

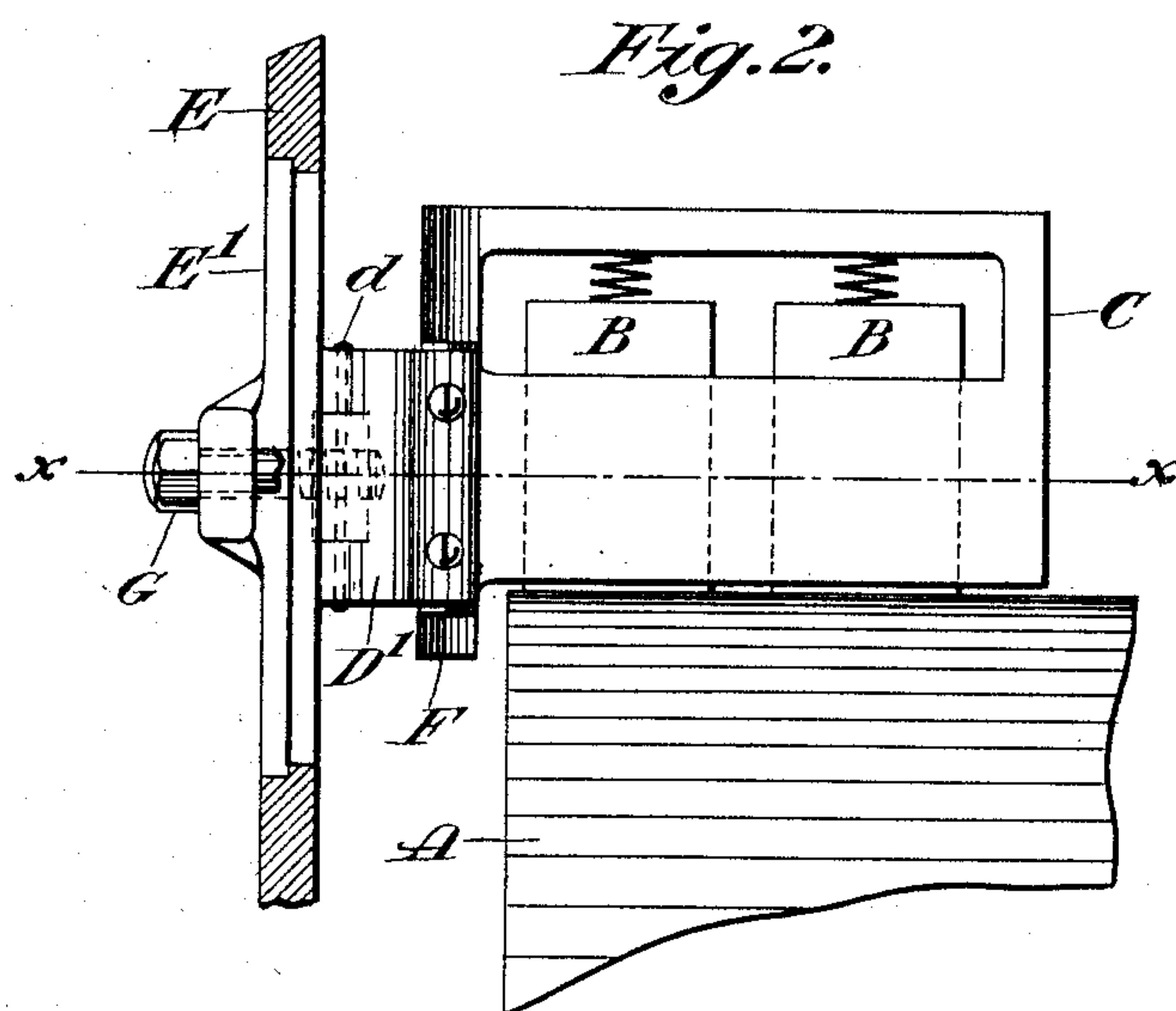
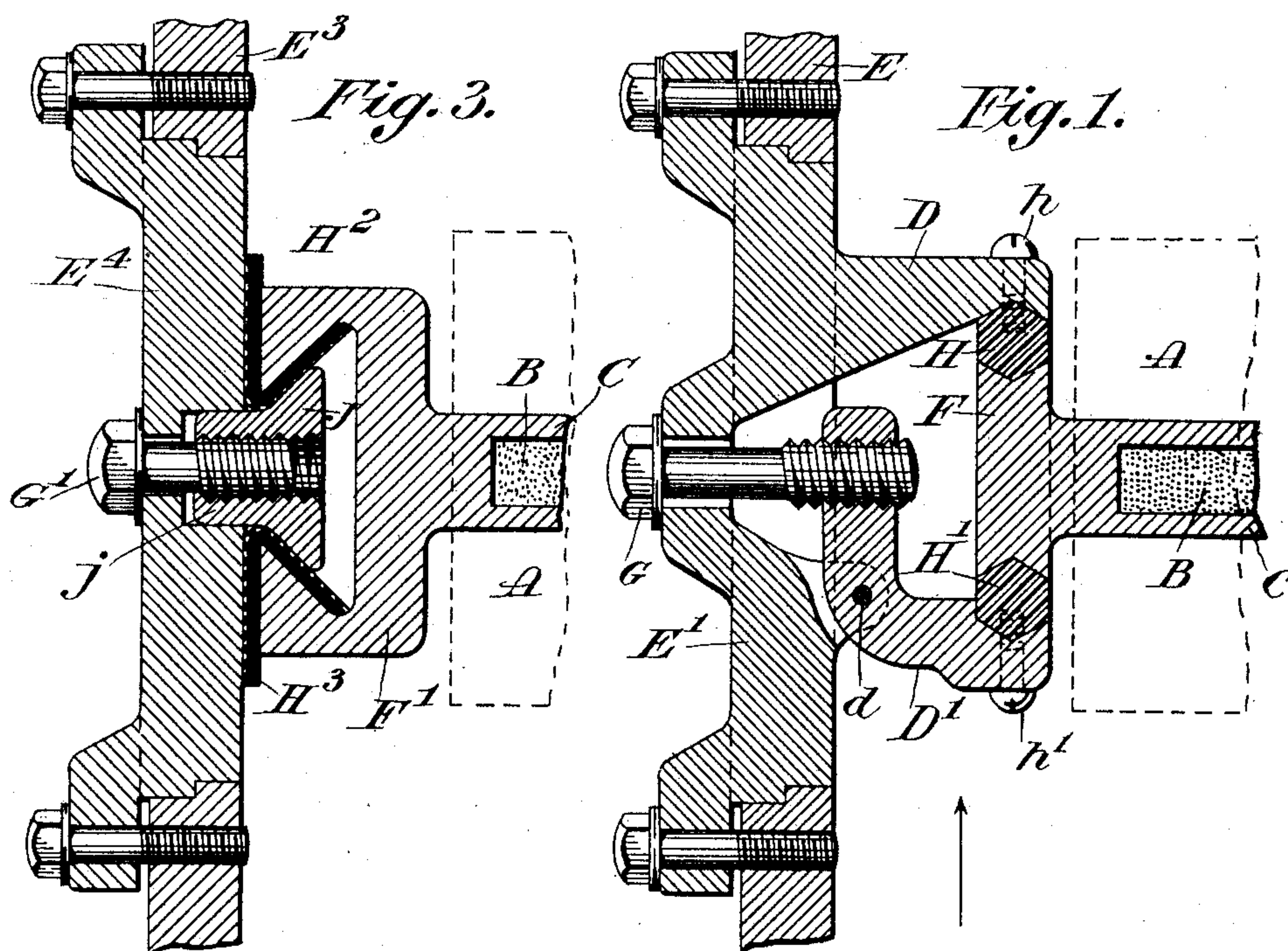
No. 629,418.

Patented July 25, 1899.

R. N. BAYLIS.  
BRUSH HOLDER SUPPORT.

(Application filed May 13, 1899.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## BRUSH-HOLDER SUPPORT.

SPECIFICATION forming part of Letters Patent No. 629,418, dated July 25, 1899.

Application filed May 13, 1899. Serial No. 716,684. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT N. BAYLIS, a citizen of the United States, residing at Englewood, Bergen county, New Jersey, have invented certain new and useful Improvements in Brush-Holder Supports, of which the following is a full, clear, and exact description.

My invention relates to dynamo-electric machines; and it consists in the improvement of the brush-holder supports therefor. Among the objects of my invention are compactness, effectiveness, durability, simplicity of construction, and adjustability. In electric apparatus of this type, particularly for outdoor work, it is common to inclose the same in a suitable housing or casing, which for many kinds of work must be very compact, leaving very little unoccupied space inside. This is particularly important in automobile-vehicle motors, where economy of space must be strictly observed. In dynamo-casings it is common to provide a suitable door, whereby access to the internal parts may be gained for the purpose of inspection and adjustment. Because of the wear upon the commutator and brushes in dynamos and in motors it is the brush-holder that most frequently requires adjustment, and it is therefore to that particular portion of the apparatus that this invention is directed. Heretofore (the amount of free space within the casing being very limited) it has been most difficult to effect this adjustment; but by the employment of my improved device the brush-holders may be quickly and easily adjusted to a nicety in a very short space of time, it being necessary to insert only one hand within the casing, while the other hand may be engaged on the outside to manipulate the clamping device, a portion of which is located exteriorly. Furthermore, the brush-holders may with the greatest facility be removed bodily from the machine for cleaning or repair and replaced without disturbing the adjustment.

In the accompanying drawings, Figure 1 is in the main a sectional plan view showing a portion of a dynamo or motor casing fitted with my improved supporting and adjusting device. Fig. 2 is a side elevation of the parts shown in Fig. 1, looking in the direction of the arrow. Fig. 3 is a view, corresponding

substantially to Fig. 1, of one of several modifications of which my invention is susceptible.

In the drawings, A is a commutator.

B B are the brushes, mounted in a suitable holder C. These brushes B may be carried by the holder in any suitable way. When the parts are in place, one edge of the holder C is preferably closely adjacent to the peripheral surface of the commutator A, a condition found to be necessary to obtain the best results in practice. When the diameter of the commutator has become reduced either from wear or otherwise, it is desirable to readjust the position of the brush-holder, and to that end I provide a suitable means which comprises a slide-block at one end of the holder, (or at both ends when it is desired to have the holder reversible,) which may be adjustably engaged in the desired position by an intermediary grip device. In the preferred form, Figs. 1 and 2, this grip device comprises a stationary jaw D and a movable clamping-jaw D', the latter being fulcrumed at a suitable point, as at *d*. These parts D and D' are preferably carried by a removable cover-plate E', fitting into an opening in the casing and secured thereto by suitable means. If desired, this grip device may be attached directly to or be integral with the casing-wall E.

F is the slide-block, which is engaged by the jaws D D'.

G is a clamping-screw which projects from the outside through the cover-plate E', the threaded end of which screw takes into one end of the movable clamping-jaw D', so that by turning said screw the clamp is tightened or loosened, as desired. In the specific form shown when the clamping-screw G is loosened the end of the clamping-jaw D' which engages the slide-block F is freed therefrom sufficiently to permit the slide-block to be moved up or down, and thus the holder C may be adjusted to the desired distance from the commutator, the clamping device acting as a guide for said brush-holder. When the proper position has been ascertained, the clamping-screw G is turned up and the intermediary clamping device is brought into tight engagement with the slide-block F and the brush-holder is positively engaged in the desired position. Various ways of insulating



the several parts may be employed, but I prefer to provide strips of insulation  $H H'$ , which may be carried by the jaws  $D D'$  and preferably held thereto by the use of suitable screws  $h h'$  or otherwise. By this means the brush-holder will be properly insulated from the casing and from the exposed head of the adjusting-screw  $G$ .

In the modification shown in Fig. 3 instead of employing a pair of jaws for the clamping device I have formed an elongated undercut groove in the slide-block  $F'$ , into which groove a headed clamping member  $J$  projects, which member acts as the clamping intermediary, by which the fixed position of the holder is determined and to that end corresponds to the movable clamping-jaws shown in Figs. 1 and 2. The clamping member  $J$  is by preference provided with a suitable angular projection  $j$ , which projects into a correspondingly-shaped recess in the inside of the cover-plate  $E^4$ , where the same is employed, (otherwise in the casing  $E^3$ ), so that the brush-holder cannot be turned out of the proper angle to the commutator. Passing through the cover-plate from the outside (or through the casing if the former is not employed) is a clamping-screw  $G'$ , the inner end of which is preferably threaded and takes into the member  $J$ .

By loosening the screw  $G'$  from the outside the holder may be raised or lowered to exactly the proper position by inserting one hand only within the casing. In this case as in other cases it is desirable that suitable insulation be employed. To that end therefore I have shown a preferable way of insulating the brush-holder from the casing and from the adjusting-screw, comprising the pieces  $H^2 H^3$ , which insulate the intermediary  $J$  from the block  $F'$  and the latter from the casing.

If desirable, thin brass plates may be cemented or otherwise attached to the insulating-strips  $H^2 H^3$ , whereby adhesion between the insulating-strips and the adjacent part is prevented, thus insuring freedom of action at all times when it becomes desirable to readjust the position of the brush-holder.

It will be observed that one of the valuable features of the improvement hereinbefore described is that, irrespective of the adjusting mechanism, the attaching of the brush-holding device directly to the cover-plate, which is removable from the external casing, permits freedom of access to the brushes and their support as well as to the commutator, since the same is located in close proximity to the said removable cover-plate and its allied parts.

While it is preferable to adjust the holder in the method before described, it may be

found desirable in some cases to adjust the same by removing the cover-plate and the brush-holder bodily. In such an event, of course, it might not be necessary to extend the adjusting device through the cover-plate.

What I claim is—

1. In an apparatus of the character specified, an external casing, an internal adjustable brush-holder, an adjusting device projecting from the outside to the inside of the casing, and an intermediate clamping device between the adjusting member and the brush-holding member.

2. In an apparatus of the character specified, an external casing, an internal adjustable brush-holder, an adjusting device projecting from the outside to the inside of the casing, and an intermediate guide and clamping device between the adjusting member and the brush-holding member.

3. In an apparatus of the character specified, an external casing, an internal adjustable brush-holder, an adjusting device projecting from the outside to the inside of the casing, and an intermediate one-piece guide and clamping device between the adjusting member and the brush-holding member.

4. In an apparatus of the character specified, an external casing, an internal adjustable brush-holder, a screw-threaded adjusting device projecting from the outside to the inside of the casing, and an intermediate clamping device between the adjusting member and the brush-holding member.

5. In an apparatus of the character specified, an external casing, an internal adjustable brush-holder, a slide-block at the end thereof, an adjusting device projecting from the outside to the inside of the casing, and an intermediate clamping device between the adjusting member and the brush-holding member.

6. In an apparatus of the character specified, an external casing, an internal adjustable brush-holder, an adjusting device projecting from the outside to the inside of the casing, and an intermediate clamping device between the adjusting member and the brush-holding member, all of said parts being carried by a removable cover-plate.

7. In a device of the character specified, an external casing, an internal brush-holder, a removable cover-plate carried by said casing, the said brush-holder being in turn carried by the said cover-plate.

R. N. BAYLIS.

Witnesses:

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