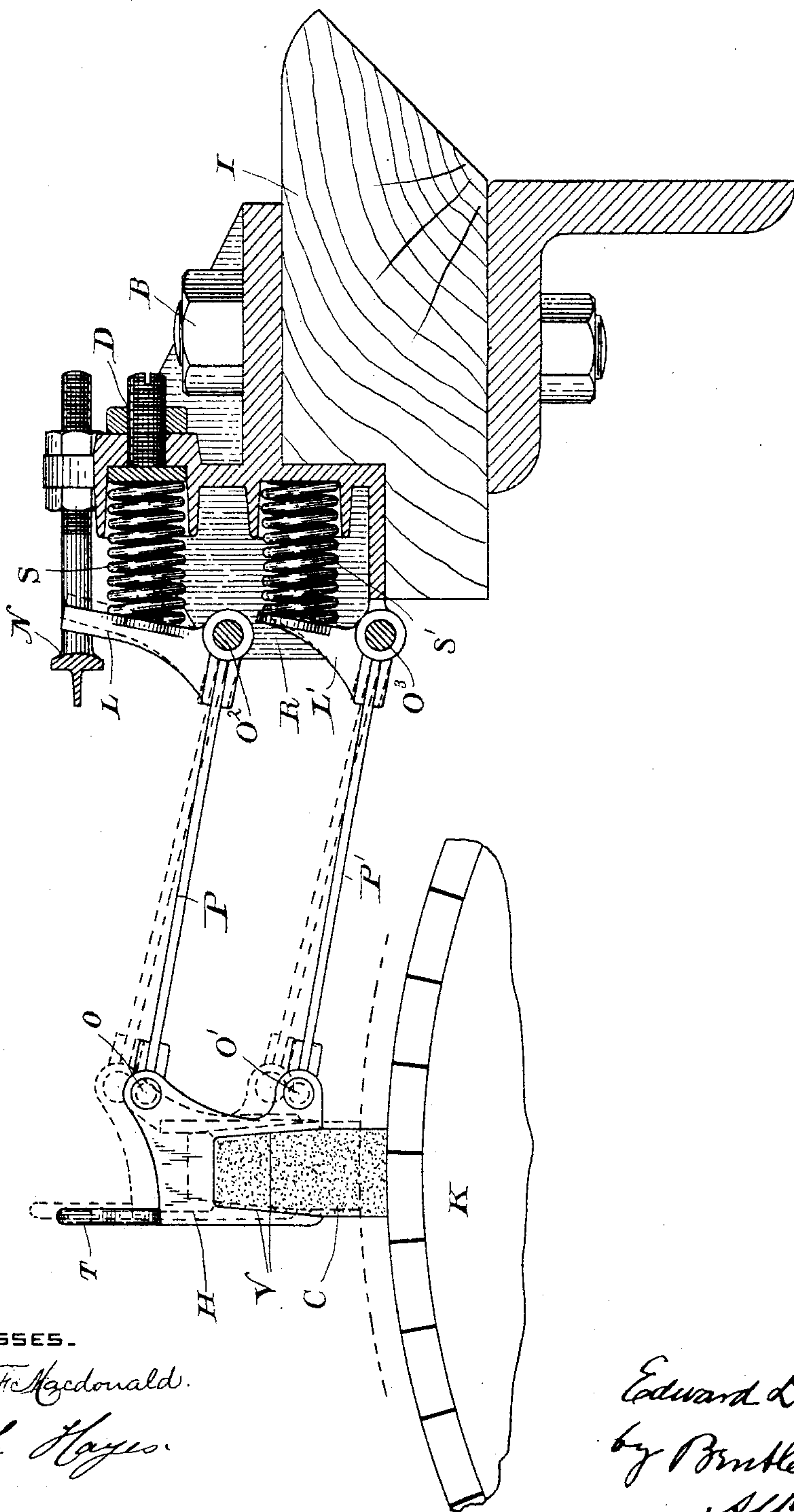


(No Model.)

E. D. PRIEST.  
BRUSH HOLDER.

No. 538,281.

Patented Apr. 30, 1895.



WITNESSES.

*Alec F. McDonald.*

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INVENTOR

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# UNITED STATES PATENT OFFICE.

EDWARD D. PRIEST, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE  
THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

## BRUSH-HOLDER.

SPECIFICATION forming part of Letters Patent No. 538,281, dated April 30, 1895.

Application filed August 25, 1892. Serial No. 444,063. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD D. PRIEST, a citizen of the United States, residing at Lynn, county of Essex, and State of Massachusetts, have invented a certain new and useful Improvement in Brush-Holders, of which the following is a specification.

My invention relates to dynamo electric machines and motors, and it consists in certain improvements in the brush holders, as hereinafter set forth and particularly pointed out in the claims.

The holder is especially adapted to brushes made of carbon, or other material suitable to be pressed radially against the commutator.

The object of the invention is, to maintain a more perfect electrical contact between the carbon brush and its carrier, whereby a heavy current can be carried off without injuriously heating the parts; to hold the brush in better position to prevent chattering; to render the holder easy to manipulate, and to make it compact.

The drawing is a side view, partly in section.

The brush C is composed, preferably, of carbon, plated with copper, as usual. The upper portion is wedge-shaped to fit tightly into the wedge-shaped socket in the socket piece H, which is provided on one side with upper and lower ears O, O', to which are hinged the ends of parallel flat spring arms P, P', respectively. The other ends of the arms are pivotally attached to the stationary part R, preferably by being riveted to one of the arms of the elbow levers L, L' fulcrumed on the pins O<sup>2</sup>, O<sup>3</sup>. The spring arms are of the same length, so that the socket piece H is always parallel with the part R.

Bearing against the other arms of the levers L, L' are springs S, S', which are seated in suitable pockets in the part R. The tension of these springs may be adjustable, as by means of a follower, screw D, and lock nut. An adjustable stop N prevents the socket piece H from coming into contact with the commutator K, when the brush is removed. The part R is secured by bolts B to an insulating sup-

port I. The socket piece has a grasping part or handle T, by which the brush may be conveniently lifted off the commutator.

The spring arms P, P' are preferably made of some highly elastic and good conducting material, such as phosphor-bronze. Their cross section is such as to enable them to carry the heaviest currents taken up from or delivered to the commutator without injuriously heating them or affecting their elastic qualities. They may, however, be made of steel or other elastic inferior conductors, the current being mainly or entirely carried by a flexible cable.

By making the brush socket wedge-shaped and the carbon to correspond the brush has a constant tendency to wedge itself into a firm position in the socket piece and make a good contact therewith. Moreover, it is held rigidly, and moves bodily with the socket piece, thereby obviating all tendency to chatter, even upon a commutator whose surface has become warm.

It is obvious that in some cases it may be found preferable to rely wholly upon the springs S, S', and to make the arms P, P' stiffer and heavier; but ordinarily, the springs S, S' are auxiliary to the action of the arms P, P'.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the stationary part of a brush holder, of a socket piece for the brush, and parallel flat spring arms pivotally connecting the socket piece with the stationary part, substantially as described.

2. In a brush holder, a socket piece for the brush having a tapering socket, and a brush having a tapering portion tightly fitting said socket, substantially as set forth.

3. The combination with a socket piece having upper and lower ears, of a stationary part, and flat spring arms pivotally connected with said ears and with said stationary part, substantially as set forth.

4. In a brush holder, the combination with a stationary part, of two elbow levers fulcrumed thereon, springs pressing against said levers, spring arms attached to the levers, and



a socket piece pivotally connected with the outer ends of said arms, substantially as set forth.

5. The combination with a stationary part, of two elbow levers fulcrumed thereon, adjustable springs bearing against said levers, a stop to limit their movement, spring arms attached to the levers, and a socket piece piv-

otally connected with the outer ends of said arms, substantially as described. 10

In witness whereof I have hereto set my hand this 22d day of August, 1892.

EDWARD D. PRIEST.

Witnesses:

JOHN W. GIBBONEY,  
BENJAMIN B. HULL.