

Patented Dec. 27, 1921.

1,401,679

Fig. 1.

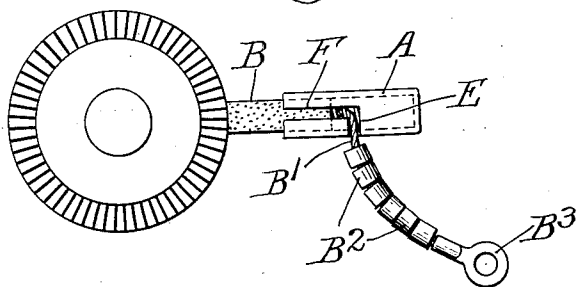


Fig. 2.

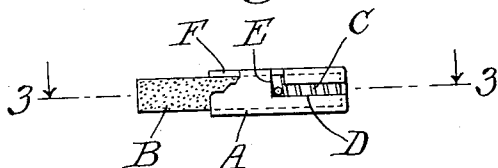
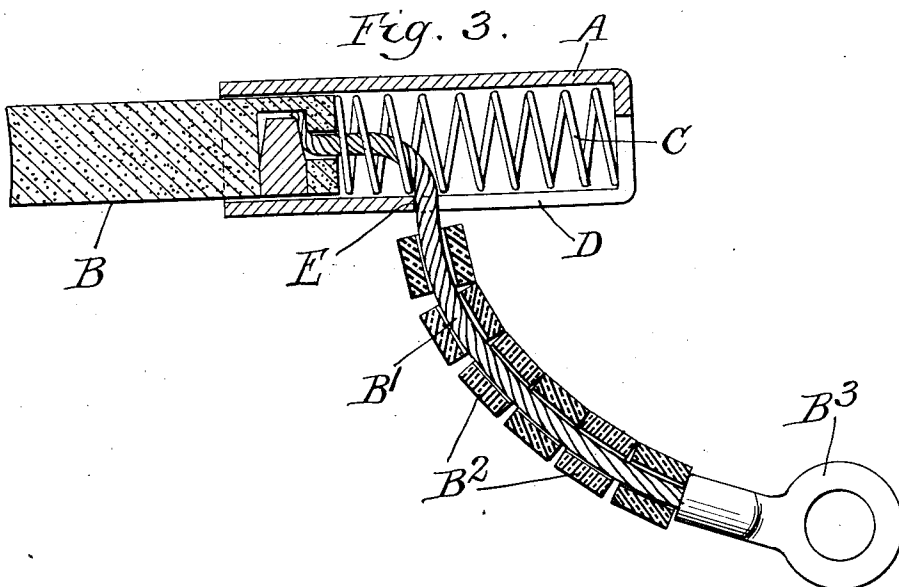


Fig. 3.



Witness.

Edward T. Wray.
H. Earl Hoover

Inventor.

Dudley F. Dillin
by Parker Carter
Attorneys

UNITED STATES PATENT OFFICE.

DUDLEY F. DILLIN, OF NORTH CANTON, OHIO, ASSIGNOR TO THE HOOVER SUCTION SWEEPER COMPANY, OF NEW BERLIN, OHIO, A CORPORATION OF OHIO.

BRUSH-HOLDER.

1,401,679.

Specification of Letters Patent.

Patented Dec. 27, 1921.

Application filed February 11, 1920. Serial No. 357,845.

To all whom it may concern:

Be it known that I, DUDLEY F. DILLIN, a citizen of the United States, residing at North Canton, in the county of Stark and State of Ohio, have invented a certain new and useful Improvement in Brush-Holders, of which the following is a specification.

My invention relates to brush holders for pigtail type of carbon or graphite brushes, and particularly to brush holders in connection with electrical apparatus which comprise means for holding the brush and pigtail and a tension spring by which the brush is held against a commutator or other electrical part. One object of my invention is to provide such a structure wherein, repair, replacement, and readjustment of the brush or spring may be readily made. Another object is to make unnecessary the disassembling of the brush unit comprising brush, pigtail connecting cable, insulating beads and terminal, when removing the brush unit from its holder. Other objects will appear from time to time throughout the specifications and claims.

My invention is illustrated more or less diagrammatically, wherein:

Figure 1 is a plan view;

Fig. 2 is a side elevation of one side with pigtail broken away;

Fig. 3 is a vertical section along the line 3-3 of Fig. 2.

Like parts are designated by like characters throughout.

A is a hollow metallic casing adapted to inclose the brush B and the spring C. B¹ is the brush pigtail and has upon it the insulators B²-B². B³ is a contact part or terminal soldered or otherwise permanently secured to the pigtail B¹. D is a longitudinal slot in the side of the casing A through which the pigtail B¹ normally protrudes and in which it is adapted to move in response to any variation in the position of the brush. E is a slot at right angles with slot D and communicating with it. F is a slot parallel to the slot D communicating with the slot E and extending to the end of the casing A.

The use and operation of my invention are as follows:

The brush is, of course, constantly subject to friction and is, therefore, gradually worn down or it collects oil and grease which gums it thus making cleaning necessary. In previous forms of brush holders such replacement has only been made possible by re-

moval of the contact part or terminal which is usually soldered on, or by other disarrangement of the parts of the brush holder.

In my brush holder, however, by reason of the slots which are cut in such a way, it is possible to make any such changes or replacement by merely passing the brush pigtail through the two slots and the brush and pigtail may then be removed intact. This, of course, also enables me to remove the spring. By the arrangement, therefore, I am able to make any replacement or readjustment which may from time to time be necessary without in any way breaking or changing any of the structural arrangements which are normally designed to be permanent.

It will, of course, be understood that the brush holder as shown is designed to be secured by some proper holding means in the structure of which it forms a part, and this holding part forms no part of my invention and, therefore, is not illustrated herewith.

I have spoken of the two slots which I have shown in the illustrations as longitudinal and as being connected by a third slot. It is, of course, obvious that this third slot is in reality a part of the slot which is intended to allow the pigtail to be removed from the shell, and while this third slot is at right angles to the other two slots this arrangement might be widely varied without departing from the spirit of my invention.

The shell as shown is rectangular in section but this might be varied, and it might, for example, be circular in section, and if such were the case, the slot arranged for the brush removal might be curved or spiral or otherwise varied in shape.

Although I have shown in my drawings an operative arrangement, still it will be obvious that many changes other than those above outlined might be made in the shape, arrangement and size of parts without departing materially from my invention, and I wish, therefore, that my figures be regarded as in a sense diagrammatic.

I claim:

1. A brush holder comprising a hollow shell having two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other, and a third slot connecting them.

2. A brush holder comprising a hollow shell open at one end and partially open at

the other, two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other, and a third slot connecting them.

3. A brush holder comprising a hollow shell two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other and a third slot connecting them in combination with a brush adapted to enter the open end and a pigtail attached to said brush and adapted to project through any of said slots.

4. A brush holder comprising a hollow shell open at one end and partially open at the other, two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other, and a third slot connecting them in combination with a brush adapted to enter the open end and a pigtail attached to said brush and adapted to project through any of said slots.

5. A brush holder comprising a hollow shell two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other, and a third slot connecting them in combination with a brush adapted to enter the open end and a pigtail attached to said brush and adapted to project through any of said slots and to be moved through all of said slots.

6. A brush holder comprising a hollow shell open at one end and partially open at the other, two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other, and a third slot connecting them in combination with a brush adapted to enter the open end and a pigtail attached to said brush and adapted to project through any of said slots and to be moved through all of said slots.

7. A brush holder comprising a hollow shell open at one end and partially open at the other, two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other, and a third slot connecting them in combination with a spring adapted to enter said open end and to bear against said partially closed end and a brush adapted to enter said open end and rest against said spring and a pigtail attached to said brush and adapted to project through one of said slots.

8. A brush holder comprising a hollow shell two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other, and a third slot connecting them in combination with a spring adapted to enter said open end and

to bear against said partially closed end and a brush adapted to enter said open end and to rest against said spring and a pigtail attached to said brush and adapted to project through one of said slots and adapted to be moved through all of said slots.

9. A brush holder comprising a hollow shell open at one end and partially open at the other, two slots through the wall of said shell spaced apart from each other and extending, one toward one end of said shell and the other toward the other, and a third slot connecting them in combination with a spring adapted to enter said open end and to bear against said partially closed end and a brush adapted to enter said open end and rest against said spring and a pigtail attached to said brush and adapted to project through one of said slots and adapted to be moved through all of said slots.

10. As a new article of manufacture a unitary brush structure comprising in combination a hollow shell having two slots through its wall spaced apart from each other and extending one from one end of said shell and the other toward the other, and a third slot connecting them, in combination with a brush assembly positioned within said shell, and a pig tail attached to said brush adapted to project through one of said slots.

11. As a new article of manufacture a unitary brush structure comprising in combination a hollow shell having two slots through its wall spaced apart from each other and extending one from one end of said shell and the other toward the other, and a third slot connecting them, in combination with a brush assembly positioned within said shell, and a pig tail attached to said brush adapted to project through one of said slots and adapted to be moved through all of said slots.

12. As a new article of manufacture a unitary brush structure comprising in combination a hollow shell having two slots through its wall spaced apart from each other and extending one toward one end of the shell and the other toward the other, and a third slot connecting them, a brush within said shell and a spring bearing upon said brush tending to force it out of the shell, means for limiting the action of said spring comprising a pig tail attached to said brush and adapted to project through any of said slots.

In testimony whereof, I affix my signature in the presence of two witnesses this sixth day of January, 1920.

DUDLEY F. DILLIN,

Witnesses:

H. EARL HOOVER,
H. E. GOUGLER.