E. N. BRODERICK.

CARBURETER.

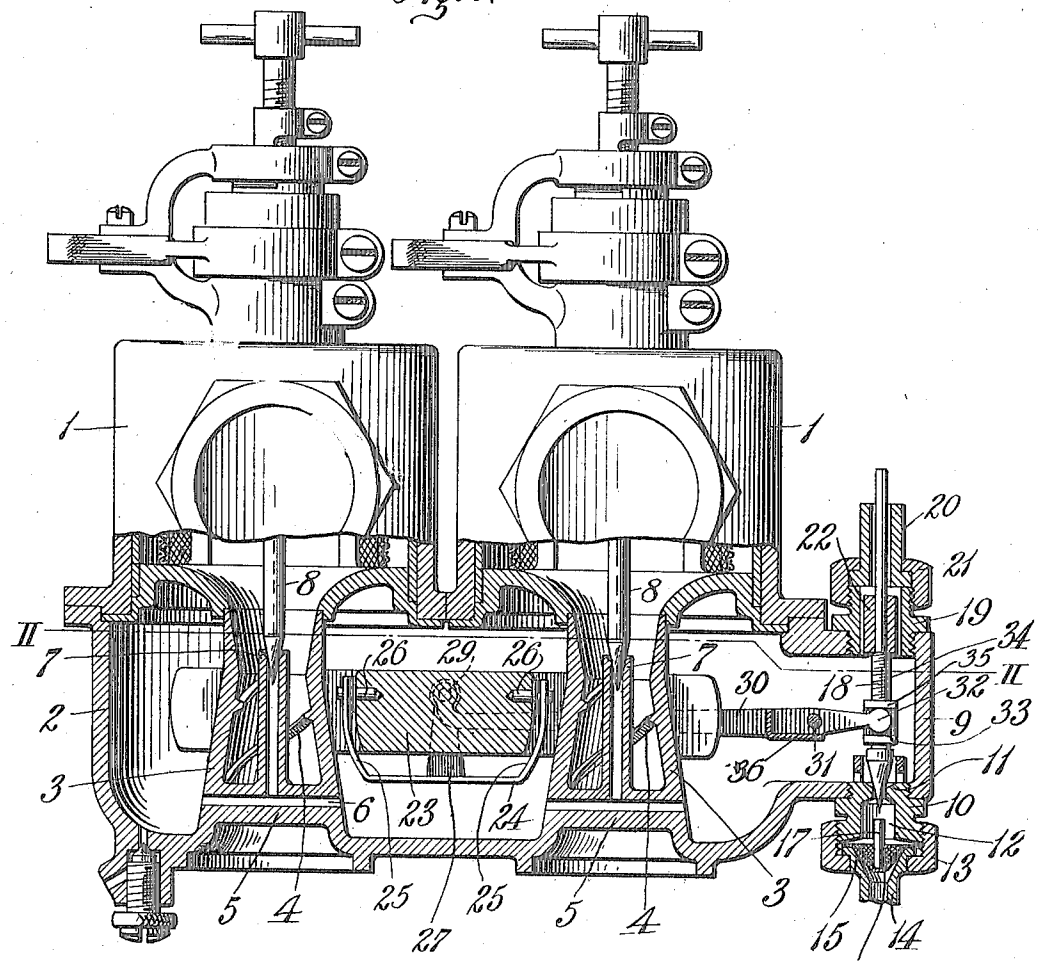
APPLICATION FILED OCT. 29, 1912. RENEWED MAR. 1, 1916.

1,207,681.

Patented Dec. 5, 1916.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
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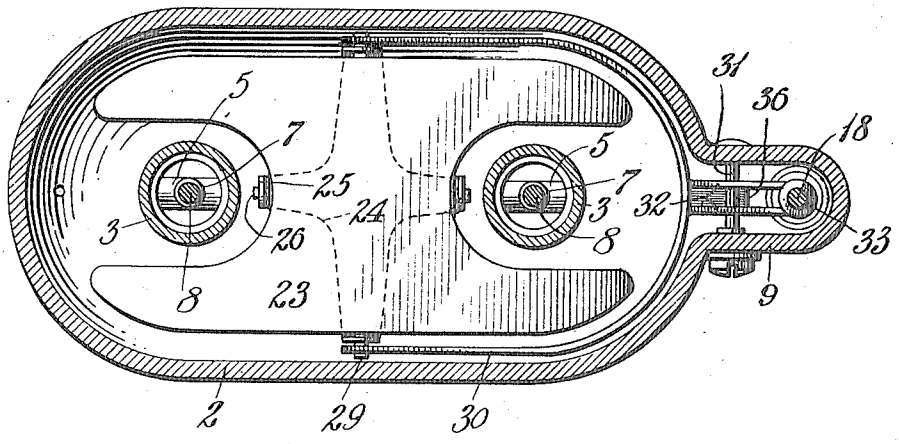
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2 SHEETS—SHEET 2.

Fig. 2



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UNITED STATES PATENT OFFICE.

ERNEST N. BRODERICK, OF DETROIT, MICHIGAN.

CARBURETER.

1,207,681 Specification of Letters Patent. Patented Dec. 5, 1916.

Application filed October 29, 1912, Serial No. 728,469. Renewed March 1, 1916. Serial No. 81,550.

To all whom it may concern:

Be it known that I, ERNEST N. BRODERICK, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Carbureters, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to float feed carbureters of the multiple type wherein a single fuel inlet is controlled by a single float regardless of the number of outlets and mixing chambers.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view partially in elevation and partially in section of a carbureter embodying features of the invention; Fig. 2 is a view in section on line 11—11 of Fig. 1.

As herein indicated a pair of mixing chambers 1 with any preferred form of controlling device and auxiliary outlets, are seated on a base or float chamber 2 provided with a pair of tapered bored air tubes 3 extending therethrough, the bore of each tube preferably having spiral deflectors 4 on the wall to impart rotary motion to the incoming current of air. A cross bar 5 on each tube has a fuel duct 6 in communication with the bore of an upright fuel nipple 7 whose upper ends is counterbored or otherwise adapted to form a seat for a needle closure 8 controlled from one of the mixing chambers.

A lateral extension 9 of the float chamber, whose lower wall is preferably at an interval above the base of the chamber is apertured to receive a bushing 10 having an annular valve seat 11 on its upper end and a counterbored guide passage 12 at its lower end. A coupling gland 13 screwthreaded or otherwise secured on the outer end of the bushing 10 retains the fuel inlet fitting 14 with flared or bell mouth piece 15 on which a suitably disposed screen 16 rests, a stem 17 of the latter loosely entering the opening 12.

A suitably disposed guide on the upper end of the bushing 10 serves to center a needle closure 18 over the valve seat 11, the stem of the latter passing upwardly through a bushing 19 and a cap 20 retained thereon by a collar 21. To limit the movement of the stem and to prevent disturbance of the latter from the exterior, a safety block 22 is placed thereon to check its upward movement.

A float 23 of suitable material and conformation lies in the base or float chamber 2 preferably being of the H shape herein indicated to clear the air tubes and to give sufficient buoyancy. A gimbal plate 24 has a pair of upwardly extending arms 25 with hanging arm pivot pins 26 inserted in the cross portion of the plate. Arms 27 at the gimbal plate ends are likewise pivoted to the yoke on bearing pins 29 at right angles to the pins 26. The gimbal yoke has its arms 30 pivoted on the pins 29 and its stem is fulcrumed on a cross pin 31 transversely disposed in the extension 9. Preferably the stem has a pair of parallel arms 32 embracing a bearing block 33 vertically adjustable on a screwthreaded portion 34 of the needle closure. The rounded end portions of the arms rock against wing flanges 35 on the bearing block so that movement of the float raises and lowers the stem. Preferably the yoke is one piece and is formed of sheet metal struck out in proportionate shape and bent as shown with a stiffening web 36 connecting the arms 32.

By this form of carbureter a single float control feed is obtained suitable for use with two or more mixing chambers. The construction of the air tubes imparts rotary motion for air indrawn therethrough, thereby obtaining uniform mixture at the outlet mouths of the fuel tubes because of the arrangement of the fuel closure and valve seat together with the guiding members, the parts are easily machined and the device may be adjusted as is necessary under conditions of service.

Obviously changes in the details of construction may be made without departing from the spirit of the invention and I do not care to limit myself to any particular form or arrangement of parts.

What I claim is:—

1. A multiple float feed carbureter comprising mixing chambers, a base supporting the chambers, a plurality of air tubes extending through the base each opening into a mixing chamber, spiral deflectors on the interior of each tube, a fuel nipple in each tube having a bore in communication with the interior of the base, a fuel inlet valve for the bore, a float conforming to the

base, a fuel inlet valve for the base having a needle closure, a gimbal yoke pivoted on the base operatively connected to the closure, a gimbal plate pivoted to the yoke parallel to the axis of oscillation of the latter and swiveled to the float transversely to the axis of oscillation to the yoke, and manually operable means for regulating the float through the nipples.

2. A multiple float feed carbureter comprising a base, mixing chambers supported on the base, air tubes extending through the base each opening into a chamber, a float in the base substantially surrounding the air tubes, a lateral extension on the base, a bushing in the base of the extension having an annular valve seat above the level of the bottom of the base, a guide bushing in the upper part of the extension, a closure for the seat having a stem reciprocatable through the guide bushing, a safety block on the stem for checking the upward movement of the closure, and gimbal connections between the float and closure for operating the latter.

3. A multiple float feed carbureter comprising a base, mixing chambers supported on the base, air tubes extending through the base each opening into a chamber, a float in the base substantially surrounding the air tubes, a lateral extension on the base, a bushing in the base of the extension having an annular valve seat above the level of the bottom of the base, a guide bushing in the upper part of the extension, a closure for the seat having a stem reciprocable through the guide bushing, a safety block on the stem for checking the upward movement of the closure, gimbal connections between the float and closure for operating the latter, a transversely disposed pivot pin in the extension, a gimbal yoke fulcrumed on the pin and operatively connected at its outer end to the closure, and a gimbal plate having arms pivoted to the extremities of the yoke and transversely disposed arms pivoted to the float.

4. A multiple float feed carbureter comprising a base, mixing chambers supported on the base, air tubes extending through the base each opening into a chamber, a float in the base substantially surrounding the air tubes, a lateral extension on the base, a bushing in the base of the extension having an annular valve seat above the level of the bottom of the base, a guide bushing in the upper part of the extension, a closure for the seat having a stem reciprocable through the guide bushing, a safety block on the stem for checking the upward movement of the closure, gimbal connections between the float and closure for operating the latter, a transversely disposed pivot pin in the extension, a gimbal yoke fulcrumed on the pin and operatively connected at its outer end to the closure, a gimbal plate having arms pivoted to the extremities of the yoke and transversely disposed arms pivoted to the float, and spiral deflectors on the walls of the air tubes.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST N. BRODERICK.

Witnesses:
OTTO F. BARTHEL,
C. R. STICKNEY.