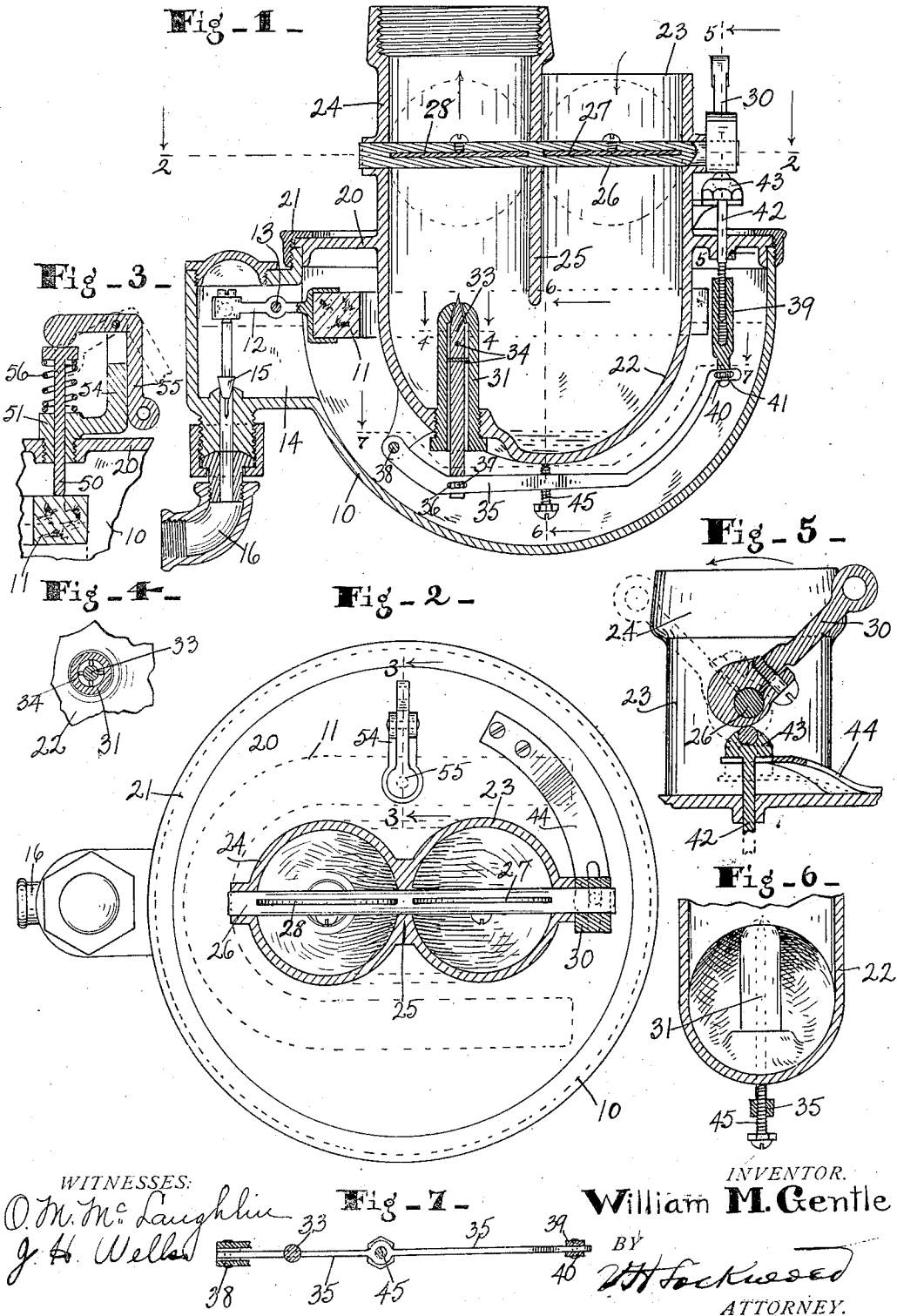


W. M. GENTLE.
CARBURETER.

APPLICATION FILED DEC. 1, 1910.

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UNITED STATES PATENT OFFICE.

WILLIAM M. GENTLE, OF GREENWOOD, INDIANA.

CARBURETER.

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Specification of Letters Patent.

Patented July 30, 1912.

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To all whom it may concern:

Be it known that I, WILLIAM M. GENTLE, of Greenwood, county of Johnson, and State of Indiana, have invented a certain useful Carbureter; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

The object of this invention is to improve the construction and operation of carbureters.

One feature of the invention consists in mounting the air inlet valve and the throttle valve on the same shaft or otherwise so as to be operated by the throttle lever simultaneously and to the same extent. To this end said valves are mounted in the same plane for controlling the inlet and outlet passages which are parallel. Along with the foregoing is an arrangement operated also by the throttle lever to operate the fuel inlet so that said throttle lever simultaneously actuates the air inlet valve, the fuel inlet valve and the throttle valve, and to the same extent.

These and the other features of the invention will be understood from the accompanying drawings and the following description and claims.

In the drawings Figure 1 is a central vertical section through the carbureter with the parts in idle position. Fig. 2 is a horizontal section on the line 2—2 of Fig. 1. Fig. 3 is a vertical section on the line 3—3 of Fig. 2. Fig. 4 is a horizontal section on the line 4—4 of Fig. 1. Fig. 5 is a vertical section on the line 5—5 of Fig. 1. Fig. 6 is a vertical section on the line 6—6 of Fig. 1. Fig. 7 is a horizontal section on the line 7—7 of Fig. 1.

In detail, 10 represents a float-chamber being substantially semi-spherical in vertical section, as shown in Fig. 1.

11 is a float which is U-shaped, as indicated by dotted lines in Fig. 2. It is mounted on the lever 12 fulcrumed on the pin 13 in the extension 14 from the float chamber and actuates the valve 15, which regulates the supply of fuel through the inlet 16.

The top 20, which closes the float chamber, is held down in place by an annular threaded ring 21, and it carries the carbureting chamber 22, which extends down into the float-chamber. The air inlet 23 extends above the top 20, and the gas outlet 24 likewise extends above the top 20 and is par-

allel with the inlet 23, the two passageways being separated by a partition 25.

The shaft 26 extends transversely through the air inlet 23, partition 25 and gas outlet 24, and carries two disk-valves 27 and 28, the former being located in the air passage, and the latter in the gas outlet passage and constitutes the throttle valve. These two valves are secured to the shaft 26 so as to be in the same plane and normally close the two passageways. Said shaft is actuated by the throttle lever 30 secured on its outer end.

A fuel nozzle 31 projects upwardly into the carbureting chamber 22 and preferably under and in vertical alinement with the gas outlet 24. It is closed by a needle valve 33, which has guide pins 34 therein, as shown in Fig. 4. The nozzle 31 screws into place and valve 33 is loosely pivoted to a lever 35, said lever having a slot 36 in it through which a pin 37 from the valve projects, as shown in Fig. 1. The lever 35 lies in the float-chamber below the carbureting chamber and is fulcrumed on a pin 38 at one end and at the other end is loosely connected with an internally threaded rod 39. Said rod has a pin 40 in it which projects loosely into a slot 41 in the lever 35. The rod 39 screws on another rod 42 which projects upwardly through the top and has a head 43 which is engaged by the head of the throttle lever. This head is semi-spherical, as shown in Fig. 5, so that when the throttle lever is moved from the full-line position in that figure to the dotted-line position, the rod 42 will be dropped, and consequently the lever 35 and the fuel valve 33. The rod 42 and associated parts are held in their upper position by the flat spring 44. It is thus seen that when the throttle valve is actuated, it simultaneously gives to the air inlet valve, fuel inlet valve and throttle valve opening movements which correspond at all times in extent with each other, and there the true proportion of air and fuel with each other and with the gas passing out through the passageway 24 is given. The movement of the lever 35 is stopped by the adjustable screw 45 which extends through it and engages the bottom of the carbureting chamber, as shown in Fig. 1.

At one side of the device a fuel flushing means is shown, as appears in Figs. 2 and 3. A rod 50 is vertically reciprocable through

a plug 51 which screws into the top 20 of the float chamber 10, said rod 50 extending down to the float. On an arm 54 from the plug 51 a lever 55 is fulcrumed between its ends so as to engage the upper end of the rod 50 and depress it when actuated, and said rod 50 and lever 55 are returned to their normal positions by the spring 56, which is coiled about the rod 50 and seated on the plug 51.

The peculiar relationship of the float chamber 10 and the top 20 carrying all of the valve mechanisms and adjustments therefor and the union 21 for securing said top to the float chamber, enables the top, which carries all of the valve mechanisms, to be adjusted or turned to any desired position according to the requirements of the machine in any particular case and it can be secured at any adjustment by the union 21. Although the fuel supply pipe 16 may have to be in a certain fixed relation, the valve mechanisms and throttle can be turned to any position. This is a very great advantage in equipping automobiles and other devices with carbureters.

I claim as my invention:

1. A carbureter including a carbureting chamber having an air inlet passageway and a mixture outlet passageway, a fuel inlet passageway, a valve for opening and closing said inlet, an air inlet valve, a throttle valve for the mixture outlet, a shaft extending through the air inlet and mixture outlet passageways on which both of said valves are mounted, a throttle lever secured to said shaft for actuating the same, and means for operating said fuel valve actuated by said throttle lever whereby said two valves will be similarly actuated and all of said valves will be simultaneously actuated.

2. A carbureter including a carbureting chamber having a fuel inlet passageway, a valve for opening and closing said inlet, an air inlet passageway and a mixture outlet passageway parallel with each other, a shaft extending transversely through the walls of said passageways, a throttle lever on the outer end of said shaft, a disk-valve secured to said shaft in the air inlet passageway, a disk-valve secured to said shaft in the mixture outlet passageway said disk-valves being in the same plane, means for operating said fuel inlet valve, and means on said throttle lever for actuating said valve operating means.

3. A carbureter including a carbureting chamber provided with an air inlet passageway, a mixture outlet passageway and a fuel inlet nozzle, an air inlet valve, a mixture outlet valve, a valve for controlling the inlet of fuel through said inlet nozzle, a shaft extending through the air inlet and mixture outlet passageway on which the air inlet and mixture outlet valves are secured, a throttle

lever secured on said shaft, and a lever construction mounted independently of said throttle lever and actuated thereby for opening said fuel inlet valve.

4. A carbureter including a carbureting chamber provided with an air inlet passageway, a mixture outlet passageway, a fuel inlet nozzle, an air inlet valve, a mixture outlet valve, a valve for controlling the inlet of fuel through said inlet nozzle, a shaft extending through the air inlet and mixture outlet passageways on which the air inlet and mixture outlet valves are secured, a throttle lever secured on said shaft, a lever construction mounted independently of said throttle lever but actuated thereby for opening said fuel valve whereby said fuel valve mechanism may be operated independently of the throttle lever.

5. A carbureter including a carbureting chamber provided with an air inlet valve and a mixture outlet valve, a fuel inlet nozzle projecting upwardly in said carbureting chamber, a fuel inlet valve extending upwardly in said nozzle, a float chamber surrounding said carbureting chamber, a lever pivoted at one end to said float chamber and lying within said float chamber, a loose connection between said fuel inlet valve and said lever, a throttle lever having a cam-shaped head, and adjustable means reciprocable in the top of said float chamber and loosely connected with said fuel inlet valve actuating lever and in position to be engaged and actuated by the cam-shaped head of the throttle lever.

6. A carbureter including a carbureting chamber provided with an air inlet valve and a mixture outlet valve, a fuel inlet nozzle projecting upwardly in said carbureting chamber, a fuel inlet valve extending upwardly in said nozzle, a float chamber surrounding said carbureting chamber, a lever pivoted at one end to said float chamber and lying within said float chamber, a loose connection between said fuel inlet valve and said lever, a throttle lever having a cam-shaped head, adjustable means reciprocable in the top of said float chamber and loosely connected with said fuel inlet valve actuating lever and in position to be engaged and actuated by the cam-shaped head of the throttle lever, and a stop screw in said fuel inlet valve actuating lever in position to engage the bottom of the carbureting chamber for limiting the movement of said lever in the valve closing direction.

7. A carbureter including a carbureting chamber provided with an air inlet valve and a mixture outlet valve, a fuel inlet nozzle projecting upwardly in said carbureting chamber, a fuel inlet valve extending upwardly in said nozzle, a float chamber surrounding said carbureting chamber, a lever pivoted at one end to said float chamber and

lying within said float chamber, a loose connection between said fuel inlet valve and said lever, a throttle lever having a cam-shaped head, adjustable means reciprocable
5 in the top of said float chamber and loosely connected with said fuel inlet valve actuating lever and in position to be engaged and actuated by the cam-shaped head of the throttle lever, and a spring secured on the
10 top of said float chamber which tends to hold said adjustable means up against the head of the throttle lever.

8. A carbureter including a carbureting chamber, a fuel inlet nozzle projecting upwardly therein, a fuel inlet valve extending
15 upwardly in said nozzle, a float chamber surrounding said carbureting chamber, a

fuel inlet at one side thereof, a valve for closing said inlet, a float for actuating said valve, a lever within said float chamber and
20 pivoted at one end to said float chamber, a loose connection between the fuel inlet valve of the carbureting chamber and said lever, and means for actuating the lever to open the valve into the carbureting chamber to
25 flood said chambers.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

WILLIAM M. GENTLE.

Witnesses:

G. H. BOINK,
H. J. WELLS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."