H. E. JACOBSEN.

Electro-Galvanic Belt.

No. 203,835. **Patented May 21, 1878.**

Fig. 1.

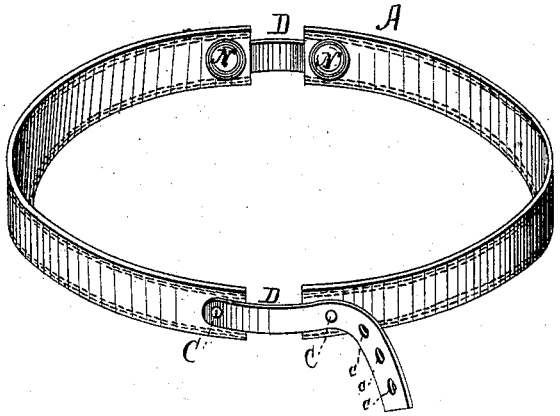


Fig. 2.

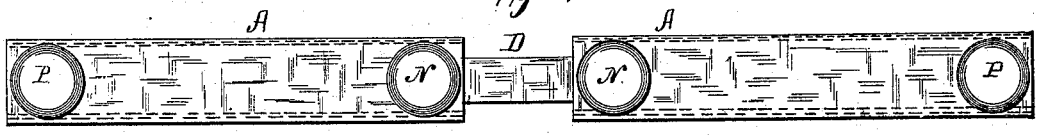


Fig. 3.

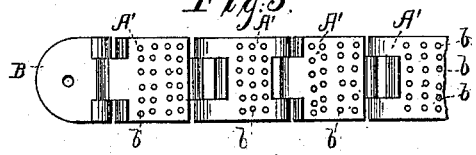
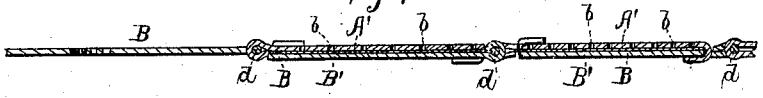


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY E. JACOBSEN, OF NEW YORK, N. Y.

IMPROVEMENT IN ELECTRO-GALVANIC BELTS.

Specification forming part of Letters Patent No. **203,835**, dated May 21, 1878; application filed October 17, 1877.

To all whom it may concern:

Be it known that I, HENRY E. JACOBSEN, of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Electro-Galvanic Belts; and I do hereby declare that the following is a full, clear, and exact description thereof, 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 the letters of reference marked thereon, which form a part of this specification.

My invention consists of a belt to be worn around the body, or on any part thereof, for the purpose of infusing the body with a continuous electro-galvanic current, to be produced by the chemical action of the heat and eliminations of the body upon the component parts of the belt.

Figure 1 in the accompanying drawings is a perspective view of the belt complete. Fig. 2 is an inside elevation. Fig. 3 is a detailed view of the belt without the covering, showing the perforations in the zinc plates. Fig. 4 is a longitudinal section of several links.

The belt A consists of a series of metallic plates, which are composed of the zinc plates A′ and the copper plates B, so united as to form a chain, which is placed inside a covering made partly of leather and partly of flannel or other fibrous material, and having at each end a metallic plate or terminal, P N, fastened by means of the screws C C, which pass through the covering and chain, the heads of the screws serving as a means to fasten the two ends of the belt by aid of the elastic straps D D.

The chain is formed of a series of links, and each link is made of two metal plates of electro-galvanic action, a zinc plate, A′, and a copper plate, B, with a piece of cotton cloth, B′, or other fibrous fabric, intervening in such a manner that the metallic contact is prevented between the zinc plate A′ and the copper plate B, and at the same time the cloth serves the purpose of retaining the moisture to act on the metal. The links at the ends of the chain are formed of a single plate—at one end a zinc plate, A′, at the other a copper plate, B. The links are connected by fastening the zinc plate A′ of one to the copper plate B of the next, the ends of the plates being bent into a loop, through which a pintle, *d*, is fastened, the same order being observed throughout the belt, in such a manner that the metal (zinc) to be acted upon is brought nearest the body through the entire chain.

The inner or zinc plate A′ is perforated with a number of small holes, *b b b*, to give free access for the moisture to pass to the cloth B′ within, thereby increasing and accelerating the electric current.

The terminals P N, which are in contact with the body, are composed of concave plates of copper, plated to prevent corrosion, having a small nut soldered in the center of each, into which the screws C C are fitted. The terminals P N serve as the receptacles of the electric current and as the discharge. As no part of the chain is in direct contact with the body, on account of the covering, the current is concentrated in the terminals P N, which are placed directly on whatever part of the body it is intended to bring galvanic action. They are made broad and almost flat, to rest easily and comfortably on the body, and at the same time to cover a sufficient surface to act on any particular set of muscles or nerves, without producing any unpleasant feeling or suppuration.

The belt A is made in two semicircles, or rather two chains form one belt, each having a positive and a negative pole. In the drawing the positive pole is indicated by the terminal P, which is gilded, and the negative pole is indicated by the terminal N, which is silvered. The belt is covered on the outside with leather, and on the inner side, or next the body, with flannel or other suitable material. The two sections of the belt are connected by elastic straps D D, so arranged as to make the belt conform to the movements and shape of the body, and also that the poles may be brought closer together or removed farther apart, as desired, in order to bring them in contact with any particular part of the body.

The belt could be made in one piece, instead of two semicircles, if desired, the space across the back, which would only be a few inches, being a continuation of the leather

covering, but containing no links of the chain. When the belt is placed on the body, two ends of the same polarity—say two negatives—are placed on the back, and the other two ends (both positive) are placed in front, or vice versa, according to the direction it is desired to send the electric current, which travels from the positive to the negative. This is done in order to make the current go directly to and through the organs that it is desired to reach.

In combinations of zinc and copper the zinc is always the metal to be acted upon; hence I place all the zinc plates A′ inside or nearest the body, and the plates are all so fastened together that they cannot get loose from their position.

As a constant electric current is most efficient for medical purposes, the combination of plates is so arranged that the heat and eliminations from the body, by chemical action on the zinc plates A′, produce a galvanic current constantly while the chain is on the body, the copper plates B merely serving as separators and conductors of the current, collecting the positive at one end of the chain and the negative at the other.

Having thus described my invention, I claim—

In an electro-galvanic belt, a link composed of a copper plate, B, and zinc plate A′, the zinc plate A′ being perforated with holes *b*, the two plates being of equal size and united, as described, and having between them a piece of cotton or other woven cloth, substantially as described, and for the purposes set forth.

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

HENRY EMIL JACOBSEN.

Witnesses:
H. S. SLEEPER,
G. E. HUTCHINSON.