

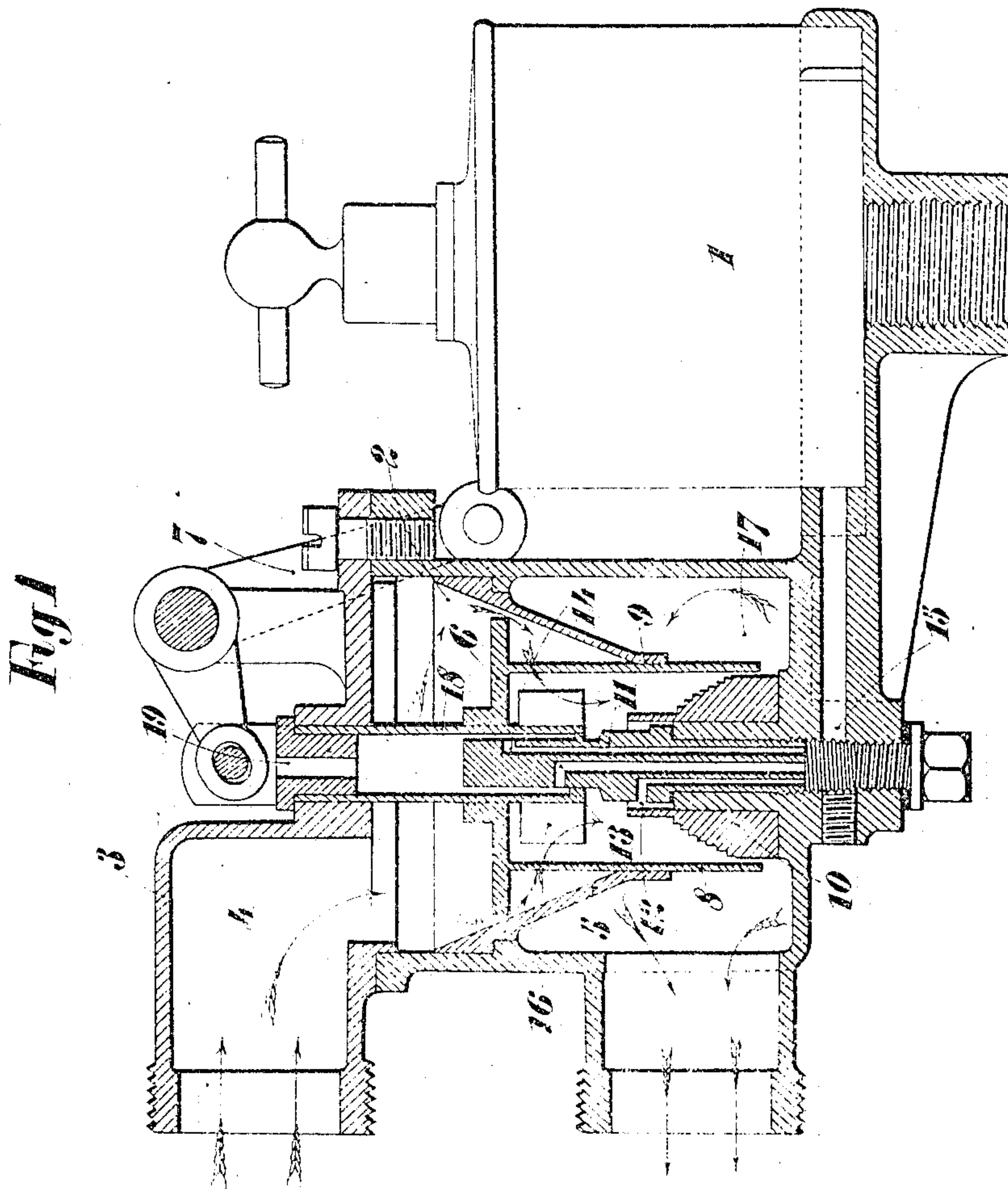
No. 818,853.

PATENTED APR. 24, 1906.

L. RENAULT.  
CARBURETER.

APPLICATION FILED MAY 29, 1905.

2 SHEETS—SHEET 1



Witnesses:

*J. B. Keeler*  
*E. Kester*

Inventor

Louis Renault

By *James L. Norris*

*Att'y*

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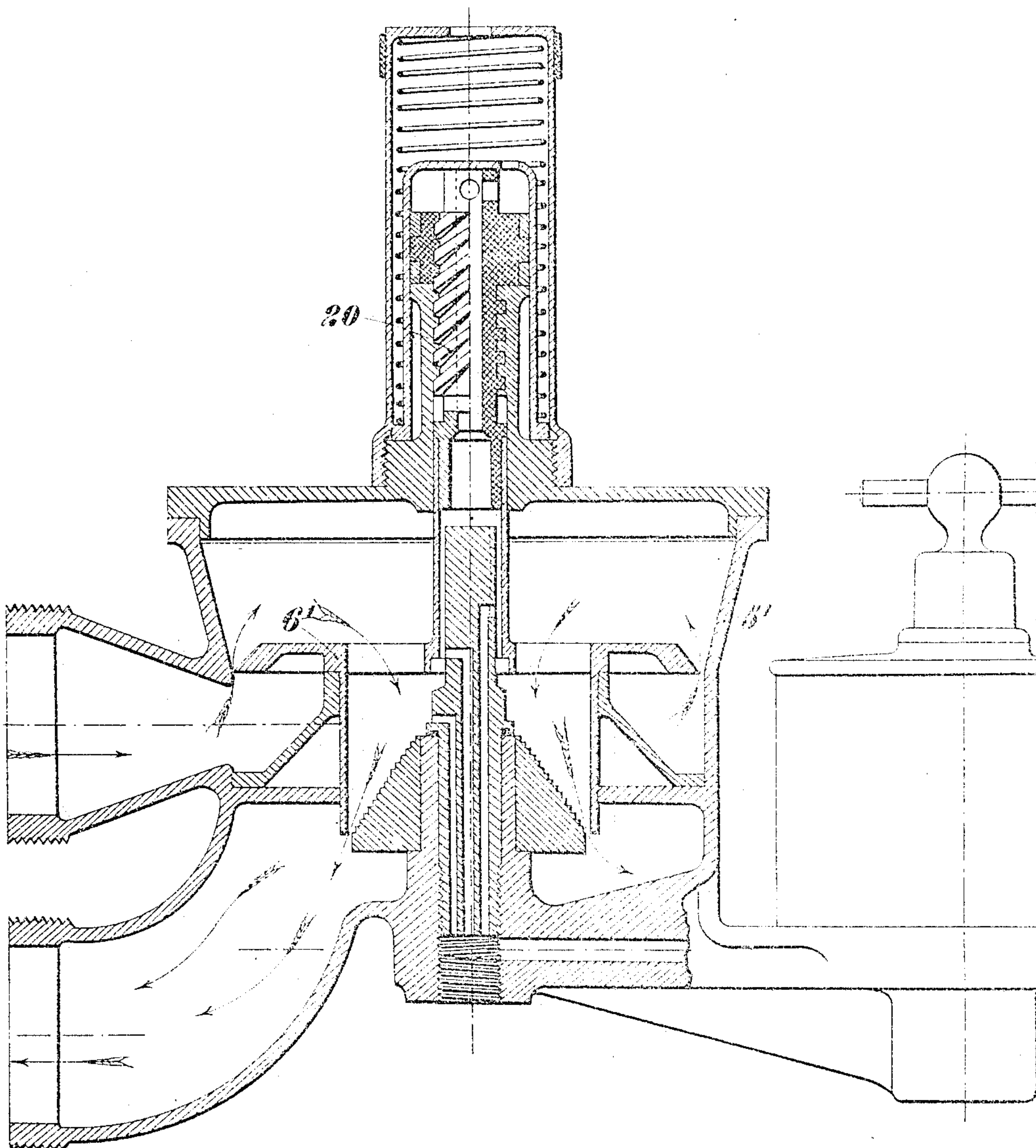
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2 SHEETS-SHEET 2.

*Fig. 2.*



*Witnesses:*

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# UNITED STATES PATENT OFFICE.

LOUIS RENAULT, OF BILLANCOURT, FRANCE.

## CARBURETER.

No. 818,853.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed May 29, 1905. Serial No. 262,888.

*To all whom it may concern:*

Be it known that I, LOUIS RENAULT, engineer, a citizen of the French Republic, residing at Billancourt, Department of the Seine, France, have invented certain new and useful improvements in Carbureters, of which the following is a specification.

This invention has for its object to provide a carbureter having a variable supply and in which the passages for the air and liquid hydrocarbon can be simultaneously and proportionately increased or decreased either by mechanical means operated by hand or automatically in proportion to the degree of vacuum created in the suction-pipe of the carbureter.

I will describe my invention with reference to the accompanying drawings, of which—

Figure 1 is a vertical section of a carbureter constructed according to my invention in which the supply of explosive mixture is regulated by mechanical means operated by hand, and Fig. 2 is a similar section of a carbureter operated automatically.

The carbureter, Fig. 1, comprises a chamber 1, containing liquid hydrocarbon at a constant level, and an air-chamber 2, closed at its upper part by a cover 3, provided with an opening 4, through which air enters the chamber. At the upper part of the chamber 2 is arranged a conical or funnel-shaped member 5, inside which a disk 6 can be moved up and down by means of the bell-crank 7. The under side of the disk 6 is provided with a hollow cylinder 8, sliding smoothly in the lower part of the funnel-shaped member 5 and surrounding a conoidal part 10, surrounding a projection inward from the base of the chamber 2. On the top of the said projection rests a spraying-nozzle 11, provided with several passages 12 13 14, arranged at different heights and forming communication by the passage 15 between the chambers 1 and 2.

The upper part of the cylinder 8 is provided with openings 16 for permitting the air entering by the opening 4 passing into the cylinder 8, from whence it passes into the space 17 of the chamber 2, from whence it passes into the suction-pipe of the motor.

The conoidal part 10 enables the passage from the cylinder 8 to the space 17 to be completely closed; but if the cylinder 8 and disk 6 be raised by means of the bell-crank 7 an air-passage is obtained the cross-sectional area

of which is proportional to the lift of the said cylinder and disk. When the cross-section of the passage for air from the cylinder 8 to the space 17 increases, the cross-section of the air-passage from the chamber 2 to the inside of the cylinder 8 also increases. The operation of the cylinder 8 permits of increasing proportionately the cross-section of the passage comprised between the funnel-shaped member 5 and the conoidal part 10,

The disk 6 carries at its center a second cylinder 18, the upper part of which passes through the cover 3 and is in communication with the atmosphere through the opening 19. The lower part of the cylinder 18 is of reduced internal diameter and can slide smoothly over the spraying-nozzle. According as the disk 6 is more or less raised, a greater or lesser number of outlets for the liquid hydrocarbon is uncovered and subjected to the suction produced in the cylinder 8. When the disk 6 is at the lower end of its stroke—that is, when the cylinder 8 intercepts the passage between the inside of this cylinder and the space 17—the liquid-hydrocarbon outlet 12 is in communication with the inside of the cylinder 8, while the other two passages 13 and 14 for the liquid hydrocarbon are covered by the tube 18, and thereby put in communication with the atmosphere through the opening 19 and are consequently entirely unaffected by the suction-stroke of the motor-piston.

If the disk 6 be raised by means of the bell-crank 7, the air-passage around the spraying-nozzle 11 increases as the disk rises, while at the same time the supply of liquid hydrocarbon increases proportionately, because the lower part of the tube 18 uncovers successively the passages 13 14, which being then subjected to the suction created in the chamber 8 come successively into operation.

In order to render the carbureter automatic in action, it is necessary to substitute for the operating-lever 7 means whereby the cylinder 8 and disk 6, Fig. 2, are raised by suction in the carbureter. For this purpose the disk 6', moving in the conical part 5' of the carbureter, is made very large, so as to present a large area to and be more efficiently acted upon by the suction. The movement of the disk is regulated by means of a screw-brake 20 to prevent the disk moving too suddenly.

Having now particularly described and ascertained the nature of my invention and in

what manner the same may be performed, I declare that what I claim is—

1. A carbureter comprising a mixing-chamber, a spraying-nozzle provided with a plurality of outlet-passages of different lengths, said passages communicating with the mixing-chamber and a hydrocarbon-supply, a funnel-shaped member arranged within the mixing-chamber, a vertically-movable disk arranged within the mixing-chamber, a cylindrical member carried by said disk, positioned within said funnel-shaped member and having openings in the side thereof, and means carried by said disk for closing certain of the outlet-passages of the nozzle and for establishing communication between the passages and the atmosphere.

2. A carbureter comprising a mixing-chamber, an air-inlet therefor, a chamber surrounding said mixing-chamber and adapted to communicate therewith, an outlet for said last-mentioned chamber, a vertically-movable cylindrical member adapted to open and

close communication between the two chambers, a nozzle extending within said mixing-chamber and provided with a plurality of outlet-passages of different lengths opening into the mixing-chamber and communicating with a hydrocarbon-supply, a vertically-movable disk attached to said cylindrical member, means carried by the disk and surrounding the nozzle and adapted to close certain of said passages to said mixing-chamber and to establish communication between said passages and the atmosphere, and means for vertically moving said closure means, thereby imparting a like movement to the disk and cylindrical member.

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

LOUIS RENAULT.

Witnesses:

EMILE KLOH,  
PIERRE LEINE.