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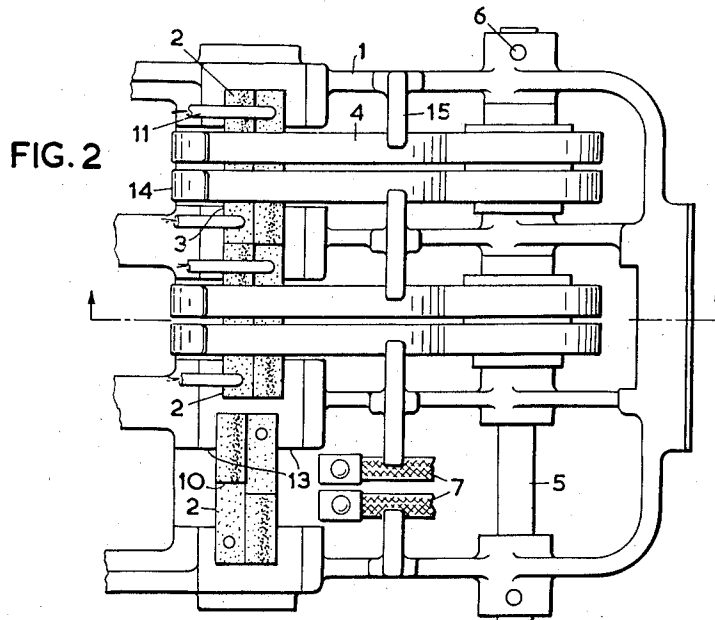
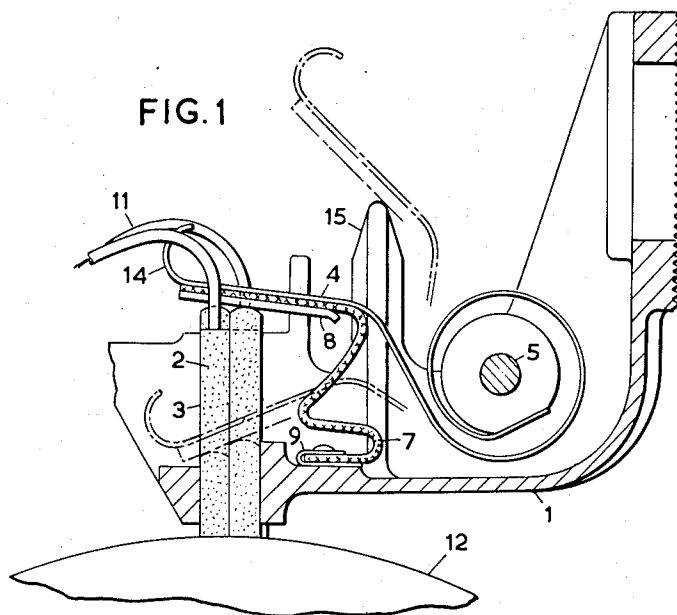
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2,964,663

BRUSH HOLDERS FOR DYNAMO ELECTRIC MACHINES

Filed Feb. 2, 1959

2 Sheets-Sheet 1



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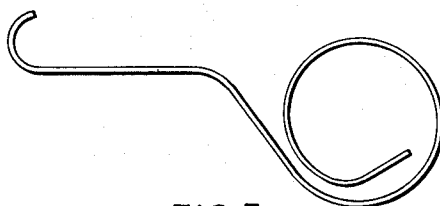
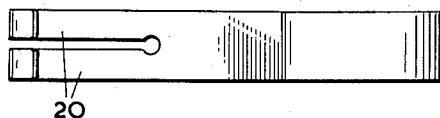
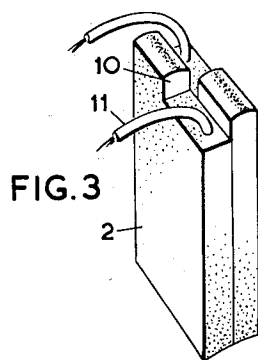
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BRUSH HOLDERS FOR DYNAMO ELECTRIC MACHINES

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2 Sheets-Sheet 2



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2,964,663

BRUSH HOLDERS FOR DYNAMO ELECTRIC MACHINES

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5 Claims. (Cl. 310—246)

This invention relates to brush holders for dynamo-electric machines. It is concerned with brush holders of the kind housing two or more brushes.

According to the invention a brush holder assembly includes, in combination, a double brush holder, tandem brushes slidable therein, and a pressure applying member for each brush extending over the top of both brushes, said brush holder being slotted to allow said member to follow the brushes as they wear, and each of said brushes having a step on the top face thereof so as to clear the member associated with the other brush.

Further features of the invention will appear from the following description with reference to the accompanying drawings wherein:

Fig. 1 shows a sectional elevation of one form of brush holder according to the invention,

Fig. 2 is a plan view of the brush holder,

Fig. 3 is a perspective view of one of the brushes, and

Figs. 4 and 5 are a plan and elevation respectively of an alternative spring arrangement.

Referring now to the drawings, a brush holder frame is indicated at 1. Pairs of narrow brushes 2 are slidably mounted in brush compartments 3 in the frame 1.

Six spiral springs 4 are wound round and secured to a spindle 5 which is located in the brush holder frame 1 by means of split pins 6. Near the free end of each spring there is a straight portion to which is sweated one end of a flexible braid 7 and a plate 8.

The other end of the flexible braid carries a clip 9 which is riveted to the brush holder frame 1. The flexible braid provides a direct electrical connection from the brushes through the plate 8 to the brush holder frame bypassing the spring.

The spring engaging end of each brush is cut away, as indicated at 10, so as to form a step in the top of the brush and a pigtail 11 of the usual type is attached to the lower face of the step. The steps of adjacent brushes are diagonally opposite so that each spring 4 exerts pressure, through the plate 8, on one brush only, without fouling the adjacent brush. The brushes bear on a commutator, indicated at 12.

The frame 1 has slots 13 to permit the spring pressure to be maintained on the brushes when these considerably shorten due to wear. Such a case where the brushes have worn to the full extent is shown chain dotted in Fig. 1.

When it is required to remove the brushes, the springs 4, which have curved ends 14 for ease in handling, are retracted and allowed to rest on the support lugs 15, as shown chain dotted in Fig. 1.

In an alternative embodiment of the invention, one of the brushes in a pair has the spring engaging end cut away centrally, whilst the other brush has the spring engaging end cut away at both sides. Springs are arranged to act on the upper parts thus formed.

As an alternative to the type of spiral spring shown

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in Figs. 1 and 2, the spring finger type of spiral spring shown in Figs. 4 and 5 may be used, each of the spring fingers 20 engaging a separate brush.

There are various further arrangements within the scope of the present invention. Thus, more than two brushes may be mounted side by side in the peripheral direction. In each arrangement the spring engaging ends of the brushes will be cut away to prevent spring fouling.

It will be appreciated that the invention may be applied to either a commutator or slipring type of machine.

What I claim as my invention and desire to secure by Letters Patent, is:

1. A brush holder assembly including, in combination, a double brush holder, tandem brushes slidable therein, and a pressure applying member for each brush extending over the top of both brushes, said brush holder being slotted to allow said member to follow the brushes as they wear, and each of said brushes having a step on the top face thereof so as to clear the member associated with the other brush.

2. A brush holder assembly including, in combination, a double brush holder, tandem brushes slidable therein, and a pressure applying spiral spring for each brush having an extension extending over the top of both brushes, said brush holder being slotted to allow the said extension to follow the brushes as they wear, and each of said brushes having a step on the top face thereof so as to clear the extension of the spiral spring associated with the other brush.

3. A brush holder assembly including, in combination, a double brush holder, tandem brushes slidable therein, a pressure applying spiral spring for each brush having an extension extending over the top of both brushes, said brush holder being slotted to allow the said extension to follow the brushes as they wear, and each of said brushes having a step on the top face thereof so as to clear the extension of the spiral spring associated with the other brush, and a stiffening member attached to said extension.

4. A brush holder assembly including, in combination, a double brush holder, tandem brushes slidable therein, a pressure applying spiral spring for each brush having an extension extending over the top of both brushes, said brush holder being slotted to allow the said extension to follow the brushes as they wear, and each of said brushes having a step on the top face thereof so as to clear the extension of the spiral spring associated with the other brush, a stiffening member attached to said extension, and a flexible braid providing an electrical connection between said extension and said brush holder.

5. A brush holder assembly including, in combination, a double brush holder, tandem brushes slidable therein, and a pressure applying spiral spring having an extension extending over the top of both brushes, said extension being slotted lengthwise so as to form two spring fingers each engaging one brush only, said brush holder being slotted to allow said spring fingers to follow the respective brushes as they wear, and each of said brushes having a step on the top face thereof so as to clear the spring finger associated with the other brush.

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