(No Model.)

A. K. BONTA.

COMMUTATOR TURNING DEVICE.

No. 459,572. Patented Sept. 15, 1891.

Fig. 1.

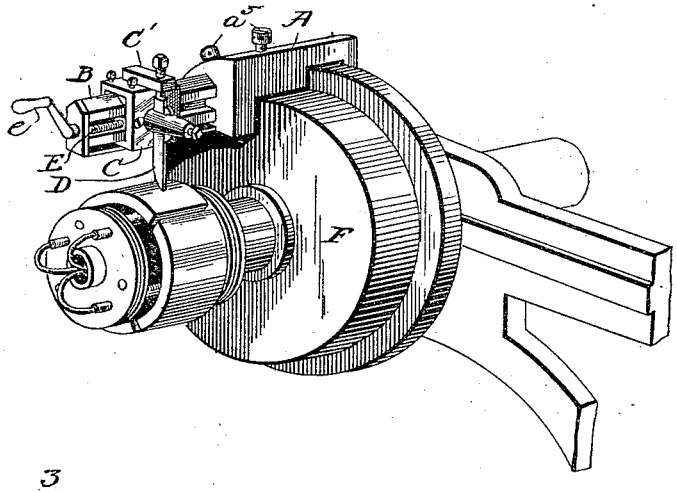


Fig. 2.

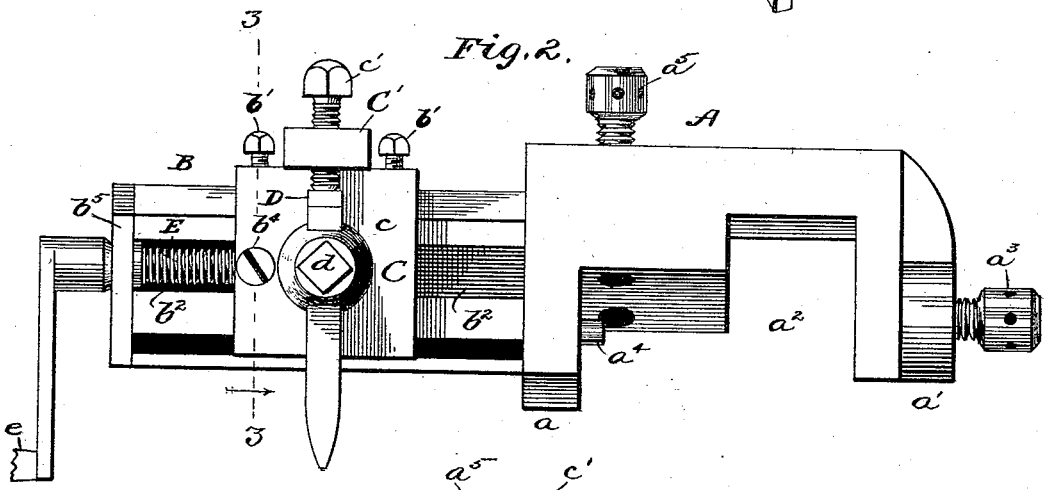
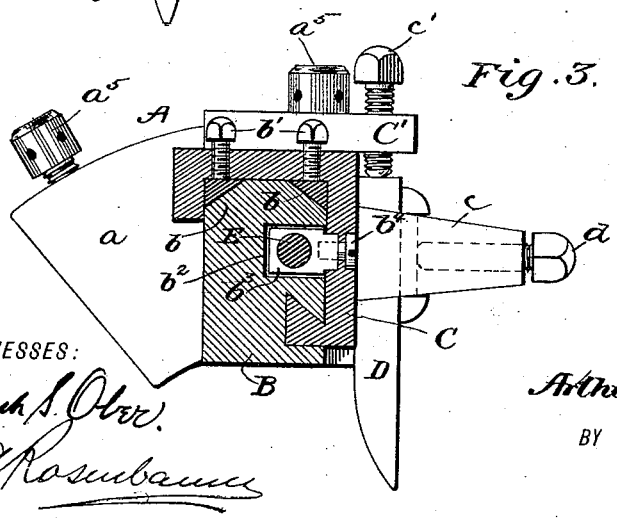


Fig. 3.



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COMMUTATOR-TURNING DEVICE.

SPECIFICATION forming part of Letters Patent No. 459,572, dated September 15, 1891.

Application filed October 16, 1890. Serial No. 368,255. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR KNOX BONTA, a citizen of the United States, residing at Hoboken, county of Hudson, and State of New Jersey, have invented certain new and useful Improvements in Commutator-Turning Devices, of which the following is a specification.

In dynamo-electric machines the commutators become worn unequally after a time, due to the friction with the brushes, and such unequal wear results in injurious sparking. To avoid the sparking due to this cause it becomes necessary to grind or turn the surface of the commutator occasionally to restore to it a true and smooth cylindrical form. One way in which this has heretofore been done is by removing the commutator from the dynamo and reducing the surface in a lathe or similar device. This not only causes a serious waste of time, but is mainly disadvantageous in that it frequently happens that the commutator is not accurately replaced so that its entire surface will be exactly concentric with the axis of the shaft, and the segments of a commutator are liable to become more or less disarranged in removing and replacing upon the armature-shaft.

My invention relates to the method of turning or reducing commutators and to devices for carrying out the method; and the object of my invention is to evenly reduce and polish the periphery of the commutator while the latter remains in place and is revolved in the ordinary manner and to produce a simple device which may be attached to the frame of the machine and operated to attain said results.

To this end my invention consists in the construction and combination of parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of my preferred form of attachment in connection with a Thomson-Houston dynamo. Fig. 2 is a side elevation of the complete attachment or turning device; and Fig. 3 is a section on line 3 3 of Fig. 2, looking in the direction of the arrow.

A indicates a bracket consisting of a casting having end walls a a' and with the portion connecting the two said walls cut away to a greater extent near one end, as at a^2, the object of which particular shape will be presently described.

Cast with or connected to the end wall a of the bracket is a laterally-projecting slide-bar B, planed to form ways for the slide-block C, which carries a tool-post c. At b are represented gibs for taking up wear, their adjusting-screws being shown at b'.

At C' is shown an overhanging lug carrying adjusting-screw c' for engaging the top of the tool D, and thereby regulating the depth of cut of tool D when used as hereinafter described. A clamping-screw for the tool is shown at d.

One side of the bar B is cut out or grooved longitudinally, as at b^2, and into this groove projects a lug b^3, which is secured to block C by screw b^4. This lug has a screw-threaded hole to receive the screw-shaft E, which is mounted to revolve freely, but have no longitudinal movement in an end plate b^5 of the bar B. By means of the handle e of the screw-shaft the latter may be revolved either way, and thus cause the slide-block, tool-post, and tool to move in either direction parallel with the bar B.

The bracket A is provided with a clamping-screw a^3, tapped through the right-hand wall a' to enable the said bracket to be firmly secured to a part of the dynamo, as hereinafter referred to, and the other end wall has a short inwardly-projecting pin a^4, and the top of the bracket has two adjusting-screws a^5 a^5.

In Fig. 1, F indicates the blower-box of a Thomson-Houston dynamo, and the side of this box, as is well-known, is provided with apertures, in which fit the tubes of the air-nozzles when the machine is in use. Now in applying my attachment to such machine I first withdraw the air-tubes and remove the brushes and then apply the bracket, so that its pin a^4 will pass into the upper air-apertures of the blower-box and the cut-away portion a^2 will fit over the flange of the said box. I then tighten screw a^3 and the device is in position for use. The angle at which the cutting or reducing tool will meet the periphery of the commutator may be adjusted by means of the screws a^5, for the bracket will rock or tilt slightly on the axis of a pin a^4 and screw a^3 until the said screws a^5 are brought down closely on the top of the blower-box. The pin a^4 need not

be perfectly round. One side may be flattened somewhat in order to allow the air from the pump or blower, which operates when the armature-shaft revolves, to freely escape. Preferably the dynamo will be at rest when the attachment is being fitted to its position for use. The cutting-tool D will be lowered until its point rests on the commutator and the desired depth of cut or pressure determined by the screw c', and the clamping-screw d then tightened. On starting the machine and causing the tool to traverse the entire surface of the commutator by means of screw-shaft E the said commutator will be turned down true. If a cutting-tool is employed, it may be desirable to afterward apply emery cloth or paper to reduce the fine ridges left by said tool; or a burnishing-tool could be fitted in the tool-post and the necessary smooth finish thus obtained. During the operation the brushes may be tilted back, instead of being removed.

Having now described my invention, what I claim is—

1. A commutator-turning device for dynamo-electric machines, consisting of the bracket having pin a^4 and clamping-screw a^3, slide-bar B, block C, having a tool-post and fitted to said bar, and means for feeding said block along the bars, substantially as described.

2. A commutator-turning device for dynamo-electric machines, consisting of the bracket having pin a^4, clamping-screw a^3 and adjusting-screws a^5, the slide-bar B, and a block and tool-post movable along said bar, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ARTHUR KNOX BONTA.

Witnesses:
CHRIS OTTEN,
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