

J. W. STEVENS.
CARBURETER.
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929,260.

Patented July 27, 1909.

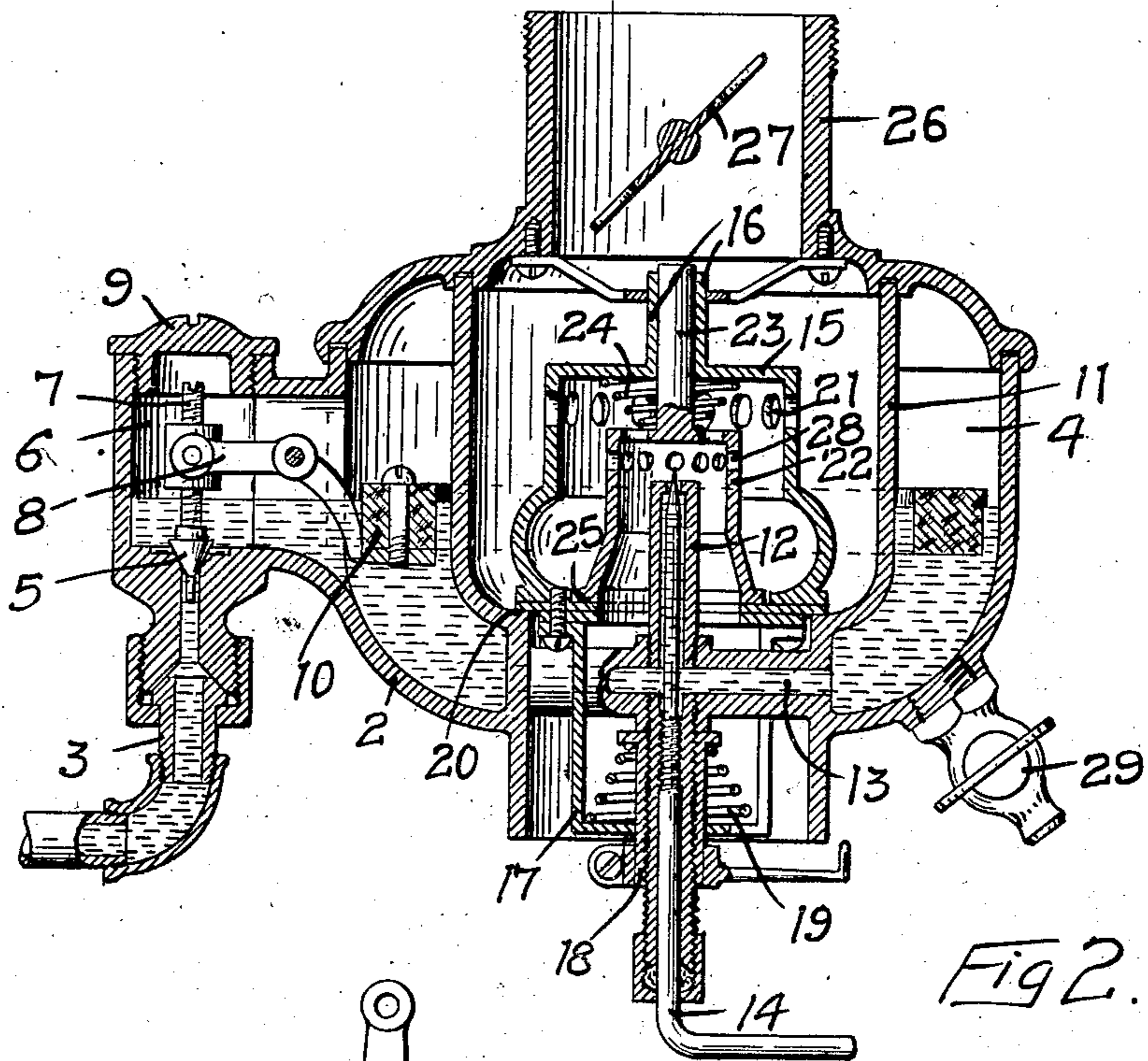


Fig 2.

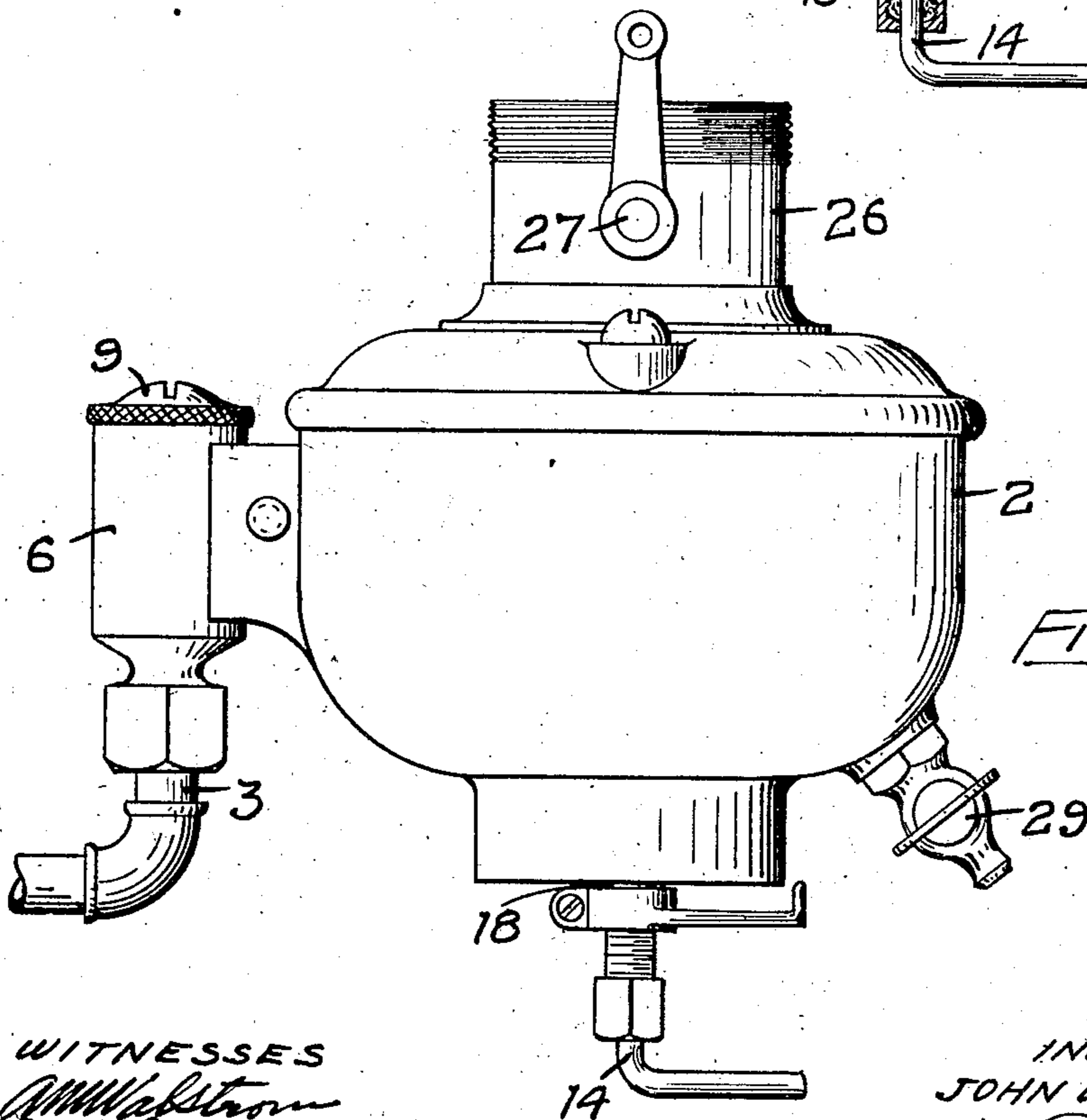


Fig 1.

WITNESSES
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UNITED STATES PATENT OFFICE.

JOHN W. STEVENS, OF ST. PAUL, MINNESOTA.

CARBURETER.

No. 929,260.

Specification of Letters Patent.

Patented July 27, 1909.

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To all whom it may concern:

Be it known that I, JOHN W. STEVENS, of St. Paul, Ramsey county, Minnesota, have invented certain new and useful Improvements in Carbureters, of which the following is a specification.

The object of my invention is to provide a carbureter, by means of which the volume of carbureted air delivered to the cylinder will be automatically regulated according to the speed of the engine and the degree of suction produced by the movement of the piston.

My invention consists generally in providing valves arranged one within the other, which are capable of operating successively, to release the carbureted air in varying volume, as desired.

In the accompanying drawings, forming part of this specification, Figure 1 is a view, showing the outside of my improved carbureter, Fig. 2 is a sectional view of the same.

In the drawing, 2 represents a casing having an oil supply pipe 3 on one side leading to a chamber 4, the entrance to which is controlled by a valve 5. This valve 5 is preferably located in an extension 6 of the casing and has a threaded stem 7 adjustably mounted in a lever 8, which is accessible through a cap 9. The lever 8 is pivoted at a point intermediate to its ends and is attached to a float 10 that is located within the chamber 4 and may be in the form of a ring, as shown, inclosing a centrally arranged housing 11. The movement of the float is adapted to open and close the valve 5 in the usual way and is controlled by the height of the liquid in the chamber.

Within the housing 11, a stand pipe 12 is arranged, communicating with the chamber 4, through a passage 13 and having a needle valve 14, which controls the flow of oil through the pipe.

A valve 15 is arranged within the housing 11 and is provided with a guide 16 at its upper end and at its lower end is attached to a yoke 17 that is adapted to slide on a hollow stud 18, a spring 19 being coiled about said stud and normally holding the valve in its closed position against a seat 20, which is formed on the wall of the housing 11. The upper portion of the valve 15 has a series of holes 21 therein and within the said valve is a second valve 22 spaced from the valve 15 and having a guide 23 at its upper end

and normally held in its depressed or closed position by a spring 24 that is weaker than the spring 19, so that the valves will open successively. A seat 25 is provided at the lower end of the outer valve, with which the inner valve contacts. A pipe 26 leads from the chamber 4 to the cylinder and is equipped with a valve 27. The upper portion of the valve 22 is provided with ports 28 leading from the space inclosed by said valve to the space between the inner and outer valves. The chamber 4 has a suitable draw-off valve 29.

In the operation of the carbureter, the valve 14 having been adjusted, air is drawn through the ports 28 and 21, and as the suction increases, the valve 22 may be lifted entirely from its seat, allowing air to enter between said valve and its seat, as well as flow through the ports 28. If the suction still increases and a larger volume of air becomes necessary, the valve 15 will leave its seat and air will flow under it as well as under the inner valve and pass on to the cylinder. By this means, the carbureter will automatically adapt itself to the varying speeds of the engine and the degree of suction, without further attention on the part of the operator.

I do not wish to confine myself to the location of these valves with respect to the chamber 4, or to the float, which incloses them, as they may be arranged outside of said chamber, without materially affecting the successful operation of the device.

I claim as my invention:—

1. A carbureter, comprising a casing having connection with a source of oil supply and provided with a stand pipe having an oil feed opening and a valve therefor, and an air inlet opening, a valve inclosing the upper portion of said stand pipe and spaced therefrom and having ports in its upper walls and a seat at its lower end, and means for yieldingly holding said valve upon its seat, and a second valve inclosing said first-named valve and spaced therefrom and also having ports in its upper walls, and a seat in its lower end and means yieldingly holding said second valve against its seat, and said valves covering said air inlet opening and being adapted to rise successively as the degree of suction increases, for the purpose specified.

2. In a carbureter, the combination, with a casing having an air inlet opening, of valves arranged one within the other and closing said opening and spaced from one

another, said valves having ports and seats and means for holding said valves on said seats with a varying pressure, means for delivering a supply of oil within said inner valve, and the casing inclosing said valves having means for connection with an engine cylinder, substantially as described.

3. The combination, with a casing, having an oil supply and means for regulating its delivery thereto, of a housing arranged within said casing having means for connection with an engine cylinder, valves concentrically arranged within said housing and in the form of inverted cups spaced from one another, said valves each having seats at their lower ends, and means for yieldingly holding said valves on said seats, and said

valves having ports in their upper walls communicating with the space within said housing and with the space between said valves, means for delivering oil within said inner valve, and said housing having an air intake opening that is partially closed when said valves are seated to reduce the volume of air entering said housing and the lifting of said valves from their seats successively permitting an increased volume of air to enter said housing, substantially as described.

In witness whereof, I have hereunto set my hand this 25 day of February 1909.

JOHN W. STEVENS.

Witnesses:

J. A. BYINGTON,
C. G. HANSON.