L. PLEIN.

CARBURETER.

APPLICATION FILED JULY 26, 1909.

960,697. Patented June 7, 1910.

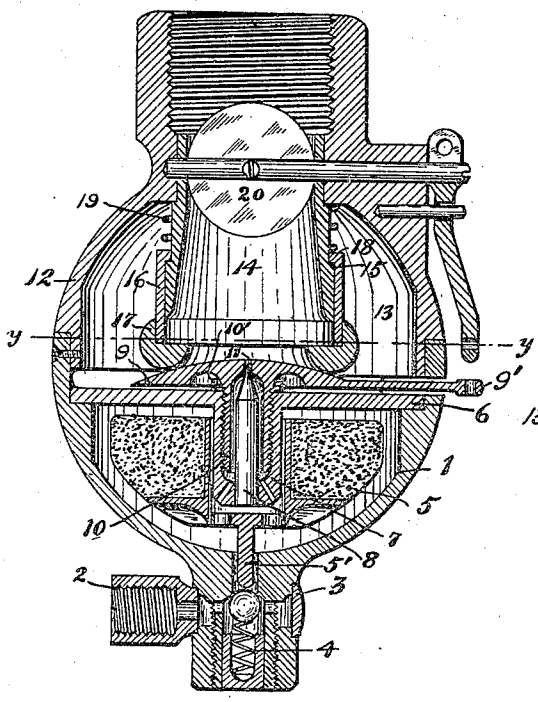

Fig. 2.

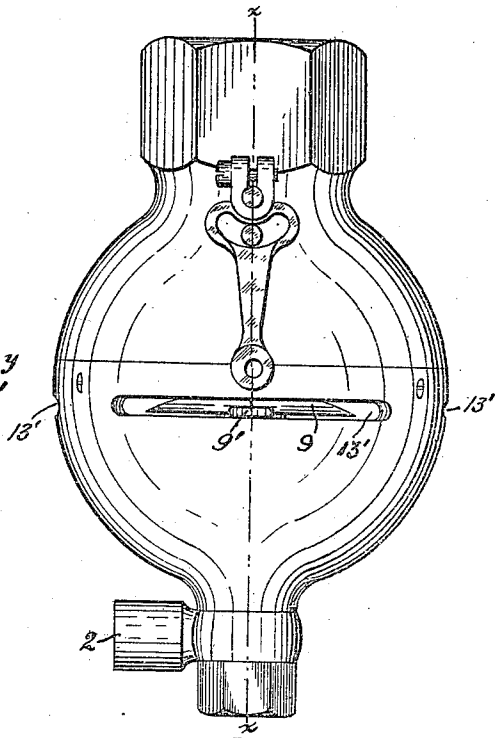

Fig. 1.

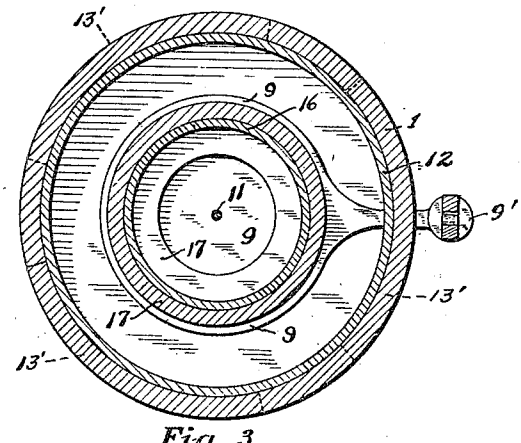

Fig. 3.

Witnesses:

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UNITED STATES PATENT OFFICE.

LOUIS PLEIN, OF CHICAGO, ILLINOIS.

CARBURETER.

960,697. Specification of Letters Patent. Patented June 7, 1910.

Application filed July 26, 1909. Serial No. 509,666.

To all whom it may concern:

Be it known that I, LOUIS PLEIN, a subject of the Grand Duke of Luxemburg, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

My invention relates to improved carbureters for explosion engines and has for its object the production of a carbureter of compact and simple construction and capable of automatically regulating the fuel mixture to suit the varying speeds of the engine.

The invention consists in the combination and arrangement of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Figure 1 is a side elevation of a carbureter embodying my invention, Fig. 2, a section on line *x*—*x* of Fig. 1, and Fig. 3, a section on line *y*—*y* of Fig. 2.

The carbureter comprises a well or basin 1 adapted to contain the gasolene or other fuel. Basin 1 is supplied through a supply pipe 2 which is controlled by a ball valve 3 yieldingly held to its seat by a spring 4. A float 5 in the basin 1 having a stem 5′ adapted to contact with ball 3 serves to maintain the gasolene at a constant level in basin 1. The top of well 1 is closed by a plate 6 carrying a depending threaded socket 7 in open communication with the liquid in the well. A needle valve stem 8 projects upwardly in socket 7 with its needle point somewhat above the level of plate 6. A dome shaped plate 9 is provided with a threaded sleeve 10 taking into the threaded socket 7 around the needle valve stem 8, and said plate is provided with an opening 11 adapted to coöperate with the point of valve stem 8 to form a needle valve. At one side the plate 9 carries an arm or lever 9′ projecting through a slot in the side of well 1 for turning said plate and sleeve. A spring 10′ is imprisoned in a suitable channel in the plate 9 and around the sleeve 10 so as to introduce enough friction between said plates 9 and 6 to prevent accidental turning of the former on the latter.

Above well 1 is secured a casing 12 forming the mixing chamber 13 to which air is admitted through slits 13′ in the walls of basin 1. Above plate 9 is secured a tubular guide 14 having a stop shoulder 15 and a shell 16 having a rounded lower edge 17 is slidably mounted on said guide. At its upper end the shell 16 carries a flange 18 adapted to engage the shoulder 15 to limit the downward movement of the mixing shell so that the edge 17 may come in close proximity to but not in actual contact with the plate 9. A spring 19 serves to yieldingly hold the shell 16 to its seat on shoulder 15 and the usual butterfly throttle valve 20 is provided in the upper end of guide 14. At its upper end casing 12 is provided with a threaded boss by means of which the interior of guide 14 may be connected with the intake of an engine.

In operation the float 5 will operate to maintain a constant level of gasolene in well 1 as will be readily understood by those skilled in the art. To start the engine the arm 9′ is turned to the limit of its movement to raise plate 10 from the point of valve stem 8 thus permitting the passage of gasolene upwardly into the mixing shell 16 under the influence of the air rushing therein. By turning the arm 9′ to the limit of its opening movement the plate 9 is elevated to diminish the opening between the edge 17 and the top of said plate, while of course a full supply of gasolene is admitted. Thus in starting the engine the entry of the air is restricted and the supply of gasolene made large to obtain a very rich mixture. When the engine is started the arm 9′ is turned back by the operator until the most efficient mixture is obtained. When the speed of the engine increases the air rushing in with greater velocity will elevate the shell 16 so as to admit more air and consequently a proportionately larger amount of gasolene will be drawn through opening 11 and thus the mixture maintained constant for varying speeds. When the speed of the engine decreases the spring 19 restricts the opening between edge 17 and plate 9 to decrease the quantity of air and consequently the quantity of gasolene. Thus it will be seen that when the most efficient mixture has been obtained by the operator, this will be maintained automatically for all speeds of the engine.

While I have illustrated and described the preferred construction for carrying my invention into effect this is capable of variation and modification without departing

from the spirit of the invention. I, therefore, do not wish to be limited to the exact construction set forth but wish to avail myself of such variations and modifications as come within the spirit and scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a carbureter, the combination of a fuel duct therefor; a stationary needle valve stem for said duct; a perforated plate adjustable toward and away from said needle valve and arranged to have its perforation receive said needle valve; a tubular member yieldingly mounted over said plate; and means connecting the interior of said tubular member with the intake of an engine, substantially as described.

2. In a carbureter, the combination of a fuel duct therefor; a needle valve in said fuel duct; a perforated plate mounted upon screw threads to adjust toward and away from said needle valve and arranged to have its perforation receive said needle valve; a tubular member yieldingly mounted over said plate; a stop limiting the approach of said tubular member so as to prevent actual contact with said plate; and means for connecting the interior of said tubular member with the intake of an engine, substantially as described.

3. In a carbureter, the combination with a casing, of a mixing chamber therein; a threaded fuel pipe leading to said mixing chamber; a stationary needle valve stem in said pipe; a dome shaped perforated plate mounted upon a sleeve threaded in said pipe with its perforation arranged to receive said needle valve; a tubular member yieldingly mounted over said plate; and means for connecting the interior of said tubular member with the intake of an engine, substantially as described.

4. In a carbureter, the combination with a casing, of a mixing chamber therein; a threaded fuel pipe leading to said mixing chamber; a stationary needle valve stem in said pipe; a dome shaped perforated plate mounted upon a sleeve threaded in said pipe; a friction spring imprisoned in said plate around said sleeve; a tubular guide over said plate, a tubular member mounted on said guide and having a rounded lower edge; a spring adapted to press said tubular member toward said plate; a stop on said guide adapted to limit the approach of said tubular member to said plate so as to prevent actual contact therewith; and means for connecting the interior of said tubular guide with the intake of an engine, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS PLEIN.

Witnesses:
JOSHUA R. H. POTTS,
ARTHUR A. OLSON.