

981,853.

This diagram illustrates a complex mechanical assembly, possibly a pump or a valve mechanism, shown in a cross-sectional view. The central component is a vertical shaft or piston rod, labeled *H* at the top, which passes through a series of seals and guides. A spring, labeled *F3*, is coiled around the shaft. The shaft is connected to a lever or arm, labeled *H'*, which is pivoted at the top. The assembly is housed within a complex frame or casing, with various components labeled with letters and numbers. The casing includes a central chamber, labeled *B1*, and a side chamber, labeled *B2*. The central chamber contains a piston or plunger, labeled *D1*, which is connected to the shaft. The side chamber contains a piston or plunger, labeled *D2*, which is connected to the shaft. The assembly is equipped with various valves and ports, labeled *A*, *A'*, *B*, *B'*, *C*, *D*, *D'*, *E*, *F*, *G*, *H*, and *H'*. The diagram shows the internal components and their relative positions, providing a detailed view of the mechanical structure.

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UNITED STATES PATENT OFFICE.

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CARBURETER.

981,853.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LEWIS P. HALLADAY, a citizen 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.

My invention relates to improvements in carbureters, and is illustrated in the accompanying drawing wherein the device is shown in section.

The feed pipe A communicates by means of a valve A¹ which is controlled by the bell crank A² and float A³ with a fuel chamber B, which chamber surrounds the carbureter B, being held rigidly in engagement with it at B¹ and B² by the nut B³. The fixed air intakes B¹ communicate with the passage B³ and mixing chamber B⁴ which in turn communicates with the engine by a passage controlled by the butterfly valve B⁵. The passage C which may be closed by the needle valve D leads to the cylinder D². The passage D³ leads through the wall of the cylinder D² into the cup D¹. The auxiliary air intake E² is controlled by the valve E which is held upon its seat by the spring E¹ and rides upon the rod E³ which is screw threaded in the hub E⁴ to adjust the tension of the spring E¹. The rod F is pivotally mounted upon the valve E and has screw threaded upon it the sleeve F¹ which is in engagement with one end of the bell crank F². The other end of the bell crank is in engagement with the rod F³ which supports at one end the needle valve D, is surrounded by the spring F⁴ which is in engagement at one end with the top of the cup D² and at the other with the collar F⁵ rigidly mounted upon the rod. The sleeve F¹ which is slidably mounted in the wall of the carbureter, may be rotated by means of the thumb piece G to vary its position with relation to the valve E, thus varying the tension upon the spring F⁴. The bell crank G² is pivotally mounted upon the wall of the carbureter, the arm G³ being held in engagement with the corrugations G⁴ on the piece G by the tension of the spring G⁵, the lever H and connecting rod H¹ being adapted to control the butterfly valve B⁵.

I have shown in the drawing an operative device but it will be evident that the arrangement shown could be greatly changed without departing from the spirit of my invention. I wish, therefore, that my drawing be considered as diagrammatic.

The use and operation of my invention are as follows:—The fuel is fed to the oil chamber and its level therein controlled in the usual manner. Air is drawn in through the usual air opening past any suitable injecting device and a combustible gas is thereby formed. This gas as thus formed under ordinary circumstances passes through the carbureter into the engine. Under certain circumstances the supply of gas thus normally generated becomes insufficient, whereupon the suction from the engine increases and the auxiliary air intake is opened. This, while producing more gas, produces at the same time a weaker mixture. To provide against this weakness of the mixture the fuel valve is arranged to operate automatically responsive to said auxiliary air valve. Thus when the auxiliary air valve is opened an increase of supply of fuel is supplied to furnish a rich mixture. The mixture, of course, can be manually adjusted by any desirable means and when once so adjusted will always remain constant owing to said relation between the auxiliary intake and the fuel valve.

I claim:—

A carbureter comprising a mixing chamber, an air passage thereto, a fuel feed located within said air passage, a port in the wall of said carbureting chamber, an auxiliary air valve controlling said port, adjustable means for controlling the opening of said auxiliary valve and elastic means operating to force the fuel valve in an open position, a turn buckle connection from the auxiliary valve a bell crank lever in connection with said turnbuckle which in turn engages the fuel valve and resists the opening tendency.

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Witnesses:

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