

Sept. 8, 1925.

1,552,623

C. C. LITTLE

CARBURETOR

Filed April 18, 1921

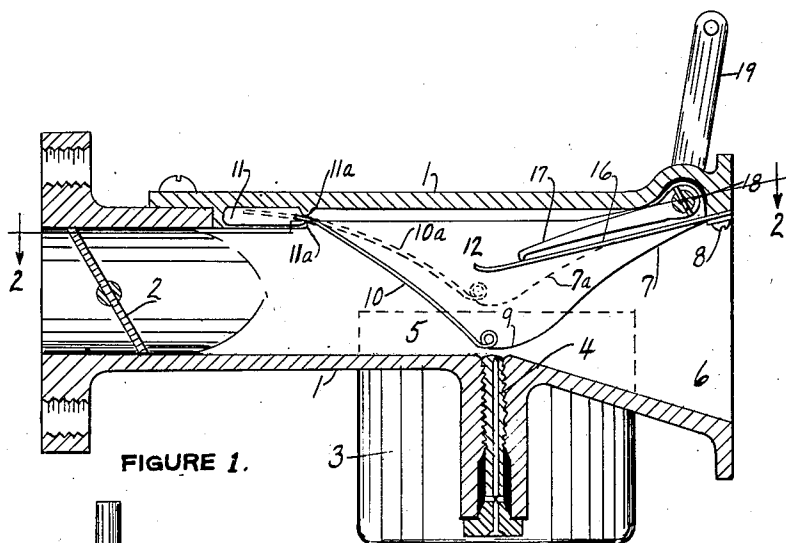


FIGURE 1.

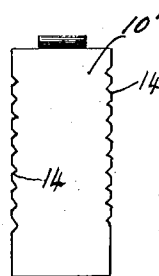


FIGURE 4.

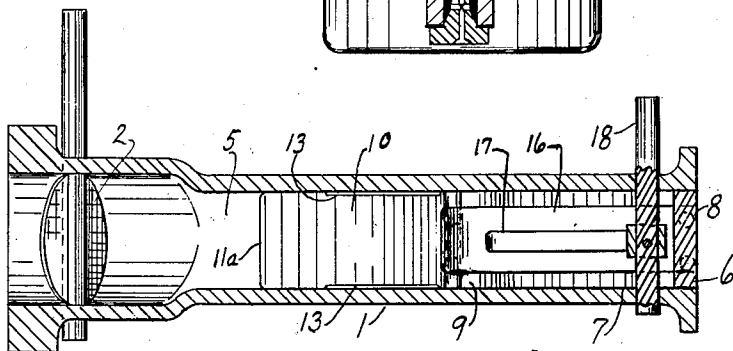


FIGURE 2.

FIGURE 5.

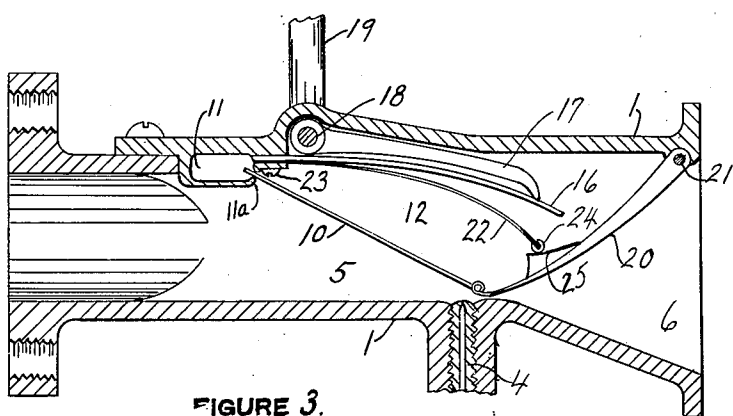
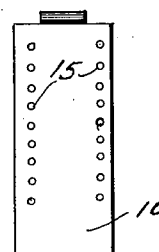


FIGURE 3.



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Patented Sept. 8, 1925.

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UNITED STATES PATENT OFFICE.

CHARLES C. LITTLE, OF SAN JOSE, CALIFORNIA.

CARBURETOR.

Application filed April 18, 1921. Serial No. 462,280.

To all whom it may concern:

Be it known that I, CHARLES C. LITTLE, a citizen of the United States, and resident of San Jose, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Carburetors, of which the following is a specification.

My invention relates particularly to the air valve mechanism of a carburetor and it has for its object to provide a carburetor of simple and economical construction in which the air passes through a single opening immediately over the fuel nozzle with a minimum amount of resistance to its passage. A further object is to provide efficient means for preventing fluttering of the air valve.

In the drawings:—

Figure 1 is a vertical sectional view through a carburetor embodying my invention.

Figure 2 is a horizontal sectional view on line 2—2 of Figure 1 with the float omitted.

Figure 3 is a vertical sectional view through another embodiment of my invention.

Figure 4 is a plan view of another embodiment of one member of the valve mechanism.

Figure 5 is still another embodiment of the member shown in Figure 4.

Referring more in detail to the drawing the numeral 1 indicates the casing, 2 the throttle, 3 the float chamber, and 4 the fuel nozzle of a carburetor leading into a carbureting chamber into which also leads an air intake 6, the two side walls of the carbureting chamber and air intake being arranged in parallel relation to each other as shown.

A flat resilient valve 7 is fixedly secured to casing 1 at the air intake end 6, as at 8, and extends inwardly and downwardly toward the nozzle 4, to direct inflowing air thereover, said valve fitting between the walls of the casing as closely as possible to permit its free motion. The inner or free end of valve 7 is curved upwardly, as at 9, and hinged thereto is a flat member 10 which also fits closely between the walls of casing 1 and has its opposite end slidably guided by walls 11^a, into a pocket 11 formed in casing 1 as shown. These two flat members 7 and 10, in conjunction with the casing 1, form an air cushion chamber 12 which has restricted communication through a groove 13, in each

side edge of member 10. The same result may be obtained in a number of different ways, such as the notches 14 in the edges of member 10^a, (Fig. 4), or a plurality of orifices 15 may be provided in the member as shown in Fig. 5.

Disposed within the chamber 12 and above the valve 7 is a resilient controlling member 16 which is attached to the casing at 8 and may be adjusted by means of an arm 17 pivotally mounted by a shaft 18 having an operating lever 19.

In operation, suction within the carburetor causes the resilient valve 7, and its connected member 10 to move upwardly to some such point, as for example, that indicated by the dotted lines 7^a and 10^a. The opening of the valve, under any given degree of suction, is controlled by the members 16, 17 and 19, the upward curve at the free or inner end of the valve being such that the greatest constriction of the passage will always be directly opposite or above the fuel nozzle at all valve positions. Member 10 forms an expanding passage with the wall 7, 10, somewhat like a venturi, guards the valve against injury in case of an explosion within the carburetor, and completes the boundaries of the chamber 12. The pocket 11 provides a sealed joint between the member 10 and the top wall of the chamber to prevent back pressure entering chamber 12 around the free end of said member 10. The openings 13 provide a considerable frictional resistance to the passage of air from and to chamber 12 and provides a most effectual means for preventing fluttering of the valve. If, for example, a sudden increase of suction were to occur in the carbureting chamber, the valve would be rapidly lifted, and would tend to fly beyond its normal position for that suction because of its inertia. The chamber 12 forms a cushion for such sudden movements of the valve.

In using my invention I am not confined to the use of a resilient valve. In Figure 3 I show an inflexible valve 20, pivotally mounted at 21, and provided with a curved surface 25 on its back. A spring 22, attached to the casing at 23, carries a roller 24 for contacting with the curved surface 25 whereby on operation of shaft 18 by lever 19 the arm 17 will press down onto spring 22 and accordingly adjust the valve 20. The free end of the latter is connected

to the closure 10 for chamber 12 as in the preferred embodiment.

As fluctuations in air pressure occur in chamber 5 the valve will yield to the extent determined by the setting of lever 19, and as the valve yields, the air within chamber 12 may find ready exit through the openings 13. Without these escape passages the action of the valve would be uncertain. It is to be noted, however, that these passages are so restricted as to permit the air within chamber 12 to cushion the valve upon sudden or quick movements thereof.

I claim—

15 1. In a carburetor, a carbureting chamber, a fuel nozzle leading thereinto, a resilient valve arranged within the chamber with its free end extending across the chamber to-

ward the nozzle, and a member hinged to the free end of the valve and defining therewith and with the adjacent walls of the chamber an air chamber providing a cushion for the valve and member, said air chamber having a vent.

2. In a carburetor, a carbureting chamber, 25 a fuel nozzle leading thereinto, a resilient valve arranged within the chamber with its free end extending across the chamber toward the nozzle and a member hinged to the free end of the valve and defining there- 30 with and with the adjacent walls of the chamber an air chamber providing a cushion for the valve and member, said member having a restricted opening establishing communication between the two chambers.

CHARLES C. LITTLE.