

(No Model.)

R. LUNDELL.

DYNAMO ELECTRIC MACHINE OR ELECTRIC MOTOR.

No. 505,665.

Patented Sept. 26, 1893.

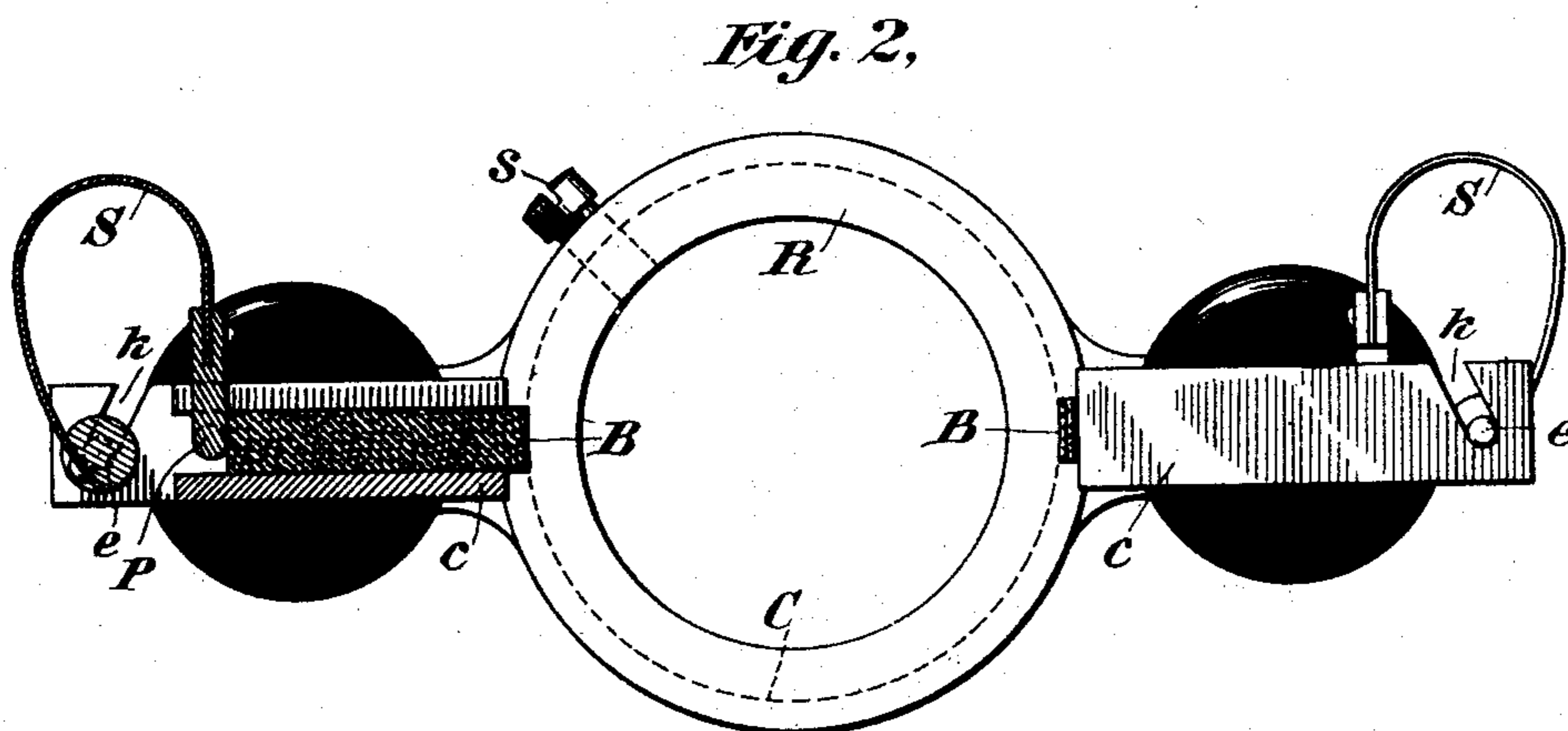
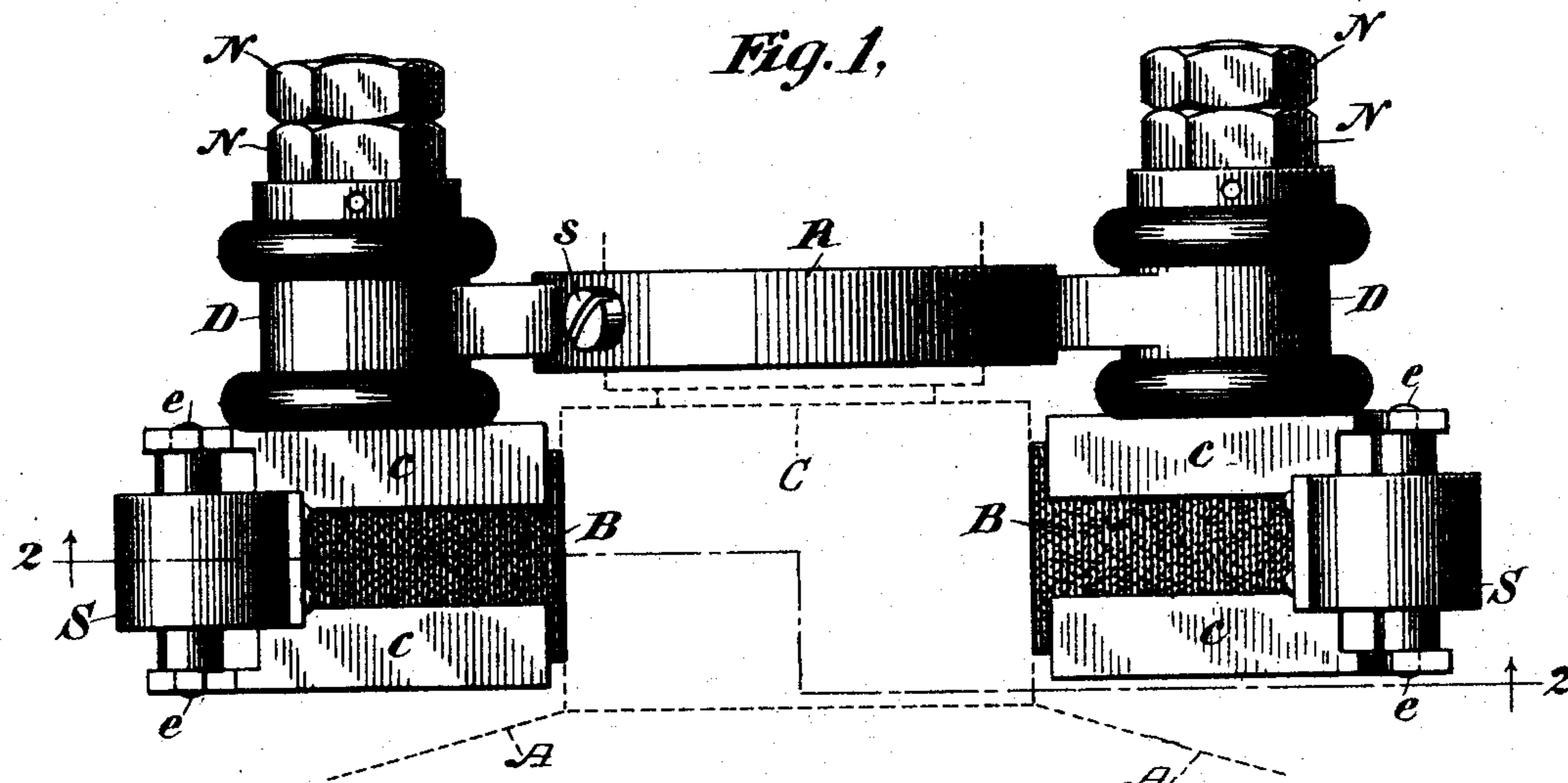


Fig. 3,

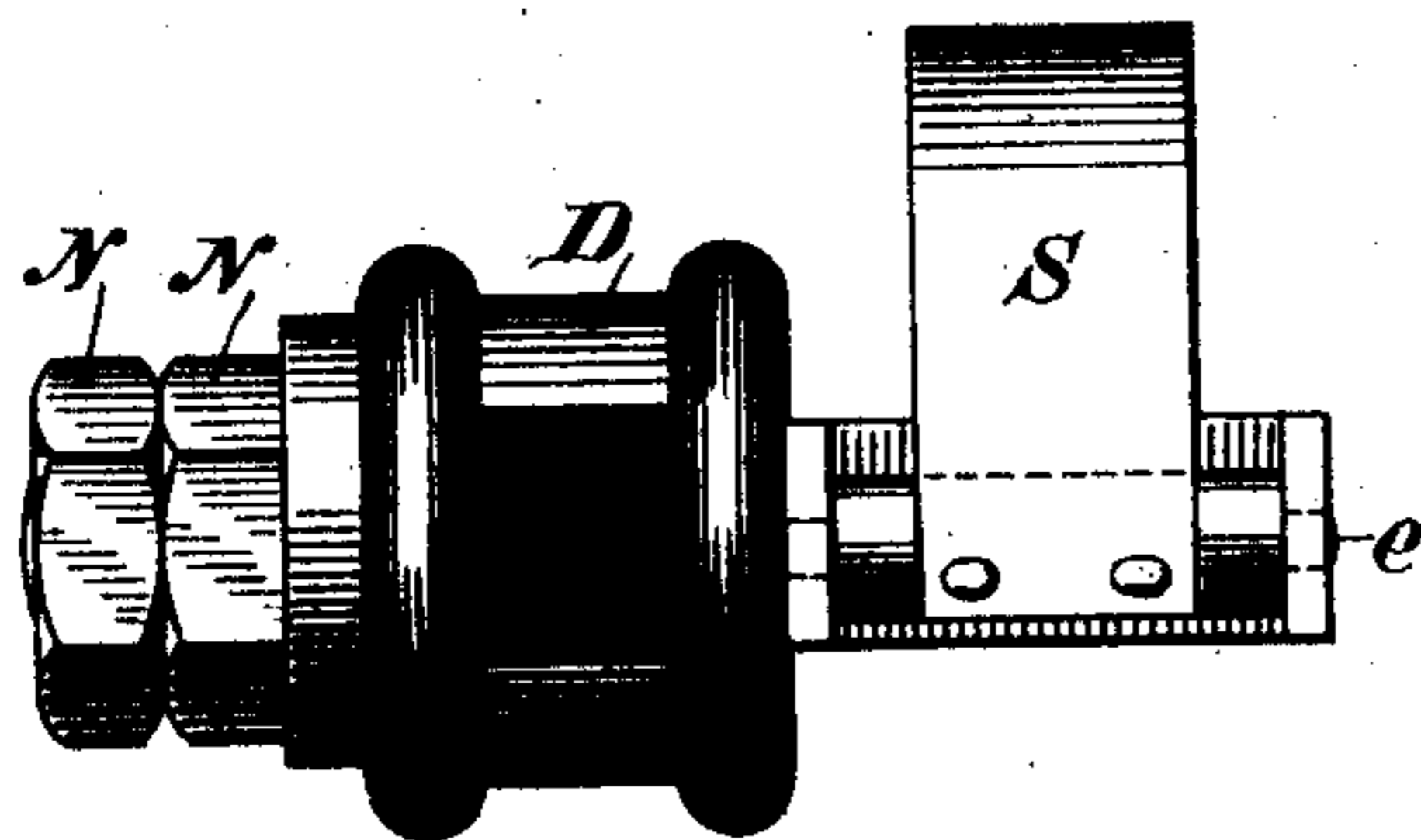
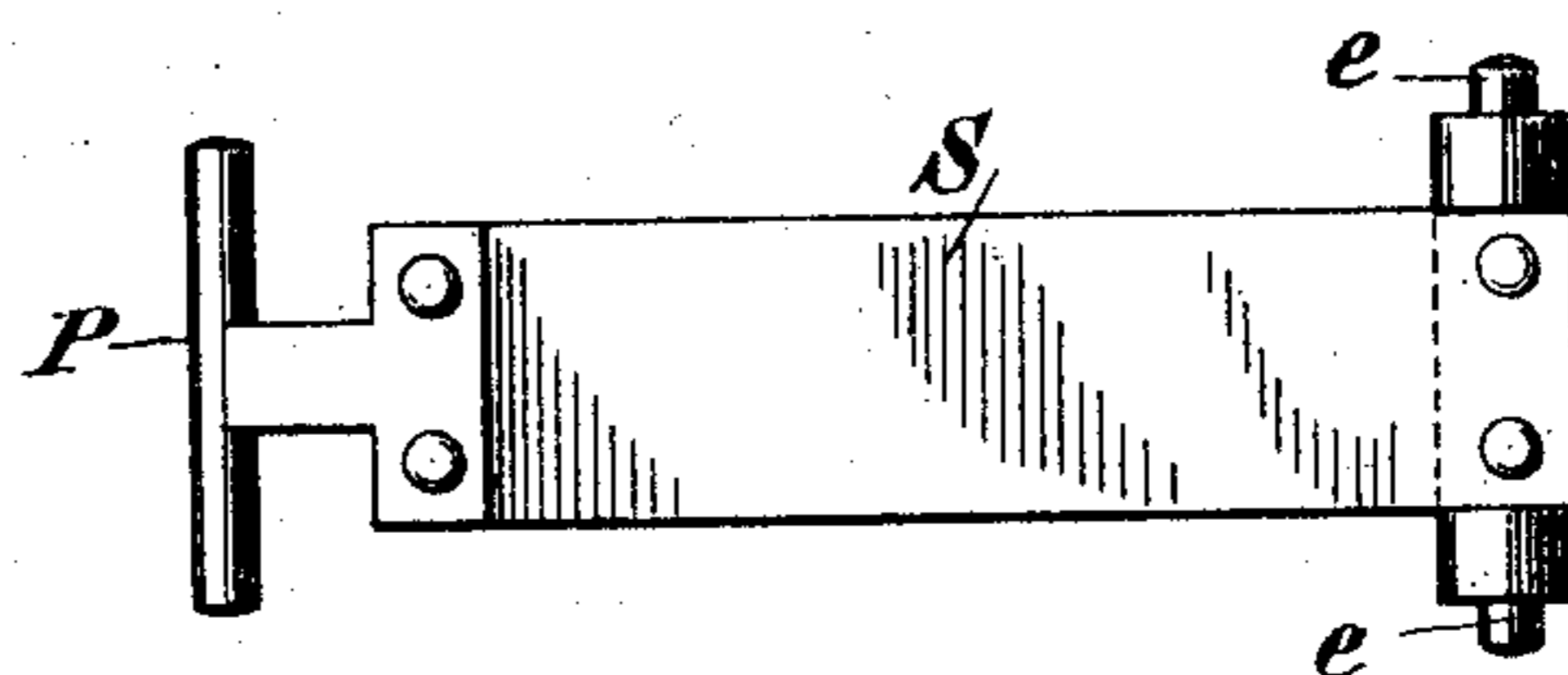


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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DYNAMO-ELECTRIC MACHINE OR ELECTRIC MOTOR.

SPECIFICATION forming part of Letters Patent No. 505,665, dated September 26, 1893.

Application filed October 31, 1892. Serial No. 450,506. (No model.)

To all whom it may concern:

Be it known that I, ROBERT LUNDELL, a citizen of the United States of America, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Dynamo-Electric Machines or Electric Motors, of which the following is a specification.

My invention is directed particularly to commutator brush holding attachments for such machines and its objects are to furnish a simple, cheap and efficient means for causing the brushes to be fed constantly forward as they are worn away upon the surface of the commutator, and to render these parts equally and readily detachable for the purpose of inserting new brushes or making such other changes as the necessities of the case may demand.

The invention will be fully understood by referring to the accompanying drawings, in which—

Figure 1 illustrates in plan view a rocker arm of well known form sustaining a pair of my improved commutator brush holding devices with commutator brushes in position resting upon the face of the commutator, which latter with the end of the armature of a dynamo machine or electric motor is illustrated in dotted lines. Fig. 2 is a part end elevational, part sectional view taken on the broken line 2—2, Fig. 1, and as seen looking in the direction of the arrows. Fig. 3 is a side elevational view of Fig. 1 as seen looking from left to right. Fig. 4 is a plan view of one of the brush feeding springs as it appears when removed from the brush holder.

Referring now to the drawings in detail in all of which like letters of reference represent like parts wherever used, A represents the armature of an electric motor or dynamo electric machine, C the commutator and R the usual well known form of rocker arm provided with extensions D D to which the commutator brush holders are secured by bolts and nuts N N in the usual manner, the rocker arm being secured adjustably in the required position by a set screw s.

c c are the commutator brush holders which are in the nature of hollow sleeves with open-

ings or slits in the direction of their length or longitudinal axes in their upper sides, the hollow portions of the brush holders being of substantially the same size and contour (preferably rectangular) as the commutator brushes B B made of carbon or other well known equivalent material. The brush holders are provided at their outer ends with lugs or ears having each a pair of inclined notches k k adapted to sustain the trunnions e e on the outer ends of the flat carbon feeding springs S S, the inner ends of which are provided with pins P of substantially the same width as the carbon brushes.

The apparatus is put together for operation as follows: The brushes B B are first slid into position resting upon the commutator C as clearly shown in Figs. 1 and 2. The pins P P on the inner ends of the springs S S are then placed against the outer ends of the brushes and the springs are then bent so as to allow the trunnions e e, e e to drop into the notches k k. Under these conditions the springs S S will force the brushes forward and keep them always in position with their inner ends against the face of the commutator. As they wear away the pins P P will continue to feed them forward under this yielding influence.

I am aware that it is broadly old to force commutator brushes forward under the influence of springs and weights, and I make no claim hereinafter broad enough to include these generic features.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A brush holding device consisting of a hollow sleeve slitted in the direction of its length, in combination with a detachable spring carrying a follower on one end and having a bearing or support in the sleeve at the other end, the end which carries the follower having movement in the slit as the follower bears against and moves forward with the brush substantially as described.

2. In a brush holding device, a hollow sleeve slitted in the direction of its length, in combination with a follower consisting of a bearing or pin borne by a flat spring extending through the slit and connected to a second

bearing journaled or pivoted in the sleeve substantially as described.

3. A brush holding device consisting of a hollow sleeve slitted in the direction of its length, in combination with a detachable spring carrying a follower at one end which bears against the end of the brush, and trunnions or bearings at the other end thereof supported in the sleeve substantially as described.

4. A brush holding device consisting of a

hollow sleeve having a slit or opening on its upper side in combination with a detachable spring having trunnions on one end adapted to bear in corresponding notches in the outer ends of the sleeve and a pin on the other end adapted to bear upon the commutator brush, substantially as described. 15

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