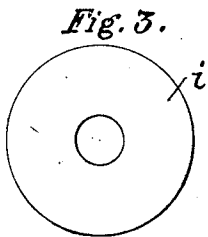
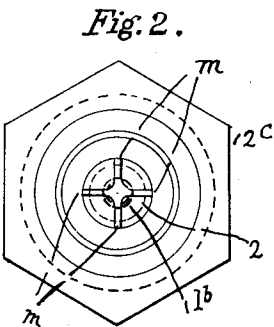
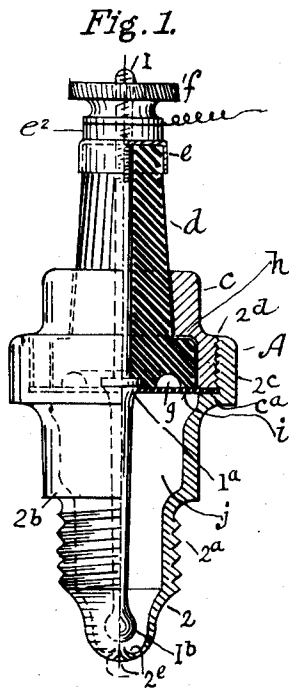


F. W. ERICKSON.
SPARKING PLUG.
APPLICATION FILED JAN. 19, 1912.

1,044,509.

Patented Nov. 19, 1912.



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UNITED STATES PATENT OFFICE.

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SPARKING PLUG.

1,044,509.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed January 19, 1912. Serial No. 672,147.

To all whom it may concern:

Be it known that I, FREDERIC WM. ERICKSON, residing at New York, in the county of New York and State of New York, have invented certain Improvements in Sparking Plugs, of which the following is a specification.

The present invention relates to improvements in sparking plugs or electric igniters for internal combustion motors, and provides means whereby the liability of fouling and short circuiting will be reduced to a minimum, and means for intensifying and increasing the caloric value of the produced spark and means whereby the spark gap may be maintained at a determined or calibrated space as in multiple cylinder motors; in order to produce the best results, the length of the spark gap in each cylinder should be accurate to within a small fraction of an inch. All of which I will now proceed to describe and point out in the claim, reference being had to the accompanying drawings which illustrate the specification and form a part thereof, of which—

Figure 1 is an elevation in one-half section of a spark plug embodying my invention. Fig. 2 is a view of the lower end of the former figure, and Fig. 3 is a side view of an insulating washer or disk.

In the drawings A is a metal shell, whose upper end 2^c is provided with an internal screw-thread 2^d and with a ledge C^a upon which rests an insulating disk or washer i, preferably of mica of a calibrated or determined thickness, the lower portion being of reduced diameter whose under part 2^b forms a bearing to rest upon the frame of the motor, where the threaded shank 2^a is screwed into the proper opening to the explosion chamber of the motor.

C is a metal collar having an external screw-thread to engage with the thread 2^d of the shell A, and has an internal shoulder h adapted to hold the insulating post d firmly to the upper part of the washer i. The upper end of the insulating post d is fitted with a metal cap e which serves as a protection of the material composing the same and its lower end is tapered and enlarged and fits snugly within the tapered upper end of the collar C.

l is a metal rod which passes through the insulating post d and terminates at its top

in a screw-thread upon which is a nut e² above which is the nut f adapted to engage a terminal wire w; at the lower end of the post d the rod l has an enlargement 1^a which when the nut e² is turned down hard retains the sections A, C and d together. From the enlargement 1^a the rod l tapers down to a bulb 1^b which serves as an electric discharge terminal, the opposite terminal being formed from the rounded finial of the shell A, which has the cross-cut perforations or openings m, in its end forming the sharp corners 2^e which are bent inward constituting spark points within the interior of the shell. The mica disk or washer i has a central hole to enable it to be passed over the end 1^b of the rod l to near the enlargement 1^a and protects the lower end of the insulating post d from heat due to the sparking, and is made of a calibrated or determined thickness so that the gap between terminal 1^b and the points 2^e will be the same, whenever; if the outer surface becomes coated with soot it becomes desirable to substitute a new one, and as the expense is slight any number of them may be kept on hand and an old one quickly replaced by a new.

The circular channel g in the lower end of the insulating post d is concentric and serves to increase the insulating area in case the washer i should by accident get punctured. By the use of the removable insulating washer i the chamber j of the shell A is kept comparatively clean and free from soot which collects mainly in its upper end, as it is so easily replaced when foul by a new one, and serves to lengthen the life of the plug which often has to be replaced by a new plug after an automobile run of 1,000 miles, and as the washers are carefully made of the same thickness the accuracy of the calibration of the spark is maintained.

Having described the invention, I claim:

A spark plug composed of a metal shell having a rounded perforated lower end with inwardly bent sparking points, a supporting ledge in the upper part of the shell, a perforated mica disk resting on the ledge, a perforated insulating post whose lower end extends into the upper part of the shell, a collar adapted to bear upon the exterior of the post and upon the edge of the disk and hold the same to the shell, with a metal rod extending through the interior of the shell

and the post one end of which is separated from the sparking points by a gap, while the opposite end is provided with a screw thread and a nut at the upper end of the post, as set forth.

In testimony whereof, I have signed my name to this specification in the presence of

two subscribing witnesses, this 16th day of January, 1912.

FREDERIC WM. ERICKSON.

Witnesses:

HARRIET LEVI,
JOHN A. COLE.