(No Model.)

M. RAUGHTIGAN.

WIRE SHEARS.

No. 451,601. Patented May 5, 1891.

Fig. 1.

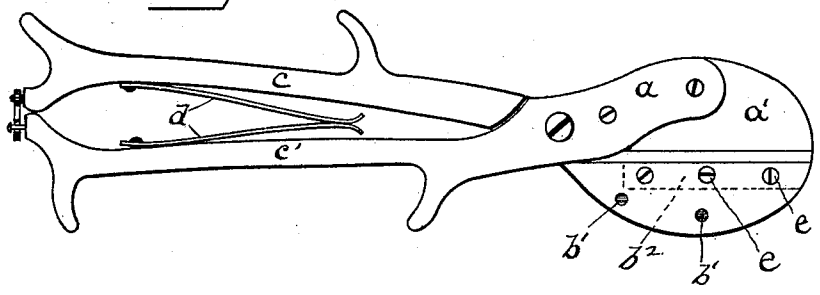


Fig. 2.

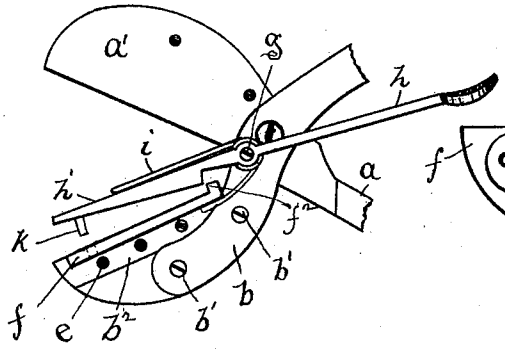


Fig. 3.

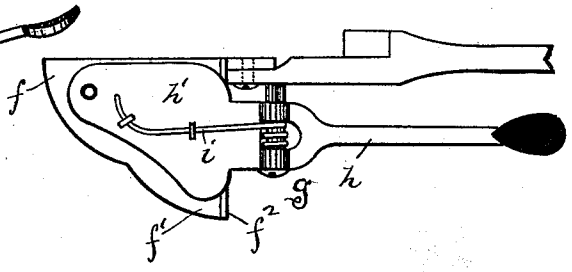
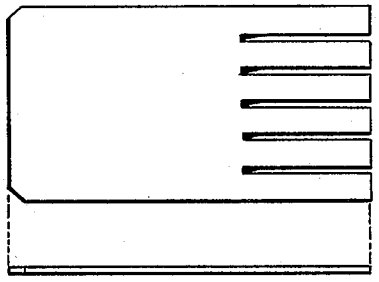


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

MICHAEL RAUGHTIGAN, OF NORWICH, CONNECTICUT, ASSIGNOR OF ONE-HALF TO FRANK C. TURNER, OF SAME PLACE.

WIRE-SHEARS.

SPECIFICATION forming part of Letters Patent No. 451,601, dated May 5, 1891.

Application filed November 20, 1890. Serial No. 372,091. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL RAUGHTIGAN, a citizen of the United States, residing at Norwich, in the county of New London and State of Connecticut, have made certain new and useful Improvements in Brush-Cutters for Electric Dynamos, which improvements are fully set forth and described in the following specification, reference being had to the accompanying sheet of drawings.

This invention has for its object the production of a simple, strong, and serviceable tool, by means of which so-called "brushes" used in connection with dynamos may be evenly and squarely trimmed at the brush end. Various devices have been used to accomplish this purpose, in some cases consisting of simple hand-shears and in others of cumbersome bench-machines. It is especially desirable that said brushes be so trimmed that the end or portion which is in wearing contact with the commutator of the dynamo shall be exactly parallel with the axial center of said commutator-shaft.

The tool which I have provided is illustrated in the annexed drawings, Figure 1 being a rear side view of the same, and Fig. 2 a front side view of the cutting and clamping devices, the handles being broken off. Fig. 3 is a top or plan view of the jaw *b* and the attached spring-clamp, which holds the brush firmly in place during the act of trimming. Fig. 4 shows top and edge views of a sheet-copper brush of the form which my device is intended to trim.

In the drawings, the letters *a* and *b* represent the two principal companion sections of my brush-trimmer, said sections being pivotally joined, as in ordinary hand-shears, and having suitable handles *c c'*, that are forced apart by springs *d*, attached to said handles, as plainly shown in Fig. 1 of the drawings. The particular form of these handles and of the springs *d* forms no part of my present invention.

Secured to the short arm of section *a* is a steel blade *a'*, whose cutting-edge is in approximate alignment with the longitudinal center of the complete tool. The companion section *b* has secured to its short arm by screws *b'* a similar cutting-blade b^2, whose straight edge may coact with the cutting-edge of blade *a'* to produce a shearing cut. The blade b^2 has secured to it by screws *e* an angle-plate *f*, that projects laterally a considerable distance, as at plate *f'*, to support the brush during the act of trimming, and is provided with a rib f^2, that forms a right angle with the cutting-edge of the tool. To hold the brush securely in position during the operation of trimming, I have provided a lever that is pivoted to the side of section *b* by a screw *g*. One arm *h* of said lever extends rearward parallel with arm *c*, to provide an operating-handle, by means of which said lever may be rocked on its fulcrum. The opposite or front end of said lever is formed as a plate *h'*, that serves as a clamping-jaw to press the brush firmly down on plate *f'* of the angle-arm *f*, said plate *h'* being held normally in its closed position—*i. e.*, resting against plate *f'*—by a spiral spring *i*, coiled about the pivot-screw *g*. One end of said spring bears on plate *h'*, while the opposite end extends forward under plate *f'*.

When about to use my described tool, the cutting-jaws are opened and the lever *h* depressed until the brush can be placed in position on plate *f* with its end projecting slightly beyond the cutting-edges of plate b^2. Lever-arm *h* is then released and the spring *i* immediately forces plate *h'* downward upon said brush, when the cutting-jaws may be brought together and the end of the brush evenly sheared off. To prevent the brush from slipping between plates *f* and *h'* during the operation of cutting, I provide a pin *k*, that is fixed in plate *h'* in such position that the brush may enter snugly between rib f^2 and said pin, the latter projecting through a coincident hole in plate *f* when the parts are in their closed positions.

My brush-trimmer may be operated by one hand, the thumb being used to move the lever-arm *h*.

Having described my invention, I claim—

1. A brush-trimmer of the class referred to, consisting of shears having a brush-supporting plate secured to one jaw and having a rib f^2, as set forth, in combination with a spring-actuated brush-clamping lever, one of whose ends coacts with said plate, the oppo-

site end extending along the handles of the shears, all being substantially as specified.

2. In combination with brush-trimming shears having a brush-supporting plate secured to one jaw and having a rib f^2 at one side, as set forth, a clamping-lever that may coact with said plate to hold the brush, and a pin, as k, fixed in said plate to prevent accidental displacement of the brush during the act of trimming, all as specified.

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