No. 685,993. Patented Nov. 5, 1901.

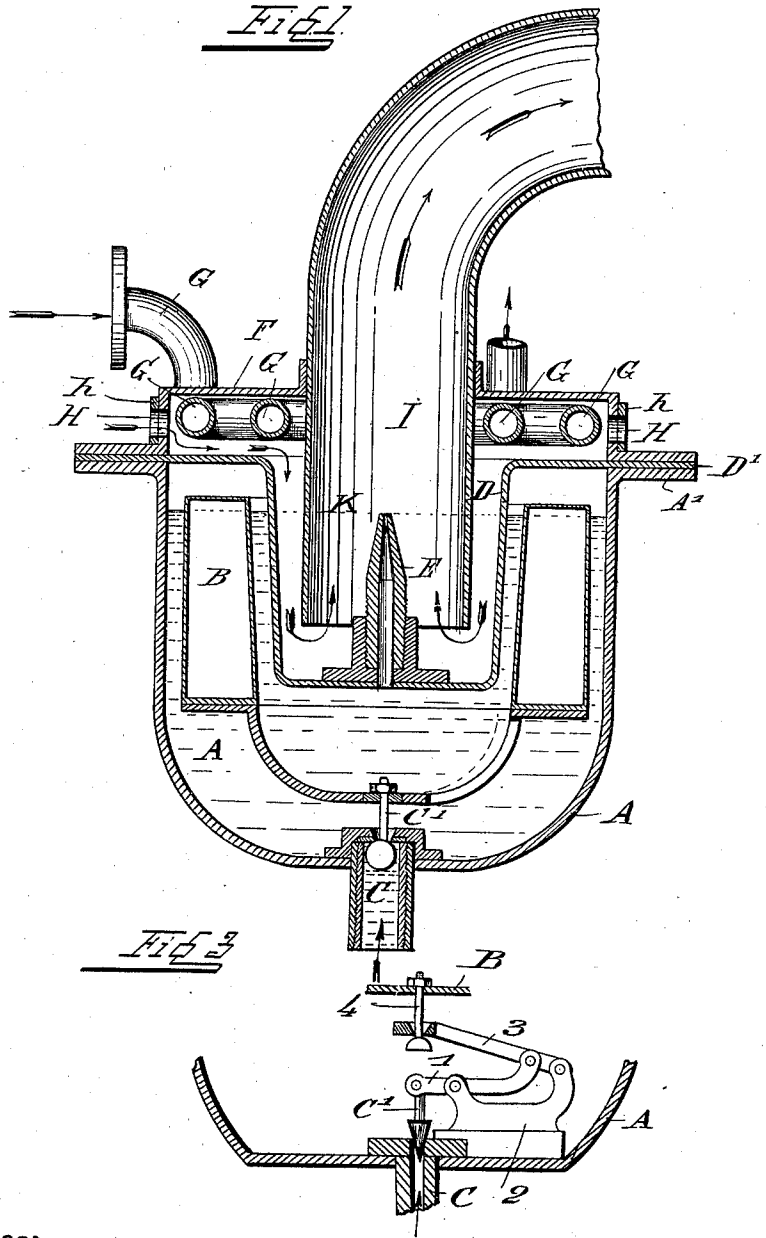
F. LE BLON.

CARBURETER FOR EXPLOSIVE ENGINES.

(Application filed Nov. 21, 1900.)

(No Model.) 4 Sheets—Sheet 1.

Fig 1



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Inventor,
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by B. Singer
Att'y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 685,993. Patented Nov. 5, 1901.

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Fig. 7

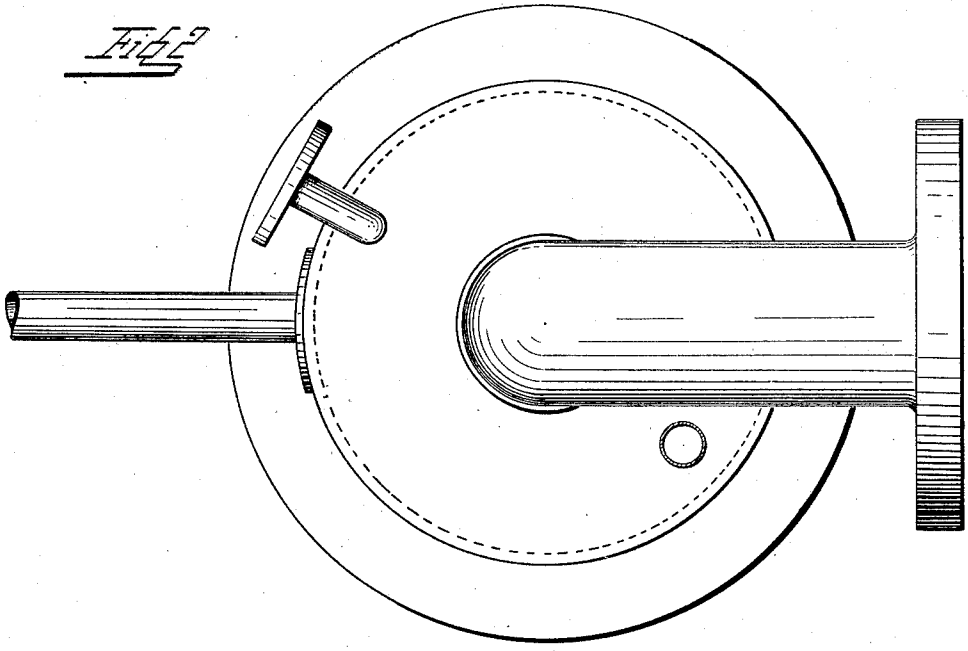
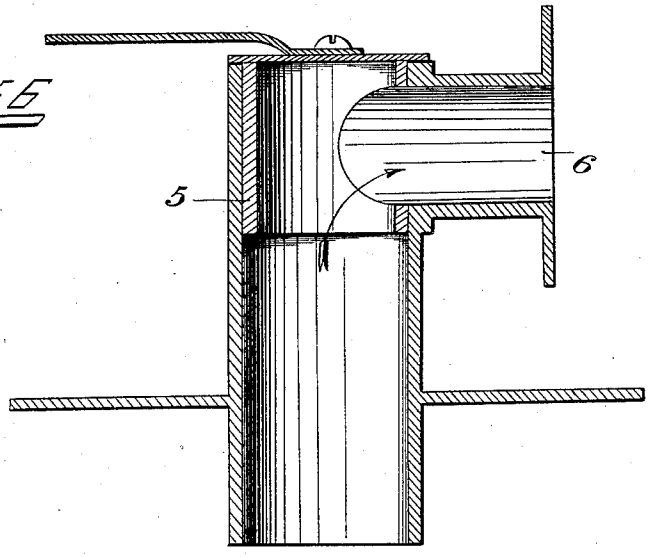


Fig. 6



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Fig 6

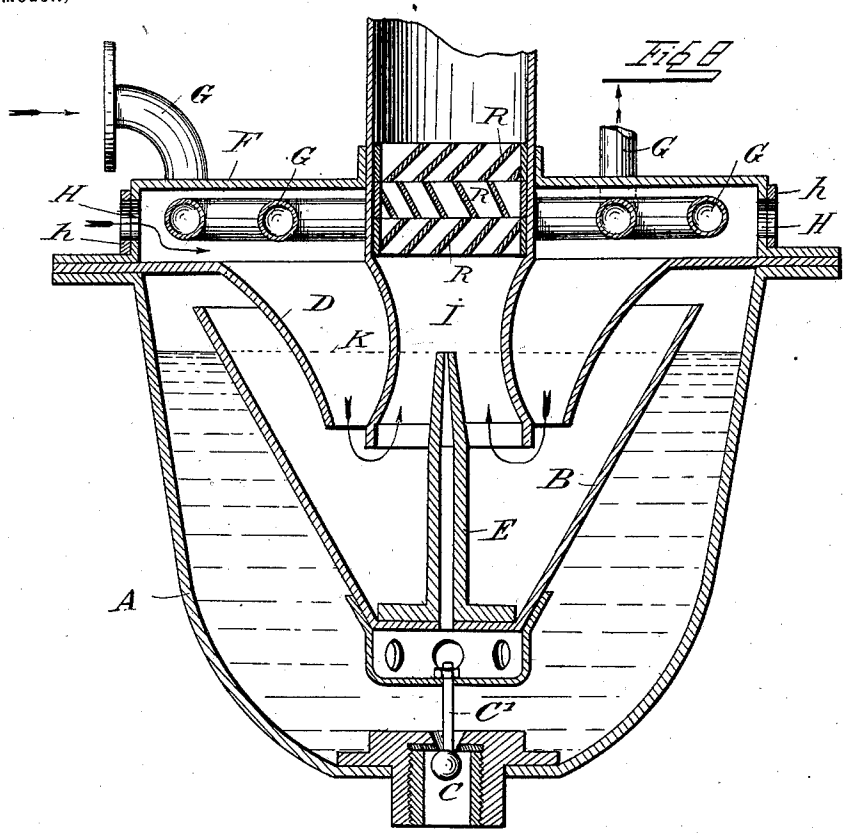


Fig 4

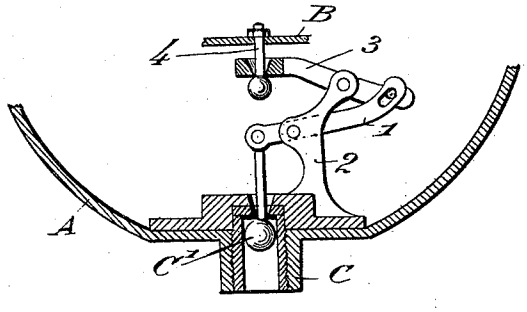
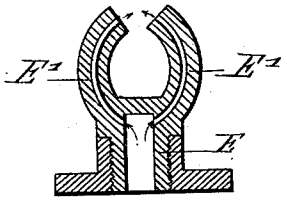


Fig 5



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No. 685,993. Patented Nov. 5, 1901.

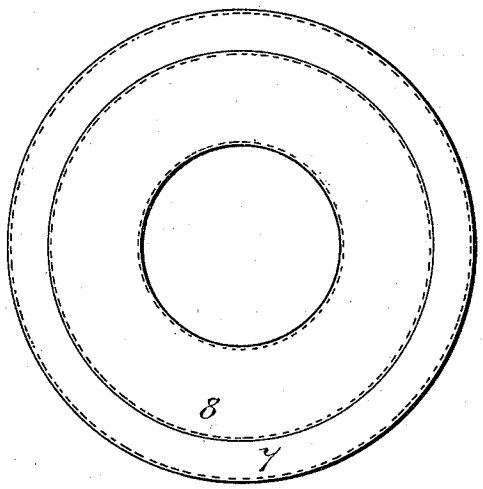
F. LE BLON.

CARBURETER FOR EXPLOSIVE ENGINES.

(Application filed Nov. 21, 1900.)

(No Model.) 4 Sheets—Sheet 4.

Fig 7



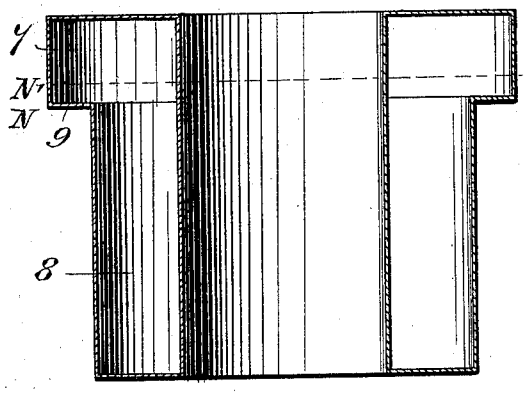
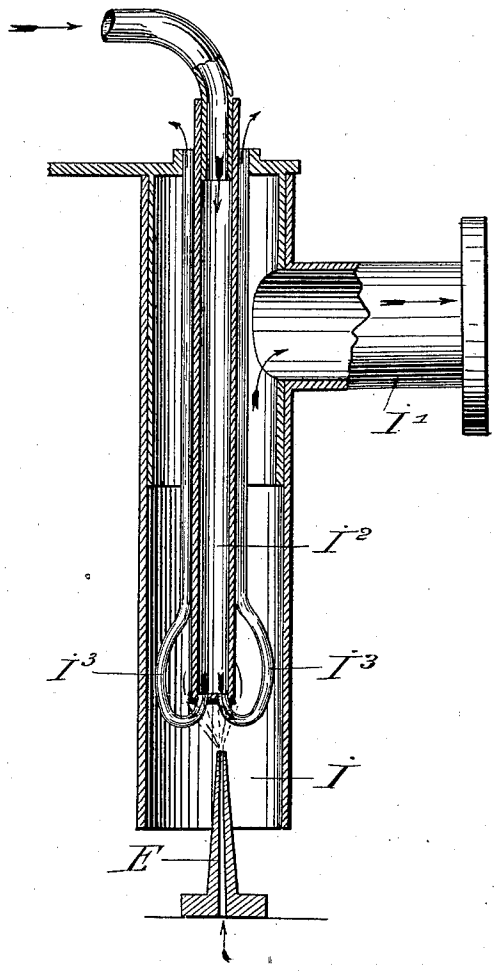


Fig 9



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E. Hoffman.

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UNITED STATES PATENT OFFICE.

FRANCIS LE BLON, OF BILLANCOURT, FRANCE.

CARBURETER FOR EXPLOSIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 685,993, dated November 5, 1901.

Application filed November 21, 1900. Serial No. 37,312. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS LE BLON, a citizen of the Republic of France, and a resident of Billancourt, Seine, France, have invented certain new and useful Improvements in Carbureters for Explosive-Engines, of which the following is a specification.

My present invention relates to improvements in carbureters for hydrocarbon, the object being to provide a carbureter in which the liquid hydrocarbon or other liquid is constantly taken at the center of the level thereof whatever may be the position of the vehicle or apparatus.

With this object in view the invention consists in the construction, novel combination, and arrangement of parts fully described and claimed hereinafter.

In the accompanying drawings, Figure 1 is a vertical sectional view of a carbureter constructed in accordance with my invention. Fig. 2 is a plan view of same. Figs. 3 and 4 are detail views showing modified forms of shutters or obturators and means for actuating same. Fig. 5 shows a modified form of twyer or ejecting-nozzle. Fig. 6 shows a modified form of cover and outlet. Fig. 7 shows a plan view and vertical section of a modified form of float. Fig. 8 is a view similar to Fig. 1, showing a modified form of float and outlet. Fig. 9 illustrates a device applicable to my carbureter for heating the hydrocarbon after mixing it with air.

Like letters and numerals refer to like parts throughout all the views.

Referring to Fig. 1 of the drawings, A represents a suitably-shaped receptacle, the bottom of which is provided with a central inlet-nozzle C, controlled by a ball or other valve C′, attached to an annular float B, arranged within the receptacle A and constructed so as to maintain the level of the liquid admitted through said nozzle C at a given line K. The upper end of the receptacle is provided with a horizontally-projecting flange A′, to which is secured a similar flange D′ of an inner receptacle D, the bottom of which is provided with a central hole, over which is suitably secured a vertical twyer or ejecting-nozzle E, the upper end of which is flush with the line K.

Secured over the receptacles A and D is a hollow cover-plate F, provided with peripherical holes H, adapted to be controlled by means of a ring *h*, rotatably arranged around the cover F and provided with similar holes. Said holes serve for the admission of air into the carbureter. Secured at the center of the cover-plate F is the outlet-pipe I, the lower portion of which forms the mixing-chamber, extending downwardly to a point near the bottom of the receptacle D and through which the mixture of air and hydrocarbon passes to the motor. Arranged within the hollow cover F is a coil-pipe G, through which is passed a part of the exhaust-gases from the motor for the purpose of heating the air entering the carbureter through the holes H.

When the motor is at its sucking period, the air entering the carbureter through the holes H and heated by the coil-pipe G passes downward through the annular space between the outlet-pipe I and the receptacle D and upward through the pipe I and carries away the liquid contained in the central nozzle E.

From the drawings (dotted line K) it will be readily seen that the liquid is continually sucked away at the center of the level, notwithstanding the position of the apparatus.

Instead of attaching the valve C′ directly to the float B said valve may be attached to a fulcrumed lever 1, pivoted on a bracket 2 and pivotally connected with a lever 3, also fulcrumed on the bracket 2 and suitably connected at its free end with a rod 4, secured to the bottom of the float B. (See Figs. 3 and 4.) The construction increases the efficiency of the closing device operated by said float.

Instead of employing the nozzle E shown in Fig. 1 I may employ the device shown in Fig. 5, formed of a central tube E, made integral, with two branch conduits E′ E′ turned one toward the other, whereby the jet is divided into two parts striking against each other, so as to be thoroughly pulverized and perfectly mingled with the air sucked into the carbureter.

The cover may be modified, as shown in Fig. 6—that is, it may be provided with a tube-section 5, rotatably mounted in front of a branch pipe 6 and having a lateral opening adapted to register with said pipe 6, whereby the passage of gas through the latter may be intercepted when desired.

The float shown in Fig. 7 consists of an annular hollow casing 7, having a reduced portion 8. It will be understood that as the level of the liquid rises to the line N′ from its normal level at N the buoyancy of the float will be increased, thereby raising the inlet-closing means to which it is connected. The number of shoulders (nine) may be augmented, so as to have a stepped form of float.

The modification shown in Fig. 8 consists of a hollow upwardly-flaring float B, which is open at its upper end, the latter being above the level of the liquid and the bottom of which is provided with a central hole, over which is secured the ejecting-nozzle E. The inner receptacle D is open at its bottom, through which extends the outlet-pipe I around said nozzle E. The interior of the pipe I may be provided with a series of staggered plates R, serving to produce a perfect mixture of air and hydrocarbon. Said plates R may of course be arranged within the outlet-pipe I. (Shown in Fig. 1.)

Referring now to Fig. 9, E indicates the twyer, and I the outlet-pipe, provided with a branch pipe I′, connected with the sucking-valve of the motor. Concentrically arranged in said pipe I is a smaller pipe I^2, extending to a point near the mouth of said twyer and connected with the exhaust of the motor. The lower end of said pipe I^2 terminates in a plurality of tubes I^3, curved upwardly and extending along the pipe I^2 and out from the pipe I. Thus the exhaust-gases from the motor may be utilized for heating the mixture as it is discharged from the twyer E, whereby petroleum or other hydrocarbon of inferior quality may be employed with great advantage.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In the carbureter of the class described, the combination with a receptacle, a liquid-inlet in the bottom of same, and a controlling-valve for said inlet, of a suitable float within the receptacle and suitably connected with said controlling-valve, a second receptacle secured to and arranged within the outer receptacle, a suitable ejector at the center of the inner receptacle and communicating with the interior of the outer receptacle, a suitable cover above said receptacles, means for admitting air into the carbureter, an outlet-pipe carried by said cover and extending around the ejector, means for heating the air admitted into the carbureter, and means for heating the mixture of hydrocarbon and air, substantially as set forth.

2. In a carbureter of the class described, the combination with a receptacle, a liquid-inlet in the bottom of same, and a controlling-valve for said inlet, of a suitable float within the receptacle and suitably connected with said controlling-valve, a second receptacle secured to and arranged within the outer receptacle, a suitable ejector at the center of the inner receptacle and communicating with the interior of the outer receptacle, the upper end of said ejector being flush with the normal level of liquid within the outer receptacle, a suitable cover above said receptacles, means for admitting air into the carbureter, an outlet-pipe carried by said cover and extending around the ejector, means for heating the air admitted into the carbureter and means for heating the mixture of hydrocarbon and air, substantially as set forth.

3. In a carbureter of the class described, the combination with a receptacle, a liquid-inlet in the bottom of same, and a controlling-valve for said inlet, of a suitable float within the receptacle and suitably connected with said controlling-valve, a second receptacle secured to and arranged within the outer receptacle, a suitable ejector at the center of the inner receptacle and communicating with the interior of the outer receptacle, the upper end of said ejector being flush with the normal level of liquid within the outer receptacle, a hollow cover above said receptacles, holes in the wall of said cover through which air is adapted to be admitted into the carbureter, means for controlling said holes, a central outlet-pipe carried by the cover and extending around the ejector, means for heating the air admitted into the carbureter and means for heating the mixture of hydrocarbon and air, substantially as set forth.

4. In a carbureter of the class described, the combination with a receptacle, a liquid-inlet in the bottom of same, and a controlling-valve for said inlet, of a suitable float within the receptacle and suitably connected with said controlling-valve, a second receptacle secured to and arranged within the outer receptacle, a suitable ejector at the center of the inner receptacle and communicating with the interior of the outer receptacle, the upper end of said ejector being flush with the normal level of liquid within the outer receptacle, a hollow cover above said receptacles, holes in the wall of said cover through which air is adapted to be admitted into the carbureter, means for controlling said holes, a central outlet-pipe carried by the cover and extending around the ejector, and a coil-pipe within the hollow cover and adapted to be connected with the exhaust of the motor, substantially as set forth.

5. In a carbureter of the class described, the combination with a suitable receptacle, a central inlet in the bottom thereof, a controlling-valve for said inlet, a hollow upwardly-flaring float within the receptacle and suitably connected with the controlling-valve, and a suitable nozzle communicating with the interior of the receptacle, and mounted to deliver the contents of said receptacle to the mixing-chamber, of an annular and downwardly-extending part secured to and arranged within the receptacle, a hollow cover above said part, holes in the wall of said cover through which air is adapted to be admitted into the carbureter, means for controlling

said holes, a central outlet-pipe forming the mixing-chamber carried by the cover and extending around the ejector, said pipe being concentric with said downwardly-extending portion, whereby an air-conduit will be formed therebetween and a coil-pipe within the hollow cover and adapted to be connected with the exhaust of the motor, substantially as set forth.

6. In a carbureter of the class described, the combination with a receptacle, a liquid-inlet in the bottom of same, and a controlling-valve for said inlet, of a suitable float within the receptacle and suitably connected with said controlling-valve, a second receptacle secured to and arranged within the outer receptacle, a suitable ejector at the center of the inner receptacle and communicating with the interior of the outer receptacle, a suitable cover above said receptacles, means for admitting air into the carbureter, an outlet-pipe carried by said cover and extending around the ejector, means for heating the air admitted into the carbureter and a concentric pipe within said outlet-pipe and extending downward near the ejector and then upward, out from the outlet-pipe, said concentric pipe adapted to be connected with the exhaust of the motor, substantially as set forth.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

FRANCIS LE BLON.

Witnesses:
ADOLPHE HURM,
EDWARD P. MACLEAN.