Feb. 3, 1959 W. W. WEISBECKER ET AL 2,871,741

SPARK PLUG GAPPING TOOL

Filed Sept. 28, 1956

FIG. 1

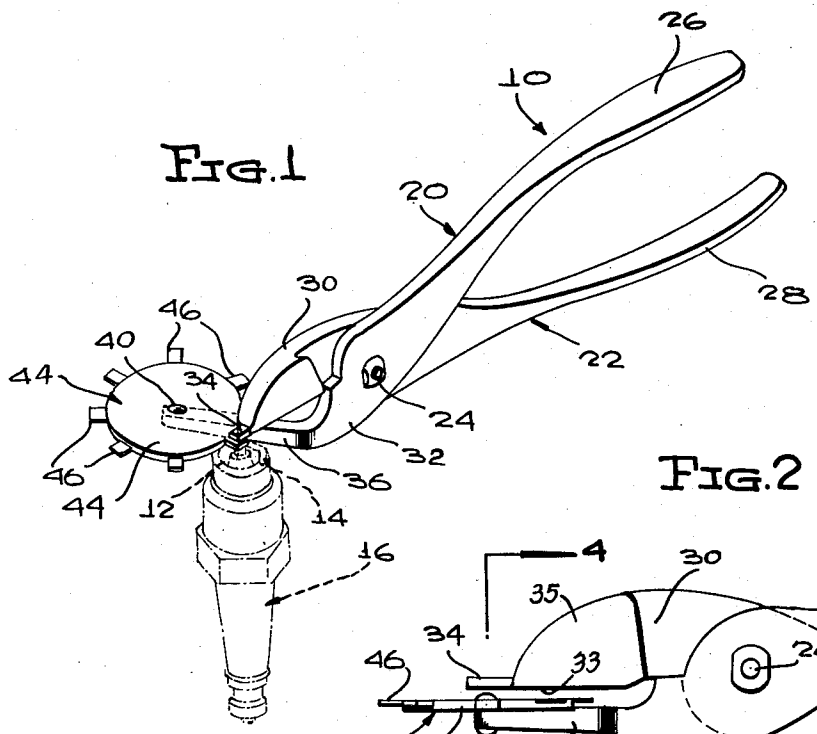


FIG. 2

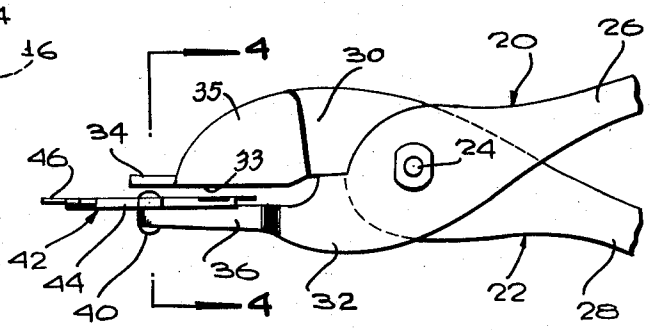


FIG. 4

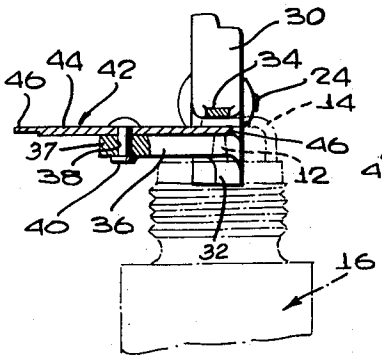
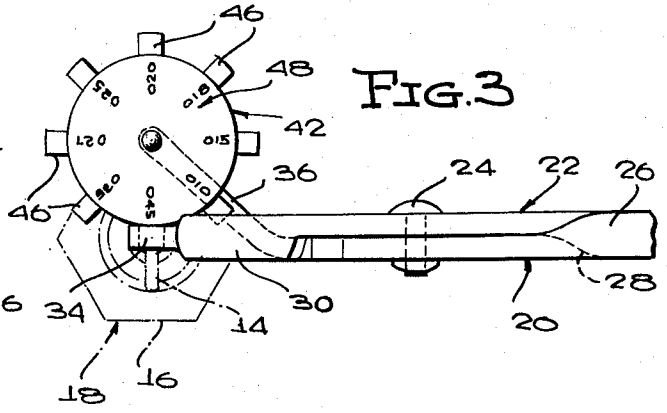


FIG. 3



INVENTORS
WALTER W. WEISBECKER
BY & IRENE M. WEISBECKER

McMorrow, Berman & Davidson
ATTORNEYS

United States Patent Office

2,871,741

Patented Feb. 3, 1959

2,871,741

SPARK PLUG GAPPING TOOL

Walter W. Weisbecker and Irene M. Weisbecker, Rantoul, Ill.

Application September 28, 1956, Serial No. 612,687

1 Claim. (Cl. 81—15)

This invention relates to an improved spark plug gapping tool of the pliers and rotary gauge type.

The primary object of the invention is to provide a more practical and efficient tool of this kind which can be applied and operated more quickly, is simple in construction, and is composed of a small number of simple and easily assembled parts.

Another object of the invention is to provide a tool of the character indicated, which can be made in well-finished, rugged, and serviceable forms at relatively low cost, is easily used, and is highly satisfatory for the purpose intended.

These together with other objects and advantages which will become apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout the several views, and in which:

Figure 1 is a perspective view of a tool of the invention, shown applied to a spark plug shown in phantom lines;

Figure 2 is an enlarged fragmentary side elevational view of the tool;

Figure 3 is a fragmentary top plan view of Figure 1 the spark plug being shown in phantom lines; and

Figure 4 is a fragmentary vertical transverse sectional view taken substantially on line 4—4 of Figure 2, an associated spark plug being shown in phantom lines.

Referring to the drawings in detail, the illustrated tool, indicated generally at **10**, is usable for adjusting the gap between the center electrode **12** and the radial electrode **14** of a spark plug, indicated generally at **16**, the radial electrode **14** being bendable toward and away from the upper end of the center electrode **12**.

The gapping tool **10** comprises a pair of crossed levers **20** and **22** pivoted on a pivot pin **24** extending therethrough, and having handle portions **26** and **28**, respectively, and upper and lower jaws **30** and **32**, respectively.

The upper jaw **30** includes a nose **35** which terminates at is forward end in a longitudinally extending flat lug **34** whose underside is flush with the flat straight underside **33** of the nose **35**. The lower jaw **32** lacks a nose, like the nose **35**, whose place is taken by an elongated laterally angled arm **36** having a forward end **37** in which is a vertical bore **38** through which extends a vertical headed pin **40**, rotatably mounting on the upper side of the arm **36** an electrode gap gauge, indicated generally at **42**.

The gauge **42** comprises a disc **44** having thereon circumferentially spaced radial gauge lugs **46** of different thicknesses. On the upper surface of the disc **44** are indicia **48** identifying the different gauge lugs. The gauge lugs **46** are adapted to be selectively positioned beneath and in spaced relation below the upper jaw lug **34** by rotating the disc **44**.

As shown in Figure 4, a spark plug **16** is gapped by positioning the center electrode **12** under the upper jaw lug **30**, with a selected gauge lug **46** between the center electrode **12** and the radial electrode **14**. Thereupon the handle portions **26** and **28** are compressed toward each other. If the gap between the electrodes corresponds to the thickness of the gauge lug **46** used, no change in the gap results, but if the gap is larger than the thickness of the gauge lug **46** used, the gap between the electrodes will be closed to the extent necessary to provide a gap corresponding to the thickness of the gap lug used, by the bending pressure of the upper lug **34** on the radial electrode **14**.

If the gap between the electrodes **12** and **14** is too small, a thinner gauge lug **46** is placed between the electrodes and the tool twisted to increase the gap, whereafter the above described procedure is used to exactly gap the electrodes.

The foregoing is considered as illustrative only of the principles of the invention. Since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, as fall within the scope of the appended claims.

What is claimed as new is as follows:

A tool for adjusting the air gap between the outer and central electrodes of a spark plug, said tool comprising a pair of opposing, complemental jaws having crossed handles pivotally connected together for moving the jaws toward and away from each other, one jaw having a forwardly projecting lug constituting an axial prolongation thereof, said lug having an underface disposed in a plane that contains the pivot axis of the handles, the other jaw terminating inwardly of said one jaw and having an extension arm extending laterally outwardly and projecting forwardly therefrom, said arm terminating in a free outer end disposed substantially in lateral alignment with said lug, a disc rotatably mounted on the free end of the arm and rotatable about an axis perpendicular to the pivot axis of the handles, said lug having a side facing the arm and disposed in a plane perpendicular to and tangentially disposed relative to an extension of the curvilinear plane in which the periphery of the disc lies, said disc having integral gauging lugs of varying thickness extending radially from the periphery thereof and disposed in circumferentially spaced fashion on the periphery, said gauging lugs being of a length substantially equal to the width of said lug and each gauging lug having a face adapted to confront said underface of said lug with each gauging lug being adapted to selectively seat on a central electrode and having it face bearing under an outer electrode and with the lug engaging at its underface on the outer electrode and clampingly cooperating with the selected gauging lug to bend the outer electrode relative to the central electrode.

References Cited in the file of this patent

UNITED STATES PATENTS

1,384,209	O'Toole	July 12, 1921
2,492,380	Duma	Dec. 27, 1949
2,645,142	Schwenzfeier	July 14, 1953
2,670,643	Clark	Mar. 2, 1954

FOREIGN PATENTS

125,449	Australia	Sept. 12, 1947