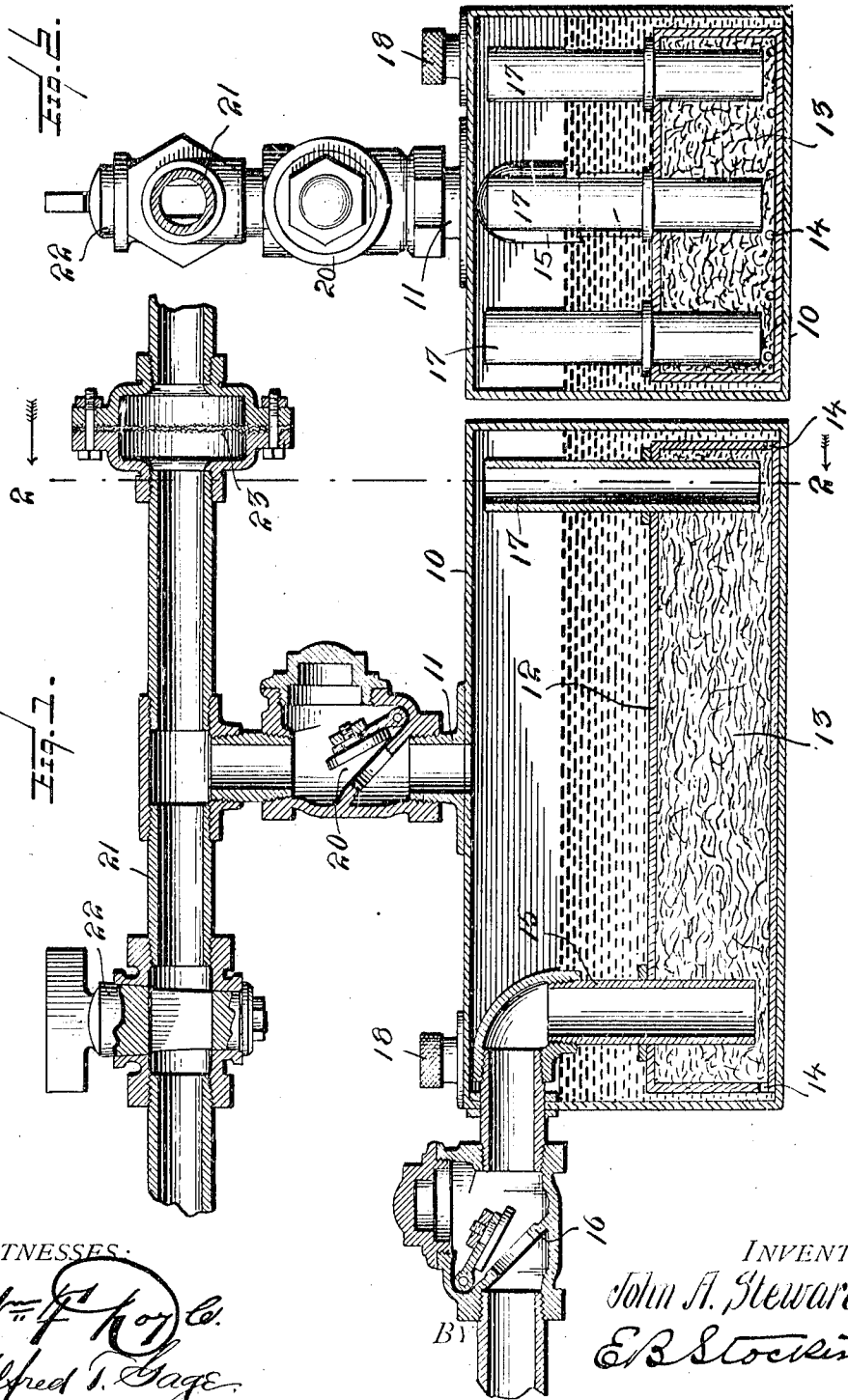


J. A. STEWARD.
CARBURETER.

APPLICATION FILED MAR. 9, 1909.

947,357.

Patented Jan. 25, 1910.



WITNESSES:

H. F. Roy & Co.
Alfred T. Gage

INVENTOR

John A. Steward.

E. B. Stocking

Attorney

UNITED STATES PATENT OFFICE.

JOHN A. STEWARD, OF RUTLAND, VERMONT.

CARBURETER.

947,357.

Specification of Letters Patent.

Patented Jan. 25, 1910.

Application filed March 9, 1909. Serial No. 482,306.

To all whom it may concern:

Be it known that I, JOHN A. STEWARD, a citizen of the United States, residing at Rutland, county of Rutland, and State of Vermont, have invented certain new and useful Improvements in Carbureters, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a carbureter, and particularly to a construction adapted for application to the inlet port of a gas or internal combustion engine.

The invention has for an object to provide a closed liquid receptacle having a feed connection therefrom and a vaporizing chamber disposed therein and provided with an absorbent filling and with openings communicating with the liquid receptacle together with an air inlet to said chamber and a passage therefrom within the receptacle above the liquid therein.

Other and further objects and advantages of the invention will be hereinafter fully set forth and the novel features thereof defined by the appended claims.

In the drawing:—Figure 1 is a vertical section through the carbureter, and Fig. 2 is a horizontal section through the upper portion thereof.

Like numerals refer to like parts in the several views of the drawing.

This invention comprises an improvement upon the construction shown in my patent dated March 2, 1909 #913,857 and seeks to form a simple and compact construction wherein the carbureting chamber is disposed within the liquid receptacle and is thus adapted for direct connection with a gas or explosive engine.

In the form shown the receptacle 10 may be of any desired size or configuration and is closed air tight except for the connection 11 from which the gas is discharged and which is preferably connected to the suction port of a gas engine. At the lower portion of this receptacle a vaporizing chamber 12 is disposed and is filled with an absorbent material 13, through which the gasolene or liquid is fed through the openings 14 at the opposite ends of the chamber. This chamber is also supplied with an air inlet pipe 15 which discharges at the lower portion there-

of and is preferably extended to sufficient extent to permit the expansion of the gas in the receptacle and chamber. This pipe may be supplied, if desired, with a check valve 16 for the same purpose. The opposite end of the chamber 13 is formed with the discharge pipe 17 which extends upward therefrom above the liquid level within the receptacle 10. This receptacle may be filled with gasolene or other liquid through any preferred opening, for instance, as shown at 18.

The engine connection 11 from the upper portion of the gasolene tank may be of any desired character, but is preferably provided with a check valve 20 which also communicates with the cylinder feed pipe for an engine cylinder. This pipe may also have connected thereto an air supply 21 having the regulating cock 22 for governing the supply of air to be mixed with the fuel, and the feed pipe is provided intermediate the cylinder and fuel connection with a fire check 23, preferably comprising layers of reticulated material.

The carbureting chamber may be provided with a series of apertures to admit gasolene thereto as shown in Fig. 2. The disposition of the inlet and discharge pipes within this chamber adjacent the lower portion thereof prevents the chamber becoming filled with liquid. As soon as the liquid rises above the lower open ends of these pipes they are sealed thereby and the compression of the vapor in the upper portion of the chamber prevents further entrance of liquid therein. A series of the discharge pipes may be used and the operation of the carbureter is automatic both in the carbureting action and its feed to an engine or other object to which the fuel is to be supplied.

In the operation of the invention it will be seen that the suction in the piston stroke of the engine is exerted through the feed pipe from the receptacle and draws a supply of gas from the vaporizing chamber through the discharge pipe therefrom. This action causes an intake of air at the opposite end of the vaporizing chamber and also an inward flow of liquid, so as to always maintain the absorbent material therein in a saturated condition.

This construction and arrangement of carbureter presents a compact form wherein the vaporizing chamber is disposed within the liquid receptacle and the entire device adapted for direct connection with the suction port of an engine so that a quantity of material to be vaporized may be retained in position for use, thus providing a simple, efficient and economically constructed carbureter for this purpose.

Having described my invention and set forth its merits, what I claim and desire to secure by Letters Patent is:—

1. A carbureter comprising a closed receptacle having its lower portion filled with liquid, a vaporizing chamber disposed within said receptacle and sealed at its upper portion and provided with openings at its lower portion communicating with said receptacle below the liquid level therein, an air inlet extended to the lower portion of said chamber below said level, and a discharge from the lower portion of said chamber extended below said liquid level.

2. A carbureter comprising a closed receptacle having its lower portion filled with liquid and its upper portion forming a gas chamber, a feed connection with said receptacle above the liquid level thereof, a vaporizing chamber disposed within said receptacle and sealed at its upper portion and provided with openings at its lower portion communicating with said receptacle below the liquid level thereof, an air inlet extended to the lower portion of said vaporizing chamber below said level, and a discharge from the lower portion of said chamber below said level and communicating with the gas chamber above the liquid of said receptacle.

3. A carbureter comprising a closed receptacle having its lower portion filled with liquid, a vaporizing chamber therein sealed at its upper portion and provided with filling openings at its lower portion communicating with said receptacle below the liquid level therein, an air inlet disposed at one end of said chamber and extending upward from below said level and outwardly from said receptacle, and a discharge from the opposite end of said chamber extending from below the liquid level to a point above the liquid level in said receptacle.

4. A carbureter comprising a closed receptacle having its lower portion filled with liquid, a vaporizing chamber therein sealed at its upper portion and provided with filling openings at its lower portion communicating with said receptacle below the liquid level therein, an air inlet disposed at one end of said chamber and extending upward from below said level and outwardly from said receptacle, a discharge from the opposite end of said chamber extending from below the

liquid level to a point above the liquid level in said receptacle, and means provided in said air inlet to permit expansion of the gas within said chamber and receptacle.

5. A carbureter comprising a closed receptacle having its lower portion filled with liquid and its upper portion forming a gas chamber, a discharge connection from said gas chamber, a vaporizing chamber disposed within said receptacle and sealed at its upper portion and provided with an inlet opening at its lower portion below the liquid level of the receptacle, an air inlet to the lower portion of said vaporizing chamber below the liquid level of the receptacle, and a discharge pipe from said vaporizing chamber extended below said level and communicating with said gas chamber.

6. A carbureter comprising a closed receptacle having its lower portion filled with liquid and its upper portion forming a gas chamber, a discharge connection from said gas chamber, a vaporizing chamber disposed within said receptacle and sealed at its upper portion and provided with an inlet opening at its lower portion below the liquid level of the receptacle, an air inlet to the lower portion of said vaporizing chamber below the liquid level of the receptacle, a discharge pipe from said vaporizing chamber extended below said level and communicating with said gas chamber, and an outwardly opening check valve disposed in the discharge connection from said receptacle.

7. A carbureter comprising a closed receptacle having its lower portion filled with liquid and its upper portion forming a gas chamber, a discharge connection from said gas chamber, a vaporizing chamber disposed within said receptacle and sealed at its upper portion and provided with an inlet opening at its lower portion below the liquid level of the receptacle, an air inlet to the lower portion of said vaporizing chamber below the liquid level of the receptacle, a discharge pipe from said vaporizing chamber extended below said level and communicating with said gas chamber, and an inwardly opening check valve disposed in the air inlet to said vaporizing chamber.

8. A carbureter comprising a closed receptacle having its lower portion filled with liquid and its upper portion forming a gas chamber, a discharge connection from said gas chamber, a vaporizing chamber disposed within said receptacle and sealed at its upper portion and provided with an inlet opening at its lower portion below the liquid level of the receptacle, an air inlet to the lower portion of said vaporizing chamber below the liquid level of the receptacle, a discharge pipe from said vaporizing chamber extended below said level and communicating with said gas chamber,

an inwardly opening check valve disposed in the inlet to said vaporizing chamber, an engine supply provided with a fire check and connected to the discharge of said receptacle, and a check valve disposed in said discharge connection to open outwardly from said receptacle.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. STEWARD.

Witnesses:

R. D. SMITH,

H. F. KINGSLEY.