A. A. MELLBLOM.

SPARK PLUG.

APPLICATION FILED AUG. 26, 1918.

1,425,329. Patented Aug. 8, 1922.

Fig. 1.

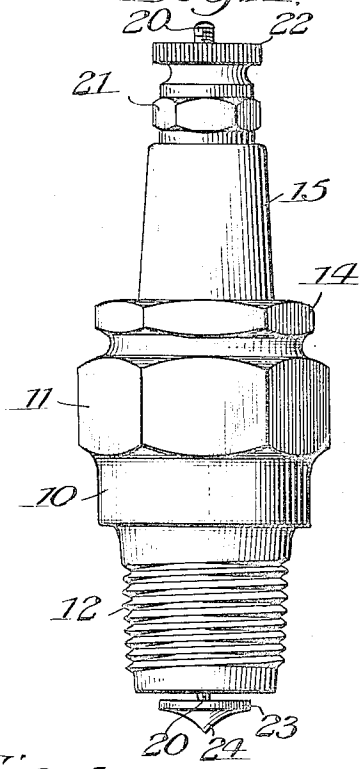


Fig. 2.

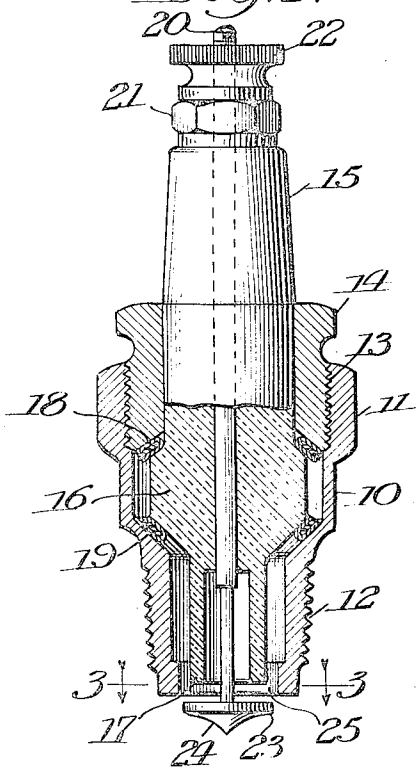


Fig. 5.



Fig. 3.

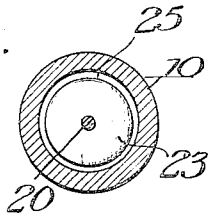
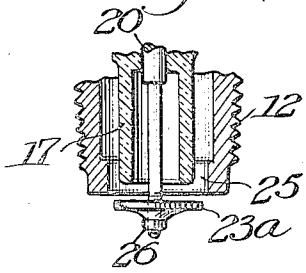


Fig. 4.



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SPARK PLUG.

1,425,329. Specification of Letters Patent. Patented Aug. 8, 1922.

Application filed August 26, 1918. Serial No. 251,370.

To all whom it may concern:

Be it known that I, ADOLPH A. MELLBLOM, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Spark Plugs, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

The invention relates to spark plugs and has for its object the provision of means whereby oil and other carbon producing elements are prevented from reaching the electrode of the plug, and thereby keep same dry and thus insure a spark which will properly ignite the explosive mixture in the cylinders of the engine.

It is a further object of the invention to design and arrange the parts so that the carbon producing elements will be directed towards the shell or ground side of the plug instead of towards the electrode thereby preventing the carbon producing elements from reaching the interior of the shell to interfere with the proper operation of the plug.

The invention has as an additional object the production of these and other advantages in a simple and expeditious manner, all of which will be explained and more readily understood when read in conjunction with the accompanying drawings in which—

Fig. 1 is an elevation of a spark plug having one form of the invention applied thereto;

Fig. 2 is a vertical section of the plug shown in Fig. 1;

Fig. 3 is a section taken on line 3, 3 of Fig. 2;

Fig. 4 is a sectional view of the lowermost portion of a plug, having a modified structure applied thereto; and

Fig. 5 is a top plan view of another structure which may be applied to an end of the electrode.

In the embodiment of the invention as shown in the drawings I contemplate the use of the usual shell 10 having the flat faced portions 11 the exteriorly screw threaded portion 12 and the interiorly threaded portion 13 to receive the clamping nut 14. A porcelain insulator 15 is provided with the enlarged portion 16 and the reduced extremity 17 which terminates a suitable distance above the lowermost end of the shell 10. Gaskets 18 and 19 are provided to hold the compression and prevent its escape between the parts forming the plug. An electrode 20 is mounted in the insulator 15 and is provided with the set and clamping nuts 21 and 22 respectively. Upon the lowermost end of the electrode 20 is arranged the disc shaped enlargement 23 which is of a weight sufficient to withstand a high degree of heat, the under side of which is provided with the deflecting surface 24. This disc shaped member is arranged a suitable distance below the lowermost extremity of the shell 10 and is illustrated as being of a slightly less dimension than the bore or chamber 25 of the shell 10. This relative difference in dimension is provided for the purpose of permitting any oil which might find its way to the interior of the chamber 25 to pass without touching the disc, in dropping from the interior of the shell 10. One of the objects of providing this distance between the lowermost extremity of the porcelain insulator 15 and the top of the enlargement 23 is to prevent the possibility of causing a short circuit between the disc 23 and the shell 10 by the accumulation of oil upon the porcelain and between the disc and the end of the insulator. The relative position and approximate distances between the lowermost end of the shell 10, the lowermost extremity of the insulator 15, the disc 23 and the shape of the lowermost face of the disc, co-operate with each other to prevent oil from reaching the electrode 20, keeping it dry and insuring a spark across the space between the disc 23 and the lowermost end of the shell 10.

It is evident that the shape of the lowermost face of the member 23 will deflect any oil striking it away from the lowermost end of the shell 10, also any oil striking this end of the shell will drop therefrom without touching the member 23. It is further evident that should any of the oil find its way between the uppermost face of the disc 23 and the lowermost face of the shell 10 that it will strike the walls of the extremity of the insulator 17 and not reach the lowermost end of the electrode 20, this will consequently keep it dry and insure the production of a spark between some point of the periphery of the member 23 and the shell 10 which forms the ground side of the circuit. In the structure shown in Fig. 4 the member 23^a is threaded upon the lowermost end of the electrode and is held in its proper position by the set nut 26. This arrangement

may be resorted to should it be found necessary to vary the distance between the member 23^a and the lowermost end of the shell of the plug.

In Fig. 5 a modified form of disc is shown in which the edge is serrated producing an edge which may be filed down or bent to the desired form.

Having shown and described various forms of the invention it is obvious that others may be resorted to without departing from the spirit of the appended claim.

What I claim and desire to cover by Letters Patent is:

A spark plug having a shell and an electrode having a member secured thereto, said member being arranged with respect to the shell to permit a spark to occur between it and the shell, said member having a concave conoidal deflecting surface.

In witness whereof, I hereunto subscribe my name this 21st day of August, A. D. 1918.

ADOLPH A. MELLBLOM.