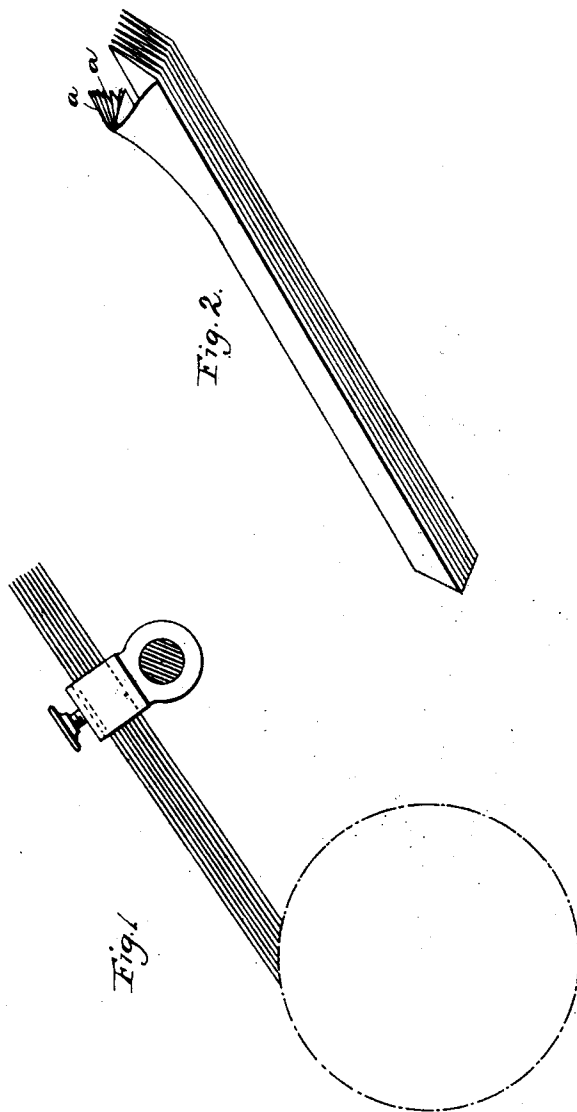


(No Model.)

L. BOUDREAU.
COMMUTATOR BRUSH.

No. 538,097.

Patented Apr. 23, 1895.



Witnesses:

J. M. Fowler Jr.
Aly Stuart.

Inventor:

Louis Boudreau
by Christ & Church
His Attorneys.

UNITED STATES PATENT OFFICE.

LOUIS BOUDREAU, OF PARIS, FRANCE.

COMMUTATOR-BRUSH.

SPECIFICATION forming part of Letters Patent No. 538,097, dated April 23, 1895.

Application filed October 28, 1892. Serial No. 450,276. (No model.) Patented in France July 2, 1892, No. 222,767; in England October 8, 1892, No. 17,982; in Switzerland October 11, 1892, No. 5,689, and in Germany October 12, 1892, No. 68,369.

To all whom it may concern:

Be it known I, LOUIS BOUDREAU, a citizen of the Republic of France, residing at Paris, France, have invented certain new and useful Improvements in Brushes for Dynamo-Electric Machines and Motors, of which the following is a specification, and for which I have obtained Letters Patent in France, dated July 2, 1892, No. 222,767; in England, dated October 8, 1892, No. 17,982; in Germany, dated October 12, 1892, No. 68,369, and in Switzerland, dated October 11, 1892, No. 5,689.

This invention consists in an improved brush for generators or receivers of electric currents, and will be best understood by reference to the accompanying drawings, in which—

Figure 1 represents a brush constructed in accordance with my invention, in contact with a commutator or collector. Fig. 2 is a perspective view of the brush with the upper fold raised so as to show a number of sheets spread out or unfolded.

The improved brush mainly consists of one or more superposed sheets *a* being preferably very thin plates of rolled metal (their thickness not exceeding a few hundredths of a millimeter), and capable of being easily folded, such sheet metal being known to the trade as metal foil and has certain well known characteristics. One or more of such superposed sheets are evenly folded in the ordinary manner on straight lines, the folds being as tightly compressed as possible. The object of the folding is to enable an electric brush to be formed of a sheet or superposed sheets and without any rupture or break at the side of the brush. Besides, according as the number of folds is greater or less, the flexibility of the brush will vary to the desired extent, the result in all cases, however, being a spring of such remarkable yieldingness and delicacy as cannot be obtained by any other means, and a friction of such lightness as will reduce to a minimum the wear both of the brush and commutator.

The direction of the line of the folds with relation to the longitudinal center of the brush is immaterial, but I prefer to arrange them parallel therewith as shown.

It has been found by experiment that sheet metal (such as brass-foil well-known in the trade) of an approximate thickness of three hundredths of a millimeter is very serviceable for the present purpose as it can readily be folded and forms very durable electric brushes, which, by reason of the lightness of their friction, are hardly, if at all, subject to wear, while they never produce any wear of the commutator, which under their action only acquires a bright polished surface affording additional evidence of the softness of the friction and of the insignificance of wear.

When the end of the brush has, through use, assumed the concave shape corresponding to the periphery of the commutator, its further wear is also practically stopped, so that the subsequent adjustment for the purpose of bringing it closer to the commutator need only be resorted to at very long intervals of time.

Brass foil has only been mentioned above by way of example, as it will be understood that the invention is not to be confined to the employment of this material, inasmuch as any suitable metal foil of conducting material may be used; while the size and shape of the improved brushes may vary indefinitely to suit requirements. So too the foil or thin sheet metal may be made of two kinds of metal reduced to the minimum thickness and if desired coated with deposits of kindred or other metals by any well known electro-chemical, chemical or physical process, thereby securing the advantage of the best conducting metal combined with a metal having good wearing qualities, &c.

I am aware of the patent granted to Cherry and Younglove, No. 480,762, dated August 16, 1892, and do not claim herein the invention set forth in said patent.

I claim—

1. As an improved article of manufacture, a commutator brush formed of superposed folds of metallic sheet foil compressed into a compact body; substantially as described.

2. As an improved article of manufacture, a commutator brush formed of superposed folds of superposed sheets of metallic foil

compressed into a compact body; substantially as described.

3. The combination in a commutator or similar brush for electric purposes of folded leaves
5 of more than one kind of metal.

4. A commutator or similar brush for electric purposes consisting of folded metal coated with deposits of kindred or other metals.

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

LOUIS BOUDREAUX.

Witnesses:

L. HILLIGE,
J. ROBELET.