July 15, 1941. B. A. RICCIO 2,249,396

GENERATOR BRUSH RELEASING TOOL

Filed July 25, 1940 2 Sheets-Sheet 1

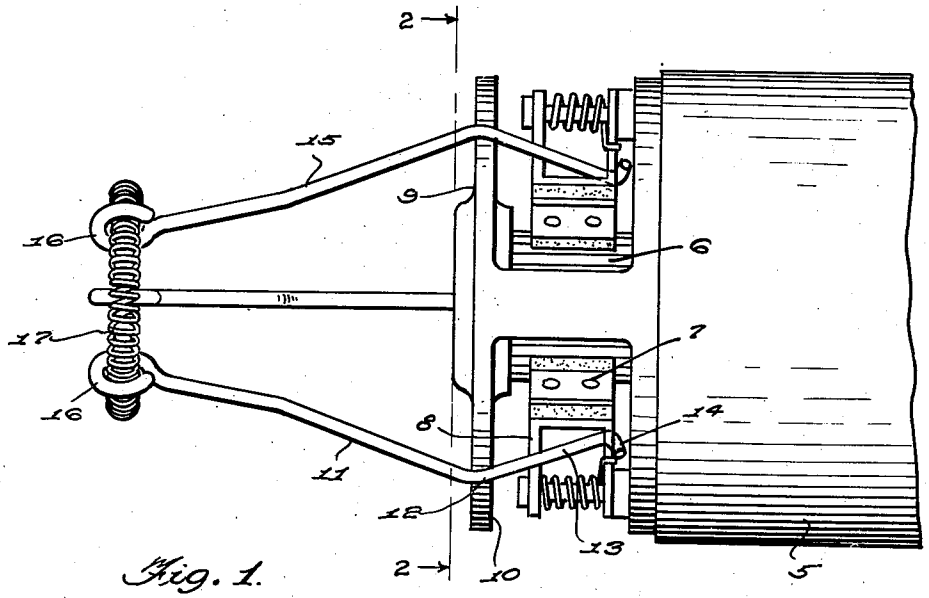

Fig. 1.

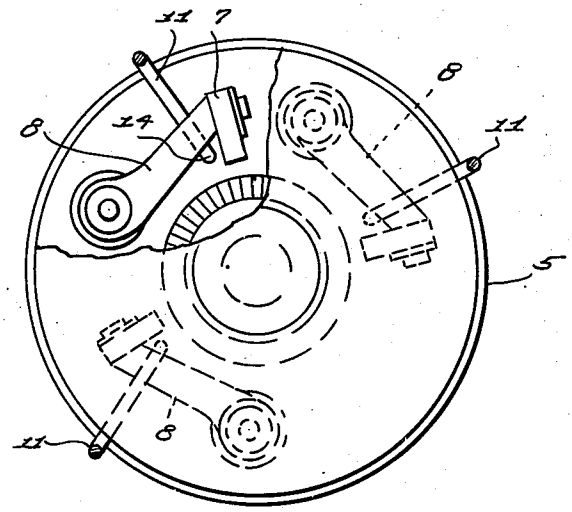

Fig. 2.

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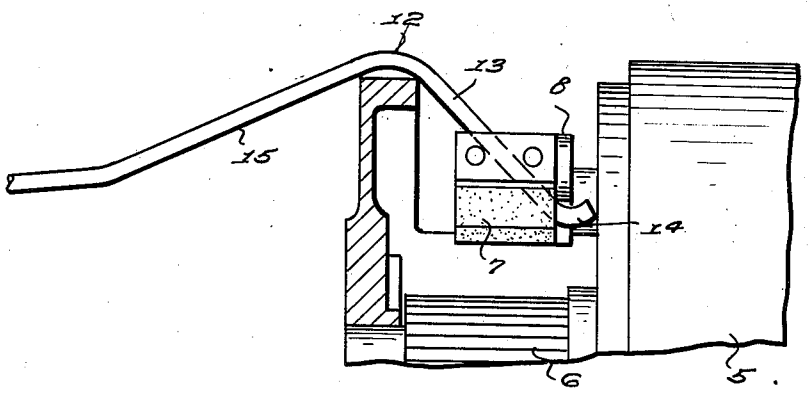

Fig. 3.

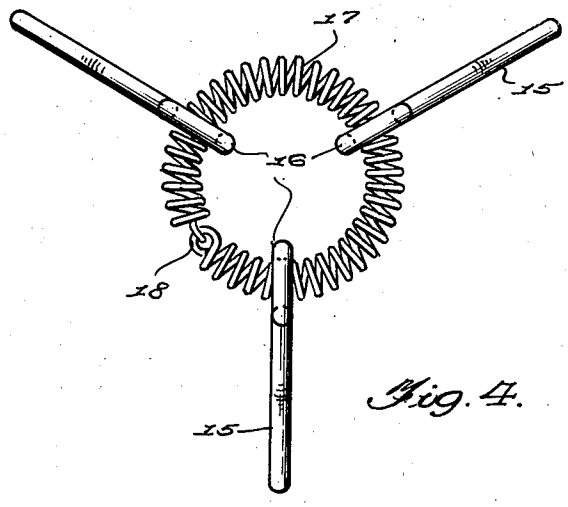

Fig. 4.

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UNITED STATES PATENT OFFICE

2,249,396

GENERATOR BRUSH RELEASING TOOL

Benjamin A. Riccio, South Norwalk, Conn.

Application July 25, 1940, Serial No. 347,543

3 Claims. (Cl. 81—3)

The present invention relates to new and useful improvements in repair devices for generators, starters and the like and has for the primary object to provide a simple, effective and easily applied tool for holding the spring urged brushes away from the armature in the aforesaid electrical apparatus in order that the armature may be removed for repair and then replaced.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout and in which:

Figure 1 is a fragmentary side elevational view of a generator showing the tool in position for lifting the brushes.

Figure 2 is an end elevational view with part of the end plate broken away and taken along the line 2—2 of Fig. 1.

Figure 3 is an enlarged fragmentary detail of one of the lifting arms shown in engagement with the brush and with parts shown in section and Figure 4 is an end elevational view of the tool.

Referring now to the drawings in detail wherein for the purpose of illustration I have disclosed a preferred embodiment of the invention the numeral 5 designates the generator casing and the numeral 6 represents the armature core, with which the brushes 7 are yieldably held in engagement by the spring pressed bracket 8. The end plate for the casing is shown at 9 in which the end of the armature core is journaled, and in order to provide access to the brushes 7 to clean or remove the same the casing immediately inwardly of the end plate is provided with an opening 10.

Frequently it becomes necessary to remove the armature for repair purposes and in order to hold the brushes 7 out of engagement with the armature core during such removal thereof I provide a tool which comprises a plurality of arms 11, preferably constructed of heavy wire, or similar rigid material three of such arms preferably being employed, each of the arms being bent at an intermediate portion as shown at 12 with the inner ends 13 thereof inclined inwardly over the edge of the end plate 9 so as to project into the opening 10 of the casing. The extremities of the inner end 13 are formed with hooks 14 adapted to engage behind the bracket 8 of the brushes 7 whereby to hold the bracket away from the armature core against the tension of the spring provided for said bracket.

The outer ends of the arms 11, outwardly of the bent portion 12, converge as shown at 15 and have their outer extremities provided with eyes 16 and through which a coil spring 17 is inserted, the ends of the coil being detachably connected as shown at 18.

The coil spring 17 is stronger than the combined strength of the springs for the bracket 8 and the coil spring 17 is adapted to maintain the outer end 15 of the arm in a contracted position so as to hold the bracket 8 away from engagement of the armature core whereby to permit the free removal and replacement of the armature in the casing.

A resilient rubber ring may be substituted for the coil spring 17, if desired, and in order to insert the ring in the eyes 16 of the arms, said eyes are open sufficiently to receive the ring.

It is believed the details of construction, manner of use and advantages of the device will be readily understood from the foregoing without further detailed explanation.

What is claimed is:

1. An armature brush lifting tool of the class described comprising a plurality of arms having an intermediate portion adapted for bearing on the edge of the end plate of the casing for the armature, the inner ends of said arms engaging the brushes for holding the same out of engagement with the armature and yieldable means connecting the outer ends of said arms to each other and adapted to spread the inner ends of the arms apart.

2. An armature brush lifting tool of the class described comprising a plurality of arms having an intermediate portion adapted for bearing on the edge of the end plate of the casing for the armature, the inner ends of said arms engaging the brushes for holding the same out of engagement with the armature and a coil spring connecting the outer ends of each of said arms to each other for securing the arms in a predetermined position.

3. An armature brush lifting tool of the class described comprising a plurality of arms having an intermediate portion adapted for bearing on the edge of the end plate of the casing for the armature, the inner ends of said arms engaging the brushes for holding the same out of engagement with the armature, said arms having their outer ends converging toward each other, eyes formed at the outer ends of the arms and a coil spring inserted through said eyes for retaining the outer end thereof in a contracted position.

BENJAMIN A. RICCIO.