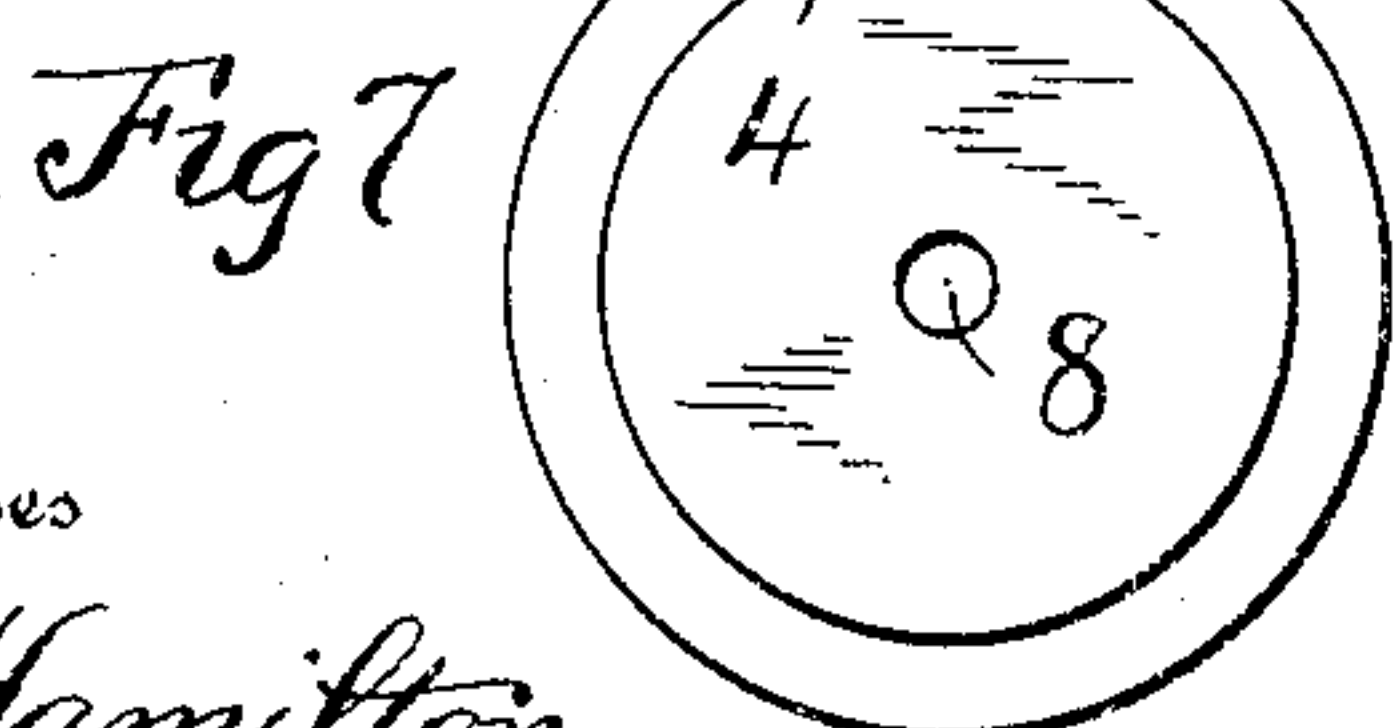
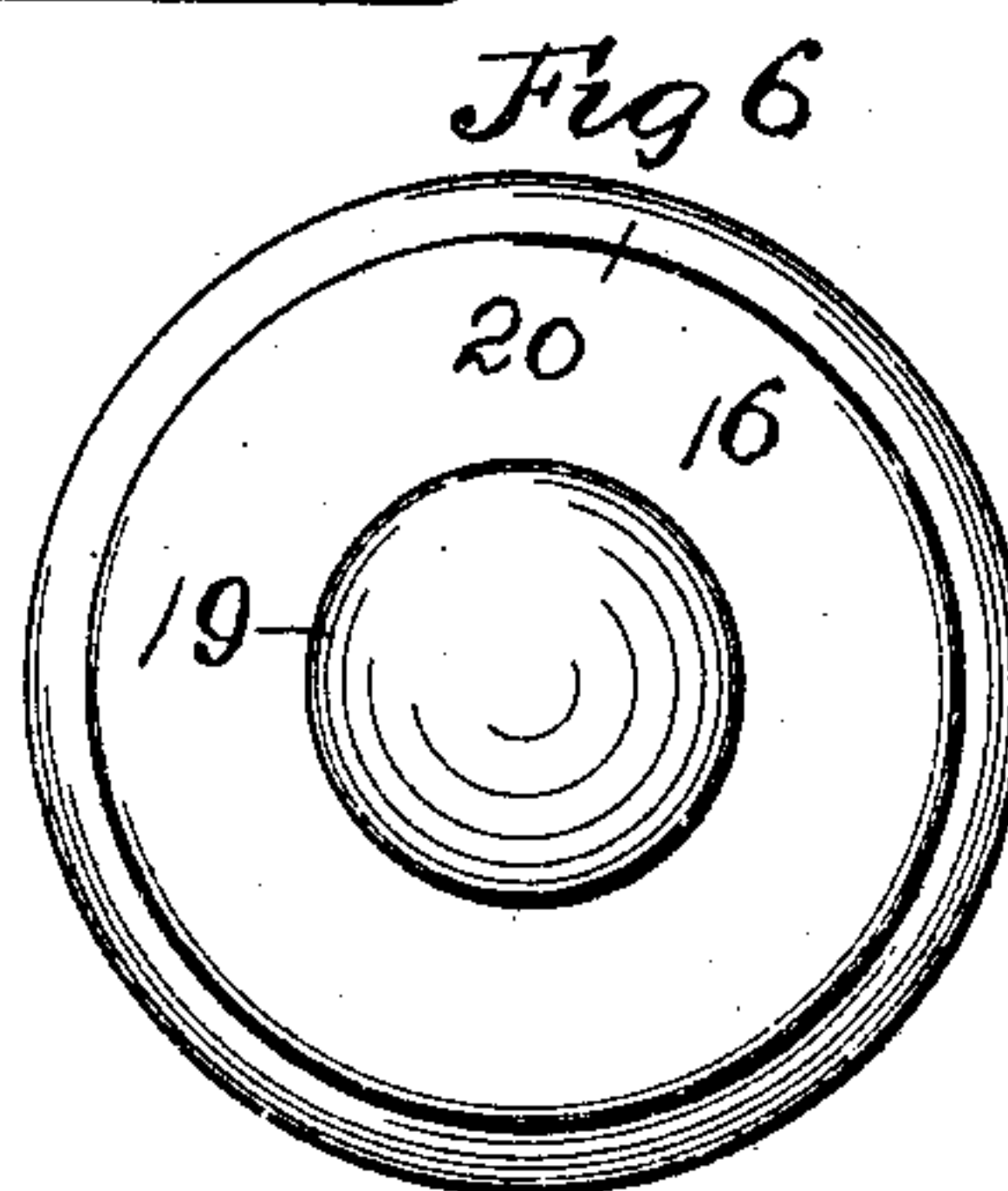
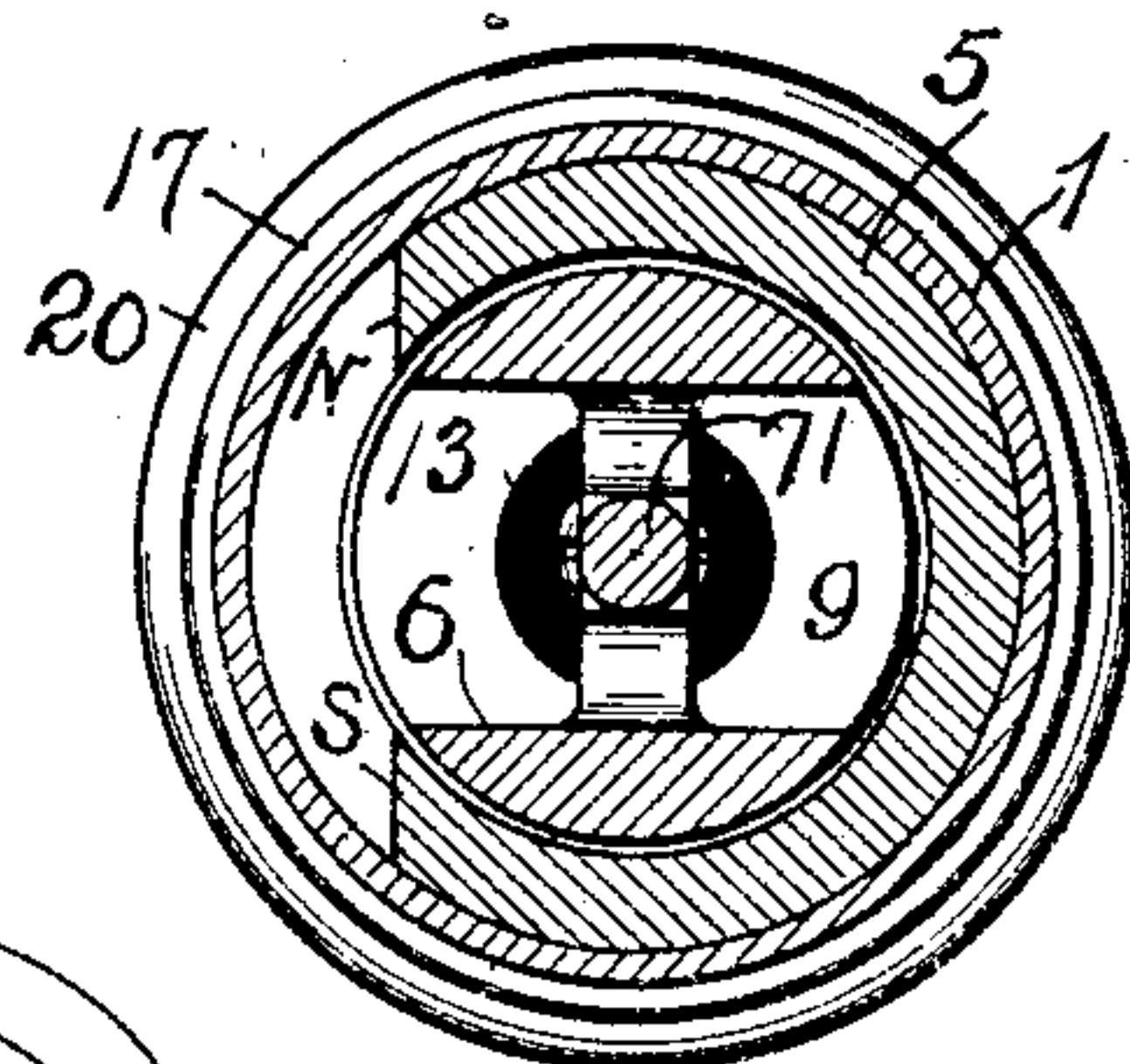
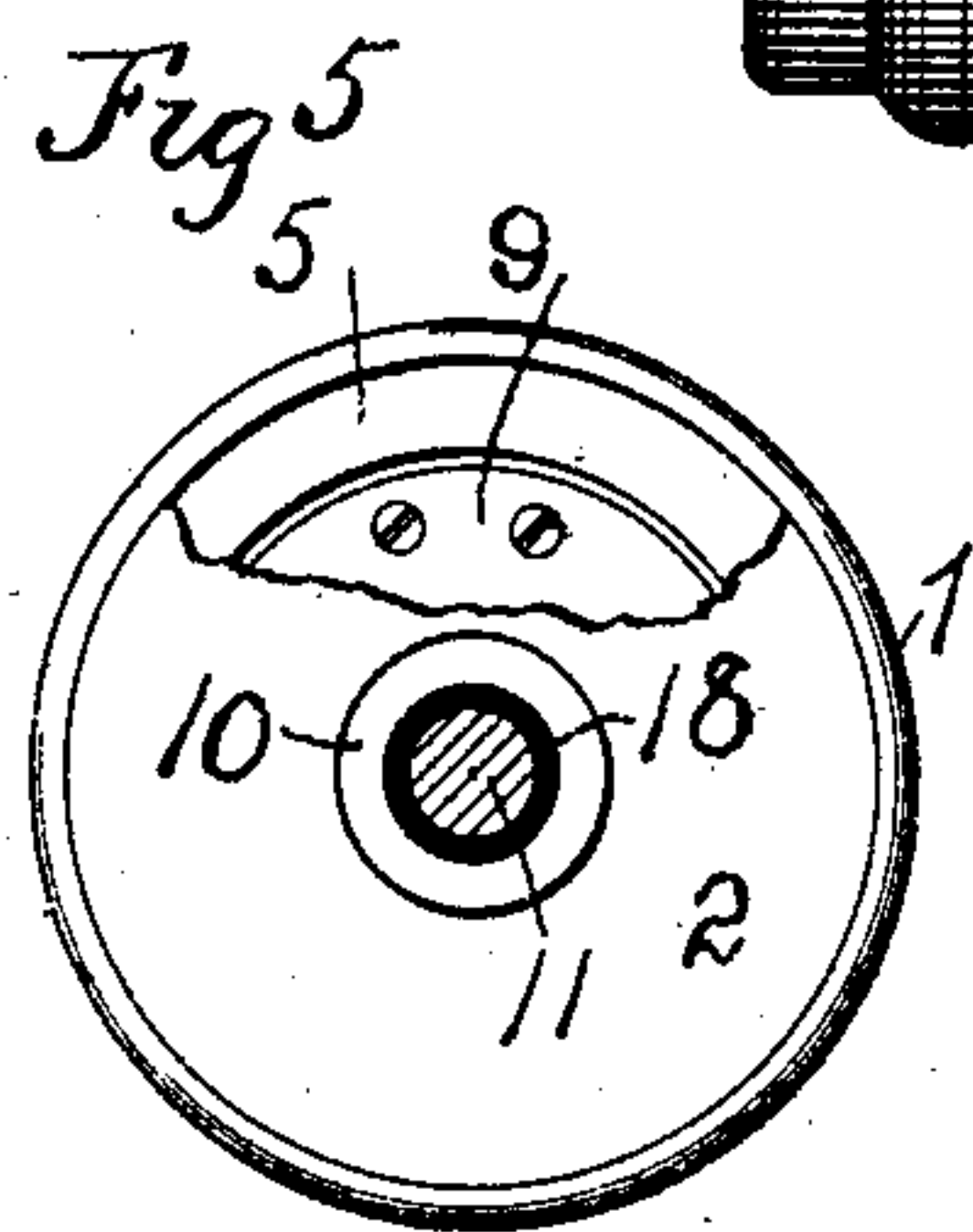
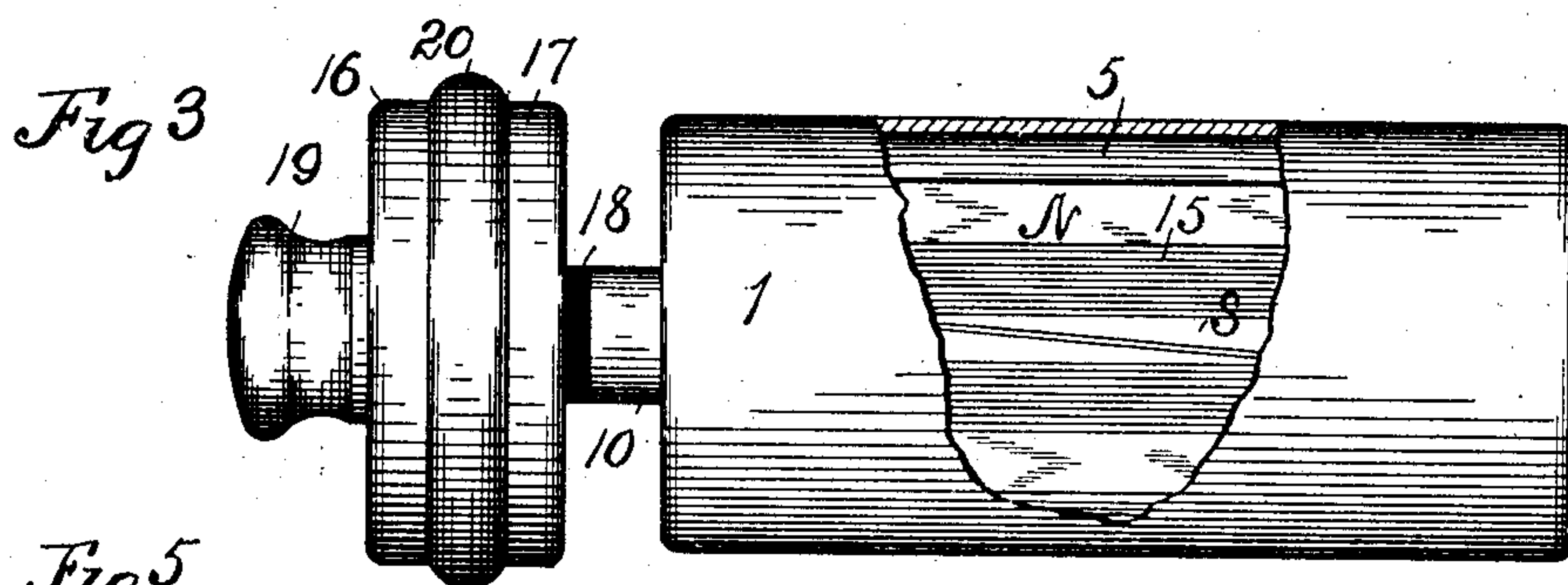
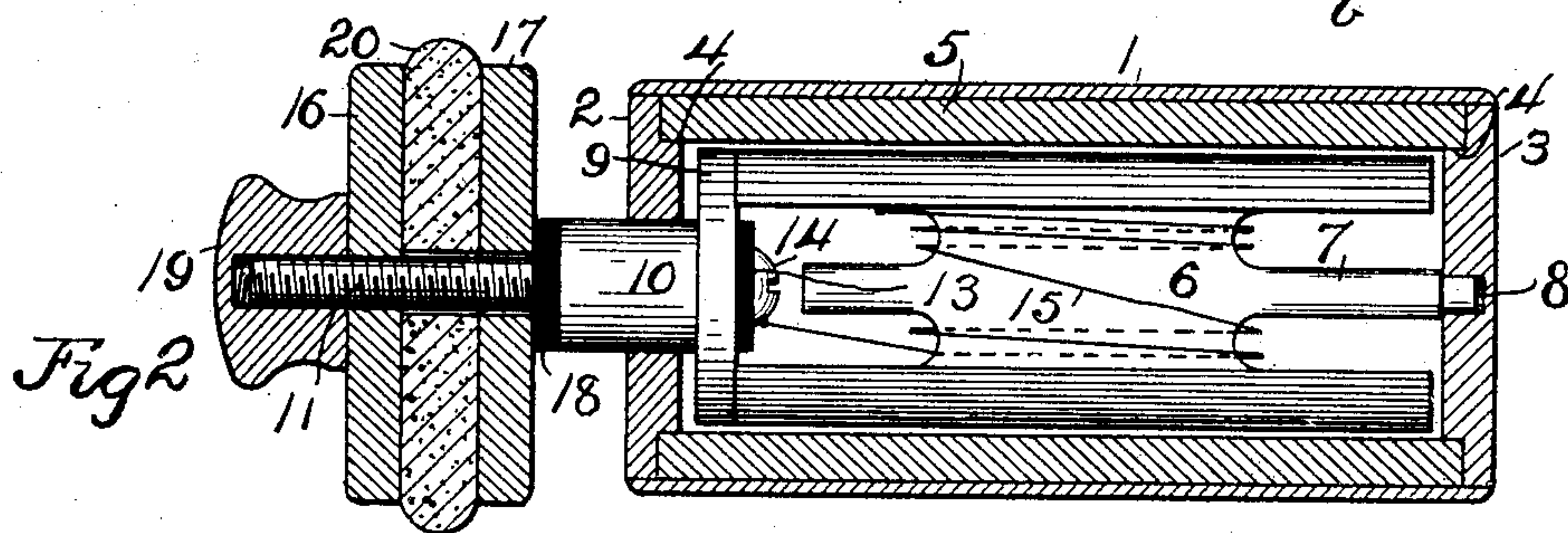
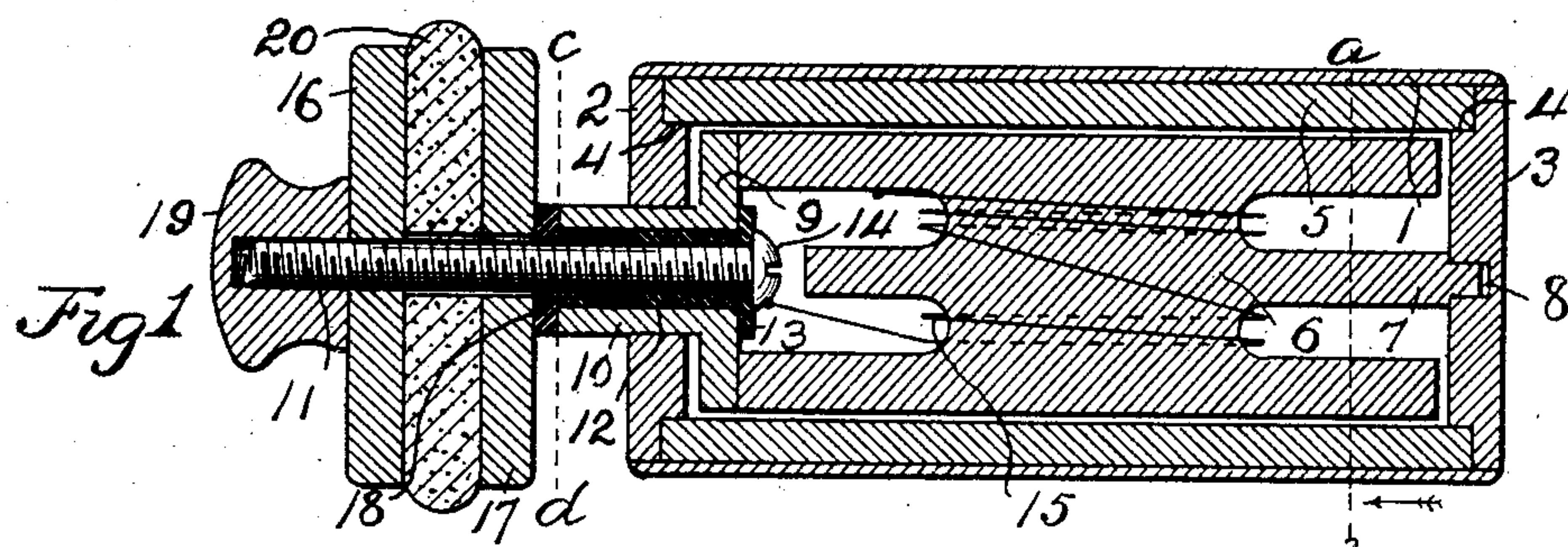


No. 784,024.

PATENTED MAR. 7, 1905.

A. BARRETT & W. CONDON.
DYNAMO ELECTRIC MASSAGE INSTRUMENT.

APPLICATION FILED JULY 5, 1904.



Witnesses
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UNITED STATES PATENT OFFICE.

ALBERT BARRETT AND WILLIAM CONDON, OF KANSAS CITY, MISSOURI.

DYNAMO-ELECTRIC MASSAGE INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 784,024, dated March 7, 1905.

Application filed July 5, 1904. Serial No. 215,261.

To all whom it may concern:

Be it known that we, ALBERT BARRETT and WILLIAM CONDON, citizens of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Dynamo-Electric Massage Instruments, of which the following is a specification.

Our invention relates to improvements in dynamo-electric massage instruments.

The object of our invention is to provide a massage instrument by which the flesh may be subjected to massage manipulation simultaneously with the production of dynamo-electric currents which are applied to the portion of the flesh thus manipulated.

Our invention provides, further, an instrument comprising a handle forming an electrode, a roller-electrode rotatively mounted thereon and insulated therefrom, and a mechanism for producing electro-dynamic currents actuated by the rotation of the roller-electrode and having said two electrodes as terminals to its circuit.

Our invention provides, further, a tubular handle forming an electrode, a magnet mounted thereon, an armature rotatively mounted on said handle in the field of the magnet and provided with a suitable insulated winding, to one end of which the handle-electrode is electrically connected, a roller-electrode rotatively mounted on and insulated from said handle-electrode and electrically connected with the other end of said winding, and means by which the armature is rotated when the roller-electrode is rolled.

Our invention provides, further, a novel form of dynamo-electric machine by which a great efficiency in the production of electric currents is effected.

Other novel features of construction are hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal central sectional view, but a few coils of the armature-winding being shown. Fig. 2 is a view similar to Fig. 1, the armature, however, being shown in elevation. Fig. 3 is a side elevation view, a portion of the handle being broken away. Fig.

4 is a cross-section on the line *a b* of Fig. 1, the winding on the armature being omitted. Fig. 5 is a cross-section taken on the dotted line *c d* of Fig. 1, a portion of the adjacent head of the handle being broken away. Fig. 6 is an end elevation view of the roller-electrode. Fig. 7 is an inner end view of the head 3.

Similar characters of reference denote similar parts.

The instrument comprises four principal parts—the handle-electrode, the roller-electrode, the permanent magnet, and the armature. The handle comprises a cylindrical tube 1, of conductive material, such as brass or aluminium, in the ends of which are secured in any suitable manner, as by soldering, the circular plates or heads 2 and 3. Each of said heads is provided on its inner end with a circular shoulder 4. A magnetized cylindrical steel-tube magnet 5 has fitted in its respective ends the shoulders 4, said shoulders being concentric with the tube 1 and the magnet 5. The steel tube 5 is slit lengthwise, opposite edges N and S of said slit portion being oppositely polarized. The tube 5 is of hardened steel and forms a permanent magnet in which the armature is rotatable. The armature comprises a soft-iron core 6 of any desirable form, preferably that of the ordinary Siemens type, said core having at one end an axial extension 7, rotatively mounted in a central axial recess 8 in the head 3. Upon the other end of the armature-core 6 is secured a disk 9, having a cylindrical axial extension 10, rotatively mounted and extending through an axial hole in the head 2. In the axis of rotation of the core 6 in a central longitudinal hole provided in the disk 9 and extension 10 is mounted a threaded rod or screw 11, disposed in and rotatable with an internally-screw-threaded sleeve 12, of insulating material, said sleeve being mounted in the hole through the disk 9 and rotatable with said disk and the armature-core 6. The inner end of the sleeve 12 is provided with a peripheral flange 13, which bears against the inner end of the disk 9. The inner end of the rod 11 has a head 14 which bears upon the

inner end of the sleeve 12. The core 6 has wound on it an insulated conductive winding 15, one end of which is connected to the rod 11 and the other end to the core 6. The winding is electrically connected with the tube 1 through the core 6, disk 9, extension 10, and head 2, all of which are of conductive material. The winding 15 has its principal convolutions disposed parallel with the slit portion of the magnet 5.

The roller-electrode comprises two conductive circular disks or plates 16 and 17, provided each with a central hole through which extends the rod 11. Between the disk or member 17 and the extension 10 is a collar 18, of insulating material, mounted on the rod 11. The member or disk 16 has its central hole screw-threaded to fit the rod 11. A lock-nut 19 is mounted on the rod 11 and bears upon the outer side of the member 16. Between said two members 16 and 17 is clamped an absorbent conductive disk 20. If desired, this disk may be omitted, as may be one of the members 16 or 17. The members 16 and 17 are preferably of non-absorbent material, but they may be of an absorbent material, such as carbon. When non-absorbent material is employed, aluminium is the preferable material to use.

In operating our invention the tube 1 is grasped in one hand and the roller-electrode, comprising the members 16, 17, and 20, is rolled over the portion of the flesh to be massaged. By moving the handle to and fro the roller-electrode is caused to rotate, thus rotating, through the intermediacy of the rod 11, the core 6 and disk 9. The winding 15 passing through the field of magnetic force between the poles N and S generates in said winding an alternating current which passes, by means of the rod 11, members 16 and 17, and absorbent disk 20, to and through the flesh of the operator to the tube 1, and thence by way of the head 2, extension 10, disk 9, and core 6 to the winding 15. The absorbent disk 20, which may be of felt or similar absorbent material, should be first moistened in slightly-acidulated water or water holding salt in solution.

By constructing the magneto-electric mechanism as described a very efficient and compact device is attained. The armature being disposed with its axis of rotation coincidental with the axis of the cylindrical magnet, the winding 15 on the armature is always equidistant from the center of the magnet and cuts the lines of magnetic force during every part of its revolution, and with a magnet of this form no soft-iron pole-pieces are required.

Our invention may be variously modified without departing from its spirit.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A massage instrument comprising two

electrodes electrically insulated from each other, one rotatable relative to the other, one serving as a handle and the rotatable one for rolling over the flesh, and a magneto-electric device comprising two members, one a permanent magnet, and the other a magnetizable body having a suitable insulated winding located in the field of the permanent magnet, the winding being connected respectively at its ends with the two electrodes, and one of said members mounted on and rotatable with the rotatable electrode, and the other member mounted on the other electrode.

2. A massage instrument comprising a handle forming an electrode, a permanent magnet carried thereby, an armature rotatively mounted on the handle in the field of the magnet and provided with a suitable insulated winding one end of which is electrically connected to the electrode, and a rotary electrode connected to the other end of the winding and carried by but insulated from the armature.

3. A massage instrument comprising a tubular electrode provided with heads in the ends; a permanent magnet carried by said electrode, an armature rotatively mounted in the said heads and in the field of the magnet and provided with a suitable insulated winding one end of which is electrically connected with the electrode, and a roller-electrode mounted on and insulated from the armature and connected electrically with the other end of said winding.

4. A massage instrument comprising a magneto-electric device consisting of two members, one a magnet and the other an armature, one member being rotatable relative to the other, and one member provided with a suitable insulated winding, a roller-electrode carried by but insulated from the rotatable member and connected with one end of said winding, and a handle-electrode carrying the other member and electrically connected with the other end of said winding.

5. A massage instrument comprising a tubular handle having an outer covering of conductive material, a tubular magnet slotted along its full length and disposed in said handle, an armature rotatively mounted in said magnet and in said handle and provided with a suitable insulated winding one end of which is electrically connected with the conductive covering of the handle, and a roller of conductive material connected electrically with the other end of said winding and mounted on, insulated from and rotatable with the armature.

6. A massage instrument comprising a tubular handle having two heads, a tubular permanent magnet slotted along its full length, an armature rotatively mounted in said heads and in the field of said magnet and provided with a suitable insulated winding connected electrically at one end with said handle, and a

roller-electrode mounted on, insulated from and rotatable with said armature and connected electrically with the other end of said winding.

5 7. A massage instrument comprising a tubular handle consisting of a tube of conductive material having heads in its ends one of which is provided with a hole therethrough, a tubular permanent magnet in said handle, an armature rotatively mounted in said heads in the field of said magnet and extending through the hole in one head, and provided with a suitable insulated winding connected electrically with the said tube of the handle, and a roller of conductive material insulated from but rotatable with said portion of the armature which extends through one head, and electrically connected with the other end of said winding.

8. A massage instrument comprising a conductive tube provided with heads in its ends, said heads being provided with axial holes, each head having an annular inner shoulder disposed concentric with said axial holes, a tubular permanent magnet slotted along its full length and having its inner periphery fitted to said shoulders and supported thereon, an armature rotatively mounted in said holes in said heads and having a portion of magnetizable material located in the field of the magnet, and having a suitable insulated winding, one end of which is electrically connected with the conductive tube, and a roller of conductive material insulated from and rotatable with the armature and connected electrically with the other end of said winding.

9. A massage instrument comprising a tubular handle of conductive material consisting of a tube having two heads, a cylindrical tubular permanent magnet slotted along its full length and disposed concentrically within said handle, an armature rotatively mounted in said heads with its axis of rotation coincidental with the axis of the permanent magnet and having an insulated winding one end of which is electrically connected with the tubular handle, a roller-support disposed in the axial center of and carried by said armature but insulated therefrom, and connected with the other end of said winding, and a roller mounted on and rotatable with said roller-support outside the handle.

10. A massage instrument comprising a tubular handle the exterior of which is of conductive material, a magnet in said handle, an armature rotatively mounted in said handle in the field of the magnet and provided with a suitable winding connected at one end with the conductive exterior of the handle, and a roller-electrode having a portion of its body of conductive non-absorbent material and a portion of absorbent conductive material, said roller-electrode being mounted on and rotatable with but insulated from the armature, the conductive portions of said roller-electrode be-

ing electrically connected with the other end of said winding.

11. A massage instrument comprising a tubular conductive handle having heads in its ends, a permanent magnet mounted in said handle, an armature rotatively mounted in said handle-heads in the field of the magnet and provided with a suitable insulated winding connected electrically at one end with the tubular handle, and a roller-electrode mounted on and insulated from the armature and consisting of two non-absorbent conductive members, and an absorbent conductive member clamped between said non-absorbent members, said roller members being electrically connected with the other end of said armature-winding.

12. A massage instrument comprising a tubular handle of conductive material consisting of a tube having two heads, a lengthwise-slotted tubular permanent magnet mounted in said handle, an armature rotatively supported in said heads in the field of the magnet and provided with a conductive insulated winding one end of which is electrically connected with the handle, an axial roller-support mounted on and insulated from the armature and rotatable therewith and connected with the other end of said winding, and a roller-electrode comprising two conductive non-absorbent plates mounted on and rotatable with the roller-support, and an absorbent conductive member clamped between said plates.

13. A magneto-electric device comprising a cylindrical tubular magnet slotted lengthwise its full length, an armature rotatively mounted in said magnet and having its axis of rotation in the axis of the magnet, an insulated winding on the armature, a handle-electrode supporting the magnet and armature and connected electrically to one end of said winding, a rotary electrode connected electrically to the other end of said winding, and means for rotating the armature when the rotary electrode is rotated.

14. A magneto-electric device comprising a tubular cylindrical permanent magnet slotted lengthwise its full length, an armature rotatively mounted in said magnet with its axis of rotation in the axis of the magnet, an insulated winding on the armature, a handle-electrode supporting the magnet and armature and connected electrically to one end of said winding, a rotary electrode connected electrically to the other end of said winding, and means for rotating the armature when the rotary electrode is rotated.

15. A magneto-electric device comprising a cylindrical tubular permanent magnet slotted its full length, two end plates secured to the ends of said magnet, an armature rotatively mounted in said magnet in said plates, the axis of rotation of the armature being the axis of the magnet, an insulated winding on the arma-

ture, a handle-electrode supporting the magnet and armature and connected electrically to one end of said winding, a rotary electrode connected electrically to the other end of said winding, and means for rotating the armature when the rotary electrode is rotated.

16. A massage instrument comprising a tubular handle having heads on the ends of a tubular body, the body being of conductive material, a cylindrical tubular magnet mounted in said handle consisting of a hardened magnetized tube slotted its full length, an armature rotatively mounted in said heads with its axis of rotation in the axis of the cylindrical magnet and provided with a suitable insulated winding one end of which is electrically connected with the body of the handle, a rod insulated from but mounted in the axial center of the armature and rotatable therewith and connected electrically with the other end of said winding, and a roller-electrode of conductive material mounted on and rotatable with said rod.

17. A magneto-electric machine comprising a cylindrical steel tube slit lengthwise, opposite edges of the slit portion being oppositely polarized, an armature rotatively mounted in said tube with its axis of rotation in the axis of the tube, the armature having a soft-iron core and insulated generating-wires on said core disposed parallel with said slit, an insulated winding on the armature, a handle-electrode supporting the magnet and armature and connected electrically to one end of said winding, a rotary electrode connected elec-

trically to the other end of said winding, and means for rotating the armature when the rotary electrode is rotated.

18. A massage instrument comprising a handle-electrode, a roller-electrode rotatively mounted thereon and insulated therefrom, a permanent magnet mounted on the handle, an armature rotatively mounted on the handle in the field of the magnet and provided with a suitable insulated winding one end of which is electrically connected with the handle-electrode, and the other end connected electrically with the roller-electrode, and means by which the armature is rotated when the roller-electrode is rotated.

19. A massage instrument comprising a handle-electrode adapted to be grasped by the hand and moved to and fro without rotation, a roller-electrode disposed adjacent one end of and rotatively mounted on and insulated from said handle-electrode, whereby when the handle is moved to and fro the roller when resting upon the flesh will be caused to roll, an electro-dynamic mechanism carried by the handle and having the said two electrodes as terminals of its circuit, and means by which said dynamo-electric mechanism is actuated when the roller-electrode is rotated.

In testimony whereof we affix our signatures in presence of two witnesses.

ALBERT BARRETT.
WILLIAM CONDON.

Witnesses:

WARREN D. HOUSE,
HENRY F. ROSE.