W. M. T. BESSON.

SPARK PLUG.

APPLICATION FILED MAR. 20, 1913.

1,100,650. Patented June 16, 1914.

Fig. 1.

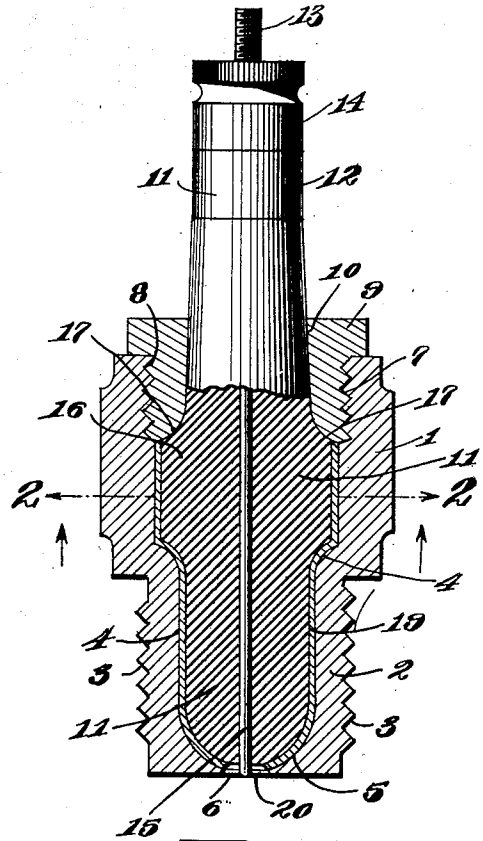
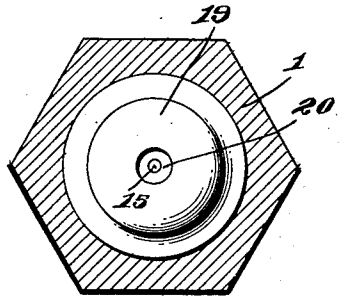


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE

WILLIAM M. T. BESSON, OF SELMA, ALABAMA, ASSIGNOR OF ONE-HALF TO H. A. VAUGHAN, OF SELMA, ALABAMA.

SPARK-PLUG.

1,100,650. Specification of Letters Patent. Patented June 16, 1914.

Application filed March 20, 1913. Serial No. 755,678.

To all whom it may concern:

Be it known that I, WILLIAM M. T. BESSON, a citizen of the United States, residing at Selma, in the county of Dallas and State of Alabama, have invented certain new and useful Improvements in Spark-Plugs, of which the following is a specification.

This invention relates to spark plugs and has for its primary object the provision of an improved form of sparking plug for use in the explosive end of an internal combustion engine whereby increased efficiency will be obtained in producing an igniting spark for exploding the charge of gas contained in the explosive chamber of the engine under all conditions.

Another object of this invention is the provision of a spark plug of novel construction, which will, at all times, prevent the corroding of the inner end of the plug, which enters the explosive chamber of the engine, due to the formation of carbon generated by the action of the gases in the chamber or the accumulation of carbonized oil thereupon, thereby preventing a short circuit of the igniting means and insure a spark of sufficient magnitude to explode the charge of gas in the explosion chamber of the engine.

These objects are accomplished by means of the fact that only a very small portion of the porcelain or other insulating material of the sparking plug is exposed to the oil or carbon and this small surface is constantly swept by an electric spark which consumes instantly all carbon or the like that might deposit upon the insulating material, thereby keeping the sparking gap clean and preventing a short circuit of the igniting means.

With the foregoing and other objects in view, this invention consists in such novel features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters of reference designate like or corresponding parts throughout the several views, and in which,

Figure 1 is a sectional view through a portion of the improved spark plug, showing the parts thereof in elevation; and, Fig. 2 is a sectional view on the line 2—2 of the insulating exterior of the spark plug, showing the interior portion thereof in plan.

The improved spark plug has an outer casing 1 which has its lower reduced portion 2 provided with external screw-threads 3 by means of which the spark plug is attached to the explosive end of any type of internal combustion engine in connection with which a device of this nature is used and which casing is provided with a cut-out portion 4 centrally located therein and extending longitudinally therethrough having its lower end rounded as at 5 and communicating with the lower end of the reduced portion 2 of the outer casing 1, leaving a small opening therein as at 6. The upper ends of the sides of the cut-out portions 4 are provided with internal screw-threads 7 which engage the external screw-threads 8 on the plug 9 which has an aperture 10 extending longitudinally therethrough.

A plug 11 which is constructed of any suitable insulating material such as porcelain or the like is seated in the cut-out portion 4 and the aperture 10 having its upper end 12 protruding above the upper end of the plug 9. The ordinary means of attaching an electric conducting wire to the upper end of the plug 11 is used, namely, a screw-threaded bar 13 and thumb nuts 14 thereupon. The screw-threaded bar 13 communicates with the electrode 15 which is centrally located within the plug 11 and which extends longitudinally therethrough.

The plug 11 has an enlarged portion 16 extending annularly thereabout, which enlarged portion forms a means for securely holding the plug 11 within the cutout portion 4. The lower end 17 of the plug 9 engaging the upper shoulder of the enlarged portion 16, prevents the plug 11 from moving longitudinally within the cut-out portion 4 and the aperture 10. A jacket 19 which is of any suitable conducting material is mounted upon the outer surface of the plug 11 and in fluid-tight engagement with the outer surface of the plug 11, including the lower end which is adjacent the

lower or protruding end of the electrode. The lower end of the jacket 19 is provided with a circular opening 20 which extends therethrough and which communicates with the opening 6 in the casing 1. The electrode 15 is centrally located within the circular opening 20 of the jacket 19. The circular opening 20 may be flared outwardly having a greater diameter at the outer edge of the jacket than at the inner edge. This feature will facilitate the sweeping of the insulating member by the electric spark.

It will be seen from the foregoing description and drawings that only a very small portion of the insulating plug 11 is exposed and susceptible to corroding all carbon or carbonized oil, thereby hindering the efficiency of the spark plug and also that this small portion which is exposed by means of the opening 20 will at all times be protected by the electric spark which will jump from the electrode 15 to the jacket 20 as the sparks will instantly consume any foreign article such as the carbon or carbonized oil which might tend to cling to the plug 11.

In practical fields, certain minor features of construction, combination and arrangement of parts may necessitate alterations to which the patentee is entitled, provided such alterations are comprehended within the scope of what is claimed.

What is claimed is:—

In a spark plug for internal combustion engines, a shell having a bore therethrough, one end of the bore being spherical and provided with an outlet, a jacket of conducting material located within the shell and conforming to the spherical form of the bore of the shell, an insulator located within the jacket and conforming to the spherical portion of the jacket, a lock nut received by the upper end of the shell adapted to engage the jacket and insulator, said jacket provided with an outlet registering with the outlet of the shell and an electrode extending through the outlets and spaced from the jacket and shell, said lock nut adapted to force the spherical portions of the insulator against the spherical portions of the jacket and thereby force the spherical portion of the jacket against the corresponding portion of the shell.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM M. T. BESSON.

Witnesses:

L. A. PRICE,

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