J. M. WALTON.

SPARK PLUG.

APPLICATION FILED OCT. 13, 1913.

1,132,811. Patented Mar. 23, 1915.

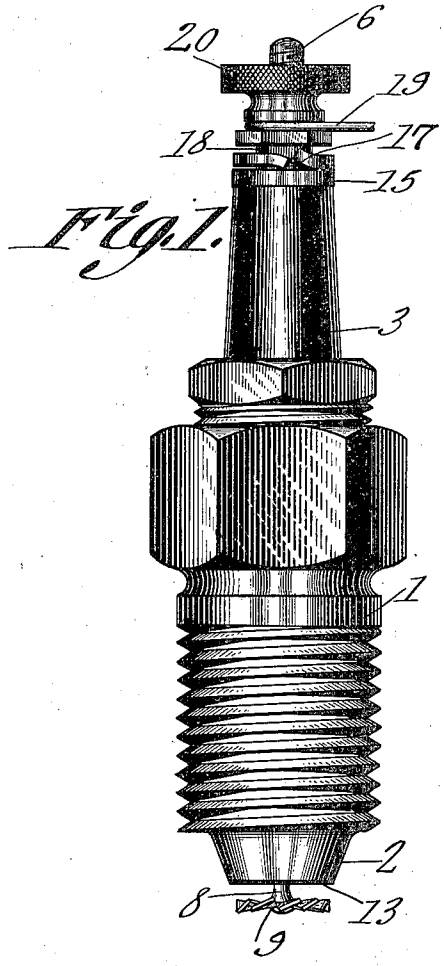


Fig. 1.

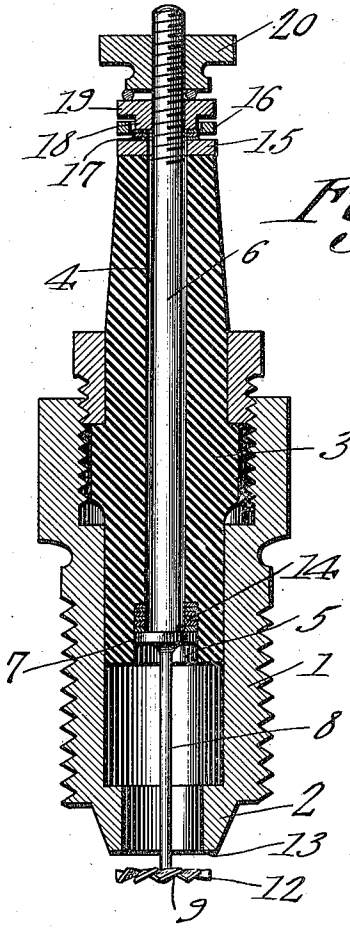


Fig. 2.

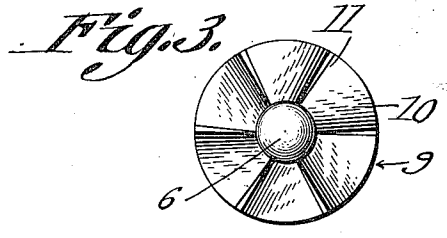


Fig. 3.

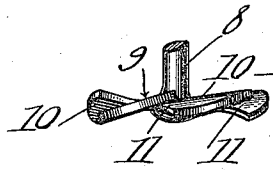


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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SPARK-PLUG.

1,132,811. Specification of Letters Patent. Patented Mar. 23, 1915.

Application filed October 13, 1913. Serial No. 794,980.

To all whom it may concern:

Be it known that I, JOHN M. WALTON, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Spark-Plug, of which the following is a specification.

The present invention relates to improvements in spark plugs, one object of the invention, being the provision of coöperating electrodes, the construction and combination of which provide for the dripping of the lubricating oil which may be carried by the carbureted air thereupon, so that the sparking points will not be insulated by the lubricant, and by means of which the terminals at all times will be free of lubricant and to a great extent be relieved of the objectionable feature of carbonizing.

A further object of the present invention, is the provision of an adjustable central electrode, by means of which the spark gap may be regulated to an exactness, said adjustable electrode being provided with a plurality of points, whereby desired sparking is assured, even should some of the points be insulated by lubricant or become carbonized.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings—Figure 1 is a side elevation of a spark plug constructed according to and embodying the present invention. Fig. 2 is a vertical central sectional view therethrough. Fig. 3 is a bottom plan view of the disk of the adjustable electrode. Fig. 4 is a side elevation thereof.

Referring to the drawings, the numeral 1 designates the metal shell which is adapted to be screwed into the cylinder of the explosion engine, its electrode or sparking portion 2 being in the form of a truncated cone and tapered, as clearly illustrated, so that any lubricant adhering thereto, will be directed downwardly and away from the spark plug.

Fitted within the member 1, in the usual manner, is the sleeve or insulating member 3, which is provided with the central bore 4 for the reception of the stem 6, the lower end of the bore 4 being enlarged as at 5 for the reception of the disk or head 7 carried by the stem 6 intermediate of its enlarged and reduced end 8, said reduced end being disposed to project below the sparking terminal 13 of the truncated conical end 2 of the member 1 and carry thereupon, the sparking terminal or disk 9. This disk 9, as clearly illustrated in Figs. 3 and 4, is radially cut and the extreme edge of each radial section 10 is bent out of the same plane of the central portion of the disk and relatively to each other so as to provide the interstices or spaces 11 at the periphery of the disk, the upper face of each section 10 being disposed at an angle, so that any lubricant directed thereon from the terminal 2 will be further directed between the spaces 11 and thus drain the electrodes of the spark plug. The upper points or edges 12 of the disk 9 are disposed directly below and in sparking relation to the sparking end 13 of the member 2 and thus provide a plurality of points on the disk 9, in the present instance, six being shown.

Surrounding the lower end of the enlarged portion of the stem 6 above the disk or head 7 within the socket 5, are a plurality of packing and adjusting rings 14, the same being relatively thin, and providing means whereby the sparking disk 9 may be adjusted so that its sparking points 12 will be placed at the desired adjustment relatively to the sparking terminal 13 of the portion 2 of the member 1, these disks 14 regulating the spark gap between these parts.

Disposed upon the upper end of the insulating body 3 and surrounding the upper threaded end of the stem 6, is a disk 15, there being disposed upon the stem 6 a plurality of thin washers or rings 17, which form an auxiliary adjusting means for the sparking member 6, a split ring or locking washer 16 surrounding these washers or rings 17, and the lower reduced end 18 of the upper lock nut 19. Disposed upon the upper end of the stem 6, is the binding nut 20 for properly connecting the electrical terminal thereto.

It will be noted that the disk 9 is of greater diameter than the bore 13′, thus causing the periphery thereof to overlap, as it were, the flat sparking rim 13 of the electrode 2. By this construction, the passage-

way for gases into the bore 13′ is lessened, the disk 9 acting as a baffle plate to prevent such passage that tends to and does clog the bore. By this arrangement lubricant upon the portion 2 is directed upon the periphery of the disk 9 where the explosions blow off or dislodge the same.

What is claimed is:

A spark plug, including a metal bushing having a reduced frusto-conical electrode end, said bushing having a longitudinal bore therethrough terminating in a reduced bore through the electrode end to provide a reduced circular rim upon the electrode end, a tubular body of insulation having an intermediate enlargement, one end of the body seating in the enlarged end of the longitudinal bore of the bushing, a locking means for holding the body of insulation in the bushing, a metal stem extending through the tubular body and projecting beyond the frusto-conical end of the bushing, and a disk electrode riveted upon the extended end of the stem and of greater diameter than the reduced bore of the bushing, the periphery of said disk being provided with a plurality of radial incisions, and the intermediate segments of the disk being alternately bent up out of the plane of the disk to provide a plurality of sparking points and oil drains.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN M. WALTON.

Witnesses:

FRANK C. FEGLEY,

EFFIE H. FEGLEY.