Jan. 2, 1940. R. U. SPEARMAN 2,185,320

FUEL VAPORIZER

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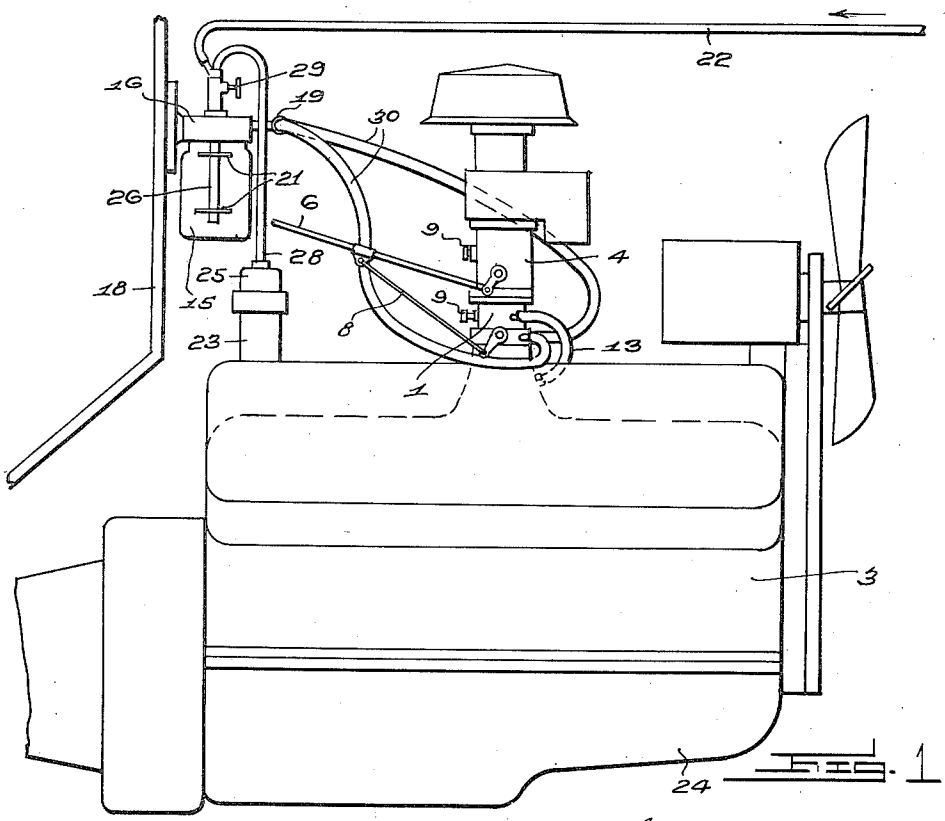


Fig. 1.

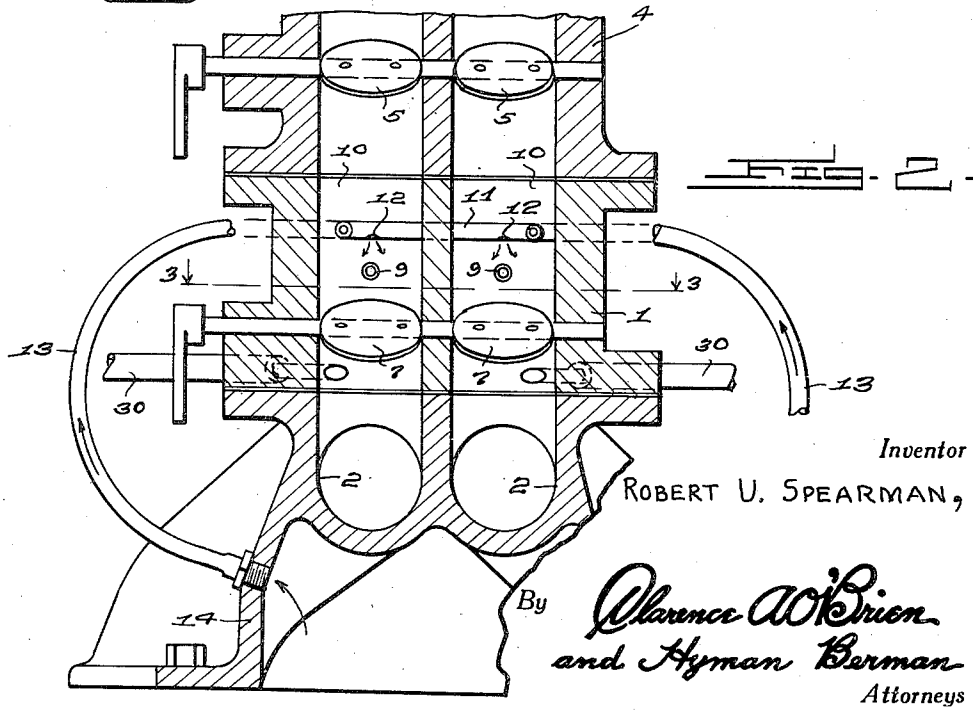


Fig. 2.

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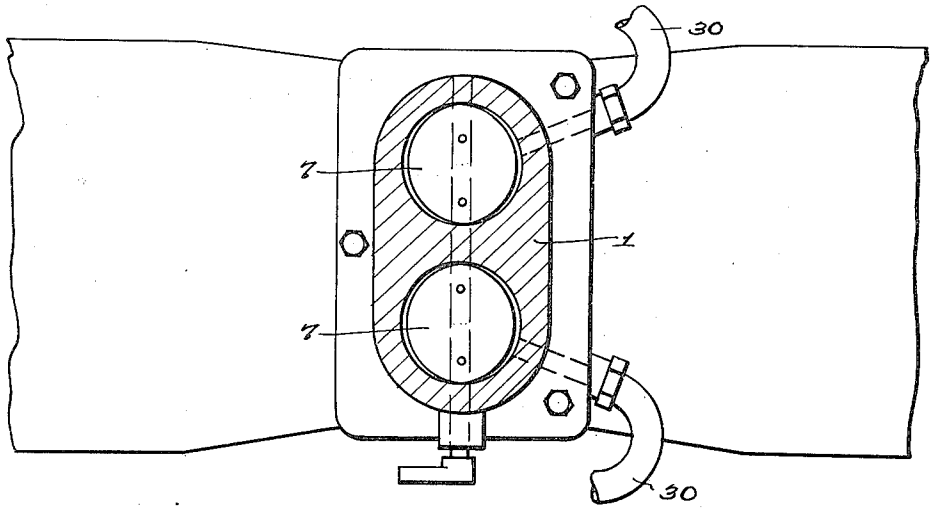


FIG. 3.

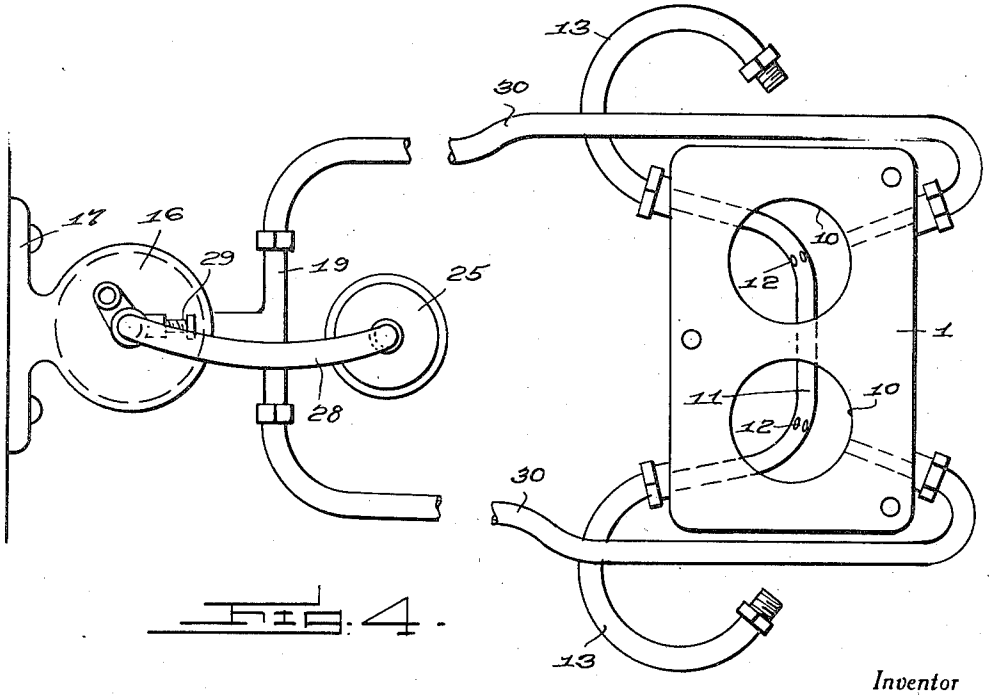


FIG. 4.

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FIG. 5.

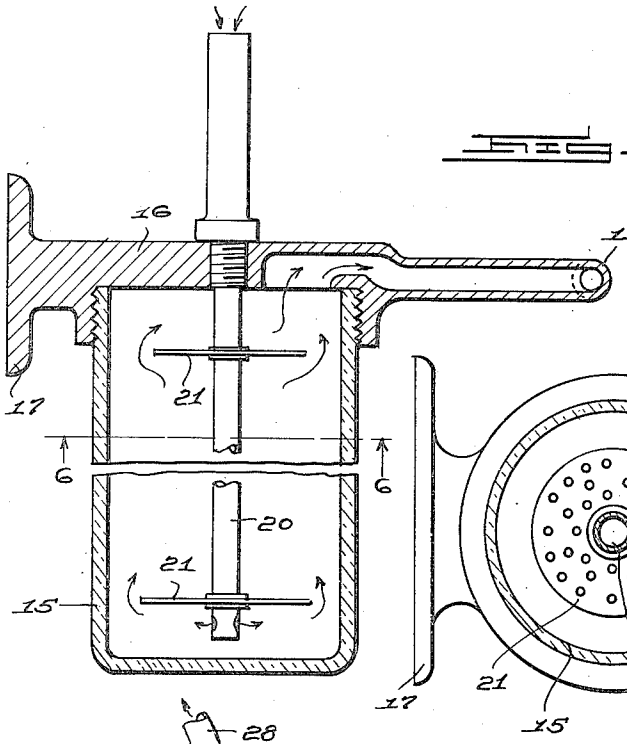
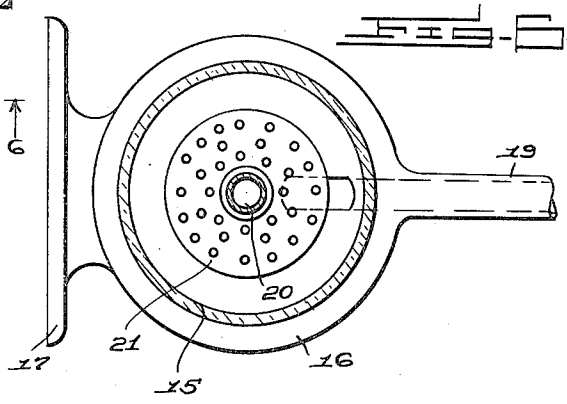
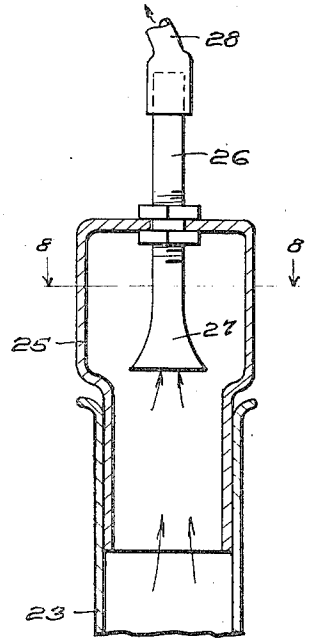


FIG. 6.





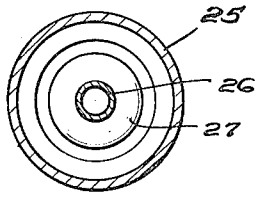


FIG. 8.

FIG. 7.

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Patented Jan. 2, 1940 2,185,320

UNITED STATES PATENT OFFICE

2,185,320

FUEL VAPORIZER

Robert U. Spearman, Lakeland, Fla.

Application June 28, 1939, Serial No. 281,746

1 Claim. (Cl. 123—119)

The present invention relates to new and useful improvements in fuel vaporizers for internal combustion engines in automobiles and has for its primary object to provide, in a manner as hereinafter set forth, an apparatus of this character embodying novel means for taking vapors from the radiator and crank case of the engine, adding moisture thereto and then introducing the mixture into the fuel charge going into the engine from the carburetor.

Other objects of the invention are to provide an engine fuel vaporizer of the aforementioned character which will be comparatively simple in construction, strong, durable, highly efficient and reliable in use, compact and which may be manufactured and installed at low cost.

All of the foregoing and still further objects and advantages of the invention will become apparent from a study of the following specification, taken in connection with the accompanying drawings wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in side elevation, showing a fuel vaporizing apparatus constructed in accordance with the present invention installed on an engine.

Figure 2 is a view in vertical section through portion of the apparatus which is mounted between the intake manifolds and the carburetor of the engine.

Figure 3 is a view in horizontal section, taken substantially on the line 3—3 of Fig. 2.

Figure 4 is a top plan view, showing the apparatus removed from the engine.

Figure 5 is a view in vertical section through the water container.

Figure 6 is a view in horizontal section, taken substantially on the line 6—6 of Fig. 5.

Figure 7 is a vertical sectional view, showing the connection to the breather cap of the engine.

Figure 8 is a view in horizontal section, taken substantially on the line 8—8 of Fig. 7.

Referring now to the drawings in detail, it will be seen that the embodiment of the invention which has been illustrated comprises what may be referred to as a gasket 1 of suitable metal which is adapted to be interposed between the intake manifolds 2 of a V type engine 3 and a dual downdraft carburetor 4. Butterfly valves 5 are provided in the carburetor 4. A rod 6 connects the butterfly valves 5 to the accelerator pedal (not shown) of the vehicle. The reference numeral 7 designates butterfly valves in the gasket 1. A rod 8 connects the valves 7 to the rod 6 for operation in unison with the valves 5. The reference numeral 9 designates suitable air jets.

Traversing the passages 10 of the gasket 1 is a pipe 11 having discharge ports 12 therein communicating with said passages 10. Pipes 13 connect the ends of the pipe 11 with the usual valve cover or casing 14 of the engine 3. Thus, heated air is introduced into the charge from the carburetor 4 before said charge reaches the intake manifolds of the engine.

Mounted on the vehicle adjacent the engine 3 is a container 15 of any suitable capacity for the reception of water. The container 15 is screwed into a top 16 which has formed integrally therewith a bracket 17 which may be attached to the dash board 18 of the vehicle. The top 16 is formed to provide a T connection 19 communicating with the container 15 at the top thereof.

Extending downwardly into the container 15 through the top 16 is a tube 20. Fixed at vertically spaced points on the tube 20 in the container 15 are perforated baffles 21. A flexible conduit 22 connects the upper end of the tube 20 with the outlet end of the usual overflow pipe of the automobile radiator (not shown).

Referring now to Figs. 7 and 8 of the drawings, it will be seen that the reference numeral 23 designates the breather pipe of the crank case 24 of the internal combustion engine 3. The reference numeral 25 designates a removable cap for the breather pipe 23. Mounted on the breather cap 25 and extending downwardly thereinto is a tube 26 which terminates in a flared lower end 27. A flexible conduit 28 connects the tube 20 to the tube 26. A valve 29 controls the tube 20. Flexible conduits 30 extend from the T connection 19 to the passages 10 of the gasket 1.

It is thought that the operation of the apparatus will be readily apparent from a consideration of the foregoing. Briefly, with the engine 3 in operation vapors are sucked downwardly into the container 15 through the flexible conduit 22 from the radiator and the flexible conduit 28 from the crank case 24 of the engine. These vapors pass upwardly through the water in the container 15 and are moistened thereby. The moistened vapors are then drawn through the flexible conduits 30 into the passages 10 of the gasket 1 and then pass into the intake manifolds of the engine. The construction and arrangement is such that by moving the butterfly valves 5 and 7 toward closed position the fuel charge from the dual carburetor 4 and the heated air from the pipes 13 entering the engine, after mix-

ing with the vapors from the conduits 30, may be regulated as desired. The suction due to the breathing of the crank case will not draw the water from the container 15 through the conduit 28 for the reason that, when the engine is operating, there is always a greater suction in the intake manifold which is connected to the upper portion of said container by the pipes 30.

It is believed that the many advantages of a fuel vaporizer constructed in accordance with the present invention will be readily understood and although a preferred embodiment of the apparatus is as illustrated and described, it is to be understood that changes in the details of construction and in the combination and arrangement of parts may be resorted to which will fall within the scope of the invention as claimed.

What is claimed is:

In combination with a V type internal combustion engine including a pair of intake manifolds and a dual carburetor, a gasket interposed between the manifolds and the dual carburetor and comprising a pair of passages, one communicating with each manifold, conduits connecting the passages in the gasket with the crank case of the engine and the radiator for receiving vapors therefrom, a pipe traversing the passages in the gasket between the conduits and the carburetor, said pipe having ports therein communicating with the gasket passages, pipes connecting the first named pipe to the valve casing of the engine for receiving hot air therefrom, control valves in the gasket anterior to the vapor conduits, control valves for the carburetor, and means for actuating the first and second named valves in unison.

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