

April 15 , 1924.

1,490,713

H. A. RUPERT

SPARK PLUG

Filed Nov. 16 . 1921

Fig. 1.

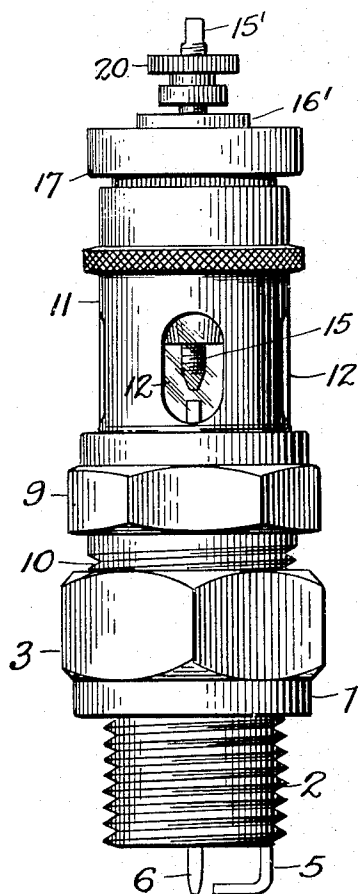


Fig. 2.

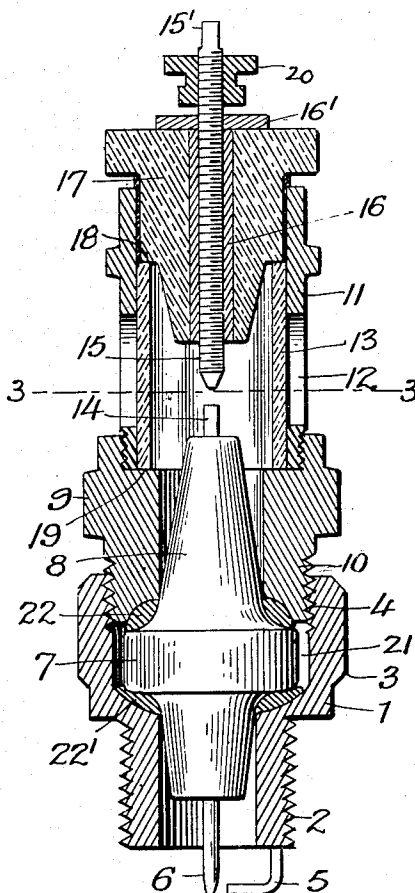
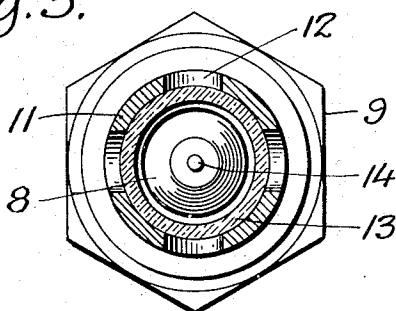


Fig. 3.



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Patented Apr. 15, 1924.

1,490,713

UNITED STATES PATENT OFFICE.

HOWARD A. RUPERT, OF CHESTER, PENNSYLVANIA.

SPARK PLUG.

Application filed November 16, 1921. Serial No. 515,523.

To all whom it may concern:

Be it known that I, HOWARD A. RUPERT, a resident of Chester, in the county of Delaware and State of Pennsylvania, a citizen of the United States, have invented certain new and useful Improvements in Spark Plugs, of which the following is a specification.

My invention relates to Improvements in spark plugs one object being the provision of a spark plug of simple, inexpensive and durable construction which can be easily taken apart for purpose of inspection, repair or cleaning and which will be of small and compact size.

Another object of my invention is the provision of a spark plug which will to a great extent prevent the gathering of carbon and thus remain in a clean condition, which will permit visual observation of the sparking condition of the plug at all times and which will provide proper adjustments of the parts to secure the highest efficiency.

Another object of my invention is the provision of a spark plug which will permit ready and inexpensive repair or renewal of parts, which will entirely exclude exterior or foreign matter to the mechanism of the plug, and which generally in every respect will prove useful, efficient and practical.

With the attainment of these objects in view my invention consists of a spark plug embodying novel features of construction and combination of parts substantially as shown, described and particularly defined by the claims.

In order that the construction in detail and the operation of my spark plug may be fully understood and its many features of merit and advantages be appreciated I have shown in the accompanying drawing a spark plug constructed in accordance with my invention, and in said drawing:

Figure 1 represents a side elevation of the complete spark plug embodying my invention illustrated on a somewhat enlarged scale.

Fig. 2 represents a vertical central sectional view of the complete plug, and

Fig. 3 represents a sectional view taken on the line 3—3 of Fig. 2.

It will be understood that my spark plug may be made in any size to suit the work or service for which it is intended and in the drawings similar numerals of reference are used to designate like parts in all the views.

The numeral 1 designates the body or base of the plug provided with screw threads 2, for engagement with the engine and with the enlarged upper cupped portion 3, formed with interior screw threads 4, said base having depending from its lower threaded portion 2, the electrode 5, which in connection with the electrode 6, forms the sparking medium for igniting the charge in the engine cylinder.

In the cupped portion 3, fits the annular enlargement 7, formed intermediate of the insulating sleeve 8, whose upper and lower portions extend into the base and also into the member 9, which is formed with threads engaging the threads 4 of the cupped portion of the base, said sleeve member 9 being connected with an upward extending cylindrical portion 11, provided with a series of slots or openings 12, which form sight openings for viewing through the glass casing or tube 13, the electrode 14, carried by the insulating sleeve 8, and the adjustable electrode 15, mounted in the threaded sleeve 16 supported in the porcelain insulating plug 17, which fits in the upper portion of the sleeve member 11, and is formed with a shoulder 18, which with the shoulder 19, on sleeve member 9 serves to retain the glass casing or tube 13 in place.

As shown in Fig. 2, a suitable parking or cement is placed between the sleeve 11 and insulator 17.

It will be noted that glass casing or tube 13, is supported and retained in proper position by portions 11 and 9 upon the shoulders 18 and 19, which protect the glass tube 13, and hold it against any movement, which I regard as an important feature of my invention.

Upon the sleeve 16 is formed or engages the metal ring 16' between which and the thumb screw 20 mounted on the adjustable electrode 15, fits the wires leading to the battery, and said adjustable electrode is formed at its upper end with an angled portion 15' the purpose of which is to permit the application of a wrench or other implement for adjusting said electrode to vary the distance between it and the electrode 14 carried by the insulating sleeve 8.

The enlarged portion of the sleeve 8 it will be observed is supported in the chamber 21, provided between the base and the intermediate sleeve and an upper washer or ring 22 and a lower washer or ring 22' are em-

ployed to protect said sleeve and secure the proper joint between the parts.

The operation of my spark plug will be readily understood from the drawing taken in connection with the description as it functions in the same manner as all spark plugs in general use and with which all persons skilled in such matters are acquainted, the particular advantages of my plug residing in its small and compact size; its ease of cleaning, adjustment and repair, its comparative freedom from the collection of carbon; and its construction which permits viewing instantly the sparking condition of the plug, all of which points will be understood and appreciated by the motorist.

I claim:

The spark plug herein shown and described, consisting of the base member having a depending exteriorly threaded portion and an upper enlarged portion formed with interior threads, an insulator having an intermediate enlarged portion seated in the enlargement of said base member, an electrode having its upper end extending above said insulator and its lower end de-

pending therefrom, an electrode carried by the base member to cooperate with said lower end of said electrode, an intermediate sleeve member having a lower exteriorly threaded portion to engage the interior threads of the base member and having its upper portion shouldered and formed with interior threads, a glass tube resting on the shoulder of said intermediate sleeve member, a sleeve surrounding the glass tube, having its lower portion formed with exterior threads to engage the interior threads of said intermediate sleeve member, and formed with a series of sight openings, an insulator fitting within the upper end of the sleeve and formed with a shoulder in line with the shoulder on the intermediate sleeve member, said glass tube fitting upon and retained in rigid position by the shoulders of the insulator and sleeve member, and an adjustable electrode mounted in said insulator and coacting with the upper end of the electrode of the lower insulator.

In testimony whereof I hereunto affix my signature.

HOWARD A. RUPERT.