W. PATTERSON & F. N. PERCIVAL.

CARBURETER.

APPLICATION FILED JULY 8, 1912.

1,076,309. Patented Oct. 21, 1913.

Fig. 1.

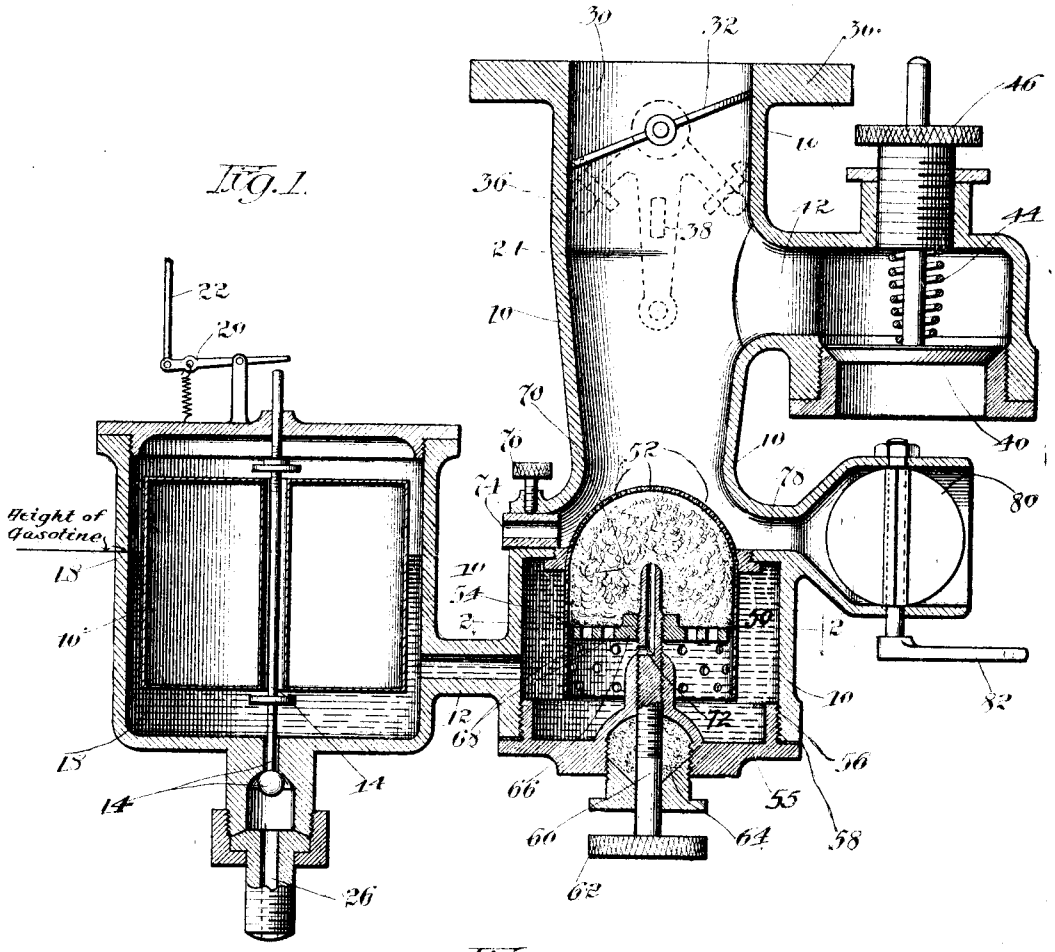
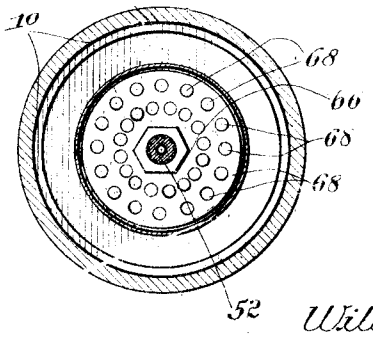


Fig. 2.



Witnesses:
Robert H. Weir
Arthur Carlson

Inventors.
William Patterson.
AND
Frank N. Percival
by Cheever & Cox
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM PATTERSON AND FRANK N. PERCIVAL, OF CHICAGO, ILLINOIS.

CARBURETER.

1,076,309. Specification of Letters Patent. Patented Oct. 21, 1913.

Application filed July 8, 1913. Serial No. 708,313.

To all whom it may concern:

Be it known that we, WILLIAM PATTERSON and FRANK N. PERCIVAL, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Carbureters, of which the following is a specification.

This invention relates to carbureters used upon gas engines, particularly for use upon automobiles, where very high efficiency is necessary.

The object of the invention is to provide such a carbureter which will more readily take up the gasolene which is to be mixed with the air than has heretofore been possible.

The invention consists in the features and combinations hereafter fully set forth and claimed.

Figure 1 is a vertical sectional view of a carbureter having the preferred form of this invention applied theretc. Fig. 2 is a sectional detail view on the line 2—2, Fig. 1.

The numeral 10 indicates the side walls of the body portion of a carbureter to which this invention is applied. This carbureter is, as usual, provided with a gasolene passageway 12 entering chamber 18 which is in turn controlled by a valve 14 operated by a float 16 movable up and down by liquid within the chamber 18 and manually movable by the lever 20 operated by the pull cord 22. Gasolene is fed to the chamber 18 through the plug 26 and thence through the passageway 12 into the carbureter proper. The chamber 10 is also provided with the discharge opening 30 controlled by the pivot valve 32 operated by any suitable mechanism. The movement of this valve 32 is limited by the arms 36 engaging the stop 38 in the ordinary manner. The body of the carbureter is also supplied with an auxiliary air valve 40 controlling the admission of air through the passageway 42 to the upper part of the carbureter in the ordinary manner. This valve 40 is controlled by the spring 44 regulated by the thumb screw 46.

In the center of the lower portion of the carbureter chamber proper is screw threaded a plate 50 carrying a perforated dome shaped member 52, which is the top of a perforated cylindrical member 54 extending downward to near the bottom of the carbureter, as shown. The lower end of the chamber 10 is closed by a bottom plate 55 screw threaded at 56 and protected by a washer 58. Through the center of this plate 55 is a screw threaded stem 60 operated by the handle or head 62 and protected with a packing 64. On the upper end of this screw threaded stem 60 is rigidly secured by any suitable means, such for instance as cement, a horizontal plate 66 provided with perforations 68. This plate 66 is of a size approximately, but slightly less, than the interior diameter of the cylindrical member 54. Rotating the shaft 60 moves this plate 66 up and down within the cylinder 54. Inside the cylinder 54 under the dome 52 and above the plate 66 is placed a sufficient quantity of cotton or other like porous material 70 sufficient to substantially fill the chamber formed between the parts just named. The upper end of the stem 60 is provided with a passageway 72 leading from below the plate 66 up into this mass of cotton 70.

On one side of the carbureter body 10 and adjacent to the dome 52 is an air intake bushing 74 held in position by a set screw 76. Bushings like this one 74 having different size openings through their center may be provided so as to, at will, vary the amount of air passing through the bushings into contact with the dome surface 52. On the opposite side of the carbureter body 10 is another air intake passageway 78 closable by a valve 80 under the control of lever 82.

In the operation of the device air is admitted through bushing 74 and passage 78 to the body of the carbureter, from which it passes through the open end 30; in so doing passing over and in close proximity to the dome 52. The rush of air through the carbureter body creates, in the ordinary manner, a slight vacuum within the body of the carbureter and immediately adjacent to the dome 52, the result being that gasolene contained in the large area of cotton immediately adjacent to the openings in the dome 52 is sucked by this passing air into and mixed with the passing air, with the result that the desired explosive mixture is formed. The various parts are so proportioned that no more liquid is drawn through the cotton than is needed. An over supply of gasolene within the dome 52 is avoided in two ways; first, the float 16 absolutely controls the admission of gasolene through the valve 14 so as to maintain the level of the gasolene in

and around the bottom of the perforated dome 52 at a given fixed height and whenever the engine stops taking gasolene from the carbureter the incoming gasolene entering the chamber 18 raises the float 16 and closes the valve 14 before there is any overflow through the perforated dome 52 into the carbureter proper. Furthermore, by turning the regulating handle 62 the cotton within the dome is compressed and rendered more dense, and, therefore, the gasolene passes through it to the perforations in the dome less easily than when a less pressure is used, thereby slowing down the flow of gasolene through the cotton, and consequently to the perforations of the dome. In actual practice these methods working together cause a perfect regulation and no overflow within the carbureter. During this operation gasolene is supplied through plug 26, chamber 18, passageway 12 into the lower portion of the body of the carbureter, whence it flows through the opening 68 and the openings in the cylindircal member 54 and through the passageway 72 into the cotton 70, which presents it to the openings in the dome shaped member 52 in the manner described. The pressure of the cotton 70 and consequently the number and size of the openings through it to the openings in the dome 52 is regulated by the pressure on the cotton produced by moving the shaft 60 in and out through the packing material 64.

The claims are:—

1. A carbureter having a carbureting chamber provided with an entrance port and an exhaust port for air passing through the mixing chamber, a perforated dome containing porous material located within the carbureting chamber where air passing through said ports passes in contact with the dome, means for adjustably compressing the porous material within the dome, means for supplying combustible material to the porous material within the dome in such a way that the combustible material is presented by the porous material to perforations in the dome adjacent to the air passing through the carbureting chamber, and a regulating valve controlling the admission of combustible material to the device adapted to maintain the level of combustible material at a selected point in the porous material as described.

2. A carbureter having a carbureting chamber, in one portion of which is located a perforated dome containing porous material, there being air inlets in the walls of the carbureting chamber immediately adjacent to said dome and an exhaust port so located that air entering the chamber passes directly from said dome and thence out of the chamber, means for adjustably compressing the porous material within the dome, means for supplying combustible material to the porous material within the dome in such a way that the combustible material is presented by the porous material to perforations in the dome adjacent to the above mentioned air passageways, and a regulating valve controlling the admission of combustible material to the device adapted to maintain the level of combustible material at a selected point in the porous material, as described.

In witness whereof we have hereunto subscribed our names in the presence of two witnesses.

WILLIAM PATTERSON.
FRANK N. PERCIVAL.

Witnesses:
JOSEPH F. ANDERSON,
L. F. KLEIN.