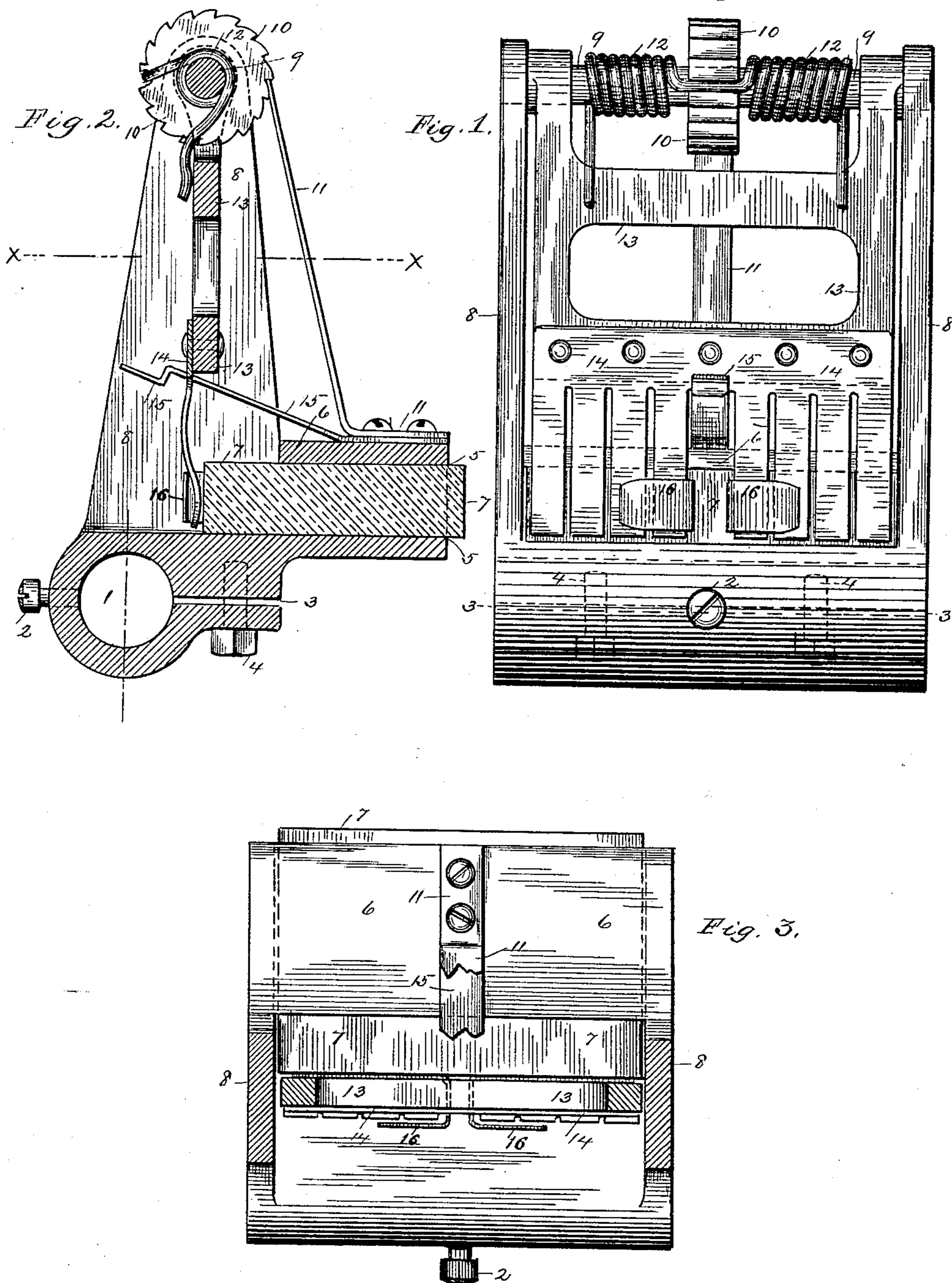


(No Model.)

W. LE R. EMMET.
BRUSH HOLDER FOR DYNAMOS.

No. 451,177.

Patented Apr. 28, 1891.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM LE ROY EMMET, OF EAST ROCKAWAY, NEW YORK.

BRUSH-HOLDER FOR DYNAMOS.

SPECIFICATION forming part of Letters Patent No. 451,177, dated April 28, 1891.

Application filed September 18, 1890. Serial No. 365,402. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LE ROY EMMET, a citizen of the United States, residing at East Rockaway, Queens county, and State of New York, have invented a certain new and useful Improved Brush-Holder for Dynamos, of which the following is a specification.

In the accompanying drawings, which make part of this specification, Figure 1 is a rear elevation; Fig. 2, a section on a line drawn at the extreme right of the spring 12 in Fig. 1, and Fig. 3 a plan view on line *xx* of Fig. 2.

My invention relates to devices for pressing the carbon brush against the commutator of a dynamo and making proper electrical connection to the commutator with said carbon. One of the advantages of this particular construction is that it provides for a conveniently-adjustable pressure upon the rear end of the brush. The pressure is also transmitted to the carbon through flexible teeth, which readily vibrate without moving the frame and make contact along the whole face of the brush by reason of their flexibility. This construction reduces the pressure necessary to be employed. The brush may also be removed from the face of the commutator without disturbing the brush-holder. Likewise the brush may be entirely removed from the holder without changing the position of the latter. By the particular arrangement of the tension devices inside the brackets of the frame of the brush-holder the largest possible amount of contact-surface is secured between brush and commutator with a given size of frame. Finally the heel of the brush is protected from abrasion, while a good electrical connection is obtained between the pressure device and the brush.

In building my brush-holder I use a frame of the general shape seen in the several views. At the rear end and base of said frame is the stud-hole 1 for the horizontal stud, parallel to the line of the commutator-shaft. Said stud is secured by set-screw 2, which enters usual keyway in stud. Communicating with said stud-hole 1 is a spring-slot 3, sprung by bolts 4 4. At the front of said frame is the chute 5 with roof 6, which acts as an open-ended box for the carbon brush 7, which is

preferably electroplated. 8 8 are two flush side brackets of the frame with spindle 9 fixed between their upper ends. Upon said spindle turns a loose ratchet-wheel 10, dogged by spring-pawl 11, screwed at its lower end to roof 6 of chute 5. Around said spindle is coiled a spring 12, one loop of which is hooked upon the ratchet-wheel 10. The ends of said spring 12 bear upon a pressure-lever 13, pivoted upon the spindle. Said pressure-lever is here shown as a frame consisting of two side bars and two transverse bars; but this construction may obviously be greatly varied. At the bottom of said pressure-lever 13 is fastened a metallic spring-comb 14. A catch 15 holds the pressure-lever 13 when the brush 7 is withdrawn. Said catch is also secured to the roof 6 of the chute. Upon the rear of said carbon brush are soldered duplicate metal heel-plates 16 16. Each of these takes a backward turn, and then is laid back against the teeth of the comb.

In operation the brush-holder is secured upon its stud and clamped opposite to any desired portion of the commutator's surface. The brush is put in the box and the metal heel-plates hooked around the teeth of the comb and the tension-wheel turned until the proper pressure is obtained. The teeth of the comb will then bear against the carbon brush, making an intimate contact therewith at a comparatively-light pressure, thus reducing wear and tear by friction on meeting surfaces. The teeth also adjust themselves to the irregularities on the rear face of the carbon. Should it be desired to withdraw the brush from the commutator, this can be done without moving the frame or altering the tension, as the catch will hold the pressure-lever in position. This feature is advantageous, as it enables the brush to be returned to its exact former position, where it will neatly fit in the place it has worn. As the brush can be slid along its stud to any point, the face of the commutator may be worn evenly along its entire length. Since the tension-wheel is put between the side brackets their faces may be flush and the entire width of the brush-holder less the thickness of the side brackets is effective for contact on the commutator. By turning the ratchet-wheel

back the entire tension can be taken off the spring and the brush removed from the holder.

The catch may be applied to other pressure-levers than the one here shown. The brush
5 employed may be any of the common types of brushes used upon dynamos.

I claim—

1. In an organized brush-holder, the combination of a frame, a pressure-lever pivoted
10 to said frame, means for imparting pressure to said lever, a brush-socket, a catch to lock said lever back, and a brush normally loosely attached to said lever and unconnected with
said brush-socket, substantially as set forth.

15 2. In an organized brush-holder, the combination of a frame, a spindle supported between the side brackets of said frame, a loose ratchet-wheel mounted upon said spindle, a pawl engaging said ratchet-wheel, a spring
20 deriving its tension from its connection with said wheel, a pressure-lever pivoted upon said spindle and acted upon by said spring, a brush-socket, and a brush unconnected with said socket and normally loosely connected
25 with said lever, substantially as set forth.

3. In an organized brush-holder, the combination of a frame with flush side brackets, a spindle supported between said side brackets, a loose ratchet-wheel upon said spindle,
30 a pawl engaging said wheel, a spring secured

to said ratchet-wheel and bearing upon a pressure-lever pivoted to said spindle, said pressure-lever, a brush-socket, and a brush unconnected with said socket and normally
loosely connected with said lever, substantially as set forth. 35

4. In an organized brush-holder, the combination of a frame, a pressure-lever pivoted to said frame, means for imparting pressure to said lever, a spring-comb secured to said
40 lever, a carbon brush, means for loosely attaching said carbon brush to said spring-comb, and a catch for holding back said brush and said comb from the commutator, substantially as set forth. 45

5. In an organized brush-holder, the combination of a pressure device for thrusting the carbon brush normally against the commutator, said carbon brush, guides for said
carbon brush, devices for loosely attaching
50 said pressure devices to said brush, and a catch to hold back said pressure devices and brush from the commutator, substantially as set forth.

In testimony whereof I have hereunto set
my hand. 55

WILLIAM LE ROY EMMET.

Witnesses:

JAMES A. MCKEAN,

WM. L. PIERCE.