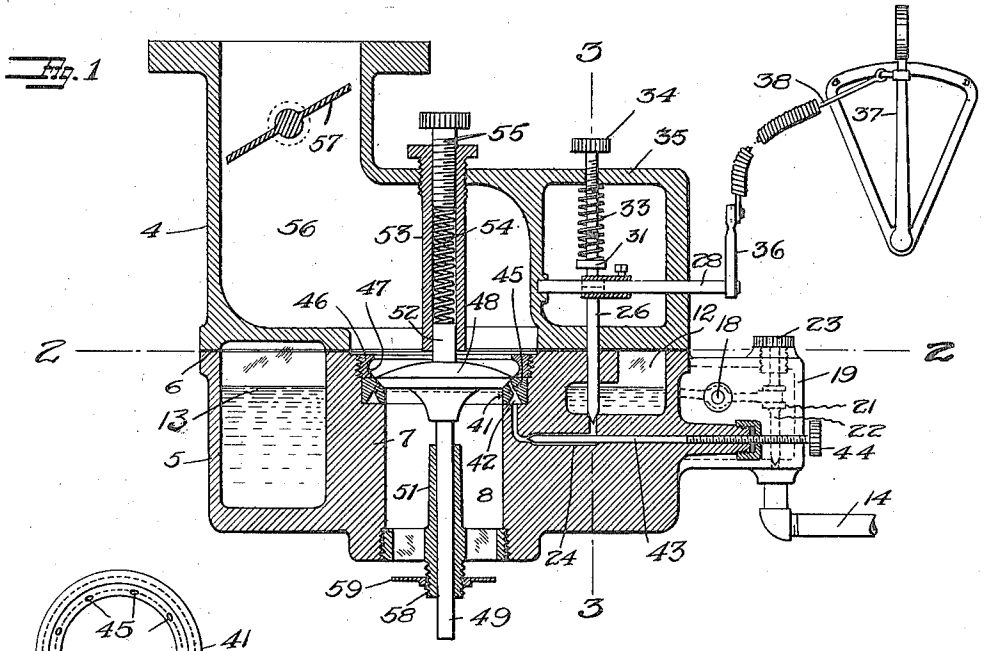
G. A. KROHN.

VALVE CONTROLLING MECHANISM FOR CARBURETERS.

APPLICATION FILED JUNE 8, 1916.

1,257,494. Patented Feb. 26, 1918.

Fig. 1



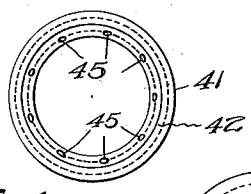
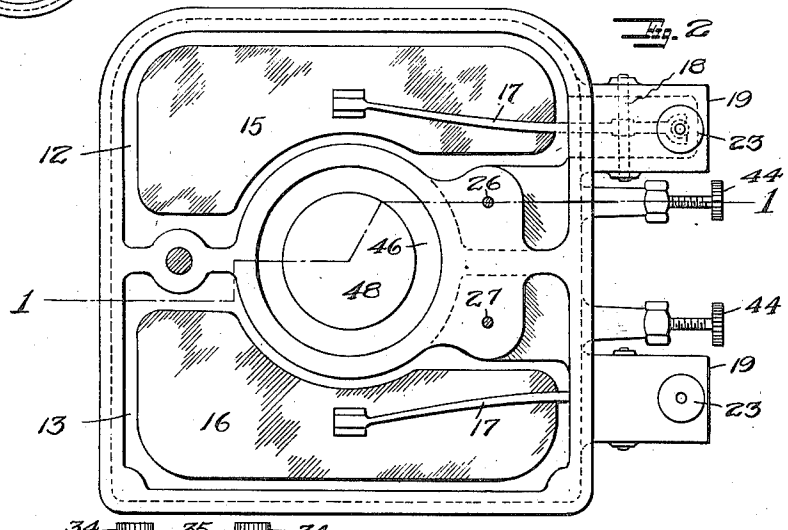


Fig. 4

Fig. 2



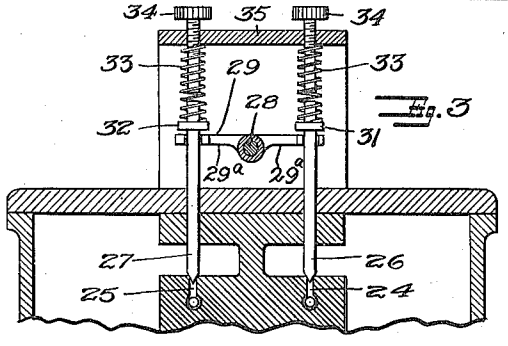


Fig. 3

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VALVE-CONTROLLING MECHANISM FOR CARBURETERS.

1,257,494. Specification of Letters Patent. Patented Feb. 26, 1918.

Application filed June 8, 1916. Serial No. 102,446.

To all whom it may concern:

Be it known that I, GUSTAVE A. KROHN, a citizen of the United States, and a resident of Coarsegold, Madera county, State of California, have invented a new and useful Valve-Controlling Mechanism for Carbureters, of which the following is a specification.

This invention relates to carbureters for internal combustion engines, and particularly to the valve controlling mechanism thereof.

One object of the invention is to provide a carbureter having two fuel chambers, valves for controlling the flow of fuel from the chambers to the carbureting chamber, and novel means for operating and controlling the valves.

A further object is to provide means whereby the degree of opening of the valves may be adjustably controlled, and to provide very simple valve mechanism adapted to establish communication between one of the fuel chambers and the carbureting chamber, and disestablish communication from the other fuel chamber to the carbureting chamber, this valve controlling mechanism being of such character that it may in turn be controlled by a device mounted upon the steering wheel of the machine upon which the carbureter is attached.

In said drawings—

Figure 1 is a vertical section of the carbureter taken on the line 1—1, Fig. 2.

Fig. 2 is a plan view of the lower half of the carbureter taken on the line 2—2, Fig. 1.

Fig. 3 is a vertical section of a portion of the carbureter taken on the line 3—3, Fig. 1.

Fig. 4 is a plan view of the fuel distributing ring.

For the purpose of convenience in manufacture, the carbureter of my invention is formed of two sections or castings 4—5, which are securely fastened together, the joint being sealed by a suitable gasket 6. The lower casting 5 is formed with a circular wall 7 which forms an air inlet passage 8. Formed within the lower casting are two separate fuel chambers 12—13, each provided with a separate fuel inlet 14, and each provided with a float 15—16, for controlling the flow of fuel into the chambers. Connected to each float is a lever 17 which is fulcrumed on the pin 18 in the fuel inlet chamber 19 and which is forked at its outer end to engage a grooved collar 21 on the fuel inlet control needle 22. The needle 22 is guided at its upper end in the screw plug 23.

The float chambers 12 and 13 are provided with fuel outlet passages 24 and 25 which are controlled respectively by the needles 26 and 27, and means are provided for moving the needles. Mounted on a rotatable shaft 28, arranged between the needles, is a double rocker lever 29 having oppositely projecting arms 29ª formed with forked ends which engage under collars constituting abutments 31—32 secured to the needles, the collars or abutments being so placed that when the lever is in neutral position, both needles 26 and 27 are seated on the discharge openings. As the lever is rocked in one direction from the neutral position one needle is raised and when rocked in the other direction the other needle is raised, so that the flow of fuel to the carbureting chamber may be cut off entirely or either one fuel or the other may be allowed to flow. The needles 26—27 are normally pressed to their seats by springs 33 and the stroke of the needle is adjusted by the screw 34 arranged in the plate 35 above the needle. The shaft 28 may be rocked in any suitable manner to control the fuel supply and in the drawing I have shown one means of control. Secured to the shaft is an arm 36, which is connected to a lever 37 arranged conveniently for the operator, by any suitable means such as the Bowden wire 38. Movement of the lever 37 to one end of its throw causes the carbureter to draw gasolene, movement to the other end causes it to draw distillate or kerosene and movement to the center causes both fuel supplies to be cut off. This feature is advantageous in automobile use, since it allows the driver to shut off the supply of fuel to the carbureting chamber when the engine is used as a brake in descending grades.

The chamber defined by the circular wall 7 has at its upper end a valve seat formed by a distributing ring 41, having perforations 45 to which the duct 24 operatively connects. The valve 48 governs passage through these perforations 45, the valve being urged downward to its seat by a spring 54. The valve stem of the valve 48 is mounted in a guide 51, which carries an air inlet controlling plate 59. The throttle valve 57

controls the outflow of the gaseous mixture from the carbureting chamber 56. The pressure of the spring 54 is controlled by the screw 55. Any other arrangement of the carbureting chamber may be substituted for the one illustrated, as this arrangement of the carbureting chamber and its controlling valve forms no part of my present invention.

I claim:

1. A carbureter having two fuel chambers disposed side by side, but separated by an intervening wall, an operating shaft disposed exteriorly to the fuel chambers, said fuel chambers each having a vertically disposed passage and an outlet opening below and alined with said passage, needle valves seating in the outlet openings and extending upward through said passages, and a lever having oppositely projecting arms mounted upon said shaft, the ends of the arms being each formed with a passage for the respective needle valves, the needle valves each having an abutment disposed above the corresponding arm on the lever and adapted to be engaged thereby to operate the respective valve, and a spring urging each needle valve downward against its seat and detachably engaged each with the corresponding needle valve.

2. In a carbureter, two fuel chambers disposed side by side and separted by an interveing partition, each of said fuel chambers being formed in its upper wall with a vertically extending passage and in its lower wall with an alining outlet port, valve stems extending upward through said passages and coacting with said ports, each stem being provided with an abutment, a member arching over said transverse wall, a shaft detachably supported in said member and extending between the two valve stems, a lever having oppositely projecting arms adjustably mounted upon said shaft and coacting with said abutments, said lever when operated acting to lift one or the other of said valves, springs urging said valves downward, and stops adjustably mounted in the said member above the valve stems and adjustably limiting the upward movement of the valve stems.

3. In a carbureter, a base section having two adjacent fuel chambers separated by a partition, the upper wall of each fuel chamber having a passage and the lower wall being formed with an outlet port alining with the passage, an upper section disposed upon the base section and detachable therefrom and having passages alining with the passages in the upper wall of the base section, said upper section including a web arching over said passages, valve stems extending through the passages of the upper and lower sections and coacting with the outlet ports, said valve stems being provided with abutments, springs urging the valve stems downward and into closed position, vertically adjustable stops extending through said arched portion of the upper section and above said section and limiting the upward movement of said stems, a shaft extending through said arched portion between the stems, and a lever mounted upon the shaft and having oppositely projecting arms adapted to engage said abutments to operate said valves, each of said arms being provided with a passage for the respective valve stem, whereby when the lever is rocked, one of said valve stems will be raised, said lever when in an intermediate position permitting both valves to remain closed.

4. In a carbureter, two fuel chambers disposed side by side but separated by an intervening wall, a member arching over the intervening wall, an operating shaft extending through said member, said fuel chambers each having a vertically disposed passage and an outlet opening disposed below and in alinement with the passage, each of said fuel chambers being provided with a passage intersecting the outlet, needle valves in the last named passages and adjustable to control the outlet of fuel through said passages, needle valves seating in the outlet openings and extending upward through the first named passages, a lever mounted upon said shaft and operatively engaging said needle valves to cause the opening of one or the other of the needle valves as the lever is rocked in one or the other direction, and springs urging the last named needle valves to a closed position.

In testimony whereof, I have hereunto set my hand at San Francisco, California, this 26th day of May, 1916.

GUSTAVE A. KROHN.

In presence of—

H. G. PROST.