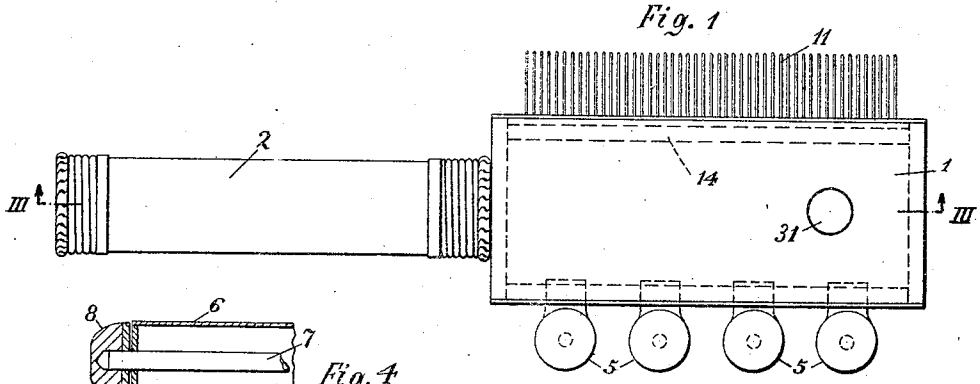
April 7, 1925. 1,532,462

A. WINTERFIELD

ELECTRICAL MASSAGING INSTRUMENT

Filed Oct. 28, 1920

Fig. 1



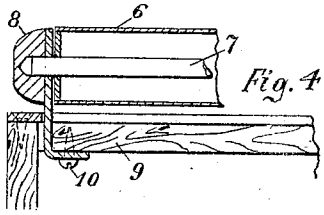
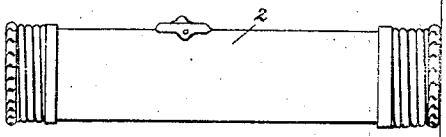


Fig. 4

Fig. 2



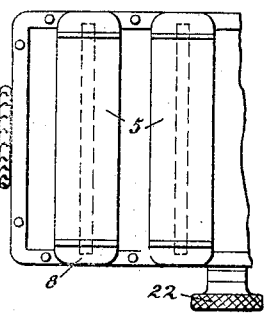
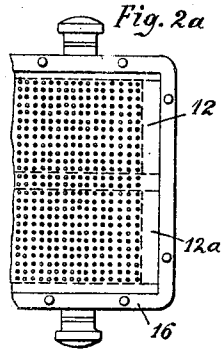


Fig. 2a



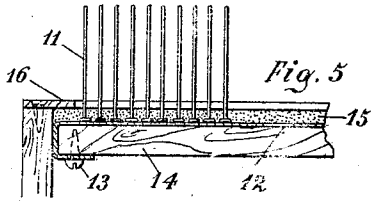


Fig. 5

Fig. 3

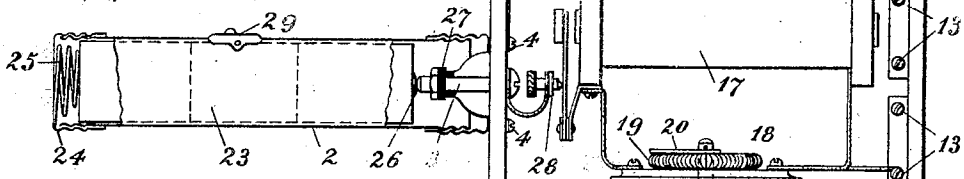
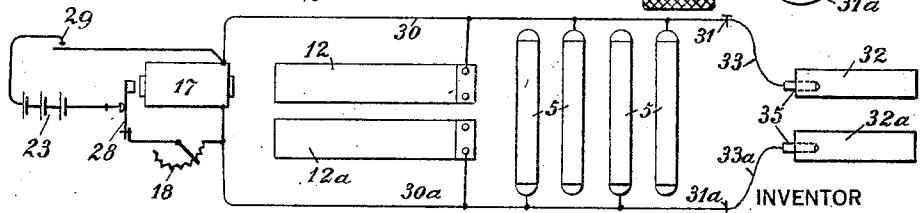


Fig. 6



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UNITED STATES PATENT OFFICE.

ARTHUR WINTERFIELD, OF NEW YORK, N. Y., ASSIGNOR TO MEDICAL ELECTRIC APPARATUS CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

ELECTRICAL MASSAGING INSTRUMENT.

Application filed October 28, 1920. Serial No. 420,127.

To all whom it may concern:

Be it known that I, ARTHUR WINTERFIELD, formerly a citizen of the German Republic, but having now filed his declaration of intention to become a citizen of the United States, residing in New York city, county of New York, and State of New York, have invented certain new and useful Improvements in Electrical Massaging Instruments, of which the following is a specification.

This invention relates to an electrical massaging instrument of the self-contained type and has for its object to provide said instrument with an improved electrode which renders the same particularly adaptable for general use over the entire body of a patient. The electrodes herein contemplated are in the form of rollers mounted parallel to each other on one face of the instrument, alternate rollers being oppositely electrified so that the electric current will pass from one roller to the next through the body of the patient.

Another feature contemplated in the present invention consists in the provision of means for rendering the intensity of the electric current adjustable over a wide range so that the instrument may be regulated by the operator to the intensity of current which is most beneficial and then make it possible to begin a treatment with comparatively weak current and gradually increase the same until the maximum intensity is finally reached. This means consists in the preferred form of embodiment in a rheostat which is inserted into the electric circuit of the instrument.

Various other features and objects of the invention will be understood from the following detailed description of a specific form of embodiment of the invention, having reference to the accompanying drawing, in which—

Figure 1 is a side view of one form of embodiment of the invention;

Figure 2, a bottom plan view of Figure 1, the right hand portion of the instrument being shown broken away;

Figure 2ª, a top plan view of Figure 1, the left hand portion of the instrument having been broken away;

Figure 3, a view showing a horizontal section of Figure 1 taken on lines III—III, looking in the direction of the arrows;

Figure 4, a fragmental view showing the manner in which the roller electrodes are mounted on the box;

Figure 5, a view similar to Figure 4, showing the manner in which the metallic bristle electrodes are mounted on the box; and

Figure 6, a diagrammatic view showing the preferred form of circuit connections employed in the illustrated embodiment of my invention.

Similar characters of reference designate similar parts in each of the several views.

The instrument consists of a container or box 1 provided with a hand piece 2, this hand piece being secured to the box by means of the bolt 3 and screws 4, as illustrated in Figure 3. The one face of the box 1 is provided with a plurality of roller electrodes 5, which electrodes consist of hollow cylindrical members 6 mounted on shafts 7, which shafts are journaled in bearing members 8, affixed to the wall 9 of the box by means of screws 10. The outer ends of the members 8 are rounded off so as to take away all rough edges and corners which might injure the patient in using the instrument.

The opposite face of the box is provided with metallic bristle electrodes 11 intended for use primarily on the scalp. Each of the bristles is provided with a flat head, as illustrated in Figure 5, which head makes contact with metallic plates 12 and 12ª, these plates being spaced apart from each other and affixed by screws 13 to the wooden face wall 14 of the box 1. The shanks of the bristles extend through perforations in a sheet of soft rubber 15, which sheet covers the entire face of the box and is held in place by a metallic flange 16 secured by screws to the walls of the box, as illustrated in Figure 5. The points of the bristles are rounded off to prevent scratching or other injury during the use of the instrument.

Inside the box 1 is provided a vibrator 17 of the usual type and a variable resistance rheostat 18. This rheostat comprises an annular coil of wire 19 with which a contact finger 20 is arranged to cooperate. This finger is mounted on a shaft 21 which extends to the exterior of the box, where it is provided with a knurled head 22 by means of which the position of the finger

20 and, therefore, the resistance of the rheostat may be controlled.

A flash-light battery 23 of the usual type is mounted in the hand piece 2, a screw cap 24 and spring 25 serving to hold the battery in place. The terminal 26 of the battery is thus forced into contact with the end of the bolt 3, which bolt is insulated at 27 from the casing of the hand piece and conducts the current from the battery to the vibrator contact 28. The other terminal of the battery is connected through the casing of the hand piece 2 to one of the screws 4, a switch 29 of the usual flash-light type being interposed in this connection to control the current supply.

The circuit connections are illustrated diagrammatically in Figure 6. It will be observed from this diagram that the current from battery 23 flows through switch 29, through the winding of the vibrator 17, the rheostat 18, and through the vibrator contact 28 back to the other terminal of the battery. Owing to the interruptions of the current by the vibrator contact, an electromotive force of comparatively high voltage is set up at the terminals of the vibrator winding so that current enters the conductors 30 and 30^a, flows into the plates 12 and 12^a, thus electrifying the bristles mounted thereon and passing from the electrodes of the one plate into those of the other through the scalp of the patient using the instrument. The conductors 30 and 30^a are connected also to alternate roller electrodes 5 so that the current passes from the electrodes through the body of the patient. Terminals 31 and 31^a, mounted on the side walls of the box 1, are also associated with conductors 30 and 30^a, these terminals being provided to permit of a pair of hand electrodes 32 and 32^a to be connected therewith by wires 33 and 33^a.

The method of using the instrument may now be readily understood. For a scalp massage the instrument is grasped at the hand piece 2, the switch 29 is thrown to the on-position and the knurled head 22 is turned to the position at which the current strength is most suitable for the patient. If desired a pointer may be attached to this knurled head, which pointer may be arranged to cooperate with a scale, the indices of which serve to show the strength of the current which will be obtained with a particular position of the rheostat contact. This adjustability of the current is a highly important feature, as it permits of an adjustment of the current to the required strength, thus preventing excessive shock and injury to a person highly susceptible thereto and at the same time rendering the instrument usable with effectiveness by a person not so susceptible. This rheostat permits also of a gradual increase in the current during a treatment or of a gradual stepping up of the current between successive treatments, as the patient gets more and more accustomed thereto.

The roller electrodes are beneficial for general body treatments and are of particular value because they permit of a gentle massage of the affected part during the treatment. The hand electrodes are, as the name indicates, to be grasped by the hands of the patient so that the current during the treatment will pass through the entire upper part of the body.

Although I have herein shown and described only one particular form and embodiment of my invention, it is to be understood that various changes and modifications may be made therein within the scope of the following claims, without departing from the spirit of the invention.

What I claim is:

1. An electrical massaging instrument comprising a plurality of roller electrodes and a plurality of sets of bristle electrodes mounted on the face of the instrument, a source of current within said instrument, means for electrifying both said rollers and said bristle electrodes by said source of current and means for regulating the intensity of electrification of said electrodes.

2. The device of claim 1 in which said regulating means comprises a resistance rheostat.

3. An electrical massaging instrument having a hollow handle, a battery in said handle, an interrupter mounted within said instrument and associated with said battery, a rheostat for adjusting the strength of current furnished to said interruptor by said battery, said rheostat being mounted within said instrument but having an operating member extending to the exterior thereof, a plurality of roller electrodes mounted on the exterior of said instrument, said electrodes being provided with rounded ends, means for associating alternate electrodes with opposite terminals on said interruptor and a pair of terminals on the exterior of said box associated with the terminals of said interruptor and a pair of hand electrodes adapted to be associated with said terminals.

4. An electrical massaging instrument comprising a casing, a handle therefor, a plurality of pairs of roller electrodes mounted on the exterior of said casing, a battery provided within said instrument, means associated with said battery for producing a current of potential higher than that of the battery current, and means for connecting alternate pairs of said electrodes to said means so as to produce opposite potential in alternate electrodes.

5. An instrument of the character described, comprising a casing, a hollow han-

dle therefor, a source of current in said handle, a plurality of roller electrodes mounted on one face of the casing, a brush comprising metallic bristles mounted on another face of the casing, means within said casing associated with said source of current for impressing on said roller electrodes, and on the bristles of the brush potential higher than that of the said source, and means for regulating said potential, said means comprising an operating member mounted on the exterior of said casing.

6. An instrument of the character described, comprising a casing, a hollow handle therefor, a battery in said handle, a switch on said handle for governing the flow of current from said battery, said switch comprising an operating member on the exterior of the instrument, a plurality of roller electrodes mounted on the face of said casing, an interruptor provided in said casing and associated with said battery for impressing on said electrodes potential higher than that of the battery current, and means in said casing for regulating said potential, said means comprising an operating member mounted on the exterior of said casing.

7. In an instrument of the character described, a casing, a hollow handle provided on said casing, a source of current in said handle, a switch on said handle for governing the flow of current from said source, a plurality of electrodes mounted on the exterior of the casing, means interior to said casing for impressing on said electrodes current of potential greater than that of the said source of current, and means for governing the electrification of said electrodes, said means comprising an operating member mounted on the exterior of the casing.

8. In an instrument of the character described, a casing, a hollow handle therefor, a source of current provided in said handle, a switch on said handle for governing the flow of current from said source, an interrupter mounted within said casing and associated with said battery, a plurality of electrodes on the exterior of said casing, means for impressing current from said interrupter on said electrodes, a resistance rheostat mounted within said casing for governing the electrification of said electrodes, and an operating member for said rheostat, said member extending to the exterior of said casing.

9. In an instrument of the character described, a plurality of pairs of roller electrodes mounted on one face of the casing, a series of bristle electrodes mounted on the other face of the casing, a plurality of terminals on said casing, a pair of hand electrodes adapted to be associated with said terminals and means interior to said casing for electrifying said roller and bristle and hand electrodes, said means comprising an interrupter, a source of current, and means for governing the intensity of electrification of said electrodes, said means comprising a resistance rheostat associated with said interrupter.

In testimony whereof I have affixed my signature to this specification.

ARTHUR WINTERFIELD.