

No. 752,419.

PATENTED FEB. 16, 1904.

M. R. RODRIGUES.

HIGH TENSION THERAPEUTIC ELECTRODE.

APPLICATION FILED JUNE 3, 1901. RENEWED JULY 9, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

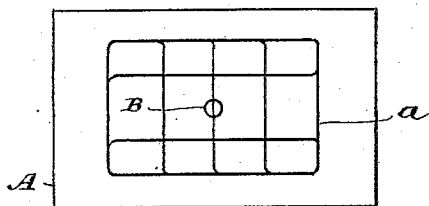


Fig. 2.

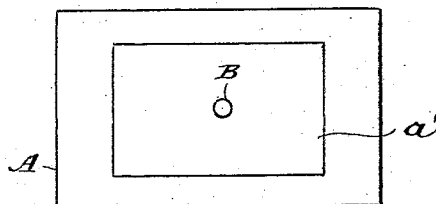


Fig. 3.

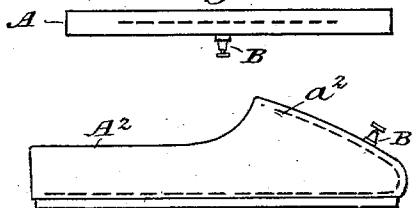


Fig. 5.



Fig. 4.

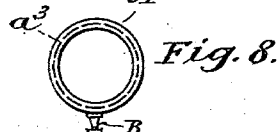


Fig. 7.

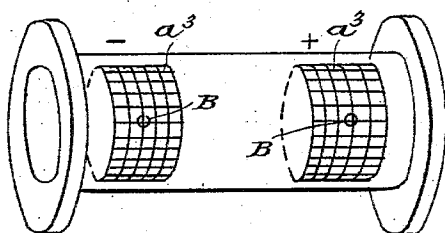


Fig. 6.

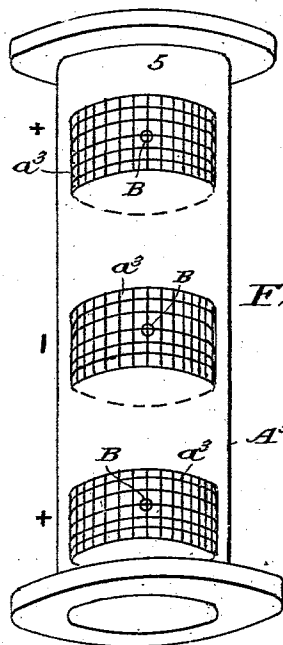
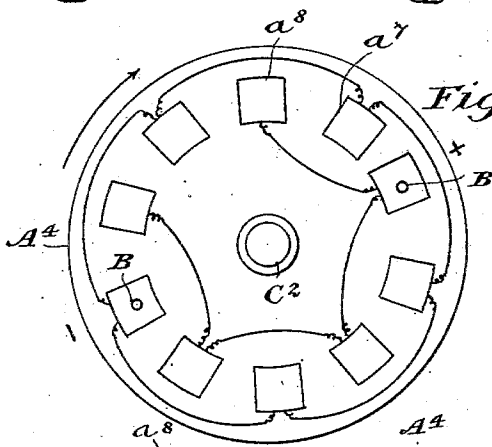


Fig. 9.



Witnesses:

J. R. Patton
Shubclowell

Fig. 12.

Inventor:

M. R. Rodrigues
J. O. Fowler

his Attorneys.

No. 752,419.

PATENTED FEB. 16, 1904.

M. R. RODRIGUES.

HIGH TENSION THERAPEUTIC ELECTRODE.

APPLICATION FILED JUNE 3, 1901. RENEWED JULY 9, 1903.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 10.

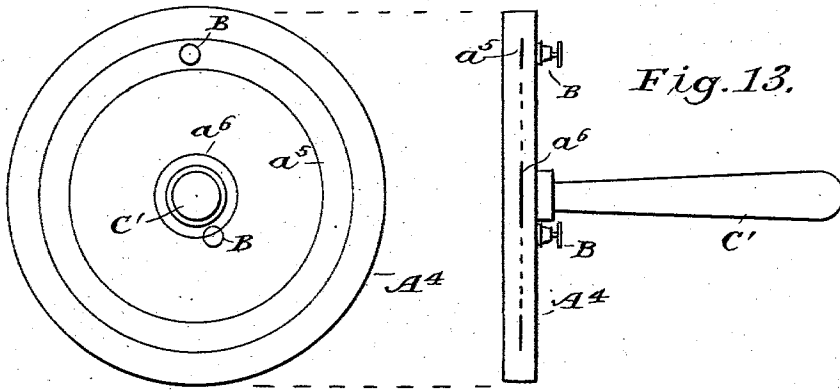


Fig. 13.

Fig. 14.

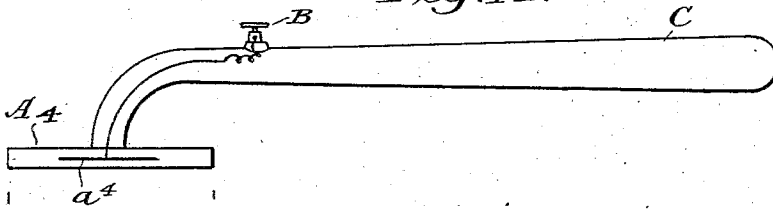


Fig. 11.

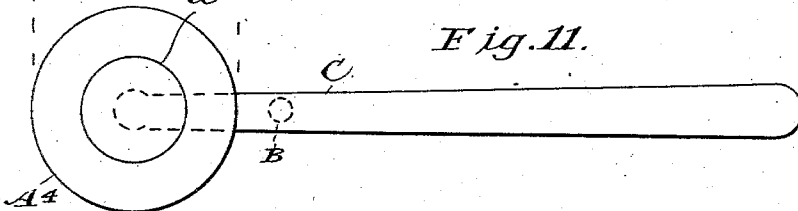
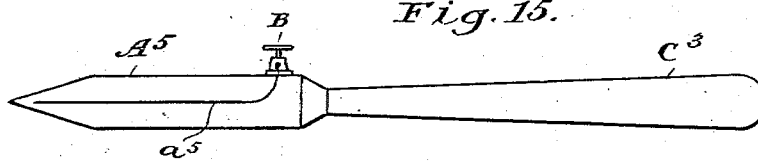


Fig. 15.



Witnesses:

E. B. Botton
John Wall

Inventor:

M. R. Rodrigues

By

J. O. Fowles

his Attorney

UNITED STATES PATENT OFFICE.

MANUEL R. RODRIGUES, OF BROOKLYN, NEW YORK.

HIGH-TENSION THERAPEUTIC ELECTRODE.

SPECIFICATION forming part of Letters Patent No. 752,419, dated February 16, 1904.

Application filed June 3, 1901. Renewed July 9, 1903. Serial No. 164,921. (No model.)

To all whom it may concern:

Be it known that I, MANUEL R. RODRIGUES, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented a certain new and useful High-Tension Therapeutic Electrode, of which the following is a specification.

My invention relates to appliances for use in general and local electrization for therapeutic applications by which any part of the body may be placed in an aura-electrica zone by means of an electrode made to conform with the contour of the body and constructed and arranged to be used either as a sedative or as an appliance to aseptize or stimulate and invigorate the whole system, and particularly that particular part of the body to which it is applied and by means of which the patient may be subjected to a high-tension current by means of an aspergilliform discharge, whereby the painful sensation of a direct application of the current is avoided; and it has for its object the provision of an appliance of the kind set forth, simple in construction, inexpensive to manufacture, and which combines compactness of structure and light weight and also increased efficiency in practical operation.

To attain the desired end, this my invention consists in the construction, arrangement, and operation of parts herein set forth.

In order to enable my invention to be fully understood, I will proceed to explain the same by reference to the drawings which accompany and form a part of this specification, in which—

Figures 1 and 2 represent plan views of electrodes constructed according to my invention. Fig. 3 is a longitudinal section of the appliance shown in Fig. 1. Fig. 4 is a side elevation of a slipper-electrode made in accordance with my invention. Figs. 5, 6, and 7 are side elevations of sleeves or armlets constructed according to my invention. Fig. 8 is a view of my appliance represented in Fig. 5, shown in section. Figs. 9, 10, and 11 are plan views of my disk electrodes. Figs. 12, 13, and 14 are side elevations of the same; and Fig. 15 is a side elevation of another electrode constructed according to my invention.

Like letters of reference indicate like parts in all the views.

It is well known that skilful electrization is a valuable palliative and in many cases a curative agent in the treatment of atonic nerves and numerous morbid processes, and the question how it may be rationally and scientifically applied has been one of much study by scientists. Inasmuch as high-tension currents when applied by a dry metallic electrode or by direct spark are very unpleasant or painful, I have found it desirable to devise an electrode by which the necessary stimulation, invigoration, or other therapeutic action may be produced without the unpleasant effects resulting from the use of electricity as ordinarily applied—namely, as stated, by the use of a diffused aspergilliform discharge in lieu of employing any direct points of contact—and I have therefore constructed according to my invention an organization of the class described embodying the preferred construction of parts and their mutual relationship, combination, arrangement, and organization in a composite body or structure, as hereinafter described.

Referring particularly to the drawings, which show several specific forms of my electrode, which may be made of different shapes to fit the various contours of the body for particular local applications, but which embody, essentially, the same principle of construction, A denotes a body, of glass or other insulating material, having a preferably vitreous surface and containing a metallic material embedded therein, as a wire network *a* or a thin metallic plate *a'* in electrical connection with a binding-post B. In use the high-tension current passes from the binding-post B to the interior embedded metal portion of my electrode and thence through the preferably vitreous face of the appliance to the body of the patient, the current becoming thereby broken up, as it were, or diffused. This style of electrode may be used for a platform or general electrode and also for a foot-plate.

In Fig. 4 a slipper made of insulating material, as glass, is shown containing a metallic material *a'*, embedded in the same and electrically connected with the binding-post B.

In Fig. 5 a sleeve or armlet A^3 is represented, the same being constructed of glass or other insulating material provided with an interior metallic portion a^3 and a binding-post B. In these forms of my electrode the pole or terminal B is connected with a source of high-tension current which, being impelled through the preferably vitreous face of my electrode, becomes diffused or softened, so that no painful or unpleasant effect will be produced in the application of my appliance.

In Figs. 6 and 7 sleeves or armlets of similar construction are shown, except that the sleeve in Fig. 7 is a duplex one and has two metallic bodies a^3 , forming, respectively, an anode and cathode, and two binding-posts B B, while the armlet in Fig. 6 is a multiple concentration-electrode and has three metallic bodies a^3 and three binding-posts B, whereby the current from the outer metallic bodies may be concentrated upon the portion of the arm of the patient adjacent to the inner metallic body, or vice versa.

My electrode may also be constructed in the form of disks A^4 , as shown in Figs. 9, 10, and 11, the one represented in Fig. 11 being a single disk electrode with interior metal plate a^4 , binding-post B, and handle C and the one shown in Fig. 10 being a duplex electrode having two interior metallic bodies a^5 and a^6 and binding-posts B and handle C' , while the electrode represented in Fig. 9 is a multiple one and has a series of alternate positive and negative plates a^7 and a^8 and two binding-posts B and a handle C^2 . The latter disk electrode is intended to cover large surfaces and may be rotated when applied. In all of my disk electrodes the body of the same consists of a suitable insulating material, as glass, made in a solid body or in sections of preferably non-homogeneous insulating materials and containing in the interior of the same any desired electrical conducting material, as metal wires or plates.

In Fig. 15 a single concentration-electrode is shown consisting of an insulating-body, as glass A^5 , and a metal plate or wire a^5 , embedded therein and connected with binding-post B and also having a handle c^3 .

As it is evident that many changes in the construction, form, proportion, and relative arrangement of parts might be resorted to without departing from the spirit and scope of my invention, I would have it understood that I do not restrict myself to the particular construction and arrangement of parts shown and described, but that such changes and equivalents may be substituted therefor and that

What I claim as my invention is—

1. An electrode for high-tension currents consisting of a body of insulating material provided with a contact-surface composed of insulating material, and having a conductor of electricity embedded therein adjacent to said contact-surface.

2. An electrode consisting of a body of insulating material, provided with a conductor of electricity embedded therein adjacent to the contact-surface of the electrode, and constructed and arranged to conform to the contour of the body of the user.

3. An electrode for high-tension currents consisting of a body of insulating material provided with an insulating-surface, and having an anode and cathode contained therein, the said anode and cathode being isolated by the insulating material.

4. An electrode for high-tension currents consisting of a body of insulating material provided with an insulating-surface, and having a conductor of electricity contained therein and located adjacent to said contact-surface of the electrode, in combination with a handle therefor.

5. An electrode for high-tension currents consisting of a body of insulating material provided with an insulating-surface, and having a series of anode and cathode terminals, alternately disposed, contained therein.

In testimony of the foregoing specification I do hereby sign the same in the city of New York, in the county and State of New York, this 25th day of May, A. D. 1901.

MANUEL R. RODRIGUES.

Witnesses:

JOHN C. WALL,
WM. CLINTON BURLING.