

No. 849,511.

PATENTED APR. 9, 1907.

C. W. SPEIRS.

BRUSH FOR DYNAMO ELECTRIC MACHINERY.

APPLICATION FILED NOV. 26, 1906.

Fig. 1.

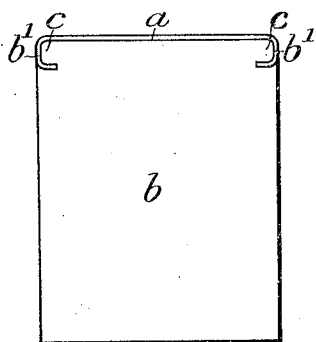


Fig. 2.



Fig. 3.

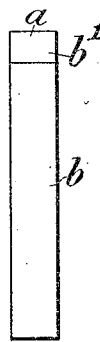


Fig. 4.

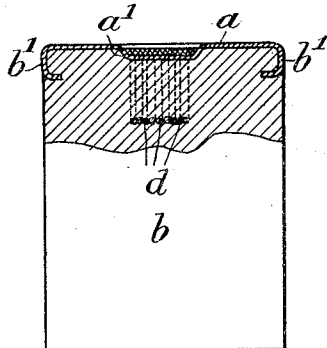
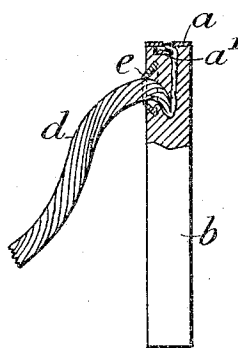


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

CHARLES WILLIAM SPEIRS, OF LONDON, ENGLAND, ASSIGNOR TO THE MORGAN CRUCIBLE COMPANY, LIMITED, OF LONDON, ENGLAND.

BRUSH FOR DYNAMO-ELECTRIC MACHINERY.

No. 849,511.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed November 26, 1906. Serial No. 345,210.

To all whom it may concern:

Be it known that I, CHARLES WILLIAM SPEIRS, a subject of the King of Great Britain, residing at Battersea Works, Battersea, London, England, have invented new and useful Improvements in Brushes for Dynamo-Electric Machinery, of which the following is a specification.

This invention relates to brushes for dynamo-electric machinery and to that class of brush which is formed by compressing flaked natural plumbago, either alone or mixed with metal or other materials, into blocks of the desired shape and without burning, the object of the said invention being to provide improved means for connecting all layers or laminations in such brushes together and with the leads or conductors.

According to the invention a metal plate or cap is applied to the brush during the manufacture of the same, to which metal plate the leads or conductors can be connected in any desirable manner.

In a suitable arrangement for carrying out the invention the plate or cap is formed at its ends with flanged lips or projections which constitute recesses into which the material of the brush will be compressed and which serve for keying the said cap upon the brush. This cap is laid in the mold before the plumbago, and the latter is pressed into the cap during the compressing operation.

In practice a flexible lead is advantageously attached to the under side of the cap before the material is pressed into it, an eye or ferrule being arranged around that part of the lead which extends through the body of the brush, the said eye or ferrule being also partly embedded in the material.

In the accompanying drawings, Figure 1 is an elevation of a brush provided with a cap in accordance with the invention. Fig. 2 is a longitudinal section of the same, and Fig. 3 is an edge view. Fig. 4 is a sectional front elevation of a brush, showing the arrangement of a flexible lead attached to the under side of the cap, and Fig. 5 is a sectional edge view of the same.

a indicates the metal cap, which, as shown, is of a size corresponding to the width and thickness of the brush *b*, the ends of this cap being provided with the flanged ends *b'* *b'*, forming the recesses *c c*, or being provided with other suitable projections or recesses.

This cap is inserted into the mold at one end thereof, and the prepared material of which the brush is to be formed is then fed into the mold and compressed in the usual manner, the material compressed in the recesses *c c* serving to retain the cap in position.

Owing to the great pressure to which the brush is subjected, it will be understood that a very intimate connection is produced between the surface of the cap and the material of the brush. As hereinbefore stated, the lead or conductor may be connected to this cap in any suitable manner.

In Figs. 4 and 5 the lead *d* is represented as being attached to the under side of the cap, a strip *a'* of the said cap being pressed down in order to form a slot or pocket through which the end of the lead can be inserted, the said end being fixed by pressing back the strip onto it. In making this brush the cap is placed in the mold, as hereinbefore described, and the lead is inserted through a hole in the bottom of the mold with an eyelet *e* around it, so that when the pressure is applied the eyelet will be fixed, while the end portions of the lead will become embedded in the body of the material, as clearly indicated in Fig. 5.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. A commutator-brush composed of compressed particles and provided with a metal strip having one entire face thereof in intimate contact with said compressed particles and having portions embedded therein to permanently attach the same to said brush, substantially as described.

2. The combination with a commutator-brush composed of compressed particles, of a metal strip permanently secured to said brush and a conductor having a portion thereof embedded in said brush and connected with said metal strip, substantially as described.

3. The combination with a commutator-brush composed of compressed particles, of an eyelet partly embedded therein and a conductor having a portion embedded in said brush and a portion projecting from said brush through said eyelet, substantially as described.

4. The combination with a commutator-brush composed of compressed particles, of a

metal strip secured to said brush, said strip being provided with a depressed portion having slots therein and a conductor having its end passing through said slots in said depressed portion of said strip and firmly retained in contact with said strip, said depressed portion of said strip and a portion of said conductor adjacent thereto being embedded in said brush, substantially as described.

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10 5. The combination with a commutator-brush composed of compressed particles, of a metal strip secured to said brush, said strip being provided with a depressed portion having slots therein, and a conductor having its

end passing through said slots in said depressed portion of said strip, and firmly retained in contact with said strip, said depressed portion of said strip and a portion of said conductor adjacent thereto being embedded in said brush, substantially as described.

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