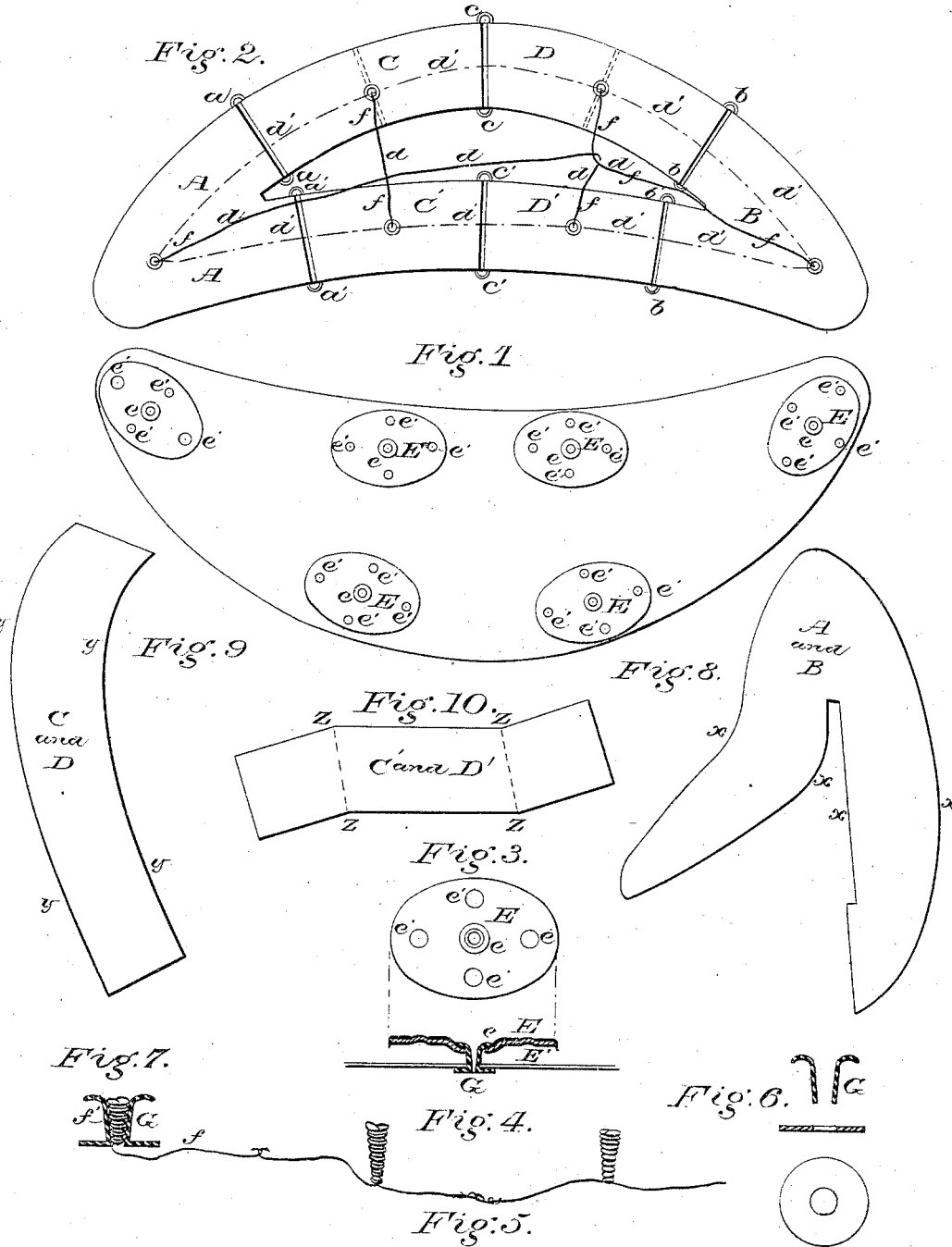


D. P. BIBLE.
Galvanic Body-Wear.

No. 212,650.

Patented Feb. 25, 1879.



Witnesses:

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UNITED STATES PATENT OFFICE.

DANIEL P. BIBLE, OF NEW YORK, N. Y.

IMPROVEMENT IN GALVANIC BODY-WEAR.

Specification forming part of Letters Patent No. 212,650, dated February 25, 1879; application filed September 7, 1878.

To all whom it may concern:

Be it known that I, DANIEL P. BIBLE, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Galvanic Appliances; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to a shield to be worn over the small of the back or any other part of the body, for the purpose of supplying the system with a continuous current of galvanism for the relief and cure of disease by its application, as a therapeutic agent. The current is produced by the action of heat and the cutaneous transpiration or excretions of the body in contact with the component parts of the shield, without the use of acids to act upon the battery or generators of galvanism, yet the several parts being so arranged that vinegar or other acid fluids can be applied to set the current free.

The improvements consist in the arrangement and combination of metallic generators of different oxidizing affinities in contact with the surface of the body, which are connected with chains of two different metals, forming voltaic pairs, and making each metallic disk a generator as well as diffuser of galvanic electricity, all of which will be hereinafter more fully described.

Figure 1 represents the side which is to be worn next to the body. Fig. 2 represents the chain of copper and zinc. Fig. 3 represents the generators enlarged. Figs. 4, 5, 6, and 7 show interior parts of Fig. 3 enlarged. Figs. 8, 9, and 10 are details, which will be fully explained.

A is a copper end plate, folded over to form a link at the folded edge *a*, through which is a zinc-wire link, and at *a'* a copper-wire link. B is a similar folded plate of zinc at the other end of the chain, having a zinc-wire link, *b*, and a copper-wire link, *b'*. C is a folded link-plate of zinc, connected to A by the zinc-wire link *a*. C' is a similar plate-link, made of zinc, connected to A by the copper-wire link *a'*. D

D' are similarly-formed plate-links of copper, connected to B by the wire links *b* and *b'*, and to C C' by zinc-wire link *c* and copper-wire link *c'*, these forming a chain of folded flat-metal links from blanks of peculiar form, arranged to complete a shield of crescent shape, which is to be made to conform to any curve or line which may be required to be adapted to any part of the body.

Fig. 8 shows the blank form for A and B, which being folded at *x x* the parts will coincide and form the end plates, or positive and negative poles, as seen in Fig. 2. Fig. 9 is a blank of C and D, and is folded at *y y*. Fig. 10 is a blank of C' D', and is to be folded at *z z*, to form those links. All of these blank plates, when folded with their ends to the middle, have pieces of cloth inclosed, and are secured, first, by hollow rivets, as seen in section, Fig. 4, of the generators, also in Fig. 3, which are formed of an outer plate, E, of copper, zinc, silver, or other motric metal, which is hollowed or bulged up, having a central countersunk orifice, *e*, and four holes, *e' e' e' e'*, surrounding the center one, *e*.

The inner plate, E', of another metal, is made to conform to and fit within E, and has one hole in the center to correspond with that in E, and four places punched up into the corresponding holes *e' e' e' e'* in plate E, so that the intermediate layer of cloth will be forced through these holes outside of the face of E, and thus they will come in contact with the body when the shield is placed on any part of it.

Through the central hole, *e*, is a barrel-rivet, G, Figs. 6 and 7, by which the generators are riveted to the chain at the middle of each link, there being inserted between a suitable layer of cloth as an absorbent of moisture, by which the galvanic current is maintained.

In each barrel is an isolated copper wire, *f*, formed into a coil, *f'*, sufficient to fill the cylinder. One end of the wire *f* passes out, and is connected to the end of the next wire *f*, and so on to all the wires around the chain, as seen in Figs. 2 and 5, so that these wires all form a continuation of helices; or they may be varied in the manner of connecting them, as seen in broken lines *d' d'* in Fig. 2, but so that the continuity from one to the other may be

maintained at $d d$, as in Fig. 2. (Represented at $d d$.)

The object of this arrangement is to communicate the full force of the generators to the parts of the body on which they rest, and utilize all the force given by the heat and acid excretions from the body upon the inside of the barrel. The connection of these helices with the poles also serves to increase the force at those extremities of the shield where the surface is larger.

The shield is covered on one side with any suitable material, such as silk, morocco, or other fabric, and may be ornamented or not, to suit the taste.

The inside, or surface next to the skin or body, may be of any suitable material of light texture.

The generators and chain may be made into or applied to belts, bands, and suspensories, for the purposes hereinbefore set forth.

The shield or other appliances are held in place on the body by elastic and other straps.

Having thus described my invention, I claim—

1. The generators composed of an outer plate, having a central orifice, with surrounding orifices, an inner plate with central orifice, surrounding orifices, and raised bases, to correspond with orifices $e' e' e' e'$ in the outer plate, and a piece of cloth between the plates, substantially as and for the purpose described.

2. The generators composed of an outer and inner plate, as described, and an intermediate layer of cloth, in combination with a galvanic chain, and united with it at each link by hollow rivets, substantially as and for the purpose described.

3. The combination of the generators E, the galvanic chain, hollow rivets, and the helical wires, all substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

DANIEL PASSMORE BIBLE.

Witnesses:

WM. H. POOLEY,

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