpensive to manufacture.

To the accomplishment of these and such other objects as may hereafter appear the invention consists of the novel construction, combination and arrangement of parts herein specifically described and illustrated in the accompanying drawing, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which come within the scope of the claim hereunto appended.

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

Figure 1 represents a vertical sectional view of the device on line 1—1 in Figure 2.

Figure 2 is a sectional view on line 2—2 in Figure 1.

Figure 3 is a top view of the cover of the apparatus.

Figure 4 is a fragmentary bottom view of Figure 3.

Figure 5 is a top view of the bowl of the apparatus.

Figure 6 is a side view of the strainer, partly in section, as used in this invention.

As is well known that, under the influence of excessive heat, as for instance, when traveling in hot weather, or when climbing steep and long mountains, or when the motor is idling for any length of time, the gasoline in the feed-pipe from the fuel pump vaporizes and naturally interferes with the proper feeding and function of the carburetor. In other words, instead of feeding liquid gasoline to the carburetor the latter is supplied with gasoline vapor which is unfit for use in the present carburetors. This condition is known as vapor lock and causes the engine to stall and prevent starting and the only way to prevent this is to wait until the engine has cooled off or to pour cold water on the carburetor thereby causing the accumulated gasoline vapor in the carburetor to condense.

With the present invention, vapor lock is almost entirely eliminated, due to the fact that any vapor formed in the fuel line from the fuel pump will be condensed into liquid fuel as it enters the bowl or reservoir through a series of jets and commingles with the liquid fuel in the bowl.

To prevent the forming of vapor pockets in the upper region of the reservoir, provision is made to condense the vapor by means of a series of thimble-like members formed integrally with the cover of the apparatus which act as a cooling medium for the vaporized fuel.

As shown, the apparatus consists of a bowl or reservoir 10, including a bottom 11 and a removable cover 12. A boss 13 positioned at the exterior of said reservoir 10 is interiorly threaded at 14 to receive a feed-pipe (not shown) from the fuel pump (not shown) of an internal combustion engine.

The aforesaid boss is preferably located at a level higher than the top 15 of the jet-block 16, as shown.

The horizontal port 17 joins the vertical port 18 at right angles and the lower portion of port 18 is provided with an enlarged bore 19 which terminates at the bottom into a downwardly extending interiorly threaded boss 20 adapted to receive the strainer tube assembly 21 (Figure 6).

The latter comprises a bolt 22 having a head 23 and an exteriorly threaded shank 24 which is provided with a central bore 25 adapted to snugly receive a foraminous tube 26 which is open at both ends.

When the strainer tube assembly is in position,

the open upper end 27 of said foraminous tube 26 abuts the shoulder 28 of bore 19, so that the fuel passing through ports 17 and 18 must enter the interior of said tube 26, passes through the perforations 29 of the latter and then through the horizontal bore 30 of said jet block 16 and is discharged into the reservoir 10 through a series of vertically disposed jets 31 which may be gradually increased in size as shown in Figures 2 and 5.

The bottom 11 of reservoir 10 is tapered towards the sides 32 of the jet-block 16 as shown in Figure 1 and is indicated by the numeral 33 and any sediment that may be accumulated on the bottom 11 may be drained through the drain holes 34 which are in communication with the bore 19.

The cover 12 is of special design and comprises a flange 36 which conforms to the outline of the top of the bowl or reservoir 10. This flange 36 is provided with a downwardly extending cup-shaped portion 37 which has a series of integral vertical thimbles 38 intended to serve as a cooling means and therefore condenser for any vapors which may accumulate at the top of the liquid fluid within the reservoir.

The fuel outlet boss 39 is shown positioned in close proximity to the upper edge 40 of reservoir 10 and is provided with a drilled hole 41 and an enlarged threaded aperture 42 in which a feed pipe (not shown) is secured which connects to the carburator (not shown). It should be noted, that the outlet apertures 41 and 42 are shown above the base line 43 of the portion 37 of the cover 12.

Normally, the apparatus is completely filled with fuel by means of a fuel pump (not shown) which draws the fuel from the gasoline tank of the vehicle and feeds the same into the reservoir 10 of the apparatus to be delivered in turn to the carburator.

It will thus be seen that a continuous supply of fuel will always be maintained in direct operative communication with the carburator to meet varying conditions of load.

5 From the foregoing, it will be observed that in order to prevent vapor lock in modern carburation the vapor in the fuel line, before it enters the carburator, must be disposed of. Heretofore this has been accomplished by employing 10 an auxiliary gravity tank which is open to the atmosphere and which releases accumulated vapors through a vent or other similar means. Such gravity tanks have floats, valves and many other moving parts which often require servicing 15 by experts.

In the herewith described apparatus no moving parts are employed and with ordinary care the same may be used for the life of the vehicle.

I claim:

20 In a vapor lock eliminator of the class described adapted to be interposed between the fuel pump and the carburator of an internal combustion engine comprising a fluid reservoir having an inlet port and an outlet port, and a cover for said 25 reservoir, said inlet port arranged in direct communication with a plurality of graduated discharge openings in the bottom portion within said reservoir adapted for breaking up and condensing vaporized fluid entering said reservoir 30 from said fuel pump, additional means for condensing vapors accumulated in the upper region of said reservoir; the cover of said reservoir being provided with a downwardly extending cup-shaped bottom portion penetrating the interior 35 of said reservoir and carrying a plurality of integral thimbles, open at the bottom, extending upwardly from said cup-shaped bottom portion and the outlet port of said reservoir being above the level of said cup-shaped bottom portion of 40 said cover.

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