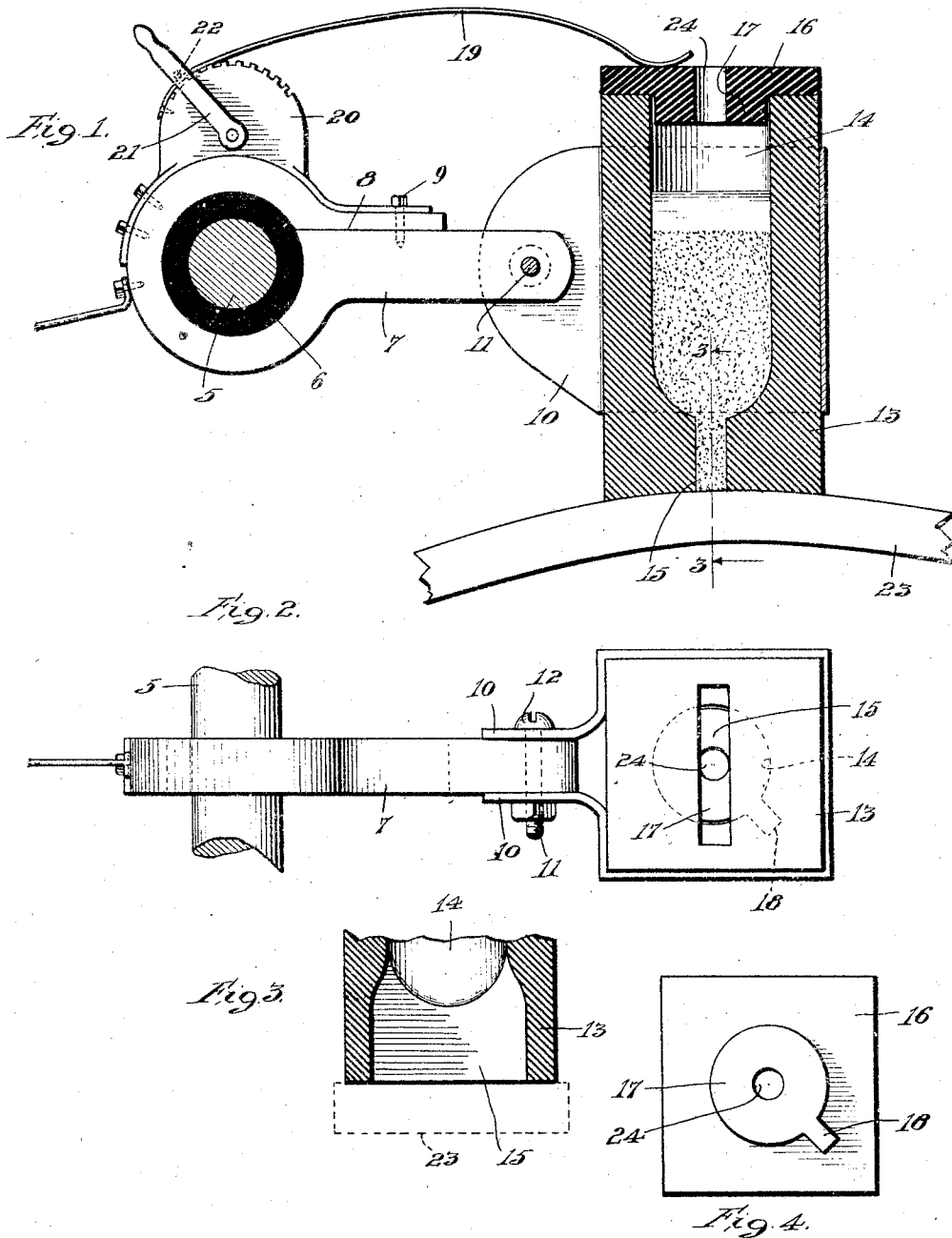


E. F. STER.
ELECTRIC MACHINE BRUSH.

APPLICATION FILED DEC. 12, 1913; RENEWED OCT. 8, 1914.

1,246,825.

Patented Nov. 13, 1917.



Witnesses:
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UNITED STATES PATENT OFFICE.

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ELECTRIC-MACHINE BRUSH.

1,246,825.

Specification of Letters Patent.

Patented Nov. 13, 1917.

Application filed December 12, 1913, Serial No. 806,166. Renewed October 8, 1914. Serial No. 865,779.

To all whom it may concern:

Be it known that I, EDWARD F. STER, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Electric-Machine Brushes, of which the following is a specification.

My invention relates to improvements in brushes for electric machines and more especially to brushes for alternator collector rings.

The object of this improvement is to provide a simple brush of the character mentioned provided with a fountain means for supplying lubrication between the brush and its collector ring. Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawing forming a part of this specification, and in which—

Figure 1 is a vertical section taken through a brush holder and brush embodying my invention.

Fig. 2 is a bottom view of the same,

Fig. 3 is a section taken on line 3—3 in Fig. 1, and

Fig. 4 is a bottom view of a cap used on the brush.

The preferred form of construction as illustrated in the accompanying drawing comprises a supporting member 5 on which is secured an insulating member 6 carrying a brush holder 7. The brush holder 7 is slit at 8 and provided with a screw 9 adapted to provide an adjustment whereby the brush holder may be moved vertically on insulating member 6. A guide 10 is pivoted as at 11 to the holder 7 on a bolt 12, the latter providing a means for adjusting the guide 10 on the holder 7.

Mounted for free vertical sliding in the guide 10 is a collector ring brush 13. This brush is preferably of carbon but may be of any desirable substance. The brush 13 is provided with a perforation therethrough forming a well 14 at its upper end and a long and narrow constricted portion 15 at its lower end.

At the top of brush 13 is a cap 16 loosely fitted thereon with an extension 17 extend-

ing into the well 14 preventing lateral movement of the cap 16. The cap 16 is further provided with a lug 18 adapted to fit a corresponding recess in the top of brush 13 preventing the cap from rotary movement on the brush 13. A leaf spring 19 is carried by a disk 20, the latter being secured to the brush holder 7. A lever 21 carries a pin 22 adapted to rest on the upper side of spring 19 and upon swinging the lever 21 toward the right hand, the working length of spring 19 is shortened thereby increasing the pressure on cap 16. This spring also furnishes the proper amount of pressure of brush 13 on the collector ring 23.

In the constricted portion 15 and the lower portion of the well 14 in said brush is a viscous material packed therein by means of a suitable tamper (not shown). Said viscous material is preferably made up of graphite and dynamo oil in quantities substantially four parts of the graphite and one part of oil. On the top of this viscous material is placed a quantity of oil, in substantially the proportions shown in Fig. 1. In use, the oil seeps through the graphite and oil compound, between the collector ring 23 and bottom of brush 13 providing sufficient lubrication therefor to produce the desired result. At intervals new oil is added to the space above the viscous material in the brush 13. A perforation 24 is provided through cap 16 to permit free access of air to well 14 to permit the free passage of oil through the viscous compound. The mouth of the constricted portion 15 is provided as long and narrow as possible in order to cover as wide a surface of the ring 23 as possible.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore, do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. A device of the kind described comprising a brush member having a perforation therethrough and a recess at the top of said

perforation; and a cap on said brush member having a portion extending into said perforation and a lug disposed in said recess, substantially as described.

5 2. A device of the kind described comprising a brush member having a perforation therethrough and a recess at the top of said perforation; and a cap on said brush member having a portion extending into said
10 perforation and a lug disposed in said recess, there being an opening through said cap permitting the free passage of air to said perforation, substantially as described.

3. A device of the kind described comprising a brush member having a perforation therethrough and adapted to contain lubricating material, said brush having a recess at the top of said perforation opening upwardly; a cap on said brush member having a portion extending into said perforation; and a lug disposed in said recess preventing torsional movement of said cap, there being an opening through said cap permitting the free passage of air through
25 said cap, substantially as described.

4. A device of the class specified comprising a brush made entirely of carbon material, said brush having a cavity or chamber formed in said carbon material and providing a reservoir, and having an outlet
30 also formed in said material and extending from the reservoir to the wearing surface of the brush.

5. A device of the class specified comprising a brush having a reservoir, a cap fitted loosely upon the top of said brush and covering said reservoir, and spring means normally acting upon said cap to maintain the same in position upon said brush.
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6. A device of the class specified comprising a brush member provided with a reservoir chamber near its upper end, in combination with a cap fitted loosely upon the upper end of said brush member and having
45 a depending portion adapted to fit into said chamber.

7. A device of the class specified comprising

a brush provided with a reservoir, a cap fitted loosely upon the top of said brush for closing said reservoir, a spring applied
50 to said cap for holding the same normally in position, and means for adjusting the tension of said spring, said means comprising a member adapted to press against the spring and arranged for movement along
55 the length of said spring so as to exert more or less pressure thereupon.

8. The combination of a brush member having its upper end provided with a reservoir chamber, a cap fitted over the top of
60 said brush member and closing the upper end of said reservoir, a spring applied to said cap for holding the same normally in position, and means for adjusting the tension of said spring, said means comprising
65 a pivoted lever 21 having a pin 22 adapted to move along said spring.

9. A device of the class specified comprising a brush made entirely of carbon material and provided with a reservoir and an
70 outlet passage therefrom to the wearing surface of the brush, a cap fitted loosely to the upper end of the brush and closing the reservoir, and a spring applied to said cap for holding the same normally in position to
75 close said reservoir.

10. A device of the class specified comprising a brush made entirely of carbon material and provided with a reservoir and an
80 outlet passage therefrom to the wearing surface of the brush, a cap fitted loosely to the upper end of the brush and closing the reservoir, said cap being made of insulating material, and a spring applied to said cap for holding the same normally in position
85 to close said reservoir.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD F. STER.

Witnesses:

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HELEN F. LILLIS.