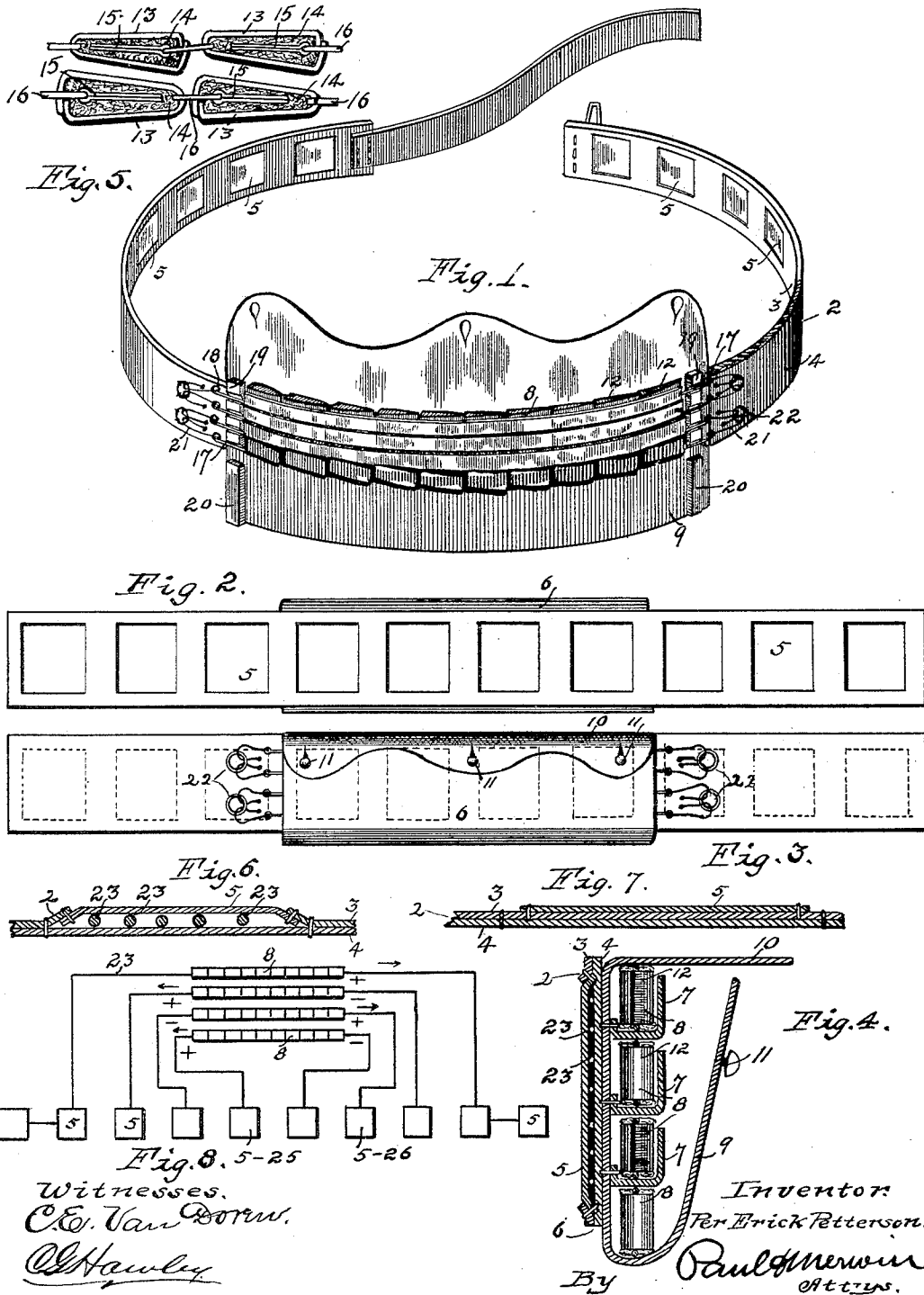


(No Model.)

P. E. PETTERSON.
ELECTRIC BELT.

No. 462,732.

Patented Nov. 10, 1891.



UNITED STATES PATENT OFFICE.

PER ERICK PETTERSON, OF MINNEAPOLIS, MINNESOTA.

ELECTRIC BELT.

SPECIFICATION forming part of Letters Patent No. 462,732, dated November 10, 1891.

Application filed March 11, 1891. Serial No. 384,552. (No model.)

To all whom it may concern:

Be it known that I, PER ERICK PETTERSON, of Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain Improvements in Electric Belts, of which the following is a specification.

My invention relates to electric belts for the medical application of electricity; and its object is to provide a cheap and simple electric belt of great power and which will distribute the electric current evenly to all parts of the body covered by the belt.

My invention consists in the various constructions and combinations hereinafter described, and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, in which—

Figure 1 is a view of a belt embodying my invention, showing four battery-chains. Fig. 2 is a rear view thereof. Fig. 3 is a front view. Fig. 4 is an enlarged sectional view showing the arrangement of the batteries and belt. Figs. 5, 6, and 7 are details. Fig. 8 is a diagram showing the connections with the several contact-plates.

As shown in the drawings, the belt 2 is made up of two thicknesses of leather or cloth 3 4, the inner one having openings corresponding to the form of the zinc plates 5 secured therein. This belt is adapted to be fastened about the body by any suitable means, as by the strap and buckle shown. Independent of the belt, but suspended on the front part thereof, is the battery-pocket 6, having the narrow flaps 7 (shown in Figs. 1 and 4) and adapted to confine the battery-chains 8 in place against the rear part of the pocket 6. The lower edge 9 of the pocket is adapted to fold up and cover the faces of the battery-chains 8. The upper portion 10 folds down and is secured in place by the buttons or fastenings 11. The battery-chains ordinarily contain the same number of links or cells 12 as there are contact-plates 5. This proportion may be varied indefinitely. The number of battery-chains is usually one-half the number of contact-plates 5. These battery-chains are made up of two or more cells. (Shown in detail in Figs. 4 and 5.) The outside of each link or cell consists in a zinc strap 13, folded

upon itself and embracing the cloth or fiber 14 wound about the inner copper plate 15. The wires or coupling-links 16 lead from the copper plate of one link to the zinc plate of the next link in advance, thus connecting all of the zinc and copper elements in series. The cloth or flannel 14 is saturated with any suitable acid to energize the battery. To the ends of the chains are secured short connecting-wires 17, having eyes 18 and fastened or held in place by the notched blocks 19, provided in the back wall of the pocket 6. When the lower flap 9 is folded up, the block 20 thereon serves to tightly close the notches in the block 19 to prevent the disarrangement of the wires 17. The chains are arranged one above the other in alternate positions, so that in one chain the current of electricity flows in a given direction, while the current from the next chain flows in an opposite direction, thereby supplying both positive and negative current to each side of the belt. The flexible connecting-cords 21 extend from suitable hooks linked in the eyes 18 through retaining-rings 22, provided on the strip 2, and through the outer thickness of leather or cloth 4 into the space between the two parts of the belt, from thence passing back to suitable connections with the several contact-plates 5. These electric connections are shown in the diagram, Fig. 8, where the battery-chains are connected directly with the contact-plates 5 by strands 23. The relative directions in which the electric currents flow are indicated by the arrows in Fig. 8, by which it will be seen that the positive currents flow from the lower chain 8 to the contact-plate 5 25, while from the next battery-chain currents flow to the plate 5 26 on the opposite side of the belt. Two or more contact-plates may be joined together, as shown, by the end plates in Fig. 8. I sometimes secure the contact-plates directly on the inside of the belt, thereby having the strip 3, as shown in Fig. 7, instead of concealing the edges of the plates beneath the edges of the openings in the strip 3, as exhibited in Fig. 6. Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the supporting-belt 2, having the contact-plates 5 arranged

at regular distances around the same, of the pocket 6, having the upper and lower flaps, the longitudinal strips secured to the back of the pocket and adapted to fold up over the fronts of the chains 8, means for securing said flaps, and connections between the ends of said battery-chains 8 and said contact-plates, substantially as described.

2. The combination, in a device of the class described, of the supporting-belt formed of two strips secured together along their edges, the inner strip having openings arranged throughout its length at regular distances, plates 5, secured between said strips, means for securing the ends of the belt, a pocket 6, the notched blocks 19 and the closing blocks 20 thereof, the battery-chains 8, the flexible strips 7 for holding the same in place, the wire ends of said chains held in the notches of said blocks 19, and flexible cords 21, secured by rings 22, with the belt connecting with said wires and with wires extending between the parts of the belt 2 to said contact-plates 5, substantially as described.

3. The combination, in a device of the class described, of a belt 2, contact-plates 5, arranged at regular distances on the inner portion thereon, the pocket 6, having flaps 9 and 10, battery-chains 8, the longitudinal strips 7, arranged to hold all except the lower battery-chain in place, said lower battery-chain being held in position by the flap 9 when folded up, said battery-chains arranged oppositely, blocks 19 for holding the ends of the same in place, and the flexible connections extending between said wires and said plate 5, whereby the electric current is distributed evenly to all parts of the body covered by the belt and whereby currents of both positive and negative character are supplied from each side of the belt, substantially as described.

In testimony whereof I have set my hand this 6th day of March, 1891.

PER ERICK PETTERSON.

In presence of—

C. G. HAWLEY,
FRED. S. LYON.