Feb. 10, 1925.

1,525,539

J. G. GAVLAK

SPARK PLUG ATTACHMENT

Filed Dec. 16, 1920

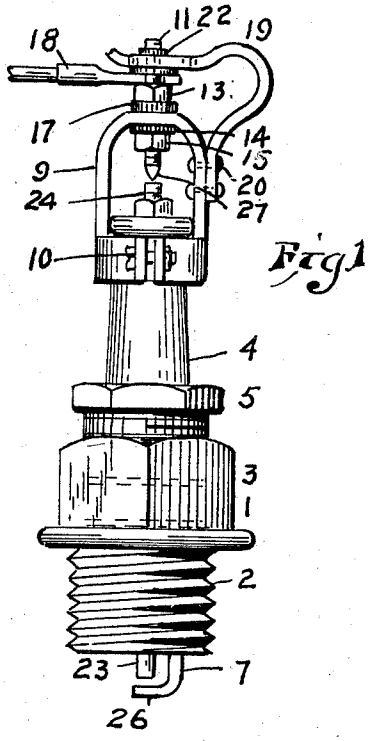


Fig 1

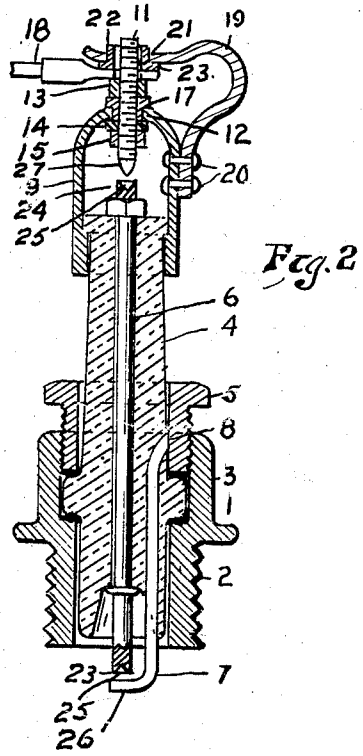


Fig. 2

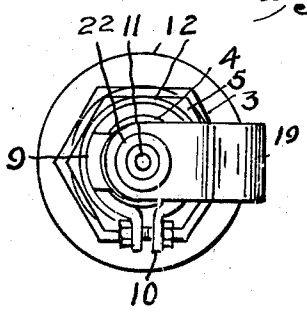


Fig 3

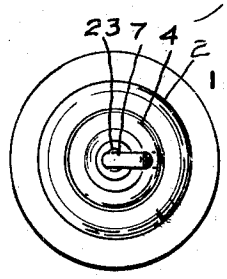


Fig 4

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UNITED STATES PATENT OFFICE.

JOSEPH G. GAVLAK, OF MONONGAHELA CITY, PENNSYLVANIA.

SPARK-PLUG ATTACHMENT.

Application field December 16, 1920. Serial No. 431,297.

To all whom it may concern:

Be it known that I, JOSEPH G. GAVLAK, a citizen of the United States, residing at Monongahela City, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Spark-Plug Attachments, of which the following is a specification.

This invention relates to improvements in spark plugs, and the primary object thereof is to provide a device of the class stated, in a manner as hereinafter set forth, whereby the intensity of the spark employed for igniting the combustible mixture within the combustion chamber of the engine will be intensified or increased, under such conditions reducing the possibility of miss-fire to a minimum, whereby the efficiency of the engine will be increased.

Further objects of the invention are to provide a device of the character described which is simple in its construction and arrangement, strong, durable and efficient in its use, positive in its action, which provides visible means for ascertaining its functioning, and which is comparatively inexpensive to manufacture.

To the accomplishment of these and such other objects as may hereinafter appear the invention consists of the novel construction, combination and arrangement of parts herein specifically described and illustrated in the accompanying drawing wherein is shown an embodiment of the invention, but it is to be understood that changes, variation and modification can be resorted to which come within the scope of the claim hereunto appended.

In the drawing forming a portion of this specification and wherein like numerals of reference designate corresponding parts throughout the several views:

Figure 1 is a vertical elevation of a spark plug in accordance with the invention.

Figure 2 is a vertical sectional view thereof.

Figure 3 is a top plan view of the device, and Figure 4 a bottom view.

Referring in detail to the drawing 1 indicates a metal bushing or shell formed with an externally screw-threaded inner end 2 adapted to be screwed in an engine cylinder by means of a hexagonal head 3 on its outer end. The shell 1 is formed with an axial bore in which the porcelain plug 4 is securely mounted by means of the ring nut 5.

A wire 6 extends centrally through the plug 4 and forms one of the electrodes of the device. The other electrode 7, instead of being attached to the inner face of the shell 1 in the usual manner, is carried by having a portion thereof embedded in the lower portion of the plug 4. The upper end of the embedded portion of the electrode 7 protrudes, as at 8, through the side of the plug 4 and is in contact with the inner face of the ring nut 5. This arrangement of the electrode 7 obviates the necessity of drilling the inner face of the shell 1 and mounting the electrode thereon, thereby providing for the economical assembly of the device.

An electrode support 9, having its lower end formed to provide a clamping element 10, is securely clamped to the outer end of the plug 4. An electrode 11, positioned to extend in alinement with the electrode 6, is adjustably mounted in the aperture 12 formed in the support 9. The electrode 11 is threaded throughout its length and is secured in the adjusted position by means of the nut 13 and the washer 17 on the outer face of the support 9, and the nut 15 and the washer 14 on the inner face of the support. Positioned in the aperture 12, of the support 9, is the washer 17, which is of fibre and extends on the outer face of the said support 9, and through said washer 17, extends the electrode 11, the latter also extends through a fibre washer 14. The nut 13 bears against the washer 17 and the nut 15 abuts against the washer 14. The washers 14 and 17 insulate the electrode from the support 9.

For securing the conductor terminal 18 to the electrode 11, a spring 19 is provided, having one end thereof attached, as at 20, to the support 9. The free end of the spring 19 is formed with an aperture 21 in which a fibre bushing 22 provided with a flange 23 is fixedly mounted. The flanged portion of the bushing 22 engages the terminal 18 and the action of the spring 19 will hold the latter in constant contact with the electrode 11 and nut 13, and permit of its ready removal if desired.

The opposed ends of the electrodes 11 and 6 are spaced slightly from each other to provide a spark gap whereby the device will serve its office of an intensifier.

To augment the sparking action of the device the electrode 6 has its inner end 23 and its outer end 24 concaved, as at 25, the former acting in connection with the flat

L-shaped portion 26 of the electrode 7, and the latter with the tapered inner end 27 of the electrode 11.

What I claim is:

In an attachment for spark plugs, the combination of a support having its lower end formed to provide a clamp adapted to be secured to the outer end of the porcelain plug of the spark plug, an electrode adjustably mounted in said support and provided with contact nut, and a flat spring having its lower end fixed to said support, the free end of said spring formed with an aperture for the passage of said electrode and overlapping and acting to exert a tension against said contact nut, substantially as described and for the purpose set forth.

In testimony whereof I affix my signature.

JOSEPH G. GAVLAK.