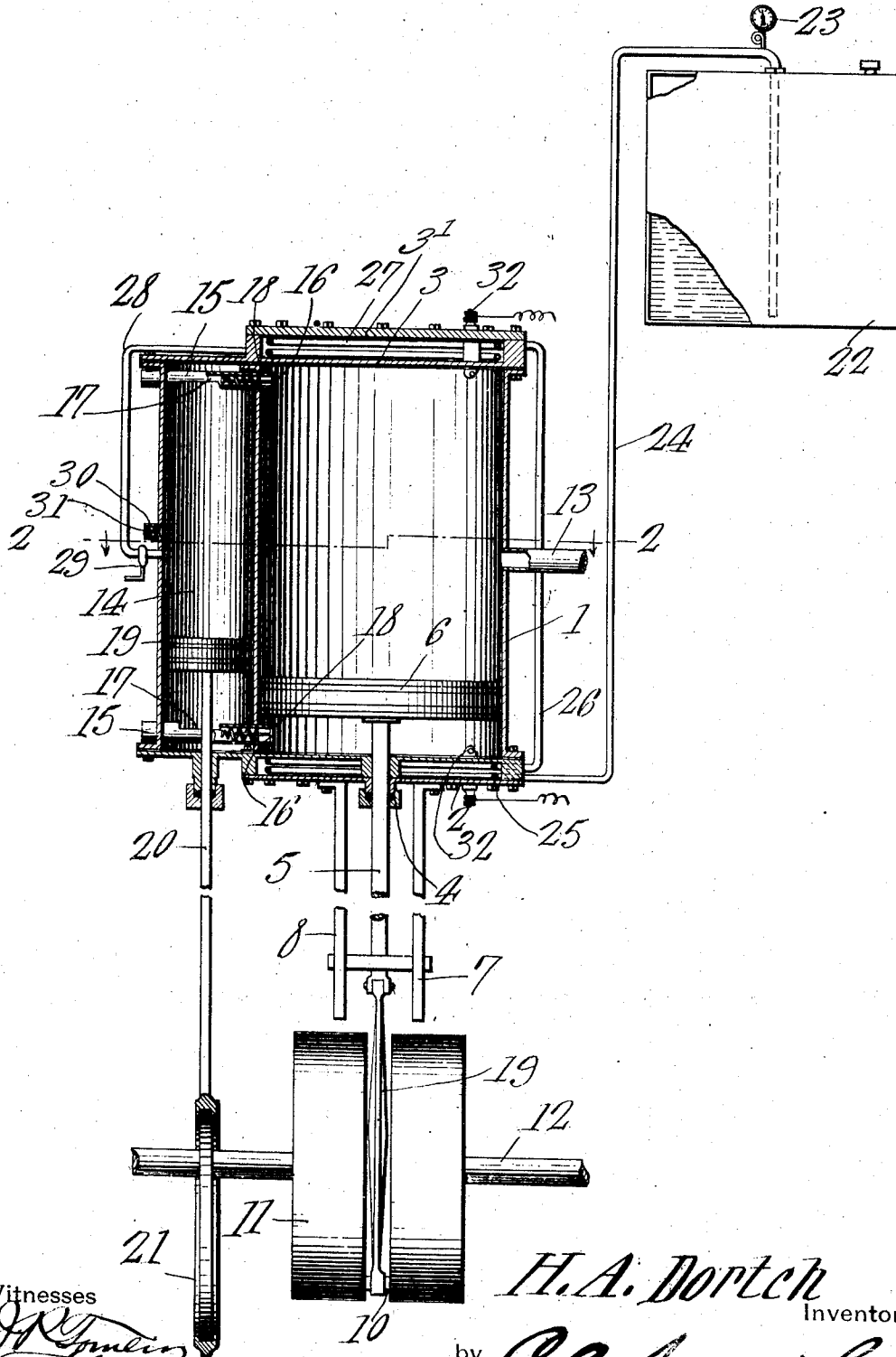


H. A. DORTCH.
INTERNAL COMBUSTION ENGINE.
APPLICATION FILED DEC. 27, 1910.

1,050,625.

Patented Jan. 14, 1913.



Witnesses

J. P. Miller
Herbert D. Lawson

H. A. Dortch

Inventor

by

C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

HENRY A. DORTCH, OF HAYTI, MISSOURI.

INTERNAL-COMBUSTION ENGINE.

1,050,625.

Specification of Letters Patent.

Patented Jan. 14, 1913.

Application filed December 27, 1910. Serial No. 599,328.

To all whom it may concern:

Be it known that I, HENRY A. DORTCH, a citizen of the United States, residing at Hayti, in the county of Pemiscot and State of Missouri, have invented a new and useful Internal-Combustion Engine, of which the following is a specification.

This invention relates to internal combustion engines, one of its objects being to provide means whereby the heat generated by the engine may be used for vaporizing fuel supplied thereto.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawing, which is a view partly in section, and partly in elevation of the complete apparatus, the preferred form of the invention has been shown.

Referring to the drawing by characters of reference 1 designates the cylinder of an engine of any desired type, said cylinder having hollow heads 2 and 3 adapted to be closed by plates 2' and 3' respectively, there being a gland 4 at the center of the head 2 and in which the rod 5 of a piston 6 is mounted to reciprocate. This rod is connected to a cross head 7 adapted to reciprocate between guides 8, said cross head being connected by a pitman 9, to a wrist pin 10 interposed between and connecting fly wheels 11. These wheels are mounted on a shaft 12. An exhaust pipe 13 extends from the cylinder 1 and a cylindrical mixing chamber 14 is located at one side of the cylinder. Valve casings 15 are fitted within the mixing chamber and each of said casings has a spring pressed valve 16 designed to open into the cylinder 1 but to prevent the escape of gas from the cylinder by way of casing 15. Each casing 15 has an inlet port 17 while the valve 16 closes the outlet port 18. A piston 19 is mounted for reciprocation within the mixing chamber 14 and constitutes means for compressing fuel prior to its discharge into the cylinder 1. This piston is connected, by a rod 20, to an eccentric 21 or the like carried by the shaft 12.

Although a particular form of engine has

been shown and described, the same constitutes no part of this invention and any other suitable form may be utilized in lieu thereof.

A tank 22 or other suitable receptacle is supported at a point removed from the cylinder 1 and is designed to hold liquid fuel under pressure, the pressure being indicated by any suitable device such as a gage 23. A pipe 24 leads from the bottom of the receptacle to coil 25 located within the head 2, this coil communicating, through a pipe 26, with another coil 27 located within the head 3. A discharge pipe 28 extends from this coil 27 and opens into the mixing chamber 14, there being a valve 29 within this pipe 28 for regulating the supply of fuel to the chamber 14. An air inlet pipe 30 opens into the chamber 14 and may be provided with a valve 31 for preventing the escape of fuel from the chamber by way of pipe 30 but which will automatically open to admit fuel to said chamber. A sparking device such as indicated at 32 may be located on each head 2 and 3, suitable means being provided whereby sparks will be produced at the proper time during the operation of the piston. Before the engine is started, the fuel within the receptacle 22 is placed under pressure by forcing air into said receptacle. Fuel will pass from the receptacle 22 and through pipe 24 to the coil 25 in head 2 and it will here be partly or entirely vaporized by the heat generated in the cylinder 1. The fuel will then pass, by way of pipe 26, to the other coil 27 where it will be further heated and will then flow to the mixing chamber 14 through pipe 28.

Importance is attached to the fact that the liquid fuel is vaporized in the heads of the cylinder by the heat generated within the cylinder. It thus becomes unnecessary to use a carbureter and by utilizing the forcing piston and the mixing chamber, the vaporized fuel can be thoroughly mixed with air so as to produce the proper explosive charge.

It will be noted that the heads in which the coils are arranged can be readily attached to or removed from the engine cylinder and it is thus not necessary to utilize a cylinder of any special construction. Furthermore the closure plates 2' and 3' can be easily removed from the heads so as to permit access to be had readily to the coils for the purpose of repairing or replacing them.

What is claimed is:—

A hydro-carbon engine including a cylinder, hollow heads detachably secured to the ends thereof, closure plates secured to the heads, a mixing chamber, a coil seated within each head, a fuel receptacle, a pipe connection between said receptacle and one of the coils, a pipe connection between the two coils, a pipe connection between one of the coils and the mixing chamber, and a

valved connection between the mixing chamber and said coil.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HENRY A. DORTCH.

Witnesses:

L. C. AVERILL,
D. R. DORTCH.

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