

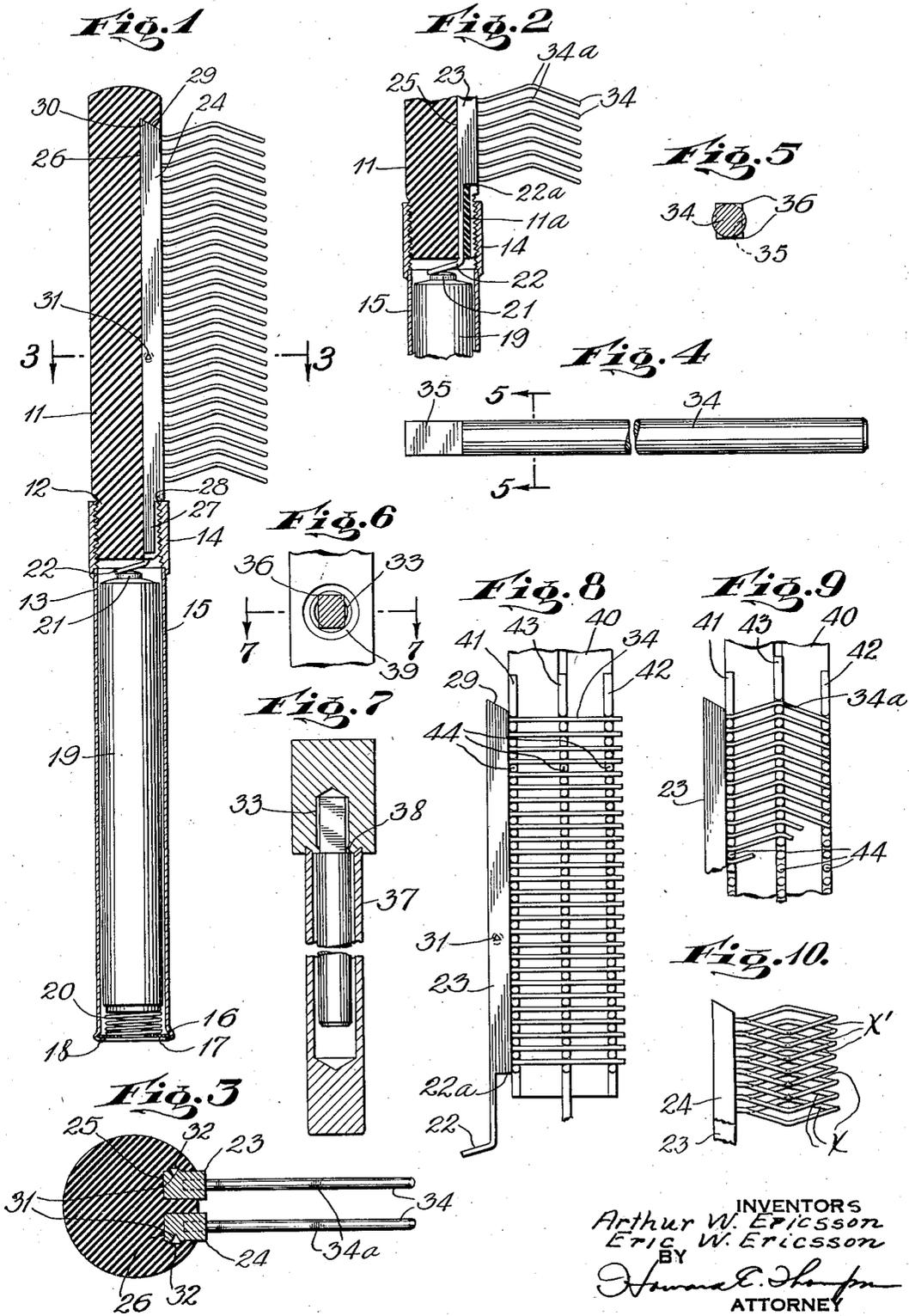
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ELECTRIC COMB

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ELECTRIC COMB

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This invention relates to electric combs, and the object of the invention is to provide a comb consisting of an elongated cylindrical head or backing preferably composed of insulating material, within which are mounted two comb elements arranged side by side in substantially parallel relation, and wherein each element consists of a bar countersunk in the head or backing member and includes a plurality of pins secured in the bar at longitudinally spaced intervals, and that part of the pins projecting from the bar being offset centrally thereof; a further object being to provide a tubular handle member detachably coupled with one end of the head or backing with a dry cell battery disposed in said handle member and means for contacting the opposed poles of the battery with the separate comb elements whereby the battery circuit is completed by the strands of the hair engaging and trans-
versing the fingers or pins of opposed comb elements; a further object being to provide a comb of the class described which is constructed along simple, economical and practical lines whereby the comb may be produced at a nominal cost, and further, whereby the electric circuit to the comb elements becomes simple, positive and substantially fool-proof in operation; and with these and other objects in view, the invention consists in a device of the class and for the purpose specified, which is produced in accordance with the method more fully hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a longitudinal, sectional view through a comb.

Fig. 2 is a view similar to Fig. 1 but showing a different section and showing only a part of the construction.

Fig. 3 is a section on the line 3—3 of Fig. 1 on an enlarged scale.

Fig. 4 is a detail view of one of a number of pins or fingers which we employ.

Fig. 5 is a section on the line 5—5 of Fig. 4.

Fig. 6 is an enlarged, detail sectional view indicating the manner of attaching a pin to the supporting bar.

Fig. 7 is a sectional detail view with part of the construction broken away, illustrating the manner of securely retaining the pins in connection with the supporting bar.

Fig. 8 is a diagrammatic view of a jig or fix-

ture used in bending the comb pins or fingers.

Fig. 9 is a view similar to Fig. 8 showing parts in a different position and showing the result of the bending operation; and,

Fig. 10 is a detail view of one end portion of a comb showing a modified arrangement of comb elements in connection with the backing member.

In carrying the invention into effect, we employ a cylindrical body 11 of rubber or other comb position insulating material, and this body forms the head or backing member of the comb proper and is externally threaded at one end as seen at 12 to receive a detachable tubular handle member 13, preferably composed of metal.

In order to simplify and cheapen the manufacturing cost of the handle member 13, the same is made from a threaded sleeve 14 which is secured at one end of a tubular portion 15, the other end being spun to form an internal annular groove 16, in which a closure plate or disk 17 is mounted by spinning the end of the tube over as is indicated at 18. Within the handle member 13 is arranged a long dry cell battery 19, one terminal end of which contacts with the casing through a spring 20, whereas the other contact end 21 is disposed within the open end of the handle member to engage a spring terminal 22 formed integral with one elongated supporting bar 23. Another substantially similar supporting bar 24 is employed.

The head or backing member 11 is provided with longitudinal grooves 25 and 26 disposed adjacent each other and arranged in parallel relation. These grooves are adapted to receive the supporting bars 23 and 24 respectively. The bar 24 differs from the bar 23 simply in having a reduced end portion 27 forming a contact shoulder 28 instead of the terminal extension 22 which also forms a shoulder 22a, the latter being disposed at a point outwardly of the sleeve 14, so as to prevent contact of the sleeve 14 with the shoulder 22a as is seen in Fig. 2. It will be understood that in this position, the sleeve 14 is in abutting engagement with the shoulder 28 as may be seen in Fig. 1 of the drawing so that the tubular handle member which is in circuit with one end of the battery through the spring 20 will complete the battery circuit to the bar 24, whereas the bar 23 is in circuit with the terminal 21 through the spring contact 22.

Aside from the foregoing, the structure of the bars 23 and 24 is identical, and therefore, the brief description of one will apply to the other. The outer end of each bar is beveled as seen at

29 in Fig. 1 of the drawing so as to engage an undercut portion 30 in the grooves 25, 26, thus securing the outer ends of the bars against displacement from the head or backing 11. One side surface of each bar is also provided with an outwardly extending barb or projection 31, which in sliding the bars 23 and 24 into the slots 25 and 26 will cut a groove or channel therein as is indicated at 32 in Fig. 3 of the drawing to retain the bars 23 and 24 against accidental displacement from the head 11 when the handle member 13 is removed. As is indicated in Fig. 2 of the drawing, a filler strip or piece of insulating material 11a is disposed upon a part of the reduced extension, forming the contact 22, so as to prevent any possible circuit flow between said reduced extension and the sleeve 14.

The bars 23 and 24 constitute part of what may be termed cone elements and in completing the formation thereof, each bar has a plurality of longitudinally spaced circular apertures 33 formed therein. According to our improved method a plurality of pins or rods 34, which may also be termed fingers, are mounted in the apertures 33 by providing flattened sides 35 at one end of said pins so as to produce relatively sharp corners 36, note Fig. 5 of the drawing, so that in the operation of pressing or forcing the pins, which are normally straight as may be seen in Fig. 3 of the drawing, into the apertures 33, the corners 36 will cut into the walls of said apertures to firmly retain said pins against rotation within said apertures, thus acting as keyways to maintain a definite alinement of the pins, especially after the shaping thereof as later described.

To aid in securing the pins in connection with the bars and to secure the same against wobbling or other movement, a tubular punch 37 is employed, note Fig. 7 of the drawing, to force an annular collar or link of metal 38 around the shanks of the pins where they extend in the bars 23 and 24 as is clearly illustrated in said figure. This operation forms ring-like depressions 39 on the surface of the bars around said pins, as may be seen in Fig. 6 of the drawing. In this connection, it will be understood that the illustrations in Figs. 4-7 are on a very much enlarged scale, in order to clearly illustrate the invention.

After all of the pins 34 have been secured to the bars, the assemblage thus formed is placed in a jig or fixture 40 shown in Figs. 8 and 9 of the drawing, consisting of two stationary racks 41, 42 disposed adjacent the end portions of the pins 34 and a central movable rack 43. Normally, the racks have a plurality of spaced teeth or elements 44 arranged in common alinement to compensate for the straight pins 34 as seen in Fig. 8 of the drawing, it being understood that the pins 34 are disposed between said elements 44. By moving the rack 43 upwardly in the manner indicated in Fig. 9 of the drawing, the central portion of the pins 34 will be offset or bent as seen at 34a. The purpose of this construction is to flex the hair in the passage of the comb through the hair in a combing operation, so as to insure a bridging or contact of the separate strands of hair or a group of strands across or between the pins 34 of one comb element with the pins 34 of the other comb element so as to complete the battery circuit and thus, electrically charge or excite the hair in the combing operation.

This result can be further insured by arranging the offset of one comb element opposite that of the other so as to provide the crossed arrange-

ment of the elements indicated in Fig. 10 of the drawing, in which x would indicate the upwardly bent fingers of one element, say for example, the element having the bar 23, and $x2$ the element having the bar 24. The results shown in Fig. 10 of the drawing will be accomplished by simply moving the rack 43 downwardly in forming one element, and upwardly in forming the other, or still further, the placement of the bar including the fingers in the fixture 40 may simply be reversed.

At this time, it will also be understood that the particular method of offsetting, bending or waving the pins may be made to suit the desire or fancy of the manufacturer, or the particular uses to which the comb may be put. For example, where the hair is heavy upon the head, a construction such as that shown in Fig. 1 of the drawing would be desirable; whereas, in lighter growths, a structure such as that shown in Fig. 10, or other forms of construction would be more desirable.

We have found from experience, that a comb of the class under consideration, if used two or three times daily, will build up new life and energy to the hair and scalp and stimulate the growth of hair, and at the same time, will maintain the scalp in a state of life and growth activity, eliminating to a large degree, the formation of dandruff or other scalp infections or irritations. It will be understood that by reason of the fact that the battery circuit is normally open and is only closed in the actual use of the comb, long service will be rendered by the battery, and especially so, if the comb is used intermittently two or three times a day.

Having fully described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. In a comb of the class described, a comb element consisting of an elongated strip having a plurality of fingers spaced longitudinally thereof and projecting from said strip, one end of the strip being beveled and the other end thereof reduced, a mounting member for said element comprising a body of insulating material having a channel in one outer surface thereof, the wall of the channel at one end thereof being beveled to receive the beveled end of said strip to retain said end of the strip against displacement from said member, and other means on said strip engaging a side wall of said channel for retaining the strip against lateral displacement from said member.

2. In a comb of the class described, a comb element consisting of an elongated strip having a plurality of fingers spaced longitudinally thereof and projecting from said strip, one end of the strip being beveled and the other end thereof reduced, a mounting member for said element comprising a body of insulating material having a channel in one outer surface thereof, the wall of the channel at one end thereof being beveled to receive the beveled end of said strip to retain said end of the strip against displacement from said member, other means on said strip engaging a side wall of said channel for retaining the strip against lateral displacement from said member, the fingers of said comb element having flattened ends forced through circular apertures in said strip to key the fingers against rotation in the strip, and other means for retaining the fingers against movement with respect to said strip.

3. In an electric comb of the class described, a pair of substantially similar comb elements, each

element consisting of an elongated strip of metal having a plurality of apertures spaced longitudinally of one surface thereof, a plurality of pins for mounting in the apertures of said strip, said pins having one end portion thereof fashioned to engage the walls of said apertures under pressure to key the pins against rotation with respect to said walls, and the material of the strip around said pins being forced inwardly in the direction of the pins to firmly support each pin in connection with the strip.

4. In an electric comb of the class described, a pair of substantially similar comb elements, each element consisting of an elongated strip of metal having a plurality of apertures spaced longitudinally of one surface thereof, a plurality of pins for mounting in the apertures of said strip, said pins having one end portion thereof fashioned to engage the walls of said apertures under pressure to key the pins against rotation with respect to said walls, the material of the strip around said pins being forced inwardly in the direction of the pins to firmly support each pin in connection with the strip, that part of the pins projecting from said strip being of irregular contour, and the contour of one pin being similar to that of an adjacent pin to provide equal spacing of the pins longitudinally of the strip.

5. A comb of the class described consisting of an elongated body of insulating material, two grooves arranged in close proximity to each other longitudinally of the surface of said body, said grooves opening outwardly through one end of said body and terminating short of the other end thereof, two substantially similar comb elements, each element consisting of a mounting bar seating in a groove in said body attached thereto by longitudinal sliding movement, the bar having a plurality of pins formed independent thereof, said pins being coupled with and secured to said bar at longitudinally spaced intervals and projecting therefrom, said pins being offset centrally in one direction, and means including a battery, the opposite poles of which are in circuit with the separated comb elements, for supplying electric energy to said elements and to a member transversing the elements and engaging opposed pins thereof.

6. A comb of the class described consisting of an elongated body of insulating material, two grooves arranged in close proximity to each other longitudinally of the surface of said body, said grooves opening outwardly through one end of said body and terminating short of the other end thereof, two substantially similar comb elements, each element consisting of a mounting bar seating in a groove in said body attached thereto by longitudinal sliding movement, the bar having a plurality of pins formed independent thereof, said pins being coupled with and secured to said bar at longitudinally spaced intervals and projecting therefrom, said pins being offset centrally in one direction, means including a battery, the opposite poles of which are in circuit with the separate comb elements, for supplying electric energy to said elements and to a member transversing the elements and engaging opposed pins thereof, the first named end portion of said body being externally threaded, and said last named means including a tubular casing in threaded engagement with the threaded end of said body and within which the battery is mounted.

7. A comb of the class described consisting of an elongated body of insulating material, two grooves arranged in close proximity to each other longi-

tudinally of the surface of said body, said grooves opening outwardly through one end of said body and terminating short of the other end thereof, two substantially similar comb elements, each element consisting of a mounting bar seating in a groove in said body attached thereto by longitudinal sliding movement, the bar having a plurality of pins formed independent thereof, said pins being coupled with and secured to said bar at longitudinally spaced intervals and projecting therefrom, said pins being offset centrally in one direction, means including a battery, the opposite poles of which are in circuit with the separate comb elements, for supplying electric energy to said elements and to a member transversing the elements and engaging opposed pins thereof, the first named end portion of said body being externally threaded, said last named means including a tubular casing in threaded engagement with the threaded end of said body and within which the battery is mounted, and the bar of one of said elements including a reduced integral extension bent to form a contact piece disposed over the end of said body and adapted to engage one terminal end of said battery.

8. A comb of the class described consisting of an elongated body of insulating material, two grooves arranged in close proximity to each other longitudinally of the surface of said body, said grooves opening outwardly through one end of said body and terminating short of the other end thereof, two substantially similar comb elements, each element consisting of a mounting bar seating in a groove in said body, the bar having a plurality of pins formed independent thereof, said pins being coupled with and secured to said bar at longitudinally spaced intervals and projecting therefrom, said pins being offset centrally in one direction, means including a battery, the opposite poles of which are in circuit with the separate comb elements, for supplying electric energy to said elements and to a member transversing the elements and engaging opposed pins thereof, the first named end portion of said body being externally threaded, said last named means including a tubular casing in threaded engagement with the threaded end of said body and within which the battery is mounted, the bar of one of said elements including a reduced integral extension bent to form a contact piece disposed over the end of said body and adapted to engage one terminal end of said battery, and the end portion of the bar of the other element forming a shoulder against which one end of the tubular casing is adapted to abut to complete the other side of the battery circuit to the last named element.

9. A comb of the class described consisting of an elongated body of insulating material, two grooves arranged in close proximity to each other longitudinally of the surface of said body, said grooves opening outwardly through one end of said body and terminating short of the other end thereof, two substantially similar comb elements, each element consisting of a mounting bar seating in a groove in said body, the bar having a plurality of pins formed independent thereof, said pins being coupled with and secured to said bar at longitudinally spaced intervals and projecting therefrom, said pins being offset centrally in one direction, means including a battery, the opposite poles of which are in circuit with the separate comb elements, for supplying electric energy to said elements and to a member transversing the elements and engaging opposed pins thereof, the first named end portion of said body being ex-

ternally threaded, said last named means including a tubular casing in threaded engagement with the threaded end of said body and within which the battery is mounted, the bar of one of said elements including a reduced integral extension bent to form a contact piece disposed over the end of said body and adapted to engage one terminal end of said battery, the end portion of the bar of the other element forming a shoulder against which one end of the tubular casing is adapted to abut to complete the other side of the battery circuit to the last named element, and means on each comb element engaging the walls of the groove in said body for retaining the element against displacement therefrom.

10. A comb of the class described consisting of an elongated body of insulating material, two grooves arranged in close proximity to each other longitudinally of the surface of said body, said grooves opening outwardly through one end of said body and terminating short of the other end

thereof, two substantially similar comb elements, each element consisting of a mounting bar seating in a groove in said body, the bar having a plurality of pins formed independent thereof, said pins being coupled with and secured to said bar at longitudinally spaced intervals, said pins having one end portion thereof fashioned to engage apertures in said bar under pressure to key the pins against rotation in said bar, the material of the bar around said pins being forced inwardly in the direction of the pins to firmly support the pins against displacement from the bar, the pins of one bar being offset centrally in one direction and the pins of the other bar being offset centrally in the opposite direction, and means including a tubular handle portion attached to one end of said bar, and an electric battery in said handle portion for supplying electric energy to the respective comb elements.

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