(No Model.) 2 Sheets—Sheet 1.

C. O. MAILLOUX.

CARBON BRUSH HOLDER.

No. 467,542. Patented Jan. 26, 1892.

Fig. 2.

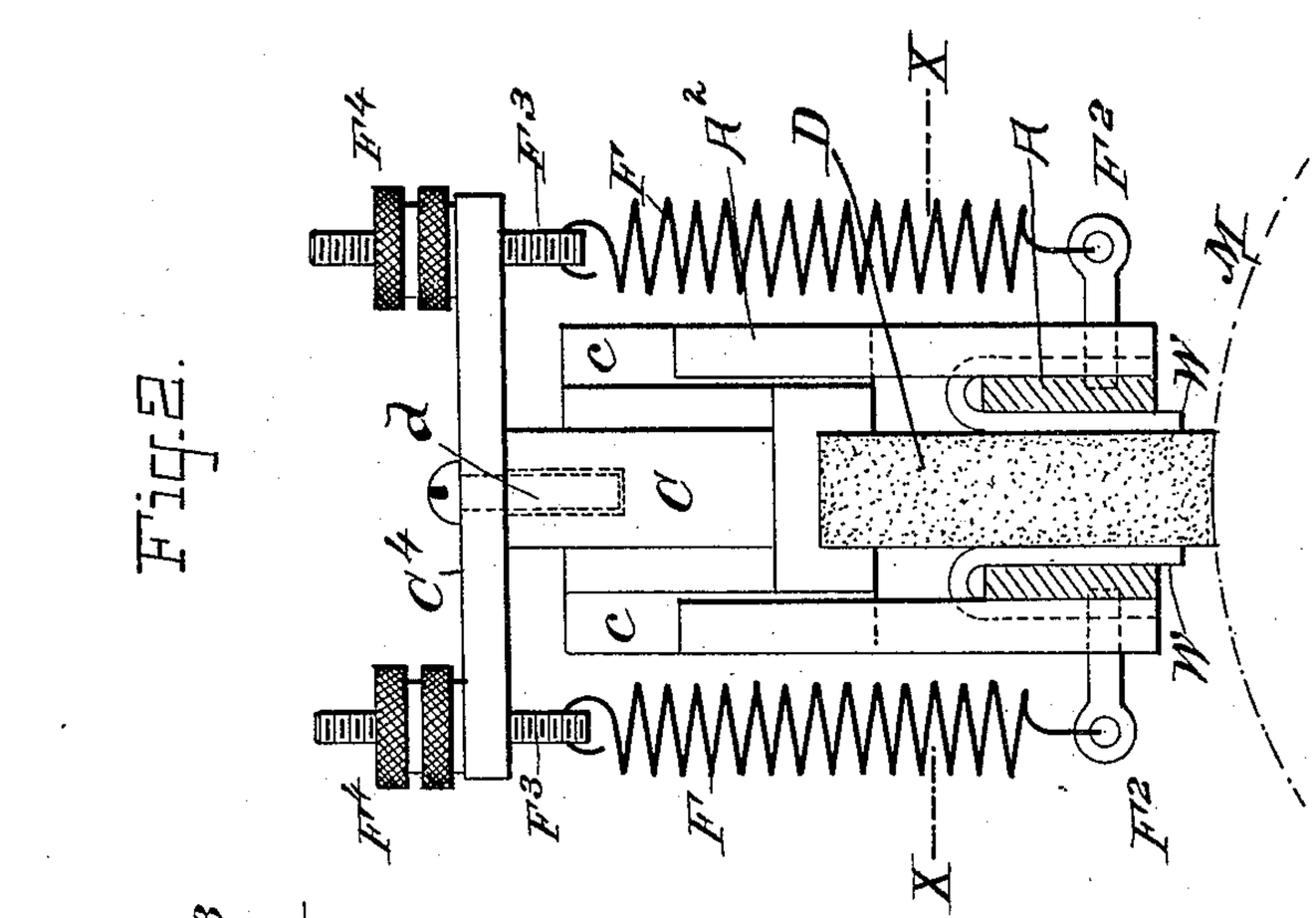
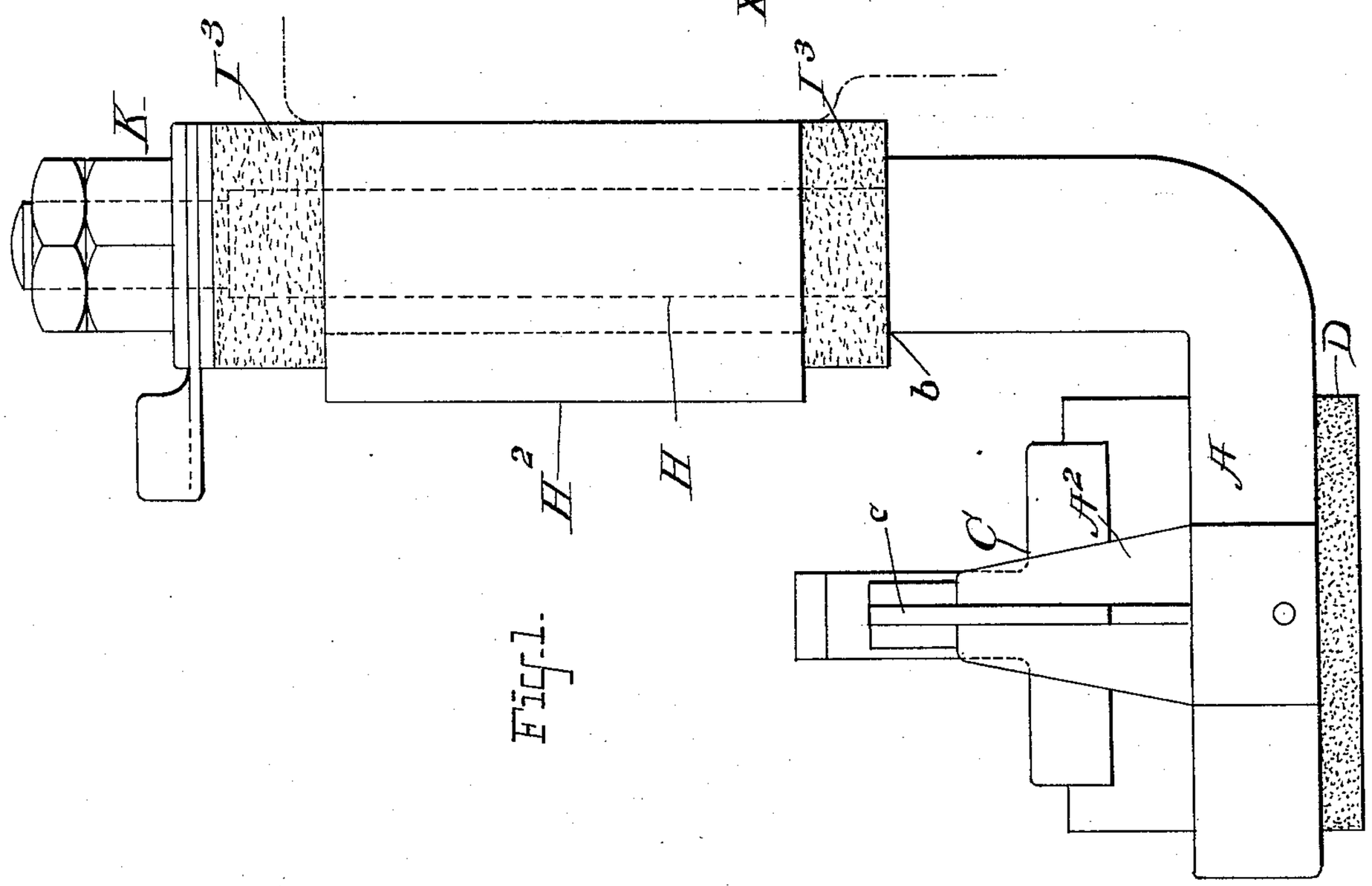


Fig. 1.



ATTEST:

J. A. Mundy

Wm. H. Capes.

INVENTOR:

Cyprien O. Mailloux

By H. C. Townsend

Attorney

(No Model.) 2 Sheets—Sheet 2.

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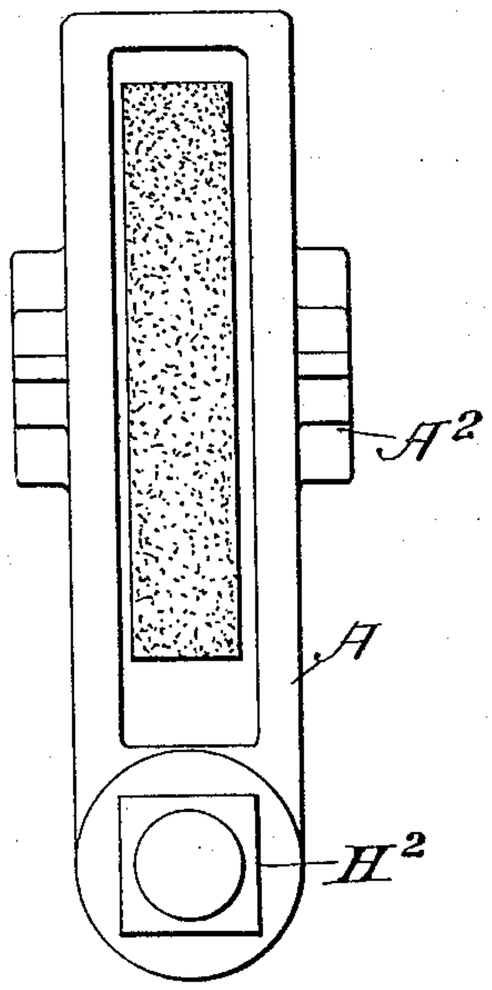
Fig. 3.



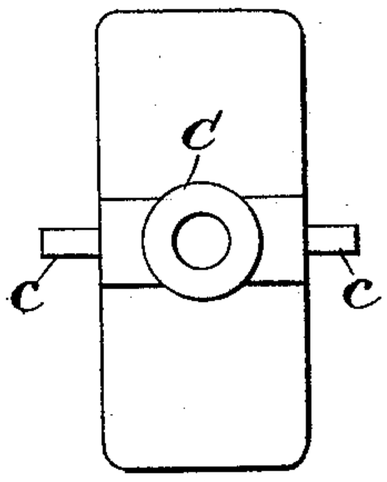


Fig. 5.

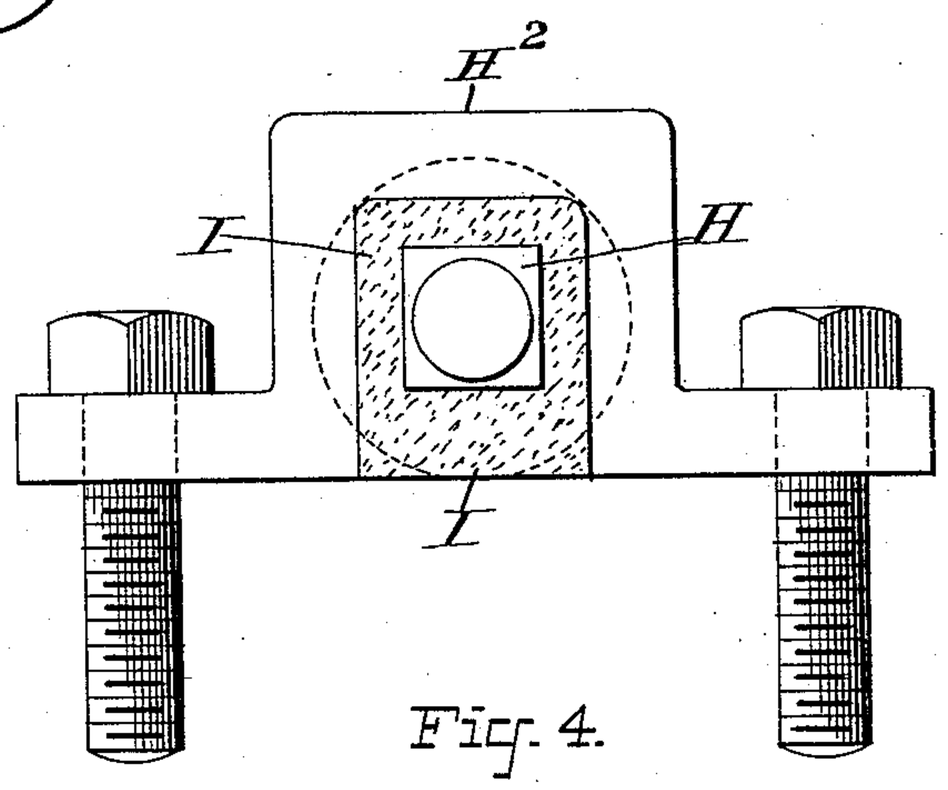


Fig. 4.

ATTEST:
A. Thurdy
Wm. A. Capes

INVENTOR:
Cyprien O. Mailloux
By H. C. Townsend
Attorney

UNITED STATES PATENT OFFICE.

CYPRIEN O. MAILLOUX, OF NEW YORK, N. Y.

CARBON-BRUSH HOLDER.

SPECIFICATION forming part of Letters Patent No. 467,542, dated January 26, 1892.

Application filed March 18, 1891. Serial No. 385,491. (No model.)

To all whom it may concern:

Be it known that I, CYPRIEN O. MAILLOUX, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented a certain new and useful Carbon-Brush Holder, of which the following is a specification.

My invention relates to the construction of brush-holders for dynamo-electric machines or motors, and is designed more particularly to provide an efficient and simple device adapted for use in those cases where the brush consists of a block or piece made of carbon.

My invention consists in the novel construction of devices and the combinations of parts hereinafter more particularly described, and then specified in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a device constructed in accordance with my invention, parts being detached. Fig. 2 is an edge view of the working parts of the apparatus. Fig. 3 is a cross-section on the line X X, Fig. 2. Fig. 4 is a cross-section through the rod which supports the body of the brush-holder. Fig. 5 is a plan of the guided socket or follower-block which receives and engages with the carbon brush.

A indicates the body of the brush-holder, which is provided with the uprights A^2, between which moves the vertically-guided block C, formed at its lower end with a socket, as indicated, to receive the carbon brush or block D. The block C, as shown in plan view, Fig. 5, is provided with the tongues *c*, which are adapted to enter the grooves or slots in the uprights A^2, so as to be guided thereby. The lower end of the body of the holder A may serve as a guide for the carbon block D at or near the lower end thereof where it engages with the commutator cylinder or ring of the machine and may at such point be provided with the springs W, as indicated, which bear against the sides of the brush D and make good electrical connection therewith.

The block C is provided with a cross-head C^4, as indicated more clearly in Fig. 2, to which are attached the upper ends of springs F, the lower ends of the latter being connected to pins F^2, projecting from the body A of the holder. The upper ends of the springs are connected to the screw pins or rods F^3, which pass through the cross-heads C^4 and are provided on the top of the latter with nuts F^4, by means of which the springs may be put under tension and the cross-head and block C forced down to bring the carbon brush against the surface of the commutator-cylinder or collecting-ring, the surface of which is indicated in dotted lines at M. It will be observed that in this construction the same guides which guide the follower or block serve to prevent the derangement of the springs and parts connected therewith, inasmuch as the cross-head, forming arms or extensions to which the springs are attached, is itself directly attached to the guided block. Hence derangement of the parts during adjustment of the spring or from vibrations when the device is used upon a street-railway motor is prevented.

I am aware that it has been proposed to force the contact-block which engages with the brush downward by means of springs attached to a cross-head which bears loosely through a screw upon the top of the block; but in such case, as will be obvious, the cross-head is not guided and the parts are liable to derangement. In my improved construction the cross-head is attached directly to the block.

The body of the brush-holder A may be formed as an arm extending at right angles from a vertical rod H, which is preferably square in cross-section and is held or supported in a bracket or support H^2, fastened to any suitable base.

I indicates a bushing of insulating material between the rod and the socket or support H^2 therefor.

I^3 are insulating-washers, one between a shoulder *b* at the lower end of the rod and the bracket H^2 and the other between the nut K, that engages the screw-thread at the upper end of said rod and the upper side of the bracket. The nut K serves to hold the rod in its support and may also serve to bind the end of a conductor, as indicated, for making electrical connection with the rod H and through the same with the brush of the commutator.

Other means for supporting the body of the

brush-holder might be used without departing from my invention.

The screw or pin *d* is loose in the block C, thus permitting the cross-head C^4 to be lifted up, at the same time distending the springs F F. This is done whenever the brush D is to be examined or changed. The cross-head C^4 after being lifted away is moved to one side, thus permitting the guided block C and the carbon brush D to be removed. To replace the brush, the operation is, it will be understood, exactly reversed. It will be observed that as the cross-arms rest directly upon the follower and engage with the same by means of the pin which enters an opening in the follower the tilting of the cross-arm through any unequal action of the springs upon the opposite end of it will be avoided.

What I claim as my invention is—

1. The combination, substantially as described, in a brush-holding device, of a holder-body, a conducting block or follower guided on said body and having cross-arms or extensions resting directly upon and engaged with said follower in the manner described, so as to prevent tilting, adjustable springs attached at one end to said arms or extensions and at the lower end to the fixed body of the holder, and a brush or contact against which said block is held or forced by the pressure of said spring.

2. The combination, substantially as described, of the brush-holder body A, having the slotted uprights A^2, the block C, having tongues which enter said slots and provided with a cross-head C^4, springs F, connected to said cross-head, nuts F^4, and screw-threaded rods F^3, as and for the purpose described.

3. In a brush-holder for a carbon brush, the combination, substantially as described, of the holder-body A, having springs at or near its lower end which engage with the side of the carbon brush, a block C, having a socket at its lower end to hold the brush and provided with lateral projections which are guided on upward extensions of the holder-body, and lateral arms or projections from said block C, connected with springs F, attached to said projection at one end and to a fixed support at their other end.

Signed at New York, in the county of New York and State of New York, this 24th day of February, A. D. 1891.

CYPRIEN O. MAILLOUX.

Witnesses:
WM. H. CAPEL,
T. F. CONREY.