

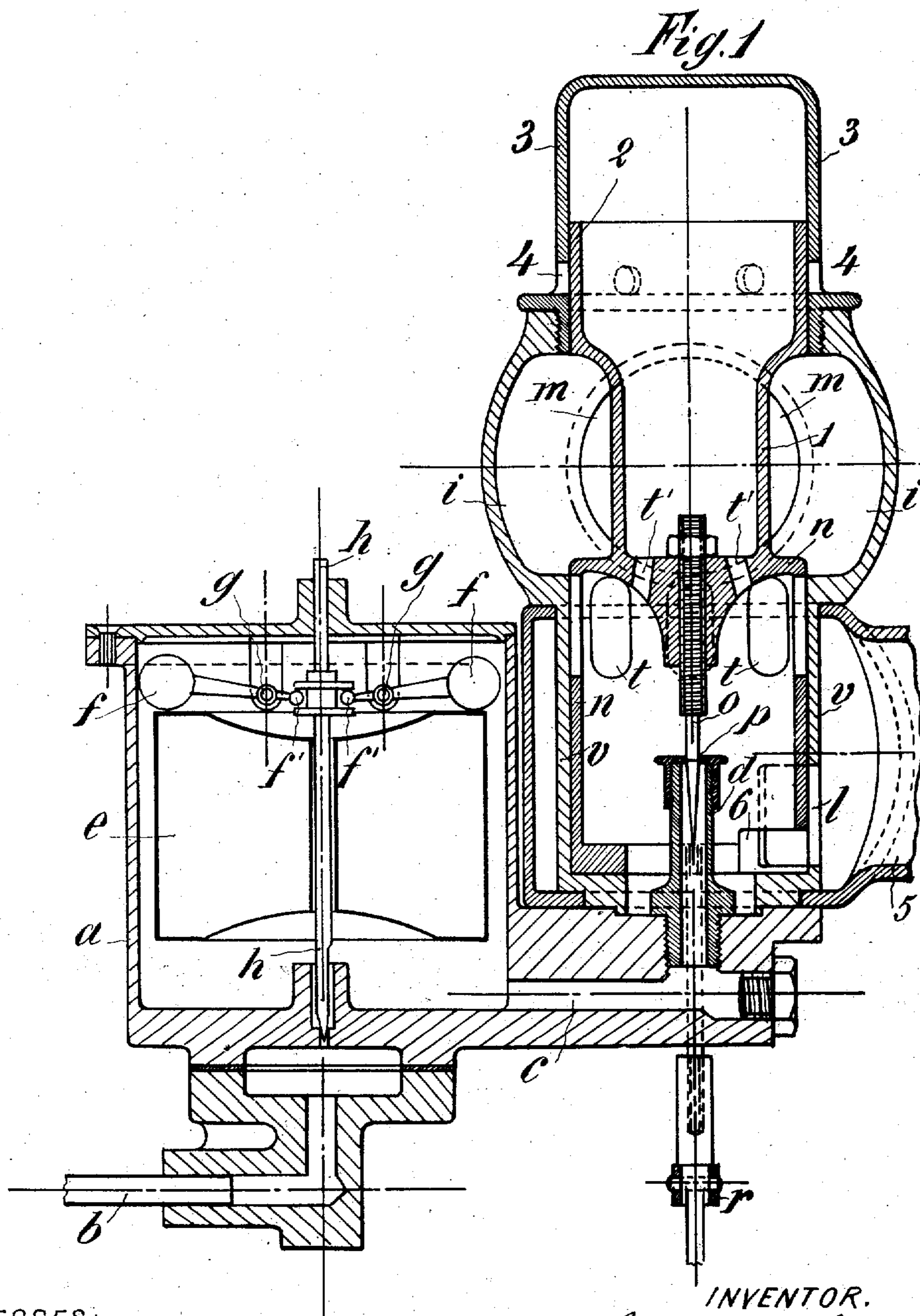
360,908.

PATENTED JULY 23, 1907.

G. ENRICO.
CARBURETER FOR OIL ENGINES.

APPLICATION FILED APR. 6, 1904.

2 SHEETS—SHEET 1.



WITNESSES:
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860,908.

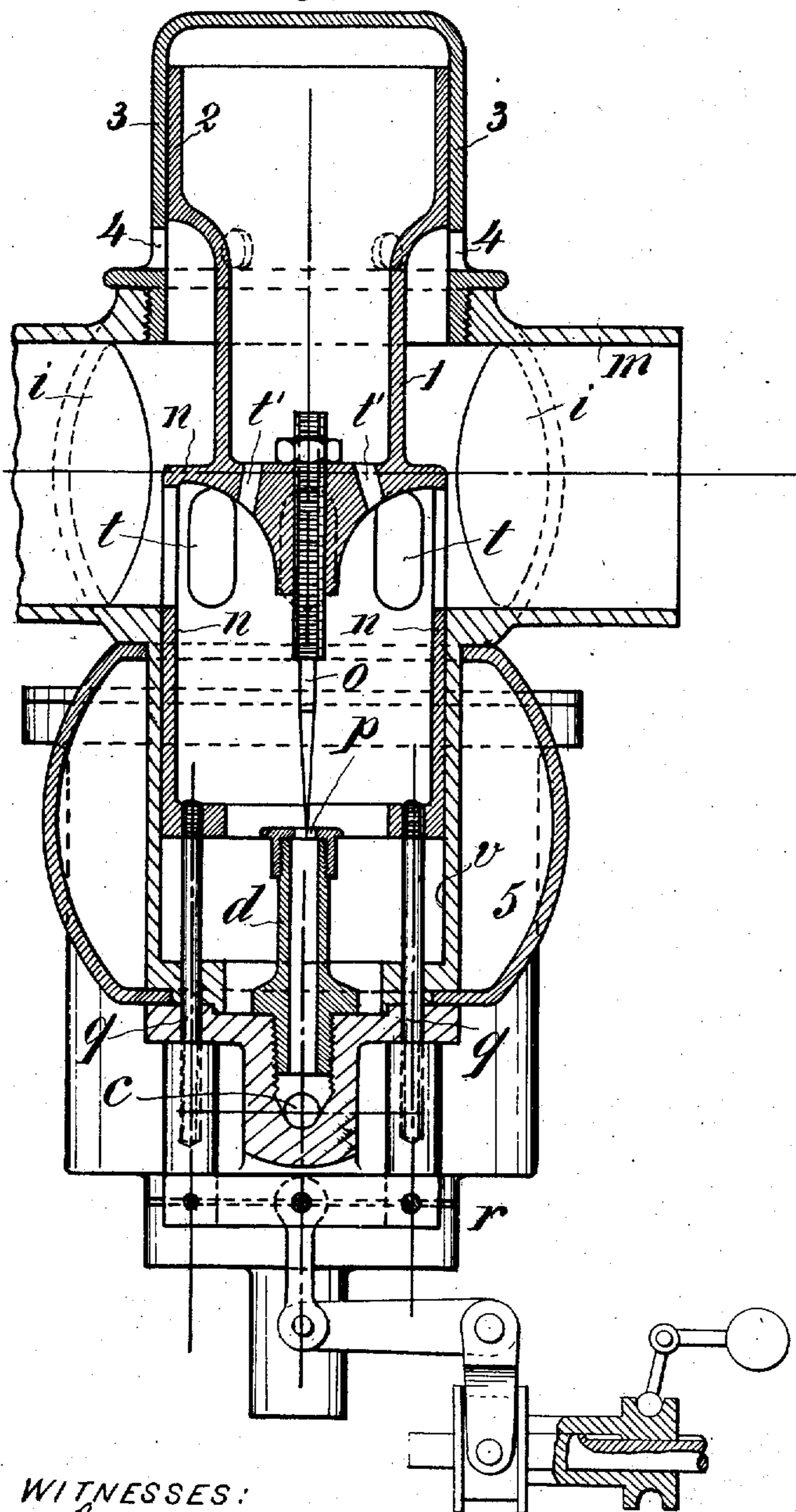
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Fig. 2



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UNITED STATES PATENT OFFICE.

GIOVANNI ENRICO, OF TURIN, ITALY.

CARBURETER FOR OIL-ENGINES.

No. 860,908.

Specification of Letters Patent.

Patented July 23, 1907.

Application filed April 6, 1904. Serial No. 201,918.

To all whom it may concern:

Be it known that I, GIOVANNI ENRICO, of Turin, in the Kingdom of Italy, have invented new Improvements in Carbureters for Oil-Engines, of which the following is a full and exact description.

This invention relates to a carbureter for oil engines, such as petrol engines, and has for its object to provide a simple and efficient carbureter so constructed that in the explosive mixture there is preserved a constant ratio between the amount of air and the amount of oil.

In the accompanying drawings Figures 1 and 2 represent vertical sections, at right angles to each other, of a carbureter constructed in accordance with this invention.

The reservoir *a* is connected with the oil supply pipe *b* by means of a valve *h* operated by a float *e* acting on the arms *f* of levers bearing on the top of the float and fulcrumed at *g* so as to cause the lowering and closing of the valve *h*, the stem of which is provided with a grooved collar with which the inner arms *f'* of the levers engage. The level of the oil in the reservoir *a* is therefore regulated by the float *e* and kept at a constant height.

The reservoir *a* is provided at the lower part with a passage *c* opening into a tube *d* which has at top an aperture *p* opening into a cylindrical chamber *v* which communicates, by an opening *l* in its wall, with a pipe *5* supplying air heated by the exhaust gases. The cylindrical chamber *v* communicates at its upper part with an enlargement *i* of the pipe *m* connected with a motor. In the chamber *v* moves a hollow cylindrical piston valve *n* open at its lower part and provided with a side opening *6* corresponding to the aforesaid opening *l*, but of less height.

At the upper part the piston valve *n* is provided with side openings *t* and with vertical passages *t'* communicating with a cylindrical extension *1* having a part 2 of larger diameter acting as a piston valve in a cap 3 arranged above the carbureter and having in it openings 4 to the atmosphere. The said part 2 counteracts the effect of a reduction of pressure on the piston valve *n*, thereby balancing the same. Without such balancing the suction would have a tendency to move the valve at each piston stroke of the motor. The piston valve *n* is connected by rods *q* to a cross piece *r* controlled by the governor. The said piston valve *n* carries a conical needle *o* extending downwards from the top of the said piston valve *n* into the aperture *p* in the top of the tube *d*. While the motor is running each

suction stroke causes a reduction of pressure in the pipe *m* and enlargement *i* and thereby oil and air are supplied through the aperture *p* and the opening *l*. If the action of the governor tend to lower the speed by closing the admission, the cross-piece *r* is in the position shown in Fig. 1, the piston valve *n* and the enlarged part 2 close the opening 4 and partially close the opening *l* while the aperture *p* is completely closed by the needle valve *o*. The opening 6 prevents the opening *l* from being completely closed and prevents the air supplied to the chamber *v* being too much throttled and cooled when the piston valve *n* is raised but a little distance above the bottom of the chamber *v*. If the governor tend to increase the admission, it raises the cross-piece *r* and the piston valve *n* thereby gradually opening both the air inlet *l* and aperture *p* to a greater extent, they being completely opened when the piston valve *n* reaches the upper end of the stroke as shown in Fig. 2. In this position the enlarged part 2 uncovers the openings 4 and the cap 3 and additional air is supplied.

By properly proportioning the needle valve *o* and the openings *l*, 6 and 4 whatever the position of the piston valve *n* may be the ratio of the free area of the aperture *p* and uncovered portions of the air inlets *l* and 4 remains constant and consequently the ratio of the quantities of air and oil forming the explosive mixture remains constant.

In order to insure good running of the motor it is advisable to so regulate the float *e* that the level of the oil is a little below the aperture *p*.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A carbureter for oil motors having a casing having admission and discharge passages, and a hollow piston valve arranged between such passages, said valve having its interior in communication with such admission passage and having an opening in its wall coöperating with such discharge passage, such discharge passage being arranged between the ends of said valve, said casing having a bore above said discharge passage, and said valve having a passage completely through it and having its upper end within said bore.

2. A carbureter having a casing provided with an air inlet and an oil inlet at its lower part, an outlet for the mixture above such inlets, and a second air inlet above said outlet, and a piston valve controlling such air inlets and outlet.

3. A carbureter having a casing provided with an air inlet and an oil inlet at its lower part, an outlet for the

mixture above such inlets, and a second air inlet above said outlet, and a piston valve controlling such air inlets and outlet, said valve having a passage through it to provide equal pressures on both its sides.

- 5 4. A carbureter having a casing provided with an air inlet and an oil inlet at its lower part, an outlet for the mixture above such inlets, and a second air inlet above said outlet, and a piston valve controlling such air inlets and outlet, said valve having a passage through it to

provide equal pressures on both its sides and carrying at 10 its lower side a needle valve adapted to control the admission of oil.

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

GIOVANNI ENRICO.

Witnesses:

YARVO CAPECCIO, [L. S.]
GOTTARDO PIRONI, [L. S.]