No. 676,308. Patented June 11, 1901.

H. GEISENHÖNER.

BRUSH HOLDER.

(Application filed Feb. 20, 1901.

(No Model.)

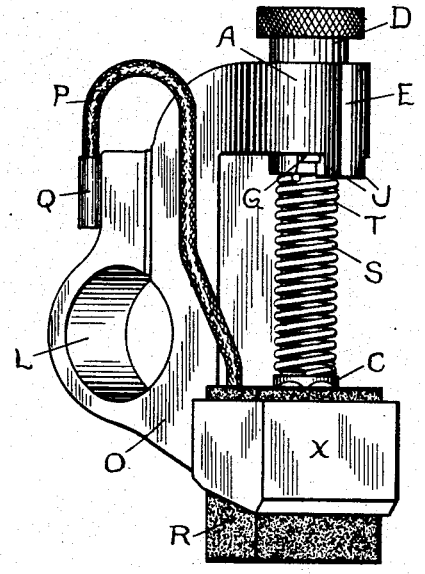


Fig. 1.

Fig. 2.

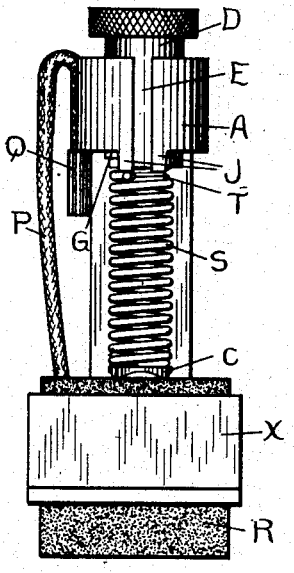


Fig. 3.

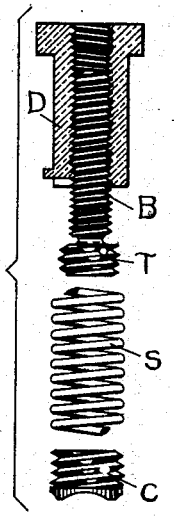


Fig. 4.

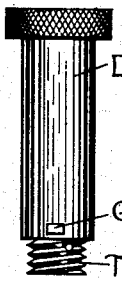
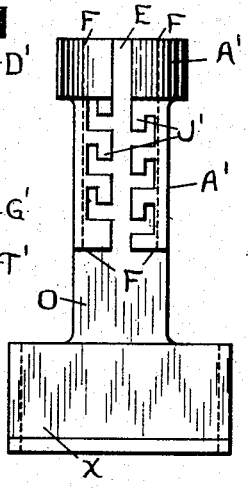


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

HENRY GEISENHÖNER, OF SCHENECTADY, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, OF NEW YORK.

BRUSH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 676,308, dated June 11, 1901.

Application filed February 20, 1901. Serial No. 48,031. (No model.)

To all whom it may concern:

Be it known that I, HENRY GEISENHÖNER, a citizen of the United States, residing at Schenectady, in the county of Schenectady, State of New York, have invented certain new and useful Improvements in Brush-Holders, (Case No. 1,975,) of which the following is a specification.

This invention relates to improvements in brush-holders for electric machines; and it consists in a novel manner of carrying the spring which presses the brush against the commutator, whereby the tension of the spring can be adjusted without removing it from the holder and the entire spring-support can be removed from the holder without affecting the adjustment of the spring. As now well known, the latter is very important, as brushes are frequently removed for cleaning and other purposes by unskilled persons who should not be permitted to vary the delicate adjustment of the brush-holder springs.

This invention provides a structure which has the above advantages, but which is very simple, requiring no complicated parts, and is low in cost.

Of the drawings, Figure 1 is a perspective view of a brush-holder embodying the invention. Fig. 2 is a front elevation of the same. Fig. 3 shows in detail the parts detached from the main body of the brush-holder, and Figs. 4 and 5 illustrate a modified form of brush-holder which also embodies the invention herein.

The form shown in Figs. 1, 2, and 3 will first be described. In these figures the improvements are shown supplied to a brush-holder having a main body O and a brush-box integral therewith, and a clamping-piece L, whereby the holder can be attached to a suitable stud. However, the improvements about to be described may be applied to other types of brush-holders.

In Figs. 1 and 2 the brush R is shown in position in its box X and has attached to it in any one of several ways devised by other inventors a flexible conducting-lead P, of braided wire, the free end of which is secured in any suitable binding-post Q to the brush-holder. This lead provides a readier path than the brush-spring for the current, and thus prevents the deterioration of the resiliency of the spring. At the upper portion of the holder is formed a support A for the spring-carrying means. This support is provided with a vertical hole, (shown by dotted lines F F of Fig. 5,) and this hole is provided with a slot E. A spring-carrier D is adapted to fit the hole and to be vertically reciprocated therein. A lug G is formed on the lower part of the carrier D, and this lug is adapted to enter the slot E and reciprocate therein when the carrier D is moved up and down. When the carrier D is depressed, so that the lug G passes downward out of the slot, the carrier is turned until the lug G passes beyond a projection J, formed along the slot at the lower part of the carrier D. The lug G then engages the lower side of the support A on the opposite side of this projection J to lock the carrier D in position.

As shown in Fig. 3, the carrier D is interiorly screw-threaded and is adapted to receive a bolt B, which is vertically adjustable therein. The bolt B is provided with a lower threaded portion T, which is adapted to receive the upper portion of a helical spring S, which is thus secured so as to move with the carrier D. The lower portion of the spring S is held on the threads of the contact-piece C, which has but a small surface in engagement with the brush B to prevent current flowing through the spring, which might destroy its resiliency.

In Figs. 1 and 2 the parts are shown in operative positions, the spring S pressing the brush against the commutator and also pressing the carrier D upward, so that the lug G is held against the lower surface of the support A to lock the parts in position. The tension of the spring S may be varied without removing the carrier D by merely grasping the spring and turning it to adjust the bolt B in the carrier D, as described. When it is necessary to remove the brush R for any purpose, it may be done without changing the tension of the spring S by depressing the carrier D so that the lug G is disengaged from the lower surface of the support S and then rotating the carrier D past the projection J until the lug takes a position opposite the lower end of the slot E. If the manual pres-

sure on the knurled head of the carrier D be now removed, the spring S will force the carrier up through the hole in the support A, the lug G moving along the slot E, so that the entire device, including the spring S, can be removed through the hole in the support A. Since the conducting-lead P is flexible, the brush can then be readily removed from its box X.

In the modification shown in Figs. 4 and 5 the adjusting-bolt B is dispensed with and the spring-carrier D′ is made in one piece and provided at its lower end with the threaded portion T′, to which the upper portion of the helical spring can be attached. A lug G′ is formed, as before, on the lower portion of the carrier D′, and the adjustment of the spring is varied by causing the lug to engage in any one of a series of lateral slots formed in the support A′ by depending projections J′. In some cases where very minute adjustment of the spring is not requisite this adjusting means will provide ample regulation.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a brush-holder, the combination with a support having a hole formed with a slot, of a spring-carrier movable in the hole and provided with a lug adapted to enter the slot, a spring mounted on said carrier and adapted to press the brush against the commutator, and means for adjusting said spring.

2. In a brush-holder, the combination with a support having a hole formed with a slot, of a spring-carrier movable in the hole and provided with a lug adapted to enter the slot, the carrier being adapted to be moved through the hole to carry the lug out of the slot and then rotated, whereby the lug engages the lower part of the support to hold the carrier in position; and a spring mounted on the carrier and adapted to press the brush against the commutator and to keep the lug in engagement with the lower part of the support.

3. In a brush-holder, the combination with a support having a hole formed with a slot, of an interiorly-screw-threaded carrier having a lug which enters the slot, a spring, and a bolt on which the spring is mounted which bolt engages the threads of the carrier, whereby the tension of the spring can be adjusted independently of the movement of the carrier.

4. In a brush-holder, the combination with a support having a hole formed with a slot, of a spring-carrier having a lug which enters the slot, and a depending projection along the slot, behind which the lug engages to lock the carrier in position.

In witness whereof I have hereunto set my hand this 18th day of February, 1901.

HENRY GEISENHÖNER.

Witnesses:
BENJAMIN B. HULL,
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