July 24, 1962 J. E. FRAUENHOLTZ 3,045,354

SPARK PLUG GAP TOOL

Filed Jan. 30, 1959

FIG. 1.

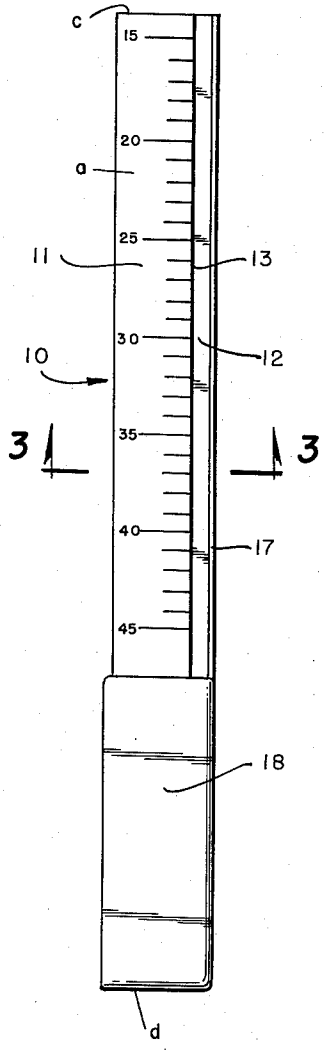


FIG. 2.

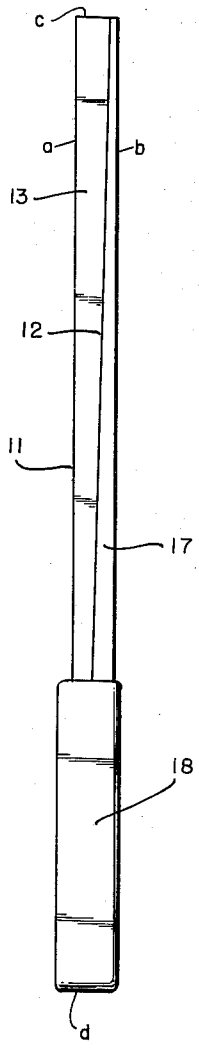
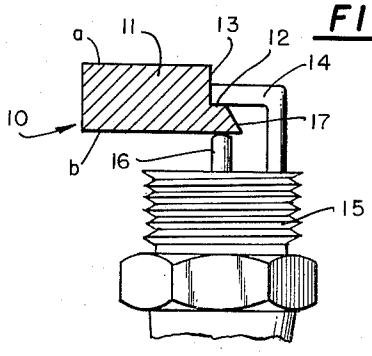


FIG. 3.



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3,045,354

Patented July 24, 1962

3,045,354

SPARK PLUG GAP TOOL

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Filed Jan. 30, 1959, Ser. No. 790,276

5 Claims. (Cl. 33—168)

This invention relates to a spark plug gap tool.

It is an object of the present invention to provide in one tool and in one operation the spreading of the gap of the spark plug and the gauging thereof.

It is another object of the present invention to provide a spark plug tool in which as the gap of the spark plug is spread a reading of the clearance of the gap can be taken, this being effected by inserting the tool in the gap and using little pressure.

It is still another object of the invention to provide a spark plug gap tool which will permit the spreading and measuring of the gap to be effected faster and in a more accurate manner than with any other spark plug gap tool.

It is a further object of the invention to provide a spark plug gap tool which will have long life, as accurate as a micrometer and will not harm the spark plug.

Other objects of the invention are to provide a spark plug gap tool that spreads and gauges the gap of the spark plug, having the above objects in mind, which is of simple construction, inexpensive to manufacture, has no moving parts, easy to use, automatic, efficient and effective in use.

For a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which—

FIGURE 1 is a top plan view of the spark gap tool embodying the features of the present invention,

FIG. 2 is a side elevational view of the tool, and

FIG. 3 is a transverse sectional view of the tool being applied to the spark plug to form the gap thereof.

Referring now to the figures, **10** represents generally the present tool which is made of tool or spring steel and is tempered. This tool is made from flat stock and while having uniform thickness throughout the principal and scale portion **11** thereof, is along one side provided with an inclined thickness gauging and spreading surface portion **12**. This surface **12** is provided by cutting away the stock material along one side of the gauge portion leaving a shoulder or ledge **13** against which inwardly bent electrode **14** of spark plug **15** will engage. As shown in FIGURE 3, the ledge **15** thus limits the insertion of electrodes **14** and **16** to thickness-gauging portion **12**. The undersurface of the gauging portion which constitutes an extension of the undersurface of the scale will lie, when the tool is being used, upon a central electrode **16**. The outer edge adjacent to the inclined spreading and gauging surface is beveled as indicated at **17** to facilitate the insertion of the tool between the electrodes **14** and **16**.

On the gauging portion **11** is a scale giving measurement or gauging indicia from fifteen thousandths of an inch to forty-five thousandths of an inch and indicating the thickness of increments of the inclined or gauging portion from the undersurface of the tool. The less thickness is at the outer end of the tool and this thickness increases inwardly toward a handle or hand grip portion **18** on the oposite end of the tool.

To use the tool, the outer end having the small thickness is pressed between the electrodes **14** and **16** of the spark plug **15**, until without pressure the tool can be slid no more within the gap of the spark plug. At this point a reading can be taken to determine the width of the gap. If it is desired to spread the electrode **14** to a greater width for the gap, pressure is exerted and the tool is slid longitudinally along the gap until the desired width has been made, the inwardly bent electrode **14** being bent upwardly and upon removal of the tool a new gap

spacing or width will have been provided. If the gap width is to be reduced, it can be done in the usual manner by bending downwardly the electrode **14** and thereafter inserting the tool so as to bring the gap up to the desired width. For example, the electrode may be lightly tapped by the handle portion **18** of the tool.

As indicated from the drawings, the tool body has opposed wide side surfaces or faces *a* and *b*, and a thickness-gauging portion **12** along one edge of its body between the wide side faces. The portion **12** slopes or inclines or is of progressively increasing thickness therealong from one end *c* to an opposite end thereof, and is defined by the wide side face *b* and as offset with respect to the wide side face *a*. The scale portion **11** lies on or along one side face *a* and between it and the side face *b* and defines a ledge portion **13** with and along the gauging portion **12**. The ledge portion **13**, as shown in FIGURE 3, serves as a limit stop for the end of the electrode **14** of the spark plug **15** being gauged as to its gap with the electrode **16**. As shown, the portions **11**, **12** and **13** extend along the tool body and between one edge or end *c* and towards an opposite end portion **18** thereof which serves as the handle or grip portion. Also as shown, the portion **18** extends between one end of the scale portion **11** and an opposite end *d* of the tool body and thus, the portion **18** lies adjacent the portion **11**. The portion **18**, as disclosed, lies between and may extend on its opposite wide sides beyond the wide side faces *a* and *b*.

It should now be apparent that there has been provided a single tool, one with which the spark gap width may be readily determined and also in the same operation the gap may be increased. It should also be apparent that there has been provided a tool which is strong and will have long life and is as accurate as a micrometer gauge. It also can be seen that the use of the tool will not harm the spark plug. If desired the inclined surface may be rounded transversely to give it a wire surface shape and cut down friction or drag when spreading the gap. Such curvature need only be slight for effective operation, and for the sake of clarity, has not been indicated on the drawing. This will make the tool still easier to use.

Various modifications in the form and construction of the tool may obviously be resorted to, all without departing from the spirit of the invention, if within the limits of the appended claims.

What is claimed is:

1. A spark gap spreading and gauging tool comprising, an elongated scale portion of substantially constant thickness having scale indicia therealong, an inclined portion extending along a side of said scale portion and having a progressively increasing thickness from one end of said scale portion, a handle secured to the other end of said scale portion, the thickness of said inclined portion being indicated by the indicia on said scale portion, and said inclined portion being adapted to engage between the electrodes of a spark plug to determine and adjust the spark gap width.

2. A spark gap spreading and gauging tool according to claim 1, wherein said inclined portion is formed with a rounded upper surface and a flat lower surface, said lower surface comprising an extension of the under surface of said scale portion.

3. A spark gap gauging tool which comprises, an elongated scale portion of substantially uniform section having measurement indicia along a face thereof, an elongated thickness-gauging portion along a side of and integral with said scale portion and having a progressively increasing thickness from one longitudinal end towards the opposite longitudinal end of said scale portion, a handle portion at the opposite end of said scale portion,

the thickness of said gauging portion being indicated by the measurement indicia of said scale portion, and said gauging portion being constructed for movement between the electrodes of a spark plug and therealong to determine and adjust the width of the gap therebetween.

4. A spark gap gauging tool which comprises, a tool body having opposed wide side faces, a thickness-gauging portion along an edge of said tool body between said wide side faces and having a progresively increasing thickness therealong, a scale portion on one of said wide side faces having measurement indicia thereon along said gauging portion, said scale portion defining a ledge portion with and along said thickness-gauging portion, a hand grip portion between said opposed wide side faces adjacent said scale portion, the thickness of increments of said gauging portion being indicated by the measurement indicia of said scale portion, said gauging portion being constructed for movement between the electrodes of a

spark plug and therealong to determine and adjust the width of the gap therebetween as indicated by the measurement indicia on said scale portion, and said ledge portion limiting the insertion of electrodes of the spark plug to said gauging portion.

5. A spark gap gauging tool as defined in claim 4 wherein said scale portion is of substantially uniform thickness between said wide side faces and is integral with said gauging portion.

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