E. R. McINTURFF.

OSCILLATING ENGINE VALVE.

APPLICATION FILED MAR. 19, 1918.

1,274,300. Patented July 30, 1918.

Fig. 1.

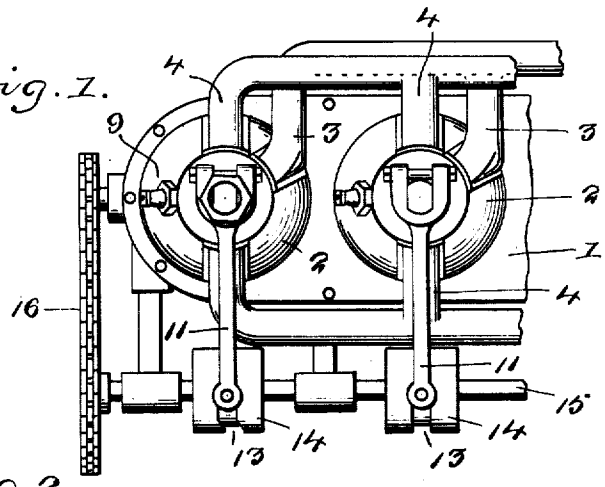


Fig. 2.

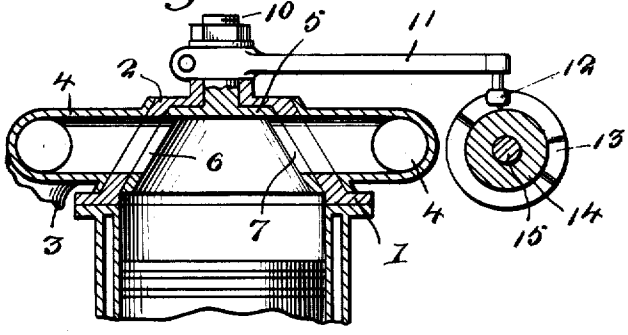


Fig. 3.

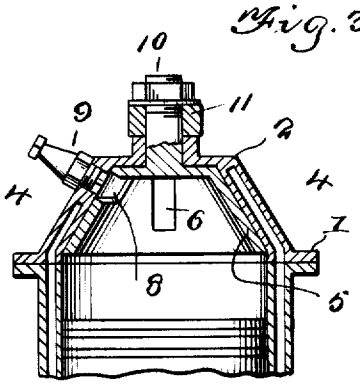


Fig. 5.

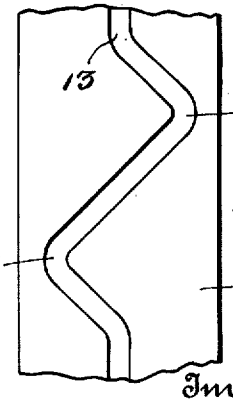


Fig. 4.

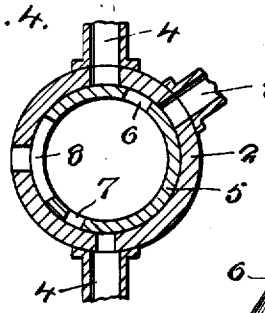
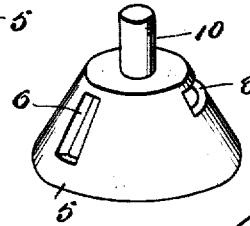


Fig. 6.



Witness
E. R. Ruhsam.

Inventor
E. R. McInturff

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

ERNEST R. McINTURFF, OF BEALETON, VIRGINIA.

OSCILLATING ENGINE-VALVE.

1,274,300. Specification of Letters Patent. Patented July 30, 1918.

Application filed March 19, 1918. Serial No. 223,446.

To all whom it may concern:

Be it known that I, ERNEST R. McINTURFF, a citizen of the United States, residing at Bealeton, in the county of Fauquier and State of Virginia, have invented new and useful Improvements in Oscillating Engine-Valves, of which the following is a specification.

This invention relates to oscillating valve structures especially adapted to be used upon hydro-carbon explosive engines, and it consists in the novel features herein after described and claimed.

An object of the invention is to provide a valve of the character stated which is of simple and durable structure and having its parts so arranged that the valve proper will remain in close contact with the wall of the casing and thereby prevent leakage without the use of washers or packings.

With the above object in view the valve includes a cone-shaped casing fashioned upon the head of the cylinder and having an intake port and a plurality of exhaust ports. A cone-shaped valve member is turnably mounted in the casing and provided with ports adapted to be brought at times in register with the intake and exhaust ports in the usual manner. The valve member is further provided with an opening through which the spark from a spark plug may pass when the discharge of gas is ignited at the time that it is fired. Means are timed up with the engine shaft to oscillate the valve member to bring the ports of the members into register with the intake and exhaust ports at proper intervals of time.

In the accompanying drawings:—

Figure 1 is a fragmentary top plan view of an engine with the valve applied;

Fig. 2 is a transverse sectional view of the valve;

Fig. 3 is a similar view cut on a plane at a right angle to the view shown in Fig. 2;

Fig. 4 is a horizontal sectional view of the same cut on the line 4—4 of Fig. 3.

Fig. 5 is a fragmentary view of a cam member adapted to operate the valve member;

Fig. 6 is a perspective view of the valve member.

The cylinder head 1 is provided with a centrally located cone-shaped casing 2 which may be provided at its side with a water jacket of usual pattern. The casing 2 is provided with an intake port 3 and a plurality of exhaust ports 4. The ports 4 are located diametrically opposite each other. The ports 4 are duplicated in order that the engine may more readily discharge the burnt gases preparatory to taking in a new charge of fuel gas. The cone shaped valve member 5 fits snugly in the casing 2 and is provided with a port 6 adapted to be brought into register with the port 3 and ports 7 adapted to be brought into register with the ports 4 during the operation of the engine in the usual manner. The member 5 is provided with an opening 8 through which a spark plug 9 may pass when the charge of gas is ignited. The valve member 5 is provided with a stem 10 which passes centrally through the top of the casing and an arm 11 is fixed to the upper end of the stem 10. The arm 11 carries at its free end a roller 12 which is received in an annular groove 13 of a disk 14 mounted upon a shaft 15 which in turn is operatively connected with the shaft of the engine by means of a belt 16 in a usual manner. The groove 13 is provided with oppositely disposed cam portions 17 and 18 best shown in Fig. 5 of the drawing. These portions are disposed on the opposite sides of the major portion of the groove 13, consequently when the roller 12 moves into the cam portion 17 the arm 11 is swung in one direction and when the roller 12 moves into the portion 18 the said arm 11 is swung in an opposite direction. As the arm 11 is swung as hereinbefore indicated the valve member 5 is turned in the casing 2 so that the ports 6 and 7 are brought into register at proper times with the ports 3 and 4.

The spark plug 9 may be timed and operatively and electrically connected with a source of energy whereby it will produce a spark when the charge has been compressed in the engine cylinder and therefore the said charge will be fired at the proper time and in a usual manner.

From the foregoing description taken in conjunction with the accompanying drawing, it will be seen that an oscillating valve of simple and durable structure is provided and that the same may be economically used upon a hydro-carbon or gas engine and that the parts of the valve are so arranged

as to prevent leakage from the cylinder of the engine and in the absence of packings or packing glands.

Having thus described the invention what is claimed is:—

A valve comprising a casing which is approximately cone shaped, said casing having an intake and an exhaust port, a truncated cone shaped valve member fitted snugly in the casing and having ports adapted to register at different times with the intake and exhaust ports of the casing, said member having at its side a spark opening located at a point between the intake and exhaust ports of the valve member and a stem connected with the smaller end of the valve member.

In testimony whereof I affix my signature.

ERNEST R. McINTURFF.