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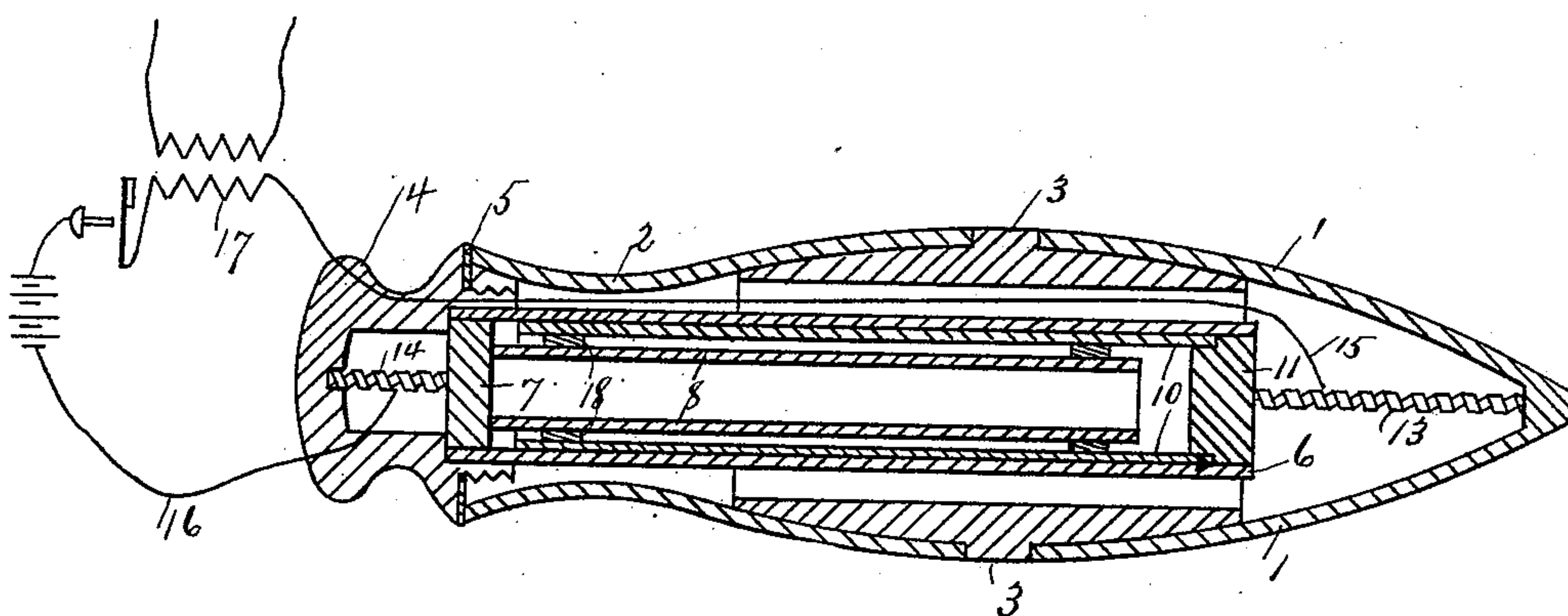
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ELECTRICAL INSTRUMENT FOR MEDICAL PURPOSES.

No. 539,501.

Patented May 21, 1895.

Fig. 1.



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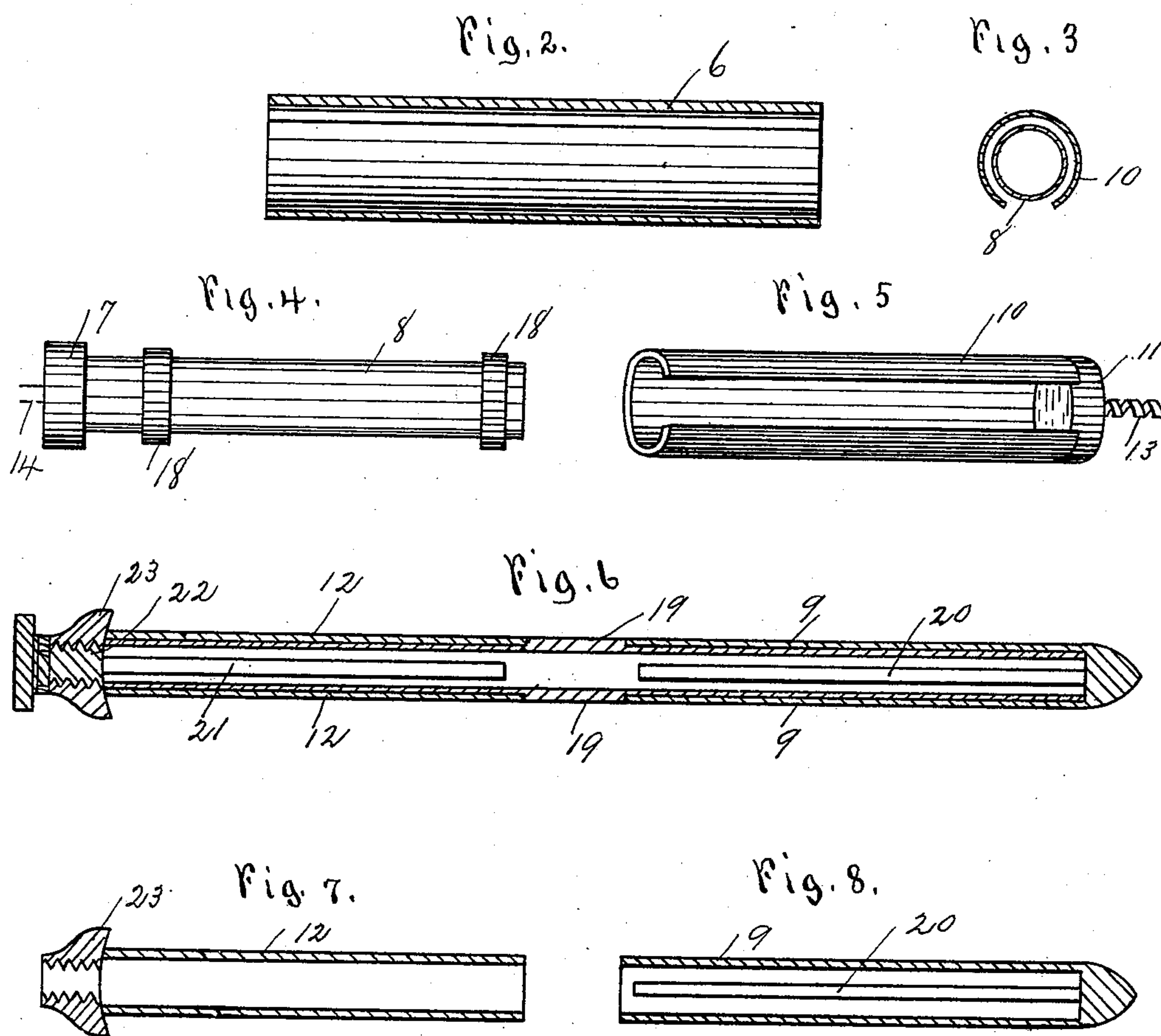
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Fig. 9.

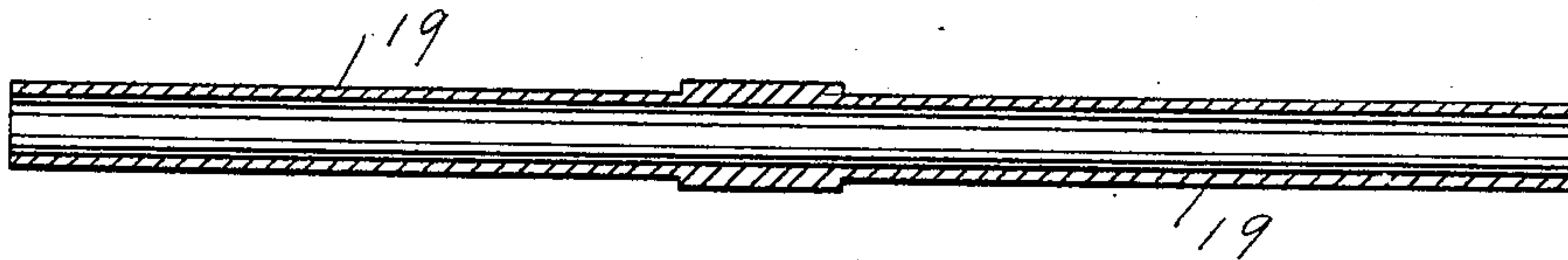


Fig. 10.

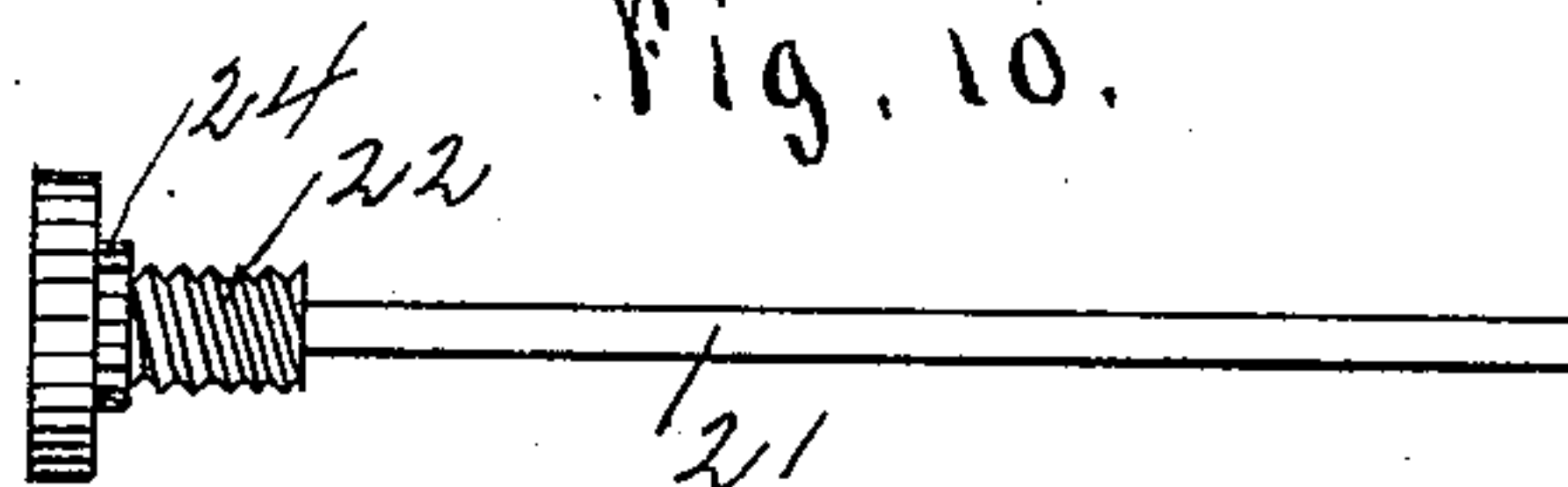


Fig. 11.

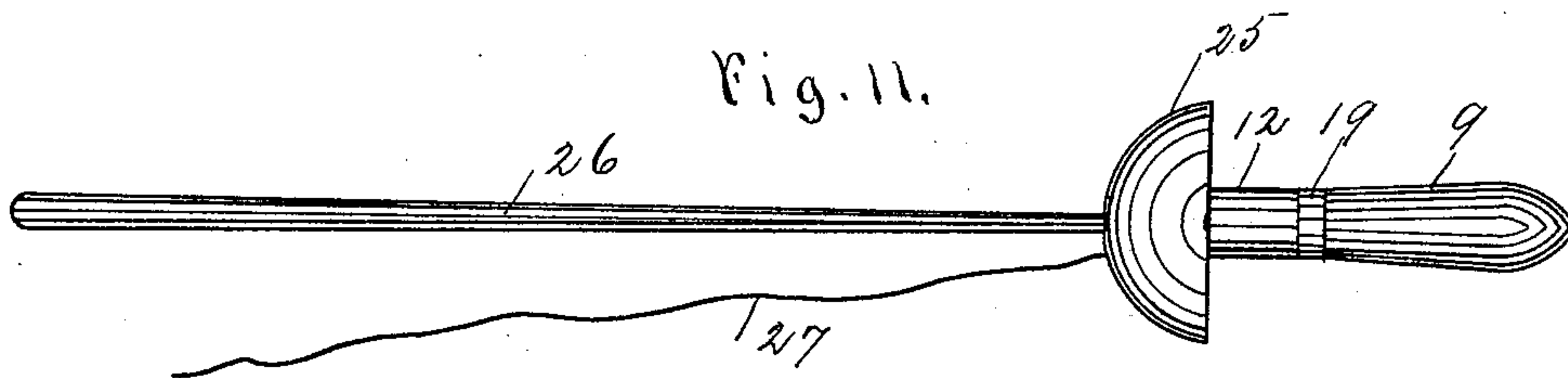


Fig. 12.

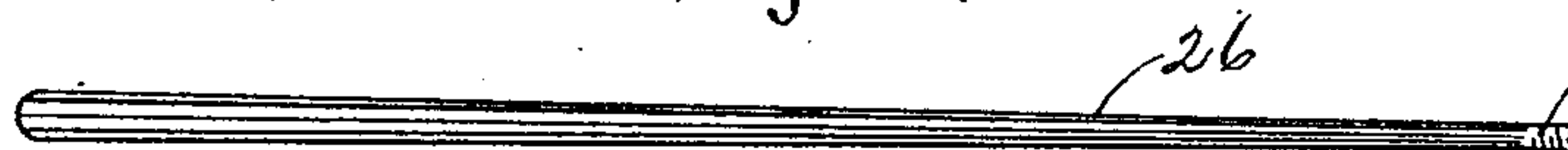
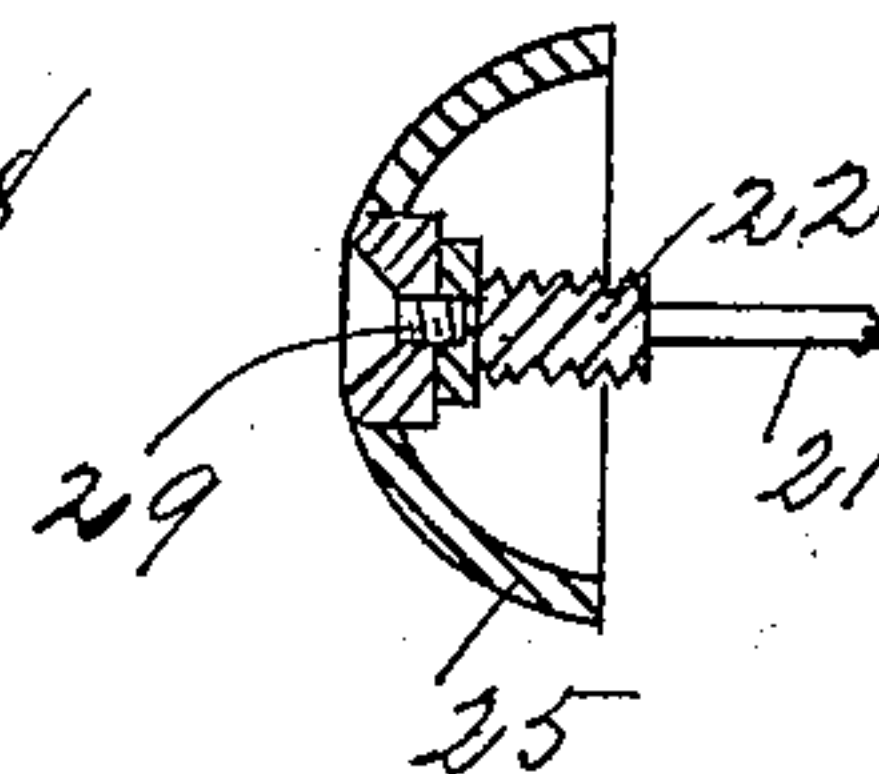


Fig. 13.



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ELECTRICAL INSTRUMENT FOR MEDICAL PURPOSES.

SPECIFICATION forming part of Letters Patent No. 539,501, dated May 21, 1895.

Application filed August 27, 1894. Serial No. 521,431. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN Y. BOYD, a citizen of the United States of America, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Electrical Instruments for Medical Purposes, of which the following is a specification, reference being had therein to the accompanying drawings and the figures of reference thereon, forming a part of this specification, in which—

Figure 1 is a longitudinal section of my improved combination galvanic and faradic rectal battery and dilator. Fig. 2 is a longitudinal section of the rubber battery-cell. Fig. 3 is a cross-sectional view of the zinc and copper poles. Fig. 4 is a side view of the zinc pole attached to one of the cell-plugs having insulators attached. Fig. 5 is a perspective view of the copper pole attached to the cell-plug at the opposite end. Fig. 6 is a longitudinal section of the galvanic urethral battery and dilator. Fig. 7 is a longitudinal section of the outer section of the urethral dilator and outer conducting-surface. Fig. 8 is a like view of the opposite end of the same, showing the copper pole attached thereto. Fig. 9 is a longitudinal section of the rubber lining and insulator. Fig. 10 is a side view of the zinc pole attached to the screw-plug. Fig. 11 is a side view of the galvanic uterus battery and dilator. Fig. 12 is a side view of the handle for inserting the uterus-battery. Fig. 13 is a sectional view of the rubber shield attached to the screw-plug.

This invention relates to certain improvements in my electrical instrument for medical purposes as secured to me by Letters Patent of the United States, No. 494,520, dated March 28, 1893, and consists of the battery cell, the arrangement of the poles, the rubber lining tube and insulator combined, and the faradic induction coil in connection with the galvanic battery.

Referring to the drawings, 1 represents the entering end of the rectal instrument. 2 is the outer end of the same.

3 is the rubber insulator separating the parts 1 and 2.

4 is a screw plug.

5 is a packing between the screw plug 4 and the outer end 2 of the instrument.

6 is a rubber cell containing the battery.

7 is a plug at one end of said cell to which is secured the zinc pole 8 which can be removed and a new zinc pole attached when the old one has been eaten away by the acids.

10 is the copper pole secured to the plug 11 in the opposite end of said rubber cell.

13 and 14 represent springs connecting battery current with the outer surface of the instrument.

15 and 16 are wires which may be used to connect the induction coil 17 with the battery poles 13 and 14 making a faradic current.

18 represents insulators between the copper and zinc poles.

19 represents a rubber insulator and lining.

9 is the entering end of the urethral instrument. 12 is the opposite end of the same.

20 represents a copper pole secured to the inner surface of the closed end of the entering part 9.

21 is a zinc pole secured to the inner end of the screw plug 22.

23 is a flange for holding the plug 22, and preventing the instrument from entering too far.

25 is a rubber shield for preventing the uterus instrument from entering too far.

26 is a handle which is secured to said uterus instrument through the medium of the screw threads 28 and 29 and is for the purpose of entering the instrument when it can be removed leaving the instrument in place.

27 is a thread or cord secured to said instrument for removing the same.

In use the instrument is operated as follows: The instrument as represented in Fig. 1, is inserted in the rectum dilating the sphincter muscles coming in contact with the mucous membrane thus completing the circuit which passes from the part 2 over the insulator 3 through the body to the part 1. The instrument as represented in Fig. 6 is inserted in the urethra in the same manner as the instrument shown in Fig. 1, is inserted in the rectum and produces a like result. The instrument as represented in Fig. 11, is inserted in the uterus by means of the handle 26 when the said handle is removed leaving the said instrument in place which acts in the same manner as the instruments shown in Figs. 1 and 6. If only the effect of one

pole is desired either positive or negative in the mucous cavity, it can be done by inserting the entering end, the other end being in contact with the hand or outside surface of the body, or the instrument may be made with the insulator 3, near the outer end.

Having thus described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is as follows:

- 10 1. The herein described electrical instrument for medical purposes, consisting of the combination of the outer casing consisting of positive and negative parts, an insulator forming a lining to, and separating said positive and negative parts, and a galvanic battery; having positive and negative poles connecting the said outer casing with said battery substantially as shown and for the purpose specified.
- 20 2. In a galvanic battery and dilator, the combination of the galvanic battery having the positive and negative poles, the insulators 18, the rubber tube 6, the plugs 7, and 11, the outer casing consisting of positive and negative parts, connected to the said galvanic battery by the positive and negative poles, said poles being provided with the induction coil

17, said outer casing having a screw plug in one end, and the lining and insulator combined separating said positive and negative parts, substantially as shown and described.

3. The herein described electrical instrument for medical purposes, consisting of the combination of a galvanic battery; having positive and negative poles, the outer casing consisting of positive and negative parts, separated by an insulator and battery lining combined, and the screw-plug in one end of said battery, substantially as shown and described.

4. The herein described electrical instrument for medical purposes, consisting of the combination of a galvanic battery having positive and negative poles, the outer casing consisting of positive and negative parts, separated by an insulator and battery lining combined, and the screw plug in one end provided with a rubber shield, and a removable handle, substantially as shown and described.

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