
S. McKeeown, of Newark, New Jersey, assignor to Splittorf Electric Company, of Newark, New Jersey, a corporation of New Jersey.

Brush for Electrical Apparatus.

1,233,265.


Application filed October 18, 1918. Serial No. 126,249.

To all whom it may concern:

Be it known that I, Samuel C. McKeeown, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Brushes for Electrical Apparatus, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to brushes for use in ignition dynamos and the like and particularly to the type of brush used in high tension distributors.

It has for its objects the production of a brush in which the arcing or burning is reduced to a minimum, a brush in which a wearing surface is provided of durable material, and a brush that will not form a conducting streak on the insulating surface of the distributor.

A further object of the invention is to provide a brush formed partly of conducting material and partly of non-conducting material, constructed in the manner specified.

Ancillary objects of the invention will hereafter appear.

In the accompanying drawings, Figures 1, 2, 3 and 4, show brushes constructed in accordance with my invention, these brushes being shown in cross-section. Fig. 5, is a diagram partly in cross-section, showing how my improved brush may be applied to a distributor in one of the well known types of ignition dynamos commonly termed magnetos. Like figures of reference denote the same parts wherever they are shown.

The numeral 1, denotes an outer casing for the brush, which may be either round or square cross-sectioned. This material may be fiber or the like and should possess durable wearing qualities.

Positioned in this material either by being inserted in a suitable aperture therein, or by being molded therein during the process of manufacture, is the metallic conductor comprising the stem 2, suitably attached to or formed integral with the shoulders 3. Attached to this head in any suitable manner, is the spring 4, adapted to press the entire brush structure outwardly when the same is supported in the movable distributor in a magnet.

In Fig. 1, the conductor 2, is shown flush at the end 6 of the brush and is therefore adapted, during the rotation of said brush, to make contact with the metallic distributor terminals, 7, 8, 9 and 10, embedded in the insulating wall 11 of the distributor; and it will be evident that during the rotation of the brush structure the surfaces 12 and 13 of the fiber surround and protect the conductor 2, and also serve to prevent any arcing that might occur between the conductor 2 and the distributor terminals, from depositing any conductive "smear" or "streak" on the inner surface of the distributor between the terminals; in other words the fiber portion of the brush structure acts as a wiper to remove any foreign substance or metallic particles that may collect within the distributor.

A modification of the arrangement just described, is shown at Fig. 2. Here the conductor 2 is cut off a short distance below the contact end of the brush structure, leaving a gap as indicated at 14.

In high tension distributors, the current will readily jump this gap and it will be seen that in this construction the metallic portion of the brush is not in contact with the inner face of the distributor, but that owing to the large wearing surfaces 12 and 13 of the brush, the distance of the gap from Fig. 2, to the end of the brush structure is accurately maintained.

Fig. 3, shows a modification in which an ordinary carbon brush is connected to the member 3, while at Fig. 4, is shown a flexible conductor 16, which may serve to connect to a high tension terminal in any suitable manner as shown in the drawing, thereby eliminating the necessity of the spring 4 carrying the current, which is otherwise the case.

While I have shown and described my invention as applied to a high tension distributor as used with ignition dynamos, it will be understood that the invention may be employed in any suitable type of dynamo or motor or other electrical devices, to which it is suited, and I do not wish to confine myself to the precise construction or arrangement herein described.

Having thus described my invention, I claim:

1. A brush comprising a tube of insulating material, a metallic conductor within said tube, and a shoulder ferrule about
said tube and forming therewith a structure having outside walls of uniform dimension from end to end, substantially as described.

2. A brush comprising a tube of insulating material, a metallic conductor within said tube, a flexible conductor joined to said first conductor, and a shouldered ferrule about said tube and forming therewith a structure having outside walls of uniform dimension from end to end, substantially as described.

3. A brush comprising a tube of insulating material, a metallic conductor within said tube, a shouldered ferrule about said tube and forming therewith a structure having outside walls of uniform dimension from end to end, and a spring secured to said ferrule and serving to conduct current to said first conductor.

4. A brush comprising a shouldered cylindrical tube of insulating material, a conducting core embedded in said tube, a ferrule about said tube and forming with the shoulder thereon a smooth outer surface, and a connection between said core and ferrule.

5. A brush comprising a cylindrical tube of insulating material having a shoulder at one end of lesser diameter than the body of the cylinder, a ferrule about said shouldered portion whereby the same is made of equal diameter to the rest of the body of said cylinder, a conductor embedded within said cylinder and electrically connected to said ferrule and means for conducting current to said ferrule.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

SAMPLUEL C. McKEOWN.

Witnesses:

E. M. ROWLEY,
D. T. HERSHEY.