

## **Specification of George Kershaw : medico-electric surfaces.**

### **Contributors**

Kershaw, George.

### **Publication/Creation**

London : Great Seal Patent Office, 1861 (London : George E. Eyre and William Spottiswoode)

### **Persistent URL**

<https://wellcomecollection.org/works/jaqrb5r6>

### **License and attribution**

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>







---

A.D. 1860, 24th AUGUST. N° 2046.

---

### Medico-electric Surfaces.

---

**LETTERS PATENT** to George Kershaw, of Upton Cottage, Slough, in the County of Bucks, Stationer, for the Invention of "**IMPROVEMENTS IN THE CONSTRUCTION OF MEDICO-ELECTRIC SURFACES.**"

Sealed the 4th December 1860, in pursuance of an Order of the Lord Chancellor, and dated the 24th August 1860.

---

**PROVISIONAL SPECIFICATION** left by the said George Kershaw at the Office of the Commissioners of Patents, with his Petition, on the 24th August 1860.

I, **GEORGE KERSHAW**, of Upton Cottage, Slough, in the County of Bucks, Stationer, do hereby declare the nature of the said Invention for "**IMPROVEMENTS IN THE CONSTRUCTION OF MEDICO-ELECTRIC SURFACES,**" to be as follows:—

The object of this Invention is to produce medico-electric surfaces to be applied to such parts of the human body as require an artificial excitement to restore the functional energy of the nervous or membranous systems of those parts. To this end I propose to combine to waterproof or other suitable fabrics, metallic surfaces composed of discs or pieces of positive and negative metals, which overlap one the other and are in metallic contact. These discs or pieces may be disposed in a line to form a metallic band, which is to be metallically connected at its ends, and worn round an arm or leg affected by paralysis or slight symptoms akin thereto. Or these discs may be arranged in the form of a circle, oval, or other circumscribing figure on the cloth to which they are attached. The attachment of the discs to the cloth may be by sewing, rivetting, or otherwise, but in whatever way they are attached the discs or pieces of positive and negative metal must be in metallic contact with each

*Kershaw's Improvements in the Construction of Medico-electric Surfaces.*

other, the zinc and the copper pieces (if these metals are used) being applied alternately and lapping the one over the other to make up the figure. The medico-electric surfaces thus produced when applied by suitable bands or straps to the part affected will, by reason of the moisture of the skin, be set in action and impart the required local stimulus required. 5

**SPECIFICATION** filed in pursuance of the conditions of the Letters Patent, and of an Order of the Lord Chancellor, by the said George Kershaw in the Great Seal Patent Office on the 7th March 1861.

**TO ALL TO WHOM THESE PRESENTS SHALL COME, I, GEORGE KERSHAW**, of Upton Cottage, Slough, in the County of Bucks, Stationer, send 10 greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Twenty-fourth day of August, in the year of our Lord One thousand eight hundred and sixty, in the twenty-fourth year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said 15 George Kershaw, Her special license that I, the said George Kershaw, my executors, administrators, and assigns, or such others as I, the said George Kershaw, my executors, administrators, and assigns, should at any time agree with, and no others, from time to time, and at all times thereafter, during the term therein expressed, should and lawfully might make, use, exercise, 20 and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**IMPROVEMENTS IN THE CONSTRUCTION OF MEDICO-ELECTRIC SURFACES,**" upon the condition (amongst others) that I, the said George Kershaw, by an instrument in writing under my hand and seal, should particularly describe and ascertain the nature of 25 the said Invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent Office within six calendar months next and immediately after the date of the said Letters Patent.

**NOW KNOW YE**, that I, the said George Kershaw, do hereby declare the nature of the said Invention, and in what manner the same is to be per- 30 formed, to be particularly described and ascertained in and by the following statement reference being had to the Drawing hereunto annexed, and to the letters and figures marked thereon (that is to say) :—

The object of this Invention of improvements in the construction of medico-electric surfaces is to produce an electric band or belt which may be applied 35 to such parts of the human body as require an artificial excitement to restore

---

*Kershaw's Improvements in the Construction of Medico-electric Surfaces.*

---

the functional energy of the nervous or membranous systems of those parts. To this end I adapt to the surface of some waterproof or other suitable non-conducting fabric metallic surfaces composed of discs, pieces or plates of positive and negative metals, which are to be made to overlap one the other, and are  
5 kept in metallic contact. These discs, pieces, or plates may be disposed in a line to form a metallic band, which is to be metallically connected at its ends, and worn round an arm or leg affected by paralysis or slight symptoms akin thereto; or the discs may be arranged in the form of a circle, oval, or other circumscribing figure on the cloth to which they are attached. The attachment  
10 of the discs to the cloth may be by sewing, rivetting, or otherwise, but in whatever way they are attached, the discs, pieces, or plates of positive and negative metal must be in metallic contact with each other, the zinc and the copper pieces (if these metals are used) being applied alternately and made to lap the one over the other in regular succession to make up the figure. The medico-  
15 electric surfaces thus produced, when applied by suitable bands or straps to the part affected will, by reason of the moisture of the skin, be set in action and impart the local stimulus required.

In the accompanying Drawing I have shewn various forms in which these medico-electric belts or bandages may be made.

20 Fig. 1 represents a bandage which is intended to be applied to the chest or throat. The concave part *a* fits to the neck, around which it is secured by the elastic band or strap *b*, with the pointed or convex part of the bandage downwards; *c, c*, are the zinc plates or discs; and *d, d*, the copper plates or discs, which are sewed down to the waterproof or other non-conducting foundation  
25 fabric *e*, as shewn in the sectional Figure 1<sup>a</sup>, in which some of the plates or discs are removed to shew the mode of attachment. The part *f*, coloured red, represents a piece of flannel, cloth, or other fabric, which covers up the waterproof or other non-conducting fabric, and is capable of holding a certain amount of moisture, such as dilute acid or a solution of salt in water, for the  
30 purpose of keeping up the electric action.

Fig. 2 represents another form of bandage, which is intended to be applied to the loins or other part of the trunk. This bandage is constructed in precisely the same manner as the other, but is somewhat different in form.

Fig. 3 is another form, which is intended to be applied to the knee, elbow,  
35 or other projecting part of the body, for which purpose it is made concave, so that the knee cap may fit in it and the electric metal plates may completely surround the part affected. The foundation fabric *e* may be made of gutta percha, or india-rubber, or some suitable fabric, covered or prepared with either of these substances; or any other non-conducting substance, such as

*Kershaw's Improvements in the Construction of Medico-electric Surfaces.*

silk, may be employed ; but as it is advisable to keep the metal plates or discs moist while on the body I prefer that whatever material should be used for the foundation it should, if possible, be made waterproof, so as to prevent evaporation. The back of the bandage may be covered with any suitable fabric, either ornamental or otherwise, and suitable bands, straps, and buckles 5 must be attached thereto, to allow of the bandage being secured on the body over the part affected.

Although in the Drawing I have shewn the metal plates or discs as having been attached to the foundation fabric by sewing, it will be evident that they may be secured thereon by rivetting, which is, perhaps, preferable, as metallic 10 attachment and contact between the parts is thereby ensured.

Having now described my Invention of "Improvements in the Construction of Medico-electric Surfaces," and having explained the manner of carrying the same into effect ; I claim as the Invention secured to me by Letters Patent, as aforesaid, the mode herein set forth of constructing medico-electric 15 surfaces.

In witness whereof, I, the said George Kershaw, have hereunto set my hand and seal, this Twenty-third day of February, in the year of our Lord One thousand eight hundred and sixty-one.

GEORGE KERSHAW. (L.S.) 20

Witness,

RICH<sup>d</sup> ALLEN,

100, Devonshire Road,  
Holloway.

LONDON :

Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,  
Printers to the Queen's most Excellent Majesty. 1861.

85

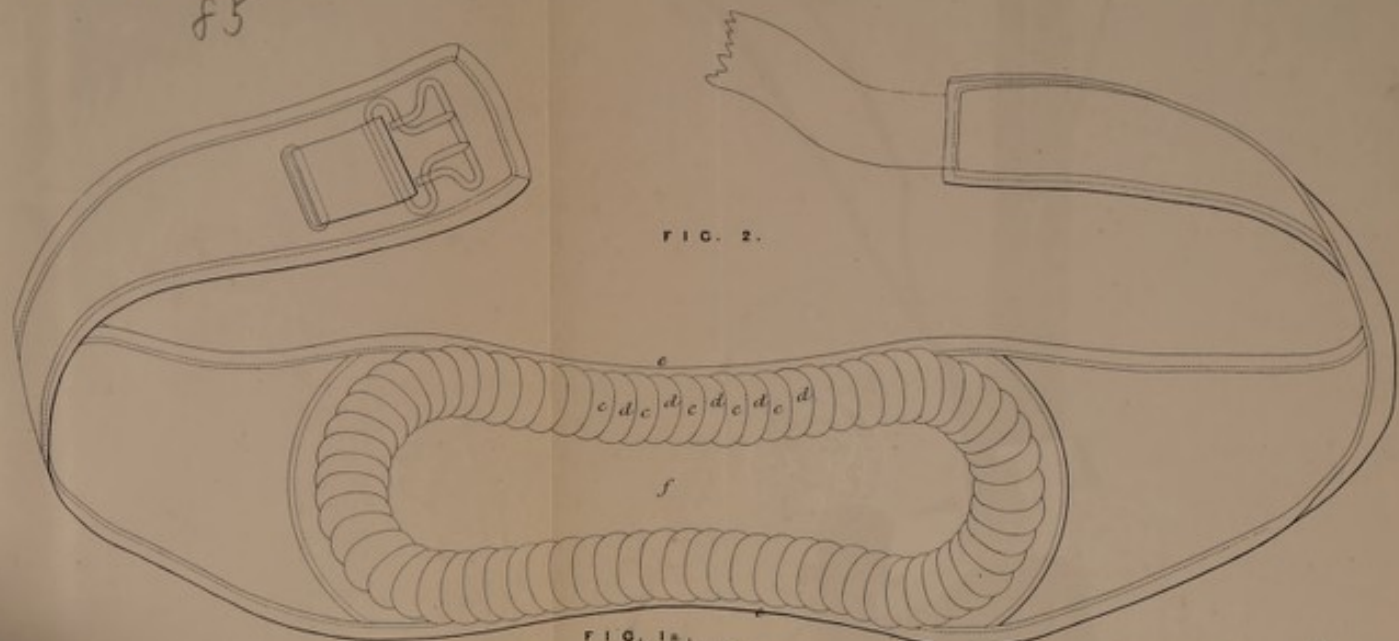


FIG. 2.

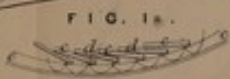


FIG. 1a.

FIG. 1b.



FIG. 1.

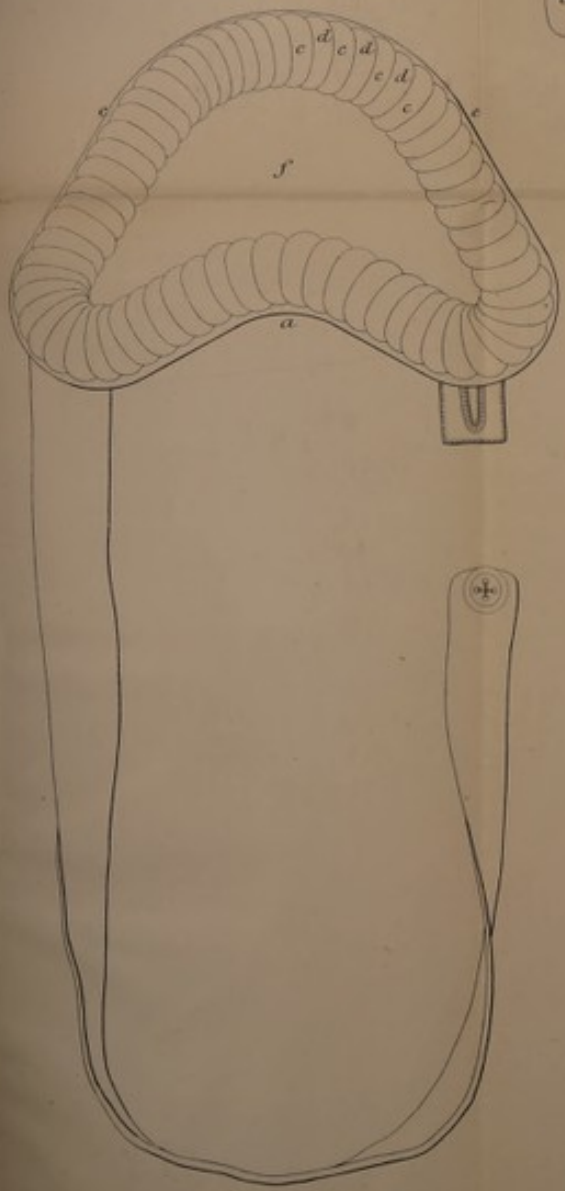
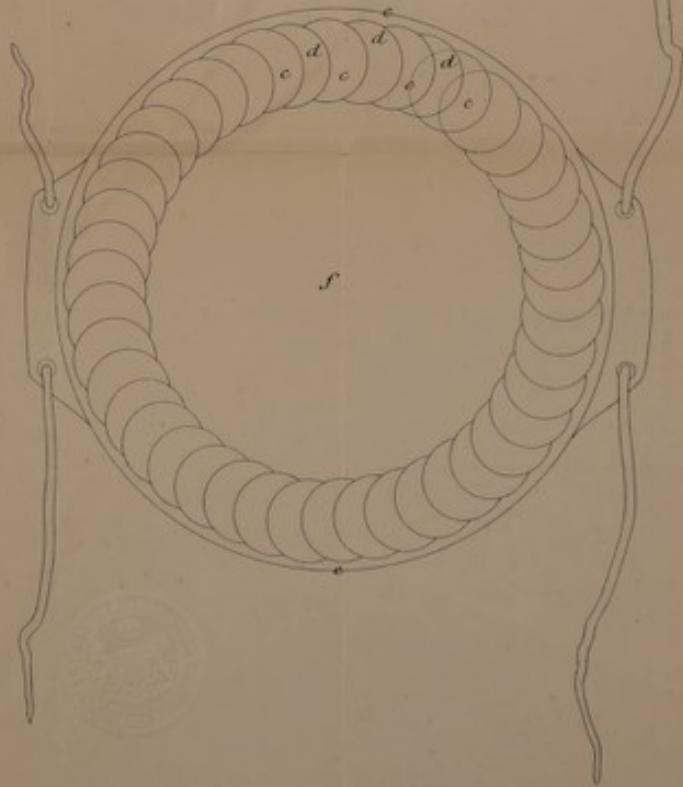


FIG. 3.



The filed drawing is colored.

Drawn by G. & Co. by M. & S. & Co.



