W. H. TATMAN.

ATTACHMENT FOR INTERNAL COMBUSTION ENGINES.

APPLICATION FILED SEPT. 16, 1911.

1,043,643. Patented Nov. 5, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

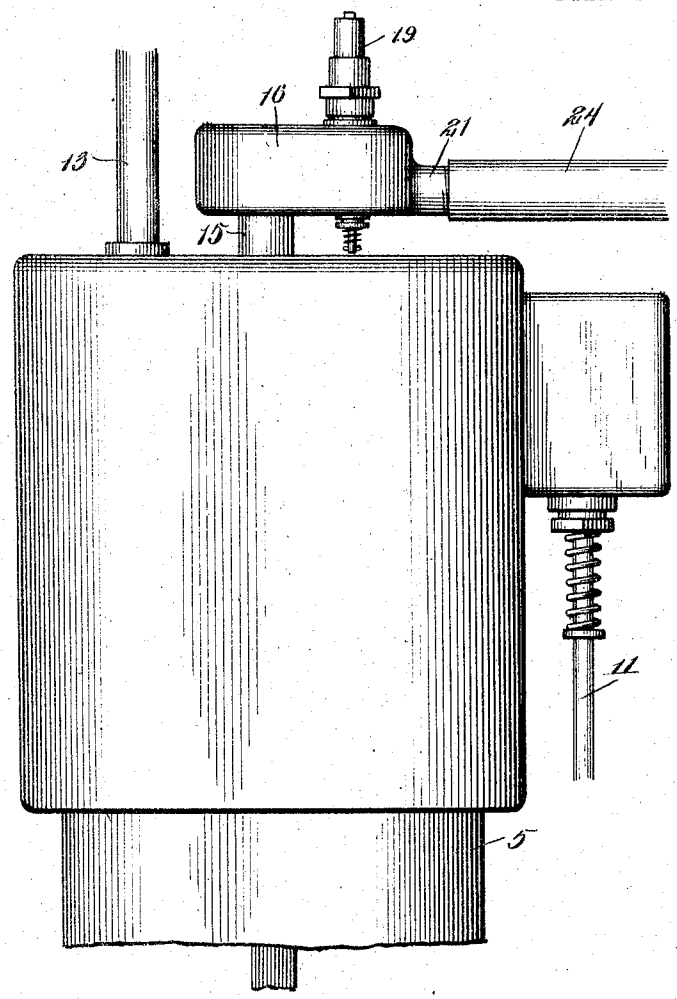
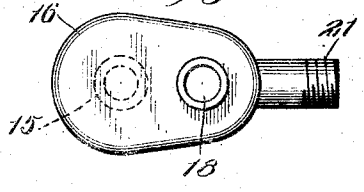


Fig. 3.



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2 SHEETS—SHEET 2.

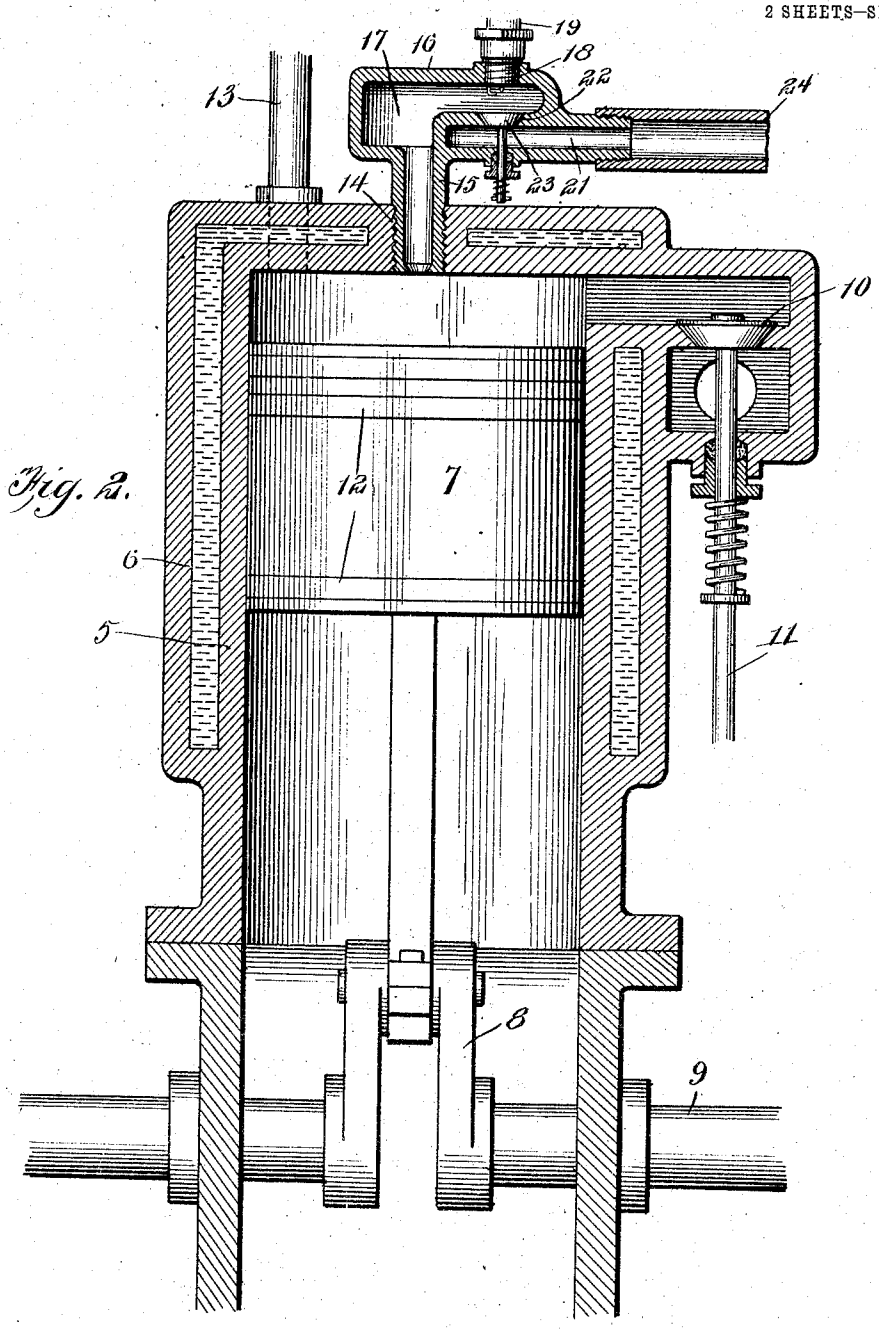

Fig. 2.

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ATTACHMENT FOR INTERNAL-COMBUSTION ENGINES.

1,043,643. Specification of Letters Patent. Patented Nov. 5, 1912.

Application filed September 16, 1911. Serial No. 649,668.

To all whom it may concern:

Be it known that I, WILLIAM H. TATMAN, a citizen of the United States, residing at Wann, in the county of Nowata and State of Oklahoma, have invented new and useful Improvements in Attachments for Internal-Combustion Engines, of which the following is a specification.

The invention relates to engines, and more particularly to the class of attachments for internal combustion engines.

The primary object of the invention is the provision of a device in which an explosive mixture may be admitted thereto for effecting a high degree of heat on the exploding thereof, thus permitting ordinary kerosene to be utilized for the running of an engine, without decreasing its efficiency in operation.

Another object of the invention is the provision of an attachment in which the running of an engine may be accomplished with a cheap fuel, thereby minimizing the expense of operating the same, without liability of damaging said engine, or affecting the efficiency thereof.

A further object of the invention is the provision of an attachment of this character which is simple in construction, that may be applied to any of the ordinary well-known types of internal combustion engine, and that is thoroughly reliable and efficient in operation, and inexpensive in manufacture.

With these and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claim hereunto appended.

In the drawings: Figure 1 is a fragmentary side elevation of an internal combustion engine, showing the attachment applied thereto. Fig. 2 is a vertical longitudinal sectional view through the same. Fig. 3 is a top plan view of the attachment.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Referring to the drawings by numerals, the internal combustion engine comprises the essential parts thereof, including the casing 5 provided with the usual water jacket 6, the piston 7 working within the casing and connected with a crank 8 on the crank shaft 9, and an exhaust valve 10, the latter being provided with an operating rod 11, by which it is lifted, and is normally held to its seat in any ordinary well-known manner, the piston 6 being provided with the ordinary packing rings 12 which frictionally engage the inner wall of the casing, as usual.

The gaseous fuel for working the engine is supplied by a pipe 13 running from a carbureter (not shown). The exhaust of the burned gases escapes through the exhaust port normally closed by the valve 10, when it is lifted open, and conveyed to a muffler (not shown) as usual.

The fuel used for running the engine is the ordinary kerosene, and is fed into the engine cylinder through the carbureter in a like manner as if gasolene were used for fuel. It is a well-known fact that kerosene will not explode until after it has been raised to a very high temperature, but it does not do so then with very much force on account of the slowness of the explosion. Therefore, it is necessary to effect a rapid explosion and a consequent increased power, which is accomplished by the attachment, presently described.

Provided in the head of the cylinder is a spark plug receiving aperture 14, in which is detachably threaded the externally threaded nippel 15 of a hollow body 16, providing an auxiliary combustion chamber 17, in direct communication with the combustion chamber in the casing 5 of the engine, and into which is adapted to be admitted a small quantity of gasolene, the said body 16, at its top wall, being provided with an aperture 18, in which is threaded the ordinary well-known spark plug 19, while formed in and at one side of the body is an inlet vent 21, the latter communicating with the interior of the auxiliary chamber 17 through a port 22 which is controlled by a spring-held valve 23 which is automatically operated, the vent 21 being connected to a tube 24 leading from a secondary carbureter (not shown) which feeds a gasolene fuel mixture to the auxiliary combustion chamber 17, so that when the piston 7 moves outwardly a charge of kerosene and air will be taken into the main combustion chamber in the casing 5, and also a charge of gasolene and air will be taken into the auxiliary combustion chamber 17, and upon the return or instroke of the said piston, it compresses the charges, and at

the proper interval the electric current through the spark plug explodes the charge of mixture in the auxiliary combustion chamber 17. This charge, when it explodes, enters the main combustion chamber in the casing 5, and owing to the great heat, at once explodes the charge of kerosene and air therein, for reversing the piston, and thus effects the running of the engine.

Of course, it is understood that the attachment may be applied at any other desirable point of the engine casing and connection therewith of any other form of carbureter which will be best adapted for the purpose and efficiency of the engine. By regulating the valve 23, the intake of air and gasolene into the auxiliary combustion chamber 17 may be increased or decreased, as may be desired. Thus, it will be seen that the ordinary kerosene may be used for fuel with the assistance of a small quantity of gasolene now used for fuel in engines.

What is claimed is:

An attachment of the class described comprising a hollow substantially elongated body forming an auxiliary chamber having an enlarged portion at one end and a reduced portion extending therefrom, said body being adapted for communication with the cylinder of an engine, an elongated inlet vent formed in and at one end of said body and separated from said auxiliary chamber, a valve in said vent and opening into the reduced portion of said chamber for supplying a combustible mixture thereto, and a spark plug mounted in the reduced portion of said chamber and in alinement with said valve for exploding said combustible mixture within the auxiliary chamber.

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

WILLIAM H. TATMAN.

Witnesses:
ELLA TATMAN,
BOYD ABBOTT.