

Improved construction of plates and arrangement of fastenings for connecting them in voltaic order for medico electric purposes / [William George Johnson].

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A.D. 1888, 14th MARCH. N° 3979.

PROVISIONAL SPECIFICATION.

**Improved Construction of Plates and Arrangement of Fastenings
for Connecting them in Voltaic Order for Medico Electric
Purposes.**

I WILLIAM GEORGE JOHNSON of The Medico Electric Belt, Truss and Battery Company Limited, 58 New Bond Street, Middlesex Electrician do hereby declare the nature of my said invention to be as follows :—

This invention relates to a certain novel construction of plates for making the
5 elements of Medico Electric bands also in means of connecting said elements in
Voltaic order to any desired length according to the purposes for which said band is
intended or the position it has to occupy upon the body.

One plate of each element, say the copper, is formed with rectangular or other
shaped openings in the surface or surfaces and with cut through indented portions to
10 form lugs or ears from either the faces or ends for articulating them to the opposite
pole plate of the other element, or by lacings of cat-gut or cord, in which case the
ears or lugs would form the means of attachment through spiral or other wires so
that each element has a freedom of action to and fro, also a twisting about to allow
any part of the band to adapt itself to any part of the body to which it may
15 be applied.

The terminals may be of disc or other shape and the cords, if cords be used, secured
in or run through stamped indents forming loops, ears or lugs between which the cord
can be clamped to fix it in position.

The plates with the rectangular or other shaped openings have enclosed within
20 their folded portions the opposite pole plates of the element, these being protected by
wrapped or laced thread.

Any method or appliance can be used for fixing the plates or bands to the body
or limb of a person and the band may be partly enclosed in a fabric by means of
which the electrical power generated may be concentrated to the exposed pole plates
25 which alone may touch the person.

Dated this 14th day of March 1888.

H. GARDNER,
166, Fleet Street, London,
Agent for the said W. G. Johnson.

COMPLETE SPECIFICATION.

Improved Construction of Plates and Arrangement of Fastenings
for Connecting them in Voltaic Order for Medico Electric
Purposes.

I WILLIAM GEORGE JOHNSON of The Medico Electric Belt, Truss and Battery Company Limited, 58 New Bond Street, Middlesex, Electrician, do hereby declare the nature of my said invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

This invention relates to a certain novel construction of plates for making the elements of Medico Electric bands also in means of connecting said elements in voltaic order to any desired length according to the purpose for which said band is intended or the position it has to occupy upon the body.

One plate of each element, say the copper, is formed with rectangular or other shaped openings in the surface or surfaces and with cut through indented portions to form lugs or ears from either the faces or ends for articulating them to the opposite pole plate of the other element or by lacings of cat gut or cord in which case the ears or lugs form the means of attachment. Spiral or other wires connect each element so that they have a freedom of action to and fro, also a twisting about to allow any part of the band to adapt itself to any part of the body to which it may be applied.

The terminals may be of disc or other shape and the cords, if cords be used, secured in or run through stamped indents forming loops, ears or lugs between which the cord can be clamped to fix it in position.

The plates with the rectangular or other shaped openings have enclosed within their folded portions the opposite pole plates of the element, these being protected by wrapped or laced thread.

Any method or appliance can be used for fixing the plates or bands to the body or limb of a person and the band may be partly enclosed in a fabric by means of which the electrical power generated may be concentrated to the exposed pole plates which alone may touch the person.

My invention is exemplified on the annexed drawings in which at Figure 1 I show a plate of copper A with rectangular slots in two parts of it and with lugs B, B, having indents C, C. through which a cord or cat gut or other flexible material D can be run and clamped as represented in Figure 2 which shows a series of elements made up from a number of said plates A folded and holding between the folded sides the other plate E, a sample of which is seen at Figure 3, Figure 4 being a view of the same pole plate with the protecting threads laced through holes at the edge to prevent the two plates forming the element touching each other.

The plate Figure 1 has two slits F forming a lug or ear for the connection of a copper wire G thereto, this being in connection with the ear H of the other pole plate E which ear projects beyond and clear of the copper folded plate A but so arranged that at whatever position the elements are placed when made up in band form they are always kept in voltaic order for the perfect flow of the current when the elements are excited.

The cords D, D, are connected to terminal plates I, J, which have lugs formed by stamping said plates through which the cord is laced and clamped; one plate I is connected to the zinc E by the coiled copper connection G and the other or opposite

Johnson's Improved Construction of Plates, &c. for Medico Electric Purposes.

terminal by the copper coil of the copper plate A at the opposite end of the chain or band. These terminals I. J, have holes in them for the connection of tape to fix them to any part of the person.

If the plates of the band Figure 2 be exposed as indicated each element plays its own part for distributing the current but if said band be covered by a fabric the terminals alone are applied to the part of the person affected in a concentrated form or what is termed a current of intensity.

Figure 5 represents a modified copper plate A in which the cords D may be dispensed with and yet be connected to the pole plate of the adjoining element as represented in the example Figure 6 where two elements are joined. This method of connection is by constructing the copper plate A with two projections K and the zinc element with two projections L, these being somewhat larger and slotted for the projection K to be passed into and curled round in hook form for linking the copper of one element to the zinc of the other the projections L, L, being first passed through slots P of the copper plate as shown.

The copper plates are flat and instead of being folded vertically as indicated in the Figures already referred to they may be folded horizontally as at Figure 7 and instead of the zinc of each element being coated or have thread wrapped upon them, the flat copper plate may be so coated as to protect it from the zinc, the fold over portions being compressed for clamping the cords D, whereby the chain or band is of a flexible character as described with reference to Figure 2.

The copper plates which are flat may be composed of what is known as ribbon copper and this ribbon may be folded as indicated after being coated or protected by a thread so that the zinc, which may be of flat or round form, is arranged between each fold of the copper and according to the sizes of each element so the number of folds would be increased or diminished to correspond, their connection in voltaic order being secured by compression at the joints as will be understood.

I have not shown a complete band in Figure 7, but terminals of any desired shape, similar to I. J, can be voltaically connected for making up a band of any desired length.

The rectangular slots or spaces in the copper plates or between the copper and the zinc admits of the desired depolarization.

I have referred to rectangular slots in the plate A but other shapes of slots or apertures may be readily formed by stamping to permit of the free entrance of the exciting fluid to the threads whether the band or chain be covered with flannel or other porous material or the elements are left exposed.

I am aware that copper and zinc plates have been stamped and arranged as elements and connected in voltaic order, the exciting fluid having free access to threads, laced or covered, which also prevent the touching of the two plates forming the element and I am also aware that elements have connected by flexible cords therefore I make no claim to the combination of such plates and cords in a general or broad sense but

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is

The particular construction or formation of copper and zinc plates shown on the annexed drawings and the method or methods of connecting them voltaically to produce a chain or band for Medico Electric purposes as set forth.

The 16th day of July 1888.

H. GARDNER,
166, Fleet Street, London,
Agent for the said W. G. Johnson.

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By DARLING AND SON, LTD.

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