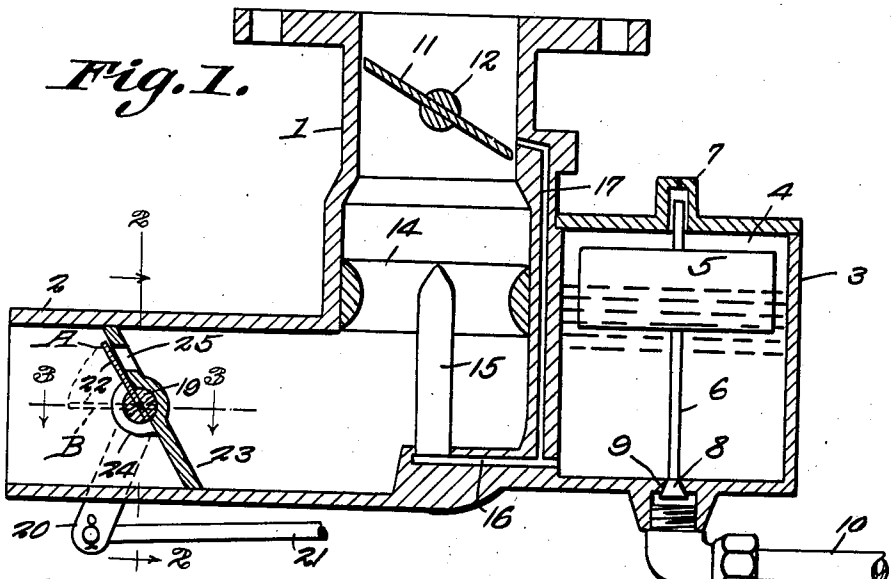
Nov. 9, 1943. A. D. AUSTIN 2,333,627

CARBURETOR VALVE

Filed Sept. 9, 1942

Fig. 1.



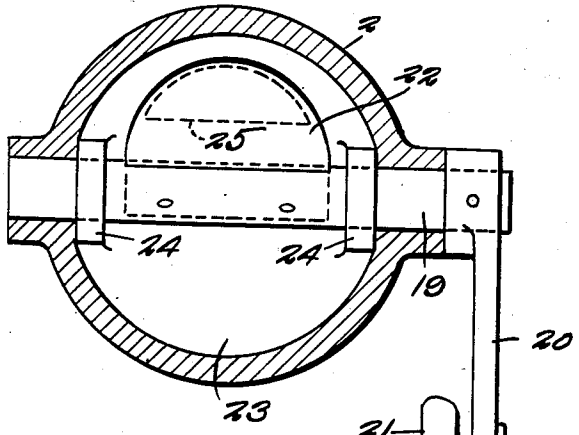


Fig. 2.

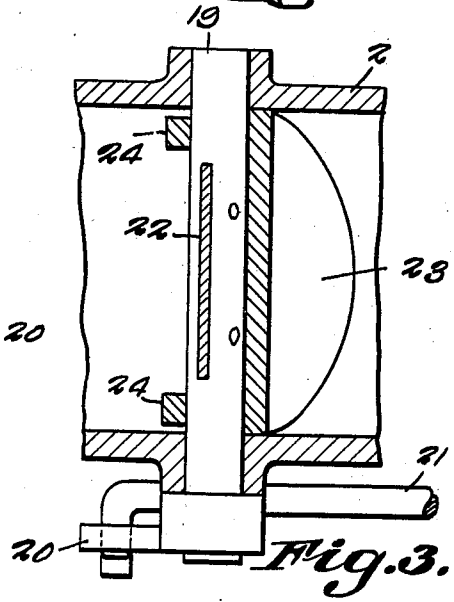


Fig. 3.

A. D. Austin

INVENTOR.

BY Cl Snow & Co.

Patented Nov. 9, 1943 2,333,627

UNITED STATES PATENT OFFICE

2,333,627

CARBURETOR VALVE

Albert D. Austin, Oakland, Calif.

Application September 9, 1942, Serial No. 457,751

1 Claim. (Cl. 261—64)

This invention aims to provide a novel valve structure and associated parts, whereby the relative proportions of air and fuel may be governed in a carburetor when it is desired to speed up an internal combustion engine from the idling position of the carburetor.

An automobile engine runs at many speeds, and under varying loads, and the degree of vacuum in the mixing chamber of the carburetor varies greatly. The combined influence of the vacuum and the air velocity, on the flow of fuel from a nozzle, is to increase the richness of the mixture, as the demands of the engine increase. In order to maintain a satisfactory mixture under all conditons, it is necessary to regulate the vacuum and the air, one or both, by automatically operating means preferably located in the air intake member of the curburetor, and the present application discloses such a structure.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawing:

Fig. 1 shows in vertical section, a device constructed in accordance with the invention;

Fig. 2 is a section on the line 2—2 of Fig. 1;

Fig. 3 is a section on the line 3—3 of Fig. 1.

In the drawing, there is shown a vertical, tubular carburetor body 1, provided at its lower end with a substantially horizontal, tubular inlet member 2. A well 3 is assembled with the body 1 and defines a float chamber 4 in which operates a float 5, carried by a stem 6, having its upper end received in a vented guide 7, the stem being provided at its lower end with a valve 8, adapted to cooperate with a seat 9 in the lower part of the well, the valve governing the flow of fuel to the well 3, from a conduit 10 connected to the lower part of the well.

A throttle valve 11 is disposed in the upper part of the carburetor body 1 and is actuated by a shaft 12, mounted to rock in the body. The body 1 is provided with a Venturi ring 14 disposed at the place where the inlet member 2 branches off from the body. A fuel nozzle 15 is mounted in the lower part of the body 1 and extends upwardly into the Venturi ring 14, fuel being supplied to the nozzle by way of a duct 16 in the bottom of the body, the duct having an idling branch 17, which opens into the body above the throttle valve 11, when the throttle valve is in the idling position of Fig. 1.

A horizontal shaft 19 is mounted to rock in the air inlet member 2 and has an arm 20, to which is pivoted an operating member 21. A wing 22 is secured to the shaft 19. A choke valve 23 is provided and has ears 24 whereby the choke valve, under conditions to be mentioned hereinafter can swing on the shaft 19. The wing 22 is adapted to close substantially, an opening 25 in the upper part of the choke valve 23. The choke valve 23 is elliptical in outline so that, when closed, it will occupy the inclined position shown in Fig. 1, in peripheral contact with the air inlet member 2. The wing 22 preferably is set at a slightly acute angle to the choke valve 23, so that air can enter and pass through the opening 25 in the choke valve, in order to permit the internal combustion engine on which the carburetor is mounted, to operate at idling speed.

In Figure 1, the carburetor is shown in idling position. By means of the operating member 21, the arm 20 and the shaft 19, the wing 22 is moved from position A to position B, for example. The valve 23 is closed, but a sufficient quantity of air can pass through the opening 25. When the valve 23 is in the closed position of Fig. 1, and as the throttle valve 11 is opened, there is an increased suction on the nozzle 15, and a richer mixture results. As the throttle valve 11 is opened, the valve 23 responds to suction, and continues to open until it comes into contact with the wing 22. If the wing 22 is in the horizontal position shown at B in Fig. 1, the choke valve 23 can assume a corresponding position, but by the time that the valve 23 comes into contact with the wing, the effectiveness of the valve as a choke terminates. Owing to the presence of the opening 25, the lower portion of the valve 23 is heavier than its upper portion and the valve, therefore, tends to close. The valve 23 is so weighted in its lower portion that if the wing 22 is in a horizontal position as shown at B, the valve will assume a horizontal position and cease to act as a choke, before the throttle valve 11 has been opened fully.

Having thus described the invention, what is claimed is:

A carburetor comprising a body having a substantially horizontal air inlet member, a throttle

valve in the upper portion of the body, a shaft journaled in the air inlet member, a choke valve mounted to swing on the shaft and located in the inlet member, the choke valve having an opening located above the shaft and causing the lower portion of the choke valve to be heavier than the upper portion thereof, whereby the lower portion will constitute a counterweight which causes the choke valve to assume a closed position, a wing fixed on the shaft, the wing being of such size and so located as to reduce the opening to idling dimensions, the choke valve engaging the wing, to space the wing slightly from the choke valve, and to form, with the opening, an idling passage when the choke valve is closed, means for rotating the shaft, to cause the wing to retire from the opening and set the choke valve free for movement responsive to suction, and a fuel discharge means located within the body, between the choke valve and the throttle valve.

ALBERT D. AUSTIN.