L. PLEIN.

CARBURETER.

APPLICATION FILED JULY 5, 1910.

983,836.

Patented Feb. 7, 1911.

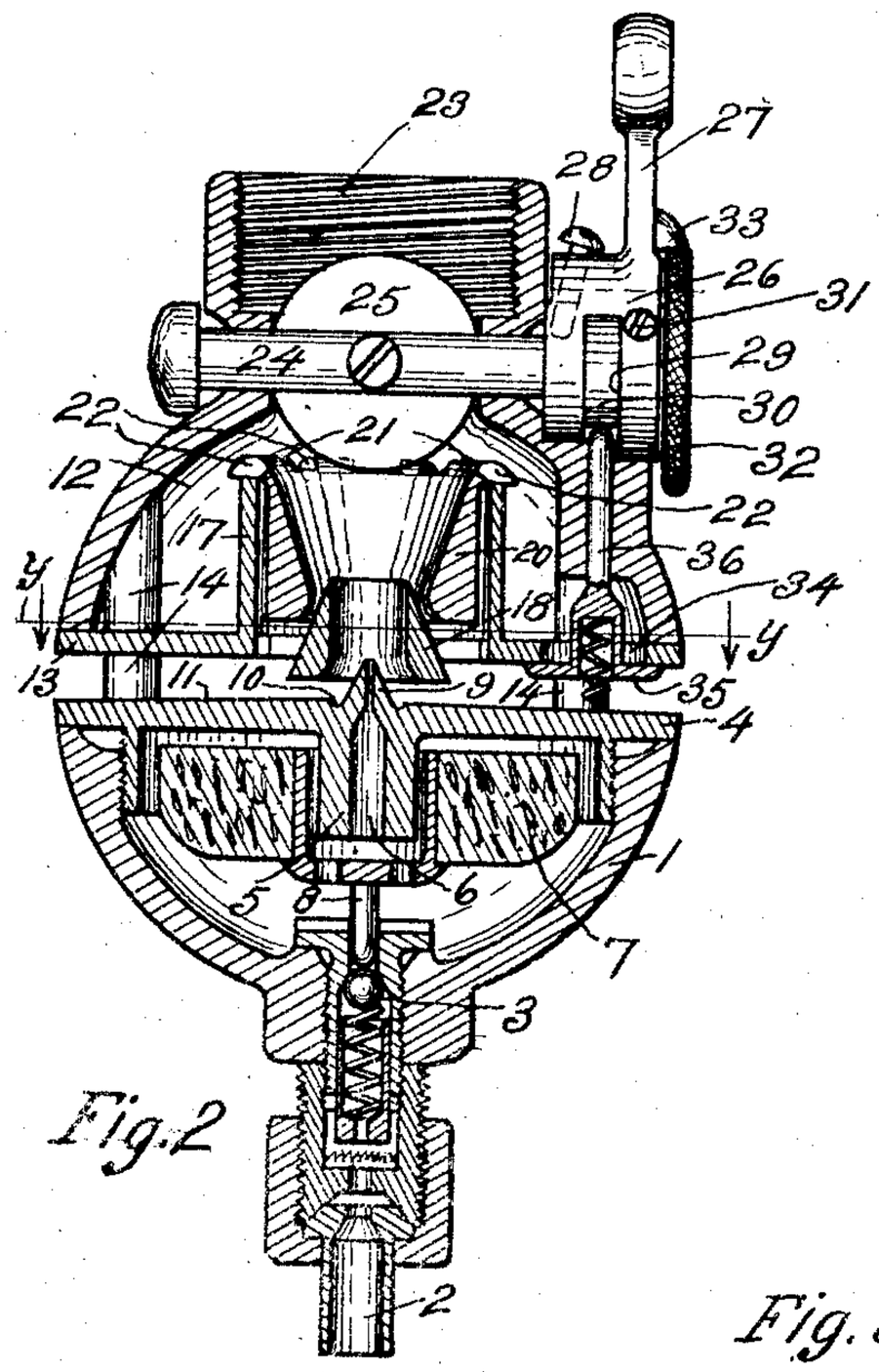


Fig. 2

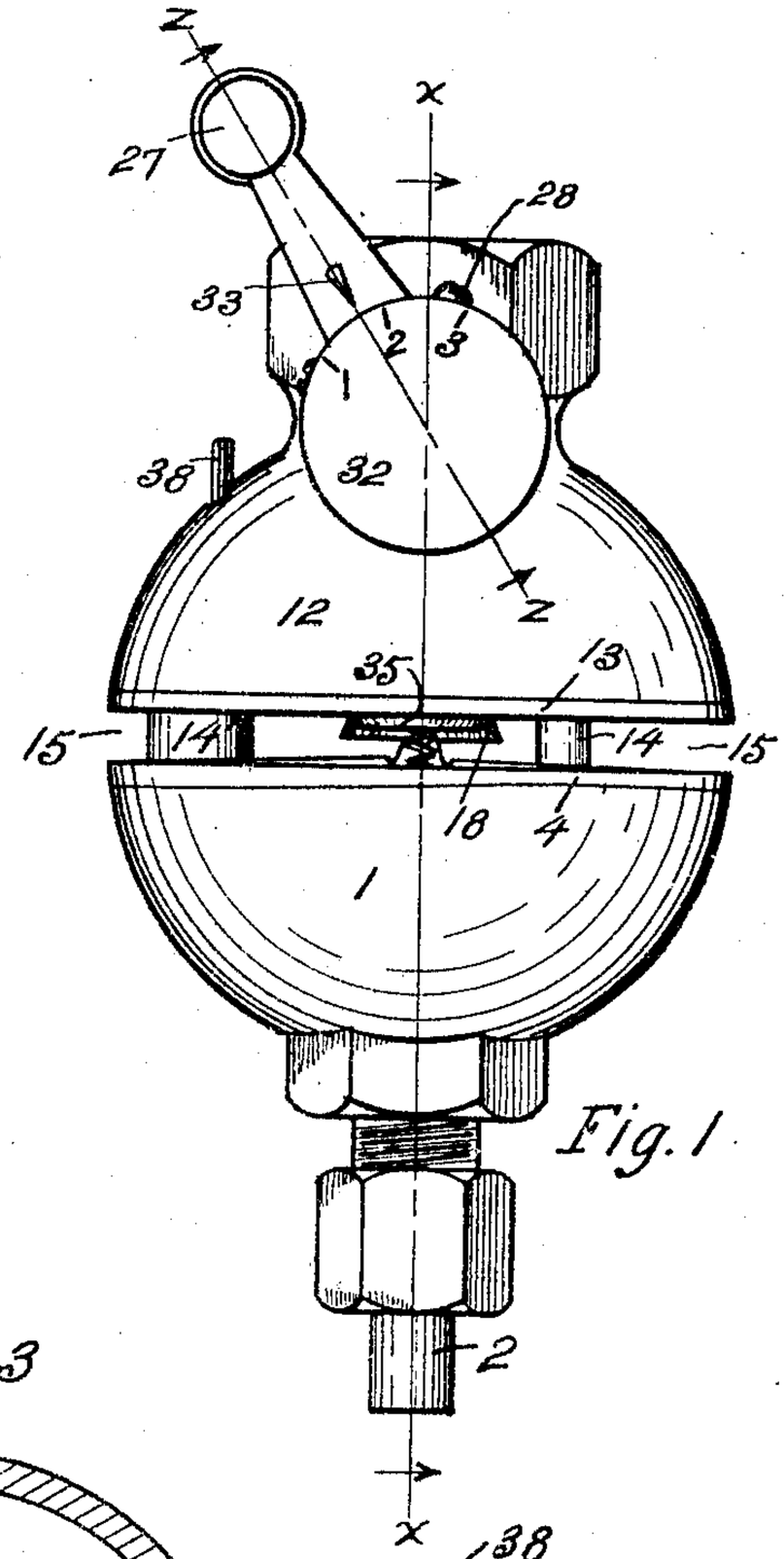


Fig. 1

Fig. 4

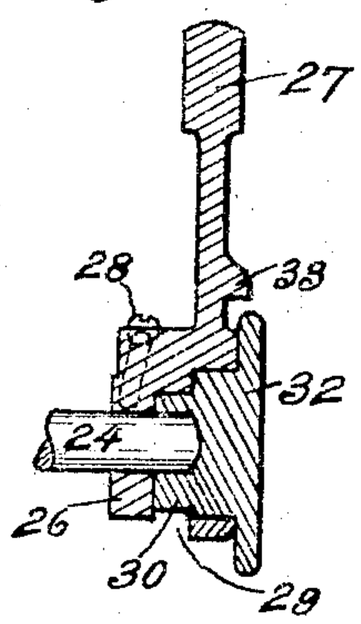
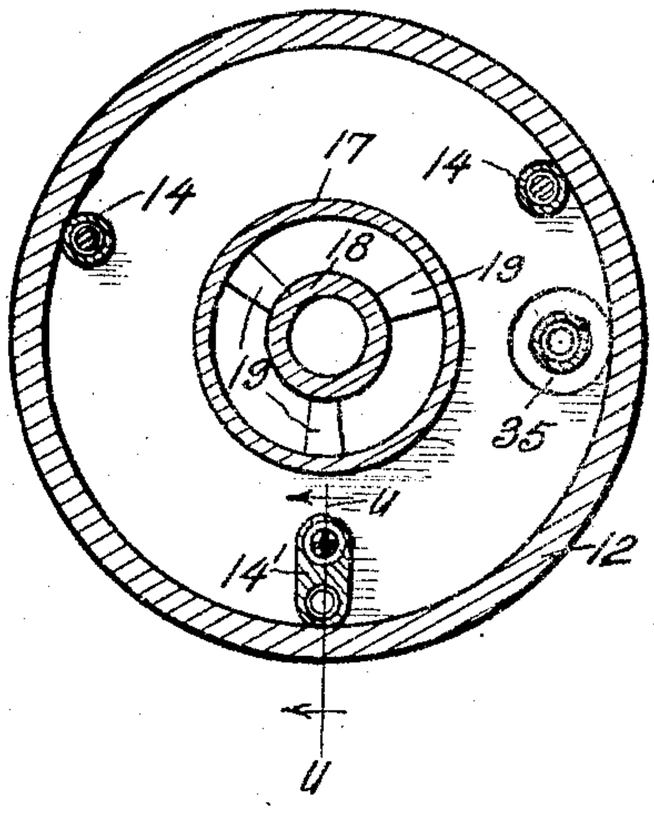


Fig. 3



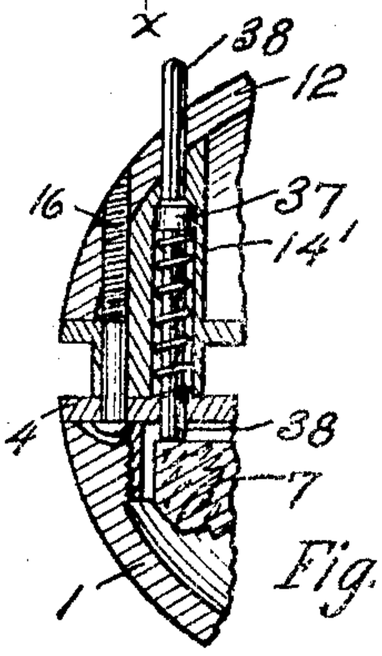


Fig. 5

Witnesses:

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UNITED STATES PATENT OFFICE.

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CARBURETER.

983,836. Specification of Letters Patent. Patented Feb. 7, 1911.

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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 improvements in 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 mixed to suit the varying speeds of the engine.

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

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

Figure 1 is an elevation of a carbureter embodying my invention, Fig. 2 is a section taken on line *x—x* of Fig. 1, Fig. 3 is a section taken on line *y—y* of Fig. 2, Fig. 4 is a section taken on line *z—z* of Fig. 1, and Fig. 5 is a section taken on line *u—u* of Fig. 3.

The preferred form of construction as illustrated in the drawings comprises a substantially hemi-spherical fuel well or reservoir 1 provided with a nipple 2 for the connection of a fuel supply pipe and a spring held ball valve 3 normally preventing entry of fuel to said well. The well is provided with a cover plate 4 having a central boss 5 projecting downwardly into well 1 and provided with a central perforation 6 for the passage of fuel therethrough. A float 7 is mounted in well 1 and carries a stem 8 adapted to contact with ball 3 to open the entry valve when the fuel in well 1 falls below a certain level. A cover plate 4 carries a central conical projection 9 perforated for the passage of fuel and surrounded by a shallow annular groove 10 for the retention of a small quantity of fuel which may overflow from projection 9. The upper surface 11 of cover 4 is sloped outwardly from the center so that any excess of fuel flowing out of projection 9, over that necessary to fill groove 10, will flow outwardly over cover 4 and be discharged.

Mounted above well 1 is a substantially hemi-spherical mixing chamber 12 having a bottom plate 13 which carries upwardly and downwardly extending tubular posts or bosses 14 and 14′. Mixing chamber 12 is secured in position over well 1 with an air space 15 between the two by means of screws 16 passing through top plate 4 and posts 14 and 14′ and threaded into the top wall of mixing chamber 12, as indicated in Fig. 5. Bottom plate 13 carries an upwardly extending central tubular boss or sleeve 17 having an inner tubular member 18 suspended in the lower mouth thereof and over projection 9 by means of radial arms 19. Suspended in sleeve 17 is a vertically movable tubular member 20 of a size to fit within sleeve 17 and over member 18 with restricted air passages between each. Member 20 is suspended in sleeve 17 by means of a flange 21 at its upper edge resting upon the upper edge of member 17. It will be observed that the juncture between the under side of flange 21 and member 20 is in the form of a fillet, as shown in Fig. 2, which serves to maintain said member in a central position. Flange 21 is provided with perforations 22 which are closed when flange 21 rests upon the upper edge of member 17 but are open to the passage of air when said flange is elevated from the upper edge of said member 17. At its upper end mixing chamber 12 is provided with a threaded passage 23 for the reception of an intake connection with the engine. Shaft 24 carries a sleeve 26 having an operating handle 27 and secured to said shaft by means of a set-screw 28. At its lower central portion sleeve 26 is slotted for the exposure of an eccentric 30 which is adjustably secured in sleeve 26 by means of a set-screw 31. At its outer end eccentric 30 is provided with a graduated hand wheel 32 by means of which it may be adjusted in sleeve 26. An indicator 33 on handle 27 serves to indicate the relative relation of said eccentric to the valve 25.

At one side mixing chamber 12 is provided with an air inlet passage 34 normally closed by a spring held valve 35, as shown in Fig. 2. Valve 35 carries a valve stem 36 arranged to contact with eccentric 30 and whereby valve 35 may be caused to open upon manipulation of valve 25.

The post 14′ is extended inwardly sufficient to overlap float 7 and provided with a central perforation normally seated by a spring held valve 37 which carries a valve stem 38 projecting above the cover of mix-

ing chamber 12 and downwardly into well 1 to contact with float 7 whereby said float may be depressed for flooding of the carbureter in starting the engine and air may be permitted to escape from well 1.

By the construction as above set forth it will be observed that in starting the engine float 7 may be depressed for flooding of the carbureter, whereupon a supply of gasolene or other fuel will be retained in groove 10 any excess flowing off over the sloping top of cover 4. When the speed of the engine increases sufficiently the suction from the intake will serve to elevate member 20, thus permitting entry of air to the mixing chamber around the outside of member 20 and through the openings 22. The eccentric 30 is so adjusted on shaft 24 that when throttle valve 25′ is fully open, the said eccentric will also open valve 35 for the admission of an additional quantity of air. Thus when the throttle is thrown fully open and more air is required, the additional air may be furnished automatically through valve 35.

While I have illustrated and described the preferred form of construction for carrying my invention into effect this is capable of variation or modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the exact details set forth, but desire to avail myself of such variations and modifications as come within the 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 casing provided with a fuel well; a projection extending upwardly from the top of said well and provided with a fuel passage leading therefrom; an inner stationary tubular member suspended over said projection with air passages through and around it; an outer stationary tubular member suspended over and around said inner member; a vertically movable tubular member having a flange at its upper end engaging over the upper edge of said outer tubular member, there being restricted air passages between said movable tubular member and each of said stationary tubular members; and means connecting said tubular members with the intake of an engine, substantially as described.

2. In a carbureter, the combination of a casing provided with a fuel well having an outwardly sloping top; a projection extending upwardly from the top of said well and provided with a fuel passage leading therefrom, there being a depression formed around the base of said projection; an inner stationary tubular member suspended over said projection with air passages through and around it; an outer stationary tubular member suspended over and around said inner member; a vertically movable tubular member having a flange at its upper end engaging over the upper edge of said outer tubular member, there being restricted air passages between said movable tubular member and each of said stationary tubular members; and means connecting said tubular members with the intake of an engine, substantially as described.

3. In a carbureter, the combination of a casing provided with a fuel well; a projection extending upwardly from the top of said well and provided with a fuel passage leading therefrom; an inner stationary tubular member suspended over said projection with air passages through and around it; an outer stationary tubular member suspended over and around said inner member; a vertically movable tubular member having a flange at its upper end engaging over the upper edge of said outer tubular member, there being restricted air passages between said movable tubular member and each of said stationary tubular members and said flange being provided with perforations normally closed by the upper edge of said outer tubular member but opening for the passage of air upon elevation of said movable tubular member; and means connecting said tubular members with the intake of an engine, substantially as described.

4. In a carbureter, the combination of a casing provided with a fuel well having an outwardly sloping top; a projection extending upwardly from the top of said well and provided with a fuel passage leading therefrom, there being a depression formed around the base of said projection; an inner stationary tubular member suspended over said projection with air passages through and around it; an outer stationary tubular member suspended over and around said inner member; a vertically movable tubular member having a flange at its upper end engaging over the upper edge of said outer tubular member, there being restricted air passages between said movable tubular member and each of said stationary tubular members and said flange being provided with perforations normally closed by the upper edge of said outer tubular member but opening for the passage of air upon elevation of said movable tubular member; and means connecting said tubular members with the intake of an engine, substantially as described.

5. In a carbureter, the combination of a casing provided with a lower fuel well and an upper mixing chamber, the two being separated by an air space; a central projection on the top of said fuel well provided with a fuel passage leading therefrom; a

central stationary tubular member extending upwardly from the bottom of said mixing chamber; a movable tubular member suspended in said stationary tubular member by means of a flange engaging the upper edge of said stationary tubular member; an inner stationary tubular member suspended within the lower mouth of said aforementioned tubular member; a valve for admitting air to said mixing chamber; a connection with the intake of an engine; a throttle valve controlling said intake connection; and an operative connection between said throttle valve and said air valve, substantially as described.

6. In a carbureter, the combination of a casing provided with a lower fuel well and an upper mixing chamber, the two being separated by an air space; a central projection on the top of said fuel well provided with a fuel passage leading therefrom; a central stationary tubular member extending upwardly from the bottom of said mixing chamber; a movable tubular member suspended in said stationary tubular member by means of a flange engaging the upper edge of said stationary tubular member, said flange being provided with perforations normally closed by the upper edge of said outer tubular member but opening for the passage of air upon elevation of said movable member; an inner stationary tubular member suspended within the lower mouth of said aforementioned tubular member; a valve for admitting air to said mixing chamber; a connection with the intake of an engine; a throttle valve controlling said intake connection; and an operative connection between said throttle valve and said air valve, substantially as described.

7. A carbureter comprising a mixing chamber provided with an air inlet opening and a connection for the intake of an engine; a throttle valve carried by a shaft traversing said intake connection; an operative handle secured to said shaft; an eccentric adjustably secured to said shaft; a spring held air valve closing said air inlet opening; and a valve stem carried by said valve and contacting with said eccentric, substantially as described.

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

LOUIS PLEIN.

Witnesses:
JANET E. HOGAN,
JOSHUA R. H. POTTS.