

J. B. CURRY.
IGNITION DEVICE.
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1,055,260.

Patented Mar. 4, 1913.

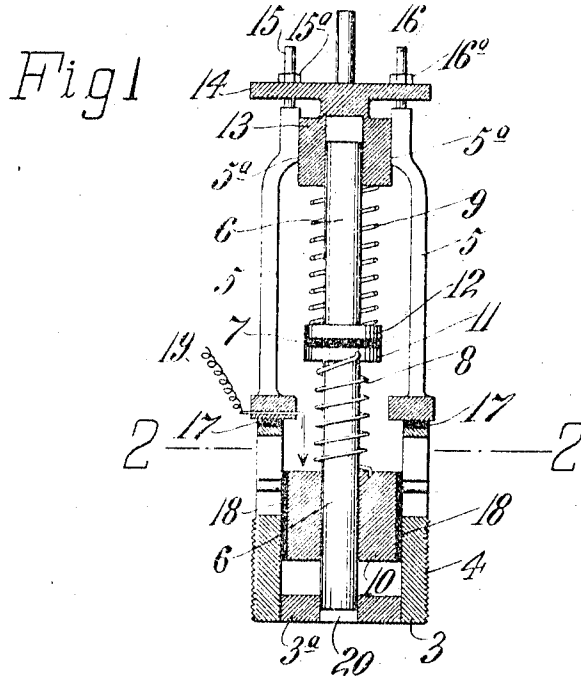
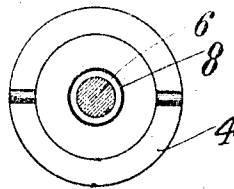


Fig 2



Witnesses:
W. H. Enderle
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J. Bernard Curry, Inventor
By *his Attorney*
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UNITED STATES PATENT OFFICE.

JOHN BYRNARD CURRY, OF TELLURIDE, COLORADO.

IGNITION DEVICE.

1,055,260.

Specification of Letters Patent.

Patented Mar 4, 1913.

Application filed April 2, 1910. Serial No. 553,030.

To all whom it may concern:

Be it known that I, JOHN BYRNARD CURRY, a citizen of the United States, residing at Telluride, in the county of San Miguel and State of Colorado, have invented certain new and useful Improvements in Ignition Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in spark plugs and has particular reference to a plug adapted for use in the cylinder of an engine whereby the spark is produced according to the amount of compression in the cylinder.

Referring to the accompanying drawings, Figure 1 is a vertical elevation of a spark plug partly in cross section, illustrating an application of my invention and Fig. 2 is a cross section on the line 2-2 of Fig. 1.

3 is a tube provided with threads 4 and a head 3^a and is adapted to be screwed into the head of the cylinder being also provided with a frame 5.

6 is a plunger separated by the insulation 7 and provided with the tension spring 8 and the compression spring 9. On this plunger is mounted the cylinder 10, the spring 8 being secured to the cylinder 10 and to the flange 11 while the spring 9 is compressed between the flange 12 and the slide 13. This slide is mounted in the slide-way 5^a of the frame 5 and is provided with the yoke 14 having bearing upon the two projections 15 and 16 extending from the frame, said projections being threaded and provided with nuts 15^a and 16^a so that by screwing the nuts down upon the projections 15 and 16, the slide 13 and its plunger 6 is forced into the plug.

The tube 3 is insulated from the frame 5 by insulation such as 17 and the tube 10 is preferably insulated from the side of the cylinder 3 by an insulation ring such as 18. The current enters by the wire 19, the other side of the circuit being grounded on the cylinder of the engine. During the compression stroke the plunger 6 is moved within the opening 20 in the head 3^a by the pressure within the cylinder. This causes the spring 8 secured to the flange 11 and to the cylinder 10 to pull the cylinder 10 after it, and at the same time the spring 9 is

compressed between the flange 12 and the slide 13. When the cylinder 10 contacts with the end of the electric circuit 19, the circuit is completed through the cylinder 10, plunger 6, head 3^a, outer tubing 4, and the cylinder of the engine which is grounded. After the cylinder 10 has made electrical contact with the end of the circuit 19, the plunger continues to travel through the opening 20 under the increasing pressure in the cylinder until finally the plunger passes beyond the opening 20 thereby opening the circuit at that point and creating a spark which ignites the compressed charge within the cylinder. By adjusting the nuts 15^a and 16^a the slide 13 is shifted thereby causing the moving parts to yield more freely to the pressure within the cylinder or to give greater resistance thereto and in this way the plug can be adjusted to spark at different pressures. After the plunger has receded to the sparking point and the explosion has taken place in the cylinder, the plunger is then again returned to its normal position by the spring 9.

Of course it will be understood that various modifications may be made without departing from the spirit of the invention as set forth in the claims.

Having described my invention, what I claim as new, and desire to secure by Letters Patent is:

1. In a spark plug, an outer casing being adapted to be secured in the cylinder of an engine, a movable plunger and a movable cylinder, resilient means against which said plunger and said cylinder may be moved, means for adjusting said resilient means, one end of an electric circuit attached to said casing in the path of said cylinder and insulated therefrom, the other end of said circuit grounded, said plunger normally grounded, whereby said cylinder is moved inwardly and completes said circuit during the compression stroke of said engine and is followed by said plunger which opens said circuit as said compression is completed.

2. In a spark plug, an outer casing being adapted to be secured within the cylinder of an engine, a movable plunger and a movable cylinder, resilient means for controlling the movements of said plunger and said cylinder, one end of an electric circuit

secured in the path of said cylinder and insulated therefrom, the other end of said circuit grounded, whereby said cylinder is moved inwardly and completes said circuit during the compression stroke of said engine, after which said plunger opens said circuit.

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

J. BYRNARD CURRY.

Witnesses:

M. JESSEN,
W. W. McCULLOUGH.