

R. S. FREEMAN.  
POWER DRIVEN TOOL FOR DRESSING COMMUTATORS.  
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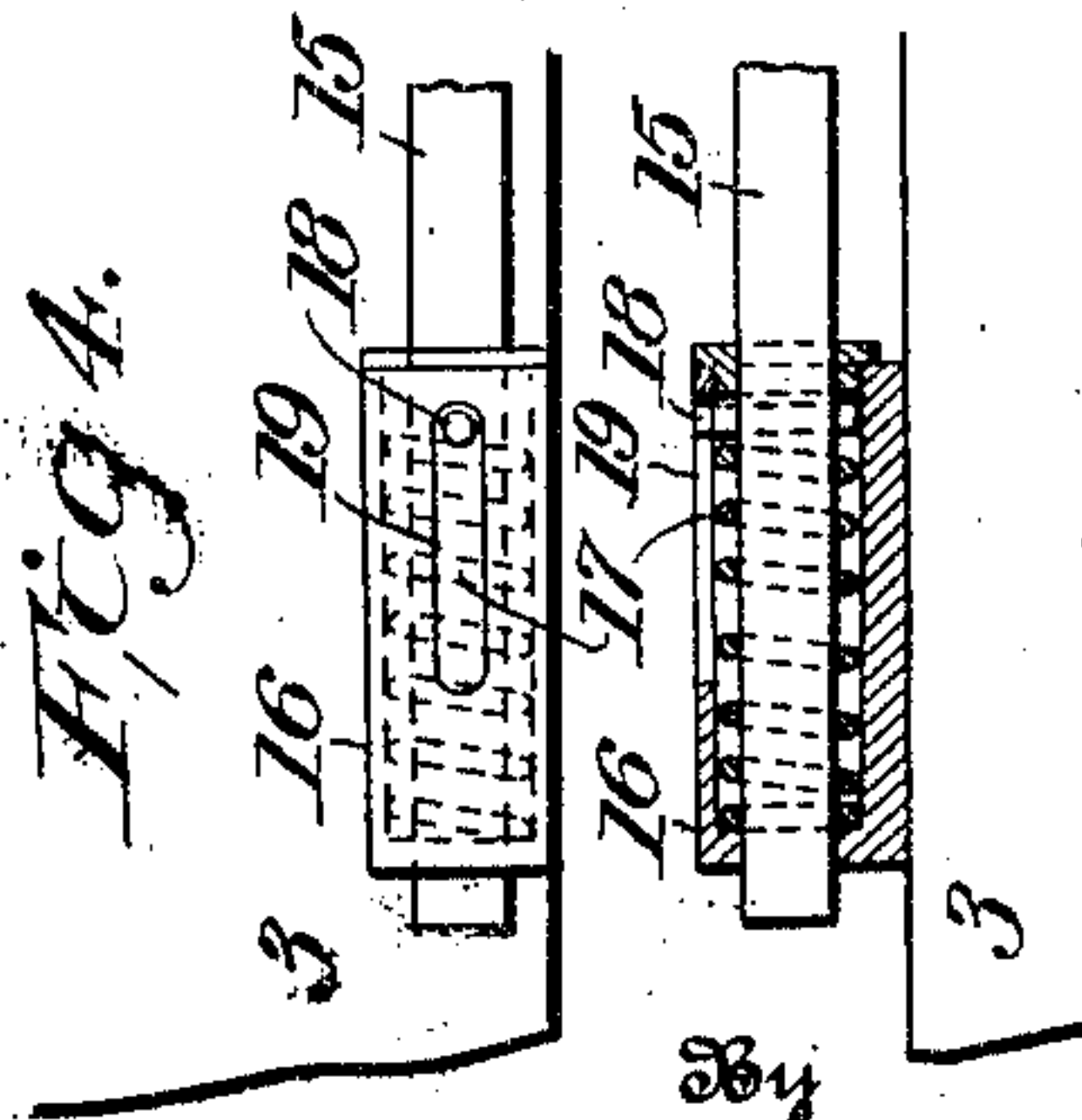
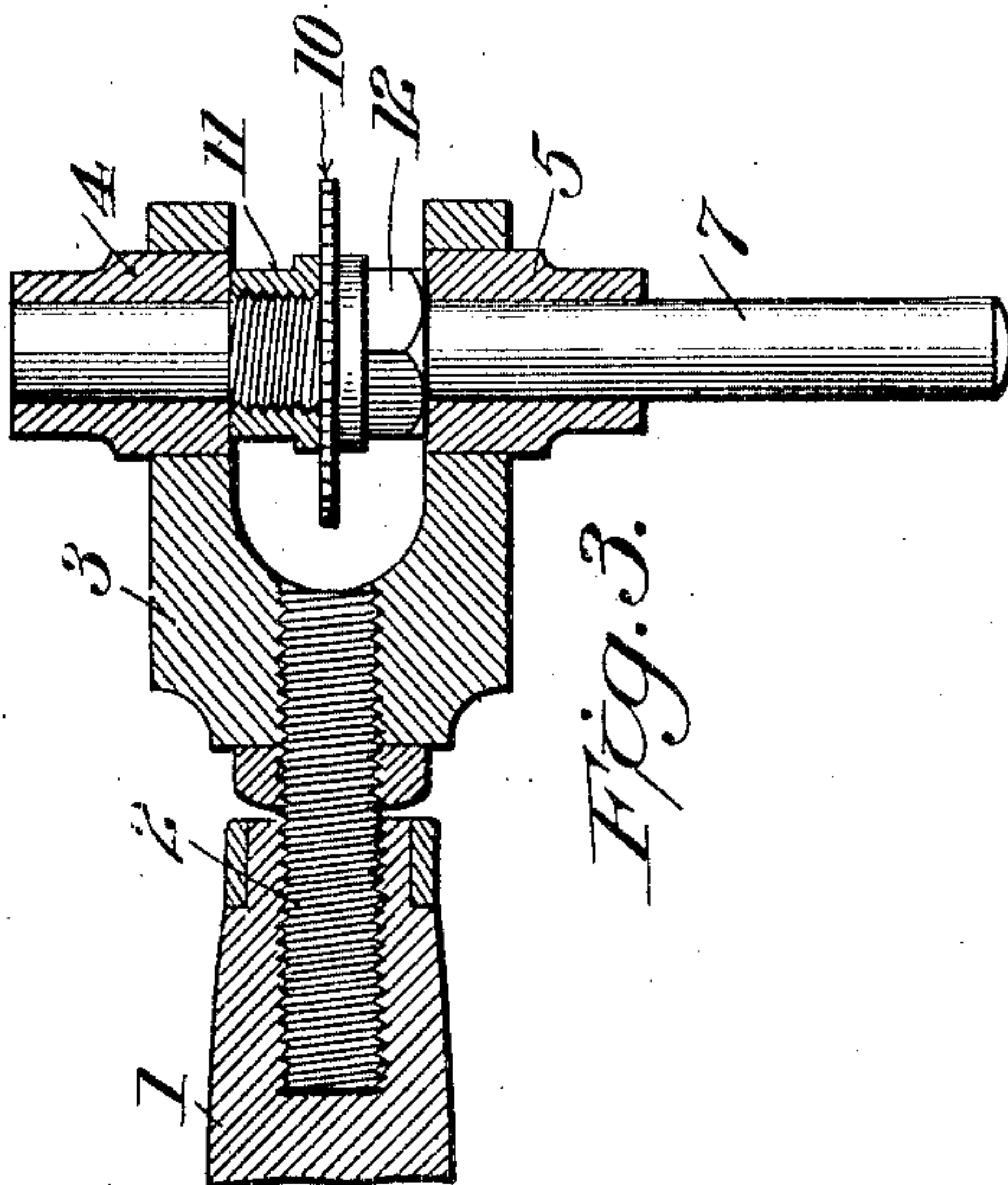
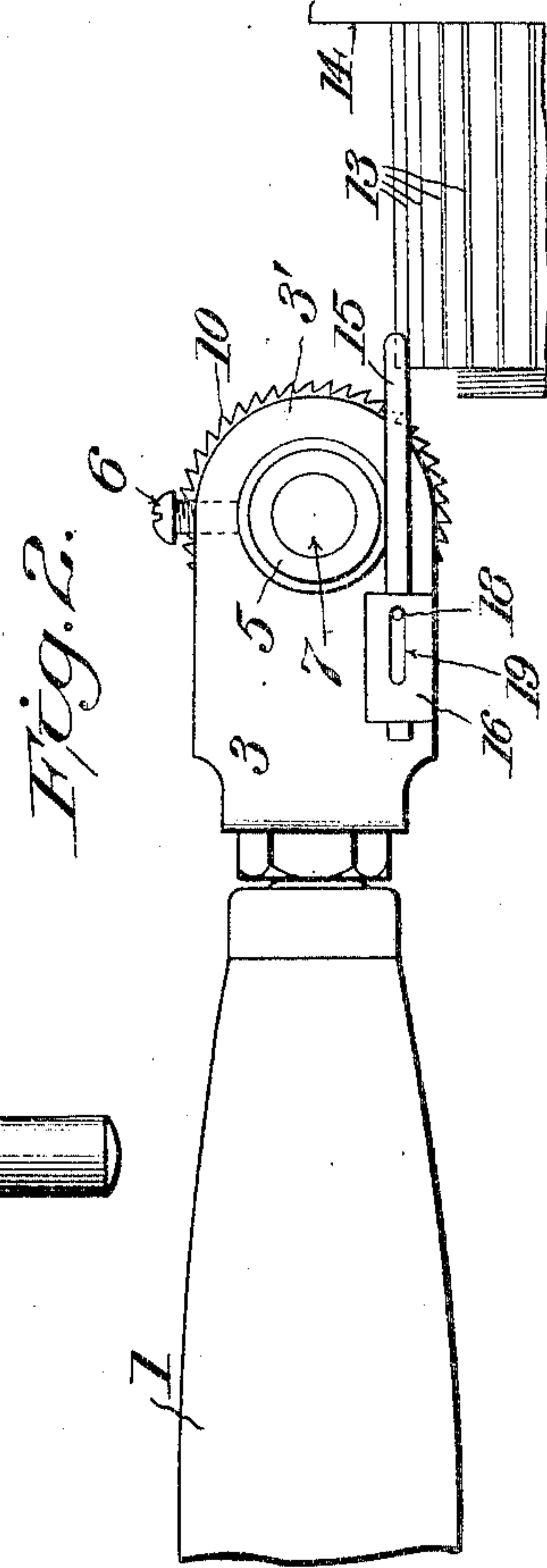
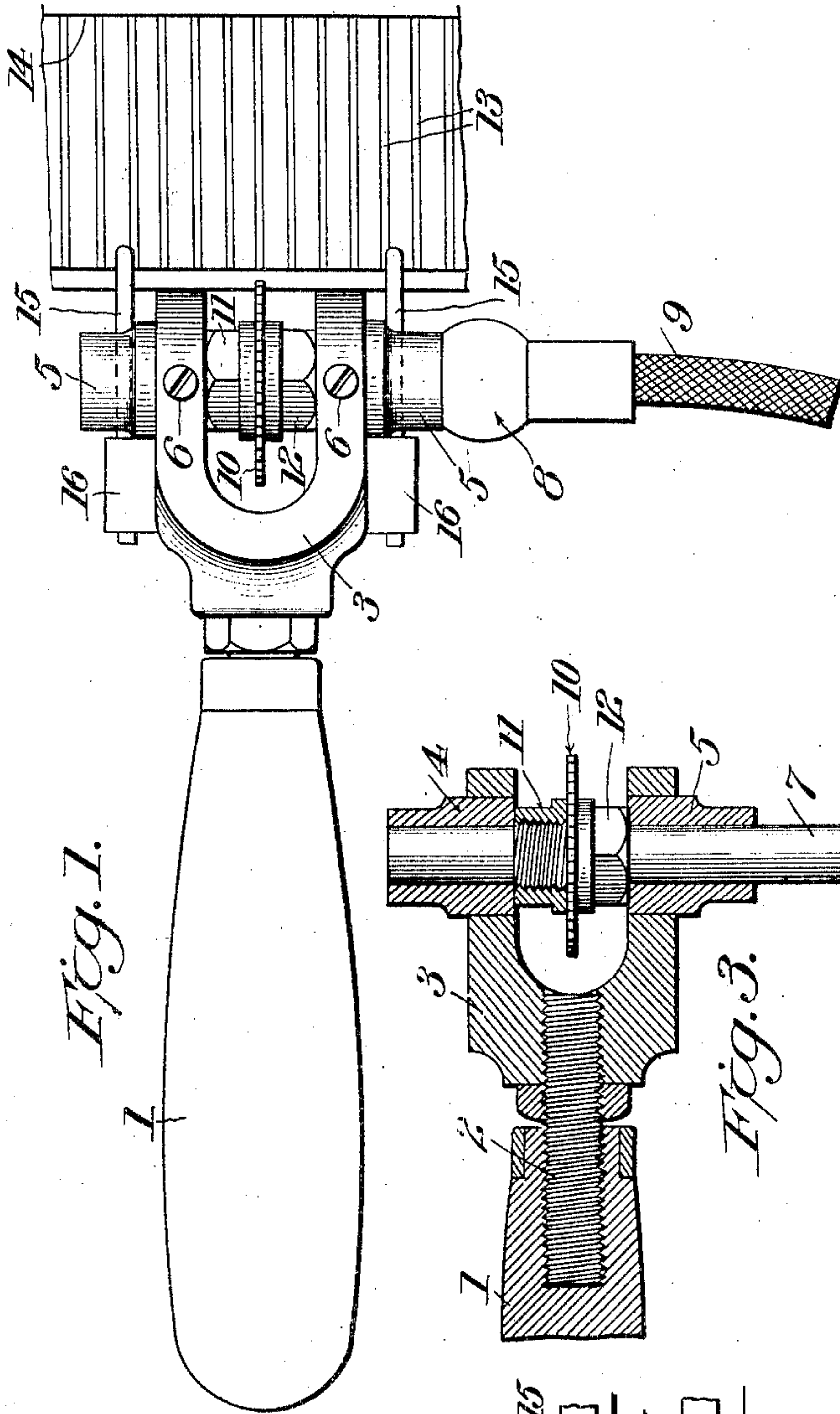


Fig. 5.

Witnesses  
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# UNITED STATES PATENT OFFICE.

ROE S. FREEMAN, OF ATLANTA, GEORGIA.

POWER-DRIVEN TOOL FOR DRESSING COMMUTATORS.

990,722.

Specification of Letters Patent.

Patented Apr. 25, 1911.

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*To all whom it may concern:*

Be it known that I, ROE S. FREEMAN, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Power-Driven Tools for Dressing Commutators, of which the following is a specification.

My invention relates to power driven hand tools, and more particularly to a tool of this character especially designed for dressing the commutators of dynamo electric machines.

As is well known, trouble is constantly experienced with commutators owing to the tendency of the relatively soft copper bars to wear away faster than the mica used as insulation between them. This results in the formation of ridges on the commutator which has the effect of producing disastrous sparking. Heretofore in order to dress commutators worn in this manner, it has been necessary to remove the armature from the machine in order that the commutator may be brought in position to be operated upon by a milling machine or cutter of any well known type.

The primary object of the present invention is to obviate the necessity for removing the armature from its bearings and to this end, the invention seeks to provide a hand tool driven by means of a flexible shaft, and so designed that it may be used to cut the mica from between the commutator bars without removing the armature from the machine.

A further object is to provide a strong, compact and practical power driven hand tool of this character which will effectively perform the work which it is designed to accomplish and which, at the same time, will be extremely cheap and simple in construction.

With the above objects in view, the invention consists in the construction and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawing, in which,

Figure 1 is a plan view of my complete device showing the same in position on a commutator; Fig. 2. is a side elevation of the same; Fig. 3 is a central horizontal section, parts being in elevation; and, Figs. 4 and 5 are a detail elevation and section respectively, showing the method of mounting the supporting arms hereinafter described.

Referring to the drawings in detail, my improved tool comprises a handle 1 which may be formed of wood or other suitable material. To this handle is secured, as by means of a screw shank 2 a forked yoke 3. Secured in openings in this yoke are a pair of alined bearings 4, 5, held in position in the yoke as by means of set screws 6. Journalled in these bearings is a shaft 7 over the end of which is adapted to fit a socket 8 attached to a flexible shaft 9.

Mounted on the shaft 7 between the forks of the yoke is a milling cutter 10 in the nature of a circular saw and this cutter is held in place on the shaft by means of clamping nuts 11, 12 screw threaded on the shaft. In this connection, it will be observed that the diameter of these nuts is less than that of the bearings 4, 5, whereby, when one of said bearings is removed from its fork, the shaft, together with the clamping nut on that side, may be shifted laterally through the opening in the fork left by the bearing so that the nut on the other side may be unscrewed and thus the shaft and first mentioned nut may be withdrawn entirely from the forks thus permitting the cutter to be removed.

Referring particularly to Fig. 2, it will be observed that the depth or width of the yoke 3 is almost equal to the diameter of the cutter. It will also be observed that the ends of the forks are substantially semicircular in shape as indicated at 3'. It will therefore be observed that owing to this shape and proportion of the parts the teeth of the cutter project slightly beyond the edge of the forks and thus when the tool is applied to a commutator such as 13, the bottom edge of the forks rest upon such commutator and serve as a support to guide the cutter along the work. In order however to even more effectively steady the cutter and to support it when operating at the end of the commutator, as shown in the drawings, I provide supporting arms 15, one of which is secured to the outside of each fork. Such arms are preferably slidably mounted upon the yoke as by means of a barrel or casing 16 through which the arm is adapted to slide and in which is disposed a coil spring 17 surrounding the arm. A pin 18 passing through the arm engages such spring and also projects through a slot 19 formed in the barrel. This construction, it will be seen, permits the arms to yield when they are brought in contact with the end wall 14 of the commutator



so as to allow the cutter to travel as far as the end of the yoke will permit.

It will thus be seen that I have provided a small, compact and at the same time substantial power driven hand tool which can be readily applied to any commutator without removing it from its normal position and it is thought that the many advantages of my invention will be readily appreciated by those familiar with such matters.

What I claim is:—

1. A tool for dressing commutators comprising a handle, a forked yoke carried thereby, a shaft extending through and journaled in both forks of said yoke, a cutter mounted on said shaft between the forks of the yoke, and a supporting arm secured to each side of said yoke parallel therewith and projecting beyond the end thereof.

2. A tool for dressing commutators comprising a handle, a forked yoke carried thereby, a shaft journaled in said yoke, a cutter mounted on said shaft between the

forks of the yoke, a supporting arm slidably mounted on each side of said yoke, and resilient means for normally maintaining said arm projected beyond the end of said yoke.

3. A tool of the class described, comprising a forked yoke, a pair of aligned bearings carried by the forks of said yoke, a shaft journaled in said bearings, a milling cutter mounted on said shaft between the forks of said yoke, and clamping nuts fitted on said shaft and serving to hold said cutter in position, one of said bearings being removable, and of greater diameter than said clamping nuts, whereby the latter may be slipped through the opening in the fork left by the removal of the former.

In testimony whereof I affix my signature in presence of two witnesses.

ROE S. FREEMAN.

Witnesses:

L. F. MILLER,

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