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BRUSH HOLDER FOR DYNAMO ELECTRIC MACHINES.  
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1,101,814.

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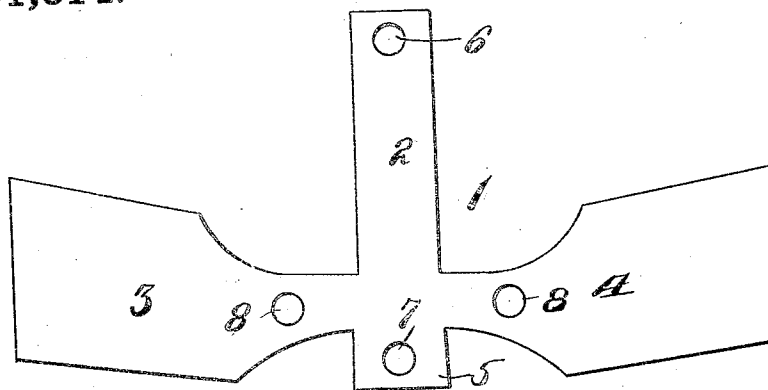


FIG. 1.

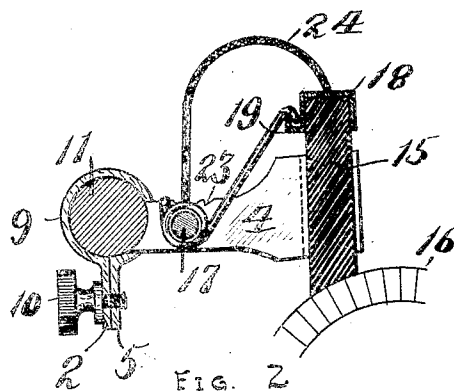


FIG. 2.

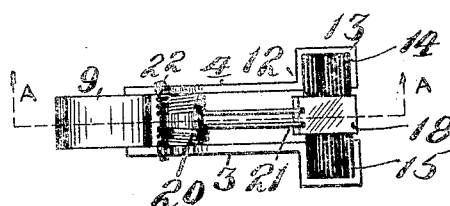


FIG. 3.

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# UNITED STATES PATENT OFFICE.

AMATO N. SAMMARONE, OF AKRON, OHIO.

BRUSH-HOLDER FOR DYNAMO-ELECTRIC MACHINES.

1,101,814.

Specification of Letters Patent.

Patented June 30, 1914.

Application filed October 31, 1910. Serial No. 798,538.

*To all whom it may concern:*

Be it known that I, AMATO N. SAMMARONE, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Brush-Holders for Dynamo-Electric Machines, of which the following is a specification.

This invention relates to improvements in brush-holders for commutators for electric machines, and the object of the invention is to form a brush-holder from a single piece of stamped metal, which when folded or bent will be provided with a part for attaching the brush-holder to the usual supporting stud and provided with ways in which is slidably mounted an ordinary carbon brush, the portion which supports the sliding ways for the brush being provided with a cross-bar on which is mounted a resilient element engaging the brush for forcing it onto the face of the commutator.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangement of parts constituting the invention to be hereinafter specifically described and illustrated in the accompanying drawings which form a part hereof wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the matter hereinafter claimed.

In the drawings in which similar reference numerals indicate like parts in the different figures, Figure 1, is a view of a blank stamped from a piece of sheet metal from which the brush-holder is fashioned; Fig. 2, is a vertical central sectional view of the device embodying this invention on line A-A of Fig. 3; and, Fig. 3, is a plan view of the device.

Referring to the drawings in detail, the reference numeral 1 denotes generally a blank of sheet metal fashioned in the form of a cross having a vertical portion 2 and side wings 3 and 4 and a depending portion 5. The vertical portion 2 is provided with an aperture 6 and the depending portion with a threaded aperture 7 and the side wings 3 and 4 with apertures 8.

In practice, the vertical portions 2 and 5 are bent into annular formation as shown at 9 in Fig. 2. A thumb screw 10 is employed for clamping this portion about the

ordinary supporting stud 11 used for sustaining brush-holders. The side wings 3 and 4 are bent so as to lie parallel as shown in Fig. 3 and with their free ends laterally bent at 12, and with the adjacent portion 13 bent to lie in a plane parallel with the axis of the stud 11. The extreme ends of the wings are bent toward each other at 14 to lie parallel with the bent portion 12. The entire conformation of the ends of the wings 3 and 4 is such as to form a slide or brush-holder to receive a carbon brush 15 the lower face of which is adapted to engage on the face of the commutator 16.

Extending between the openings 8 in the lateral portions 3 and 4 is a cross-bar 17 which serves to hold the members 3 and 4 in parallelism. Mounted on the upper end of the brush 15 is a cap 18 provided with an upturned lip 19. Mounted on the crossbar 17 are a plurality of coiled resilient elements 20. One end 21 of each of these resilient elements 20 is provided with a hook adapted to engage the lip 19 and the opposite end 22 thereof is arranged to engage in one of a plurality of notches 23 formed in the upper faces of the members 3 and 4 and by shifting the position of the end 22 of either of the springs the tension on the resilient element is increased or diminished at will. Secured to one of the wings 3 or 4 is an electrical conductor 24 which extends to and connects with the cap 18 for transmitting an electrical current from the stud 11 to the brush.

It will be obvious that by forming the entire brush-holder of a single piece of metal a great reduction in the expense of manufacturing brush-holders is accomplished, and a greater rigidity of the brush-holder is secured. Furthermore, the device affords a simple and effective device for holding brushes to permit the brush to be aligned with respect to the axis of the commutator and yet permit free sliding vertical movement of the brush in the holder. Furthermore, by providing the coiled resilient elements 17 on the cross-bar 20 and with their ends engaging the lip 19 of the cap 18 and also engaging the notches 23 a desired amount of pressure may be placed on the brushes to effect their successful engagement with the face of the commutator.

I claim:—

1. A commutator brush-holder composed of a single piece of stamped sheet metal provided with a vertical portion adapted to be

fashioned into an annular collar or sleeve for engagement with a supporting stud, the blank further provided with lateral wings fashioned to be extended in parallelism, the  
5 ends of said wings being bent away from each other in parallel lines to form a slide or brush-holding element, a brush mounted in said slides, a cap on said brush, a cross-bar extending between the parallel portions of  
10 said wings, and a coiled resilient element mounted on said cross-bar and engaging the cap and one wing for forcing the brush into engagement with a commutator.

2. A commutator brush-holder formed integrally of a single piece of stamped metal  
15 cruciform in shape with the central portion thereof fashioned into an annular collar or sleeve for engagement with a supporting stud, a clamping member to clamp said  
20 sleeve or collar about said stud, the cross

pieces of the device extending forwardly in parallelism, a bar extending between said portions, the ends of said portions being fashioned into approximately a U-shaped  
25 form, the open ends thereof opposing each other to constitute a slide or holding element for a brush, a brush mounted in said slide, a cap on said brush, a coiled resilient element on said cross bar engaging one of  
30 the cross pieces of said device and the brush for forcing the latter into engagement with the commutator.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AMATO N. SAMMARONE.

Witnesses:

C. E. HUMPHRY,  
A. L. McCLINTOCK.