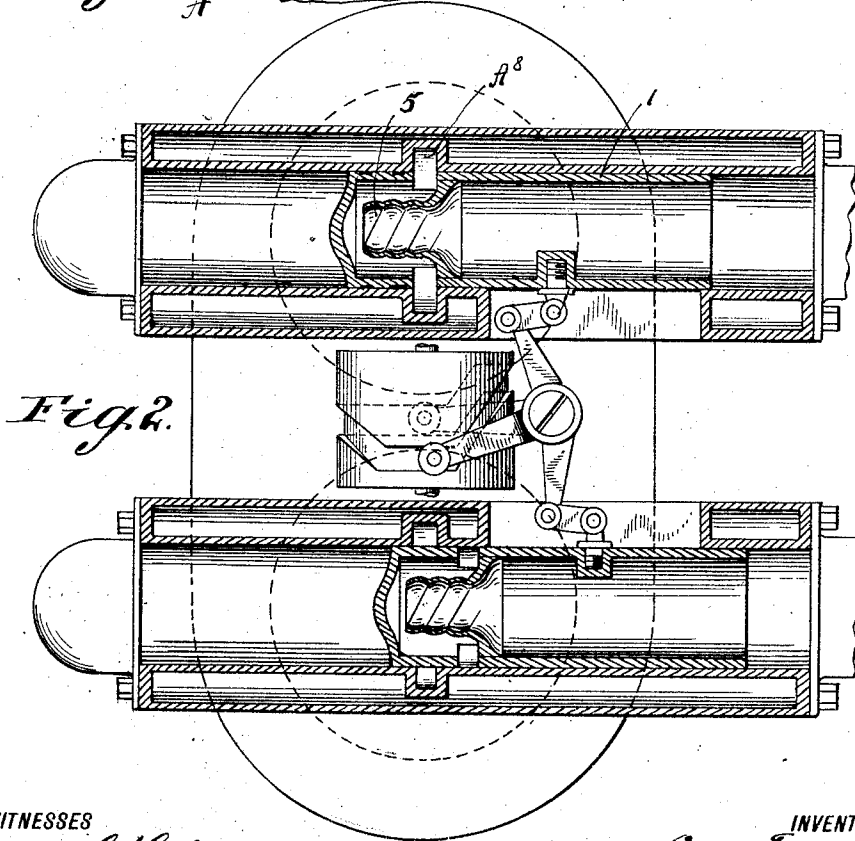
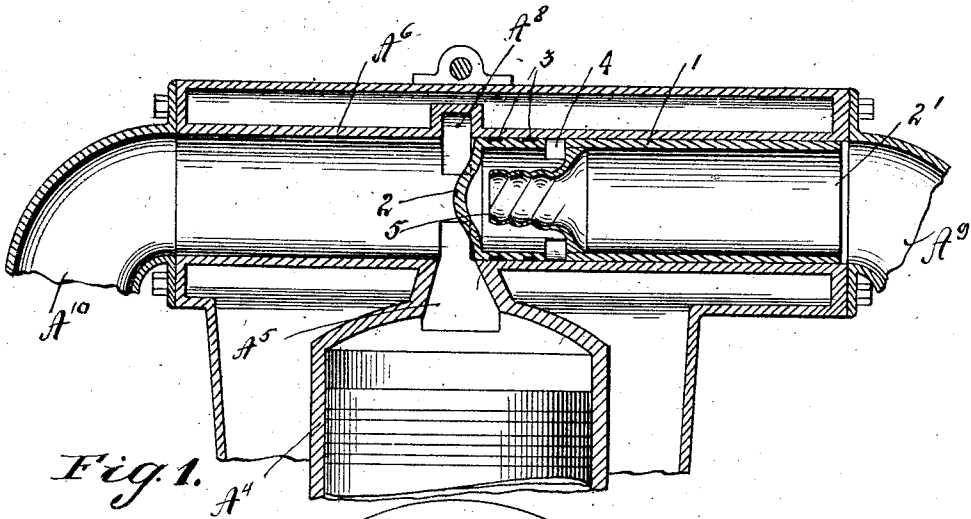


O. TREIER.
ENGINE VALVE MECHANISM.
APPLICATION FILED AUG. 10, 1912.

1,063,477.

Patented June 3, 1913.



WITNESSES
Sam'l. Hubig
D. Klein

INVENTOR
Oscar Treier
BY *Max V. Ordman*
ATTORNEY

UNITED STATES PATENT OFFICE.

OSCAR TREIER, OF BROOKLYN, NEW YORK.

ENGINE VALVE MECHANISM.

1,063,477.

Specification of Letters Patent.

Patented June 3, 1913.

Original application filed March 23, 1912, Serial No. 685,866. Divided and this application filed August 10, 1912. Serial No. 714,327.

To all whom it may concern:

Be it known that I, OSCAR TREIER, citizen of the Republic of Switzerland, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Engine Valve Mechanisms, of which the following is a specification.

The present invention relates to valves and has for its object to provide a new and improved mechanism more especially designed for use in internal combustion engines and arranged to insure proper opening and closing of the admission and exhaust valves.

This application is a division from the application Serial No. 685,866, filed March 23, 1912.

A practical embodiment of my invention is represented in the accompanying drawing forming a part of this specification and in which similar reference letters indicate corresponding parts, Figure 1 being a section on line 1-1 of Fig. 2 and Fig. 2 a sectional top plan view of the engine.

With reference to the drawing, each of the engine cylinders A^4 has a single passage A^5 which serves both for the admission and exhaust of the fuel. The tubular valve 1 is slidably mounted in the tubular chamber A^6 which extends transversely to the said passage and to the said cylinders. This valve has a closed inner end 2 and an open outer end 2' and divides the chamber A^6 into two compartments of which the left hand compartment leads into the exhaust pipe A^{10} communicating with the exhaust opening of the chamber A^6 , while the right hand compartment is formed within the interior of the tubular valve 1 and communicates with the supply pipe A^9 which leads into the admission opening of the chamber A^6 . The tubular valve bears on the inner surface of the chamber A^6 by means of suitable packing rings 3 and is provided with circumferential openings 4. Within the valve body a spiral nozzle 5 is provided which projects toward and terminates near the inner closed end 2 of the valve. This nozzle has its main object to cause a thorough mixture of the liquid gasoline with the air and another object to decrease the tension of the fuel prior to its entering the cylinder. A further result of the nozzle is

that when the mixture comes in contact with the heated opposite wall of the valve, the gasoline will be caused to evaporate while the air will cool the valve.

Various means may be employed for operating the hollow valves, as for instance those shown in the drawing and particularly as described in the application above referred to.

It will be seen that when the valve occupies the position shown in Fig. 1 the passage A^5 of the cylinder will be opened and the burnt fuel from the cylinder will be permitted to exhaust through the said passage and the circumferential openings A^8 of the chamber A^6 into the exhaust pipe A^{10} . On the other hand, when the valve body 1 moves to the left it will close the openings A^8 of the chamber A^6 and establish communication between its own openings 4 and the passage A^5 of the cylinder A^4 , so that fresh fuel entering the interior of the valve 1 and flowing through the spiral nozzle 5 will be admitted into the cylinder A^4 .

What I claim and desire to secure by Letters Patent is:

1. In a valve mechanism for engines the combination with the engine cylinder having an admission and outlet passage, of a tubular valve chamber, having an admission opening at one end, an exhaust opening at the other and circumferential openings in alinement with the said passage, a tubular valve body slidably mounted in said chamber and having circumferential openings, the inner end of said valve body being tightly closed and the outer end thereof being open, a nozzle in the interior of said tubular valve directed toward the said closed end of the latter, said valve being adapted to alternately establish communication between the said cylinder and the said chamber to permit the fuel to exhaust, and between its interior and the said cylinder to admit fresh fuel.

2. In a valve mechanism for engines, the combination with an engine cylinder having a passage for the admission and exhaust of fuel, of a tubular valve chamber having an admission opening at one end, an exhaust opening at its opposite end and circumferential openings in alinement with the said passage, a tubular valve body slidably mounted in said chamber and having cir-

cumferential openings, the inner end of said valve being tightly closed and the outer end thereof open, and a spiral nozzle in the interior of said tubular valve directed toward the said closed end of the latter, said valve being adapted to alternately establish communication between the said passage and the said chamber to permit the fuel to exhaust,

and between its interior, and the said cylinder to admit the fuel.

In testimony whereof I affix my signature in presence of two witnesses.

OSCAR TREIER.

Witnesses:

DIEDRICH RIEMSTADT,

PATRICK BUCKLEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."