

(No Model.)

F. J. & R. CHAPLIN.
BRUSH FOR DYNAMO ELECTRIC MACHINES.

No. 556,176.

Patented Mar. 10, 1896.

FIG. 1.



FIG. 2.

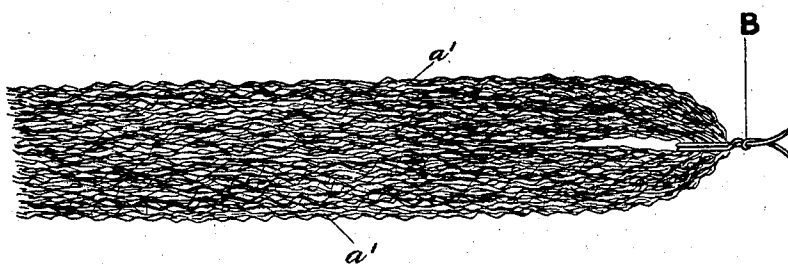


FIG. 3.

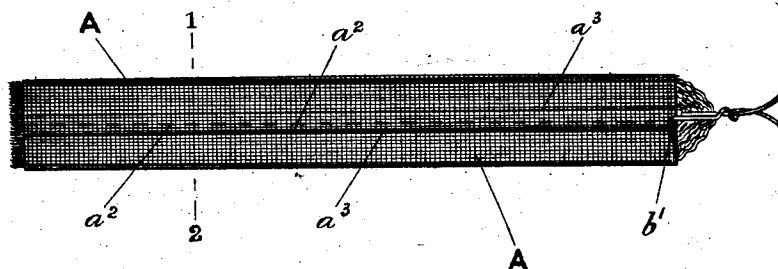
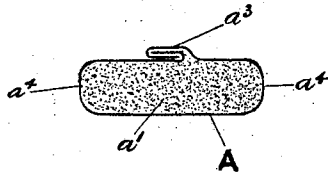


FIG. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

FREDERICK JOHN CHAPLIN AND ROBERT CHAPLIN, OF BIRMINGHAM,
ENGLAND.

BRUSH FOR DYNAMO-ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 556,176, dated March 10, 1896.

Application filed December 10, 1895. Serial No. 571,652. (No model.) Patented in England October 24, 1895, No. 20,028.

To all whom it may concern:

Be it known that we, FREDERICK JOHN CHAPLIN and ROBERT CHAPLIN, wire-drawers, subjects of the Queen of Great Britain, trading as W. CHAPLIN, of 233 Park Lane, Aston, Birmingham, in the county of Warwick, England, have invented certain new and useful Improvements in the Brushes of Dynamos, of which the following is a specification.

The invention has been patented in England, No. 20,028, dated October 24, 1895.

Our invention has for its object improvements in the brushes of dynamos which are more simple in their construction and cheaper to make than those at present in use, which are generally constructed of fine copper-wire netting, which is expensive to manufacture.

According to our invention we make our brushes for dynamos principally from crimped fine copper wire. This crimping may be in one or more directions from the axis and either regular or irregular. This crimped wire is wound over a suitable dummy and then pressed together into one section and the convolutions are severed and the whole incased in a sheet of wire-netting or a metallic copper case, when the brush is used as in the ordinary manner.

In order that our invention may be clearly understood and more easily carried into practical effect we have appended hereunto a sheet of drawings, upon which we have given one example of a brush made in accordance therewith; but it will be clearly understood that the particular mode of covering the wires and the design of the crimping may be varied without departing from the invention. The brushes may be made in any required sizes.

Figure 1 shows a length of fine copper wire with a such like crimping as we find to answer the purpose. Fig. 2 shows a sufficient number of lengths of wire held together by the binding-wires B at the back end of the brush. Fig. 3 is a plan of the brush complete. Fig. 4 is an enlarged cross-section of the completed brush on the line 1 2.

Brushes at present in use are generally made from a number of strips of copper or copper gauze or tapes, and they are bound tightly together. These brushes often cut grooves in the commutators and cause sparking, which is objectionable. Now our brushes are made from such like crimped wire *a'* as that shown by Fig. 1, which may be made up by winding over a mandrel until the required size is obtained, when a binding wire or wires B secures them, and the opposite end of the laps are cut through, as seen at Fig. 2, in the shape of a brush of crimped wires *a'*. The whole may be incased in a covering of gauze, as seen at Fig. 3, the edges being lapped over into a flat lap *a''*, when the brush is ready for use. We may sew through the lap *a''* with stitches *a''* and we may bind the wires B through at *b'* to secure the whole together, or we may finish the back end with a cap. By these means we obtain a porous or spongy brush with longitudinal wires crimped, which prevents the wires being very close to each other continuously.

The brush may be pressed more or less to bring it to the required shape or section.

We may bind the crimped wires together by lapping wires and dispense with the gauze covering *a'*.

What we claim, then, is—

1. The improvement in dynamo-brushes consisting of longitudinal wires crimped and grouped together into the required section, substantially as herein set forth and shown upon the accompanying drawings.

2. A dynamo-brush consisting of longitudinal wires crimped and grouped together into the required section and a covering of gauze, substantially as described.

In testimony that we claim the foregoing as our own we affix our names in the presence of two witnesses.

FREDERICK JOHN CHAPLIN.
ROBERT CHAPLIN.

Witnesses:

GEORGE LESTER,
SIDNEY GILBERT.