

No. 817,641.

PATENTED APR. 10, 1906.

C. B. HARRIS.  
CARBURETER.

APPLICATION FILED NOV. 18, 1904.

Fig. 1.

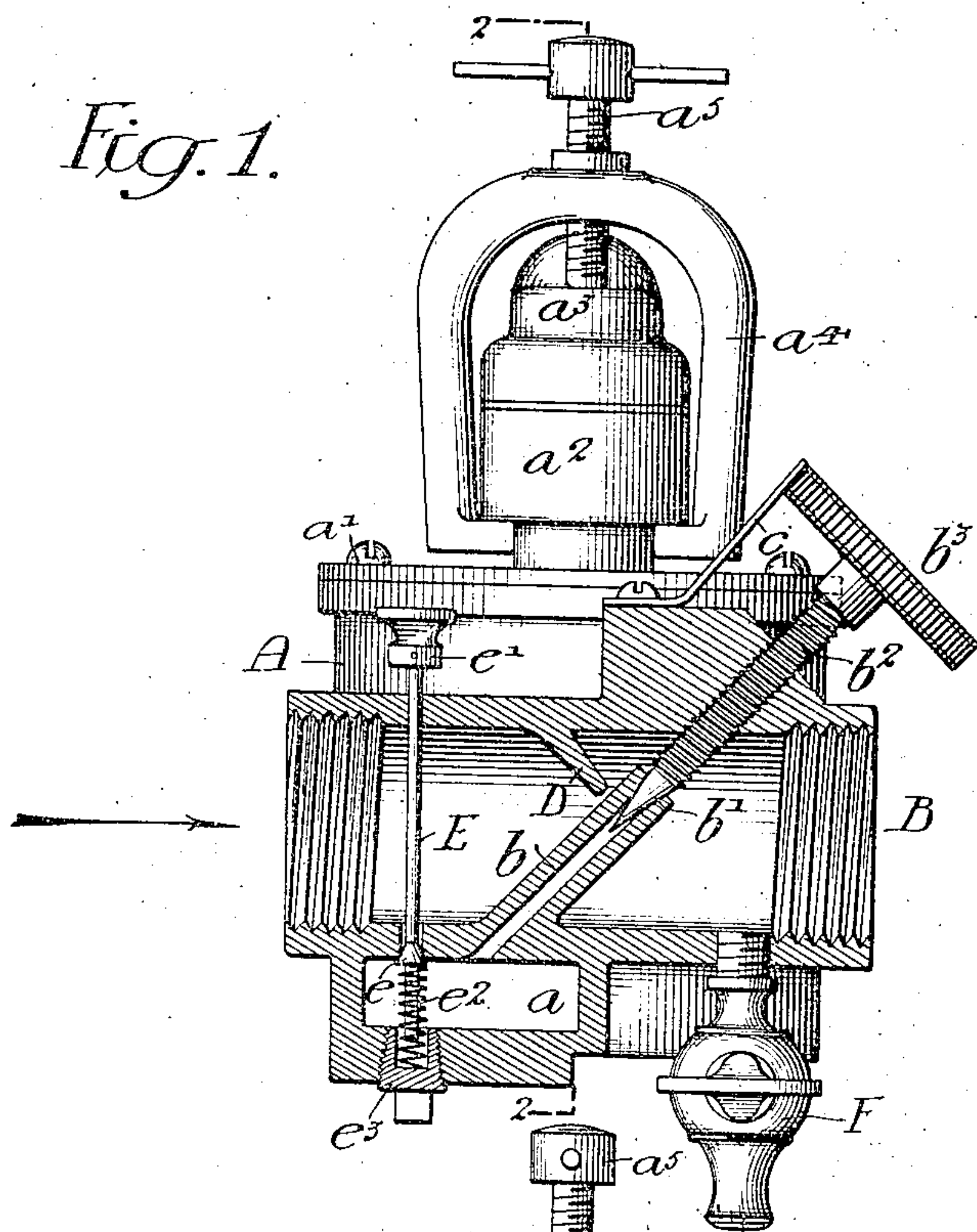
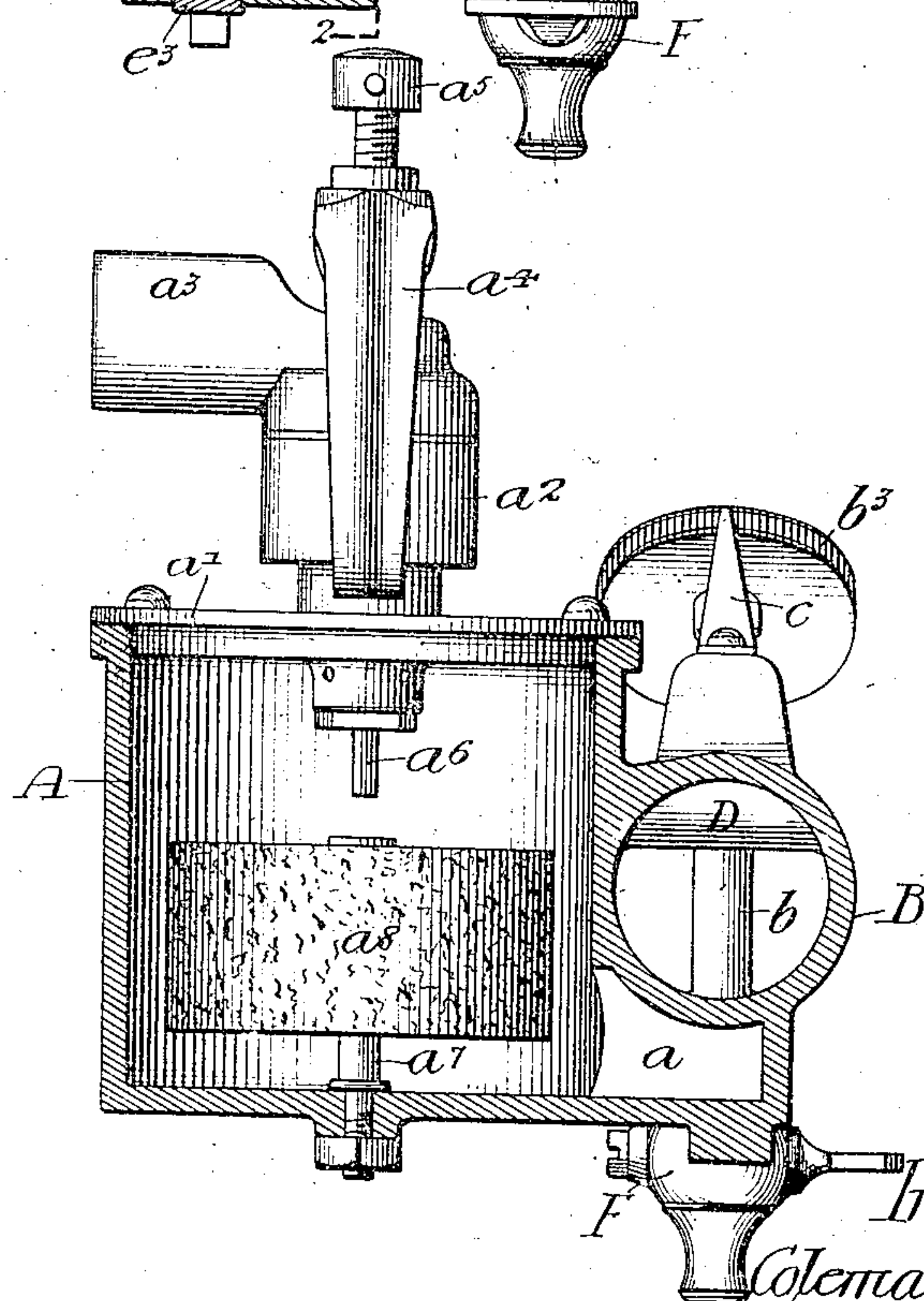


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## CARBURETER.

No. 817,641.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed November 18, 1904. Serial No. 233,328.

*To all whom it may concern:*

Be it known that I, COLEMAN B. HARRIS, a citizen of the United States, residing in Wilmington, Delaware, have invented certain  
5 Improvements in Carbureters, of which the following is a specification.

One object of invention is to provide a device of relatively simple construction for  
10 controlling the flow and vaporization of liquid fuel during its passage from a source of supply to the cylinder of the engine in which it is utilized.

More particularly it is desired to provide a carbureter with a device for directing the  
15 current of air flowing through it so that said current is caused to quickly take up or vaporize liquid fuel both as it is delivered from a tube, technically known as a "stand-pipe," and after such liquid has flowed into the lower  
20 portion of the main conducting-tube.

I further desire to provide a carbureter with a conveniently-manipulated device for quickly admitting a relatively large body of liquid fuel into the vaporizing-tube, so as to  
25 avoid the necessity of disturbing the adjustment of the main fuel-regulating valve.

These objects, together with other advantageous results, I attain as hereinafter set forth, reference being had to the accompanying drawings, in which—  
30

Figure 1 is an end elevation, partly in section, of my improved carbureter, illustrating the detail construction of the priming and regulating valves; and Fig. 2 is a transverse  
35 sectional elevation taken on the line 2 2, Fig. 1, and further illustrating the construction of my device.

In the above drawings it will be noted that a float-chamber A and a vaporizing tube or  
40 conduit B are formed as parts of a single casting, there being an extension  $a$  from said chamber lying under the tube, with the interior of which it communicates through a conduit  $b$ , known as a "stand-pipe," and placed  
45 in an inclined position within the vaporizing-tube. The float-chamber is provided with a bonnet or cap  $a'$ , having a flanged inlet-pipe  $a^2$ , and held to the main casting by screws, as shown. A conduit  $a^3$ , connected to any  
50 source of supply for liquid fuel, is normally held in connection with the pipe  $a^2$  by means

of a yoke-piece  $a^4$ , whose arms extend under the flanged portion of said parts  $a^2$ , it being possible to tighten said yoke in position so as to make a liquid-tight joint between the  
55 pipes  $a^2$  and  $a^3$  by means of a screw  $a^5$  of the well-known construction.

Within the casting forming the cover  $a'$  is a normally open valve, (not shown,) from which a stem  $a^6$  extends into the float-chamber. Projecting upwardly from the bottom  
60 of said chamber is a guide-stem  $a^7$ , on which operates a float  $a^8$ , so placed as to engage the stem  $a^6$  when raised to a predetermined height.

A valve  $b'$  is carried by a threaded spindle  
65  $b^2$  in such manner as to close the upper end of the stand-pipe  $b$  when the milled head  $b^3$  of said spindle has been properly turned, there being a pointer or indicator  $c$  fastened to the main casting of the carbureter, which may be  
70 made to show the amount of opening of said valve  $b'$ . Projecting downwardly from the top of the vaporizing-tube B and inclined toward the exit end of said tube is a deflector  
75 D, so placed as to cause a current of air flowing through the vaporizing-tube in the direction indicated by the arrow in Fig. 1 to be delivered upon or toward the bottom of said tube.

There is an opening extending between the  
80 interior of the vaporizing-tube and the extension  $a$  of the float-chamber, in which is placed a normally closed priming-valve  $e$ , carried upon a spindle E, extending through the vaporizing-tube and having a head  $e'$  extending above the same. Said valve is  
85 pressed to its seat by a spring  $e^2$ , which may be inspected or removed through the opening in the bottom of the extension  $a$  of the float-chamber by removing a screw-plug  $e^3$ .  
90 A blow-off or try-cock F is also placed in communication with the bottom or lowest portion of the vaporizing-tube B.

Under operating conditions it will be understood that the pipe  $a^3$  is connected to a  
95 source of supply for liquid fuel, while the end of the vaporizing-tube adjacent to the priming-valve  $e$  is connected to a source of supply for air and the opposite end of said tube is connected to the engine-cylinder. Since the  
100 valve attached to the stem  $a^6$  is normally open, liquid fuel will flow into the float-cham-



ber and pass into the extension *a* thereof and into the stand-pipe *b* until it rises to such a level as to cause the float *a*<sup>8</sup> to engage and raise the valve-stem *a*<sup>8</sup>, thereby closing the valve attached to said stem in the well-known manner. Since this valve forms no part of the present invention, it is not illustrated in detail. If a current of air is caused to flow through the vaporizing-tube and the valve *b*<sup>7</sup> is opened, the height of the liquid within the float-chamber is such as to cause it to overflow from the stand-pipe, from which it is also drawn by the suction of the current of air by which it is vaporized. By directing this current of air toward the bottom of the vaporizing-tube, where the liquid fuel naturally has a tendency to accumulate, I have found that the vaporization of said fuel is greatly facilitated, with the result that more satisfactory and efficient operation of the device is secured. Upon starting the engine it will of course be understood that the flow of liquid from the stand-pipe is relatively slow, and in order to quickly obtain in the vaporizing-tube a relatively large quantity of fuel I open the priming-valve *e* by depressing the head *e*<sup>7</sup>, thus permitting liquid to flow directly from the float-chamber into said vaporizing-tube. When for any reason it is desired to ascertain if there is a supply of fuel in the vaporizing-tube, this may be determined by opening the try-cock *F*.

I claim as my invention—

1. A carbureter including a substantially horizontal conduit connected to a source of air-supply and having means for the admission of liquid fuel, with a deflecting-partition in the conduit for directing the current of air toward the bottom of said conduit and causing it to take up liquid fuel therein, and a priming-valve in addition to said fuel-admission means, substantially as described.

2. A carbureter including a substantially horizontal conduit connected to a source of air-supply and having means for the admission of liquid fuel, a partition extending across the upper part of the conduit and inclined in the direction of flow of the air, for directing said flow toward the bottom of the conduit and causing it to take up liquid fuel therein, and a priming-valve in addition to said fuel-admission means placed to permit entrance of fuel to the conduit, substantially as described.

3. A carbureter including a substantially horizontal conduit connected to a source of air-supply, a tube connected to a source of supply for liquid fuel and projecting into said conduit, a partition extending across the upper portion of the conduit, said tube and said partition being both inclined in the direction of flow of the air, the partition serving to direct the air toward the bottom of the conduit

and causing it to take up liquid fuel therein, substantially as described.

4. The combination of a container for liquid fuel, with a conduit connected to a source of fuel-supply, a supply-pipe connecting said container and said conduit, a valve for controlling the flow of liquid to said pipe, with a normally closed priming-valve between the container and the conduit, and means for opening said valve at will, substantially as described.

5. The combination in a carbureter of a container for liquid fuel, a conduit connected to a source of air-supply having a valve-controlled passage between it and said container, a priming-valve operative in an opening connecting the container and the conduit, a spindle extending through the conduit and attached to said valve, whereby the valve may be moved; and a spring normally maintaining said valve in a closed position, substantially as described.

6. A carbureter consisting of a single casting having a substantially horizontal conduit for connection to a source of air-supply and a chamber extending adjacent to said conduit, a float, and means coacting therewith for controlling the quantity of liquid in said chamber, a pipe projecting into the conduit, said pipe being in connection with the float-chamber and provided with a valve whereby the flow of liquid into the conduit may be controlled, and a deflecting-partition extending across the upper portion of the conduit for directing the air-flow toward the bottom thereof, substantially as described.

7. A carbureter including a single casting having a conduit for connection to a source of air-supply and a chamber having within it a float, said chamber extending adjacent to the conduit and having an opening thereinto, a normally closed priming-valve for said opening and means whereby it may be operated at will, there being a supply-passage between the float-chamber and the conduit, and means for regulating the flow of liquid therefrom into the conduit, substantially as described.

8. A carbureter including a casting having a tubular portion and a relatively large chamber having an extension projecting under said tubular portion, there being two openings from said extension of the chamber into the tubular portion, a headed spindle extending through the tubular portion and having a valve operative in one of said openings, means for maintaining said valve in a normally closed position, and a threaded spindle projecting into the tubular portion and operative to control the flow of liquid from the second opening, substantially as described.

9. The combination of a structure having a chamber for a float and a conduit for connection to a source of air-supply, a main regulat-



ing-valve between the conduit and the chamber, a normally closed priming-valve also controlling an opening between the chamber and the conduit, a spring for holding said priming-valve closed and a removable plug for retaining said spring in position, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

COLEMAN B. HARRIS.

Witnesses:

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WILLIAM E. BRADLEY