

(No Model.)

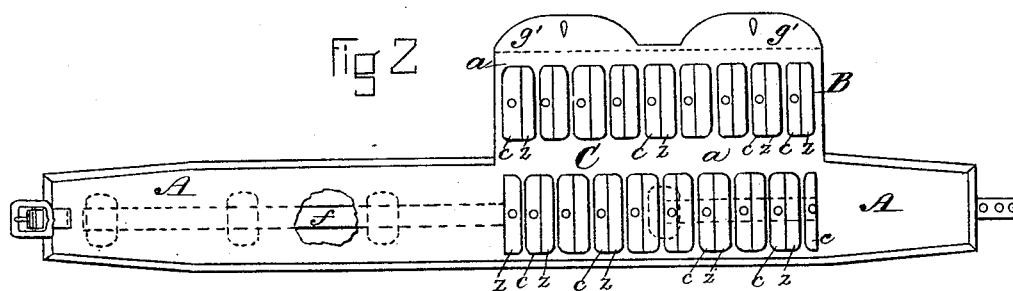
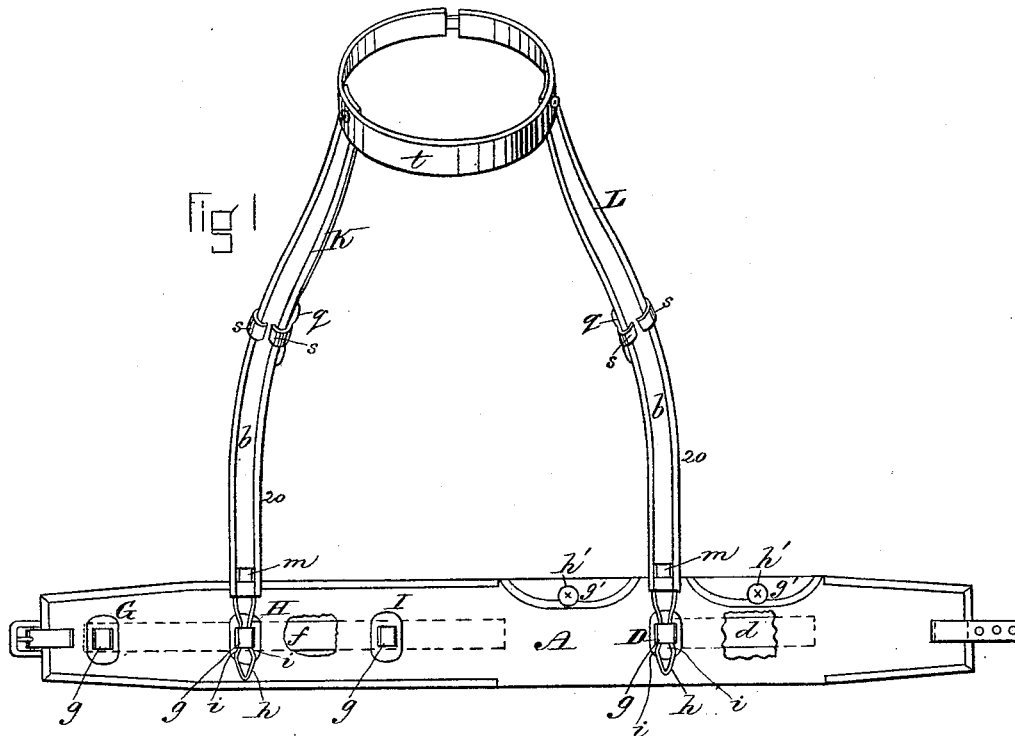
2 Sheets—Sheet 1.

J. McGRADY & G. H. SLOANE.

MEDICAL ELECTRIC BELT OR PAD.

No. 348,406.

Patented Aug. 31, 1886.



WITNESSES

W. J. Cambridge  
C. Young

INVENTORS

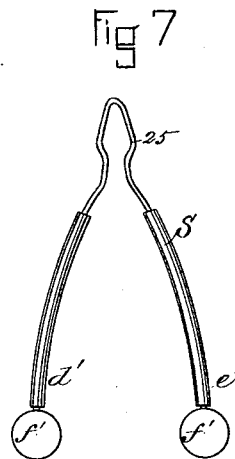
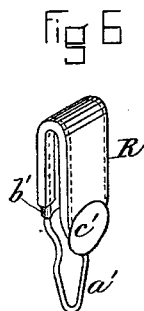
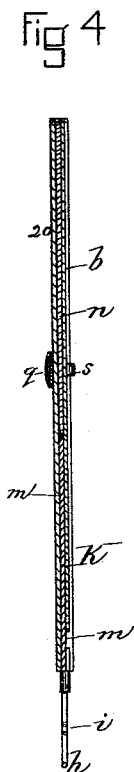
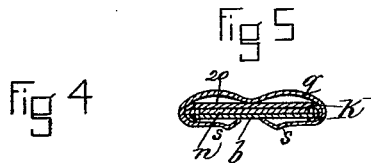
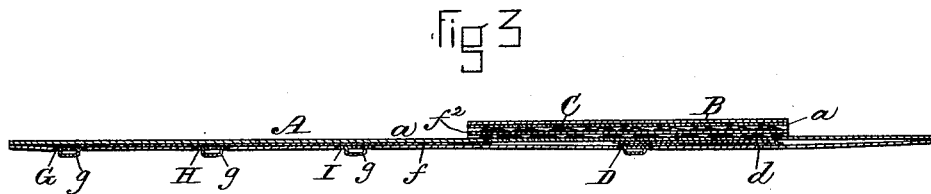
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# UNITED STATES PATENT OFFICE.

JAMES McGRADY AND GEORGE H. SLOANE, OF BOSTON, MASSACHUSETTS.

## MEDICAL ELECTRIC BELT OR PAD.

SPECIFICATION forming part of Letters Patent No. 348,406, dated August 31, 1886.

Application filed December 24, 1885. Serial No. 186,659. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES McGRADY and GEORGE H. SLOANE, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Medical Electric Belts or Pads, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a plan of an electric belt or pad constructed in accordance with our invention. Fig. 2 is a plan of the inner side of the same with the flap thrown open to show the voltaic battery. Fig. 3 is a longitudinal section through the center of the same. Fig. 4 is a longitudinal section through one of the vertical straps of the belt or pad. Fig. 5 is a transverse section, enlarged, through one of the vertical straps and its sliding button or plate. Figs. 6 and 7 represent auxiliary attachments to be applied to the belt or pad.

Our invention relates to that class of belts or pads which are designed to be worn on the person, and are provided with an electric or voltaic battery, whereby a current of electricity is generated and applied to any desired portion of the body; and our invention consists in a novel construction and arrangement of parts, as hereinafter more fully set forth and claimed, whereby a more effective and reliable appliance of this character is produced than is now in ordinary use.

In the said drawings, A represents a belt or pad, which is composed of two or more thicknesses of suitable material, and is provided with a flap, B, which, together with the portion of the belt overlapped thereby, is covered with thin rubber *a* or other suitable water-proof insulating material, as seen in Fig.

2. To this surface are riveted or otherwise suitably attached a series of zinc and copper plates, *c z*, soldered to each other by one of their long edges in pairs of one copper and one zinc plate, forming a voltaic battery, C, one-half of the said series of plates being secured to the main portion of the belt, and the other half to the flap B, as seen in Fig. 2, so that when the flap is folded over onto the main portion of the belt, the series of plates lying one over the other, starting from the right-hand side, which is the positive pole of the battery, will be copper on the main portion of the belt

and zinc on the flap, and so on to the left-hand end, which terminates in a zinc plate on the main portion of the belt forming the negative pole of the battery. The positive pole at the right-hand end, which is the last copper plate on the main portion of the belt, has secured to it a thin metallic conducting strip or ribbon, *d*, which extends between the thicknesses of the belt, as shown by dotted lines in Figs. 1 and 2, outside the battery to a point opposite to the center of the same, where it is connected to a metal plate, D, on the exterior surface of the belt. The negative terminal of the battery is in like manner connected to a similar metallic conducting strip or ribbon, *f*, extending longitudinally through the interior of the belt between its folds or thicknesses, as shown by dotted lines in Figs. 1 and 2, to the extreme end of the same, said strip *f* being connected to metal plates G H I, secured upon the outside of said belt, as seen in Figs. 1 and 3, these metal plates D G H I being each provided with a raised loop or strap, *g*, Figs. 1 and 3. When the belt is placed in position on the body, the positive terminal D is at the center of the back of the wearer, but not in contact with the flesh, as it lies on the outside of the belt, while the three negative plates or terminals G H I are located on the front side of the belt, the plate H being at the center and the plates G and I on each side, respectively. Connection is made with the person by means of conducting-straps K L, composed of thin metallic strips or ribbons *b*, preferably of German silver, which are covered on the side next the skin with thin rubber 20, and furnished at their lower extremities with spring-wire loops *h h*, so constructed that when pushed through the metallic loops *g* of the terminals they will yield laterally until the shoulders *i i* have passed through, and then spring back and lock themselves firmly in place, as seen in Fig. 1, making a good electric connection. The wire loops *h* are not connected directly to the metallic strips *b*, but are attached to strips *m*, of stiff metal, which slide in electrical contact with the strips *b*, and are attached to springs *n*, Fig. 4, composed, preferably, of elastic webbing placed between the strips *b* and their rubber covering 20, and secured at the upper ends of said strips *b*, whereby the

strips *m* are allowed to yield to conform to the movements of the wearer without at any time breaking their electrical connection with the terminals of the battery. Electrical connection is established between the strips *b* of the straps K L and the flesh of the wearer by means of metal plates or buttons *q*, Figs. 1, 4, and 5, which slide upon said straps K L on the side next to the body, and are provided with ears *s*, which are turned over the edges of the metallic strips *b* and lie in contact therewith, the buttons or slides *q* thereby constituting the positive and negative terminals of the battery contained in the belt, and it will be seen that these buttons or slides *q* can be readily adjusted to any required position upon the straps K L, to cause the electric current to be applied to the precise locality or set of nerves desired. The straps K L are supported at their upper extremities by being attached to a strap or band, *t*, adapted to be placed around the neck of the wearer and secured by any suitable fastening.

Figs. 6 and 7 represent two auxiliary attachments designed to be used with the above-described belt to apply electricity to certain portions of the body. The attachment R (shown in Fig. 6) consists of a spring-wire loop, *a'*, adapted to fit into the loop *g* of one of the plates—for instance, the plate D—said loop *a'* having a flat metallic portion, *b'*, which is covered with thin rubber and is doubled over onto the inner side of the belt, where it is provided with a metallic button or plate, *c'*, which, when the device is applied to the plate D, is adapted to lie in contact with the person immediately over the kidneys, while the attachment S, (shown in Fig. 7,) which is used in connection with the attachment R, consists of a wire bent to form two branches, *d' e'*, and adapted to be connected at its upper end with one of the front plates, G H I, by a looped portion, 25, which is pushed through a strap or loop, *g*, the branches *d' e'* being provided at their lower ends with terminal buttons or plates *f'*, adapted to press upon the body on each side of the genital organs, thus securing a current of electricity through these parts and organs.

When it is desired to use the belt, a piece, *f*<sup>2</sup>, Fig. 3, of flannel, felt, or other suitable absorbent material, saturated with vinegar or

other acidulated solution, is placed on the flap B, which is then folded over upon the main portion of the belt and secured by means of the supplementary flaps *g'*, which are fastened by means of buttons *h'* or in any other suitable manner, as seen in Fig. 1. One of the straps K L, detached from the neckband *t*—preferably the one on the front side—may be attached to the terminal plates G or I in a reversed position, so as to extend down either leg of the wearer, and the slide or button *q* thereon adjusted to any desired point to apply the electrical current to the exact location required.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination, with the belt or pad A and its voltaic battery connected with positive and negative terminal plates by the conductors *d f*, as described, of the straps K L, provided with metallic strips or conductors, and means for connecting the same with the terminal plates on the belt or pad, substantially as set forth.

2. The straps K L, composed of covered metallic strips *b*, and metallic strips *m*, adapted to slide in contact therewith and provided with springs *n*, and means for connecting the said strips *m* with the terminal plates of the battery of the belt or pad, substantially as described.

3. The combination, with the straps K L, constructed as described and adapted to be connected with the terminal plates of the belt or pad, of the buttons or plates *q*, made adjustable upon the said straps and having the ears *s*, sliding in contact with the metal strips *b*, substantially as set forth.

4. The combination, with the terminal plates located upon the surface of the belt or pad and having the loops or straps *g*, of the straps K L, provided with spring-wire loops or connections *h*, having shoulders *i*, and adapted to engage with the loops *g* of the terminal plates, substantially as described.

Witness our hands this 21st day of December, A. D. 1885.

JAMES McGRADY.  
GEORGE H. SLOANE.

In presence of—

P. E. TESCHEMACHER,  
W. J. CAMBRIDGE.