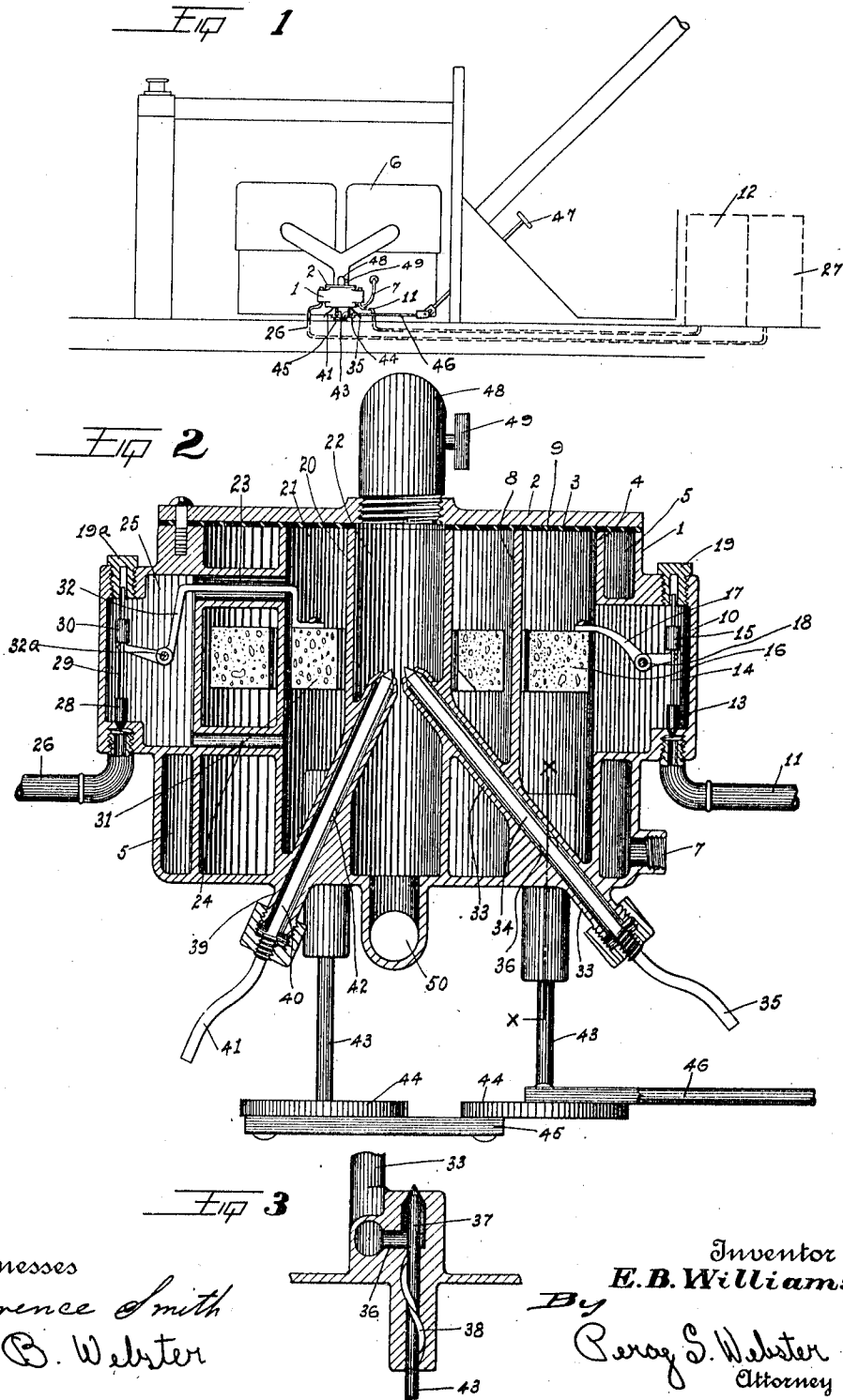


E. B. WILLIAMS.
CARBURETER.
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1,048,620.

Patented Dec. 31, 1912.



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CARBURETER.

1,048,620.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EUGENE B. WILLIAMS, a citizen of the United States, residing at Stockton, in the county of San Joaquin, State of California, have invented certain new and useful Improvements in Carbureters; and I do declare the following to be a clear, full, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in carbureters and is, particularly designed as a carbureter from which may be used either gasoline or distillate as a fuel or in which gas may be used for a time and then distillate. As is a well known fact an engine requires a more highly gasified gas when it is ready to start, but it will run equally as well with distillate after it becomes heated owing to the heat of the motor more highly gasifying the distillate.

My invention embodies a means for using both gasoline and distillate in a carbureter, consisting of a system of valves on the carbureter, whereby when the carbureter is opened it will permit the intaking of gasoline into the motor but after the valve mechanism is opened farther it will feed distillate to the motor.

A further object of the invention is to produce a simple and inexpensive device and one which will be exceedingly effective for the purposes for which it is designed.

These objects, I accomplish by means of such structure and relative arrangement of the parts as will fully appear by a perusal of the following specification and claims.

On the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is an outline view of the motor showing my improved structure thereon. Fig. 2 is a vertical section of the carbureter. Fig. 3 is a sectional view taken on a line X-X of Fig. 2.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 designates the outer casing of the carbureter provided with a removable cap 2, there being a suitable packing 3 disposed

between said cap 2 and said casing 1 to make a tight joint.

Spaced from the casing 1 is an inner wall 4 forming an intermediate chamber 5 adapted to be connected with the water jacket of the motor 6 by means of a pipe 7. Spaced from the wall 4 is another wall 8 forming a chamber 9 connected with a box 10 opening through the members 1 and 4 and having a supply pipe 11 leading from a distillate tank 12. In said box 10 is a valve 13 adapted to open and close communication between the box 10 and the pipe 11, which valve 13 has a stem 14 slidably mounted in the box 10 and provided with a collar 15.

Disposed within the chamber 9 is a float 16, secured to which is a lever 17 fulcrumed at 18 and adapted to project under the collar 15 to lift the valve 13 whenever the level of the distillate in the chamber 9 is lowered beyond a certain point which then permits the distillate to flow through the pipe 11, valve 13, box 10 and into the chamber 9 until the level of the distillate in said chamber 9 is sufficient to raise the float 16 to such a point as to relieve the lever 17 from contact with the collar 15 which then permits the valve 13 to close shutting off the supply automatically.

The numeral 20 designates another wall spaced from the wall 8 and forming an intermediate chamber 21 and also such wall 20 forms a central chamber 22. Communicating with the chamber 21 are two passageways 23 and 24 connecting said chamber 21 with a box 25 similar to the box 10. Communicating with the box 25 is a gasoline supply pipe 26 leading from a gasoline supply tank 27. Disposed within the box 10 and communicating with the pipe 26 is a valve 28 adapted to open and close communication from the pipe 26 to the box 25. Mounted on the valve 28 is a slidable stem 29 provided with a collar 30.

Disposed within the chamber 20 is a float 31 connected with which is a lever 32 projecting through the passageway 23 and fulcrumed in the box 25 as at 32^a and projecting thence under the collar 30. When the level of the gasoline in the chamber 20 is below a certain predetermined point, then the weight of the float acts on the lever 32 to lift the collar 30 and open the valve 38 permitting an inflow of gasoline through

the box 25, passageway 24 and into the chamber 20 until the desired level is attained, then the lever 32 will leave the collar 30 and permit the valve 28 to close
 5 Projecting into the chamber 22 is a sleeve 33 provided with a needle valve 34 having an adjustment arm 35. A port 36 leads from the chamber 9 into said sleeve 33 and is provided with a needle valve 37 having
 10 a threaded guide 38 to determine the open position of such valve. Projecting also into the chamber 22 is a sleeve 39 provided with a needle valve 40 having an adjustment arm 41. A passageway 42 communicates from
 15 the chamber 20 into the sleeve 39 and is provided with a valve similar to the valve 37—38. The valves 37 and the valve in the passage-way 42 are each provided with downwardly projecting stems 43 provided
 20 with disks 44 on their lower ends, such disks being connected by means of a link 45 and one of said disks having an operating lever 46 capable of being operated by a foot member 47. By operating the lever 46 the same
 25 is so connected as to open up the passageway 42 leading from the gasoline chamber 20 into the carbureting chamber 22 and then after the motor has run awhile, the same can be turned farther which will close the
 30 passageway 42 and open the passageway 36 which admits the distillate into the chamber 22.

The numeral 48 designates the usual outlet and the numeral 49 designates the throttle and the numeral 50 designates the air inlet into the carbureting chamber 22.

Thus it will be seen that the motor can be started with gasoline and as it heats up then distillate can be used, while the hot
 40 water which passes from the water jacket of the engine through the jacket 5 heats the distillate in the member 9 which also aids in its perfect combustion.

The adjustment members 35 and 41 of
 45 course are used to adjust the needle valves 34 and 40 so that the proper gravity of fuel will flow into the mixing chamber 42.

In the top of the boxes 10 and 29 are removable plugs 19 and 19^a respectively to
 50 provide for the insertions of the valves 13 and 28 respectively and their corresponding parts.

From the foregoing description it will be

readily seen that I have produced such a device as substantially fulfils the objects of 55 the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do 60 not form a departure from the spirit of the invention.

Having thus described my invention what I claim as new and useful and desire to secure by Letters Patent is:— 65

1. A device of the character described comprising an outer wall and an inner wall, such inner wall forming a central chamber, a wall disposed between said outer wall and said inner wall forming two independent 70 chambers, a float in each chamber, independent supply means communicating from each of said independent chambers with said central chamber, an outlet from said central chamber and an air inlet into said central 75 chamber, as described.

2. A device of the character described comprising an outer casing, two independent chambers within said casing, a float in each chamber, a valve adapted to open in 80 each of said chambers, a lever secured to said float and adapted to open such valves, a carbureting chamber, and means communicating from each of said independent chambers to said carbureting chamber, as 85 described.

3. A device of the character described comprising the combination of a casing, two independent chambers within said casing, means for admitting an independent fluid 90 to each of said chambers, a carbureting chamber, means for admitting said fluid from said independent chambers to said carbureting chamber, such means including a means for opening communication from one 95 of said independent chambers to said mixing chamber and closing communication from the other of said independent chambers to said mixing chamber simultaneously therewith, as described. 100

In testimony whereof I affix my signature in presence of two witnesses.

EUGENE B. WILLIAMS.

Witnesses:

JOSHUA B. WEBSTER,
 CLARENCE SMITH.