

(No Model.)

2 Sheets—Sheet 1.

W. J. SHELTON.
ELECTRO MEDICAL BELT.

No. 405,436.

Patented June 18, 1889.

FIG. I.

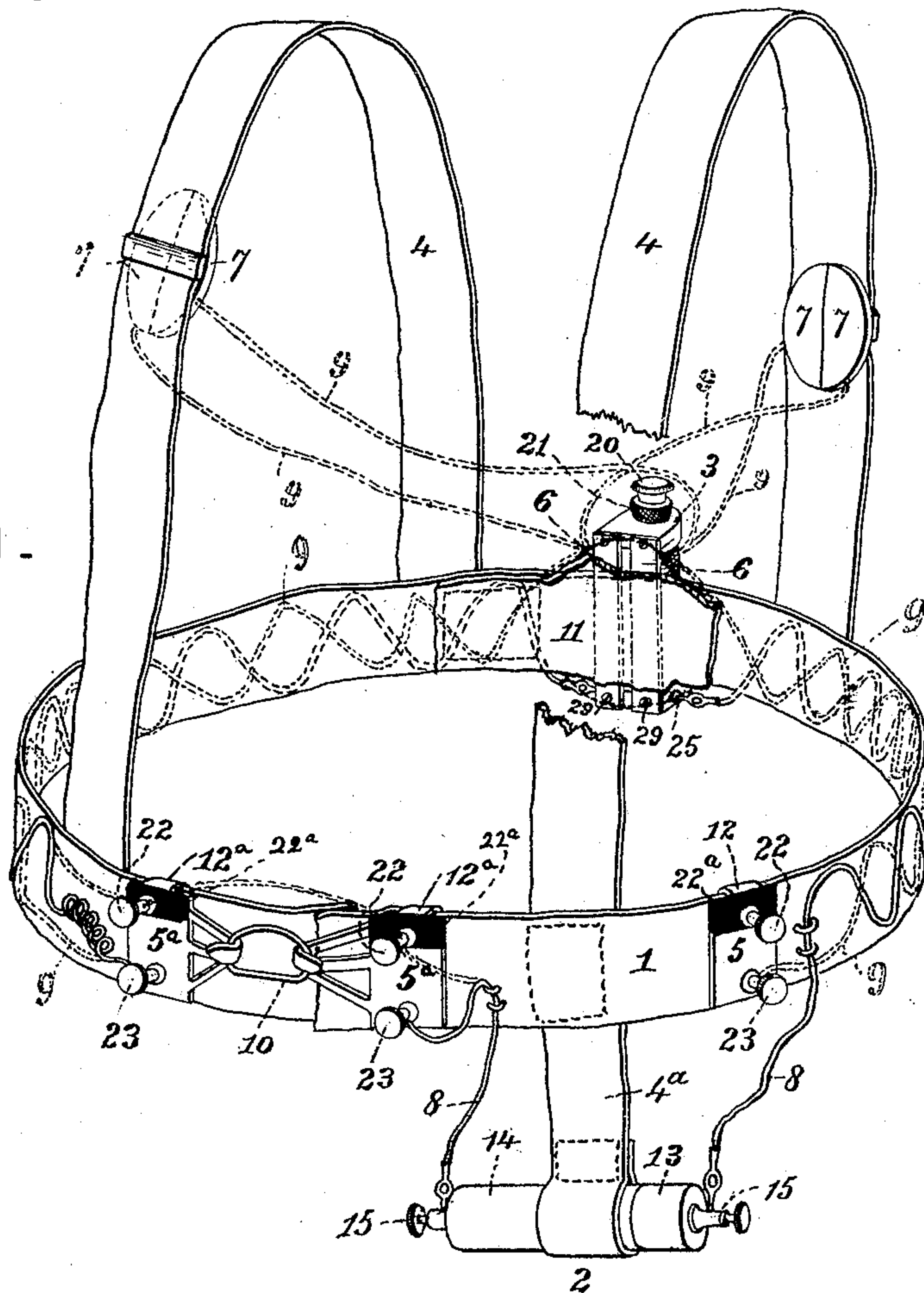


FIG. II.

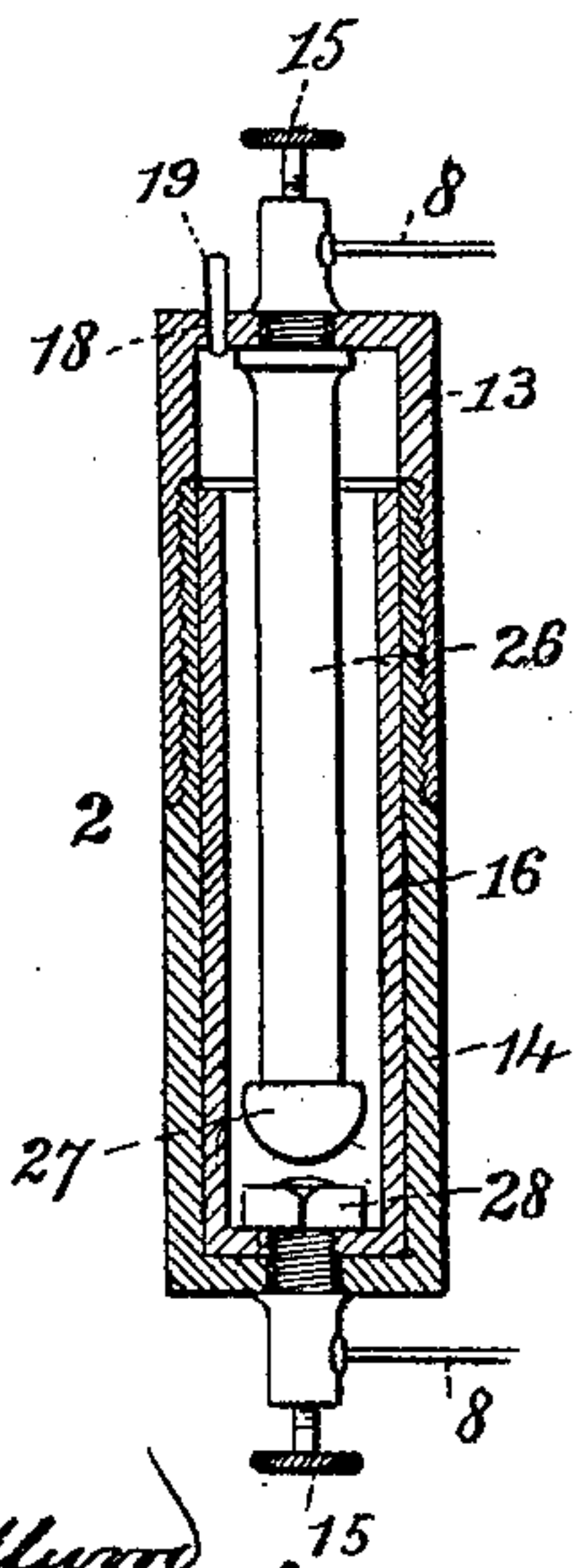


FIG. III.

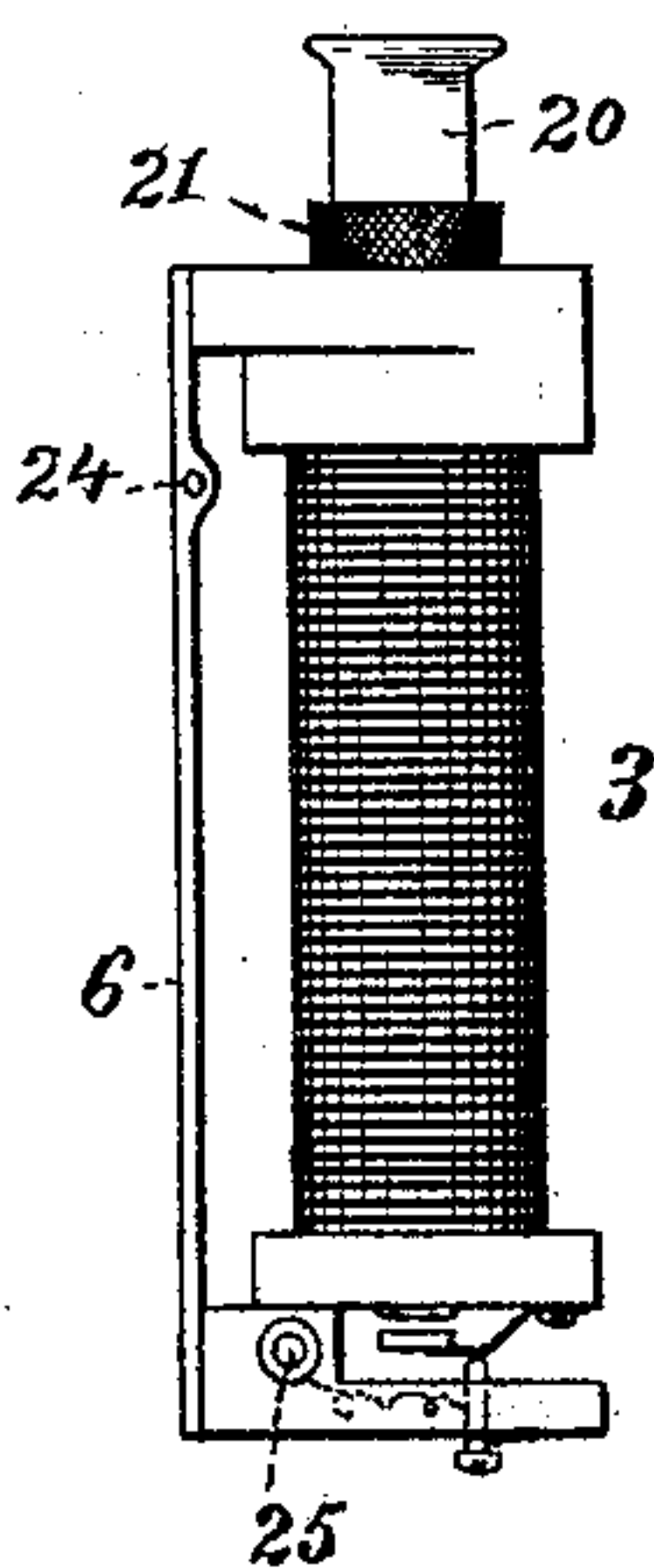
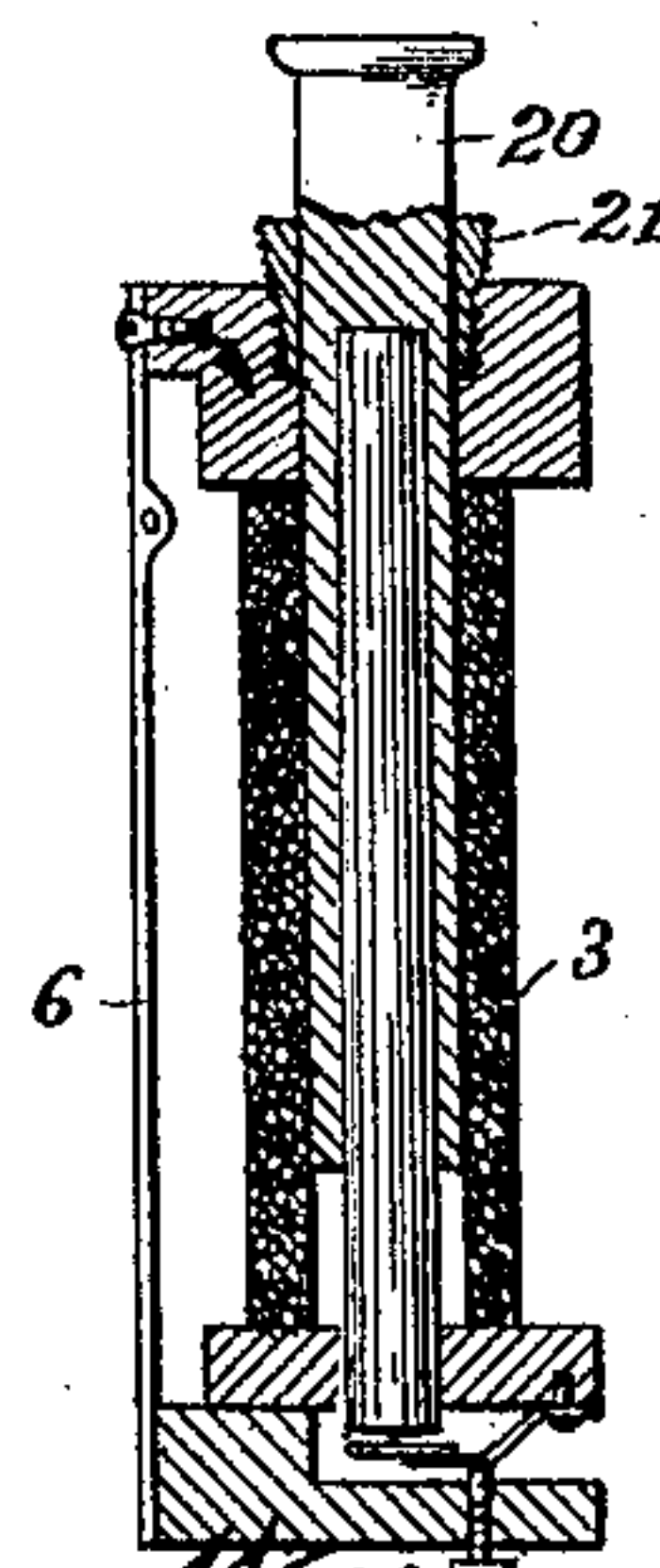


FIG. IV.



Attest
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(No Model.)

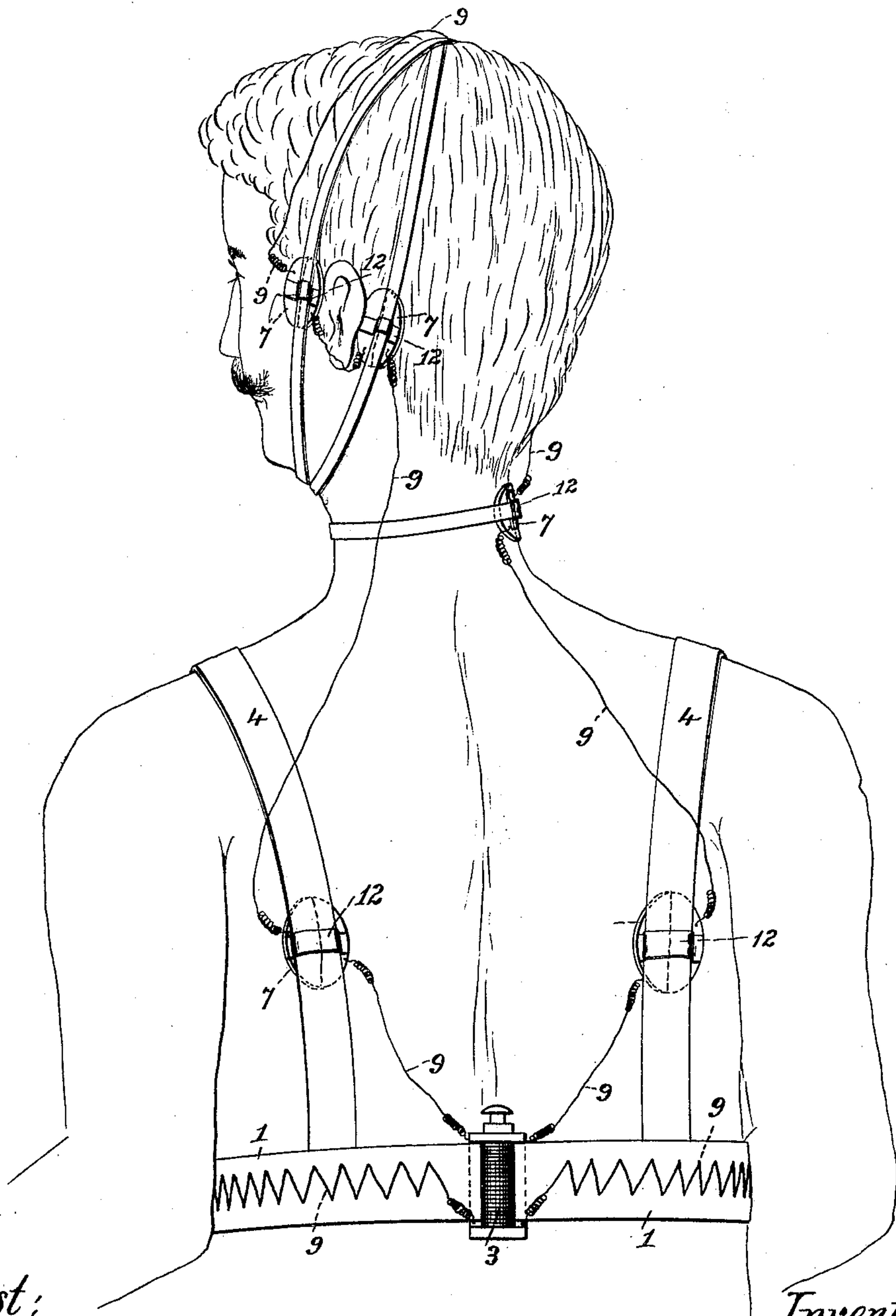
2 Sheets—Sheet 2.

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FIG. V.



Attest:

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Samuel H. Knight.

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UNITED STATES PATENT OFFICE.

WILLIAM J. SHELTON, OF COLUMBIA, TEXAS.

ELECTRO-MEDICAL BELT.

SPECIFICATION forming part of Letters Patent No. 405,436, dated June 18, 1889.

Application filed September 15, 1888. Serial No. 285,449. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. SHELTON, a citizen of the United States, residing at Columbia, in the county of Brazoria and State of Texas, have invented a new and Improved Electro-Medical Belt, of which the following is a specification.

This invention relates to that class of medical appliances in which it is designed to subject different parts of the body to the action of a current of electricity, the same being transmitted by means of contact-plates in connection with a suitable generator, said plates being applicable to any and all parts of the body and to cover greater or less area; and the objects of my invention are to provide an appliance to be easily applied, convenient to wear, and adapted to supply a greater and stronger shock of electricity than those heretofore used.

To these ends my invention consists in a suitable belt or other support carrying movable contact-plates, a galvanic battery, an induction-coil, connections between the battery and coil, and conductors connecting the secondary wire of the coil to the contact-plates through which the shock is to be conveyed, the contact-plates being provided with suitable binding-screws or other connectors, and also having suitable flaps or insulators for covering them when not in use.

The novel features of my invention are specifically pointed out in the claims, being first fully described with reference to the accompanying drawings, in which—

Figure I is a perspective view of my appliance, showing one form of belt or support, which support may be varied in construction at will. Fig. II is a longitudinal section of the particular form of battery used in connection with my device. Fig. III is a side elevation of the induction-coil. Fig. IV is a sectional view of the induction-coil, showing the means for binding in any desired position the movable sleeve. Fig. V is a view showing the application of my device.

1 may represent any suitable form of belt or support, having shoulder-straps 4 secured thereto, one of which shoulder-straps may be extended and looped to form a support 4^a for the battery 2.

3 is an induction-coil of any desired con-

struction, preferably small in size, and has straps or plates 6 secured transversely to the ends of the bobbin, forming a clasp, whereby the induction-coil is secured to the belt. The coil has sockets 25, in which are inserted the contact ends of its primary conductors 8, secured to and running around the belt, their other ends, or ends of short conductors connected therewith, being secured in binding-screws 15 at each end of the battery 2.

7 7 are contact-plates, of which there may be any number, placed at any part of the support, and they are preferably made to conform to the part of the body to which they are to be applied. For instance, it is often desirable to apply an electrical current to the temples or behind the ear, in which case I use a special form of plate conforming to these parts, which may be held in place by a suitable bandage or strap, as shown in Fig. 5. These plates 7 are connected by conductors 9 to the contact clamping-plates 6, which are in turn connected to the secondary wire of the coil. The adjacent plates are also insulated from each other, whereby the current coming from the plates 6 (which we will suppose is insulated now by flap 11) will pass from one plate 7 through the adjacent portion of the body to the other plate 7 and return.

5 5^a are additional contact-plates secured to the belt by clamps 12 12^a, respectively, through which clamps the secondary current may be transmitted to the body. These contact-plates 5 5^a are each provided with upper binding-posts 22 and lower binding-posts 23, both preferably of double-socket form. The former of these binding-posts are insulated by the plates 22^a and the latter posts 23 are in electrical contact with the plates 5 5^a. The upper insulated posts 22 are intended for receiving the primary conductors and the lower posts 23 for the secondary conductors when it is desired to apply the current to the body through such plates. The plates 5^a are adjustable for changing the size of the belt and the plates 5 are adjustable at will. The plates 5^a are further provided with the connecting-clasp 10, through which the primary current passes, the respective portions of one conductor being connected to the binding-posts 23 on the plates 5^a. By this arrangement the current is broken when the belt is removed.

While this is the preferred arrangement of the conductors, yet it is obvious that they may be changed around and the necessary connections made in any suitable way.

5 In order to regulate the strength of the secondary current, the core is provided with surrounding movable sleeve 20, which may be moved in and out at pleasure. Around this sleeve 20 I fit a split binding-sleeve 21, screw-
10 ing into the end of the bobbin, whereby the sleeve 20 may be clamped in any desired position and will not change its position by jarring when the apparatus is worn upon the body. The plates 6 of this induction-coil, it will be
15 seen, are provided with sockets 24, in which the ends of the conductors 9 are inserted.

The battery 2 consists of two correspondingly screw-threaded cylindrical cups 13 14, in the ends of which are secured the binding-
20 screws 15, and in one end is a vent-hole 18, closed by a plug 19 for the purpose of allowing the escape of air when the parts are put together. In one of the cylindrical cups is secured by means of the screw of the binding-
25 post an electrode 26, and in the other a cup-shaped electrode 16, secured also by the screw of the binding-post, on the end of which screw is fitted a nut 28. The electrode 26 passes inside of the electrode 16, and has an
30 insulating button 27 on the end for preventing contact with the bottom or sides. It will be seen that this battery forms an economical and convenient cell to be worn with the ap-
pliance.

35 While the construction hereinbefore described is the preferred form of my device, it is obvious that the principles of my invention can be carried out with various changes in the form of support and other details. For
40 instance, the support may have any number of shoulder-straps or cross-pieces attached thereto, on which are supported plates, which features I do not particularly claim, inasmuch as they are old *per se*; also, the conductors 8
45 could be connected to the insulated binding-posts of the plates 5 5^a, and the secondary conductors of the induction-coil connected to the binding-screws 23, whereby the plates would conduct electricity to the portions of
50 the body with which they might be in contact.

The flaps 11 are preferably provided for each pair or single one of the contact-plates, according to their location, and are made
55 flexible, so that they may be turned back whenever it is desired to have the plates contact with the body. The flaps may, however, be removed altogether, for it is obvious that no current will be transmitted by the plates
60 when the conductors are detached therefrom.

The induction-coil is provided with the usual make-and-break mechanism in one end, and also with suitable tension devices for regulating the same.

65 While I have shown the binding-screws in the ends of the battery, it is obvious that they could be placed at any other convenient

point and connected to the electrodes in any suitable manner. The air-vent 18 could also
70 be placed at any desired point in the cell. The battery itself may be supported, as shown, by the hanger 4^a, or it may be supported entirely by the conductors to which it is at-
75 tached, or the conductors may be of such length as to permit of the battery being carried at any part of the body or clothing—such, for instance, as in the pocket of the
80 wearer. The electrode 6 may be connected in any suitable way to the secondary wire of the coil, such, for instance, as by means of a wire passing from the screws 29 in the ends of the
bobbin.

Having thus described my invention, the following is what I claim as new therein and de-
85 sire to secure by Letters Patent:

1. In an electro-medical appliance, the combination, with a belt or other support, adjustable contact-plates 5 7, distributed over said support and having binding-posts, suitable
90 conductors secured to the appliance, an electric battery, an induction-coil carried by the appliance and connected to the conductors, and conductors running from the secondary wire of the induction-coil and adapted to be
95 connected to the different contact-plates at will, substantially as herein set forth.

2. In an electro-medical appliance, substantially as described, the combination, with the support 1 4, battery 2, sling 4^a, for supporting
100 said battery, induction-coil 3, having contacts 6, forming a clamp for holding the coil to the support, contact-plates 5 7, secured to the support, and conductors 8 9, connecting the battery with the induction-coil and the induction-coil with the contact-plates, respectively,
105 substantially as shown.

3. In an electro-medical appliance, substantially as described, the combination, with a support, a clasp for securing said support, a
110 battery, a device for imparting a current of electricity to the body, and connection between the battery and said device, said connection including in circuit the clasp for securing the support, whereby the connection
115 is broken when said support is removed, substantially as set forth.

4. In an electro-medical appliance, substantially as described, the combination, with the support, battery and induction coil carried by
120 said support, connection between said battery and induction-coil, contact-plates on the support, conductors running from said induction-coil and adapted to be secured to any and all of the plates, and insulating-covers 11, adapted
125 to insulate the contact-plates from the body and fold back from said plates, as and for the purpose explained.

5. The electric battery to be applied to medical belts, substantially as described, consisting of the correspondingly screw-threaded
130 cylindrical cups 13 14, having binding-screws 15, a cup-shaped electrode 16, secured to one of the cups of the cell, and an elongated electrode 26, secured in the other cup by a bind-

ing-post, and having the insulating-knob 27, one of said cups also having a vent-hole 18, closed by a screw-plug 19, all substantially as herein described.

5 6. In an electro-medical appliance, substantially as herein described, an induction-coil for application to such appliance, consisting of the coil 3, longitudinal insulated contact-plates 6, connected to the secondary wire of
10 the induction-coil and forming a clamp for securing the coil to the appliance, and a movable sleeve 20, having a binding-screw 21, for securing said sleeve at any desirable point, all substantially as hereinbefore described.

15 7. In an electro-medical appliance, substantially as described, the combination, with

suitable generators and conductors running therefrom, of the metallic plates 5, having binding-screws 22 23, one of said binding-screws on each plate being insulated from the
20 plate and the other making electrical connection therewith, substantially as shown, whereby the insulating-screws may be used for a primary conductor, and the secondary screws may be used to connect the plates as contact-
25 plates to the secondary conductor, substantially as described.

WILLIAM J. SHELTON.

Witnesses:

STEVE PATTERSON,
W. J. NAILLING.