

(No Model.)

A. ERIKSON.
ELECTRIC BELT.

No. 465,093.

Patented Dec. 15, 1891.

Fig. 1.

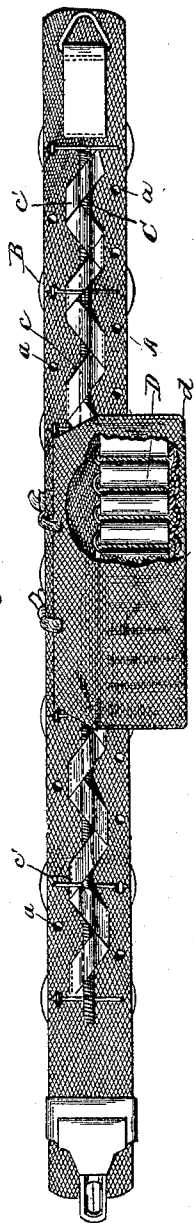


Fig. IV

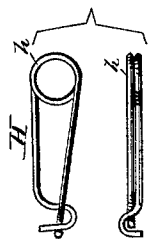


Fig. III

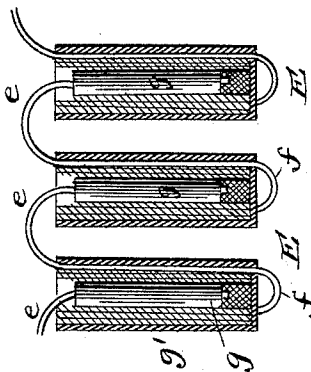
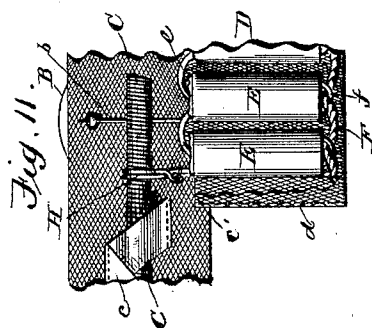
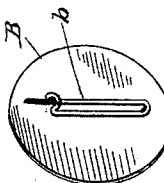


Fig. V



Witnesses

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ELECTRIC BELT.

SPECIFICATION forming part of Letters Patent No. 465,093, dated December 15, 1891.

Application filed June 25, 1891. Serial No. 397,514. (No model.)

To all whom it may concern:

Be it known that I, ANDREW ERIKSON, a citizen of the United States, residing at Hawley, in the county of Clay and State of Minnesota, have invented certain new and useful Improvements in Electro-Galvanic Belts; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in electro-galvanic belts; and the object is to provide a simple, inexpensive, and effective device for applying an electric current directly to the body, and to arrange the different parts in such relation that the number of contact-plates can be readily adjusted and the current increased or diminished without removing any of the cells of the battery.

With these and other ends in view my invention consists of the peculiar construction and arrangement of parts, which will fully appear hereinafter.

To enable others to readily understand my invention, I have illustrated the same in the accompanying drawings, in which—

Figure I is a perspective view of my improved electro-galvanic belt, showing the different parts connected and in position for use. Fig. II is a detail view, partly in section, showing one end of the battery and a portion of the belt. Fig. III is a sectional view of one end of the battery. Fig. IV is a detail view of the hook for connecting the conductor in the belt to the battery, and Fig. V is a view showing one of the contact-plates and the pin thereon.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the belt, which may be made of any desired material, preferably of strong textile fabric. This belt is provided with any suitable clasp for securing it on the person, and a series of holes or openings *a* are provided in the belt at suitable intervals apart and alternating at the upper and lower edges of the belt, said holes being provided with metallic protection-eyelets.

The contact-plates B are concavo-convex in cross-section, and each plate is provided with a clasp *b*, which is secured on the back in any suitable manner. The pin of each clasp is

passed through the fabric opposite one of the openings *a*, and the hook on said clasp is arranged to fit in said opening. The clasp is then hooked in the usual manner, and the electrode is thereby rigidly and firmly secured in place on the belt. By this means the contact-plates can be readily adjusted to any position on the belt, and any number of the plates can be used, as desired. The contact-plates are connected with the battery by the conductors C, which are arranged on either side of the belt, and consist of coiled wire springs secured to the belt at or near the ends thereof and above the battery. These conductors are arranged to pass over and in contact with the pins which fasten the contact-plates on the belt, and said conductors are held in place and in engagement with the pins by a tape or ribbon *c*, which is wound around the conductors. These tapes or ribbons hold the conductors close against the pins, and they are sewed or otherwise secured to the belt at the point where the ribbon is crossed on itself, which is arranged directly opposite the opening on the other side of the conductor, as at *c'*. It will be readily seen that each pin which is passed through the belt to hold the contact-plate in place thereon will pass over the sewed portion of the ribbon and under the conductor, thus holding the conductor in a rigid position.

The battery D is arranged at or about the middle of the belt and is inclosed in a sheath or case *d*, (shown partly broken away in Fig. I,) which is secured to the lower portion of the belt in a suitable manner. This sheath is preferably made of a silk outer cover and a lining of oil-cloth or other impervious material, and the battery hangs or is suspended in said sheath and is entirely inclosed by the same.

The battery consists of a series of cells E, each cell having an exterior shell, which is substantially oval-shaped in cross-section and is closed at its bottom. The copper wire *e* runs from the bottom of one cell, forming the loop *f* on the bottom, up through the cell on the opposite side thereof, and over and down near to the bottom of the next cell, as clearly shown in Fig. III. All of the cells are connected together in this manner, and to prevent them from becoming loose and moving

too much the cells are fastened together at their bottoms by a cord or a series of cords F, which are secured to the loops *f*, formed by the copper wire *e* on the bottom of each cell.

5 Each cell is also provided with a strip or piece of copper *g*, which is bent around the end portion of the wire *e* in the cell, or otherwise arranged, and a suitable packing *g'* is placed in the cells around the elements to absorb the
10 exciting-fluid which is put into the cells. These cells are provided with the closed bottoms in order to retain as much of the exciting-fluid as possible without allowing it to drip out and injure the sheath inclosing the
15 battery. The ends of the copper wire *e* are extended some distance above the end cells of the battery and bent into hooks *e'*.

To attach the battery to the belt, I provide suitable hooks H, (shown in Fig. IV,) which
20 are adapted to engage the hooks *e'* on the copper wire *e* and spring tightly across each other to firmly clasp the same. These hooks are bent at *h*, and they are passed loosely over the conductors C, and adapted to slide easily
25 thereon to adjust the battery to its proper place. These hooks H may engage the ends of the copper wire *e*; or if the current is too strong and it is desired to diminish it one or
30 more of the cells on either end of the battery may be disconnected by simply adjusting the hooks and engaging them with the loops *e''*, formed by the wire *e* between each cell at the top thereof.

I am aware that changes in the form and
35 proportion of parts and details of construction can be made without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such changes as fall within the scope
40 of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

45 1. The combination, with an electro-galvanic belt, of the contact-plates secured on the inner side of the belt, the spring-clasps on said plates being on the outer side of the belt, the metallic flexible conductor extending entirely around the belt and arranged
50 above the spring-clasps, the ribbon fastened to the belt and running over the conductor, and the series of cells loosely connected together and to the conductor, substantially as described.

55 2. In an electro-galvanic belt, a metallic

flexible conductor extending around the belt on the outer side thereof, and the ribbon fastened to the belt above the conductor to secure it in place on the belt, substantially as described. 60

3. In an electro-galvanic belt, a battery consisting of a series of oval-shaped cells, a copper wire forming a loop on the bottom of one cell and passing up through said cell on one side thereof and down close to the bottom of
65 the next adjoining cell, the plates on the free end of said wire, and the cord fastened in the loops and connecting the cells together, substantially as described.

4. In an electro-galvanic belt, the flexible
70 metallic conductor extending around the outer side of the belt, the series of cells loosely connected together, the copper wires connecting said cells, the loops on said wires at either end of the series of cells, and the spring-hooks
75 having their bent portion arranged to slide on the flexible conductor and adapted to engage with the copper wire, substantially as described.

5. The combination, with an electro-galvanic belt, of a flexible conductor, a ribbon which fastens said conductor to the belt, a series of cells loosely connected to said conductor, and the electrodes in contact with the conductor, substantially as described. 80

6. In an electro-galvanic belt having the series of openings arranged alternately on opposite sides thereof throughout its length, the combination of the flexible conductor, the ribbon securing said conductor on the belt, the
90 electrodes having spring-hooks secured in the openings in the belt and contacting with the conductor, and the battery loosely connected to the conductor, substantially as described.

7. In an electro-galvanic belt, a battery consisting of a series of oval-shaped cells having closed bottoms, the wire passing through each cell on opposite sides thereof and forming a loop below the bottom of said cells, all of the cells being connected together and the copper element *g*, interposed between the bent portions of the wire, substantially as described. 100

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW ERIKSON.

Witnesses:

ARCHIE WHALEY, Jr.,
OLE L. ANWORTH.