

H. WEISS.
ELECTROMEDICAL BRUSH.
APPLICATION FILED JULY 25, 1919.

1,374,414.

Patented Apr. 12, 1921.

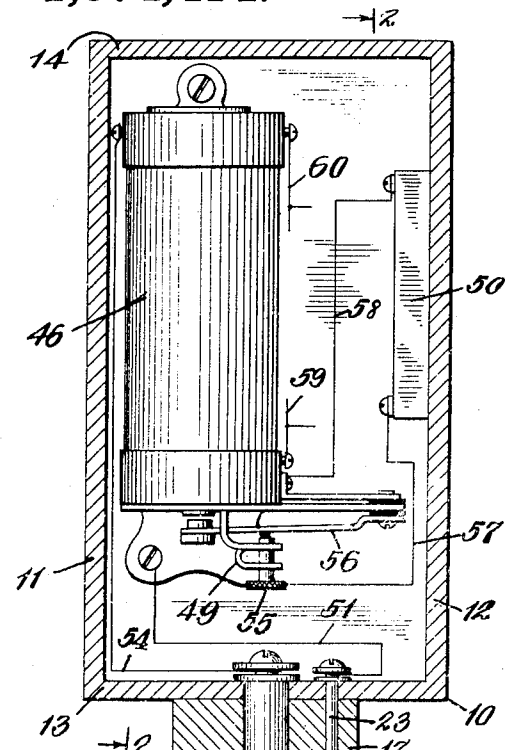


Fig. 1.

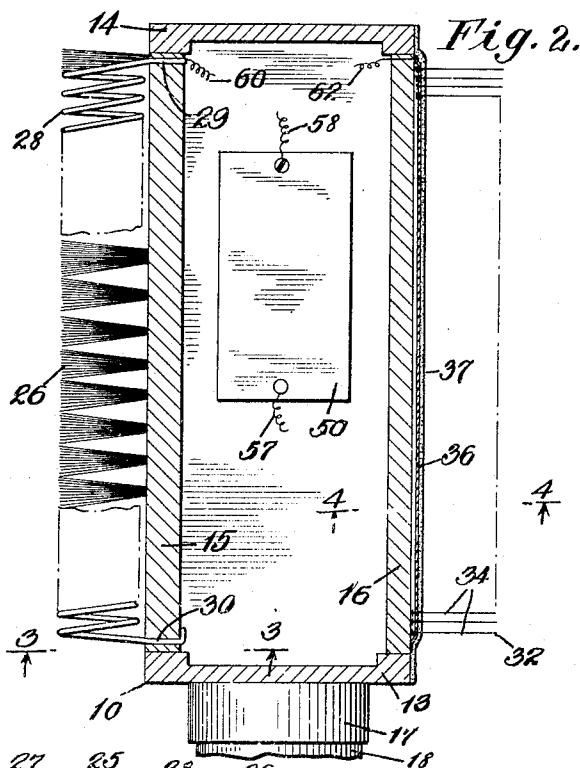


Fig. 2.

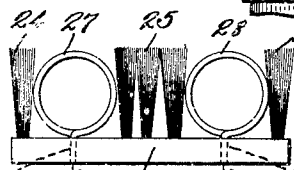
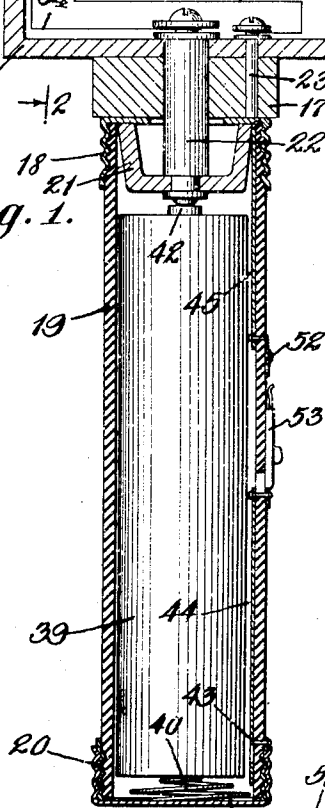


Fig. 3.

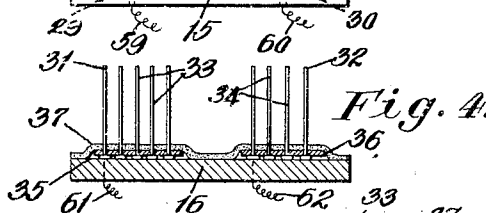


Fig. 4.

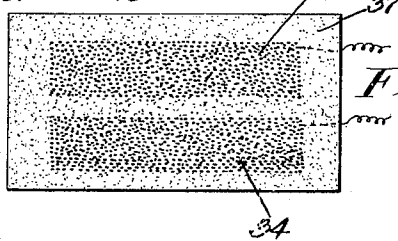


Fig. 5.

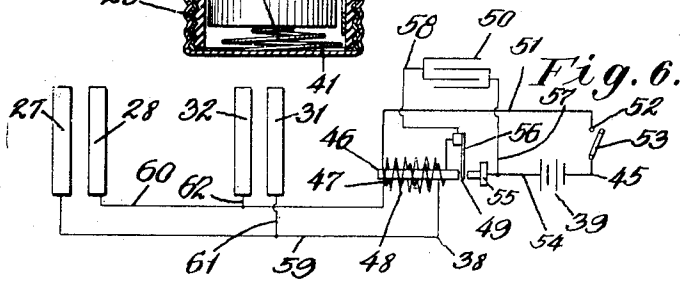


Fig. 6.

INVENTOR
Henry Weiss.
BY
H. J. Criswell
ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY WEISS, OF NEW YORK, N. Y.

ELECTROMEDICAL BRUSH.

1,374,414.

Specification of Letters Patent.

Patented Apr. 12, 1921.

Application filed July 25, 1919. Serial No. 313,141.

To all whom it may concern:

Be it known that I, HENRY WEISS, a citizen of the Republic of Germany, and a resident of New York, borough of Bronx, in the county of Bronx and State of New York, have invented certain new and useful Improvements in Electromedical Brushes, of which the following is a full, clear and exact specification.

This invention relates to a class of devices for giving electrical treatment to persons.

My invention has for its object primarily to provide a brush designed to be employed for treating persons with applications of electricity in a manner whereby the beneficial effects are obtained by frictionally stimulating the flesh and applying simultaneously therewith induced currents of electrical energy, and which is adapted to allow the treatments to be given through the medium of electrodes in the forms of bristles of wire or through the medium of electrodes in the forms of cushions associated with bristles of hair so that the applications of the electric currents may be varied according to the sensitiveness of the parts being treated. The invention resides essentially in providing a brush surface composed of one or more electrodes in the form of wire bristles as well as providing a second brush surface composed of one or more electrodes in the forms of conductive cushions made of spirally bent wires arranged so that parts of their side faces provide the bearing surfaces of the electrodes. The electrodes are interposed in a high frequency electric circuit having its current waves stabilized by a condenser, and all of these parts are associated with a hollow back or casing having a handle in which is mounted a battery serving as a source of electricity supply. Thus persons not having the usual sources of electricity supply may be enabled to treat themselves.

With these and other objects in view the invention will be hereinafter more particularly described with reference to the accompanying drawing forming a part of this specification in which similar characters of reference indicate corresponding parts in all the views, and will then be pointed out in the claims at the end of the description.

In the drawing, Figure 1 is a detail longitudinal vertical section taken through one form of electro-medical brush embodying my invention.

Fig. 2 is a fragmentary detail sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a detail view, partly fragmentary, taken on the line 3—3 of Fig. 2.

Fig. 4 is a detail sectional view taken on the line 4—4 of Fig. 2.

Fig. 5 is a top plan, partly fragmentary, of the part of the brush shown in Fig. 4, and

Fig. 6 is a diagrammatic view of the electric system employed in the brush.

The brush has a hollow non-conductive back or casing 10 which is preferably substantially rectangular in shape to provide side walls 11, 12, and end walls 13, 14. Between these walls are non-conductive spaced plates, as 15 and 16. On the end wall 13 of the non-conductive hollow back 10 may be a block, as 17, to which is held a conductive threaded cap 18 which is screwed on a non-conductive tubular handle 19 to allow the brush to be manipulated by a person, and on the second end of the handle is provided another conductive cap, as 20. Mounted in the cap 18 may be a bracket, as 21, protruding interiorly of the handle 19, and in an opening in this bracket as well as in openings in the cap 18, block 17 and in the end wall 13 of the back 10 is provided a bolt or binding post 22 which serves to attach the handle and block to the end wall 13 of the back. One end of the binding post 22 protrudes beyond the bracket 21 interiorly of the handle, while the other end of the binding post protrudes interiorly of the back, and passing through openings in the end wall 13 of the back and in the block 17 is a second binding post 23, one end of which contacts with the threaded cap 18, while its other end protrudes interiorly of the back of the brush in spaced relation to the binding post 22.

Extending from the exposed face of the plate 15 of the hollow back 10 may be one or a number of rows of spaced brushes 24, 25, 26 preferably of tufts or bristles of hair, and on the plate between the rows 24 and 25 of the bristles is an electrode 27, while on this plate between the rows 25 and 26 of the bristles is another electrode 28. Both of the electrodes 27 and 28 are in the form of cushions made of bent wire preferably in the forms of spiral springs of circumferences so that their widths correspond approximately to the lengths of the brushes. These yielding electrodes or conductive cushions are of lengths similar to the length of the plate 15

of the back 10, and both of the electrodes have their ends fastened, as at 29 and 30, to the ends of the plate 15. The electrodes are therefore disposed so that parts of their side
5 faces provide the bearing surfaces of the electrodes.

On the exposed face lengthwise of the plate 16 of the back 10 of the brush may be one or a number of electrodes 31 and 32, and
10 these electrodes are composed of spaced rows of wire bristles 33 and 34, respectively, which are of lengths to protrude sufficient distances from the back to serve as friction brushes. The wire bristles 33 of the electrode 31 pro-
15 trude from a conductive plate or metal strip 35 which is movably disposed upon or may be slightly spaced from the plate 16 of the back 10, while the wire bristles 34 of the electrode 32 also extend from a conductive
20 plate or metal strip 36 which is likewise movably disposed upon or may be slightly spaced from the plate 16 of the back of the brush. The conductive plates 35 and 36 as well as the conductive bristles of the elec-
25 trodes 31 and 32 are held to the back 10 by a sheet, as 37, of rubber or other yielding insulating material, which is cemented or otherwise fastened to the back of the brush, the bristles extending through holes suit-
30 ably provided in the yielding insulating sheet.

In this form of brush the electrodes 27, 28 and 31, 32 are charged with induced current of electricity from an electric circuit, as 38,
35 leading from a source of electrical energy, such as a dry cell battery 39 which may be of any well known type for being arranged in the handle 19 of the brush. The type of battery I prefer to employ has at one of its
40 ends a terminal, as 40, in opposed relation to the conductive cap 20 of the handle. A conductive spring, as 41, leads from this terminal to the cap 20, and at the other end of the battery is a terminal 42 with which
45 the binding post 22 contacts. The cap 20 of the handle 19 of the brush is conductively connected, at 43, to a conductor or metal strip 44 provided on part of the wall interiorly of the handle 19, and also on the
50 wall interiorly of the handle is another conductor or metal strip 45 having one of its ends spaced from the strip 44, while the second end of the strip 45 leads to the conductive cap 18 of the handle, the binding post
55 23 being in conductive contact with this cap. The wiring of the circuit 38 leads off from an induction coil 46 which may be of a commonly used or any preferred form having a primary winding 47, a secondary winding
60 48, a breaker, as 49, for interrupting the primary circuit at intervals to induce in the usual manner a high tension current in the secondary circuit, and in the primary circuit is interposed a suitable type of con-
65 denser, as 50, for stabilizing or causing a

uniform flow of the induced current through the secondary circuit. All of these parts are arranged in the brush, and one of the wires, as 51, of the primary winding leads to the binding post 23, contacting with the
70 conductive cap 18 which is engaged by one end of the conductive strip 44 of the handle of the brush. On the other end of this strip is provided a contact 52, of a switch, as 53, which is preferably of a well known type
75 slidably arranged on the handle 19 of the brush as well as being connected to the conductive strip 45 for being moved into and out of engagement with the contact 51 to make and break the primary circuit. As
80 above explained, the strip 45 is conductively connected to the conductive cap 20 of the handle 19, and this cap is conductively engaged by the spring 41 in contact with the terminal 40 of the battery 49. To the bind-
85 ing post 22 which engages the second terminal 42 of the battery is connected one end of a wire 54 leading to the conductive set screw, as 55, adapted to be adjusted in spaced relation to and from the conductive spring
90 metal finger, as 56, which is common to many forms of the breakers of inductive coils. The second end of the primary winding leads to the conductive spring finger 56, and to the wire 54 of the set screw 55 is connected
95 one end of a wire 57 leading to one terminal of the condenser 50, while leading from the second terminal of the condenser 50 to the spring finger 56 is another wire 58.

When the switch 53 is moved into engage-
100 ment with the contact 52 the primary circuit will be closed from one terminal of the battery 39, over the spring 40, cap 20, strip 45, through the switch 53, over the strip 44, through the binding post 23 and over wire
105 51 to one terminal of the induction coil. From the second terminal of the battery the primary circuit will also be closed through the binding post 22 and over the wire 54 to the screw 55 of the breaker 49, and the cir-
110 cuit will also be closed through the primary winding to the conductive spring finger 56 of the breaker, this finger being swung into contact with the screw 55 with the closing of the primary circuit. The current of the
115 primary circuit will also flow over the wires 57 and 58 from the finger 56 and from the wire 54 to and through the condenser 50 for causing a uniformity of flow of the high frequency of the primary current, and this
120 stabilized high tension voltage is induced in the secondary winding by the interruptions caused by the breaker as is incident to the use of induction coils of this class.

On one end of the secondary winding
125 leads, as at 59, to the electrode 27 of the brush, and the other end of the secondary winding leads, as at 60, to the electrode 28 of the brush. From the electrode 31 is a wire 61 which leads to the end part 59, of
130

the secondary winding, while from the electrode 32 is a wire 62 leading to the end part 60 of the secondary winding. Thus when either pair of the electrodes 27 and 28 are brought into contact with the flesh of a person the secondary circuit will be closed over this winding from one electrode to the second electrode through the body of the person which completes the circuit, and in this manner by employing the desired pair of electrodes during the manipulation of the brush accordingly the applications of electricity may be varied by reason of the electrodes 31 and 32 being in the forms of wire bristles and the association of the hair bristles with the electrodes 27 and 28.

In the foregoing description, I have embodied the preferred form of my invention, but I do not wish to be understood as limiting myself thereto, as I am aware that modifications may be made therein without departing from the principle, or sacrificing any of the advantages of this invention, therefore I reserve to myself the right to make such changes as fairly fall within the scope thereof.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

1. The combination, in an electro-medical brush, of a hollow back, a pair of electrodes each in the form of a conductive spiral spring yieldingly held lengthwise on the

hollow back so that the convolutions of both springs between their ends will serve as brushing cushions, said electrodes being interposed in a high frequency electric circuit having its current waves stabilized and the electrodes being in spaced relation so that the circuit will be closed when the electrodes are brought into contact with the flesh of a person.

2. The combination, in an electro-medical brush, of a hollow back, and two pairs of electrodes, each electrode of one pair being composed of a conductive plate having rows of conductive bristles and both plates being yieldingly held to the hollow back, each electrode of the second pair being in the form of a conductive spiral spring yieldingly held lengthwise on the hollow back so that the convolutions of both springs between their ends will serve as brushing cushions, all of the electrodes being interposed in a high frequency electric circuit having its current waves stabilized and the electrodes being in spaced relation so that the circuit will be closed when the electrodes of each pair are brought into contact with the flesh of a person.

This specification signed and witnessed this 24th day of July, A. D. 1919.

HENRY WEISS.

Witnesses:

D. KOEGER,

J. FREDERICK CRYER.