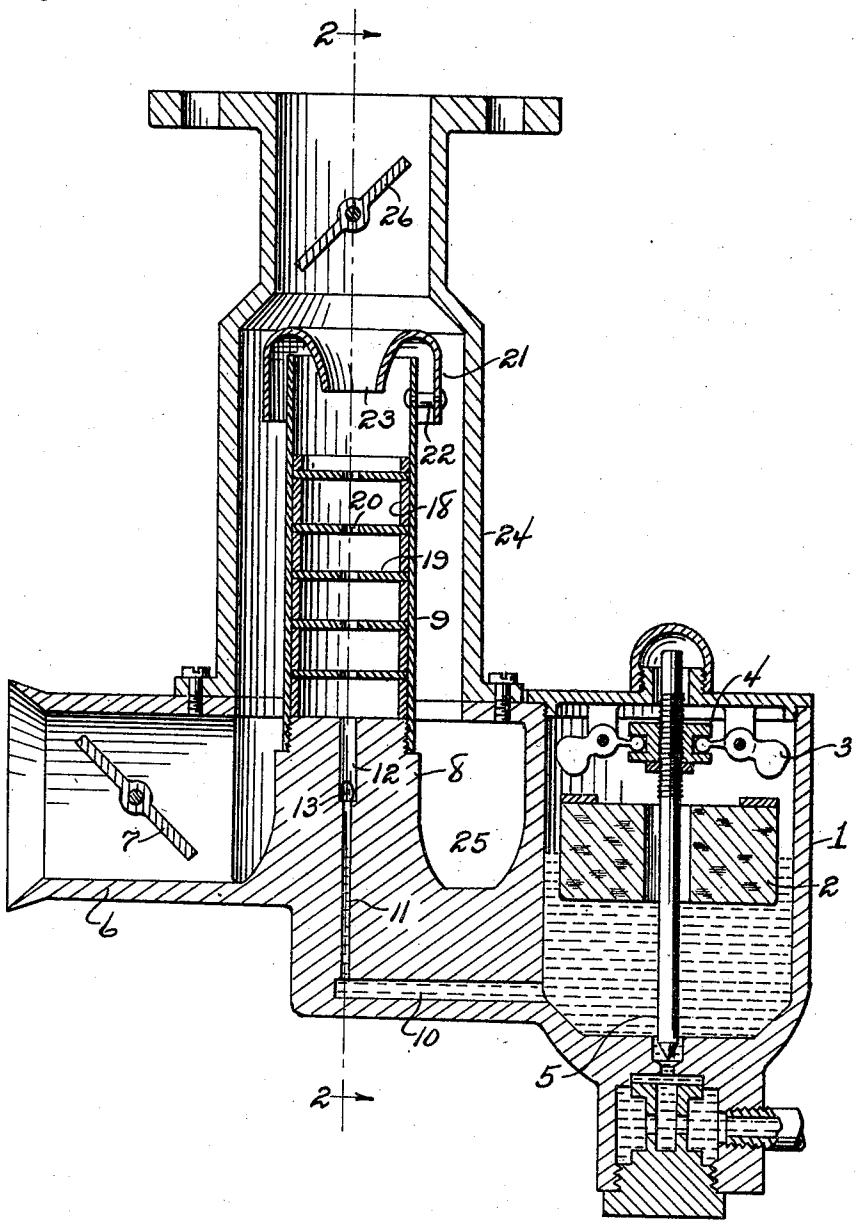
Nov. 3, 1931. H. E. BITTEL 1,830,588

CARBURETOR

Filed July 23, 1930 2 Sheets-Sheet 1

Fig. 1.



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CARBURETOR

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Fig. 2.

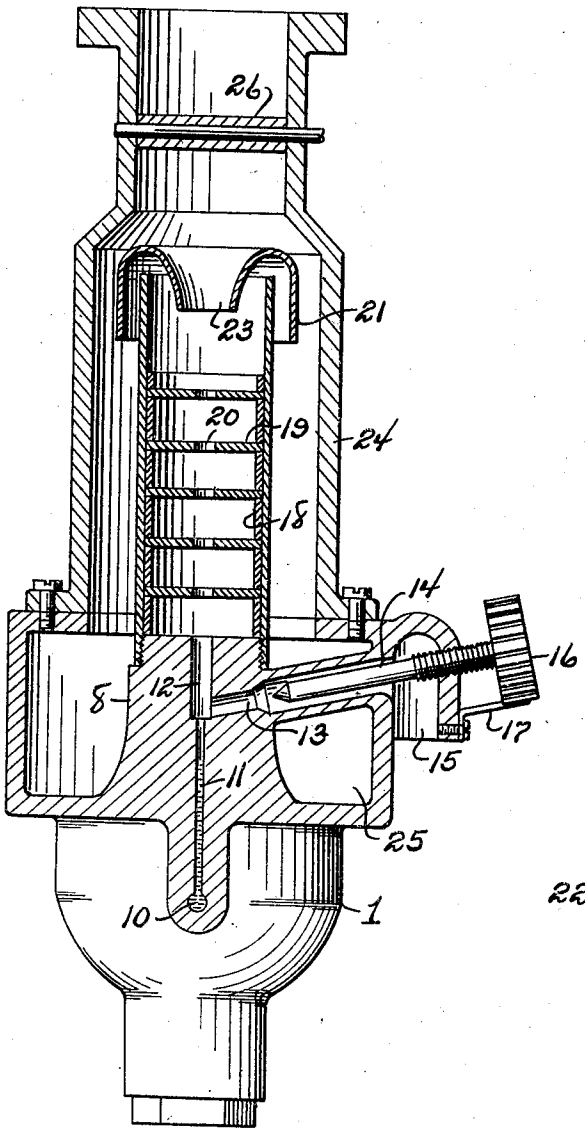


Fig. 3.

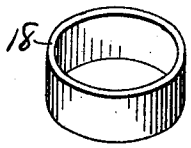
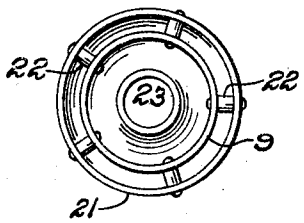


Fig. 4.



Fig. 5.



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UNITED STATES PATENT OFFICE

HAROLD EDWARD BITTEL, OF ROCHESTER, NEW YORK

CARBURETOR

Application filed July 23, 1930. Serial No. 470,084.

My present invention has reference to a carburetor adapted for use in connection with internal combustion engines and my object is to provide an improved form of carburetor which will serve for the production of a proper fuel mixture under all conditions of operation of the engine.

To the attainment of the foregoing the invention consists in the improvement hereinafter described and definitely claimed.

In the drawings:

Figure 1 is an approximately central longitudinal sectional view through a carburetor in accordance with this invention.

Figure 2 is a sectional view approximately on the line 2—2 of Figure 1.

Figure 3 is a perspective view of a ring member that comprises the body member of the mixing cells.

Figure 4 is a similar view of the disc that affords the top and bottom for the body member disclosed by Figure 3.

Figure 5 is a bottom plan view of the nozzle.

The float chamber of the improvement is indicated in the drawings by the numeral 1, the same having arranged therein the usual float 2 that is designed when raised by the gasoline to a determined point to contact with balance levers 3 for swinging a grooved collar 4 through which is screwed the needle valve 5 that controls the gas inlet to the chamber 1.

The chamber is formed on one end of a casting whose second end is provided with a tubular air inlet 6 controlled by an air intake gate or choke valve 7 in the usual manner. The casting is formed with an upstanding lug 8 that has its upper end reduced, rounded and threaded and the said end has screwed thereon the tubular body 9 of the nozzle of the improvement. Between the chamber 1 and the lug 8 there is a gasoline passage 10, the vertical branch of which is indicated for distinction by the numeral 11 and is restricted but is widened from the outer end of the lug 8 for a considerable distance and this passage 12 communicates with an angle passage 13 that has a flared portion to afford a seat for a gas and air regulating needle valve 14. The stem of the needle valve is screwed through an opening in the outer wall of a downwardly directed passage 15 which communicates with the atmosphere. The head 6 of the needle valve is kerfed or grooved and the said kerfs or grooves are engaged by a spring arm 17 that is fixed on the outer wall of the part 15.

In the tubular body of the nozzle 9 there are arranged any desired number of cells, each of the same size comprising a body portion in the nature of a ring member 18 and top and bottom members in the nature of discs 19. Each disc is centrally formed with a restricted aperture 20. The upper or outer end of the tube 9 has attached thereto a nozzle head. This nozzle head is of a particular and peculiar construction, the same comprising an annular member or ring body 21 secured to and spaced from the tube 9 by means 22. The outer end of the body is rounded and tapered inwardly, as at 23, and the said tapered portion is extended into the tube 9 above the upper mixing cell.

The nozzle is surrounded by the mixing chamber 24 which is fixed to the main casting by bolts or analogous means and which mixing chamber communicates with an opening 25 in the casting that surrounds the boss 8 and with which the air intake tubular member 6 communicates. The restricted outer end of the mixing chamber 24 has arranged therein the usual pivoted throttle valve 26 and the said outer end of the mixing chamber is provided with the usual flange whereby the same may be attached to the intake manifold of the engine.

The float 2, of course, controls the valve 5 which regulates the admission of gasoline into the chamber 1. A desired quantity of gas mixed with air flows through the passage 11, the air being admitted through the passages 15 and 16 and being regulated by the needle valve 14. The gaseous mixture enters each of the separate compartments or cells in the nozzle body so that the same is thoroughly mixed and atomized before passing through the restricted mouth 23 of the nozzle 9. A certain quantity of the mixture will flow between the mouth 23 and the body

21 of the head of the nozzle and this will be mixed with air that is let through the air intake or passage 6 and it will be noted that the fuel delivered to the several cylinders of the engine will be thoroughly mixed or atomized to insure a free and perfect running of the engine.

It is thought the construction and advantages of the improvement will be understood and appreciated by those skilled in the art to which such invention relates when the foregoing description has been carefully read in connection with the accompanying drawings but obviously I do not wish to be restricted to the precise details herein shown and described and, therefore, hold myself entitled to make such changes therefrom as fairly fall within the scope of what I claim.

Having described the invention, I claim:

1. In a carburetor, a nozzle fixed therein and extending into the mixing chamber thereof, a plurality of nested cells in the body of the nozzle, each having a central aperture in the top thereof, a shell providing a head having an inwardly flared mouth received in the outer end of the nozzle, and the body of the head surrounding the nozzle, means securing and spacing the head and mouth thereof from the nozzle and means for admitting and regulating a passage of gasoline and air through the nozzle.

2. A carburetor having a lug arranged in its air intake passage between the float chamber and the mixing chamber thereof, and said float having an angle passage therethrough provided with an angle branch that communicates with the float chamber, said carburetor being formed with an air inlet passage which communicates with the atmosphere and with the passage in the lug and a needle valve regulating said passage, a nozzle comprising a tubular body secured on the end of the lug and extending into the mixing chamber, superimposed rings in the nozzle, centrally apertured discs providing tops for the rings and said discs and rings affording mixing cells, a shell comprising a cylindrical top for the mixing chamber secured thereto and spaced therefrom and said shell having an inwardly flared mouth received in but spaced from the nozzle.

In testimony whereof I affix my signature.

HAROLD EDWARD BITTEL.