A. R. MOSLER.

SPARK PLUG.

APPLICATION FILED OCT. 29, 1913.

1,190,938. Patented July 11, 1916.

Fig. 1.

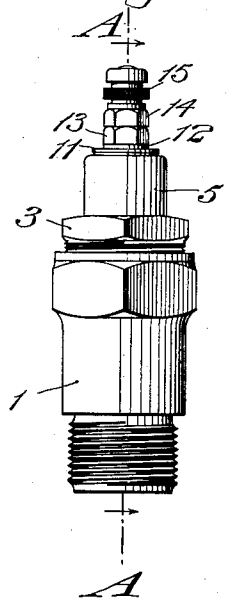


Fig. 2.

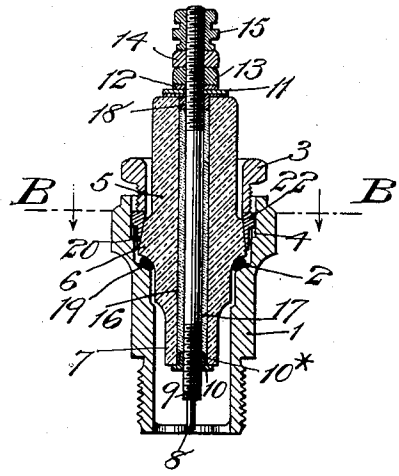


Fig. 3.

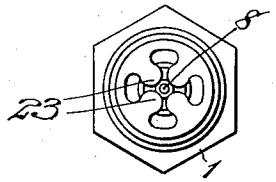


Fig. 4.

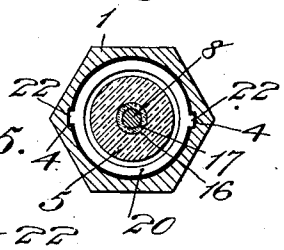


Fig. 5.

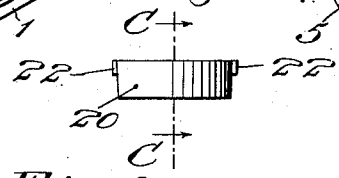
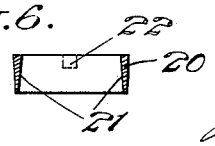


Fig. 6.



Witnesses:-
Hyperion Barry.
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by his attorneys
Brownell and Brownell

UNITED STATES PATENT OFFICE.

ARTHUR R. MOSLER, OF NEW YORK, N. Y., ASSIGNOR TO A. R. MOSLER & CO., OF YONKERS, NEW YORK, A CORPORATION OF NEW YORK.

SPARK-PLUG.

1,190,938. Specification of Letters Patent. Patented July 11, 1916.

Application filed October 29, 1913. Serial No. 798,039.

To all whom it may concern:

Be it known that I, ARTHUR R. MOSLER, a citizen of the United States, and resident of the borough of Manhattan, in the city and State of New York, have invented a new and useful Improvement in Spark-Plugs, of which the following is a specification.

My invention relates to an improvement in spark plugs, and has for its object to provide certain improvements in the construction, form and arrangement of the several parts whereby the plug may be made absolutely gas-tight and leak-proof.

A further object is to provide means for preventing the insulating block of the spark plug from turning in the base, thereby insuring a perfect seat for the same, and preventing any liability of breaking the block.

Another feature of this invention is the novel construction and arrangement of sealing the sparking electrode in the insulating block.

A practical embodiment of my invention is represented in the accompanying drawings, in which,

Figure 1 represents a side elevation of my device. Fig. 2 represents a longitudinal central section taken in the plane of the line A—A of Fig. 1. Fig. 3 represents an inverted plan of the same. Fig. 4 represents a horizontal section taken in the plane of the line B—B of Fig. 2. Fig. 5 represents a side elevation of a collar forming a part of my device, and Fig. 6 represents a longitudinal central section taken in the plane of the line C—C of Fig. 5.

The hollow base of the spark plug is denoted by 1, and is provided in the usual manner with exterior screw-threads on its inner end. This hollow base 1 is also provided with the usual seat 2. The outer end of the base is interiorly screw-threaded for the engagement of a hollow cap 3. One or more longitudinal grooves, in the present instance, two are shown, denoted by 4, are provided in the outer end of the base.

The insulating block 5 is provided with an annular tapered flange 6 and a reduced inner portion 7. An electrode 8 is centrally located in the block 5. The inner end of the electrode is screw-threaded at 9, for the engagement of a flanged washer 10. The inner end of the block 5 is ground to form a seat for the washer 10. The outer end of the electrode is provided with the usual washers 11, 12, and lock nuts 13, 14, for securing it in position in the block 5, and with the usual thumb nut 15 for the reception of an electric wire to the plug.

To insure a perfect gas-tight seal between the block 5 and the electrode 8, I fill the central bore 16 of the block around the electrode with cement 17, to within a short space from the outer end of the block. At the outer end of the bore 16, I insert a tube 18 of malleable metal, such as lead, around the electrode, which tube is crowded into the bore by the lock nuts and washers when the parts are assembled. The crowding of this metal filling 18 into the outer end of the bore 16, together with the cement 17 and the ground joint between the washer 10 and the inner end of the block 5, insures a complete gas-tight seal around the electrode in the block. It will also be seen that the shank 10^* of the washer 10 is a trifle smaller in diameter than the bore 16, thereby permitting the expansion and contraction of the washer without liability of cracking the inner end of the block. A gasket 19 of some suitable material is interposed between the seat 2 and the under side of the flange 6, on the insulating block to prevent any leakage between the base and the block. A collar 20 is interposed between the tapered flange 6 and the cap 3. This collar 20 is provided with the inner walls 21 tapered to fit the taper on the flange 6, and with tongues 22 slidable in the grooves 4 in the interior screw-threaded outer end of the base. Thus it will be seen that after the several parts are assembled, by screwing the cap into the base it will by its engagement with the collar, force the block longitudinally to its seat.

Should the block present any uneven surface at the seat, it will be equalized by the gasket 19, when the block is forced to its position in the base. The surface of the block first presented to the gasket will remain unchanged while it is being forced to its seat and until the block is removed from the base. The non-rotatable feature of the block in the base is a very desirable as well as advantageous feature, for the reason that a perfect seal between the block, gasket and base can be made with any uneven surface existing on either the block or base. The base 1 at the inner end is so shaped around

the electrode, as shown at 23, as to present a plurality of points for assisting the jump of the spark from the electrode to the base.

It is evident that slight changes might be resorted to in the form, construction and arrangement of the several parts without departing from the spirit and scope of my invention; hence I do not wish to limit myself strictly to the structure herein set forth, but

What I claim is:

1. A spark plug comprising a base having a seat and longitudinal grooves therein, an insulating block having an annular flange, a gasket interposed between said flange and seat, a collar fitted to girdle and extend above the vertical walls of said flange, tongues on the collar in position to slide in said grooves, and a cap having a screw-threaded engagement with the base to frictionally engage the collar to force the block to its seat.

2. A spark plug comprising a base having a seat and longitudinal grooves therein, an insulating block having a tapered annular flange, a gasket interposed between said flange and seat, a collar having tapered inner walls fitted to girdle and extend above the tapered vertical walls of said flange, tongues on the collar in position to slide in said grooves, and a cap having a screw-threaded engagement with the base to frictionally engage the collar to force the block to its seat.

3. In a spark plug, an insulating block having a centrally arranged tubular bore, an electrode extending through said bore and spaced from the walls thereof, washers on said electrode at the opposite ends of the block, one of said washers having a shank extending within the bore of one end of the block and spaced from the walls thereof, and cement and malleable fillings closing the space and surrounding the electrode between said washers to form a gas-tight seal.

4. In a spark plug, an insulating block having a centrally arranged tubular bore, an electrode extending through said bore and spaced from the walls thereof, a washer on said electrode at the inner end of said block, a cement filling closing the space and surrounding the electrode within the block, a washer on the electrode at the outer end of the said block and a malleable filling between said cement and outer washer.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this sixth day of October 1913.

ARTHUR R. MOSLER.

Witnesses:
H. A. WATTY,
F. GEORGE BARRY.