June 13, 1939. H. J. McDEVITT 2,162,630

SHAPER OR GRINDER

Filed Jan. 13, 1939

FIG. 1.

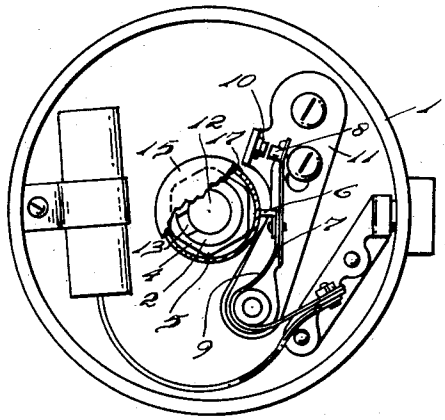


FIG. 2.

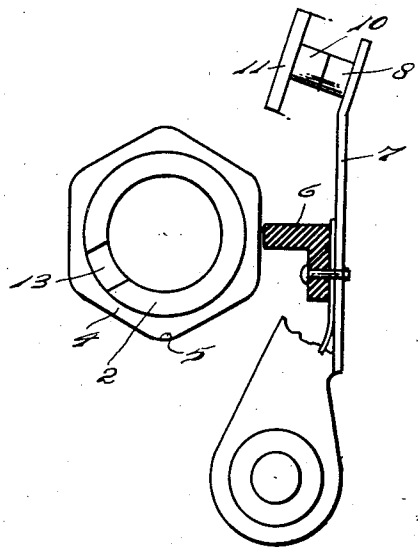


FIG. 4.

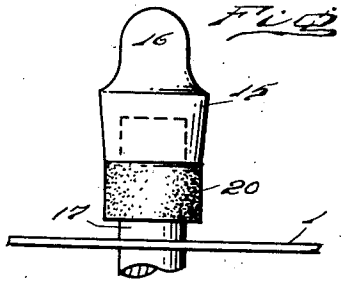


FIG. 3.

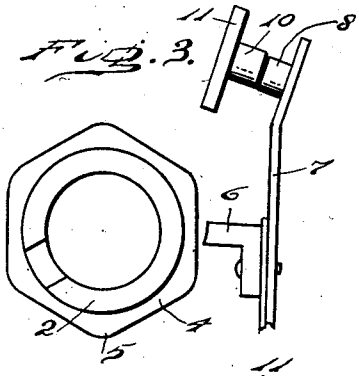


FIG. 5.

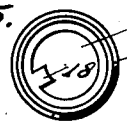


FIG. 6.

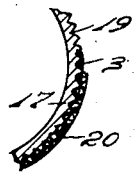


FIG. 7.

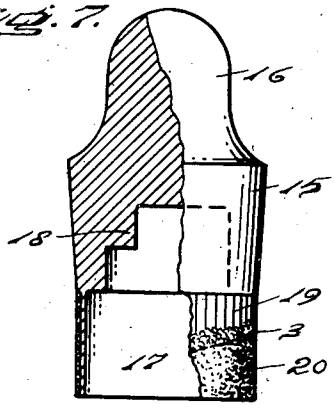
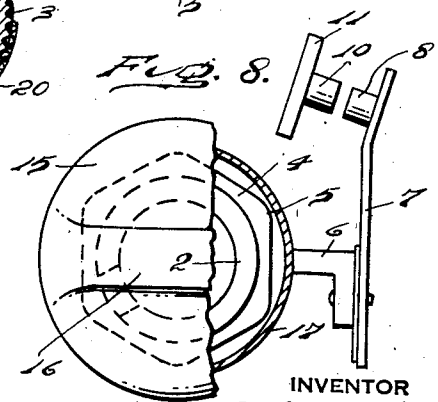


FIG. 8.



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2,162,630

SHAPER OR GRINDER

Harry James McDevitt, Media, Pa.

Application January 13, 1939, Serial No. 250,671

2 Claims. (Cl. 51—241)

In ignition systems for multi-cylinder engines, the distributor has a cam which operates against a fibre lug or boss on one of the breaker arms to move the free end of the movable breaker arm towards or away from the stationary breaker arm, and thereby close or open the circuit through their contacts which lead to the spark plugs of selected engine cylinders to effect the firing of the explosive charge in a cylinder.

When a new set of breaker arms are installed, they are set for a predetermined clearance, usually about eighteen thousandths of an inch between the contacts. The fibre is softer than the cam and after a motor vehicle has run for a few hundred miles, the clearance between the contacts is reduced to such as extent that the clearance of the breaker arms must be reset.

The object of this invention is to provide a novel shaper or grinder, replaceable for the conventional distributor rotor to shape the free end of the fibre lug so that it will be acted on by the cam to give a full bearing area of the contacts and produce a maximum spark for firing the explosive charge.

With the above and other objects in view as will be hereinafter clearly set forth, my invention comprehends novel shaping means for the fibre lug of a breaker arm.

It further comprehends a novel construction of a grinder having means to interlock with the distributor shaft and preferably replaceable for the conventional distributor rotor.

Other novel features of construction and advantage will hereinafter more clearly appear in the detailed description and the appended claims.

For the purpose of illustrating the invention, I have shown in the accompanying drawing a typical embodiment of it, which, in practice, will give satisfactory and reliable results. It is, however, to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized, and my invention is not limited to the exact arrangement and organization of these instrumentalities as herein set forth.

Figure 1 is a top plan view of a grinder embodying my invention.

Figure 2 is a sectional detail showing more particularly the cam and fibre lug.

Figure 3 is a plan view showing the parts in Figure 2 after a period of running and causing partial engagement of the contacts.

Figure 4 is a side elevation of the shaper in place on the distributor shaft.

Figure 5 is a bottom plan view of the shaper.

Figure 6 is a partial section on an enlarged scale, of the abrading portion.

Figure 7 is a partial section of the shaper.

Figure 8 is a top plan view partly in section, to show the shaper cooperating with the fibre lug or boss on the movable breaker arm.

Similar numerals of reference indicate corresponding parts.

Referring to the drawing:

1 designates a conventional distributor having a rotatable shaft 2 to which the rotor is detachably connected. The distributor shaft has a cam 4 having operative cam faces 5, corresponding in number to the number of engine cylinders with which the distributor is to be used. These cam faces 5, as the distributor shaft rotates, engages a fibre lug or boss 6 on a pivoted breaker arm 7 having a contact 8 at its free end and also having a spring 9 which tends to move the contact 8 into engagement with a contact 10 which is on a breaker arm 11, which is stationary but adjustable for setting the clearance between the contacts.

The upper end of the distributor shaft has a recess 12 and a slot 13 to receive the distributor rotor 14.

The foregoing is the conventional construction of a distributor.

15 designates a shaper or grinder, embodying my invention, and consisting of an integral body portion preferably in the form of a metal casting, having at one end a grasping handle 16 and at its opposite end a tubular portion 17 having a lug 18 to fit into the slot 13 of the distributor shaft.

The outer periphery of the tubular portion 17 is grooved or corrugated at 19 to aid in retaining the glue or adhesive 3, into which the tubular portion 17 is dipped.

An abrasive material 20, such as for example emery is then applied to the glue.

The operation will now be apparent to those skilled in this art and is as follows:

The distributor rotor is removed and the movable breaker arm moved outwardly, and the tubular portion of the shaper or grinder is moved endwise on to the upper end of the distributor shaft so that it covers the cam and the lug 17 is received in the slot 13 of the distributor shaft. The abrasive surface of the abrasive material 18 now rests against the fibre lug or boss 6. The operator now steps on the engine starter, thereby causing the distributor shaft to rapidly revolve and the free end of the fibre lug or boss will be

shaped or ground to substantially an even surface.

The shaper or grinder is now removed and the rotor replaced.

The breaker arms can now be set for a standard clearance between their contacts.

In Figure 2 the breaker arm is shown as ordinarily installed, and in Figure 3, I have shown the condition of the fibre after the motor vehicle has been run for several hundred miles, so that a new setting of the clearance is necessary to increase the gap between the contacts to a standard clearance for efficient operation.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A shaper for the cam contacting fibre of a movable breaker arm, comprising a body portion having a tubular portion at its inner end to fit over the upper end of the distributor shaft and to cover the distributor cam to render it inoperative and having means to lock with said shaft, and the outer periphery of said tubular portion having an abrasive surface.

2. A shaper for the cam contacting fibre of a movable breaker arm, comprising a body portion having its upper end shaped to provide a grasping handle, having a tubular portion opening through its bottom adapted to receive the upper end of a distributor shaft, and provided with a lug to fit into the slot of a distributor shaft, said tubular portion covering the distributor cam to render it inoperative, and abrasive material on the outer periphery of said tubular portion.

HARRY JAMES McDEVITT.