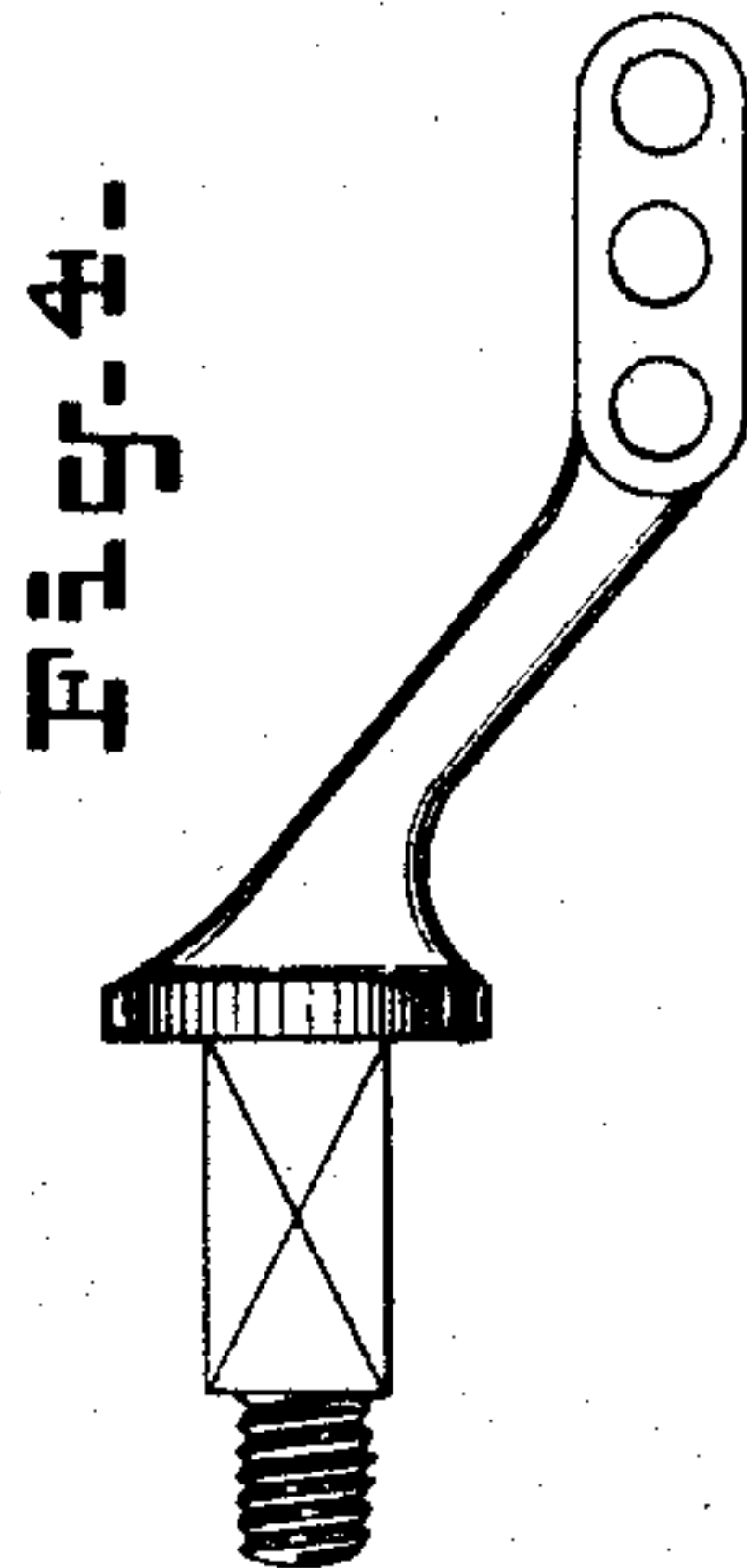
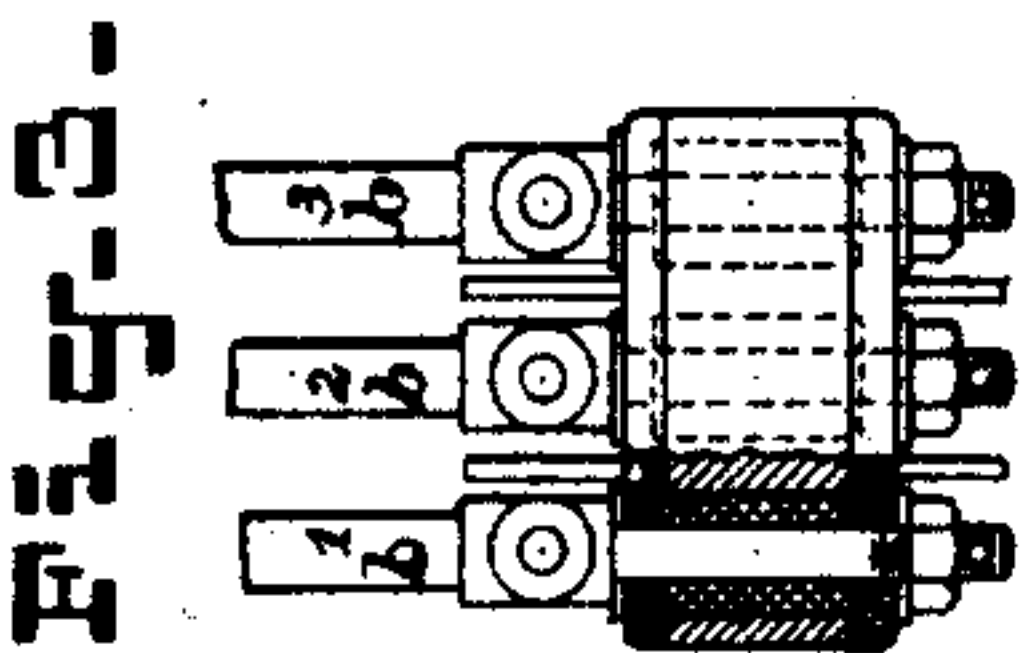
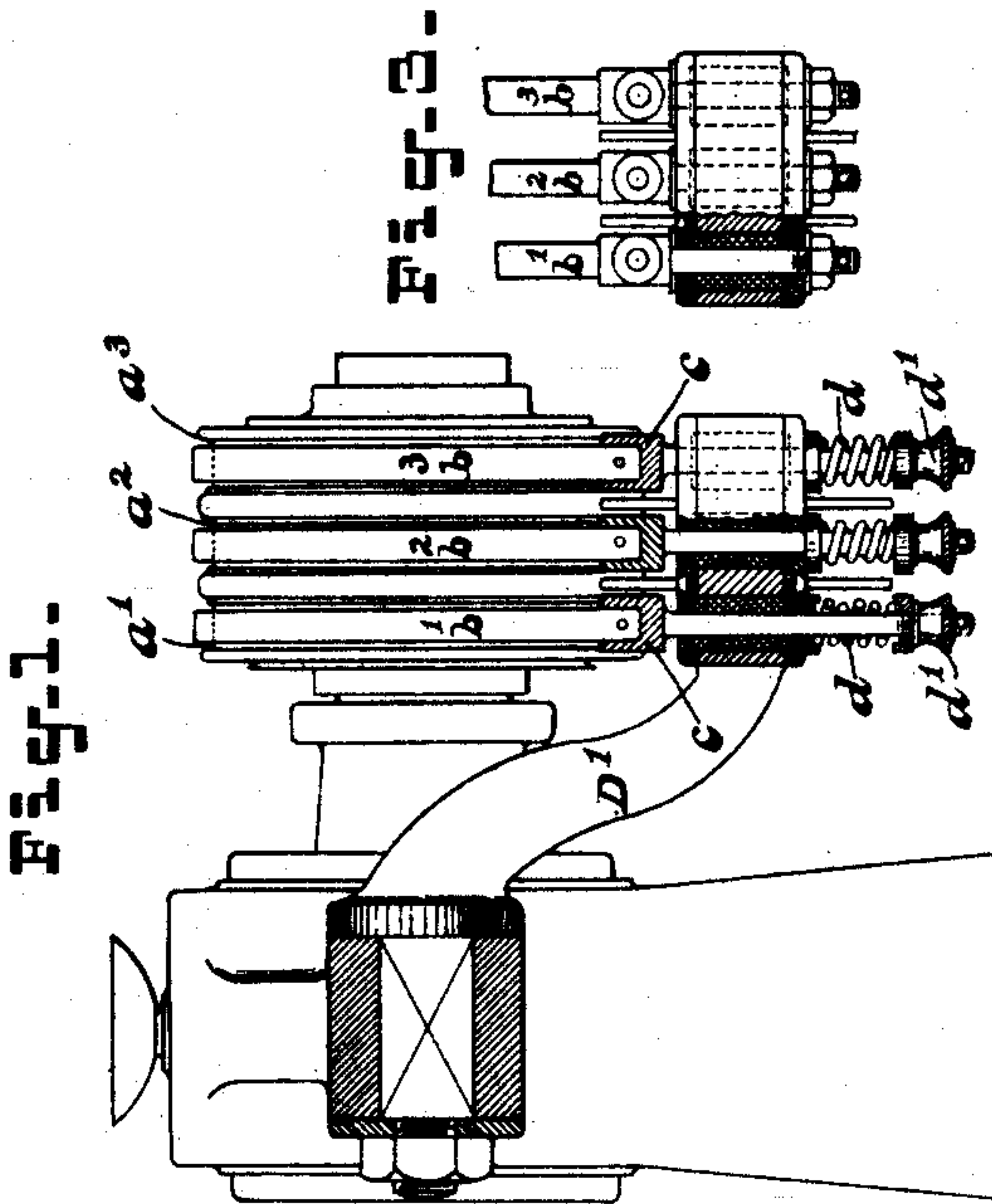
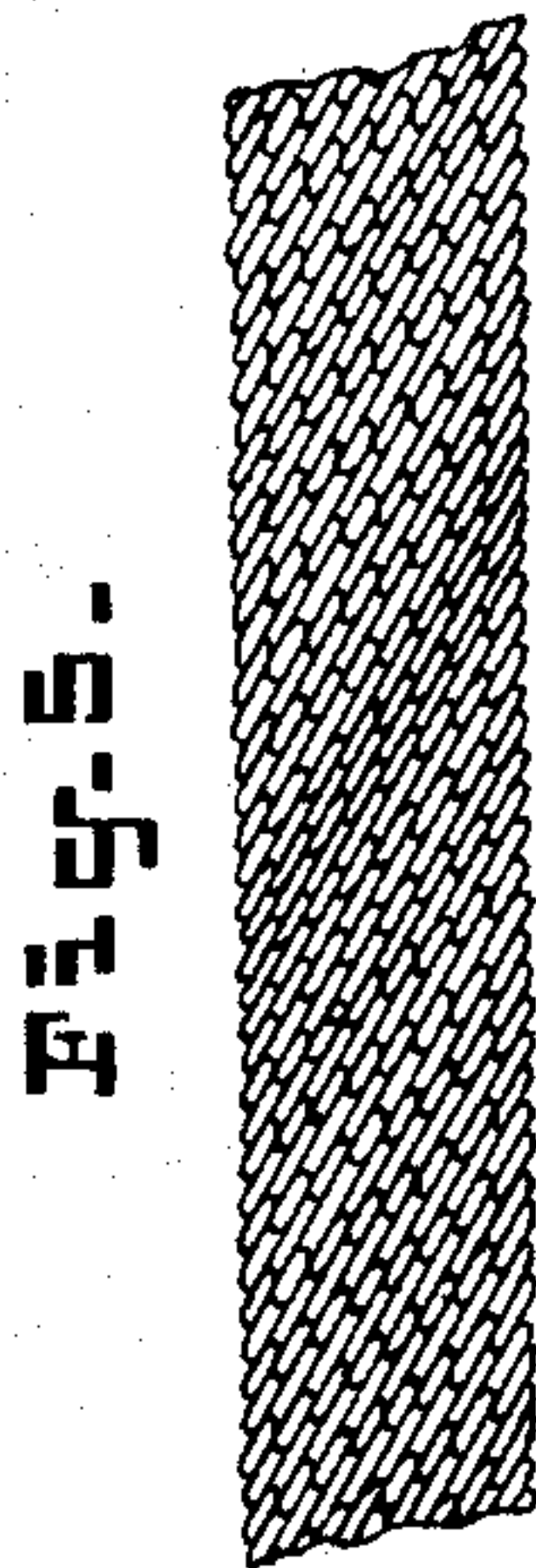
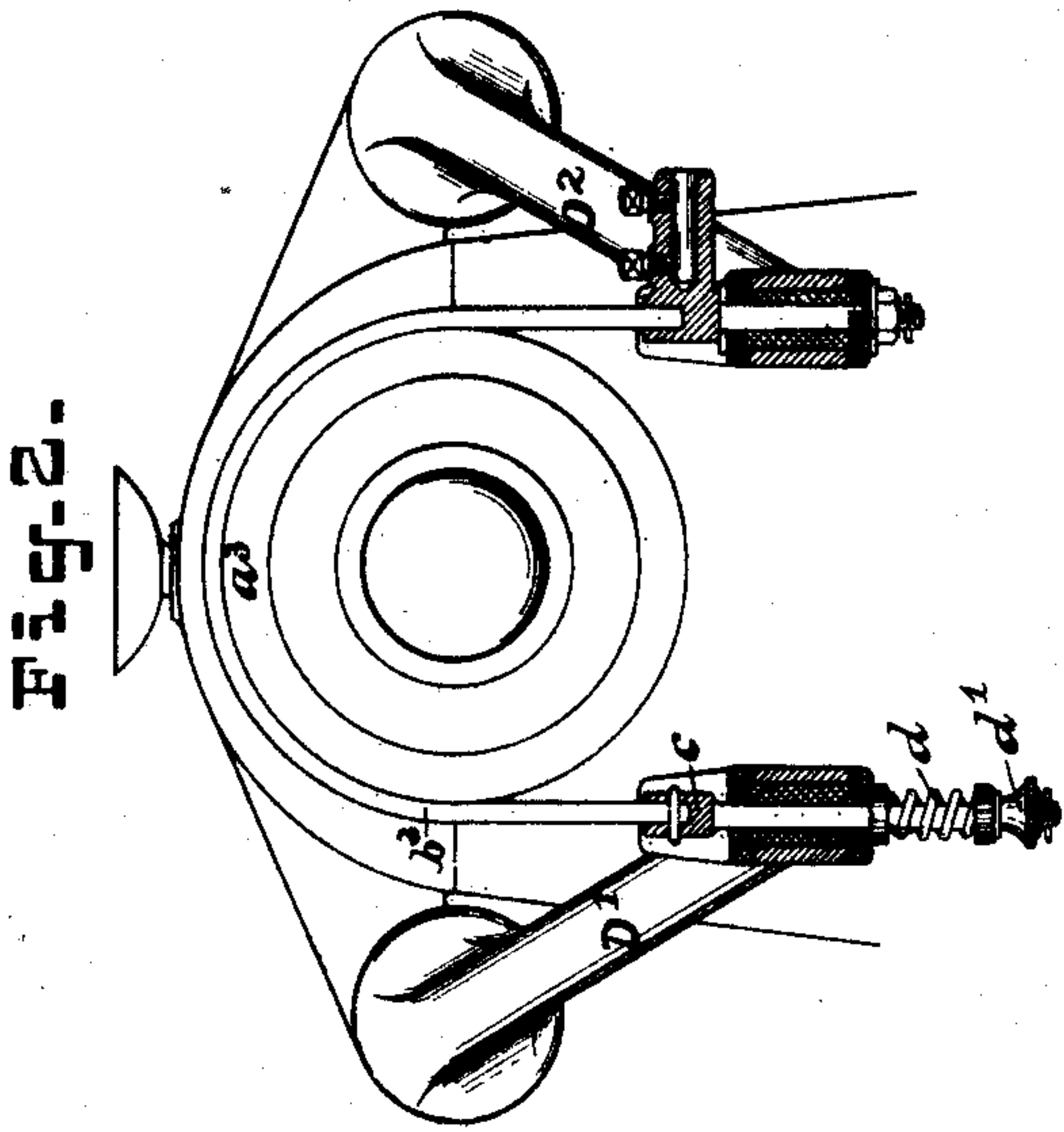


(No Model.)

A. SCHMID & E. C. MEANS.  
COLLECTING CONTACT FOR ELECTRIC MACHINES.

No. 421,320.

Patented Feb. 11, 1890.



Witnesses  
L. M. Cargt.  
George Brown Jr.

Inventors  
Albert Schmid  
Edward C. Means.  
By their Attorney  
Charles A. Ferry.

# UNITED STATES PATENT OFFICE.

ALBERT SCHMID AND EDWARD C. MEANS, OF ALLEGHENY, PENNSYLVANIA;  
SAID SCHMID ASSIGNOR TO THE WESTINGHOUSE ELECTRIC COMPANY,  
OF PITTSBURG, PENNSYLVANIA.

## COLLECTING-CONTACT FOR ELECTRIC MACHINES.

SPECIFICATION forming part of Letters Patent No. 421,320, dated February 11, 1890.

Application filed December 7, 1889. Serial No. 332,964. (No model.)

*To all whom it may concern:*

Be it known that we, ALBERT SCHMID and EDWARD C. MEANS, citizens of the Republic of Switzerland and of the United States, respectively, now residing in Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Collecting-Contacts for Electric Machines, (Case No. 373,) of which the following is a specification.

The invention relates to the construction of devices for conveying electric currents to or collecting them from the contact-rings of conductors of electric machines.

The object of the invention is to secure good electrical connections, and also, when it is desired, extending the surface of the contact over considerable area.

The invention may be generally described as consisting in applying a flexible contact-band composed of a woven wire or "linked belt" to the conductor or collector plates; and, further, in providing, where desired, a lubricating substance consisting of plumbago or similar material embedded in the contact-bands. The open-work of the band permits rapid radiation of heat, tending to keep the same from becoming unduly heated.

The invention will be more fully described in connection with the accompanying drawings, in which—

Figure 1 is a side view of a collector equipped with three contact-bands, and Fig. 2 is an end view of the same. Figs. 3 and 4 are details, and Fig. 5 is an enlarged view, of the band.

Referring to the figures,  $a'$   $a^2$   $a^3$  represent

three contact or collector rings, provided in this instance with three bands of woven or linked copper wire  $b'$   $b^2$   $b^3$ , bent over and covering as great an amount of surface of the rings as may be required, in this instance half of the entire circumference. The ends of these bands are held in adjustable clamps  $c$ , the tension upon which is maintained by the springs  $d$  and adjusting devices  $d'$ . These are suitably supported by the arm  $D'$ . The remaining ends may be firmly held in clamps carried by the arm  $D^2$  upon the opposite side of the shaft of the machine.

For the purpose of reducing the friction, which might otherwise be objectionable, the interstices of the linked collecting-bands may be filled with plumbago or other suitable lubricating material, preferably a conductor of electricity.

We claim as our invention—

1. A collecting-band for electric machines, consisting of a band or strip of linked or woven wire, substantially as described.

2. A collector or contact band for electric machines, consisting of a band or belt of linked or meshed wires and having its interstices filled with plumbago or hard carbon, substantially as described.

In testimony whereof we have hereunto subscribed our names this 5th day of December, A. D. 1889.

ALBERT SCHMID.  
EDWARD C. MEANS.

Witnesses:

J. M. TATE, Jr.,  
J. W. SMITH.