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H. P. BRAEUTIGAM

FUEL SUPPLY RESERVOIR FOR INTERNAL COMBUSTION ENGINES

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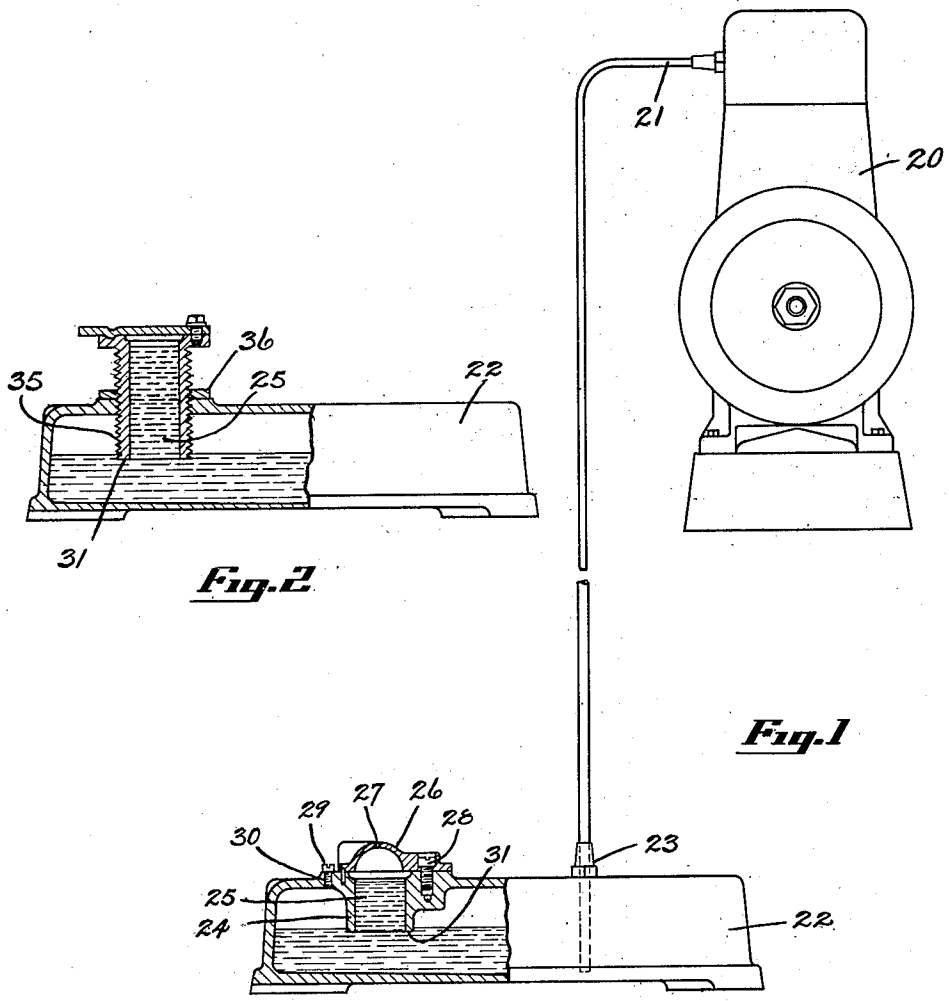


Fig. 2

Fig. 1

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UNITED STATES PATENT OFFICE.

HENRY P. BRAEUTIGAM, OF DAYTON, OHIO, ASSIGNOR TO DELCO-LIGHT COMPANY, OF DAYTON, OHIO, A CORPORATION OF DELAWARE.

FUEL-SUPPLY RESERVOIR FOR INTERNAL-COMBUSTION ENGINES.

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To all whom it may concern:

Be it known that I, HENRY P. BRAEUTIGAM, citizen of the United States of America, residing at Dayton, county of Montgomery, and State of Ohio, have invented certain new and useful Improvements in Fuel-Supply Reservoirs for Internal-Combustion Engines, of which the following is a full, clear, and exact description.

The present invention relates to liquid containers and has among its objects to provide a container with means for varying the extent to which a liquid can be introduced into it before overflowing at the filler opening.

Other and further objects of the present invention will be apparent from the following description, reference being had to the accompanying drawings, wherein preferred embodiments of the present invention are clearly shown.

In the drawings:

Fig. 1 is a view partly in section showing a vessel embodying the present invention adapted for use as a fuel tank for an internal-combustion engine; and

Fig. 2 is a view partly in section of a modified form thereof.

The present invention contemplates broadly the provision of a vessel having a filler opening, means for preventing the escape of air from the vessel after a certain amount of liquid has been introduced in order to limit the extent to which liquid can be introduced before overflowing at the filler opening, and means for changing the air trapping capacity of the vessel.

Referring to Fig. 1, 20 is an engine to which is connected a fuel inlet pipe 21. Pipe 21 extends into a tank 22, the opening in the tank through which the pipe extends is sealed by any suitable coupling 23.

Tank 22 has an annular flange 24 depending from the top wall of the tank toward the bottom wall thereof. Flange 24 provides a filler opening or passage 25 extending from the interior of the tank to the atmosphere. Passage 25 is provided with a cover 26 having a small air vent 27 and is pivotally mounted upon a bolt 28.

A screw 29 is provided in the top wall of the tank 22 and is adapted to close an opening 30 leading from the interior of the tank.

The fuel for the internal-combustion engine is poured into the tank through the passsage 25. As the fuel is being poured into said tank air will be pushed out through the passage 25. When the fuel rises slightly above the lower edge 31 of the flange 24 said fuel will seal the lower end of the passage 25 and prevent the further escape of air from the tank 22.

In this manner an air pocket is formed in the upper part of the tank 22 this pocket being bounded by the liquid level, the side and top walls of the tank and the outer wall of flange 25. After the lower edge 31 of the flange 24 is covered, but little more fuel can be poured into the tank 22 in addition to that amount which the passage 25 is adapted to hold because of the air pressure within the tank.

If it is desirable to fill the tank 22 completely with fuel, the screw 29 is withdrawn whereby the air, instead of being pocketed in the upper part of tank 22, can escape through the opening 30. In this manner the air trapping capacity of the tank is decreased and its liquid containing capacity increased.

The utility of this device will be apparent when considering its application as a fuel tank for an internal-combustion engine and particularly to that type of internal-combustion engine which is used for driving a generating unit for charging storage batteries. In the sale of battery charging plants it may be desirable to provide one type of plant for charging batteries of various capacities. For example, a certain plant could be used to charge an 80 ampere hour battery or a 160 ampere hour battery. If the tank 22 is constructed to contain enough fuel when completely filled to operate the engine long enough to charge the 160 ampere hour battery, the screw 29 is omitted. Therefore the total fuel capacity of the tank 22 serves as a measure of the duration of engine operation. But if the plant is sold with an 80 ampere hour battery the screw 29 is permitted to remain in the position shown. The length of the flange 24 is such as to make the fuel capacity of the tank approximately one half what it would be if the screw 29 were removed. Therefore it is only necessary to instruct the attendant to fill the tank to overflowing when the batteries need charging to bring the batteries up to full charge. The air trap will limit the operation of the engine to the

shorter charge period when the small battery is used.

The modification shown in Fig. 2 shows a tank in which the capacity thereof can be varied to any suitable degree. In this figure the tank is screw threaded to receive a sleeve 35 to provide the passage 25. When this sleeve is screwed out of the tank the lower edge thereof will move vertically upward to decrease the air trapping capacity of the tank and to increase its liquid containing capacity. Sleeve 35 can be locked into any position by means of a lock nut 36.

While the form of mechanism herein shown and described constitutes a preferred embodiment of one form of invention, it is to be understood that other forms might be adopted and various changes and alterations made in the shape, size, and proportion of the elements therein without departing from the spirit and scope of the invention.

What is claimed is as follows:

1. A container having a filler opening and means for varying the amount of liquid introduced through said opening into said container before overflowing.

2. A container having a filler opening, means for trapping a quantity of air in the container after a certain amount of liquid has been introduced through the filler opening to limit the amount of liquid introduced before overflowing, and means for changing the quantity of air trapped.

3. A container having top, bottom, and side walls, a flange extending from the top wall toward the bottom wall, the space within the flange providing a filler opening, the space above surface of the liquid in the container and bounded by the side and top walls and the exterior of said flange providing an air pocket which limits the liquid storage capacity of the container, and means for decreasing the air trapping capacity whereby to increase the liquid containing capacity of the container.

4. A container having top, bottom, and side walls, a flange extending from the top wall toward the bottom wall, the space within the flange providing a filler opening, the space above surface of the liquid in the container and bounded by the side and top walls and the exterior of said flange providing an air pocket which limits the liquid storage capacity of the container, and means for venting the air trap space whereby the container may be filled with liquid.

5. A container having means for permitting a quantity of liquid to be introduced therein and a quantity of air to be trapped therein to limit the amount of liquid introduced before overflowing, and means for decreasing the air trapping capacity and for increasing the liquid containing capacity of the container.

6. An air tight container having a filler opening, and means for trapping a quantity of air within the container after a certain amount of liquid has been introduced through the filler opening, to thereby limit the amount of liquid introduced before overflowing.

In testimony whereof I hereto affix my signature.

HENRY P. BRAEUTIGAM.

Witnesses:
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