H. B. WYMAN.

CARBURETER.

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1,093,901.

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Fig. 1.

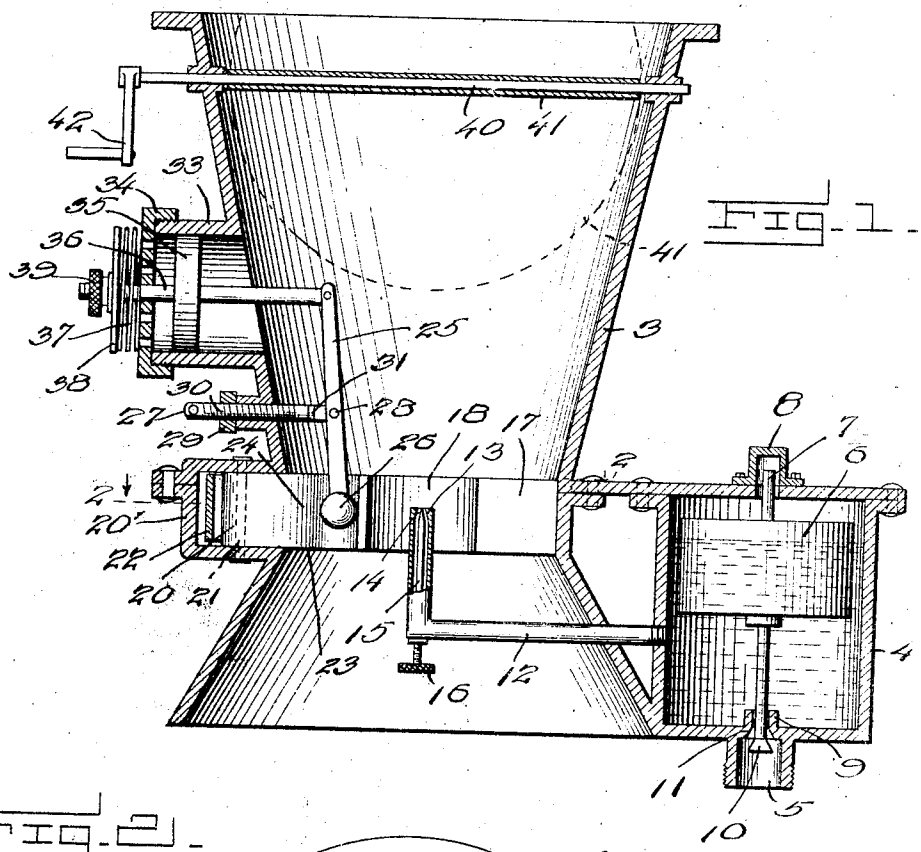
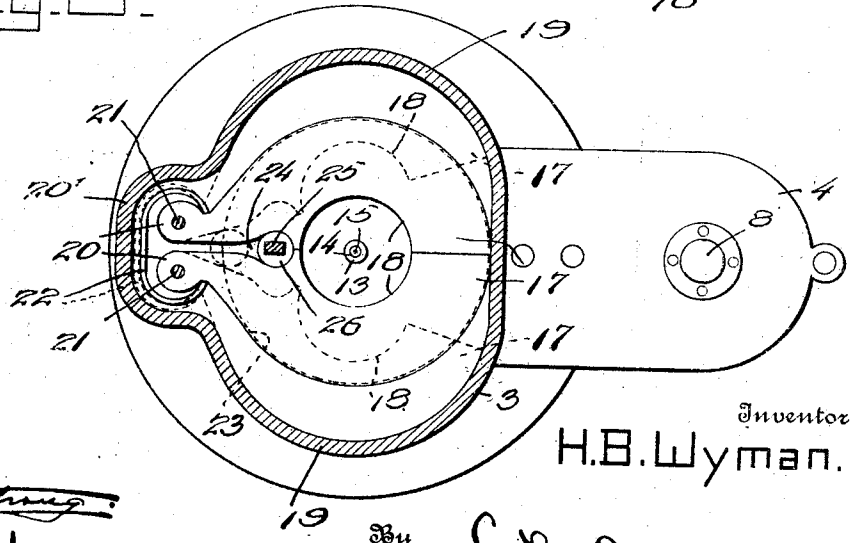


Fig. 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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CARBURETER.

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To all whom it may concern:

Be it known that I, HORACE B. WYMAN, a citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

My invention relates to new and useful improvements in carbureters.

An important object of this invention is to provide a device of the above mentioned character, which is simple in construction, automatic in operation, durable, and readily adjustable so that the same may be used in connection with different engines, or upon the same engine operating under different conditions.

Other objects and advantages of this invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same, Figure 1 is a central vertical sectional view through the complete carbureter, and, Fig. 2 is a horizontal sectional view taken on line 2—2 of Fig. 1 and looking downwardly as indicated by the arrow.

In the drawings, wherein for the purpose of illustration, I have shown a preferred embodiment of my invention, the numeral 3 designates a main shell or casing of the carbureter, which is preferably formed in upper and lower tapered or conical portions, the upper conical portion increasing in diameter upwardly and the lower conical portion increasing in diameter downwardly, thus providing an approximately central reduced or contracted portion. The main shell or casing is preferably made in this shape, although such construction is not essential and it is to be understood that the invention is not solely restricted to such shape or construction.

Disposed near the lower end of the main shell or casing 3 and to one side of the same, is a vertical fuel holding tank or receptacle 4, having preferably both ends thereof closed, as shown. This tank 4 may be preferably cast integral with the main shell or casing or rigidly connected therewith by suitable means. The fluid fuel, such as gasolene or the like, is supplied into the lower end of the fuel holding tank 4 through a nipple or coupling 5, to be suitably connected with a fuel supply pipe (not shown).

Disposed within the fuel holding tank 4 is a vertically movable float 6, carried by a rod 7. The upper end of the rod 7 operates within a housing 8, while the lower end thereof operates through an apertured boss 9, as shown. The diameter of the opening in the boss 9 is much larger than the diameter of the rod 7, whereby the gasolene or the like can freely pass through such opening and about the rod 7. The rod 7 carries at its lower end a valve 10, which is seated upon upward movement thereof against a valve seat 11. It is thus seen that when a certain amount of gasolene or other fluid fuel is fed into the tank 4, the float 6 will be elevated which causes the valve 10 to be seated and cut off the further supply of the fuel.

Leading into the inner side of the tank 4 is a discharge pipe 12, carrying at its free end an upstanding fuel nozzle or discharge device 13. This nozzle 13 is preferably arranged centrally within the lower tapered or conical portion of the main shell or casing 3, with the upper end thereof disposed above the highest possible level of the gasolene or fuel in the tank 4, as shown. The nozzle 13 is preferably provided at the upper end thereof with a conical discharge opening 14, which is adapted to be partially or completely closed by the upper end of a needle valve 15, carrying a wheel or nut 16 at the lower end thereof. At this point it may be well to mention the fact that by having the lower portion of the main shell or casing tapered or conical and increasing in diameter downwardly, the stream of air being drawn into the main shell or casing, will accordingly be deflected inwardly to pass near to or about the nozzle 13.

Mounted within the contracted portion of the main shell or casing 3 is a valve structure, preferably in the form of a plurality of swinging valves 17, provided centrally thereof with an opening or openings 18, which receive the nozzle 13 centrally within the same, as shown. The opening 18 provides a permanent passage for the minimum amount of air. The shell or casing 3 is provided with a plurality of laterally extending horizontal pockets or chambers 19 and 20, as shown. The valves 17 have their reduced ends 20, extending into the pocket

20', and are pivotally mounted upon fixed pins or bolts 21, as shown. A suitably stiff C-shaped spring 22, engages these ends 20 and serves to force the valves inwardly toward each other. When the valves 17 are swung outwardly or away from each other, they move into the oppositely arranged pockets or chambers 19, as is obvious.

The numeral 23 designates the contracted opening of the main shell or casing 3, which occurs at the contracted portion of the shell or casing.

Between the reduced ends 20 of the valve 17, is an opening 24, within which is disposed a lower end of a swinging operating lever 25, such lower end being preferably provided with an enlargement or ball 26, as shown. It is obvious that when the ball 26 is moved toward the pivot points 21, the valves 17 will be moved away from each other, thus increasing the cross sectional area of the opening 18. This operating lever 25 is pivotally mounted upon a supporting rod 27, which is preferably longitudinally movable or adjustable for the purpose of shifting the pivot point thereof. Any suitable means may be employed to longitudinally move or adjust the supporting rod 27. The rod 27 is longitudinally adjustable by providing the same with screw-threads, which engage within a screw-threaded opening in the shell 3, as shown. A head 31 is freely swiveled upon the inner end of the rod 27 and has pivotal connection with the lever 25, as shown at 28.

The numeral 29 designates a locking nut employed to hold the rod 7 in adjustment at different positions.

Formed upon the upper portion of the main shell or casing is a laterally extending preferably substantially horizontal cylinder 33, having its outer end closed by a perforated cap 34, as shown. Mounted to reciprocate within the cylinder 33 is a piston 35, having connection with a rod 36 which has its inner end pivotally connected with the upper end of the lever 25, as shown. The inward longitudinal movement of the rod 36 is opposed by a suitably stiff coil spring 37, confined between the cap 34 and an apertured plate 38, which is carried by the rod 36. An adjusting nut 39 is mounted upon the screw-threaded end of the rod 34, and engages the apertured plate 38, whereby the tension of the spring 37 may be changed by proper manipulation of this nut.

Mounted through the upper portion of the main shell or casing is a preferably horizontally arranged rock-shaft 40, carrying a throttle valve or damper 41, which is circular as is customary. The rock-shaft 40 is turned by a crank 42 carried by the outer end thereof.

The operation of the carbureter is as follows: Assuming that the engine is running and the valve 41 is partially opened, there will be a suction within the main shell or casing, to draw air upwardly through the same. This air is first deflected inwardly to pass through the opening 18 in close proximity to and about the fuel discharging nozzle 13. This air gathers up the gasolene or other fuel held within the nozzle 13, atomizing or vaporizing the same. As the air and gasolene travel into the upper portion of the main shell or casing, the mixture is allowed to expand due to the increasing in diameter upwardly of the main shell or casing, thus enabling the atomized or vaporized gasolene to become thoroughly mixed with the air. This carbureted air or charge is drawn into or fed to the cylinders of the engine. Upon further opening the throttle valve 41, the speed of the engine is increased, with a corresponding increase of suction or vacuum within the main shell or casing 3. Upon the increase of the suction or vacuum within the main shell or casing, the piston 37 is moved inwardly, swinging the upper end of the operating lever 25 inwardly, whereby the valves 17 are swung apart or away from each other, to increase the size of the opening 18, whereby an increased amount of air is admitted into the main shell or casing.

It is to be understood that the form of my invention herewith shown and described, is to be taken as a preferred example of the same, and that certain changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus fully described my invention, I claim:

1. In a carbureter of the character described, a main shell, a pair of pivoted valves disposed therein and provided with a permanent air supply opening or openings, a pivoted lever having its lower end operating between portions of the pair of valves to move the same away from each other when the lever is swung in one direction, a cylinder connected with the main shell, a piston mounted to operate within the cylinder, connecting means between the piston and lever and a fluid fuel discharging nozzle disposed in the main shell.

2. In a carbureter of the character described, a main shell, means operated by suction in the main shell, a vertically swinging lever connected with the means, a horizontally adjustable support for the lever and with which the same is pivotally connected, a movable valve mounted within the main shell and operated upon the movement of the lever, and a fluid discharging nozzle disposed within the main shell in coöperative relation to the valve.

3. In a carbureter of the character described, a main shell provided between its

ends with laterally extending oppositely arranged horizontal chambers, horizontal pivoted valves mounted within the horizontal chambers and provided upon their inner adjacent edges with openings forming a permanent air passage when the valves are closed, a spring to move the valves inwardly, an upstanding pivoted lever having its lower end operating in engagement with portions of the valves to move the same, a cylinder connected with the main shell and in free communication therewith, a piston operating within the cylinder, connecting means between the piston and upstanding pivoted lever, and a liquid fuel supply device disposed near and below the valves.

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

HORACE B. WYMAN.

Witnesses:
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C. H. WILSON.