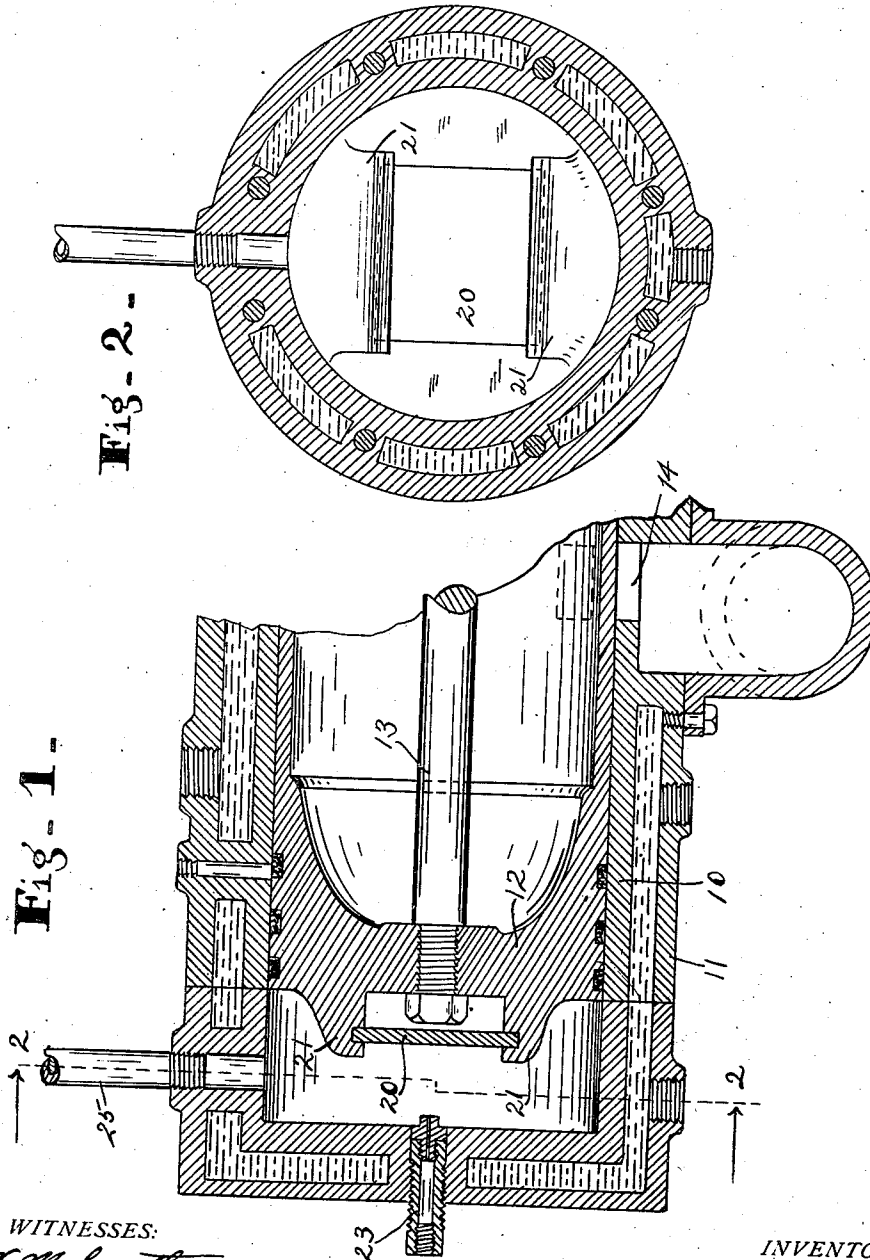


J. M. PRIMM.
CRUDE OIL ENGINE.
APPLICATION FILED MAR. 15, 1909.

956,169.

Patented Apr. 26, 1910.



WITNESSES:
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JOHN M. PRIMM, OF VANBUREN, INDIANA, ASSIGNOR TO THE PRIMM OIL ENGINE COMPANY, OF VANBUREN, INDIANA, A CORPORATION OF INDIANA.

CRUDE-OIL ENGINE.

956,169.

Specification of Letters Patent.

Patented Apr. 26, 1910.

Application filed March 15, 1909. Serial No. 483,429.

To all whom it may concern:

Be it known that I, JOHN M. PRIMM, of Vanburen, county of Grant, and State of Indiana, have invented a certain new and useful Crude-Oil Engine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

The object of this invention is to improve the construction of combustion engines, particularly for the purpose of enabling them to operate with crude oil, although this invention is not necessarily limited to crude oil engines.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

In the drawings Figure 1 is a central vertical longitudinal section of an end portion of a cylinder and piston. Fig. 2 is a transverse section on the line 2—2 of Fig. 1.

In detail there is shown herein a cylinder 10 and water jacket 11, piston 12 and piston rod 13. An exhaust port 14 is located in the cylinder. At the forward end of the piston an ignition plate 20 is secured by arms 21 projecting from the end of the piston and widened for the whole width of the plate 20 so as to hold said plate away from the end of the piston. The purpose of this construction is to cause said plate 20 to be maintained at a much higher degree of heat than the piston, but little heat will be conducted from the plate to the piston. This will cause said ignition plate 20, after the engine has been arrested, to be maintained by the explosions at a sufficiently high degree of temperature to ignite the gas.

Coöperating with the construction described, I provide a fuel nozzle 23 in the center of the end of the cylinder and opposite and in alinement with the ignition plate 20,

and said fuel nozzle is connected by any suitable means to a source of fuel under pressure, so that the fuel will be sprayed and directed against the plate 20, especially when said plate is reasonably near the fuel nozzle, thereby causing a gas to be generated by fuel being sprayed against plate 20 with sufficient force to cause it to become a vapor, and while in this state is commingled with the air and moisture already under compression, forming a gas which is ignited by plate 20. It will therefore be seen that the gas is generated and exploded at practically the same moment.

An ignition tube 25 is provided in connection with the cylinder for igniting the fuel in the cylinder for starting the same. This may be done by a blow-torch or in any other suitable way. After one or two explosions the plate 20 will become red hot and thereafter the fuel will be ignited.

This invention has been particularly designed for use in crude oil engines and is effective when crude oil is sprayed through the nozzle 23 into the cylinder and against the plate 20. But I do not wish the invention limited to the use of crude oil, as it will operate with other fuel.

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

The combination of the piston of a combustion engine provided with a pair of forwardly projecting arms, and an ignition plate secured to and between said arms and apart from the body of the piston, said arms being widened for substantially the full width of said plate.

In witness whereof, I have hereunto affixed my signature in the presence of the witnesses herein named.

JOHN M. PRIMM.

Witnesses:

ISAAC C. MILLS,
ELISHA R. ROBERTS.