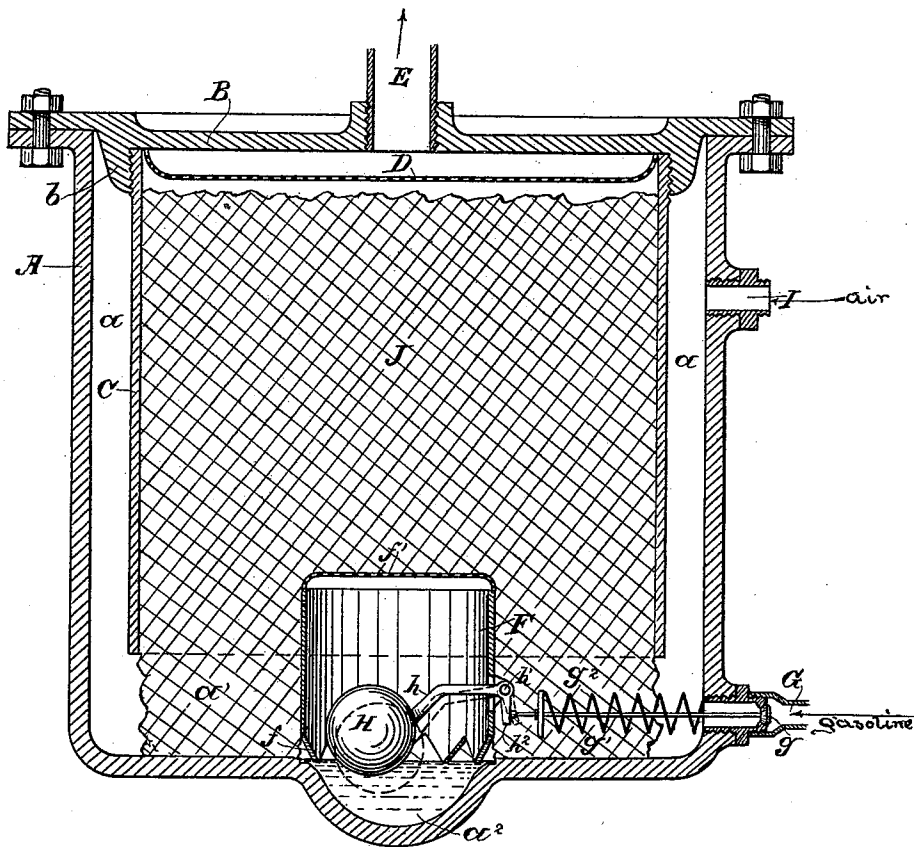


(No Model.)

B. L. RYDER.
CARBURETER.

No. 583,126.

Patented May 25, 1897.



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UNITED STATES PATENT OFFICE.

BAINBRIDGE L. RYDER, OF SAN JOSÉ, CALIFORNIA.

CARBURETER.

SPECIFICATION forming part of Letters Patent No. 583,126, dated May 25, 1897.

Application filed November 8, 1895. Renewed September 24, 1896. Serial No. 606,885. (No model.)

To all whom it may concern:

Be it known that I, BAINBRIDGE L. RYDER, a citizen of the United States, residing at San José, county of Santa Clara, State of California, have invented an Improvement in Carbureters; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of vaporizers or gas-generators especially adapted for use in connection with explosive engines, and in which the gasoline or other vaporizable liquid is supplied to an absorbent material through which the air is drawn, whereby the liquid is vaporized and the proper explosive mixture is formed.

My invention consists in the novel construction of the vaporizer, which I shall hereinafter fully describe, especial importance being laid upon the automatic feature of the device, by which a stated quantity or volume of vaporizable liquid is maintained, resulting in a uniform quality of explosive mixture, which quality it is the object of my invention to attain.

Referring to the accompanying drawing, the figure is a vertical section of my vaporizer.

A is the shell or casing of the vaporizer. B is its cap, secured thereto by suitable means, and C is a holding-ring within the casing or shell and having a diameter sufficiently less than the interior diameter of said shell to leave an annular or circumscribing space a around the ring between its periphery and the inner surface of the shell. The ring is open at both ends, and its length is sufficiently shorter than said shell to leave an underlying space a' . The ring is supported within the shell in suitable manner, the best means for supporting it being that here shown, and consisting of a flange b , extending downwardly from the cap B, and internally threaded to receive the externally-threaded upper end of the ring C, whereby said ring is suspended from the flange. A screen D lies in the upper portion of the ring, and an outlet-pipe E issues from the top of the casing through its cap B.

The bottom of the casing is depressed or recessed to form a well a^2 , and this well is guarded and surrounded by a protecting

shield or tube F, the lower portion of which is apertured, as shown at f , to afford communication with the well a^2 , and its upper end is fitted with a screen f' .

G is the inlet for the gasoline or other vaporizable liquid, said inlet being controlled by a valve g , the stem g' of which extends inwardly through the inlet G and is fitted with a controlling-spring g^2 , the tendency of which is to keep the valve g closed.

Within the protecting shield or tube F and operating within the well a^2 is a float H, the stem h of which is pivoted at h' and has an actuating-arm h^2 , which bears against the inner end of the valve-stem g' .

I is the air-inlet, which communicates with the circumscribing space a within the shell.

The holding-ring C confines a body of absorbent material, (represented by J,) and it may consist of any suitable absorbent substance, as, for example, sponge. This absorbent material extends between the screen D and the bottom of the shell, filling the lower space a' in said shell, but the liquid-well a^2 , with its float H, is protected from the absorbent material by the shield F, which thus keeps the well entirely free to permit the automatic operation of the float and through it of the liquid-inlet valve g .

The operation of the vaporizer is as follows: When there is no liquid in the well a^2 , the float H sinks, and thereby causes its arm h^2 to press upon the valve-stem g' and to force and hold the valve g open. Thereupon the vaporizable liquid passes in through the inlet G into the space a' and through the apertures f and the shield F into the well a^2 . It saturates the absorbent material J throughout its entire bulk, and as the level of the liquid rises in the well a^2 it lifts the float H, which thus removes its arm h^2 from the valve-stem g' and permits the spring g^2 to close the valve g . This closing is effected when the volume of vaporizable liquid admitted is sufficient for the needs of the vaporizer. When this volume decreases, the inlet-valve g is automatically opened by the sinking of the float H, and the volume is again brought up to the required standard by the admission of more liquid.

The air, passing in through the air-inlet I,

flows down through the circumscribing space
 a and, passing through the absorbent material J, is drawn out with its mixture of gas
 or vapor from the device through the outlet
 5 E. Thus the required amount of vaporizable
 liquid is maintained and the explosive mixture
 resulting is uniform under all circumstances.

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

1. A vaporizer consisting of a shell or casing
 having a well in its bottom, a holding-
 ring therein, open at both ends, having a di-
 15 ameter sufficiently less than the diameter of
 the casing, to leave a circumscribing space,
 and having a length shorter than said casing
 to leave an underlying space, said ring being
 exteriorly threaded at its upper end and hav-
 20 ing a screen at said upper end, a mass of absorbent
 material within the ring, a guard resting
 upon the bottom of the shell or casing
 and surrounding the well therein, having its
 upper end open and provided with a screen
 25 and its lower end provided with apertures, a
 cap for the casing to which the upper end of
 the ring is screwed, with a pipe leading from
 said cap, an inlet for air, an inlet for the
 vaporizable liquid, at the lower portion of the
 30 shell, a valve controlling the flow of liquid,
 having an inwardly-projecting stem, horizontally
 disposed, a spring on said stem tending
 to hold the valve normally closed, and
 means for opening the valve against the power

of its spring when the amount of liquid in 35
 the well decreases.

2. A vaporizer comprising a shell, having
 within its lower portion a recess or depression
 for the vaporizable liquid, and a protecting-
 shield around said well having its 40
 bottom apertured and its top provided with
 a screen, a cap for the casing having a downwardly-
 extending flange, and an outlet-pipe
 passing through said cap, a holding-ring suspended
 from the flange of the cover and hav- 45
 ing a screen-top, said holding-ring having a
 diameter sufficiently less than that of the
 shell or casing to leave a circumscribing space
 and a length sufficiently less than that of the
 casing to leave an underlying space, absorb- 50
 ent material contained within said ring and
 underlying space, an inlet for the vaporizable
 liquid for directing it to the absorbent
 material and into the well, a valve controlling
 said inlet, a float within the well and in- 55
 termediate connections whereby the movement
 of the float automatically operates the
 valve, and an air-inlet through the casing
 and communicating with the circumscribing
 space around the holding-ring, whereby said 60
 air is directed downwardly to the absorbent
 material.

In witness whereof I have hereunto set my
 hand.

BAINBRIDGE L. RYDER.

Witnesses:

F. A. REDMON,
 S. H. NOURSE.