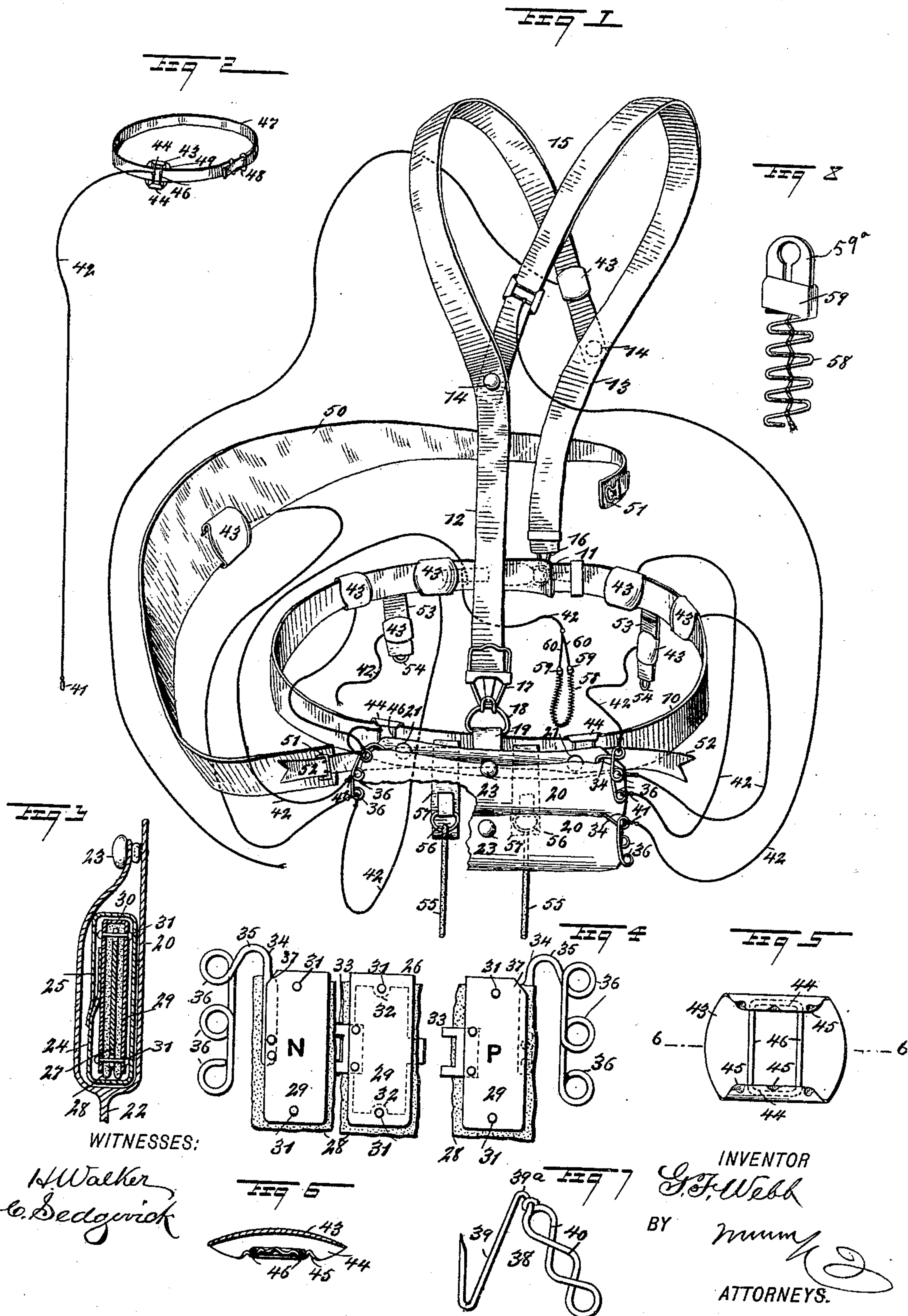


G. F. WEBB.
ELECTRIC BELT.

Patented Apr. 18, 1893.



UNITED STATES PATENT OFFICE.

GEORGE F. WEBB, OF CLEVELAND, OHIO.

ELECTRIC BELT.

SPECIFICATION forming part of Letters Patent No. 495,861, dated April 18, 1893.

Application filed December 16, 1892. Serial No. 455,381. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. WEBB, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and Improved Body-Battery and Attachments for Same, of which the following is a full, clear, and exact description.

My invention relates to that class of electric batteries and appliances which are adapted to be carried upon the person and which are used to send a current of electricity through the body in treatment of acute and chronic diseases of various kinds; and the object of my invention is to produce a battery and attachments therefor which may be carried upon the body without inconvenience, and by means of which a constant electrical current may be sent through any part of the body.

My invention is intended especially as an improvement on the body battery and attachments, for which Letters Patent of the United States No. 448,128, dated March 10, 1891, were granted, and the improvements hereinafter set forth are largely on the details of construction for an apparatus somewhat similar to that set forth in the patent referred to.

To these ends my invention consists in certain features of construction and combinations of the same, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a broken perspective view of the complete apparatus showing all the parts, although in practice the parts are seldom all used together. Fig. 2 is a perspective view of the neck band and its electrode. Fig. 3 is an enlarged cross section through one of the batteries and its containing case. Fig. 4 is a broken detail front elevation of one of the batteries. Fig. 5 is a detail inverted plan of one of the electrodes. Fig. 6 is a cross section of the same on the line 6—6 in Fig. 5. Fig. 7 is a perspective view of the cut out or adjusting device adapted to connect with the battery hinges; and Fig. 8 is a broken detail view of an elastic body contact which will be hereinafter described.

The apparatus is provided with a belt 10 which is adapted to be buckled around the

waist and which should be provided with suitable means of adjustment, the belt in the present case being provided with a fastening buckle 11. The belt is suspended by means of shoulder straps 12 and 13, which are connected respectively with the back and front portions of the belt and which are pivoted together at front and rear, as shown at 14, so as to form a yoke 15 through which the neck of the wearer extends, thus causing the straps to lie easily upon the shoulders. The strap 13 terminates at its lower end in a hook 16 which engages an eye on the belt, as shown clearly in Fig. 1, and the back strap 12 has at its lower end a buckle 17 which engages a ring 18 fastened to a cross strap 19 on the belt 10, and by this means the strap 12 may be adjusted so as to fit the harness-like attachment to people of different heights. It will be understood, however, that other forms of fastening and adjusting devices may be used to connect the straps 12 and 13 and the belt 10.

On the back portion of the belt 10 are the battery cases 20, which are fastened to the belt by buttons 21, and which are improvements on the cases shown in the former patent referred to above, and these cases are preferably constructed in series arranged one above another, as shown clearly in Fig. 1, and the upper case is connected to the one below by means of a web 22 which forms the back of the next case below. Any number of these cases may be used. Each case is open at the top so as to permit the ready insertion or removal of a battery, and when the battery is in place and is to be held there, the tops of the cases are closed by means of buttons 23, or equivalent fastening devices. Each case contains a battery and the battery is provided with a containing waterproof pocket 24, which prevents any of the acid of the battery from coming into contact with the case or with other parts of the apparatus, or with the clothing of the wearer. The pocket is open at the top and provided with a closing flap 25, and the pocket is substantially like that shown in the above named patent.

The battery proper, that is, the battery elements, is an improvement on the battery shown in said patent, and it consists of a number of connected elements 26, see Figs. 3 and 4, which are hinged together so as to conform

to the movements and shape of the body, and each element comprises a central positive or copper plate 27, an inclosing jacket of absorbent insulating felt 28, and an outer negative double zinc plate 29 which, at its upper end, is bent, as shown at 30, so that the plate extends downward on both sides of the plate 27. The felt projects outward beyond the edges of both the copper and zinc plates, as shown clearly in Fig. 4, so as to guard against any short circuiting; and the parts of each element are held together by brass rivets 31 which project through notches 32 in the ends of the copper plate, see Fig. 4.

The several elements of the battery are connected by copper hinges 33, so that the entire force of the battery may be used when necessary, and the hinges are arranged so as to connect the zinc plate of one element with the copper plate of the next. The series of elements are provided at the ends with suitable terminals, to which the conducting cords or wires may be attached, as hereinafter described, the terminal at one end being secured to a zinc element and at the opposite end to a copper element. Each terminal consists of a conducting wire 34 which is riveted to one plate of the battery element and extends upward through a notch 37 clipped in zinc plate and surrounded by felt to prevent contact, and above the element so as to project beyond the edge of the pocket 24, and it is then bent downward and outward, as shown at 35, and formed into a series of contact rings 36, in either or all of which the conducting cords or wires may be secured.

It will be seen that if a connection is made with the two terminals 34 the entire force of the battery will pass outward through the said terminals and through the conducting wires, but in many cases only a portion of the battery power is required, and for this purpose the adjuster or cut out 38 is used, this being shown in detail in Fig. 7. This adjuster comprises a hook 39, the shank of which is bent outward and downward at its upper end, as shown at 39^a, and formed into a series of loops 40 in which the hooks of the conducting cords or wires may be fastened, and by thrusting the hook 39 into the pocket 25 and beneath one of the hinges 33 and then bringing it upward so as to contact with the hinge, the battery will be cut out at this particular point so that the circuit will pass out through the adjuster 38 and back through one of the terminals 34. It will thus be seen that by hooking the adjuster into the desired part of the battery, just the right quantity of current may be used, and as the upper portion of the adjuster lies over the edge of the pocket 24, the adjuster will be in position to keep the hook in close contact with the battery hinge.

The loops 40 of the adjuster and the rings 36 of the terminals 34 are adapted to engage the snap hooks 41 on the ends of the insulated conducting cords 42, these being the ordinary flexible copper wires covered with insulating

material, which extend from the battery to the electrodes 43 which are arranged on different parts of the apparatus to contact with the body. The electrodes 43 are made preferably of aluminum, as this metal does not corrode by the action of the acids of the body. Each electrode is of an oval convex shape, as shown best in Fig. 6, and at opposite sides the metal of the electrode is bent or doubled under, as shown at 44, so as to form the electrode into a clasp capable of embracing the belt or straps of the apparatus, and this enables the electrode to be adjusted on the belt or straps.

The electrode has on its under or back side a transverse wire loop 46, which extends from one flange 44 to the other, and this wire loop is a conducting wire, preferably of copper and is held in place by inner dents or bends 45 in the flanges 44. The ends of the conductors 42 are made fast to the loops 46 in any suitable and convenient way. These electrodes, as before remarked, are adapted to be arranged on any necessary part of the body, so that a current of electricity may be projected through said parts, and in accordance with this idea, the apparatus is arranged in such a way that the electrodes may be supported in contact with the body opposite the parts which it is usually necessary to treat.

It will be seen that the belt and shoulder straps enable the electrodes to be arranged around the waist and on various parts of the breast and back, and a neck band 47 is used which is provided with a buckle 48 to enable it to be adjusted, and this band may be buckled around the neck, and it carries an electrode 43 which connects with the battery by means of one of the conductors 42 already described. It will be seen then that the current will pass through the conductor and the electrode and thence through the body and out through another electrode and conductor, back to the battery. This neck band and its electrode are used in the treatment of throat and rheumatic troubles. The electrode 43, which is secured to the neck band, has an inner lining 49 of fabric, which enables it to be sewed, or otherwise fastened to the neck band.

In connection with the apparatus, I use a broad elastic band 50 which facilitates the treatment of abdominal diseases, and this is adapted to extend around the abdomen, and it has end buckles 51 which are adapted to engage straps 52 on the back side of the belt 10, see Fig. 1, and its supporter or strap 50 is provided with an electrode of the kind already described which is arranged to come in contact with any necessary part. I also provide in connection with the apparatus, means for treating cases of hernia, and to this end there are on the front side of the belt 10 and on opposite sides of the buckle 11, short depending straps 53, which are provided with electrodes 43 and which, at their lower ends, terminate in loops 54. These loops are adapted to engage elastic bands 55 which may be

5 tied to the loops and which are adapted to extend downward and backward beneath the body and up upon the back, where they are tied to rings 56 carried by straps 57 on the back side of the belt 10, and the bands hold the electrodes in place on the rupture. In treating hernia, the electrodes are placed at the point of rupture and press on and hold in place the broken tissues, while the positive current of electricity contracts the same so that the rupture heals and a cure is effected.

10 It will be understood that the form of electrodes may be changed somewhat according to circumstances in treating a case of this kind. The several appliances and all the electrodes are not used at once, as a rule, but the electrodes are arranged according to circumstances to contact with the necessary parts of the body, and by means of the adjuster described, any desired amount of current within the limits of the battery, may be used.

25 When the battery is to be used for the first time, it is first soaked in strong cider vinegar, and the felt 28 of the batteries will absorb sufficient acid to act for the necessary length of time, on the plates of the battery elements, and when the battery is to be recharged it is soaked in vinegar diluted with water.

30 It is not thought necessary to trace out the various circuits, as it will be understood that the currents will pass from the battery through one conductor 42, through the electrode connected therewith, thence through the body, and thence back to the battery through another electrode and conductor.

35 In connection with the apparatus, I employ a German silver or other conducting coil 58, having end ferrules 59, which have terminal loops 59^a to engage branching conducting cords 60 connecting with one of the conduct-

ors 42. This coil is adapted to encircle the male organs of generation, so that a current of electricity may be applied to said organs in the treatment of disease.

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

1. In an apparatus of the kind described, the aluminum electrode having an oval convex surface to contact with the body, end flanges to engage a belt, and a transverse conducting wire to engage a suitable conductor connecting with the battery, substantially as described.

2. The combination with the belt and the battery carried by the belt, of an abdominal supporting strap adjustably secured to the back portion of the belt, and an electrode carried by the strap and connected with the battery, substantially as described.

3. The combination with the belt and a battery carried thereby, of the depending straps on the front portion of the belt, the electrodes carried by the straps and connected with the battery, and an elastic fastening cord secured to the straps and adapted to be secured to the rear portion of the belt, substantially as described.

4. The combination with the belt and the batteries carried thereby, of depending straps secured to the front portion of the belt and terminating in loops, electrodes carried by the straps and connected with the batteries, rings suspended from the rear portion of the belt, and a connecting elastic cord adapted to extend from the rings to the loops of the front straps, substantially as described.

GEORGE F. WEBB.

Witnesses:

CHARLES C. DAVIDSON,
MILDRED C. AUBRECHT.