Sept. 29, 1964 J. KAPITULA 3,151,190

CARBURETOR

Filed Sept. 21, 1962

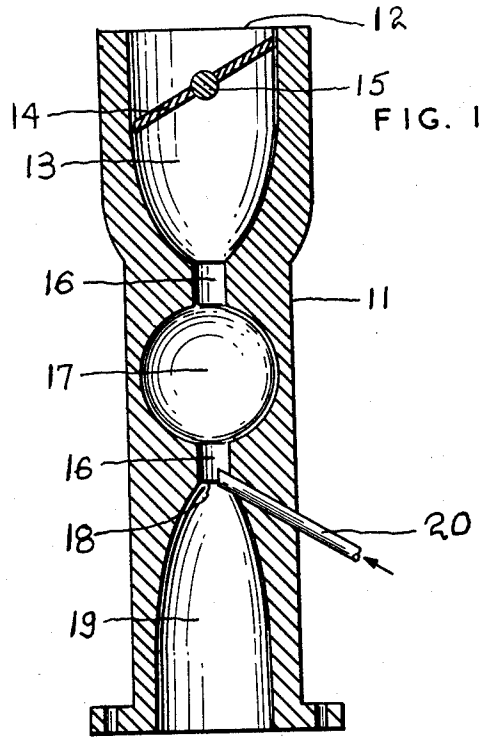


FIG. 1

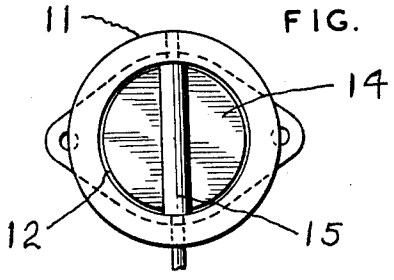


FIG. 2

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United States Patent Office 3,151,190 Patented Sept. 29, 1964

3,151,190

CARBURETOR

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Filed Sept. 21, 1962, Ser. No. 225,305
2 Claims. (Cl. 261—64)

My invention relates generally to carburetors and specifically to a carburetor provided with pressure chamber.

It is among the objects of my invention to provide a carburetor which will introduce a fluid fuel into an air stream.

It is a further object of my invention to provide a carburetor which will atomize fluid fuel in an air stream.

Yet another object of my invention is to provide a carburetor which will produce a highly uniform and homogeneous mixture of atomized fluid fuel in an air stream.

Yet another object of my invention is to provide a carburetor which will impart to an air stream a controlled pressure sufficient to produce a homogeneous mixture of air and atomized fuel.

Yet another object of my invention is to provide a carburetor which will impart to an air stream a degree of pressure without impairing the capacity and ability of the carburetor to introduce the fuel properly into a combustion chamber.

These objects and advantages as well as other objects and advantages may be achieved by the device shown by way of illustration in the drawings in which:

FIGURE 1 is a vertical sectional view of a carburetor; and

FIGURE 2 is a top plan view of that carburetor.

A carburetor may be defined as a device to form an explosive mixture from air and a fluid fuel medium which is usually volatile. Its recognized use is for supplying fuel to internal combustion engines and the like. The efficiency of the engine depends to a large degree upon the carburetor's performance of its normal functions in an efficient manner: To deliver, to a stream of air, a quantity of fuel; to change the fluid fuel into small particles or to atomize it; and to produce a mixture of fuel and air which is homogeneous. In the absence of proper introduction of fuel into the air stream, proper atomization of fuel, in the air stream and the achievement of the homogeneous mixture of fuel and air, the internal combustion engine cannot function with maximum efficiency.

The present invention relates to a carburetor which produces a high degree of atomization of fuel, and a homogeneous mixture of air and fuel. This is accomplished by production of a degree of controlled pressure of the air in advance of the point where the fuel is introduced into the venturi through the carburetor. Pressure is attained by elongating the throat of the carburetor and providing a generally spherical enlargement in the middle of the throat of the carburetor. In this manner, a high degree of controlled pressure of the air flowing through the carburetor is created at the very point where the air and fuel are mixed, resulting in a homogeneous mixture of air and fuel in the discharge chamber of the carburetor.

Referring now to the drawings in detail, my carburetor provides a generally tubular body **11**. An opening **12** in the body **11** introduces a generally bell-shaped chamber **12** defining a top or first chamber into which air passes. The rate of introduction of air into this chamber is regulated by the valve **14**, which is pivotally mounted on the shaft **15**. The chamber **13** is generally bell-shaped and symmetrical from top to bottom; it progressively decreases in horizontal cross-section toward the bottom. There, it joins with a throat **16** or venturi. The venturi is a generally and preferably tubular passage having a uniform cross-section from top to bottom. It is relatively long, and divided into two longitudinal parts by a large spherical central enlargement **17**. In the example of the invention shown, these two parts are equal in length, but they may be of different lengths.

The lower end **18** of the venturi is connected to a bottom or second chamber **19**. This chamber is generally symmetrical from top to bottom, and is bell-shaped, increasing in cross-sectional area toward the bottom of the body **11**. At the bottom **18** of the venturi **16**, a fuel supply tube **20** extending from outside of the body **11**, extends into the venturi **16**. This tube extends to the central axis of the venturi **16**, and its end conforms generally with the central axis of the venturi **16**. Fuel introduced through this tube **20** is atomized and a uniform mixture is produced.

Although only one enlargement **17** has been shown and described, it is to be understood that several similar enlargements may be formed in the throat **16**, with a corresponding improvement in performance.

The foregoing description is merely intended to illustrate an embodiment of the invention. The component parts have been shown and described. They each may have substitutes which may perform a substantially similar function; such substitutes may be known as proper substitutes for the said components and may have actually been known or invented before the present invention; these substitutes are contemplated as being within the scope of the appended claims, although they are not specifically catalogued herein.

What is claimed:

1. A carburetor comprising,
(*a*) a first bell-shaped chamber open at its top,
(*b*) a pivotally mounted valve in the first chamber adapted so as to control flow therethrough,
(*c*) an elongated, generally tubular venturi connected at the top to the bottom of the first chamber,
(*d*) a generally spherical central enlargement in the venturi,
(*e*) a second bell-shaped chamber connected at the top to the bottom of the venturi, the second said chamber being open at its bottom,
(*f*) a fuel intake tube extending from outside into the bottom of the venturi and terminating below the spherical enlargement therein at the central axis of the venturi immediately above the second bell-shaped chamber.

2. A carburetor comprising,
(*a*) a first bell-shaped chamber open at its top,
(*b*) a valve in the first chamber adapted so as to control flow therethrough,
(*c*) an elongated venturi connected at the top to the bottom of the first chamber,
(*d*) a generally spherical central enlargement in the venturi,
(*e*) a second bell-shaped chamber connected at the top to the bottom of the venturi, the second said chamber being open at its bottom,
(*f*) a fuel intake tube extending from outside into the bottom of the venturi terminating immediately above the second bell-shaped chamber.

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