

Feb. 13, 1934.

W. G. SHELTON

1,946,812

APPARATUS FOR WAVING HAIR

Filed April 25, 1930

2 Sheets-Sheet 1

Fig. 1

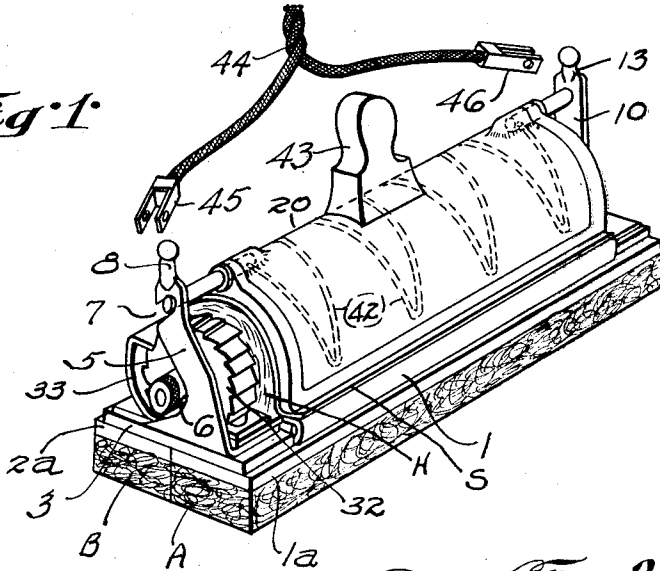


Fig. 2

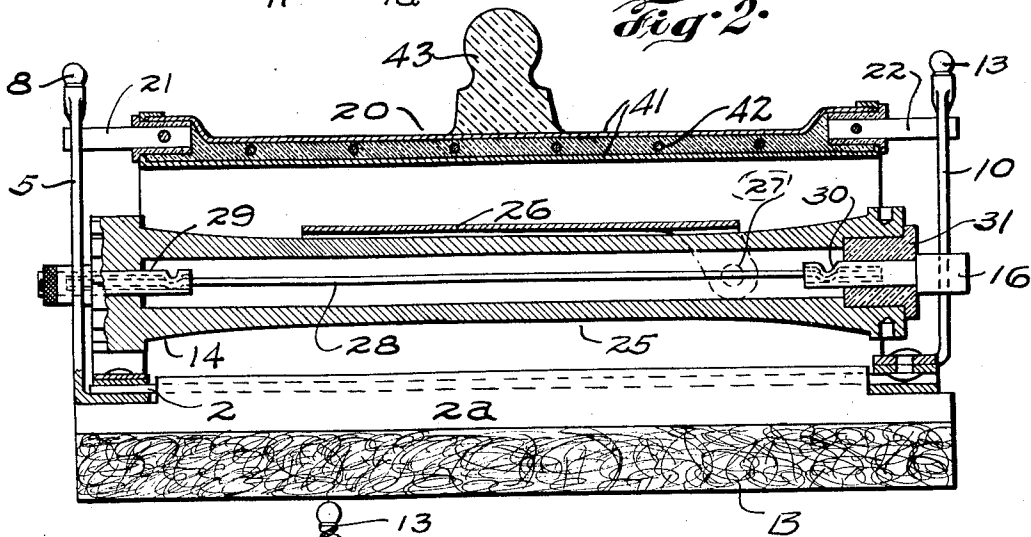
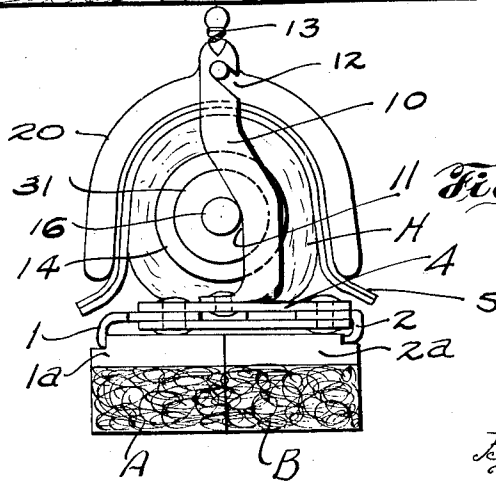


Fig. 3



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2 Sheets-Sheet 2

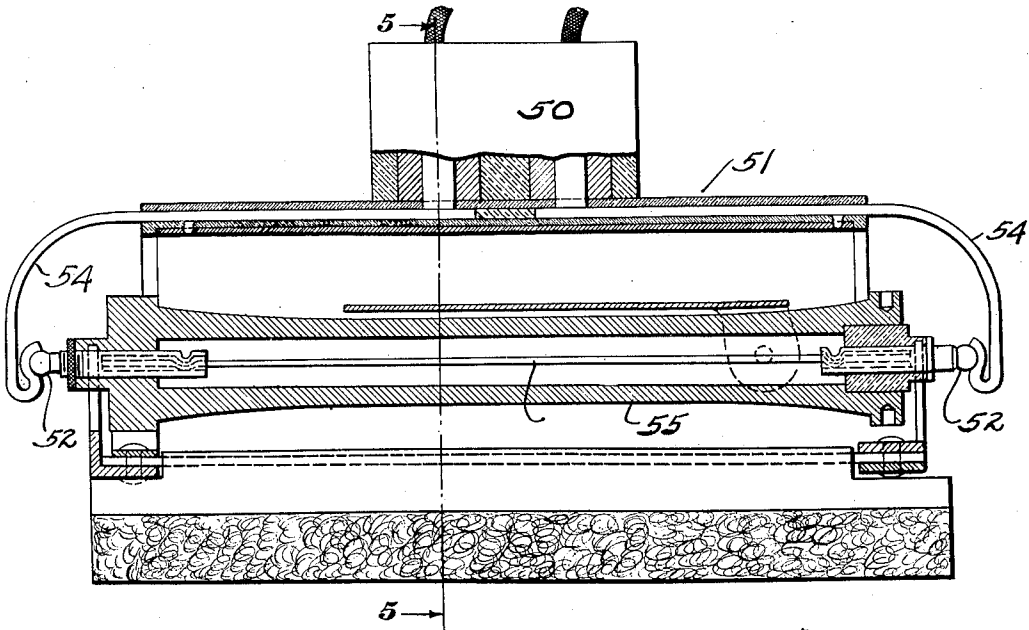


Fig. 4.

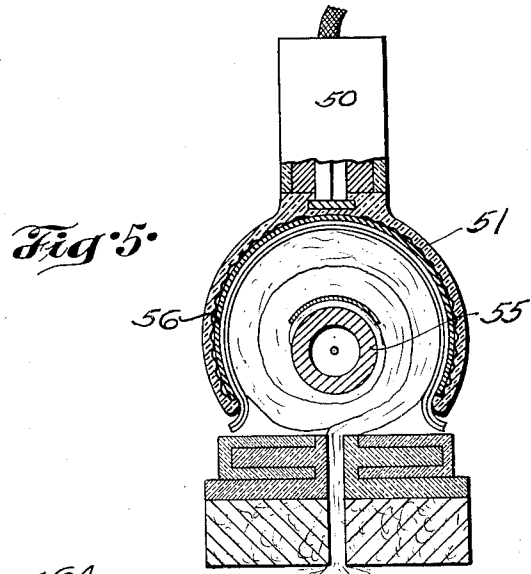


Fig. 5.

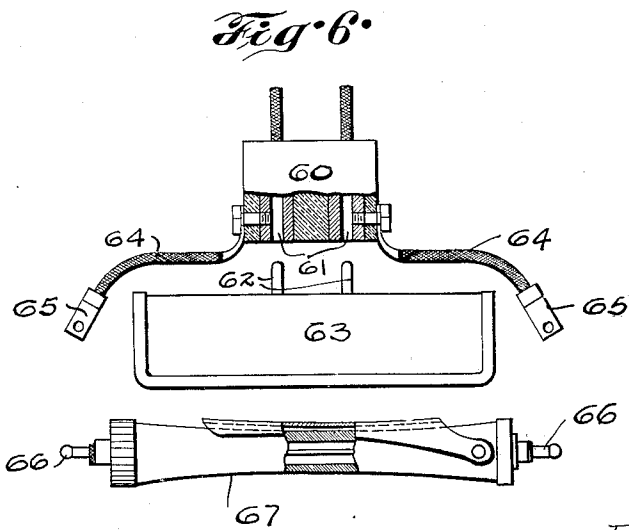


Fig. 6.

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UNITED STATES PATENT OFFICE

1,946,812

APPARATUS FOR WAVING HAIR

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Application April 25, 1930. Serial No. 447,241

10 Claims. (Cl. 219—24)

My invention relates to the art of hair waving and consists in a combination in a single unit of an interior heating member, an exterior heating member and associated structure.

6 The main object of my invention is to provide heating means on the outside and inside of the wrapped strand of hair to obtain a more even curl throughout the strand of hair.

10 Further objects of my invention are to eliminate the danger of overheating the hair nearest the scalp in order to curl the whole strand evenly, which is a disadvantage present in a Croquignole hair waving device using only an exterior heating member, and to eliminate the danger of over-
15 heating the hair nearest the outer end of the strand, which is a danger present in a similar hair waving device using only an interior heating member.

20 Another object of my invention is to shorten the hair waving operation by applying heat from both the exterior and interior of the wrapped strand simultaneously.

25 In addition, my invention has such general objects as are set forth in my copending applications, Serial Numbers 438,448 and 438,449, filed March 24, 1930, in the first of which I disclose the combination of a curling rod and interior heating member, and in the second the use of sheet-
30 like metal heating elements applied directly over a strand of hair or over a supply wrapped about such a strand, and in both of which applications I set forth the method of heating the wave by the use of low voltage whereby no insulation of the heater elements is required to
35 protect the hair and the operator.

40 My present invention utilizes the general feature of low voltage for heating metallic and non-metallic members applied directly to the hair to produce a novel combination of exterior and interior heating members for securing results not attained in either an interior or exterior heater alone.

In the accompanying drawings which illustrate my invention—

45 Figure 1 is an isometric view of a preferred form of my invention.

Figure 2 is a vertical section taken on the longitudinal center line of the device shown in Figure 1.

50 Figure 3 is a right end view of Figure 1.

Figure 4 is a vertical section taken on the longitudinal center line of a modified form of my invention.

55 Figure 5 is a transverse vertical section taken on the line 5—5 of Figure 4.

Figure 6 is a side view partly in section of another modified form of my invention showing the heating members and the electrical inlet and outlet separately.

60 The hair clamp shown in Figures 1, 2 and 3 comprises a pair of jaws 1 and 2 of fiber, rubber, bakelite or other insulating material pivoted together at one end by a metallic cross link 3 and provided with a metallic catch 4 at the other end. The jaws have felt pads A and B for resting
65 on the head of the user. This clamp is similar in design to the one disclosed in my copending application, Serial No. 386,004, filed August 15, 1929, now Patent No. 1,793,754, dated Feb. 24, 1931, but has fiber instead of metallic jaws, there
70 being rubber elements 1a and 2a on the jaws to provide a seal against the passage of steam from the heaters to the scalp of the user.

75 Link 3 has an upstanding arm 5, of current conducting material, provided with a recess 6, a notch 7 and a terminal post 8. Mounted on catch 4 is another upstanding arm 10, of current conducting material, provided with a recess 11, a notch 12 and a terminal post 13.

80 A curling rod or interior heating member 14 is journalled in recesses 6 and 11 by means of axial projections 15 and 16 respectively formed of current conducting material.

85 An exterior heating member 20 is seated in notches 7 and 12 by means of rods 21 and 22 of current conducting material projecting from the ends of the top of the heating member 20.

90 Preferably, one end of curling rod 14 has a ratchet wheel 32, and a spring pawl 33 is mounted on cross link 3 and cooperates with ratchet 32 to hold the rod against loosening after the strand of hair has been tightly wound.

95 Preferably, the body of the rod or interior heating member 14 is concaved as indicated at 25, and is provided with a latch 26, pivoted at 27, for engaging the outer end of the strand of hair when the winding operation is begun. Rod 14 is hollow and a resistance heating element 28 extends axially through the rod and is connected with the projections 15 and 16 by means of strips
100 of brass or other current conducting material 29 and 30. A bushing 31 of bakelite or other insulating material insulates strip 30 and the projection 16 from the rest of the rod. Thus the heating element 28 is in the circuit with the terminal posts 8 and 13 without the rest of the rod being in such circuit.

110 Exterior heating member 20 comprises a shell 41 and a resistance heating element 42. Shell 41 is of vulcanized rubber, bakelite or other suit-

able insulating material and is approximately semi-cylindrical in form and substantially rigid, although preferably possessing a slight degree of elasticity, and is provided with a handle 43.

5 Heating element 42 is a wire of relatively high resistance, describing a meandering course through the shell 41. The ends of element 42 are connected to rods 21 and 22. Thus heating element 41 is also in electrical circuit with terminal posts 8 and 13. A drop cord 44 is connected to the terminal posts 8 and 13 by means of spring clips 45 and 46.

10 It is obvious from the above that the heating elements in the two heaters are in parallel circuits having the terminal posts 8 and 13.

15 The two heaters will thoroughly and evenly apply heat to the interior and exterior of strand of hair H wrapped about the rod 14 with any ordinary supply device S used to provide moisture which is turned into steam by the heaters.

20 In the modification illustrated in Figures 4 and 5, a terminal block 50 is provided on the top of exterior heating member 51 and terminal posts 52 project axially from the ends of interior heating member 55. Spring members 54 of current conducting material project from the exterior heating member and are adapted to clip over the posts 52 to hold the two heating members in assembled position and connect their respective heating elements in parallel. Exterior heating member 51 makes use of a heating element 56 composed of a thin sheet of metal which will conduct electric current but will offer a relatively high degree of resistance to the passage of current and is similar in construction and performance to the heating member disclosed in my co-pending application, Serial No. 438,449, filed March 24, 1930.

40 In the modification illustrated in Figure 6, a terminal block 60 is provided with spring slots 61 adapted to grip posts 62 on exterior heating member 63, and cords 64 extend outwardly from block 60 and have spring clips 65 adapted to bind terminal posts 66 on the heating member 67. The above mentioned connecting elements are adapted to hold the terminal block and the two heating members in assembled position and to connect the heating elements of the two heaters in parallel.

50 In all of the forms illustrated, the heater members are designed to operate on such low voltage that contact with the members or their connections by the operator or by the customer is not harmful. A short circuit will not have any more objectionable effect than to delay the waving operation.

60 Although the heating elements in the respective heating members in every case have been shown to be connected in parallel, these elements could be connected in series without departing from the spirit of my invention. With the heating elements connected in parallel, the failure of one of the heating elements will not make the device entirely inoperable.

65 Obviously, other variations in the structure of my invention may be made without departing from the spirit thereof and I contemplate the exclusive use of such modifications as come within the scope of my claims.

70 I claim:

1. In a hair waving device, a clamp, an interior heater, and an exterior heater, electrical resistance elements in both of said heaters adapted to be heated by a current of a voltage insufficient to be perceptible to the human touch, separate

current conducting members extending from the ends of said clamp and from the axial center of said interior heater and from the top of the ends of said exterior heater, said current conducting members extending from said heaters being connected to said resistance elements and adapted to contact with the current conducting members extending from said clamp to connect said resistance elements in parallel.

2. In a hair waving device, a clamp, an interior heater, and an exterior heater, separate current conducting members extending from the ends of said clamp and from the axial center of said interior heater and from the top of the ends of said exterior heater, said current conducting members extending from said heaters being adapted to contact with the current conducting members extending from said clamp to connect said heaters in parallel.

3. In a hair waving device, a clamp, an interior heater, and an exterior heater, and separate current conducting members extending from the ends of said clamp and heaters, said current conducting members extending from said heaters being adapted to contact with the current conducting members extending from said clamp to connect said heaters in parallel.

4. In a hair waving device, a clamp of heat insulating and current insulating material, exterior and interior heating members, current conductors in contact with and projecting from said members, and arms of current conducting material on said clamp adapted to hold said heater members in assembled position and to connect said members in parallel.

5. In a hair waving device, a clamp, an interior heating member about which a strand of hair may be wrapped, an exterior heating member adapted to be placed over said strand of hair after the same is wrapped on said interior heating member, and means on said clamp, said interior heating member and said exterior heating member for holding said clamp and said heating members in assembled position after the hair is wrapped on the interior heating member.

6. In a hair waving device, a clamp, an interior heating member about which a strand of hair may be wrapped, an exterior heating member adapted to be placed over said strand of hair after the same is wrapped on said interior heating member, and means on said clamp, said interior heating member and said exterior heating member for connecting said heating members in parallel.

7. In a hair waving device, a clamp, an interior heating member about which a strand of hair may be wrapped, an exterior heating member adapted to be placed over said strand of hair after the same is wrapped on said interior heating member, and means on said clamp, said interior heating member and said exterior heating member for holding said clamp and heating members in assembled position after the hair is wrapped on said interior heating member, a portion of said means also functioning to connect said heating members in parallel.

8. In a hair waving device, a clamp of heat insulating and current insulating material, exterior and interior heating members, electrical resistance elements in both of said members, arms of current conducting material on the ends of said clamp and adapted to hold said heating members in assembled position, and electrical wiring terminals on each of said arms, each of said resistance elements being adapted to be

connected to at least one of said arms, whereby said terminals will serve both of said resistance elements.

10. In a hair waving device, a clamp, an interior heater and an exterior heater, upstanding arms of current conducting material on the ends of said clamp, members of current conducting material extending from said heaters, there being recesses in said arms, and said members fitting in said recesses to electrically connect said heaters in parallel.

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5 9. In a hair waving device, a clamp, an interior heater and an exterior heater, upstanding arms on the ends of said clamp, and members extending from said heaters, there being recesses in said arms, and said members fitting in said recesses to hold said heaters in assembled position.

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