

No. 853,521.

PATENTED MAY 14, 1907.

J. H. ROBERTSON.

ELECTRODE.

APPLICATION FILED JULY 24, 1906.

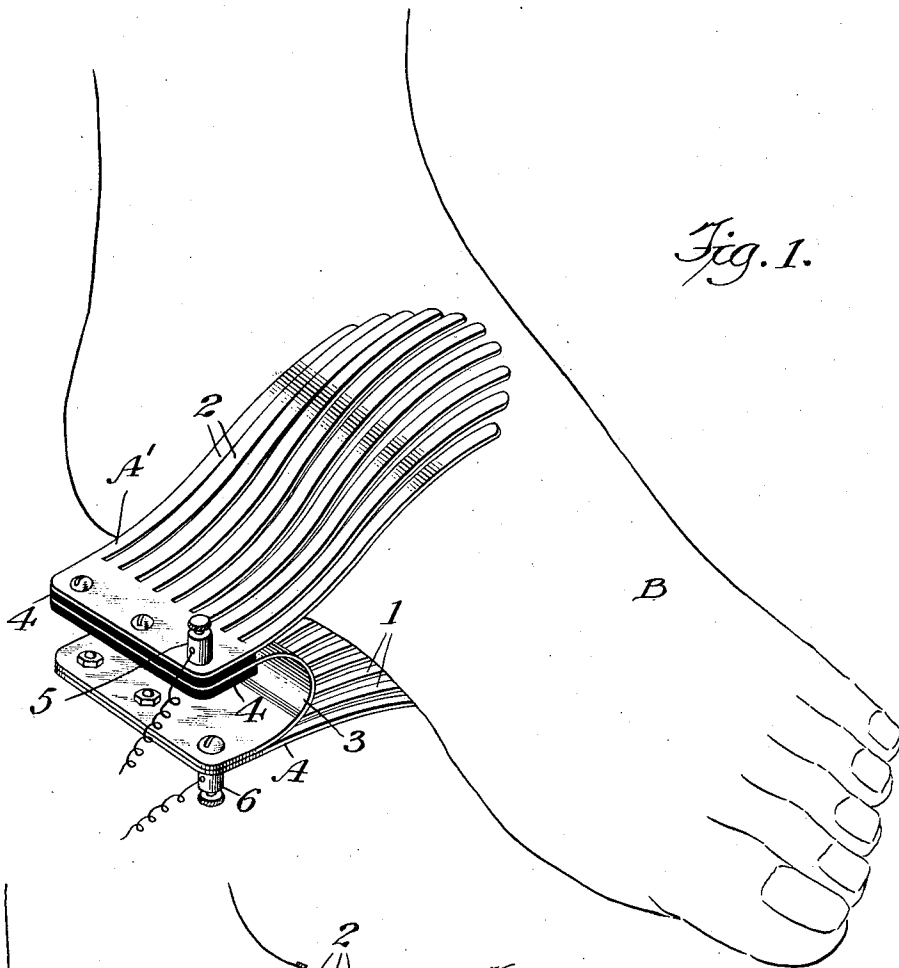


Fig. 1.

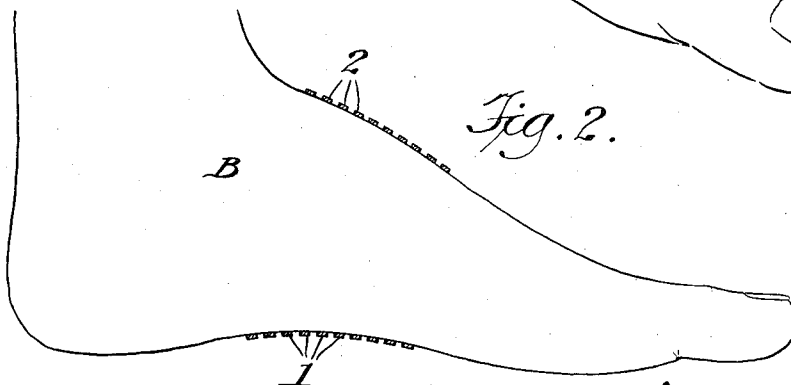


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

JAMES HART ROBERTSON, OF ARLINGTON, NEW JERSEY, ASSIGNOR OF ONE-HALF TO JOHN C. KLATZL, OF NEW YORK, N. Y.

ELECTRODE.

No. 853,521.

Specification of Letters Patent.

Patented May 14, 1907.

Application filed July 24, 1906. Serial No. 327,477.

To all whom it may concern:

Be it known that I, JAMES HART ROBERTSON, a citizen of the United States, and a resident of Arlington, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Electrodes, of which the following is a specification.

My invention relates to a new and improved electrode for use with batteries, medical coils, etc.

It relates particularly to a flexible, automatically adjustable compound electrode, adapted to insure firm and effective contact, even where the surface affected is irregular in shape.

The object of the present invention is to provide such an electrode, which shall be easily and economically constructed and operated, and capable of instant attachment to and detachment from the surface with which it is in contact. It can be used with either alternating or direct currents, and although primarily adapted for medical purposes, it can be used wherever it is desired to make a temporary electric circuit through a body where the employment of permanent fixtures would be impracticable. Used on the human body, it can be applied to the neck, arm, leg, foot, or any irregular shaped portion, and can be taken off instantly, at the same time assuring a firm and even contact while in place.

To carry out my invention, I construct a contact arrangement that may be called a compound flexible electrode, being composed of two separate, flexible, metallic contact strips. These I divide into independent strips, or fingers, that are independently flexible, and the mutual relation of this pair of flexible strips and fingers I control by means of a spring, mechanically connecting the two sets, but at the same time preserving their electrical insulation.

The accompanying drawings show my improved electrode applied to the human foot, and conforming to the irregularities of its shape.

In the drawings, Figure 1 shows a perspec-

tive view of the foot, with the device applied thereto, and Fig. 2, a side view of the foot with the ends of the electrode in section.

Referring to the drawings: A and A¹ are the two flexible contact strips divided by longitudinal slits into narrow flexible fingers, 1 and 2.

B is the foot.

Firmly attached to each strip A and A¹ is the curved controlling spring 3, serving to insure firm contact of the fingers 1, 2; 4 is insulation for preventing electric connection between strips A and A¹.

5 and 6 are the terminals for the electric conductors.

The application and operation is easily seen from the drawing. Pressing on the spring 3 separates the contact fingers and brings them into a position to be applied to any surface desired. When the spring is released its elasticity forces the fingers 1 and 2 into contact with the portion of the body and their independent flexibility enables them to adapt themselves to the configuration of the surface against which they press. Binding post 5 must be insulated from the spring 3.

The parts A and A¹ can, of course, be made of a variety of materials but A and A¹ must, of course, be conductors. I have tried several different materials for the parts A and A¹, and have received the best satisfaction while using spring steel for the parts A, A¹ and 3. The fingers 1 and 2 may be all of the same length, but a slightly curved outline at the end is preferable.

Having thus fully described and illustrated my invention, what I claim, is:

1. An electrode for medical or other purposes, having a pair of flexible contact strips provided with a series of independent flexible fingers and a spring adapted to control the relative position of the two contact strips, substantially as set forth.

2. An electrode for medical batteries, composed of a pair of flexible contacts divided longitudinally into narrow separate fingers and means for automatically adjusting said contacts, substantially as set forth.

3. An electrode for applying electricity to irregularly shaped bodies, consisting of a pair of flexible contacts divided longitudinally into a series of narrow flexible fingers of varying lengths, and means for automatically adapting the fingers to the surface irregularities, substantially as set forth.

Signed at New York in the county of New York and State of New York this 23d day of July A. D. 1906.

JAMES HART ROBERTSON.

Witnesses:

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