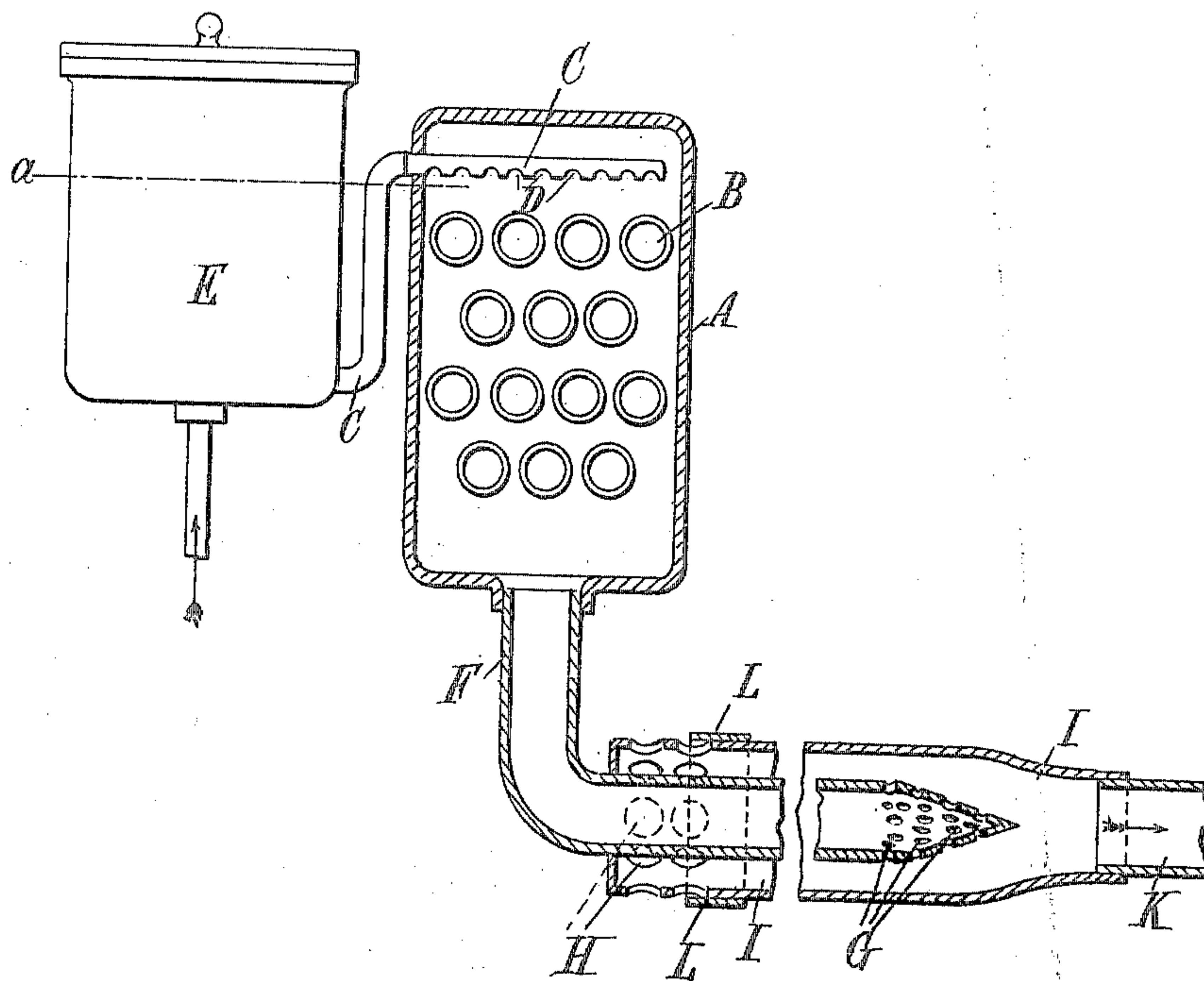


No. 804,589.

PATENTED NOV. 14, 1905.

G. ENRICO.
CARBURETER FOR EXPLOSION MOTORS.
APPLICATION FILED MAR. 9, 1904.



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UNITED STATES PATENT OFFICE.

GIOVANNI ENRICO, OF TORINO, ITALY.

CARBURETER FOR EXPLOSION-MOTORS.

No. 804,589.

Specification of Letters Patent.

Patented Nov. 14, 1905.

Application filed March 9, 1904. Serial No. 197,211.

To all whom it may concern:

Be it known that I, GIOVANNI ENRICO, civil engineer, a subject of the King of Italy, residing at 33 Via Nizza, Torino, in the Kingdom of Italy, have invented certain new and useful Improvements Relating to Carbureters for Explosion-Motors, of which the following is a specification.

This invention has reference to carbureters for explosion-motors, and has for its object an improved device whereby petroleum may be utilized in a similar manner to that in which gasoline is now employed, whereby the same practical results are attained.

In order that my invention may be readily understood and carried into effect by those skilled in the art to which it appertains, I will now proceed to describe the same fully with reference to the accompanying drawing, which represents in longitudinal section a carbureter embodying my invention.

I provide a closed vessel A, through which a plurality of tubes B pass, said tubes being adapted to receive the exhaust-gases from the motor in order to obtain a temperature sufficiently high to vaporize the petroleum. Above these tubes B is arranged the pipe C for supplying the petroleum which falls through the perforations D of said pipe upon the tubes B. These tubes afford a sufficiently-extensive heating-surface to effect the conversion of the petroleum into vapor, which when mixed with air produces the desired explosive mixture. The pipe C is fitted to a reservoir E, in which the petroleum is maintained at a constant level by any appropriate known means. As clearly shown in the drawing, the portion of the pipe C which is situated within the vaporizer A is arranged at a sufficient height above the level *a* in order to prevent the petroleum from being siphoned through the apertures D into the vaporizer A. The pipe F, through which the petroleum-vapor is conducted, is fitted to the lower part of the vessel A. The vapor issues from a number of openings G in this pipe, mixes with the air admitted through the openings H in the mixing-chamber I, and passes through the pipe K to the motor.

The operation of this improved carbureter is as follows: It is assumed that the tubes B are preliminarily heated and that the motor is working. Owing to the suction of the motor-piston, a vacuum will be formed in K, and therefore in I, F, A, and C a suitable quantity of petroleum will be sucked through the

pipe C into the vaporizer A, where it is converted into vapor, owing to contacting with the heated tubes B, which vapor on passing from the pipe F into the mixing-chamber I will be mixed with the air which is sucked through the apertures H. The size of these apertures may be regulated by a collar L, so that the desired ratios between the air and petroleum-vapor may be produced.

The portion of the pipe F which extends into the mixing-chamber I must be of sufficient length, for if the suction of the motor is not uniform and the displacement of the air and gas in the mixing-chamber I takes place intermittently the petroleum-vapor might pass out into the atmosphere through the openings H during the interruptions in the suction. This is always prevented, however, because between the openings G and H a layer of air is present which acts as an air-cushion until the suction period recommences.

The essential feature of this invention consists in the fact that the oil is vaporized in a closed vessel and in the absence of atmospheric air, so that said vessel may be maintained at a high temperature in order to facilitate the vaporization of the oil automatically introduced therein by the aspirations of the motor-piston. The mixture of oil-vapor and air takes place in the mixing-chamber I, and owing to the fact that the air so mixed is cold a much larger quantity of air can be introduced into the explosion-chamber than if it were heated with the oil. It is also to be noted that the mixture of oil-vapor and atmospheric air not being effected inside the vaporizer A, it is possible to maintain this latter at a very high temperature without danger of the mixture burning or exploding prematurely.

I do not wish to bind myself to the exact form of carbureter shown in the drawing, but may vary the same without departing from the spirit of my invention; but

What I claim as new, and desire to protect by Letters Patent of the United States, is as follows:

1. In a carbureter for explosion-motors, the combination of an oil-reservoir, a closed vaporizing vessel for vaporizing oil in the absence of air, a plurality of tubes arranged in said vaporizing vessel, means for introducing the oil above the tubes above the level of the oil to prevent the latter from being siphoned into the vaporizing vessel, said means being in position to allow the oil to gravitate over

said tubes, means for heating said tubes for maintaining the vapor thus formed at a high temperature, a mixing-chamber disconnected from said vaporizing vessel and outside the same, and a pipe leading from said vessel and terminating within said chamber and having a tapered perforated end.

2. In a carbureter for explosion-motors, an oil-reservoir, a closed vaporizing vessel, an oil-supply pipe thereto having its delivery end perforated and at a higher level than the level of the oil in the reservoir, a plurality of tubes arranged in said vaporizing vessel beneath said delivery end and upon which the oil is designed to gravitate and means for heating said tubes by the introduction of the burned gases from the explosion-chamber of the motor into said tubes, in combination with a mixing-chamber outside of and disconnected from said vessel and a conduit leading from the vaporizer to the mixing-chamber and terminating therein in a perforated end portion, said mixing-chamber being interposed between said vessel and the suction means and supported on the discharge-pipe from said vessel substantially as described.

3. In a carbureter for explosion-motors, an oil-reservoir, a closed vaporizing vessel, an oil-

supply pipe thereto having its delivery end perforated and at a higher level than the level of the oil in the reservoir, a plurality of tubes arranged in said vaporizing vessel beneath said delivery end and upon which the oil is designed to gravitate and means for heating said tubes by the introduction of the burned gases from the explosion-chamber of the motor into said tubes, a conduit leading from the vaporizer and having a perforated end portion, in combination with a mixing-chamber outside of and disconnected from said vaporizing vessel and comprising an air-supply pipe within which the conduit from the vaporizer terminates, said mixing-chamber being provided with a number of perforations and means comprising a movable collar mounted on said mixing-chamber, for regulating the supply of cold air to be mixed with the heated oil-vapor, substantially as described and for the purpose specified.

In testimony whereof I have hereunto set my hand, in presence of two subscribing witnesses, this 22d day of February, 1904.

GIOVANNI ENRICO.

Witnesses:

ALFREDO DIATTO, [L. S.]
G. B. ZAUARDO. [L. S.]