May 27, 1952 H. H. SCHNEIDER 2,598,445

VAPOR CHARGING SYSTEM FOR INTERNAL-COMBUSTION ENGINES

Filed Sept. 3, 1949

Fig. 1

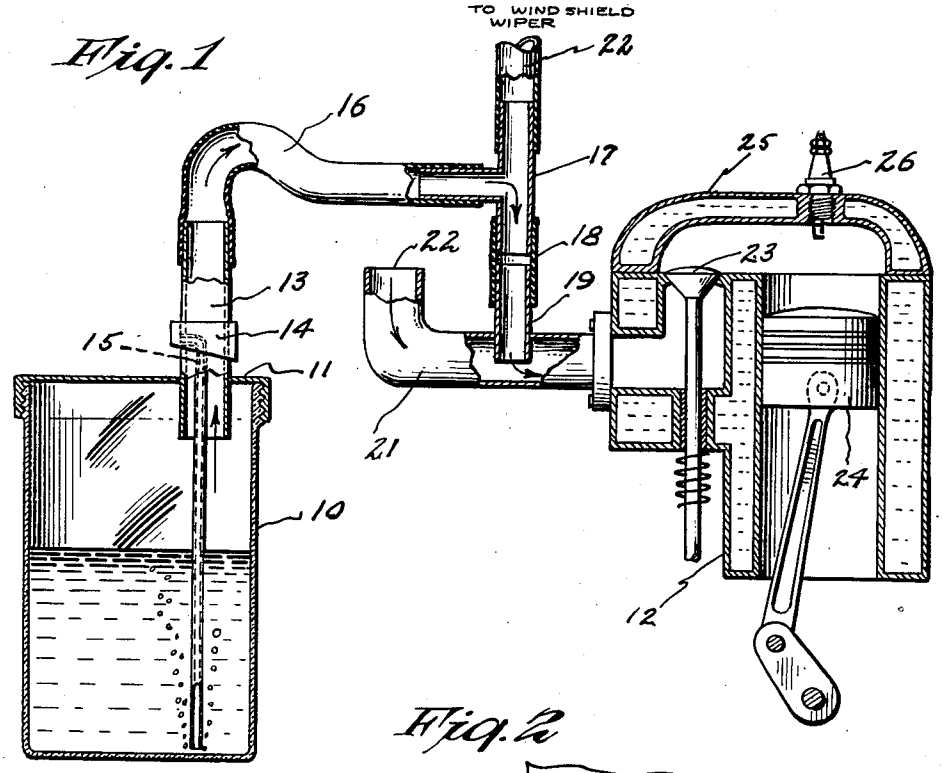


Fig. 2

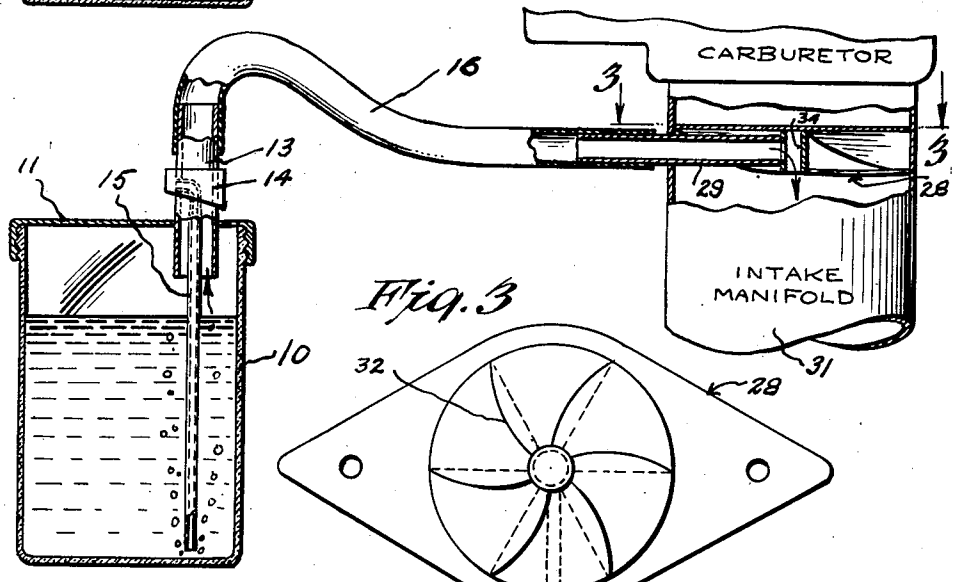
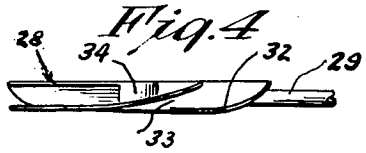


Fig. 3

Fig. 4



INVENTOR:
HARRY H. SCHNEIDER
BY
Carl Miller
ATTORNEY

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VAPOR CHARGING SYSTEM FOR INTERNAL-COMBUSTION ENGINES

Harry H. Schneider, Bronx, N. Y.

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1 Claim. (Cl. 261—121)

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This invention relates to a vapor charging system for internal combustion engines.

It is an object of the present invention to provide a vapor charging system for internal combustion engines wherein vapors will be extended into the engine and cause carbon to be removed, keep the plugs clean, reduce overheating, dissolve the gum on valve stems and eliminate sticky valves, to free the piston rings of gum and sludge and improve the compression of the engine.

It is another object of the present invention to provide a vapor charging system for internal combustion engines, wherein vapors will be extended into the engine, which reduces valve burning by oiling the valve seats; reduces sticky valves by freeing the valve stems of gum; reduces plug replacements due to fouling or burning out of the plug points by carbon; reduces piston slap by oiling and freeing the rings of gum and sludge; and reduces overheating of the motor by freeing it of carbon formation—heat producer; and consequently as result, causes easier starting; better car performance due to better compression; better fuel efficiency—extra air; saves oil; less repairs—lower upkeep; longer life for the plugs—less replacements; longer motor life—less carbon and valve jobs, less ring jobs; and quieter running of the motor.

It is another object of the present invention to provide a vapor charging system for internal combustion engines to supply additional air for the better mixing of gasoline with the air and to give the mixture at the point of adding the vapor to the manifold a swirling and spiral spin whereby to provide an improved mixing of the gasoline and air.

Other objects of the invention are to provide a vapor charging system for internal combustion engines which is of simple construction, easy to install upon the engine, inexpensive to manufacture, easy to maintain, has a minimum number of parts, automatic and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a fragmentary and sectional view of the apparatus constructed according to one form of the invention.

Fig. 2 is a fragmentary and sectional view of the apparatus according to another form of the invention and employing the mixing disc which is placed in the intake manifold.

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Fig. 3 is a plan view of the mixing disc as viewed generally on line 3—3 of Fig. 2.

Fig. 4 is a side elevational view of the mixing disc.

Referring now particularly to Fig. 1, 10 represents a glass container on which is fixed a screw cap 11. This container can be mounted under the hood of the vehicle employing internal combustion engine 12. The container has therein a solution through which air is forced to gather particles of the same for charging the internal combustion engine 12. Extending through the cover 11 is a pipe piece 13 having a rubber sleeve valve 14 surrounding the same. Beneath the sleeve valve there extends a pipe 15 for directing air to the bottom of the solution within the container 10. This pipe extends from the wall of the pipe piece 13 to the center thereof and downwardly therethrough and into the bottom of the container 10.

Through the upper end of the pipe piece 13 there is connected a hose 16 through which the vapors are conducted to a key-fitting 17. This fitting is connected by a hose piece 18 to a pipe 19 that extends into manifold 21 of the engine 12. To the upper end of the key-fitting 17 there is connected a hose 22 which leads to the windshield wiper. The manifold has its principal air opening at 22' and the air which passes therethrough is joined with the vapor leading from the pipe piece 19 and enters the engine to pass valve element 23 when it is lifted from its seat and upon piston 24 moving downwardly to suck its charge. The engine has the cylinder head 25 with spark plugs 26 therein. The piston 24 has the usual piston rings. With the vapors from the solution being added, the valve, the spark plugs and the piston rings will be kept free of carbon and sludge.

Referring now particularly to Figs. 2, 3 and 4, there is shown a mixing disc 28 which is employed for receiving the vapor and distributing the same into the gasoline and air mixture. The hose 16 leads to a nipple or tube 29 which projects from the disc and outwardly of manifold 31 of the engine. The disc 28 has a series of fixed blades 32 circumferentially spaced and providing spiral passages 33 whereby to cause the gasoline and air mixture to be swirled on passing through the manifold and to better effect its mixing with the vapors coming from the vapor 10.

The tube or nipple extends to the center of the disc and connects with a vertically extending hub 34 to which the blades 32 are connected. This hub provides a passage to direct the vapor

downwardly into the intake manifold. The vapor is accordingly picked up by the swirling gasoline and air mixture rising in the manifold and passing through the spiral spaces **33** of the mixing disc **28**.

It will now be apparent that vapors from a container can be effectively extended into internal combustion engines by a simple and automatic arrangement whereby to improve the operation of the engine and increase its life.

While various changes may be made in the detail construction, it shall be understood that such changes shall be within the spirit and scope of the present invention as defined by the appended claim.

Having thus set forth and disclosed the nature of my invention, what is claimed is:

In an apparatus for extending a vapor into an internal combustion engine comprising a container adapted to receive liquid to a predetermined level, a first pipe extending into the said container and terminating above said liquid level and having an aperture in the wall thereof outside of the container, a rubber sleeve valve extending about the pipe and having an inclined lower edge, a smaller pipe disposed within said first pipe and leading from the said aperture to a point below the liquid level, and adapted to receive air from beneath the rubber sleeve valve to vaporize the liquid within the container and to carry the same outwardly through the pipe, and hose connection means adapted to connect the pipe with the manifold of an internal combustion engine, said rubber sleeve being adjustable upon the pipe to vary the inflow of air to the smaller pipe.

HARRY H. SCHNEIDER.

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