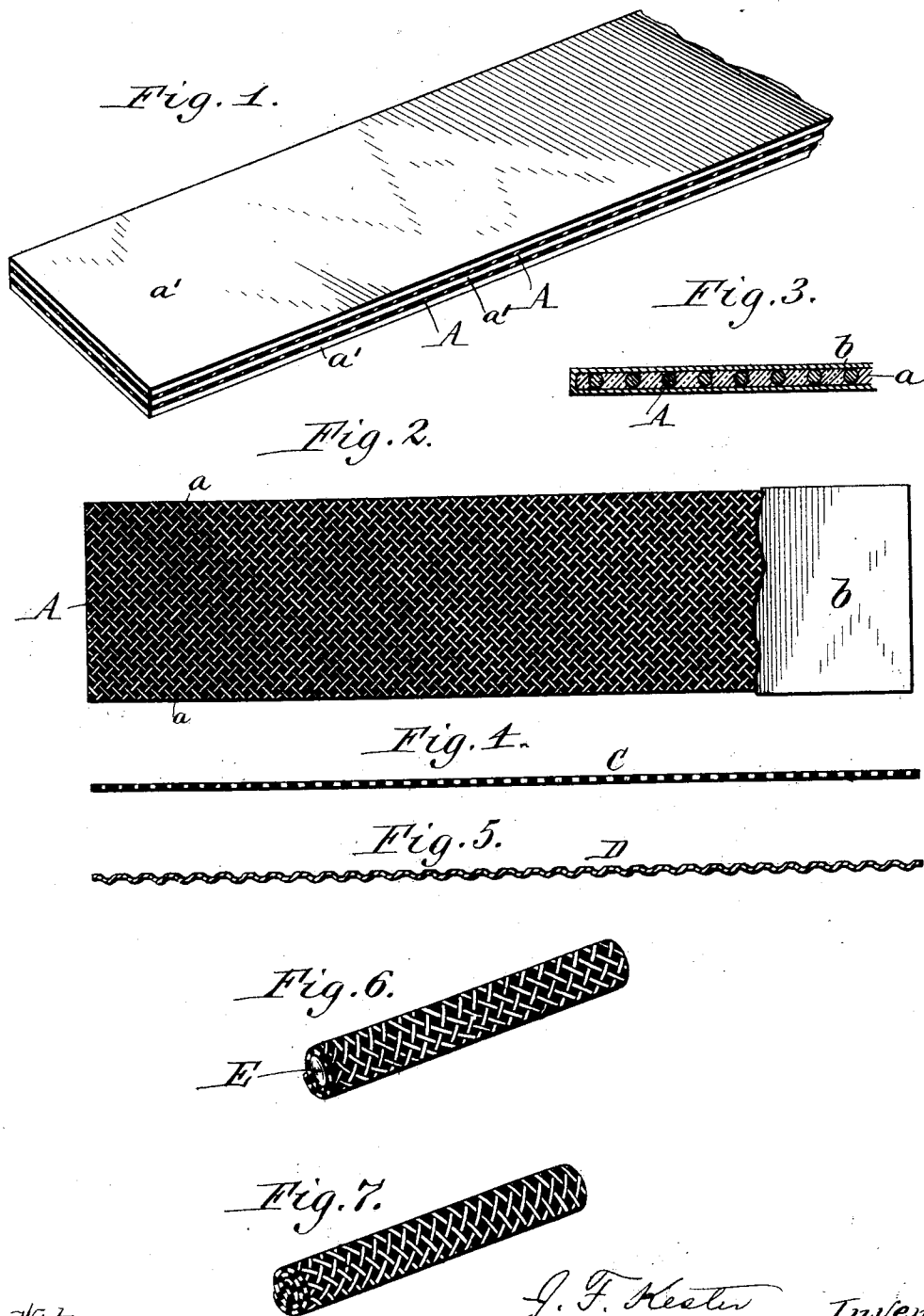


(No Model.)

J. F. KESTER.
COMMUTATOR BRUSH.

No. 514,150.

Patented Feb. 6, 1894.



Witnesses:

Emil Neuhart.
Thos. L. Popp.

J. F. Kester Inventor.
By Wilhelm O. Bonner.
Attorneys.

UNITED STATES PATENT OFFICE.

JESSE F. KESTER, OF BUFFALO, NEW YORK, ASSIGNOR TO THE F. P. LITTLE ELECTRICAL CONSTRUCTION AND SUPPLY COMPANY, OF SAME PLACE.

COMMUTATOR-BRUSH.

SPECIFICATION forming part of Letters Patent No. 514,150, dated February 6, 1894.

Application filed November 23, 1893. Serial No. 491,701. (No model.)

To all whom it may concern:

Be it known that I, JESSE F. KESTER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Commutator-Brushes, of which the following is a specification.

This invention relates to a composite commutator brush for electric dynamos and motors and has the object to provide a lubricator leaf or layer for these brushes which is simple, efficient and inexpensive in construction.

In the accompanying drawings:—Figure 1 is a perspective view of a commutator brush embodying my invention. Fig. 2 is a top plan view of one of the lubricator leaves of the brush, a portion of its covering being broken away. Fig. 3 is a fragmentary cross section, on an enlarged scale, of one of the lubricator leaves of the brush. Figs. 4 and 5 are longitudinal sections, showing modified constructions of the lubricator leaves. Figs. 6 and 7 are perspective views showing my invention applied to pencil brushes.

Like letters of reference refer to like parts in the several figures.

Referring to Figs. 1, 2 and 3, A represents a rectangular sheet or layer of wire gauze, preferably copper, the meshes or interstices of which are filled with a solid lubricating material *a* forming a lubricator leaf. In building up a commutator brush embodying my invention, one of these lubricator leaves is placed at intervals between the ordinary plate leaves *a'* of the brush, as represented in Fig. 1, the number of lubricator leaves being governed by the amount of lubrication necessary. The rotation of the commutator against the brush wears the ends of the plate and gauze leaves and heats the same sufficiently to dissolve the lubricating material in the meshes of the gauze leaves, thereby lubricating the commutator, and preventing excessive heating and avoiding sparking. The wires of the lubricator leaves are preferably arranged diagonally, as shown in Fig. 2, so that they are worn off at their ends. In order to confine the lubricating material in the meshes of the gauze leaf the surface of

the leaf is covered with an electrically deposited coating *b*, preferably tin.

Instead of forming the lubricator leaves of wire gauze the same can be made of perforated sheet metal C, as represented in Fig. 4 or of indented sheet metal D, as represented in Fig. 5, both of which constructions contain the necessary recesses or interstices for receiving the lubricating material.

When it is desired to lubricate a brush which is made in the shape of a pencil one of my improved lubricating leaves is wrapped around the same, as represented in Fig. 6, or if desired, the pencil can be made wholly from a lubricator leaf by rolling the latter into the shape of a pencil, as represented in Fig. 7.

Although the interstices in the lubricating leaves may be filled with various kinds of lubricating material having the necessary solidity, I prefer to use a compound which is composed principally of beeswax, prepared as follows:—fifty parts of beeswax, fifteen parts of spermaceti, ten parts of stearic acid are melted together and mixed with twenty-five parts of powdered graphite. While in a liquid state, this mixture is brushed into the interstices of the lubricator leaves, the action of the stearic acid soon hardening the compound.

I claim as my invention—

1. A lubricator leaf for commutator brushes provided with interstices filled with lubricating material and an electro coating deposited on the surface of said leaf, substantially as set forth.

2. A lubricator leaf for commutator brushes provided with interstices filled with a lubricating material composed principally of beeswax, substantially as set forth.

3. A lubricator leaf for commutator brushes provided with interstices filled with a lubricating material composed of beeswax, spermaceti, graphite and stearic acid, substantially as set forth.

Witness my hand this 27th day of September, 1893.

JESSE F. KESTER.

Witnesses:

THEO. L. POPP,
JNO. J. BONNER.