A. W. S. HERRINGTON.

SPARK PLUG.

APPLICATION FILED MAY 7, 1908.

916,313. Patented Mar. 23, 1909.

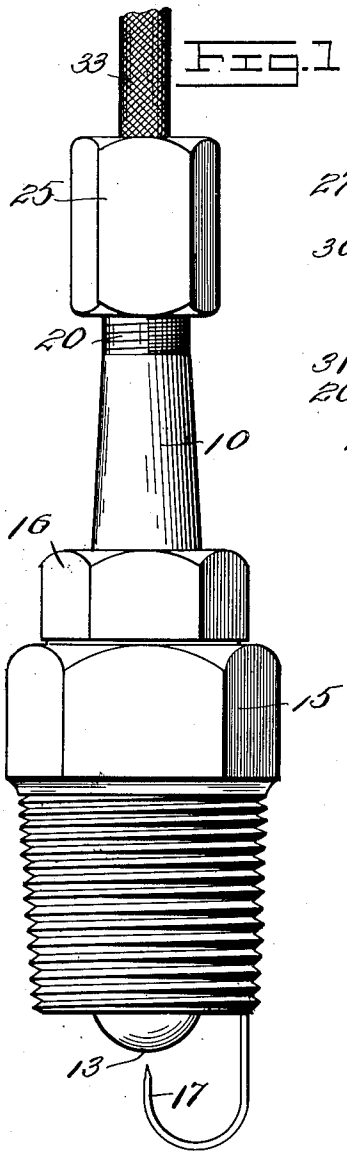


Fig. 1.

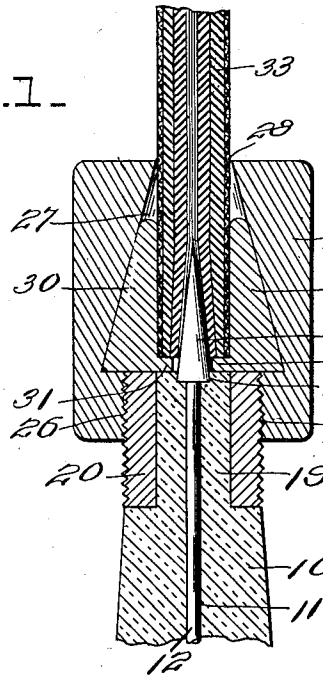


Fig. 3.

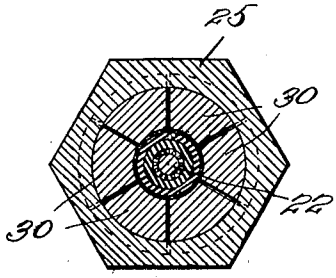


Fig. 4.

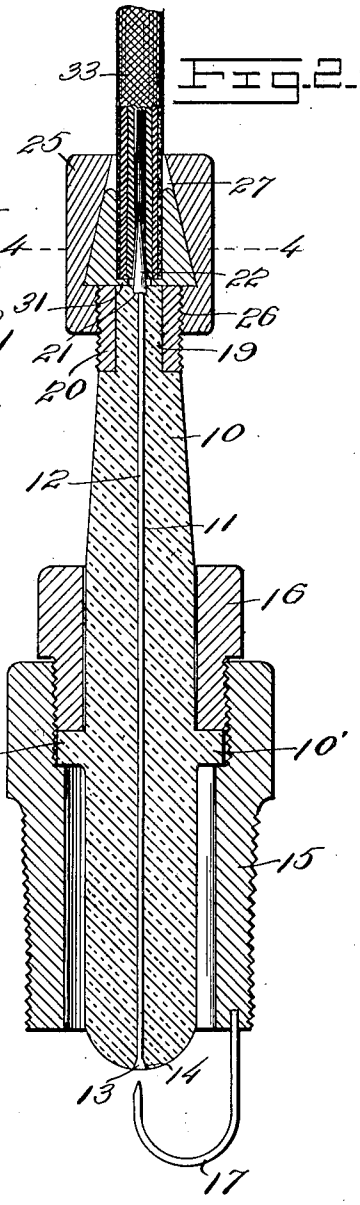


Fig. 2.

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Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR W. S. HERRINGTON, OF MADISON, NEW JERSEY.

SPARK-PLUG.

No. 916,313. Specification of Letters Patent. Patented March 23, 1909.

Application filed May 7, 1908. Serial No. 431,397.

To all whom it may concern:

Be it known that I, ARTHUR W. S. HERRINGTON, a citizen of the United States, residing at Madison, in the county of Morris and State of New Jersey, have invented certain new and useful Improvements in Spark-Plugs, of which the following is a specification.

This invention relates to hydro carbon engines and more particularly to spark plugs therefor, and has for an object to provide a plug of this type which will be efficient and durable.

An important object of this invention is to provide a means for making positive connections between the plug and a cable extending from a primary coil.

Another object is to provide such a connection which will not be liable to disengagement accidentally.

Another object is to provide a plug which will be effectively insulated, and in which the liability of short circuit is reduced to a minimum.

Another object is to provide a plug having direct connections between the sparking point and the primary circuit, without the intervention of nuts or washers.

Other objects and advantages will be apparent from the following description and it will be understood that changes in the specific structure shown and described may be made within the scope of the claims and that any suitable materials may be used without departing from the spirit of the invention.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a side elevational view of the plug, Fig. 2 is a longitudinal section through the plug, Fig. 3 is a detail view of the plug electrical connection, Fig. 4 is a cross sectional view on the line 4—4 of Fig. 3.

Referring to the drawings, there is shown a spark plug of a type similar to those now generally in use, and comprising a porcelain core 10 having a longitudinal passage 11 therethrough, in which there is engaged a conductor 12 having an enlargement 13 at its inner end engaged within a similar enlarged portion 14 at the adjacent end of the passage 11. An annular shoulder 10′ is formed around the core 10 intermediately of its length, and engaged inwardly and outwardly thereof is a supporting nut 15 of the usual type, being adapted for engagement in the usual threaded opening provided for that purpose in the cylinders of gasolene engines. A retaining nut 16 is engaged outwardly of the flange 10′ and within the nut 15 to hold the core 10 engaged therein. A sparking wire 17 is engaged on the inner edge of the retaining nut 15 extending longitudinally inward therefrom, being curved inwardly and having its outer end portion disposed in registry with and spaced from the portion 13 of the conductor 12. The opposite end of the core 10 has a reduced portion 19 formed thereon upon which there is closely engaged a threaded sleeve 20 to engage with and hold the contact portion now to be described. The adjacent end of the channel 11 is provided with a circular enlargement 21 having engaged therein the enlarged portion of a tapered head 22 carried by the conductor 12. The contact making portion comprises a nut 25 having an interiorly threaded portion 26 at one end from which there extends a gradually reduced portion 27 having a smooth surface and communicating with an opening 28 at the opposite end of the nut from the threaded portion 26. Engaged loosely within the reduced opening 27 there are pinching members 30 of wedge shape, having concave surfaces on their inner side, convex surfaces on their outer side, and being provided with inwardly projecting shoulders 31 at their enlarged ends.

In operation, the members 30 are disposed near the tapered portion 27 of the nut 25, as shown, and the nut then engaged upon the portion 20, carried by the core 10. The cable to be connected with this plug is then cut squarely and introduced through the opening 26, being forced over the head 22. The nut 25 is then further tightened upon the sleeve 20, this action compressing the members 30 into close engagement with the engaged portion of the cable 33, and making an effective contact between the wires of the cable and the head 21 carried by the conductor 12.

It will be understood that if desired the threaded portion 26 may be enlarged to the full diameter of the opening 27, so that the members 30 may be disengageable from the nut 25 from either end of the nut.

What is claimed is:—

1. An electrical connection comprising a central cable-piercing contact member and an externally threaded sleeve, each adapted

for engagement with a spark plug, a nut adapted for engagement over said sleeve, and having an enlarged conical chamber centrally thereof, the restricted end of the chamber being disposed oppositely of the sleeve and opening through the end of the nut for the reception of a cable member therethrough, and wedge members carried concentrically within the chamber and adapted to engage oppositely around a cable to be compressed thereagainst by adjustment of the nut.

2. The combination with a spark plug having a non-conducting core, of a concentric pointed conducting member projecting longitudinally therefrom, an externally threaded sleeve carried by the core, said pointed conductor being adapted for piercing engagement concentrically of the cable member, a nut adapted for engagement with said sleeve, said nut having an enlarged conical chamber centrally thereof the restricted end of the chamber being disposed oppositely of the sleeve and opening through the end of the nut for the reception of a cable member therethrough, and wedge members disposed concentrically of the chamber for engagement around a cable member for compressing engagement thereagainst by adjustment of the nut upon the sleeve.

3. An electrical contact means comprising a pointed contact member adapted for piercing engagement concentrically of a cable member, an externally threaded member located at the base of said pointed member, wedge shaped members adapted for engagement around the contact point, and a nut having a conical opening therethrough and provided with threads at its enlarged end adapted for engagement over said wedge shaped members against a cable disposed around said contact point.

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

ARTHUR W. S. HERRINGTON.

Witnesses:

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