

## **Specification of Charles Henwood : galvanic battery for medical purposes.**

### **Contributors**

Henwood, Charles.

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Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
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A.D. 1857, *3rd DECEMBER.* N° 3003.

SPECIFICATION

OF

CHARLES HENWOOD.

**GALVANIC BATTERY FOR MEDICAL  
PURPOSES.**

LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,  
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*Price 6d.*

1858.







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### Galvanic Battery for Medical Purposes.

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**LETTERS PATENT** to Charles Henwood, of the City of Oxford, Engineer,  
for the Invention of "**AN IMPROVED ARRANGEMENT OF GALVANIC BATTERY  
SUITABLE FOR MEDICAL PURPOSES.**"

Sealed the 1st June 1858, and dated the 3rd December 1857.

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**PROVISIONAL SPECIFICATION** left by the said Charles Henwood at the  
Office of the Commissioners of Patents, with his Petition, on the  
3rd December 1857.

I, CHARLES HENWOOD, of the City of Oxford, Engineer, do hereby declare  
5 the nature of the said Invention for "**AN IMPROVED ARRANGEMENT OF GALVANIC  
BATTERY SUITABLE FOR MEDICAL PURPOSES,**" to be as follows:—

I take plates of copper and zinc or of two other metals, one electro-positive  
and the other electro-negative to the other, and combine and arrange such  
plates in pairs, and unite the pairs to form a chain or belt as hereafter  
10 explained. I will suppose copper and zinc to be the metals employed. I take  
a plate of copper, bend it at the centre and fold one half down over the other  
half. I cut away small portions from the fold or part where one half is  
doubled over the other; I then place between the two halves of the copper  
plate a plate of zinc covered with linen or other textile fabric to prevent



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contact between the plates. The zinc plate is equal in breadth to nearly one half of the breadth of the copper plate; it has two lugs, which project beyond the parts cut away from the fold in the copper plate; the opposite corners to the lugs in the zinc plate are cut off and the zinc plate is held between the two halves of the copper plate by two corners of the latter, being turned in under the zinc plate; the two other corners of the copper plate have each a hole pierced therein; a hole is also made in the projecting zinc lugs, and metal rings being passed through the holes in the zinc lugs and copper corners unite every pair of plates.

**SPECIFICATION** in pursuance of the conditions of the Letters Patent, filed by the said Charles Henwood in the Great Seal Patent Office on the 3rd June 1858.

**TO ALL TO WHOM THESE PRESENTS SHALL COME, I, CHARLES HENWOOD,** of the City of Oxford, Engineer, send greeting.

**WHEREAS** Her most Excellent Majesty Queen Victoria, by Her Letters Patent, bearing date the Third day of December, in the year of our Lord One thousand eight hundred and fifty-seven, in the twenty-first year of Her reign, did, for Herself, Her heirs and successors, give and grant unto me, the said Charles Henwood, Her special licence, that I, the said Charles Henwood, my executors, administrators, and assigns, or such others as I, the said Charles Henwood, 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, and vend, within the United Kingdom of Great Britain and Ireland, the Channel Islands, and Isle of Man, an Invention for "**AN IMPROVED ARRANGEMENT OF GALVANIC BATTERY SUITABLE FOR MEDICAL PURPOSES,**" upon the condition (amongst others) that I, the said Charles Henwood, my executors or administrators, by an instrument in writing under my, or their, or one of their hands and seals, should particularly describe and ascertain the nature of 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 Charles Henwood, 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



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statement thereof, reference being had to the Drawings hereunto annexed, that is to say:—

I take plates of copper and zinc or of two other metals, one electro-positive and the other electro-negative to the other, and combine and arrange such  
5 plates in pairs and unite the pairs to form a chain or belt as hereafter explained. I will suppose copper and zinc to be the metals employed; I take a plate of copper, bend it at the centre, and fold one half down over the other half. I cut away small portions from the fold or part where one half is doubled over the other. I then place between the two halves of the copper plate a  
10 plate of zinc covered with linen or other textile fabric to prevent contact between the plates. The zinc plate is equal in breadth to nearly one half of the breadth of the copper plate; it has two lugs, which project beyond the parts cut away from the fold in the copper plate. The opposite corners to the lugs in the zinc plate are cut off, and the zinc plate is held between the two  
15 halves of the copper plate by two corners of the latter being turned in under the zinc plate; the two other corners of the copper plate have each a hole pierced therein, a hole is also made in the projecting zinc lugs, and metal rings being passed through the holes in the zinc lugs and copper corners unite every pair of plates.

20 Figure 1 of the Drawings hereunto annexed is a view of one of the copper plates preparatory to being folded; Figure 2 is a view of the zinc plate partially covered with cotton; Figure 3 shews the copper and zinc plates fastened together; and Figure 4 is a view of two pairs of plates, shewing the manner in which they are connected together. *a* is the copper plate at or  
25 about the centre *b* of which it is folded; *c* is the zinc plate, surrounded with cotton *d*, or it may be wholly covered with linen to prevent its coming into contact with the copper. This zinc plate *c* is formed with lugs *e, e*, which when the zinc plate is placed in the fold *b* of the copper plate protrude as shewn in the Figures; two of the corners of the plate *a* are folded over the  
30 zinc plate, as shewn at Figures 3 and 4. Holes are formed in the lugs of the zinc and remaining corners of the copper plates, through which rings *g, g*, are passed to connect the plates together, as shewn at Figures 4 and 5.

Figure 5 shews a number of pairs of plates connected together and fastened to a strap to form a belt for personal wear. *h* is a linen case for buttoning  
35 over the plates to keep them from contact with the body where desired. At Figure 6 the belt is shewn with the cover buttoned over the plates.

And having now described the nature of my said Invention, and in what manner the same is to be performed, I declare that I claim the forming of a



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galvanic battery suitable for medical purposes by combining plates of copper and zinc or of two other metals, electro-positive and electro-negative to each other, in the manner herein-before described and illustrated in the Drawings annexed.

In witness whereof, I, the said Charles Henwood, have hereunto set my <sup>5</sup>  
hand and seal, this Second day of June One thousand eight hundred  
and fifty-eight.

CHARLES HENWOOD. (L.S.)

LONDON:

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Printers to the Queen's most Excellent Majesty. 1858.

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FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

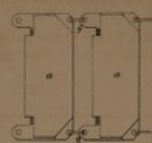


FIG. 5.

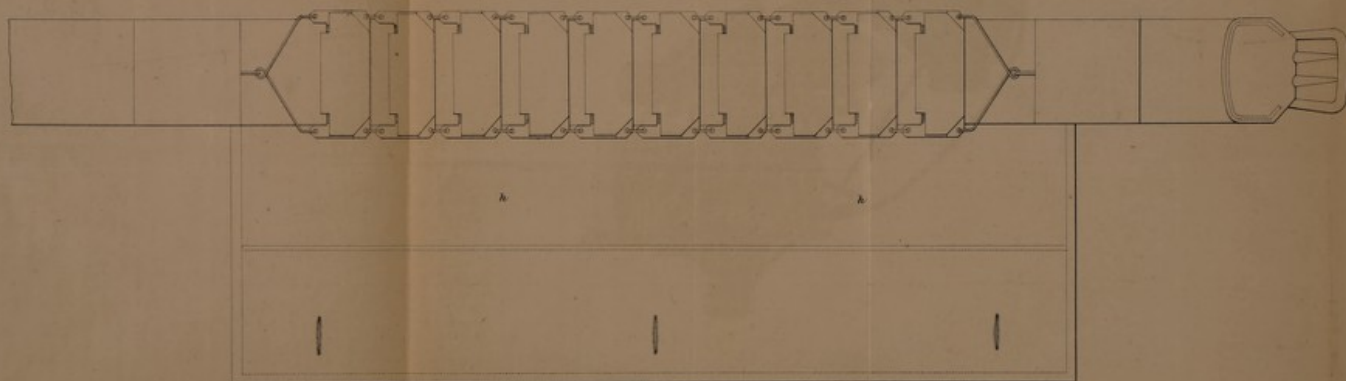


FIG. 6.



The filed drawing is partly colored.



