

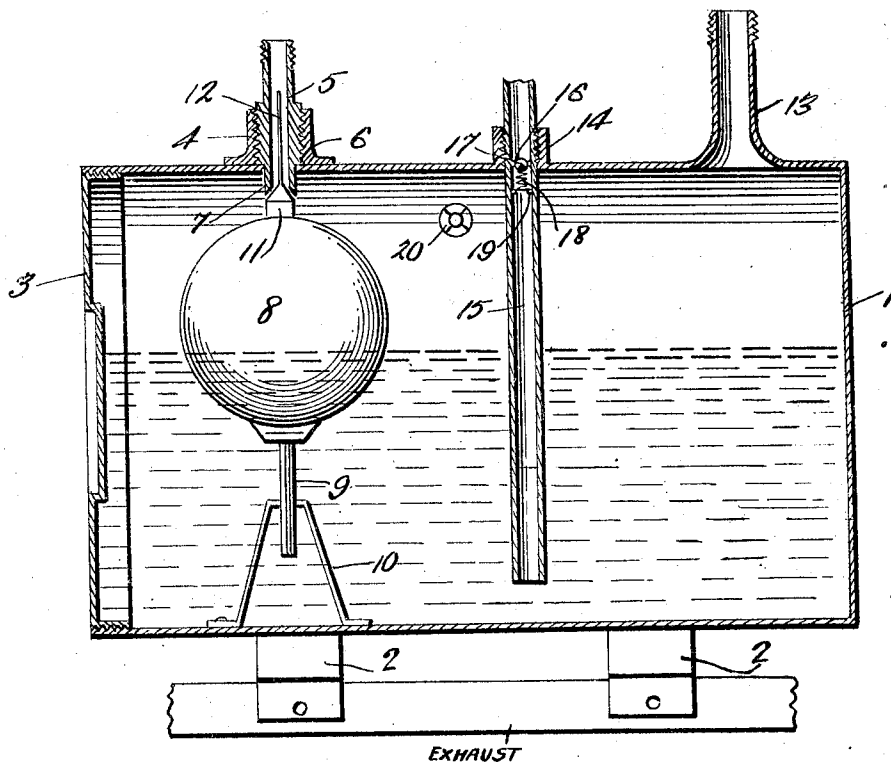
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ATTACHMENT FOR INTERNAL COMBUSTION ENGINES

Filed July 19, 1921



WITNESSES

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UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR INTERNAL-COMBUSTION ENGINES.

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To all whom it may concern:

Be it known that I, JAMES A. REASONER, citizen of the United States, residing at Athens, in the county of Athens and State of Ohio, have invented certain new and useful Improvements in Attachments for Internal-Combustion Engines, of which the following is a specification.

This invention relates to new and useful improvements in attachments for internal combustion engines and more particularly to a device for increasing the humidity of gaseous fuel used as a charge in internal combustion engines with the advantageous effects of minimizing the amount of carbon produced by the explosion, increased mileage per fuel unit and more perfect running or performance of the engine.

The object of the invention is to provide in connection with such device a liquid containing receptacle having means for automatically controlling the level of the liquid therein.

In the accompanying drawings forming a part of the application and wherein like numerals are employed to designate like parts the figure is a longitudinal, vertical section of the device.

In the drawing, I have illustrated the preferred embodiment of my invention and the numeral 1 designates a liquid containing receptacle which may be of any desired shape, but in the present instance is in the form of an elongated cylindrical drum. The bottom of this receptacle is provided with clamps 2 by which the receptacle may be clamped upon either the exhaust pipe or exhaust manifold, whichever is preferred. The purpose of attaching the receptacle to the manifold is to utilize the heat radiating from the exhaust to heat the liquid within the receptacle to a high temperature and preferably high enough to create steam from the water. One end of the receptacle is internally screw threaded to receive a removable head 3 so that access to the interior of the receptacle for repairs may be easily had.

The top of the receptacle 1 adjacent one end thereof is provided with an opening, surrounding which and fastened to the receptacle is an upstanding internally screw threaded flange 4. A nipple 5 having an enlarged externally threaded portion for reception in the threaded flange 4, constitutes a water connection with any suitable source of supply. It will be noted that the en-

larged central portion of the nipple forms a shoulder 6 which abuts the edge of the opening in the top of the receptacle and forms a substantial watertight connection between the nipple and the opening. The lower end of the nipple protrudes through the opening in the receptacle and is bevelled to provide a valve seat.

A float 8 consists of an enlarged buoyant member depending from which is a stem 9 which is guided vertically by cooperation with an opening in a bracket 10 fastened to the bottom of the receptacle. The portion of the bracket 10 having the aperture which receives the stem 9 is spaced a sufficient distance above the bottom of the receptacle to permit proper movement of the float. At a point on the float diametrically opposite the stem 9, a valve head 11 is secured and adapted for cooperation with the valve seat of the nipple 5. This valve head 11 rises from the float and is equipped with an upstanding elongated stem 12 which operates at all times within the bore of the nipple 5.

The top of the receptacle 1, at the end opposite the float, is provided with an upstanding outlet nipple 13, the end thereof which merges into the receptacle being flared outwardly and downwardly. This nipple 13 is adapted to be connected with either a carburetor air inlet or the intake manifold of the engine for a purpose which will presently appear.

Between the nipples 5 and 13, the top of the receptacle is provided with an upstanding internally screw threaded flange 14 which is adapted to suspend an air pipe 15 within the receptacle 1 with its lower end submerged in the liquid and spaced a substantial distance above the bottom of the receptacle. For the purpose of connection with the flange 14, the exterior of the air pipe 15 adjacent its upper end is provided with external screw threads for engagement with the threads of the flange. The interior of the air pipe adjacent its upper end is provided with an interior annular valve seat 16 for cooperation with an upwardly closing ball valve 17. This ball valve is normally urged against its seat by a coil spring 18 supported by suitable projections 19 formed on the interior of the air pipe.

It will of course be understood that the upper end of the air pipe communicates with the atmosphere so that air will be

drawn down into the liquid to cause bubbles which will instantly rise to the surface of the liquid in the receptacle and burst to liberate the moistened air. An overflow connection 20 is made in the receptacle adjacent the top thereof so that in case the liquid should ever rise above the constant level the excess water will be taken care of.

The operation of the device is as follows:
10 Water from a suitable source, such as the water cooling system of an automobile is admitted into the receptacle through the inlet nipple 5. When the water in the receptacle reaches a certain level, the valve 11 carried
15 by the float will have closed upon its seat at the lower end of the nipple 5 to cut off the flow of water. As the nipple 13 is connected up with the carburetor or intake manifold of an engine, upon the suction
20 stroke of the latter, air will be caused to travel down through the air pipe 15 and into the water contained in the receptacle. It will be noted that the air is liberated from the air pipe adjacent the bottom of
25 the receptacle so that air will be caused to travel a substantial distance through the water whereby it will be thoroughly saturated with moisture. As the receptacle is attached in proximity to the exhaust pipe,
30 the water will be heated to a high degree of temperature to generate steam which with the moistened air will be drawn through the outlet nipple 13 and into the engine.

It will of course be understood that the
35 ball valve 17 in the air jet will be caused to open at each suction stroke of the engine, and the greater the suction, the more the ball valve will be open and consequently a greater amount of air admitted into the

receptacle. It has been found that with this device attached to an internal combustion engine of a motor vehicle, a saving of from 4 to 9 miles on a gallon of gasoline is effected.

The foregoing description and accompanying drawings have reference to what might be considered to be the approved or preferred form of my invention. I desire it to be understood that I may make such changes in the construction, combination, arrangement of parts material, dimensions, etc. as may prove expedient and fall within the scope of the appended claim.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:

In an attachment for internal combustion engines, a liquid container having an upstanding internally threaded flange at the top thereof, a nipple having threaded engagement with said flange intermediate its ends and provided with a tapered valve seat at its lower end within the container, a float in said container, a tapered valve head rigid with the top of the float and adapted to close upon the seat of the nipple when the liquid in the container reaches a predetermined level, a stem rigid with and extending upwardly from said valve head and protruding into the nipple to guide the valve head into its seat, a bracket rigidly mounted below the float and having an opening, said float having a second stem rigid therewith and depending therefrom and slidably extending through the opening of said bracket to guide said float.

In testimony whereof I affix my signature.

JAMES A. REASONER.