

C. D. SHAIN.  
 CARBURETER FOR GAS ENGINES.  
 APPLICATION FILED MAY 29, 1911.

1,004,091.

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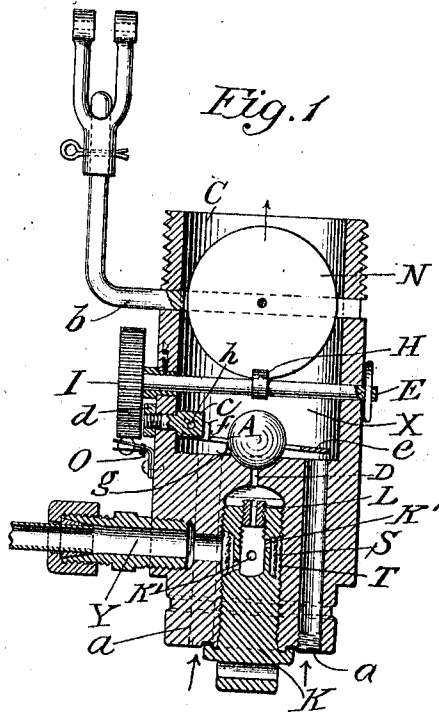


Fig. 1

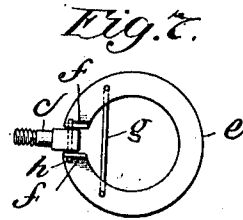


Fig. 7.

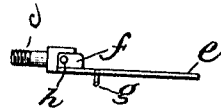


Fig. 6.

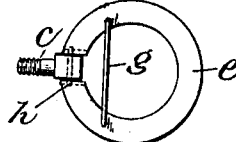


Fig. 5.

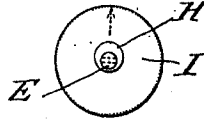


Fig. 4.

Fig. 2.

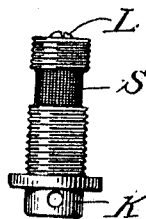
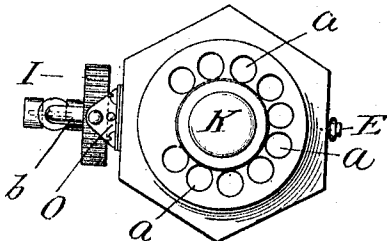


Fig. 3.

Witnesses:  
 and Rowland.  
 Lewis L. Golell

Inventor  
 Chas. D. Shain

# UNITED STATES PATENT OFFICE.

CHARLES D. SHAIN, OF ROCKAWAY PARK, NEW YORK.

CARBURETER FOR GAS-ENGINES.

1,004,091.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed May 29, 1911. Serial No. 630,247.

*To all whom it may concern:*

Be it known that I, CHARLES D. SHAIN, a citizen of the United States, and a resident of Rockaway Park, in the county of Queens and State of New York, have invented a certain new and useful Carbureter for Gas-Engines.

My invention relates to improvements in carbureters in which a ball valve or sprayer is used (see my patents June 20th, 1905, No. 792,670, and March 17th, 1908, No. 882,023); and the object of my invention is to automatically increase the sensitiveness of the movement of the ball valve or sprayer. I attain this object by the mechanism illustrated in the accompanying drawings in which:—

Figure 1, is a vertical section of the carbureter; Fig. 2, is a bottom view of the carbureter with the pipe Y removed; Fig. 3, is a vertical view of a partly hollow plug containing a screen and bushing or nozzle; Fig. 4, is a sectional view of a shaft, cam and milled nut looking from right to left; Fig. 5, is a bottom view of a baffle plate hinged to a square head screw, the baffle plate having a tilting bar; Figs. 6 and 7 are respectively side view and top view of same. The arrows at the bottom of Fig. 1 show the air inlets and the arrow at the top, the mixture outlet to engine.

Similar letters refer to similar parts throughout the drawings.

In Fig. 1, Y is a pipe through which gasoline or liquid fuel flows into the chamber T. In this chamber T, is inserted a partly hollow plug K, with a screw thread; around a part of the plug K is placed a screen S for screening the gasoline or liquid fuel. In the top of the plug K is a bushing or nozzle L (see Figs. 1 and 3). The bushing or nozzle L has a hole in the center of it, the size of which is determined by the maximum flow of gasoline or liquid fuel required for a specific size of engine. The gasoline or liquid fuel after entering the chamber T, passes through the screen S and the holes K' into the hollow part of the plug K and from there it is sucked by the engine or forced by the pressure behind it, through the bushing or nozzle L into the tube D, where its flow is in a measure arrested by the ball valve or sprayer A. The lift of the ball valve or sprayer A, is caused by suction from the engine and the pressure of the gasoline or liquid fuel under it and is regulated by the ec-

centric cam H in the center of the shaft E (Fig. 4). The shaft E and the cam H, are turned by the milled nut I, which is held in any fixed position desired, by the ball spring O.

a a are a number of air ports extending from the bottom of the vaporizer or carbureter, (see Fig. 2) up to the carbureting chamber X. These ports are for the purposes of furnishing the air supply.

e (Figs. 1, 5, 6 and 7) is a baffle plate, provided with a tilting bar g. The baffle plate e is hinged by the pin h passing through its two bent up parts f and the square head of the screw c. The screw c passes through the outer casing of the carbureter (Fig. 1) and is held in place by the nut d. Fig. 1 shows the baffle plate e slightly raised by light suction. The baffle plate e in a state of rest partly covers the air ports a (Fig. 4); the tilting bar g lies directly under the ball valve or sprayer A, out of contact with it. Upon turning over the engine, the suction causes the baffle plate e intervening between it and the air ports a, to raise; the tilting bar g follows and disturbs or lifts the ball A, this action being very sensitive. The butterfly valve N, is operated by the bent lever b, shown with fork and cotter pin (Fig. 1). The gasoline or liquid fuel after being mixed with air in the carbureting chamber X, passes out of the carbureter at C.

The carbureter can be made in several ways; but I prefer to carry out this feature of my invention as shown in the drawings.

What I do claim as my invention and desire to secure by Letters Patent is:—

1. In a carbureter, a suction tube, a tube for the delivery of gasoline thereto, a ball and seat therefor provided in the upper end of the gasoline tube in combination with a hinged baffle plate operated by the suction of air, and the bar carried by said baffle plate engaging said ball, to lift the same from its seat proportionally to the movement of the baffle plate by the current of air, substantially as set forth.

2. The combination in a carbureter of a butterfly valve operated by a lever, a casing forming a carbureting chamber, provided with air passages, extending vertically through the lower wall of the casing; a ball valve or sprayer located in the carbureting chamber and seated in a support; a passage through the support for the delivery of gas-

olene or liquid fuel under the ball, into the carbureting chamber, the ball valve controlling this delivery; an eccentric cam on a shaft, a milled nut on one end of the shaft, and a ball spring, extending from the carbureter casing and contacting with the milled nut, the cam and shaft being located above the ball and operated by the milled nut, which is held in any desired position by the ball spring; a partly hollow screened plug and bushing or nozzle for the passage of gasolene or liquid fuel, through the said support into the carbureting chamber; the partly hollow screened plug having in its top a bushing or nozzle with a hole through

its center, the proper size for supplying the maximum flow of gasolene or liquid fuel required for any specific size of engine; with a hinged baffle plate, provided with a tilting bar for automatically increasing the sensitiveness of the disturbance or lift of the ball valve or sprayer, due to the suction of the engine; all substantially as set forth. 20

Witness my hand this twenty-sixth day of May, 1911, at the city of New York, in the county and State of New York. 25

CHAS. D. SHAIN.

Witnesses:

FRANCIS L. COLELL,  
JOS. J. SMITH.