(No Model.)

I. H. BARTHOLOMEW.

BRUSH HOLDER FOR COMMUTATORS.

No. 452,561. Patented May 19, 1891.

Fig. 1

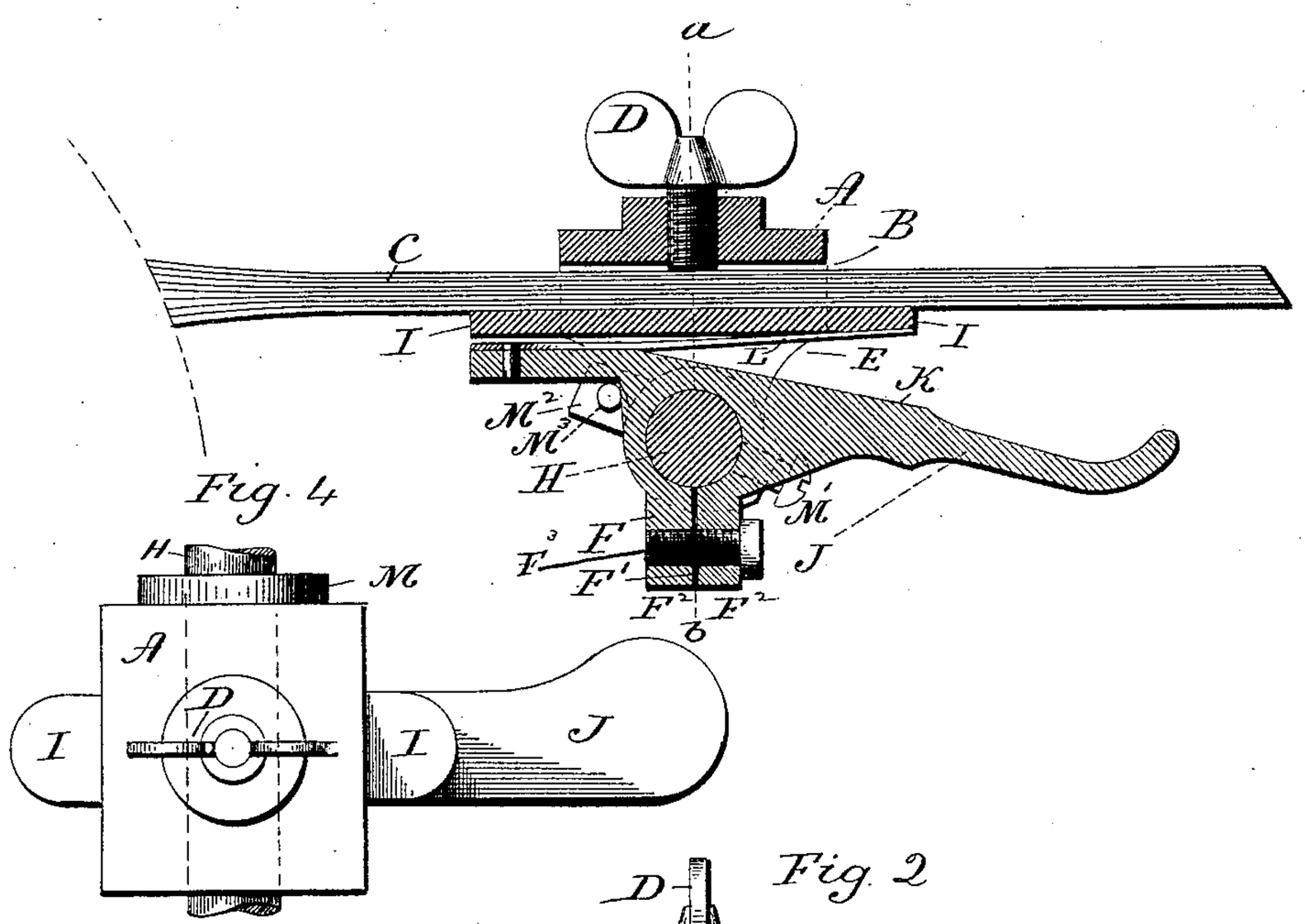


Fig. 4

Fig. 2

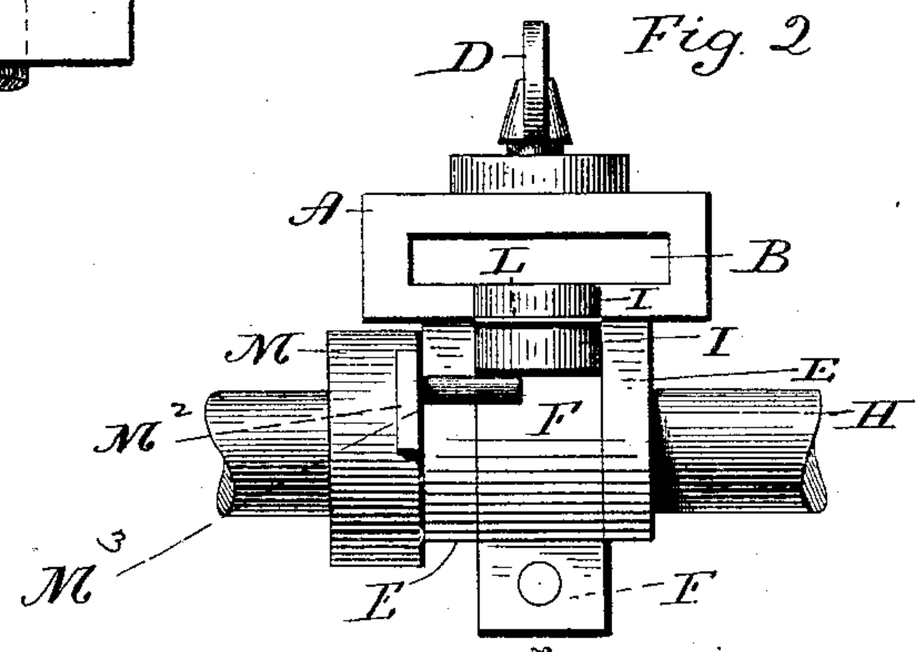
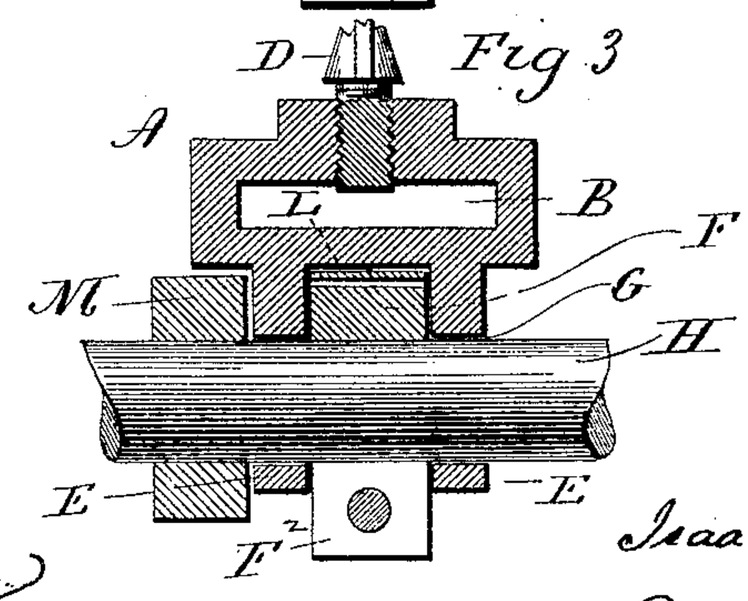


Fig 3



Witnesses
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UNITED STATES PATENT OFFICE.

ISAAC H. BARTHOLOMEW, OF NORTHFORD, CONNECTICUT.

BRUSH-HOLDER FOR COMMUTATORS.

SPECIFICATION forming part of Letters Patent No. 452,561, dated May 19, 1891.

Application filed January 19, 1891. Serial No. 378,234. (No model.)

To all whom it may concern:

Be it known that I, ISAAC H. BARTHOLOMEW, of Northford, in the county of New Haven and State of Connecticut, have invented a new Improvement in Brush-Holders for Commutators for Dynamo-Electric Machines; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a view in vertical longitudinal section of a brush-holder constructed in accordance with my invention, the commutator being indicated by broken lines; Fig. 2, a view thereof in front elevation with the brush removed; Fig. 3, a view of the device in vertical transverse section on line *a b* of Fig. 1; Fig. 4, a plan view of my improved device.

My invention relates to an improvement in holders for commutator-brushes for dynamo-electric machines, the object being to produce a simple, compact, convenient, and effective device adapted to be operated without the removal of any of its parts or the use of tools.

With these ends in view my invention consists in the combination, with a spring-actuated brush-carrier loosely mounted upon a horizontal shaft, of a bearing-piece frictionally mounted upon the said shaft and forming a stop for the carrier, and a stop rigidly secured to the shaft and arranged to limit the forward rotation of the bearing-piece thereupon.

My invention further consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

As herein shown, the brush-carrier is composed of a box or body A, having a long narrow slot B formed in it to receive the brush C, and provided with a thumb-screw D, which is screwed down upon the brush to hold the same in place in the box or body, which is also composed of two parallel depending lugs E E, separated by the width of the bearing-piece F, which is located between them, and each provided with an opening G to receive the shaft H, upon which the brush-carrier is thus mounted so as to move freely. The said box or body is also provided at its rear and forward ends with ears I I, located in line with each other and on the same level with the bottom of the slot B which receives the brush. These ears I are best shown in Fig. 4 of the drawings.

The bearing-piece F, which is best shown in Fig. 1 of the drawings, is split on the line F′, forming two lugs F^2 F^2, which are furnished with aligned and threaded perforations to receive a set-screw F^3, by means of which the said lugs are drawn together and the bearing-piece frictionally clamped upon the shaft H before mentioned. The rear end of the bearing-piece has its upper face beveled, as at K, whereby clearance for the rocking action of the brush-carrier is provided, and is extended beyond the said bevel to form the handle J, by means of which the bearing-piece is turned upon the shaft against the friction under which it is clamped thereon. A flat spring L, pivoted to the upper face of the forward end of the bearing-piece, extends throughout the length thereof and engages at its rear end with the under face and rear ear I of the brush-carrier and exerts a constant effort to throw the same forward, whereby the brush C is pressed against the commutator, so that a good contact therewith is maintained and the wearing away of the brush compensated for.

In order to disengage the brush from the commutator, the handle J is borne down upon and the bearing-piece rotated on the shaft H, upon which it is frictionally clamped, as has been described, this friction between the shaft and bearing-piece being sufficient to hold the latter in any desired position. In order, however, to prevent it from being thrown to far forward in restoring the brush to engagement with the commutator, a stop rigidly secured to the shaft is provided. This consists, as herein shown, of a small collar M, rigidly secured to the shaft by a set-screw M′ and provided with a projecting finger M^2, carrying a pin M^3, the latter being arranged to extend parallel with the shaft and to stand directly under the forward end of the bearing-piece, the collar M being adjusted upon the shaft so that the said end of the bearing-

piece will engage with the pin when the bearing-piece has been rotated to the limit of its rotation toward the commutator. The brush-carrier, bearing-piece, and stop are thus independently movable on the shaft.

The range of rocking movement given to the brush-carrier by beveling the rear end of the bearing-piece is sufficient to enable the device to be set so as to compensate for the wearing away of the brush for a considerable time. Then when the brush is worn away so that the forward ear of the brush-carrier engages with the forward end of the bearing-piece the thumb-screw D is loosened and the brush slipped lengthwise in its slot B′ until it has tipped the brush-carrier back to the limit of its rearward movement with respect to the bearing-piece.

My improved device is very compact and convenient and reduces the care of the commutator-brush to the minimum.

I would have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of my invention. I am aware, however, that it is old to make a rocking brush-carrier and employ a spring interposed between it and a bearing-piece mounted on the same shaft for throwing it toward the commutator-wheel, and I do not therefore claim such a construction broadly.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a holder for commutator-brushes, the combination, with a shaft, of a brush-carrier having two depending perforated lugs by which it is loosely mounted on the said shaft, a bearing-piece frictionally mounted on the said shaft and located between the lugs of the brush-carrier, a spring arranged to exert a constant effort to throw the brush-carrier forward toward the commutator, and a stop mounted upon the shaft and arranged to limit the forward rotation of the bearing-piece thereupon, the said brush-carrier, bearing-piece, and stop being independently movable on the shaft, substantially as set forth.

2. In a holder for commutator-brushes, the combination, with a shaft, of a brush-carrier having two depending perforated lugs by means of which it is loosely mounted on the shaft, a bearing-piece having two perforated lugs by means of which it is frictionally mounted on the said shaft located between the lugs of the brush-carrier having the rear end of its upper face beveled and provided with a rearwardly-extending handle, a flat sheet-metal spring located horizontally between the brush-carrier and bearing-piece and arranged to exert a constant effort to rotate the brush-carrier toward the commutator, and a stop mounted upon the shaft and arranged to limit the forward rotation of the said bearing-piece thereupon, the brush-carrier, bearing-piece, and the stop being independently movable on the shaft, substantially as set forth.

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

ISAAC H. BARTHOLOMEW.

Witnesses:
G. A. SMITH,
C. E. SMITH.