

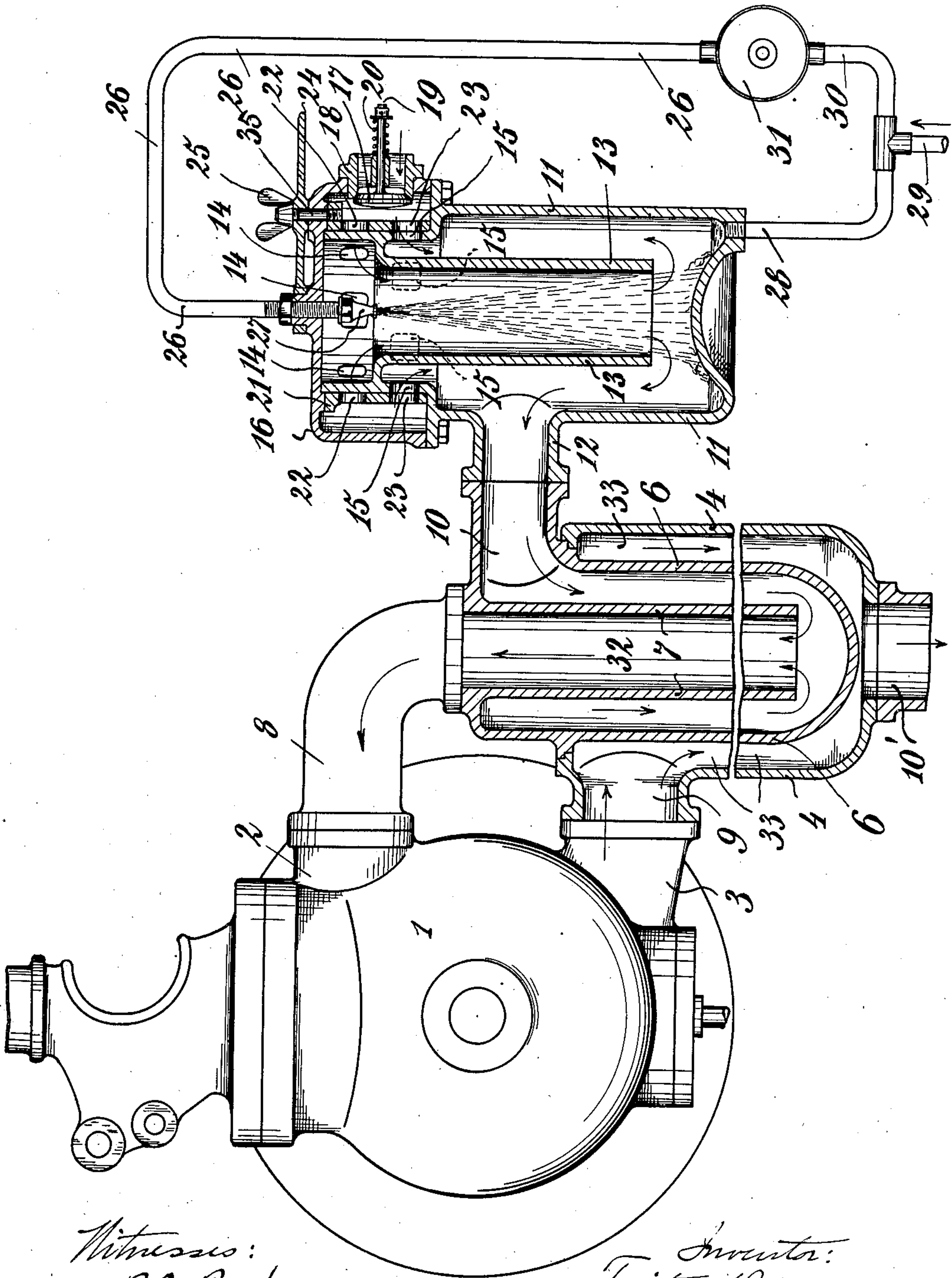
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F. DÜRR.

CARBURETING APPARATUS FOR EXPLOSIVE ENGINES.

APPLICATION FILED MAR. 2, 1907.



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UNITED STATES PATENT OFFICE.

FRITZ DÜRR, OF KARLSRUHE, GERMANY.

CARBURETING APPARATUS FOR EXPLOSIVE-ENGINES.

No. 890,970.

Specification of Letters Patent.

Patented June 16, 1908.

Application filed March 2, 1907. Serial No. 360,174.

To all whom it may concern:

Be it known that I, FRITZ DÜRR, a citizen of the German Empire, and resident of Karlsruhe, Baden, Germany, have invented certain new and useful Improvements in Carbureting Apparatus for Explosion-Engines, of which the following is a specification.

The object of the invention is to provide a carbureting apparatus which will insure a thorough mixing of air and hydrocarbon, whereby it is possible to obtain practically perfect and complete combustion and avoid wasting hydrocarbon.

The apparatus includes a chamber to which hydrocarbon is supplied in a finely distributed or divided state and is mixed there with the air necessary for driving the motor and from which the mixture is drawn into the motor during the suction-period while during the remainder of the time the deposit of hydrocarbon collects in a closed chamber and is sucked off from the same by a pump, in order to be injected again into the aforesaid chamber.

The accompanying drawing illustrates an apparatus constructed in accordance with the invention.

It is a matter of indifference in which way the apparatus is connected with the motor. On the drawing the motor is arranged on the left of the apparatus.

The motor 1 is provided with the sockets 2 and 3, the gaseous mixture being introduced through the socket 2, while the exhaust-pipe of the motor is supposed to be at 3. Both sockets are connected with a so-called evaporator 4. The latter is divided by partition-walls 6, 7 into several chambers in a manner that the inner space 7 is connected through a tube 8 with the entrance-socket 2, while the exhaust-pipe 3 is connected through an opening 9 with the evaporator 4, and the pipe 10 at the lower part of the evaporator forms the outlet into the open air. The latter may, the same as all similar conduits, have its outlet above the roof of the engine-house. The evaporator 4 possesses moreover a connecting-pipe 10. To the latter is connected an apparatus 11 by means of the socket 12. This apparatus carries in the interior a pipe 13 and has two groups of openings 14 and 15. The pot-shaped apparatus 11 is closed by a hood 16 provided in a suitable place with an air-valve 17. The latter opens into the interior and passes in a cross-piece 18 through

the guide-rod 19, while a spring 20 continuously effects the closing of the valve.

Around the openings 14 and 15 is arranged a turnable annular slide 21, which is likewise provided with openings 22, 23, which correspond with the aforesaid openings 14, 15. This annular slide is connected through the screw 35 with a lever 24 arranged on the outside of the hood 16. If the winged nut 25 of the screw 35 is loosened the annular slide 21 can be turned to the left or right, a transverse slot in the hood 16 permitting such movement of the screw 35. In this way the openings 14 and 15 can be fully or partly covered or closed and the admission of air through the valve 17 be regulated, as required. In the middle of the hood is provided a conduit 26, which projects into the interior in the middle of the hood and terminates in a nozzle 27. The conduit 26 is connected to a fast running rotary pump 31. At the bottom of the pot-shaped vessel 11 is inserted another conduit 28, which is connected with a branch conduit 29. A third conduit 30 connects both conduits 28 and 29 with the rotary pump 31.

The working is as follows: If the rotary pump is put into rotation it sucks the fluid hydrocarbon through the conduit 29, puts it under pressure and presses it through the pipe 26 to the nozzle 27, where, as shown in the drawing, it enters the pot-shaped apparatus in an exceedingly finely divided state. As long as the valve 17 is closed and no air passes into the interior of the vessel 11, the finely divided drops of hydrocarbon collect at the bottom of the vessel 11 and are sucked up there by the pump 31 and conveyed into the pipe 26.

As soon as the inlet for the gas is opened in the motor the valve 17 opens itself and the finely divided hydrocarbon mixed with the air is drawn towards the motor. On this way the hydrocarbon must, however, pass through the evaporator, namely through the chamber 32 and the socket 8. But this chamber is heated by the heat of the exhaust-gases which enters into the evaporator through the socket 3 and effects the complete gasification of the hydrocarbon. If one valve 17 should not be sufficient several of them may be arranged in the hood 16.

There is still to be noted that the vessel 11 with its internal arrangement forms a reservoir similar to the gas-bag of ordinary gas-engines.

What I claim as my invention and desire to secure by United States Letters Patent is:—

5 In a carbureter for explosive engines, the combination of a reservoir having therein a centrally arranged tube the lower end of which is above the bottom of the reservoir, and said tube being provided with apertures adjacent its upper end, a cap closing the up-
10 per end of the tube and forming an annular chamber about the apertured section thereof, an inwardly opening valve closing an air in-

let in a wall of the cap, a hydrocarbon nozzle extending into the central tube, and an annular valve surrounding the tube within the cap and adapted to regulate the passage of air through the apertures in the tube, substantially as described. 15

The foregoing specification signed at Mannheim this fifteenth day of February 1907.

FRITZ DÜRR.

In presence of two witnesses:

H. W. HARRIS,

Jos. H. LEUTE.