No. 795,357. PATENTED JULY 25, 1905.

H. B. MAXWELL.

CARBURETER.

APPLICATION FILED FEB. 8, 1905.

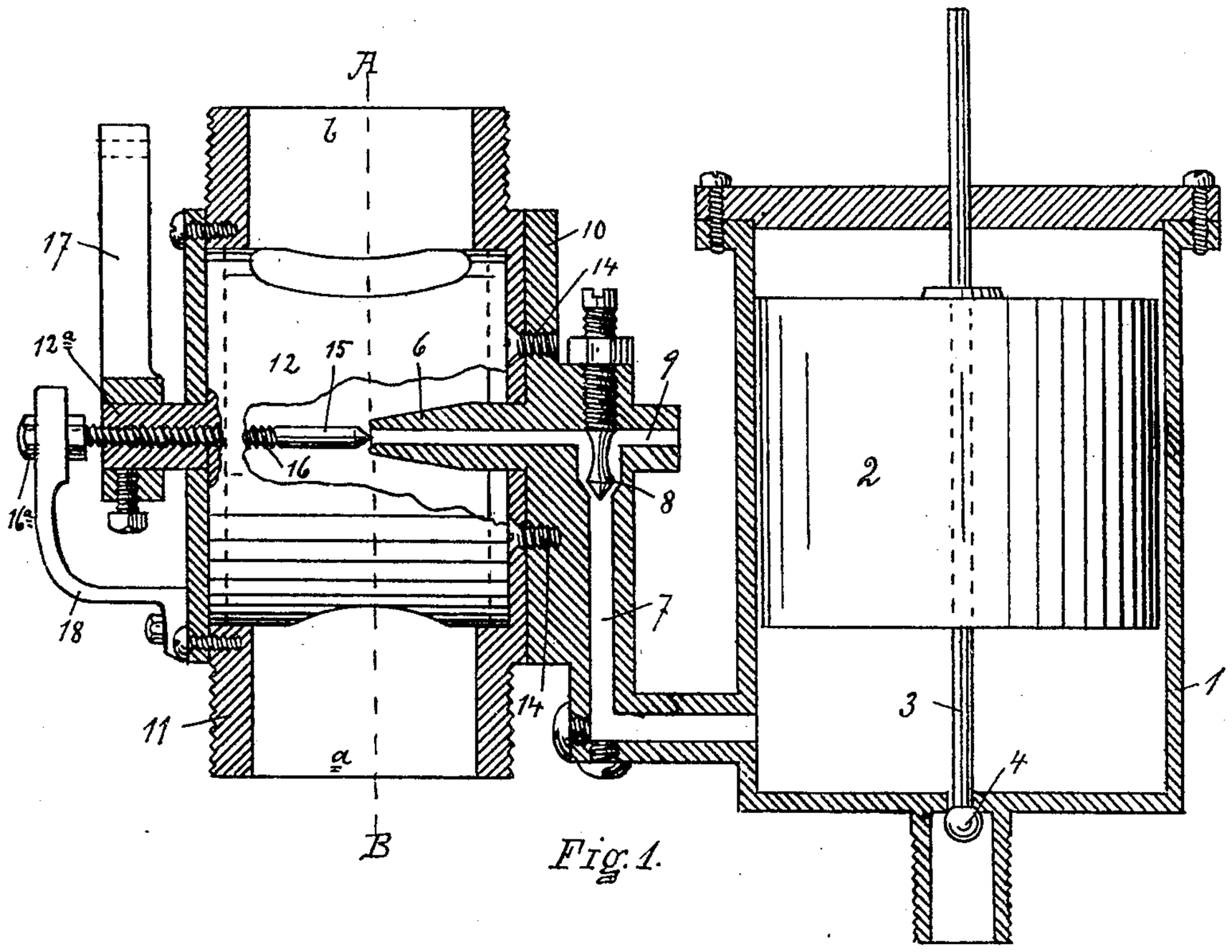

Fig. 1.

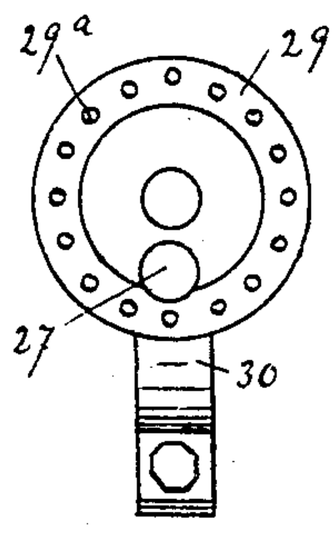

Fig. 3a

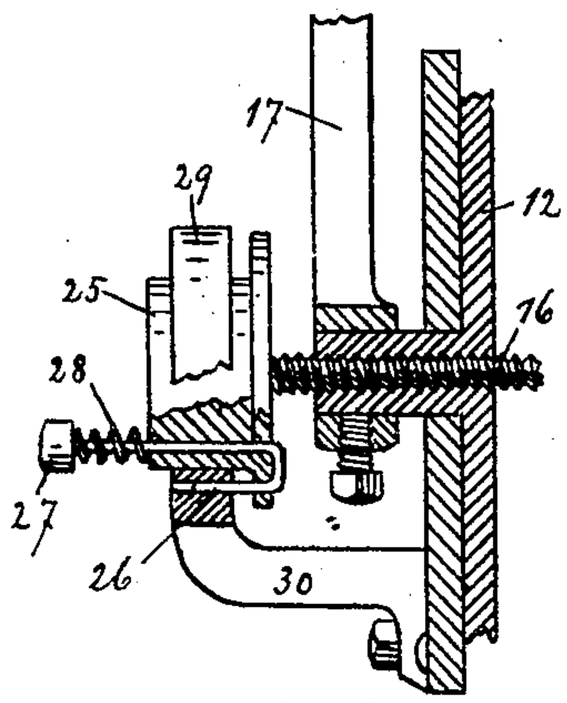

Fig. 3.

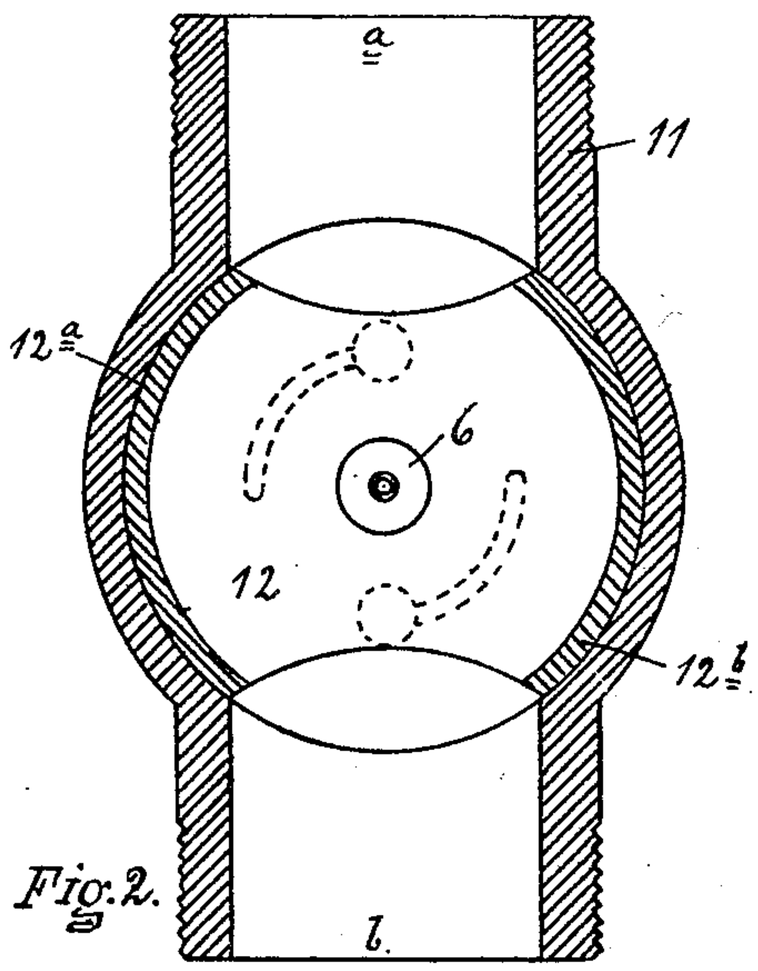

Fig. 2.

WITNESSES

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CARBURETER.

No. 795,357. Specification of Letters Patent. Patented July 25, 1905.

Application filed February 8, 1905. Serial No. 244,717.

To all whom it may concern:

Be it known that I, HARRY B. MAXWELL, of Rome, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Carbureters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form part of this specification.

The object of my present invention is to provide an improvement in carbureters for gas-engines, which improvement relates more particularly to the means for automatically controlling the flow of the carbureting fluid in conjunction with the control of the supply of air and that of the mixture.

In the drawings, Figure 1 shows a carbureter embodying my improved features, the same being shown mostly in section. Fig. 2 is a section taken on line A B of Fig. 1, showing the parts to the right of the section-line. Fig. 3 shows details in side elevation of a modified form of construction. Fig. 3[a] shows a plan view of certain of the details shown in Fig. 3.

Referring to the reference letters and figures in a more particular description, 1 indicates the float feed tank or chamber, which contains the float 2, mounted on a sliding spindle 3 and having a valve 4 at the lower end controlling the supply of carbureting fluid, usually gasolene, to the chamber 1 through the tube or opening 5. As a part of the device there is provided the carbureting-nozzle 6, which is preferably formed integral with the float tank or chamber 1 and is connected with the lower portion thereof by a passage 7, which passage terminates in the end of the nozzle and may be provided with a regulating-valve 8, preferably mounted on the screw for controlling the flow of gasolene through this passage. In connection with that portion of the passage more particularly which passes through the nozzle 6 proper there is provided an air-intake opening 9. The arrangement of float-chamber and nozzle 6 is preferably such that the passage through the nozzle 6 will occupy a plane slightly above that of the gasolene in the float-chamber as controlled by the float 2 and valve 4. Around the base of the nozzle 6 there is provided a face-plate 10, on which is mounted, by means of its circular side, the casing 11. The casing 11 is provided with openings at either end, as indicated at *a b*, with a passage between said openings. In the passage between the openings *a* and *b* is introduced the rotary cut-off 12, consisting of a cylindrical shell having openings at opposite sides to afford a passage therethrough in connection with the hollow chamber within the cut-off and more particularly providing the gate portions 12[a] and 12[b]. The nozzle 6 passes through an opening in the side of the casing and projects axially into the cylindrical cut-off 12, and its open end is located substantially in the axial line of the casing 11. The casing 11 is adjustably secured to the plate 10 by screws 14.

At the discharge or open end of the nozzle 3 there is provided a valve 15, mounted on a screw-threaded stem 16, which engages with and passes through a screw-threaded opening in the head of the cut-off 12 and through the boss 12[a] thereof, on which is secured or which receives the operating-lever 17. In the form of construction shown in Fig. 1 the outer end of the stem 16 is provided with a head 16[a] of angular form, which is received in the eye on the end of the spring-hanger 18, which hanger is supported on the casing and is adapted to prevent rotation of the stem 16 in conjunction with the movement of the cut-off 12. The head 16[a] may be of hexagon or octagon shape, so that when the spring-keeper 18 is disengaged therefrom the screw-stem 16 can be given a partial revolution—as, for instance, an eighth of a revolution or more. It will thus be seen that when the keeper 18 is disengaged therefrom the valve 15 can be very nicely adjusted in its position with reference to the nozzle 6. When engaged, as shown in Fig. 1, the keeper 18 will hold the stem against rotary movement; but as the head is adapted to slide freely through the eye in the end of the keeper it may have a longitudinal movement.

The operation of carbureters of the class herein shown is too well understood to warrant specific description, except that it may be noted that as the cut-off 12 is opened and closed, being rotated on its axis to accomplish this end, the valve 15 will be opened and closed by reason of the screw-threaded connection

between the two. It is not contemplated to have the valve 15 absolutely close the end of the nozzle 6 at any time. This valve is intended more as a regulating-valve to increase or decrease the size of the passage at the delivery end of the nozzle. The arrangement of the screw on the stem 16 with reference to the other parts is preferably such that as the cut-off is moved to open position—that is to say, to afford a free passage through the casing 11—the valve 15 will be moved away from the end of the nozzle 6, affording a larger passage out of the delivery end of the nozzle.

A modified form of construction of mechanism for securing the adjustment of the spindle 16 is shown in Figs. 3 and 3ª. In this form of construction there is provided a head 25 on the screw-threaded spindle 16, which head carries the catch-pin 26, adapted to be operated by the push-button 27 to unlocked position and by the spring 28 to locked position. Surrounding the head 25 is a ring 29, supported in fixed position by a bracket-arm 30 from the casing 11 and having a circle of holes 29ª, adapted to receive the catch-pin 26. It will be observed that when the catch-pin 26 is withdrawn by pushing on the push-button 27 the head 25, together with the valve-stem 16, may be rotated to any desired position of adjustment substantially, and when the catch-pin 26 is reëngaged in any of the numerous perforations provided therefor the stem will be secured against rotation at that position of adjustment. Then when the cut-off is operated, as heretofore pointed out, the stem will be held against rotary movement in connection with the cut-off, but will have a longitudinal movement. The length of the catch-pin and the length of the head 25 are such as to permit all necessary longitudinal movement incident to the operation and adjustment of the device.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a carbureter, the combination of a casing having inlet and outlet openings and a passage therethrough, a rotatable cut-off device in said casing having gates 12ª and 12ᵇ, means for rotating the cut-off to control the passage, a carbureting-nozzle projecting axially into the rotatable cut-off device and into the line of passage through the casing, means for supplying carbureting fluid to the nozzle, a valve located at the discharge end of the nozzle having a screw-threaded stem engaging with a screw-threaded opening in the axis of the cut-off device, and means for securing the valve-stem from rotation in unison with the movement of the cut-off device, whereby an opening and closing of the valve is secured in unison with the movement of the cut-off, substantially as set forth.

2. In a carbureter, the combination of a casing having a passage through the same, a hollow rotatable cut-off device in said passage having gates at either side, means for operating the cut-off by turning it on its axis, a carbureting-nozzle projecting axially into said rotatable cut-off device from one side, a valve located at the discharge end of the nozzle, a screw-threaded stem supporting said valve and engaging with a threaded axial opening in the cut-off device, and means for adjustably securing the valve-stem against rotation in unison with the cut-off device, and means for supplying carbureting fluid to the nozzle, substantially as set forth.

In witness whereof I have affixed my signature, in presence of two witnesses, this 1st day of February, 1905.

HARRY B. MAXWELL.

Witnesses:
A. L. Dale,
John Hubst.