

R. W. STANLEY.
BRUSH HOLDER.
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1,268,293.

Patented June 4, 1918.

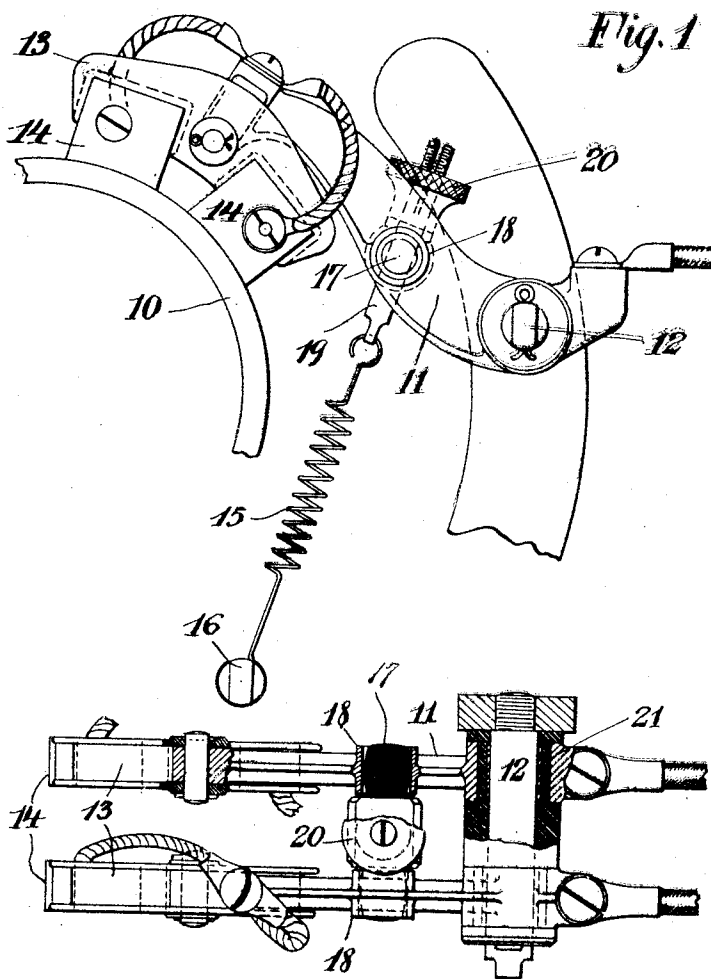


Fig. 2

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UNITED STATES PATENT OFFICE.

ROBERT W. STANLEY, OF CLEVELAND, OHIO, ASSIGNOR TO ENTZ MOTOR CAR CORPORATION, A CORPORATION OF NEW YORK.

BRUSH-HOLDER.

1,268,293.

Specification of Letters Patent.

Patented June 4, 1918.

Application filed October 18, 1915. Serial No. 56,434.

To all whom it may concern:

Be it known that I, ROBERT W. STANLEY, a citizen of the United States, and a resident of the city of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Brush-Holders, of which the following is a specification accompanied by drawings.

This invention relates to holders for brushes which are adapted to cooperate with the collector rings or the commutators of dynamo electric machines.

One object of my invention is to provide a holder which shall be simple and inexpensive in construction and efficient and reliable in operation.

Another object of my invention is to provide means for uniformly pressing the brushes against the elements with which they contact, whether these elements be collector rings or commutators.

Another object of my invention is the utilization of a single spring means for pressing a plurality of brushes against their respective contacting elements, while at the same time permitting the independent movement of each of the brushes independently of the other brushes.

Another object of my invention is to provide brush holders which are easily accessible and which may readily be moved, so that the brushes may be replaced when necessary.

With the above and other objects in view, as will more fully hereinafter appear, my invention consists of the novel devices, elements and combinations described herein, and more particularly pointed out in claims appearing at the end of this specification.

Referring to the drawing,

Figure 1 is a fragmentary side elevation of a pair of my improved brush holders as applied, for example, to the collector rings of a dynamo electric machine;

Fig. 2 is a plan view, partly in section, of the parts illustrated in Fig. 1.

In the drawings, 10 designates an element, such as a collector ring or commutator, with which the brushes are adapted to contact.

Relative rotary movement occurs between the brushes and the element or elements 10 either by reason of the rotation of the elements 10 or by reason of the rotation of the brush supporting means,

Each brush holder comprises a lever 11 pivoted at one end about a relatively fixed member, such as shown at 12. The brush supporting arm 13, in which the brushes proper 14 are mounted in any suitable manner, is pivotally connected intermediate its ends to the other end of each lever 11.

In order to turn the levers 11 about their pivot 12 and thus press the brushes against their contacting elements, I provide some suitable spring means, such as the spring 15, which is connected at one end, 16, to some suitable stationary part of the machine, and at the other end to the rod 17. This rod is loosely mounted at its ends in bearings 18 in the levers 11, and is provided with a central opening for the reception of the member 19, connected to the spring 15. A suitable nut 20 cooperates with the screw threaded member 19, whereby the tension of the spring and thus the pressure of the brushes against their contacting elements may be adjusted at will.

As a result of mounting the rod 17 loosely in the bearings 18 of the levers 11, relative angular movement is permitted between the two levers 11, and thus, although a single spring means is utilized for exerting a pressure upon both of the levers, all the advantages of employing individual spring means for each lever, are obtained. In other words, I have provided a pair of brush holders, all of which are pressed in the proper direction, by a single spring means, while at the same time each holder is free to rotate about its pivot 12 to accommodate itself to any inequalities in the surface with which its brushes contact, without in any way affecting the other brush. It is apparent also that because of the pivoting of the brush-supporting arms 13, the two brushes supported by the two respective arms will bear equally upon the contacting surface.

Another advantage of my improved construction is that if it is necessary to repair or replace any one of the brushes, this may readily be done by removing the nut 20 and swinging the holder about its pivot 12, thus giving free access to the brushes.

Any suitable means may be employed for insulating the various brush holders from each other. As shown herein, I accomplish this by constructing the rod 17 of fiber or other suitable insulating material and by interposing bushings 21 of similar material

between the levers 11, and the pivot member 12.

What I claim is:

1. In a device of the character described, a lever pivoted at one end, a brush supporting arm pivotally connected intermediate its ends to the other end of said lever, brushes supported one at each end of said arm and spring means connected to said lever intermediate its ends and tending to turn the lever about its pivot.

2. In a device of the character described, a pair of substantially parallel levers pivoted at one end, a brush supporting arm pivotally connected to the other end of each of said levers and common spring means connected to both of said levers intermediate their ends and tending to turn the levers about their pivots, but permitting independent movement thereof with respect to each other.

3. In a device of the character described, a pair of substantially parallel levers pivoted at one end, a brush supporting arm pivotally connected intermediate its ends to the other end of each of said levers, a brush supported at each end of each of said arms, and common spring means connected to both of said levers intermediate their ends and tending to turn the levers about their pivots, but permitting independent movement thereof with respect to each other.

4. In a device of the character described, a pair of substantially parallel levers pivoted at one end, a brush supporting arm pivotally connected to the other end of each of said levers, a rod loosely connected to both of said levers intermediate their ends and spring means connected to said rod and tending to turn the levers about their pivots.

5. In a device of the character described, a pair of substantially parallel levers pivoted at one end, a brush supporting arm pivotally connected intermediate its ends to the other end of each of said levers, a brush supported at each end of each of said arms, a rod loosely connected to both of said levers intermediate their ends and spring means

connected to said rod and tending to turn the levers about their pivots.

6. A brush-holding device for electrical apparatus, combining a pair of brush-supporting arms pivoted to a suitable element of the apparatus, a brush secured to each arm, a member connected to the two arms, and a spring connected to a suitable element of the apparatus and to said member and forcing both arms and their brushes toward the current-collecting portion of the apparatus.

7. A brush-holding device for electrical apparatus, combining a pair of brush-supporting arms pivoted to a suitable element of the apparatus, a brush secured to each arm, a member loosely connected to the two arms, and a spring connected to a suitable element of the apparatus and to said member and forcing both arms and their brushes toward the current-collecting portion of the apparatus, the connection of the transverse member to the spring and to the arms permitting independent angular movement of the two arms.

8. A brush-holding device for electrical apparatus, combining a pair of substantially parallel brush-supporting arms pivoted coaxially to a suitable element of the apparatus, a pair of brushes pivotally secured to each arm, a transverse member loosely connected to the two arms, and a spring connected to a suitable element of the apparatus and to said transverse member between the arms and forcing both arms and their brushes toward the current-collecting portion of the apparatus, the connection of the transverse member to the spring and to the arms permitting independent angular movement of the two arms.

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

ROBERT W. STANLEY.

Witnesses:

RALPH R. OWEN,
DARWIN HANAUER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."