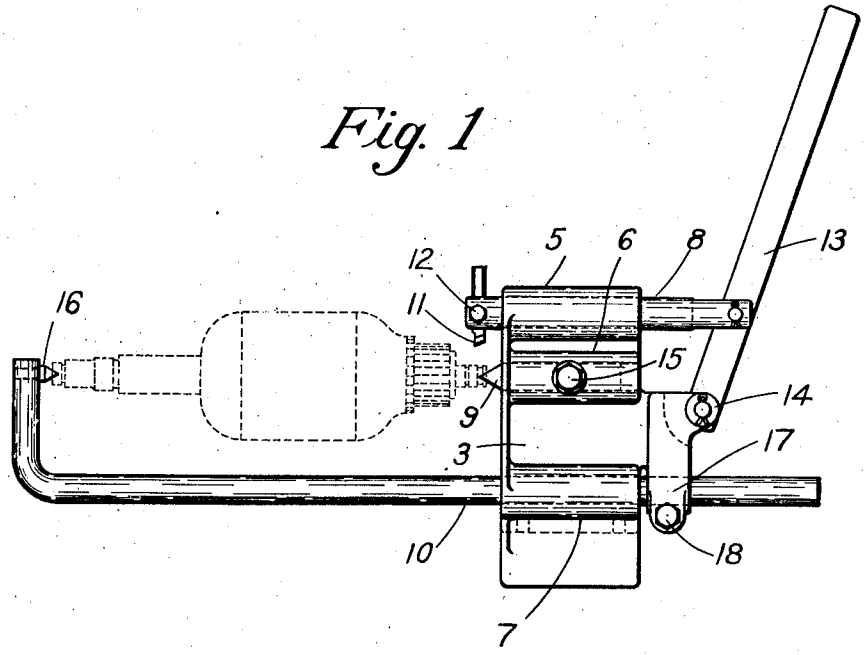
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UNDERCUTTING MACHINE.

APPLICATION FILED OCT. 15, 1919.

1,361,215. Patented Dec. 7, 1920.

Fig. 1



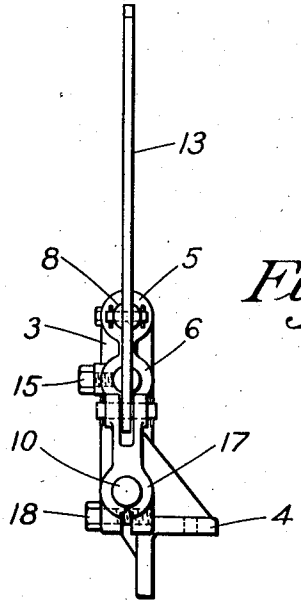


Fig. 2

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UNDERCUTTING-MACHINE.

1,361,215. Specification of Letters Patent. Patented Dec. 7, 1920.

Application filed October 15, 1919. Serial No. 330,940.

To all whom it may concern:

Be it known that I, ANTHONY F. WILLIAMS, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Undercutting-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to machines for undercutting the insulation between the segments of the commutator of a dynamo-electric machine.

The object of the invention is to produce a simple machine, having provision for all necessary adjustment, which will operate upon a commutator supported upon an armature-shaft.

To the foregoing end the invention consists in the machine hereinafter described and illustrated in the accompanying drawings, as it is defined in the annexed claims.

In the accompanying drawings Figure 1 is a side-elevation of an undercutting machine embodying the present invention, and Fig. 2 is an end-view of the same.

The invention is illustrated as embodied in a machine comprising a casting or head 3 which is provided with a flange 4 by which it may be conveniently secured in upright position on the corner of a work-bench. The head is provided with three parallel horizontal bearing-sleeves 5, 6, and 7. The uppermost sleeve 5 receives the sliding tool-carrier 8, the second bearing receives a pointed center 9, while the third bearing receives an arm 10.

The tool-carrier 8 is in the form of a rod, which supports the undercutting tool at its inner end. This tool 11 is suitably formed to cut the mica or other insulation from between the segments of the commutator, and is provided with a vertical shank which is secured in place in the tool-carrier by a set-screw 12, so that the tool may be adjusted up or down to regulate the depth of the cut and compensate for different diameters in the commutators which are to be undercut. The tool-carrier is actuated by means of a hand-lever 13, which is pivoted in the outer end of the carrier and also, at its lower end, between cheeks 14 on the head 3.

The center 9 is secured adjustably and removably in place by means of a set-screw 15.

The arm 10 has an upwardly-bent extremity which carries a pointed center 16, and this center is arranged in horizontal alinement with the center 9. The arm slides in the bearing 7, but when in use it is fixed in position by means of a split sleeve 17, integral with the head 3, which clasps the arm and is clamped against it by means of a screw 18.

The machine is adapted to operate upon a commutator which is mounted upon an armature-shaft. Fig. 1 shows, in dotted lines, a commutator so mounted, and supported by the centers 9 and 16, which engage the center-holes in the ends of the shaft. The center 9 may be adjusted in position according to the extent to which the shaft projects beyond the commutator, while the screw 18 is loosened and the arm 10 shifted longitudinally for the purpose of engaging and releasing the armature-shaft, and also to accommodate the machine to shafts of different lengths. The lever 13 is actuated to operate the undercutting tool, and the work is rotated by hand to secure proper registration of the insulation with the path of movement of the tool.

It will be apparent that the machine just described is susceptible of adjustment to a considerable range of work, while being compact, simple, and inexpensive in construction, and it is, therefore, particularly adapted for use in repair-work or experimental work.

The invention is not limited to the embodiment thereof hereinbefore described and illustrated in the accompanying drawings, but it may be embodied in various other forms within the scope of the following claims.

The invention claimed is:

1. An undercutting machine comprising: a head having parallel bearings; a tool-slide and an arm slidably mounted in said bearings; a center carried by the arm; a center, in alinement therewith, carried by the head;

means for fixing the arm in adjusted position in its bearing; and means for actuating the tool-slide.

2. An undercutting machine comprising: a head having three parallel bearings; a tool-slide movable in one of said bearings; a center removably secured in the next adjacent bearings; an arm slidably mounted in the third bearing; a center carried by the arm in alinement with the first-mentioned center; means for fixing the arm in adjusted position in its bearing; and means for actuating the tool-slide.

ANTHONY F. WILLIAMS.