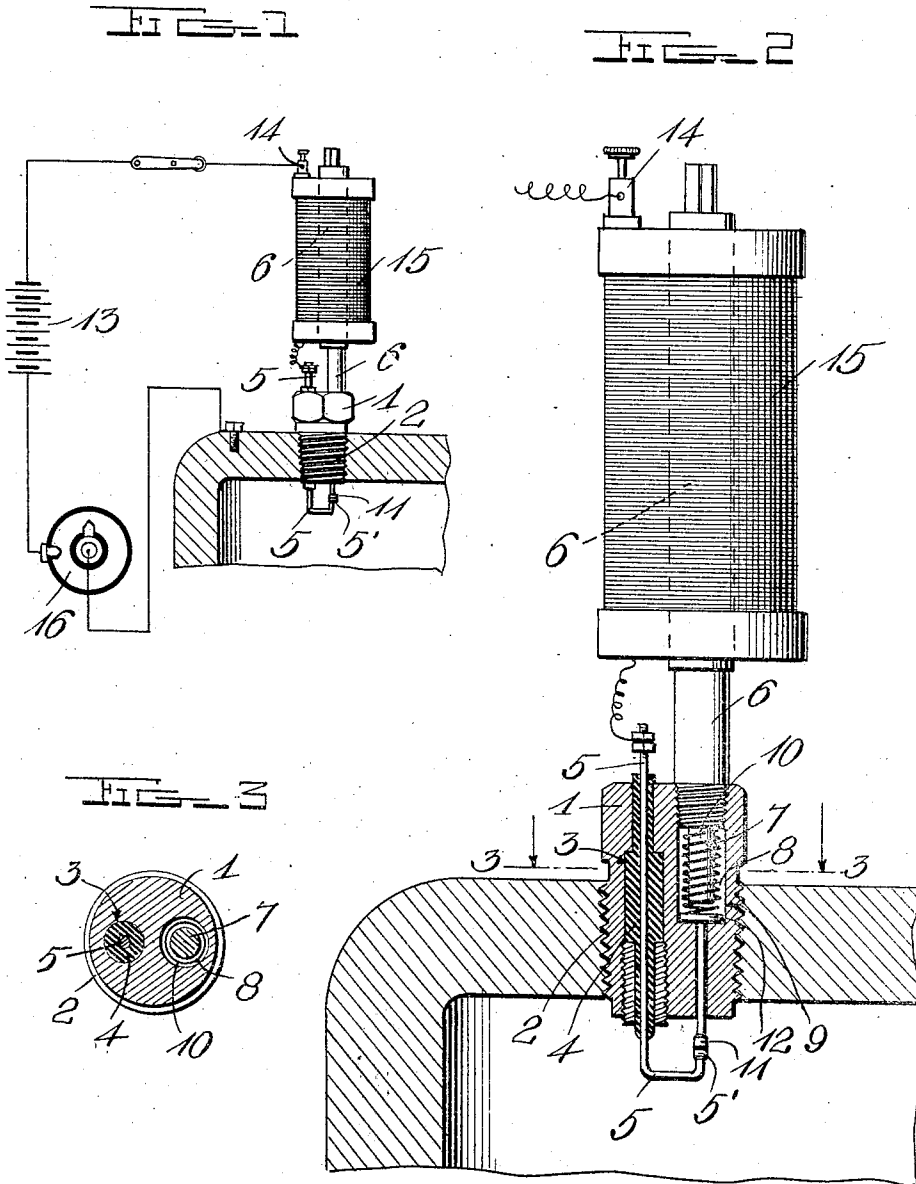


W. M. STEMPEL.  
SPARKING DEVICE FOR GAS OR OIL ENGINES.  
APPLICATION FILED MAR. 1, 1909.

943,324.

Patented Dec. 14, 1909.



Witnesses

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# UNITED STATES PATENT OFFICE.

WALDEMAR M. STEMPEL, OF URBANA, ILLINOIS.

## SPARKING DEVICE FOR GAS OR OIL ENGINES.

943,324.

Specification of Letters Patent. Patented Dec. 14, 1909.

Application filed March 1, 1909. Serial No. 430,617.

*To all whom it may concern.*

Be it known that I, WALDEMAR M. STEMPEL, a citizen of the United States, residing at Urbana, in the county of Champaign and State of Illinois, have invented certain new and useful Improvements in Sparking Devices for Gas or Oil Engines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a sparking device for gas or oil engines.

The object of the invention is to provide a device of this kind which will be very simple in construction, and which will not only take the place of the usual form of jump spark apparatus now in use but will operate very much more economically.

A secondary object of the invention is to provide a sparking device which may be readily and easily installed in position and which will not be so liable to become damaged when operated by unskilled persons.

With these and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1 is a diagrammatic view illustrating the application of the sparking device; Fig. 2 is a central longitudinal section, on an enlarged scale, of the device; Fig. 3 is a transverse section, on lines 3—3 of Fig. 2.

Referring to the drawings for a more particular description of the invention, it will be seen that my improved sparking device comprises a plug 1, of brass or other similar material provided with a screw thread 2 at its outer end in order that it may be screwed into the wall of the cylinder of the engine. This plug is provided, at a point eccentric to its longitudinal center, with a longitudinal opening 3, in which is arranged an insulator 4, which extends the entire length of the plug. A conductor 5 extends through the insulator 4 and projects beyond the inner end of the plug into the cylinder, the inner end of said conductor being provided with a platinum point or tip 5'. The outer end of the plug is provided with a longitudinal socket 9, in which is screwed the core 6, the inner end of which is provided with a reduced longitudinal extension

7, having a smooth exterior surface, leaving an annular space 8 between the extension and the wall of the socket 9. A coil spring 10, is disposed in the annular space 8 around the extension 7 of the core, the tendency of which is to hold the platinum tip 11, of the armature 12, in contact with the tip 5' of the contact 5.

In practice, the current passes from the battery 13 to the binding post 14 and after passing through the low tension coil 15 around the core 6 and the conductor 5, passes through the armature 12 and the spring 10 to the plug 1, and then passes through the timer 16 and thus completes a circuit. When the current passes through the coil 15 it causes the core 6 to become a magnet which attracts the armature 12 against the tension of the spring 10, thus breaking a circuit at the platinum points and causing a spark in the explosion chamber of the engine, which explodes the charge, as will be understood. As soon as the circuit is broken, the core 6 being no longer a magnet the armature 12 is returned to normal position by the spring 10, which brings the platinum tips again in contact, thus again making the circuit. The circuit is thus made and broken in such rapid succession that the gap between the platinum points appears almost like a continuous arc.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A sparking device of the class described comprising an exteriorly threaded plug provided in its outer end with a longitudinal socket, a fixed insulated conductor extending longitudinally through the plug, and provided at its inner end with a sparking tip, an armature movable in the socket of the plug and provided with a sparking piece, a core screwing in the socket of the plug, a coiled spring in the socket of the plug around the inner end of the core to hold the

sparkling piece of the armature in contact with that of the fixed conductor and connections to magnetize the core when the circuit is completed through the timing mechanism  
5 of the engine.

2. A sparking device of the class described comprising an exteriorly threaded plug provided in its outer end with a longitudinal  
10 socket, a fixed insulated conductor extending longitudinally through the plug and provided at its inner end with a sparking tip, a core screwing into the socket of the plug and provided at its inner end with a reduced longitudinal extension, an armature  
15 movable longitudinally in the socket of the plug and having a sparking piece to contact

or engage that of the fixed conductor, a spring in the socket of the plug around the extension of the core to normally hold the sparking point of the armature in contact  
20 with that of the fixed conductor, and connections to complete the circuit through the timing mechanism of the engine and magnetize the core.

In testimony whereof I have hereunto set  
my hand in presence of two subscribing witnesses.  
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WALDEMAR M. STEMPEL.

Witnesses:

SPENCER M. WHITE,  
C. E. STEVENSON.