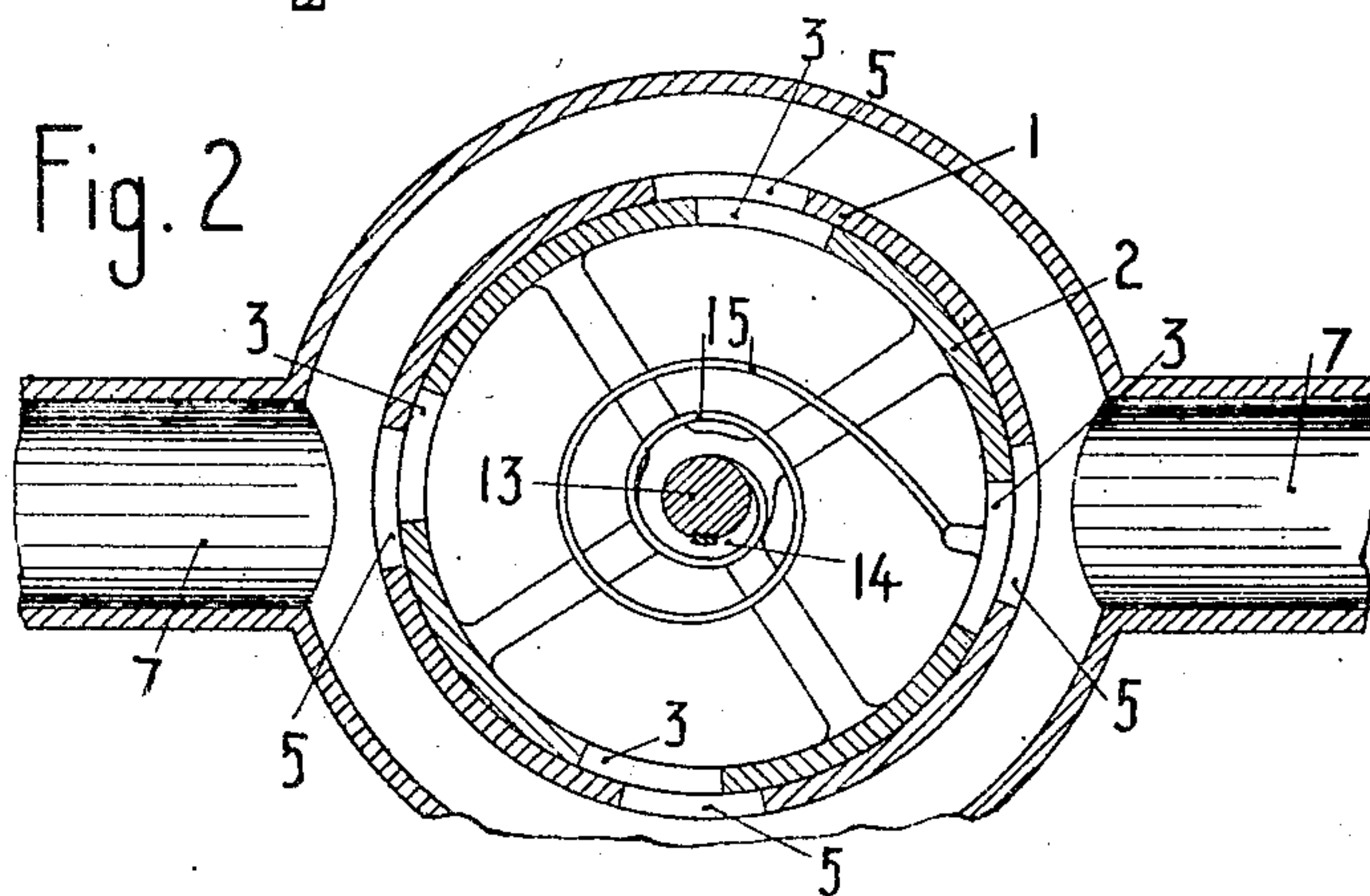
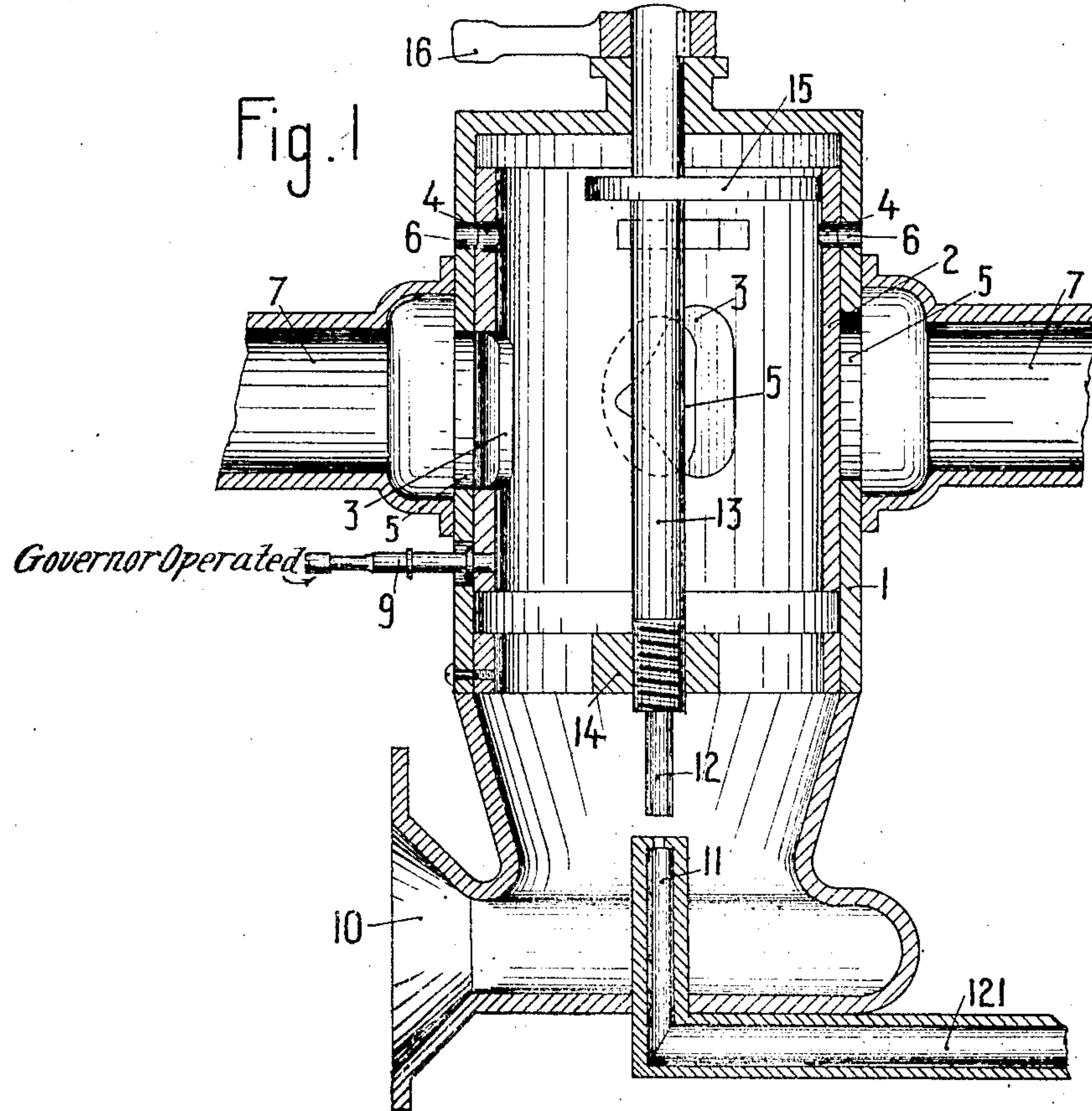


G. ENRICO.
CARBURETER FOR INTERNAL COMBUSTION ENGINES.
APPLICATION FILED NOV. 27, 1906.

904,855.

Patented Nov. 24, 1908.



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CARBURETER FOR INTERNAL-COMBUSTION ENGINES.

No. 904,855.

Specification of Letters Patent.

Patented Nov. 24, 1908.

Application filed November 27, 1906. Serial No. 345,359.

To all whom it may concern:

Be it known that I, GIOVANNI ENRICO, engineer, a subject of the King of Italy, residing at Turin, Corso Dante 35-37, Italy, have invented certain new and useful Improvements in Carbureters for Internal-Combustion Engines, of which the following is a full, clear, and exact specification.

In internal combustion engines it is necessary to keep the proportions of the constituents of the combustible mixture as constant as possible for securing efficiency of the engine, but sometimes it is desirable, especially when the engine is applied to a motor car, to vary the proportions of such constituents for short periods by increasing, or diminishing, the quantity of hydrocarbon relatively to the quantity of air.

The object of this invention is to provide a carbureter securing the automatic regulation of the amount of carburation under normal running conditions, while it enables the proportions of the constituents of the mixture to be varied when desired; the invention also comprises means for deflecting the hydrocarbon in a direction across the air current for insuring efficient mixture of the air and hydrocarbon.

I will describe this invention with reference to the accompanying drawings wherein

Figure 1 is a sectional elevation, and Fig. 2 a sectional plan, of an arrangement in accordance therewith.

1 is a cylindrical body of the carbureter constituting a mixing chamber, 2 is a cylindrical air distributor capable of rotating within the mixing chamber 1 and provided with openings 3 and 4 corresponding to openings 5 and 6 in the body of the carbureter, which openings act respectively as inlets to the suction pipes 7 of the cylinders and inlets for additional atmospheric air, so that, on turning the cylindrical distributor 2, the suction is suitably regulated, air, preferably hot, entering the mixing chamber through the opening 10 while the required quantity of additional air enters through the openings 6. The adjustment of the distributor 2 can be effected, as usual, by an arm 9 which may be connected with a centrifugal governor. The hydrocarbon is supplied to the carbureter through a tube and flat nozzle 11 connected, by a tube 121, to the reservoir of hydrocarbon. Above the nozzle 11 is the flat end 12 of a screw-

threaded rod 13 passing through a hub 14 formed with, or connected to, the body of the carbureter 1. The rod 13 is connected to the cylindrical distributor 2 by means of an elastic member, such as a spring 15, which has no initial load, or tension, put on it so that all the movements of the distributor 2 are transmitted by the said elastic member, or spring 15, in either direction to the rod 13, which, on being lowered, or raised, by the rotation of its screw-threaded part within the hub 14, brings the flat end 12 of the said rod, nearer to, or further away from, the end of the flat nozzle 11, thereby causing a greater, or lesser, resistance to the efflux of hydrocarbon from the opening in the nozzle 11, thus regulating the quantity of hydrocarbon admitted to the mixing chamber at the same time that the corresponding movement of the distributor 2 regulates the suction and admission of additional air. The rod 13 extends upwardly and projects from the top of the carbureter body and is there connected to a lever, or other device, 16, which can be operated by hand when it is desired to vary the ratio of the constituents of the mixture, the elastic member, or spring, 15, permitting the rod 13 to operate while leaving the position of the distributor 2 unchanged, so that the quantity of hydrocarbon supplied by the nozzle 11 is varied, while the quantity of air admitted is not varied. As soon as the lever, or the like, 16, is released, the parts return to their previous positions and the mixture of air and hydrocarbon resumes its normal proportions. The flat end of the part 12 over the flat upper end of the nozzle 11 causes the hydrocarbon to be deflected across the air current and this insures an efficient mixing of the hydrocarbon and air.

What I claim is:

1. In a carbureter for internal combustion engines, a hydrocarbon valve, an air valve, and means for connecting said valves so that they may be moved together to vary the quantity of mixture, such means being adapted to permit a relative manual adjustment of such valves and the automatic return thereof to their original relative positions.

2. In a carbureter for internal combustion engines, a hydrocarbon valve, an air valve, and means for connecting said valves to a governor so that they may be moved

together to vary the quantity of mixture, such means being adapted to permit a relative manual adjustment of such valves and the automatic return thereof to their original relative positions.

3. In a carbureter for internal combustion engines, the combination of a hydrocarbon valve, an air valve, means for connecting said valves so that they may be moved together to vary the quantity of mixture, said means including means for automatically restoring the relative positions of said valves when altered, and means for altering their relative positions by hand.

4. In a carbureter for internal combustion engines, the combination of means for controlling the quantity of air and hydrocarbon, and means for altering the proportion of air and hydrocarbon, said controlling means including means for automatically restoring the proportions after alteration.

5. In a carbureter for internal combustion engines, the combination of means for controlling the quantity of air and hydrocarbon, and means for altering the proportions of air and hydrocarbon, said controlling means including means for automatically restoring the proportions after alteration comprising a resilient member connecting one of such regulating means to the other.

6. In a carbureter for internal combustion engines, the combination of an air valve, a hydrocarbon valve, means for moving both said valves to regulate the quantity of mixture without changing its proportions, and means for adjusting the proportions of air and hydrocarbon, said moving means including means for automatically restoring such proportions when such adjusting means are released.

7. In a carbureter for internal combustion engines, the combination with an air valve and a hydrocarbon valve, of a resilient connection between such valves, said connection being adapted to move the hydrocarbon valve when the air valve is operated, and being adapted to permit the independent operation of the hydrocarbon valve.

8. In a carbureter for internal combustion engines, the combination with an air

valve and a hydrocarbon valve, of a resilient connection between such valves, said connection being adapted to move the hydrocarbon valve when the air valve is operated, and being adapted to permit the independent operation of the hydrocarbon valve, such means being adapted to automatically restore the hydrocarbon valve to its former relation with the air valve when the independent operation ceases.

9. In a carbureter for internal combustion engines, a cylindrical air valve, a hydrocarbon valve passing through said air valve, and a spring connecting said air valve with said hydrocarbon valve, said spring being adapted to yieldingly hold said valves in a definite angular relation, and to restore them to such relation after they are relatively displaced.

10. In a carbureter for internal combustion engines, the combination of an air valve, a hydrocarbon valve, one of said valves being adapted for direct connection to a governor, a connection between said valves adapted to cause them to normally move to a corresponding extent when the governor is operated, but adapted to permit the valve which is not directly connected to the governor to be operated independently of said governor, and means for automatically restoring said independently operated valve, after its independent operation, to its normal position with relation to the first-named valve.

11. In a carbureter for internal combustion engines, the combination of a cylindrical air valve, a hydrocarbon nozzle, a hydrocarbon valve comprising a screw-threaded rod opposite said nozzle, means which said rod screws to alter its position, and a torsional spring connecting said air valve with said rod and adapted to restore them to a normal angular relation after relative movement.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

GIOVANNI ENRICO.

Witnesses:

JOHN BAGETTO,
FERRARIS GIOVANNI.