A. G. & A. J. BERGSTROM.

SPARK PLUG.

APPLICATION FILED DEC. 30, 1912.

1,098,705.

Patented June 2, 1914.

Fig. 1.

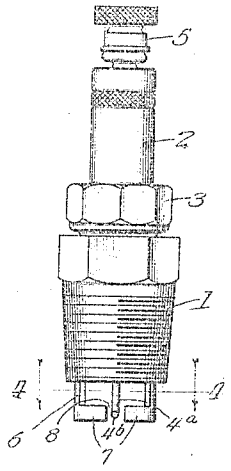


Fig. 2.

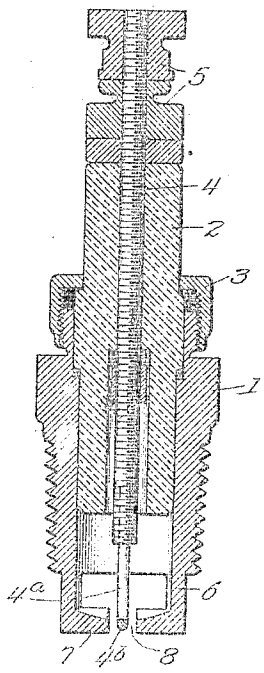


Fig. 3.

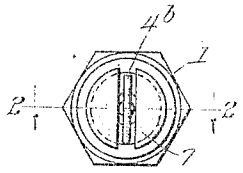


Fig. 4.

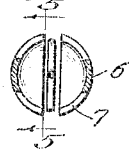


Fig. 5.

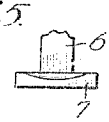
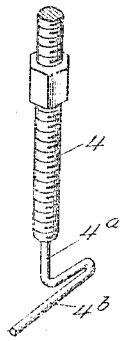


Fig. 6.



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UNITED STATES PATENT OFFICE.

ADOLPH G. BERGSTROM AND ARTHUR J. BERGSTROM, OF ROCKFORD, ILLINOIS.

SPARK-PLUG.

1,098,705. Specification of Letters Patent. Patented June 2, 1914.

Application filed December 30, 1912. Serial No. 739,174.

To all whom it may concern:

Be it known that we, ADOLPH G. BERGSTROM and ARTHUR J. BERGSTROM, both citizens of the United States, residing at Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Spark-Plugs, of which the following is a specification.

The object of this invention is to produce an improved spark plug of high efficiency and reliability in which the electrodes present a large surface, so that a large spark will be produced, and so that the electrodes will remain serviceable even though a portion of a space between them should become bridged by a deposit of burnt carbon.

In the accompanying drawings, Figure 1 is a side elevation of a spark plug embodying the features of our invention. Fig. 2 is an enlarged longitudinal central section through the plug on line 2 2 of Fig. 3. Fig. 3 is an end elevation taken from the lower end of Fig. 1. Fig. 4 is a section on line 4 4 of Fig. 1. Fig. 5 is a fragmentary elevation of the inner side of one of the outer electrodes. Fig. 6 is an enlarged perspective view of the lower portion of the central electrode.

The body of our spark plug may be of the usual or any preferred construction, being herein shown as comprising a tubular outer casing 1, a sleeve 2 of insulating material fitting therein and held in place by means of a gland 3, and a central electrode 4 positioned within the sleeve 2 and having one or more nuts 5 threaded on its upper end. The lower portion of the electrode 4 consists of a wire 4^a which may be either integral with the rod 4, or formed separately therefrom and attached thereto in any suitable way. The wire 4^a is bent to provide a transverse portion or cross-piece 4^b, preferably of a length slightly less than the inner diameter of the casing 1, so that the central electrode may be withdrawn upwardly through said casing. The lower end of the casing 1 has a pair of electrodes 6 projecting therefrom, each of said electrodes having at its free end a cross-piece 7. Said cross-pieces are relatively long and the adjacent sides thereof are straight and parallel and form between them an elongated sparking space 8. The cross-piece 4^b of the inner electrode extends centrally within and longitudinally of this sparking space parallel with the sides of the cross-pieces 7. The cross-pieces 4^b and 7 are of substantially the same length.

When an electric circuit is closed through the spark plug, the current will jump between the inner sides of the cross-pieces 7 and the cross-piece 4^a at a plurality of points, thus forming a large spark calculated to give the best possible ignition. In case a deposit of oil should collect between the cross-pieces 4^a and 7, so as to bridge the space 8 at one or more points, the portions of the space not bridged will continue to be serviceable, so that the spark plug will remain operative. From a practical standpoint, this feature is of very great importance. Many of the spark plugs heretofore produced have had two electrodes, having their ends positioned close together between which ends the spark is drawn. In such plugs, if oil collects between the adjacent ends of the electrodes, the plug will be rendered entirely unserviceable. As will be seen, the present plug overcomes this disadvantage, because, even though a portion of the spark gap should be bridged, there will still remain other portions through which the necessary spark may jump.

We claim as our invention:

A spark plug comprising a casing adapted to be mounted in an engine cylinder, a central electrode positioned in and insulated from said casing, said electrode having a cross-piece at its lower end, two projections extending from the lower end of said casing, and a transverse portion carried by the lower end of each of said projections, said transverse portions projecting inwardly from said projections, toward the cross piece and presenting surfaces lying at opposite sides of said cross-piece and disposed longitudinally of and parallel with said cross-piece.

In testimony whereof we affix our signatures in presence of two witnesses.

ADOLPH G. BERGSTROM.
ARTHUR J. BERGSTROM.

Witnesses:
F. G. HOGLAND,
I. B. NELSON.