Jan. 1, 1924 1,479,643

J. BLOMSTER

SPARK PLUG

Filed July 8, 1920

Fig. 1.

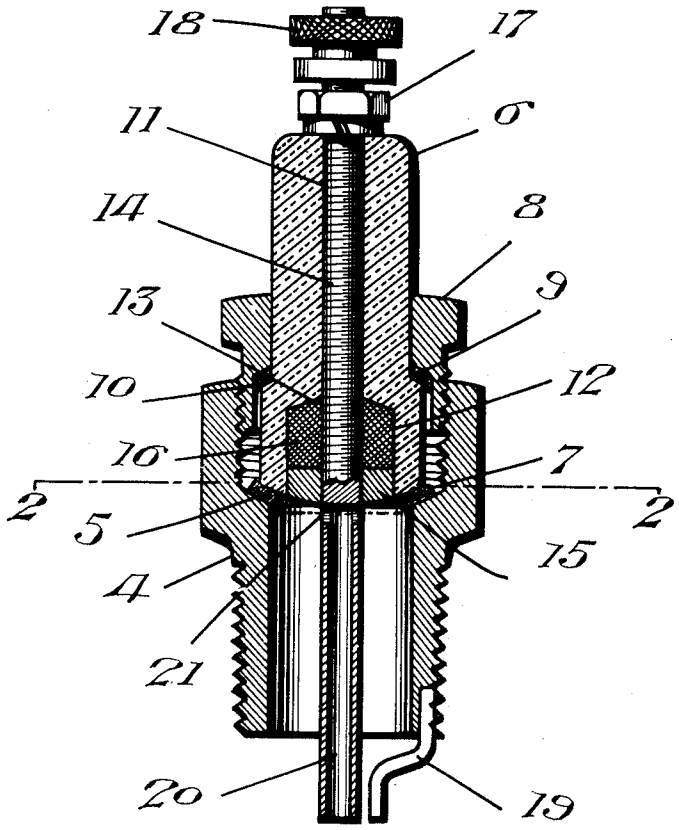
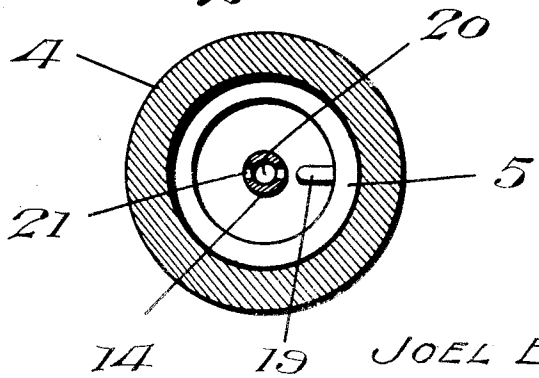


Fig. 2.



Witness

Thomas Tracy

Inventor

JOEL BLOMSTER

By W. J. Fitz Gerald & Co.

Attorney

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UNITED STATES PATENT OFFICE.

JOEL BLOMSTER, OF HOBARTON, IOWA.

SPARK PLUG.

Application filed July 8, 1920. Serial No. 394,776.

To all whom it may concern:

Be it known that I, JOEL BLOMSTER, a citizen of the United States, residing at Hobarton, in the county of Kossuth and State of Iowa, have invented certain new and useful Improvements in Spark Plugs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to spark plugs, and has for its object the provision of a spark plug provided with an electrode rod or stem of hollow or tubular form, with a bore or passage therein for the circulation of air and gas, and also enabling the corresponding electrode terminal to be highly heated, whereby to eliminate the deposit of carbon and the liability of fouling or short-circuiting.

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

The invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is a longitudinal diametrical section of the improved spark plug, portions being shown in elevation.

Fig. 2 is a cross section on the line 2—2 of Fig. 1.

The plug comprises a metal shell 4 of conventional form, having the inner outwardly facing shoulder 5, and an insulating bushing or core 6 has its inner end seated against a washer or gasket 7 bearing on said shoulder. The bushing or core is secured in the shell by means of a gland nut 8 screw threaded into the outer end portion of the shell, and provided with an inner inwardly facing shoulder 9 complementing the outwardly facing shoulder 10 of the bushing or core, to firmly secure said bushing or core in the shell. The bushing has a longitudinal bore 11 extending from its outer end, with a counter bore or recess 12 in the inner end of the bushing providing a shoulder 13, and a longitudinal electrode rod or stem 14 extends through the bore 11 and projects from the outer end of the bushing and the inner end of the shell. This rod is disposed axially of the shell, and has a collar 15 screw threaded or otherwise secured thereon between its ends and fitted within the recess 12, with packing 16 in said recess between said collar and shoulder 13. A nut 17 screw threaded on the outer terminal of the rod 14 draws said rod outwardly to firmly secure it to the bushing, and to compress the packing 16. The conductor or wire is secured to the outer terminal of the rod by means of a binding nut 18 on said terminal.

The inner end portion of the rod or stem 14 provides the insulated electrode terminal, and an electrode or sparking point 19 is secured to the inner end of the shell and is offset inwardly adjacent to the electrode terminal of the rod 14, to provide the spark gap.

The cardinal feature of the invention resides in the fact that the inner terminal portion of the rod 14 has a bore or passage 20 extending from the inner end of said rod to a point adjacent to the collar of member 15, and a diametrical hole or aperture 21 extends through said rod at the outer end of said bore or passage, so that the air and gas can circulate through said bore and within the shell between the rod 14 and walls of the shell. The bushing or core 6 terminates at the shoulder 5 so as not to obstruct the flow of gas through the hole or aperture 21. Furthermore, the bore 20 will make the electrode terminal tubular, with a thin wall that will become highly heated, for drying the carbon, so that it will crumble and fall off. By the provision of such an electrode terminal, the circulation of gas therethrough in connection with the heating thereof, will eliminate the deposit of carbon, and thereby reduce the liability of the plug becoming fouled or short-circuited.

Having thus described the invention, what is claimed as new is:—

A spark plug comprising a shell having a shoulder therein, an insulating bushing secured within the shell with the inner end of the bushing seated against said shoulder and provided with a recess, an electrode rod of substantially uniform diameter throughout its length extending through said bushing, a collar on said rod fitted in said recess, packing within the recess around the rod between said collar and bushing, a nut threaded on the outer terminal of the rod

and bearing against said bushing to draw said collar into the recess, the rod having a bore extending from its inner end to a point adjacent to said collar and opening laterally within the shell adjacent to said shoulder and inner end of the bushing for the circulation of gas therethrough, the inner terminal of the rod projecting from the shell, and an electrode carried by the inner end of the shell and projecting toward one side of the inner terminal of said rod to provide a spark gap.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOEL BLOMSTER.

Witnesses:
H. O. MILLER,
H. H. FLOOK.