March 26, 1929. W. MEYER 1,706,583

SCALP TREATMENT DEVICE

Filed Jan. 2, 1926

Fig. 1.

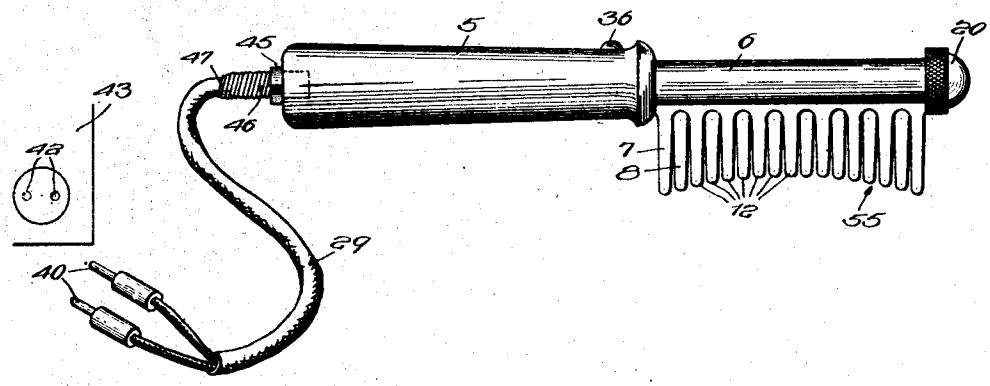



Fig. 2.

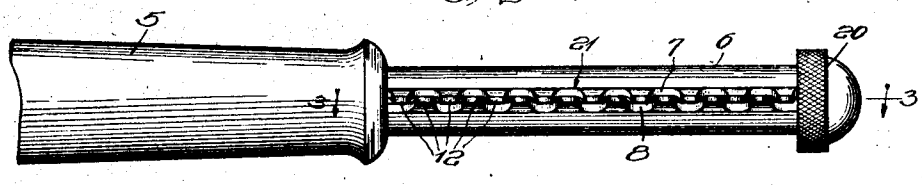



Fig. 3.

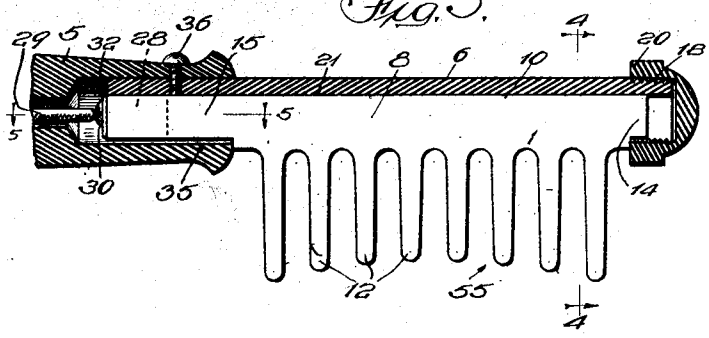



Fig. 4.

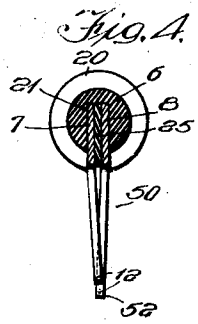
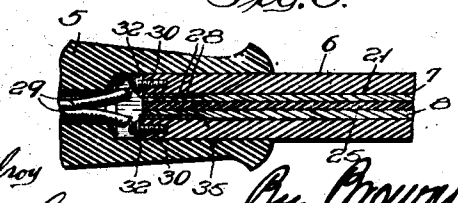



Fig. 5.




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# UNITED STATES PATENT OFFICE.

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## SCALP-TREATMENT DEVICE.

Application filed January 2, 1926. Serial No. 78,742.

This invention relates to scalp treatment devices and more particularly to an electric comb or brush for electrical treatment of the scalp.

The usual form of electrical comb or scalp brush provides but one polarity, or in other words, every tooth of the comb or bristle element or pin of the brush has the same polarity, while the other pole of the current is usually applied through an electrode held in the hand of the person undergoing the treatment.

The application of electric current in this manner is likely to prove very disturbing to the nervous system, since the current seeking the line of least resistance through the entire body will pass through the more delicate and vital organs.

It is the object of my present invention to provide for administering electrical scalp treatment of this sort without disturbing the deeper seated delicate nerves or organs.

Another object is to provide for applying the electric current solely through the scalp and independently of the remainder of the body.

Another object is to break the circuit through the scalp into a plurality of circuit connections which, with the avoidance of the deeper seated delicate nerves and organs and the confining of the treatment current to the scalp, gives a mild stimulation without the sharp sting or shock experienced with the former devices and methods.

Another object is to provide a generally improved and simplified construction that may be economically produced, and a device in which the electrodes and other parts may be readily cleaned and sterilized, without disturbing the wiring or circuit connections.

To acquaint those skilled in the art with the manner of constructing and practicing my present invention, I shall now describe in connection with the accompanying drawings, a particular embodiment of the same.

In the drawings:—

Figure 1 is a side elevational view of an embodiment of the invention;

Fig. 2 is a view of the bottom or under side of the device as viewed in Fig. 1;

Fig. 3 is a longitudinal section taken on line 3—3 of Fig. 2;

Fig. 4 is a transverse section taken on the line 4—4 of Fig. 3; and

Fig. 5 is a detail fragmentary longitudinal section taken on the line 5—5 of Fig. 3 and showing the circuit connections between the conductors and the electrodes of the device.

Referring to the drawings, the particular device selected to illustrate the construction and manner of practicing the present invention comprises a handle 5, a back member 6, and a pair of electrodes 7 and 8.

The electrodes 7 and 8 each comprises a metal or other suitable conducting strip having a connecting or back portion 10 and a plurality of integral teeth 12. The upper connecting or back portions 10 of the electrodes 7 and 8 each have relatively short longitudinal extensions 14 at one end and at its opposite end each back portion 10 has a longitudinal extension 15 of somewhat greater length. The extensions 15 form contact ends for connecting the circuit through the electrodes, and the extensions 14 form retention means at the opposite end, as will hereinafter appear.

The main back member 6 is formed of suitable insulating material such as hard rubber. The back member 6 is of circular cross section threaded externally at its outer end at 18 to receive an end cap 20, and extending longitudinally through the back member 6 from end to end is a slot 21 for receiving the back portions 10 of the comb or electrode members 7 and 8. The electrodes 7 and 8, removably mounted in the back member 6, are insulated from each other therein by means of an insulating strip 25 interposed between the back portions of the electrodes and extending throughout the lengths thereof. Carried by the back member 6 at the inner end of each electrode is a contact clip 28 for connecting the circuit conductors 29 one to each electrode 7 and 8.

The clips 28 are of angular formation with one leg of each lying internally along each of the opposite sides of the slot 21, and the other legs turned out over the inner end of the back 6. The clips 28 may be secured by screws 30 and the conductors 29 may be connected to their respective clips through these screws or by soldering the conductor wire, or otherwise connecting it to the inner laterally turned end 32 of the clip. When the electrodes 7 and 8 are mounted in the slot 21 the inner extensions 15 thereof fit tightly between and firmly in contact with the longitudinally extending portions of the clips 28, as shown in Fig. 5, thereby connecting one electrode to each contact or clip member. The extensions

15 may be tapered or thinned slightly, so that the back portions 10 will fit snugly in the slot 21 and at the same time the extensions 15 will fit between the clip members 28.

With the electrodes mounted in the back member and connected to the conductors 29 and insulated from each other, the inner extending end of the back member with the electrode extensions 15 are telescoped into the outer tubular or socketed end 35 of the handle 5. The back member 6 may be additionally secured in the handle by a screw 36 threaded radially through the tubular or socketed end 35 of the handle, and into a registering opening in the back 6. The cap member 20 is threaded upon the outer end of the back 6 over the electrode extensions 14, finishing the outer end of the device and holding the electrodes and back member firmly together.

The conductors 29 may extend out through the opposite end of the handle 5 and be provided at their opposite ends with suitable connectors 40 for connecting the electrodes through a co-operating connector 42 with a suitable source of current, which may comprise a suitably housed faradic or galvanic circuit or the device might even be connected through a suitable rheostat with the usual 110 volt "Edison" outlet. Threaded into the end of the handle 5 from which the conductors 29 extend, is a nut 45, and a coiled spring 46 secured tightly about the conductors 29 at 47 and secured at its opposite end in the nut 45 minimizes the movement of the conductors in the handle and takes the stresses and wear off of the conductors and off of the connections between the conductors and the clips 28, preventing accidentally pulling the wires out or breaking the connections in the use of the device and its movement into different positions.

The teeth 12 of the electrodes 7 and 8 are preferably turned or converge at 50 (Fig. 4) to dispose the free ends of the teeth 12 in a common central longitudinally extending plane at 52. The teeth 12 of one electrode are preferably staggered with respect to the teeth 12 of the other electrode, so that the teeth of one will engage between the teeth of the other and, in effect, a plurality of alternate dissimilar poles will be provided from one end of the comb to the other. The lower edges or ends of the teeth 12 may be finished on an arc, as shown at 55 in Figs. 1 and 3, or this may, of course, be varied as desired.

In use the device is connected to the direct or other current source and the teeth of the comb are brought into co-operation with the scalp and hair. The current thereupon passes from one electrode to the other through the upper tissues only, that is, through the scalp, hair and adjacent parts without passing through the other parts of the body, more especially the delicate and vital organs, as is the case where one electrode only is applied to the scalp and the other held in the hand. The staggering or offsetting of the teeth of the electrodes and their setting in alignment with each other or in a common plane in effect breaks the circuit through the scalp into a plurality of circuit connections in parallel with each other, which with the avoidance of the delicate nerves and other organs and the confining of the treatment current to the scalp, gives an exceedingly desirable stimulation without the sharp sting or shock experienced with the former devices and methods.

The structure is improved and simplified. It may be inexpensively produced and it permits convenient cleaning and sterilization of the two electrodes and other parts of the device.

To clean or sterilize the device the end cap 20 is removed and then by loosening the screw 36 the entire back with the electrodes carried thereby may be withdrawn from the handle 5. The two electrodes may then be removed from the slot 21 in the back member 6, and with the other parts cleaned as desired. To reassemble, the electrodes are placed back in the slot 21 in contact with the clip members 28 and with the insulating strip 25 between them, the back with its electrodes again secured in the handle and the end cap threaded upon the outer end of the back member and over the electrode extensions 14.

While I have described my invention in connection with an electric comb, it is to be understood that it may be embodied in a brush or other scalp treatment device, and I do not intend to be limited to the precise details shown or described.

I claim:—

1. In a device of the class described, the combination of an insulating handle, an insulating back member telescopically engaged with said handle, electrode means carried by said back member, and held against displacement from said back member by the telescopic engagement of said back member with said handle, and means on said back member and disposed within the handle for connecting said electrode means in an electric circuit.

2. In a device of the class described, the combination of an insulating handle, an insulating back member telescopically engaged with said handle, electrode means carried by said back member, and held against displacement from said back member by the telescopic engagement of said back member with said handle, and circuit connection means for said electrode means, said electrode means being removable from said back member without interfering with said circuit connection means.

3. In a device of the class described, the combination of an insulating handle, an insulating back member telescopically engaged with said handle, electrode means carried by said back member and held against displace-

ment from said back member by the telescopic engagement of said back member with said handle, and circuit connection means for said electrode means, said back member being removable from said handle and said electrode means being removable from said back member without interfering with said circuit connection means.

4. In a device of the class described, the combination of a back member having a groove, scalp treatment means mounted in said groove, a handle on said back member and holding one end of said last means in said groove, and a cap member mounted on the opposite end of said back member and holding the opposite end of said scalp treatment means therein.

5. In a device of the class described, the combination of a grooved support, electrode means mounted in the groove in said support, a handle having telescoping engagement with one end of the support and with one end of said electrode means and a cap member having telescoping engagement with the opposite end of the support and adjacent end of said electrode means.

6. In a device of the class described, the combination of a grooved support, electrode means mounted in the groove in said support, conductor means for said electrode means, angular terminal means laid in the handle end of the groove in said support for electrical engagement with said electrode means and over the end of the support for forming a connection between the conductor means and said electrode means, a handle having telescoping engagement with one end of the support and with one end of said electrode means and inclosing the connection between the conductor and electrode means, and a cap member having telescoping engagement with the opposite end of the support and adjacent end of said electrode means.

7. In a device of the class described, the combination of a grooved support, a pair of electrodes mounted in the groove of said support, an insulating member interposed between and separating said electrodes laterally, tooth means on one electrode, tooth means on the other electrode staggered with respect to said first tooth means and set into alignment therewith, conductor means for said electrodes, angular terminal means laid in the handle end of the groove in said support for electrical engagement with said electrodes and over the end of the support for forming a connection between the conductor means and said electrodes, a handle having telescoping engagement with one end of the support and with the adjacent ends of said electrodes and a stop member having a telescoping engagement with the opposite ends of the support and with the opposite ends of said electrodes.

8. In combination, a cylindrical back member having a longitudinal groove from end to end, a pair of flat toothed electrodes laid in said groove, an insulating member laid between and separating said electrodes laterally, a handle telescoping over one end of the back member and over the adjacent ends of the electrodes and insulating member to hold same in the groove at one end and a cap member telescoping over the opposite end of the back member and over the adjacent ends of the electrodes and insulating member to hold the opposite ends of same in said groove.

9. In combination, handle having a socketed end, a back member having generally cylindrical ends and grooved longitudinally from end to end, a pair of electrodes insulated from each other and mounted in the groove in said back member, said electrodes having extensions at one end disposed in one of the cylindrical ends of the back member and confined wholly within the periphery thereof and telescopically engageable with the handle socket, extensions on the opposite ends of said electrodes extending into the cylindrical extension at the opposite end of the back member and confined within the periphery thereof and a cap threaded upon said last end of the back member and over the adjacent end extensions of said electrodes.

10. In combination, a handle having a socketed end, a back member having generally cylindrical ends, and grooved longitudinally from end to end, a pair of electrodes insulated from each other and mounted in the groove in said back member, said electrodes having extensions at one end disposed in one of the cylindrical ends of the back member and confined wholly within the periphery thereof and telescopically engageable with the handle socket, extensions on the opposite ends of said electrodes extending into the cylindrical opposite end of the back member and confined wholly within the periphery thereof, a cap threaded upon said last end of the back member and over the adjacent end extensions of said electrodes, and a pair of conductor connections for said electrodes at the opposite end of said back member, said connections comprising a pair of angular clip members, each having a leg lying longitudinally along the inner longitudinal surface of the groove in the back member and a second leg along the adjacent end of the back member and secured thereto.

11. In a device of the class described, the combination of back member having a longitudinal groove therein, flat toothed comb means mounted in said groove and removable laterally therefrom, said comb means having laterally projecting prongs, a longitudinal end extension on said comb means and disposed in said groove and a handle telescopically engaging over said back member and

over the longitudinal end extension of said comb means to hold same in said back member.

12. In a device of the class described, the combination of an insulating handle, an insulating back member telescopically engaged with said handle, and electrode means carried by said back member and telescoping into said handle with the telescopic engagement of said back member with said handle, said electrode being removable laterally from said back member upon disengagement of said back member from said handle.

In witness whereof, I hereunto subscribe my name this 31st day of December, 1925.

WILLIAM MEYER.