(Model.)

C. N. WEST.

ELECTRICAL THERAPEUTICAL BELT.

No. 332,467. Patented Dec. 15, 1885.

Fig. 2.

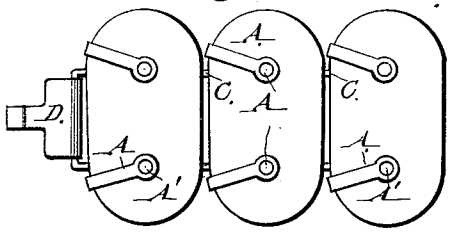


Fig. 1.

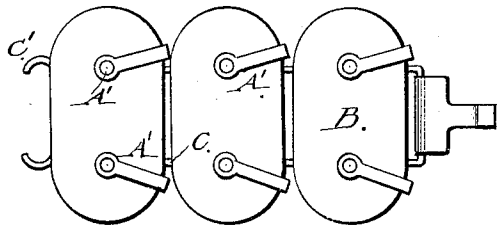


Fig. 7.

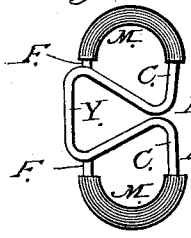


Fig. 6.

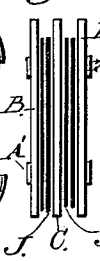


Fig. 5.

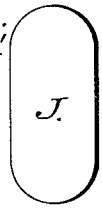


Fig. 4.

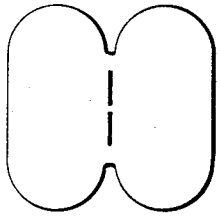


Fig. 3.

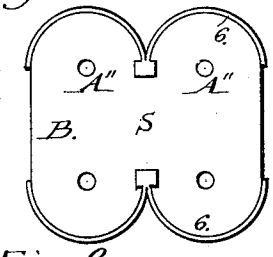


Fig. 9.

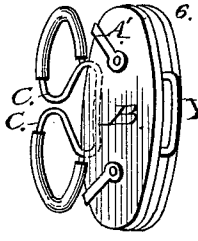
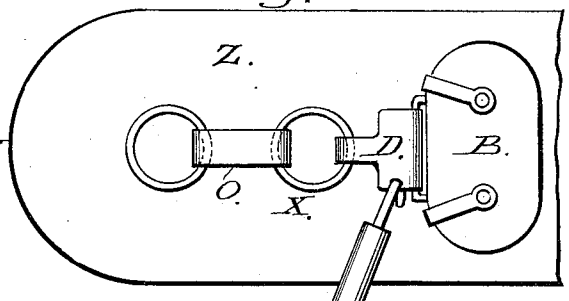


Fig. 8.



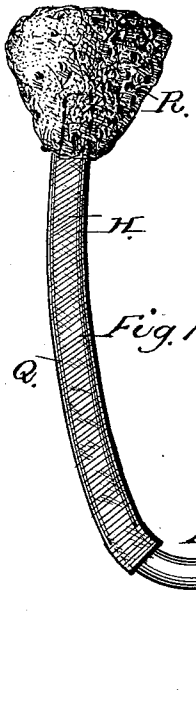
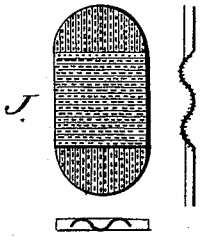
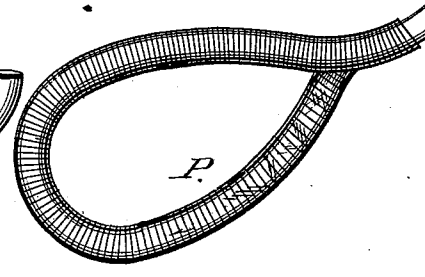


Fig. 10.

Fig. 11.





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By his Attorneys.
A. N. Evans & Co

UNITED STATES PATENT OFFICE.

CHARLES N. WEST, OF SAN FRANCISCO, CALIFORNIA.

ELECTRICAL THERAPEUITCAL BELT.

SPECIFICATION forming part of Letters Patent No. 332,467, dated December 15, 1885.

Application filed August 7, 1882. Serial No. 68,695. (Model.)

To all whom it may concern:

Be it known that I, CHARLES N. WEST, of the city and county of San Francisco, in the State of California, have invented certain new and important Improvements in Electrical Therapeutical Belts; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention has reference to that class of electric belts for therapeutical purposes in which a number of elements, each of which is composed of two or more plates of dissimilar metals separated by a layer of fibrous material are linked together, so as to form a belt that will pass around the body of a person and generate an electric current when the fibrous filling is moistened with an exciting-fluid.

It also relates to certain improvements in appendages for connecting the belt with certain parts and organs of the human body, by which the electric current is conducted from the belt and applied to those parts or organs.

My first improvement relates to the construction and peculiar arrangement of the parts of the individual elements of the belt, by which these elements may be taken apart at pleasure and any of its parts exposed, so that they may be cleaned or renewed without breaking the electrical connection between these elements or in any manner require the reconstruction of any portion of the battery or elements in the series constituting the belt; and it further relates to the manner of linking or connecting the elements together.

My second improvement relates to the form and arrangement of the conductor for applying the electric current to the generative organs, as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is a view of a portion of the belt with its individual elements in their relative positions, and showing the bands A′ A′, with which each element is held together, thrown forward so as to close the element and to form a complete cell of it. C C are the connecting portions of the wire frame, Fig. 1, as seen between the elements. A A are the heads of the rivets which hold the bands A′ A′ to the outside plate, B. These rivets are centers around which the bands A′ A′ revolve. D is a flat hook attachment designed both to connect the belt to its cloth-supporting belt Z, Fig. 8, and also to assist the connection of the belt with its appliances P and Q, Figs. 8 and 10.

Fig. 2 is a view of the end of the belt opposite to that of Fig. 1. Its elements are lying in the same direction and position, but with its bands A′ A′ thrown back, so that the elements will open and permit one element to be separated from another element.

Fig. 3, letter B, is a view of the outside or forming plate of an element after it is stamped or cut out, but before it is bent or doubled into shape, as it is in the completed element in Fig. 9, B. Letters G G represent the circular edges of the plate turned or bent, and A″ A″ are holes in the plate for the rivets holding the bands A′ A′. The letter S is the middle portion of the plate B, which permits the hinge to articulate with the wire frame, Figs. 7 and 9, letter C, when the plate is folded into its position to form an element.

Fig. 4 is a view of the "felt" or absorbent cut into its proper shape, as at letter I.

Fig. 5, letter J, is one of the inside metal plates cut into shape to fit its position at M M on wire frame, Fig. 7.

Fig. 6 is an edge view of a completed element, showing the relative position of the metal plates and other parts which form the element. B B are the edges of the outside plate folded in its doubled position, so as to form an element between its doubled surfaces. I I are the edges of the folded felt; J J, the edges of the inside plates; C C, the edge of the wire frame, Fig. 7. A′ A′ are the bands.

Fig. 7 is a view of a wire frame bent into a shape that will suit the shape of the outside plate, B, when it is doubled into form, and at the same time hold the inside plates, J J, in their positions. M M represent portions which are covered with an insulator to prevent metallic contact with the outside plate. Y represents that portion which forms the hinge and articulates with the outside plate, B, at S when the elements are joined, as in Figs. 1 and 2, at C C.

Fig. 8 is a view of the manner of connecting the belt B with its cloth or supporting belt Z by a ring, X, and a strap, O, sewed to the cloth belt.

Fig. 9 is a view of an element showing the outside plate, B, folded in position, the bands A′ A′ thrown back, so as to open the element and show the position of the wire frame within the element, and also to show its position

when connected with the next adjoining element, as seen at C C.

Fig. 10 is a view of an "electric pessary," forming an appliance adapting the belt to females. Letter R is a sponge attached to a metallic conductor which is covered by an insulating-tube at Q, extending from the sponge to the black portion E, representing the metallic conductor, connecting with the belt at D, Fig. 8.

Fig. 11 represents a thin metal plate, corresponding in shape with the inner surfaces of the outside plate, B, and is of the same electrical character as that plate, and is both perforated and corrugated, as is seen in the dots and black lines. To the right of the plate is a longitudinal section, while below it is a transverse section, both showing the corrugations. This plate is connected with the inside surface of the outside forming plate B.

Fig. 8, letter P, is a view of a spiral attachment, forming an appliance adapting the belt to males, being connected to the belt at D by a flexible metal conductor and constituting the negative electrode of the belt.

To construct an element composing a series in my belt, I stamp out plates, Figs. 3 and 5, of dissimilar metals, of any shape or size or thickness, provided that one of the plates B, Fig. 3, shall be sufficiently large to fold upon itself at its middle part, S, so that the two sides thus folded shall form the two sides—viz., the upper and lower sides—of an electric element, all the other parts of which shall be contained within these two sides of the one folded plate, as seen in Figs. 6 and 9. In the present construction I use a brass plate of about No. 31 in thickness, and cut it of a shape that when the plate is folded the parts forming the two ends of an element will be circular. These circular edges of the plate, which form the end of an element, I turn up or bend, all in the same direction, so that when the plate is bent upon itself these bent edges G G, Fig. 3, will form the completing sides of a cell or box, Fig. 9. In the present case I turn these sides of the depth that when they meet each other in the folded plate they will inclose a space of one-eighth of an inch, which constitutes the thickness of an element, the other dimensions of which I make one and one-fourth of an inch in length by three-fourths of an inch in width. I also punch four holes, A″ A″, in the plate, Fig. 3, through which I pass as many rivets, A A, Fig. 1, which hold the ends of two bands, A′ A′, which bands, being first punched with holes at both ends, I place with their holes over the holes of the plate B. These bands are made of any suitable metal, of any proper shape, and of a length that when one end is riveted to one of the holes in the plate B the other end may be riveted to the hole in the plate which will come on the opposite side of the element when the plate B is folded in position. These bands are placed on that side of the plate B that when it is folded the bands will come on the outside of the element. In the present case I make these bands of copper, No. 26 in thickness. The plate thus prepared I fold so that the circular parts of one side of it will correspond with the circular parts of the other side, and meeting each other will form a cell, as before described. These bands in this position permit the element to remain open, as seen in Fig. 9; but if I now swing the bands around the circular ends of the plate B thus bent to its open side I close and fasten the element, as in Figs. 1 and 8; but to construct the parts which are inclosed within this folded plate B, as above described, I first construct a frame of copper wire or other suitable material, Fig. 7, which is designed to form the central part of the element, (see C C, Fig. 6,) and to hold upon either side of it one of the inside metal plates, J J, Fig. 6. It is also designed to connect one element of my belt with another, as seen in Fig. 1, C C, and Figs. 7 and 9, Y Y Y, forming the hinge. In the present case I make this frame of copper wire, No. 18. I insulate the outside edges of this frame at M M, Fig. 7, liable to come in contact with the sides of the inclosing-plate at G G, Figs. 1 and 9. To do this I use any kind of thin leather, or any fibrous or other non-conducting suitable material, and saturating it with gum-shellac or other suitable gum dissolved in alcohol or other solvent, I wrap it around or attach it to the part while in its soft or fluid state, and when dry will form an insulator both hard and impervious to moisture. This form of insulation is valuable because of its effectiveness and its ease of adaptation to all forms of battery construction. I use in this case chamois-leather saturated with gum-shellac dissolved in alcohol. To use this frame C, Fig. 7, as thus constructed, I first connect it with the plate B, Fig. 3, by placing the part Y, Fig. 7, so in contact with the part S, Fig. 3, plate B, that these two parts shall coincide with each other and articulate, so as to form a hinge between the frame C and the plate B when the latter shall be bent in position in the element. This completed relation of the frame and plate is seen in C and B, Fig. 9. I next stamp out a plate, J, Fig. 5, of metal of an opposite electrical tension to that of the outside plate, B, and of a shape to suit its position on the frame C at M M, Fig. 7. I use zinc for this inside plate in the present case. I next stamp out a piece of cloth, paper, or other fibrous material of a shape that when folded upon itself will cover and envelop the frame after the plates J J have been placed in position upon it at M M, as before described. This felt covering thus placed comes between the outside and these inside plates, preventing metallic contact, and at the same time holds the exciting-fluid in contact with these plates. The frame C, holding the plates J J and covered by the felt I, Fig. 4, is next inserted within the forming sides of the plate B, the bands A A are revolved into position, and the element is completed in all its parts, and at the same time

and in this way this element is connected or joined with the next element.

To prevent any difficulty in saturating my absorbent with the exciting-fluid, I stamp out thin perforated plates J', Fig. 11, of metal of an opposite electricity to that of the inside plates, J J, and of a shape to fit the inside surface of the plate B. I corrugate these plates in one or both directions, as shown, Fig. 11, at side and bottom views, so that when placed between the absorbent and outside plate, B, the corrugations will form minute tubes between the two surfaces, into which the exciting-fluid may easily pass, and then be absorbed through the perforations into the entire felt or absorbent.

To construct the appliance P, Fig. 8, I use fine wire of any conducting metal, and, coiling it close, so that it will form a flattened tube of any proper size to suit its design, I then form a loop of this coiled tube of a size to surround the male generative organs. I form this by joining the two ends of the tube by inserting the coils of one end between the coils of the other end for a distance of an inch, (more or less.) This loop P is then connected with the metallic cord E, Fig. 8, by inserting this cord into the joined end of loop P and fastening it by wrapping with a thread or any other mode of fastening. This appliance P, thus completed and joined to the belt at D, Fig. 8, forms an elastic electrode, adapting it to the parts for which it is designed, securing great comfort in its use.

To construct the appliance Q, Fig. 10, I attach a properly-shaped sponge, R, to suit the internal female organs, over the end of a flexible conducting-cord, E, Fig. 10, and fasten it there. I then envelop the cord next the sponge with a rubber tube or other insulating material, H, Fig. 10, for a distance of four inches, (more or less.) This insulator is fastened to the sponge at its one end and to the cord at the other end. The end of the cord E not attached to the sponge R is connected with the belt at D, Fig. 8. This appliance I call an "electric pessary," and it is designed to be inserted within the female vagina for the purpose of supporting the uterus and to convey an electric current generated in my belt to the uterus and surrounding parts, thus forming an electrode to a female belt.

The advantages of an electric element constructed as before described over many others previously constructed are—

First. I get double the surface of metal for electrical action within the same element dimensions.

Secondly. I reduce the internal resistance by the construction, permitting the outside and inside plates to be brought in closer contact.

Thirdly. I have a better connection and better conduction between the elements, secured by an electrical contact at S, plate B, Fig. 3, of three-fourths of an inch.

Fourthly. A simpler mode of insulation.

Fifthly. Easier saturation.

Sixthly. An indestructible element. As the positive metal forms no integral part of the construction, but is simply an adjunct of the element, the consumption of the positive metal no more affects the electrical or mechanical construction of the element than the fuel consumed affects the furnace in which it is burned, for the positive plates when corroded can be removed and renewed without disturbing the connections by simply throwing the bands back and removing the positive plate on one side of the element and replacing the new plate before disturbing the other side plate. In this manner the connections are continued and the electric current continues to pass through the undisturbed side of the opened element.

Seventhly. This construction is lighter, more compact, more durable, and is cheaper.

Having thus described my invention, what I claim, and desire to secure by Letter Patent, is—

1. In an electric belt for body wear, having a series of electric elements, the outer plate or covering, B, of each element bent as shown, in combination with the wire frame C, articulating with the bend of said plate and joining suitably with the opposite conductor of the next element, said connecting-frame being insulated at M to prevent contact with the outer covering or plate of said next element, substantially as herein described.

2. In an electric belt for body wear, composed of a series of flexibly-connected electric elements, the outer covering or plate, B, of each element bent as shown and having rounded and inwardly-flanged ends, whereby the remaining portions of the element are inclosed, in combination with the means for closing said covering-plate, consisting of the pivoted bails or bands A' A', adapted to swing on a circle over the ends of the bent plate, substantially as herein described.

3. In an electric belt for body wear, having a series of flexibly-connected electric elements, the inner metal plate, J, of the element, and its absorbent covering I, in combination with the outer covering or plate, B, and the bent metal plate intervening between said outer covering and the absorbent material, said intervening plate being corrugated and perforated, substantially as and for the purpose herein described.

4. In an electric belt for body wear, consisting of a series of electric elements suitably formed and connected, and in combination therewith, the attachment P, consisting of a wire spirally twisted and formed into a loop, said attachment being connected with the belt by a flexible metal conductor and constituting the negative electrode of said belt, substantially as herein described.

In witness whereof I have hereunto set my hand and seal.

CHARLES N. WEST. [L. S.]

Witnesses:

CHAS. D. WHEAT,

C. WILLIAMS, Jr.