

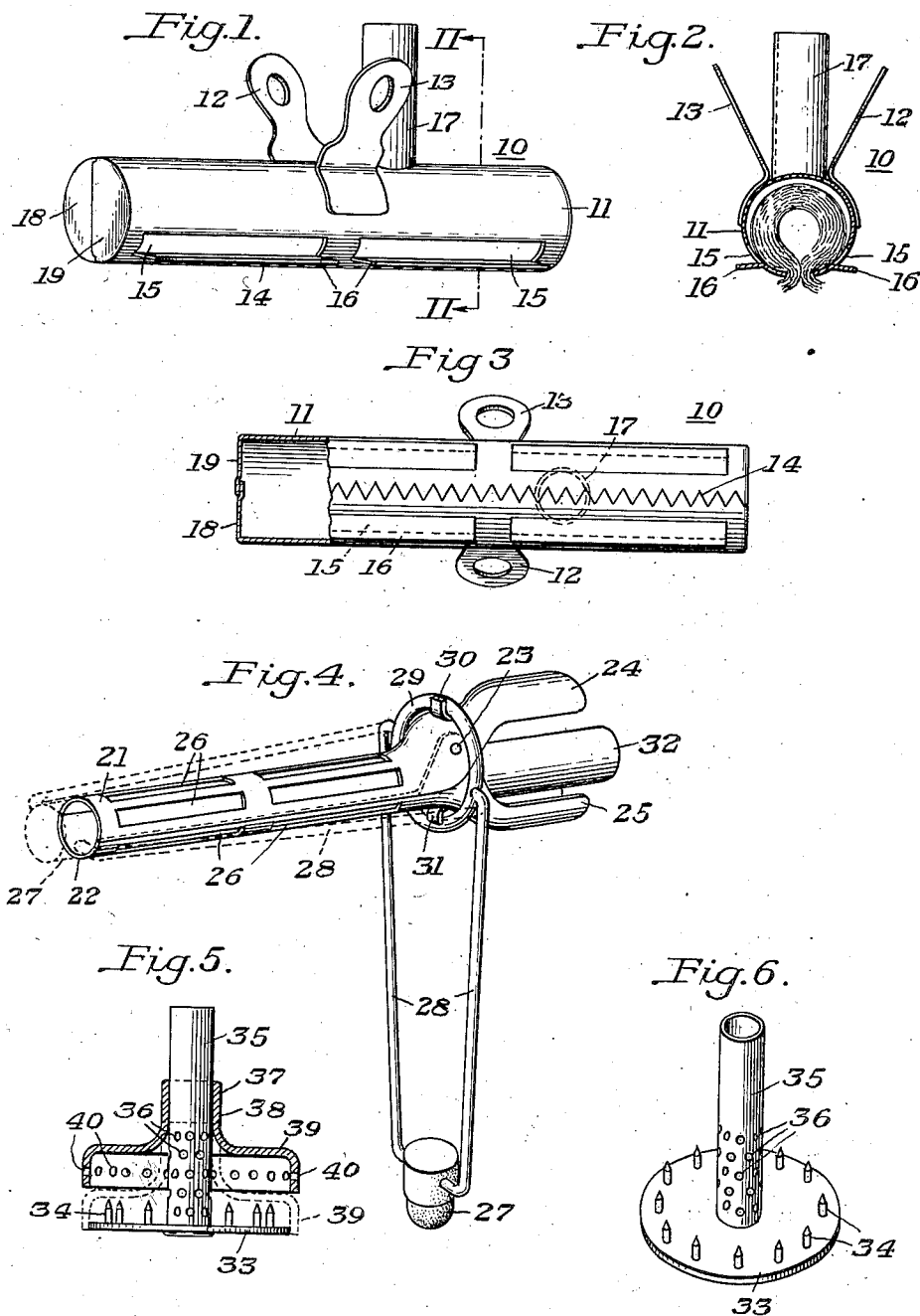
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HAIR DRYING AND WAVING APPARATUS

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## HAIR DRYING AND WAVING APPARATUS

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My invention relates to hair drying and hair waving apparatus in which hair is dried by a current of heated air applied directly and locally to the hair to be treated. My invention is applicable to apparatus for surrounding a bunch or wave of hair to be curled, the hair having been first moistened, or the moistened hair may be wound on the apparatus, which serves as a core. The hair is then heated by air applied by the apparatus to expel the moisture from the hair and to cause the curl to remain therein.

After human hair has been permanently waved, it is in short kinky curls which are undesirable from the esthetic viewpoint. The usual procedure is to comb the dried hair to remove the kinks and then reset it by first wetting the hair with a suitable lotion or solution, and then to arrange the hair in waves which are commonly referred to as finger waves. After the finger waves have been set over the desired portion of the head, the practice has been to subject the whole head of hair to a current of heated air expelled from a canopy in spaced relation to the head, and partly surrounding it. This drying takes a comparatively long period of time to thoroughly dry the hair and especially that part of it which is near the scalp. The outer part, which is exposed directly to the heated air dries fairly rapidly and then acts somewhat as an insulator to prevent drying of the underneath layers of hair. It takes a fairly considerable period of time to dry the hair under methods heretofore known, depending on the thickness of the customer's hair and the amount of hair waved at one operation.

My invention is of particular utility in drying the wetted or moistened finger waves and for forming wetted or moistened hair into curls. It is one of the objects of the invention to provide apparatus suited for rapid and thorough drying of the hair and to reduce the time required for this operation to a minimum.

On certain parts of the head, it is often advisable to form the hair in small diameter curls which are pinned into shape until dried, and one form of my invention is particularly useful for rapidly forming and drying these curls without the aid of pins to hold them in shape while drying.

In the accompanying drawing, illustrating a present preferred embodiment of my invention,

Figure 1 is a perspective view of one form of apparatus for carrying out my invention;

Figure 2 is a cross-sectional view along the line II-II of Figure 1 and showing the apparatus in position around a wave of hair to be dried;

Figure 3 is a bottom plan view, partly in section, of the apparatus shown in Figure 1;

Figure 4 is a view in perspective of another form of apparatus suitable for carrying out my invention;

Figure 5 is a view partly in section and partly in elevation of still another form of apparatus constructed according to my invention; and

Figure 6 is a perspective view of a detail of the apparatus shown in Figure 5.

In Figures 1, 2 and 3 of the drawing there is shown a drying unit or wave dryer 10 which comprises an outer shell or tube 11 of suitable dimensions made from suitable resilient material, preferably metal, adapted to enclose a bunch or wave of hair. The sides of the tube 11 are movable relative to each other and for that purpose are provided with expander portions 12 and 13 which are secured to the top portion of the tube and which serve as handles. The bottom of the tube 11 is divided along a serrated line 14 so that the sides of the tube form two co-operating jaws which are movable away from and toward each other and will securely grip an object placed between them. The sides of the tube adjacent the serrated dividing line 14 have outlet openings 15 formed therein. Preferably these openings are formed by striking a portion 16 of the side wall outwardly as shown. Any other air outlet arrangement, such as holes along the sides of the tubes, is also contemplated. The arrangement which I have described serves to allow air from the interior of the tube 11 to escape in a manner which will not cause it to impinge directly on the scalp of the person whose hair is being treated.

An air supply tube 17 is connected to the top portion of the tube 11 and communicates with the interior thereof. The ends of the tube 11 are closed by overlapping plates or closure members 18 and 19, secured to the sides of the tube to form a drying chamber closed at both ends. It is desirable to overlap the end plates 18 and 19 so that when the tube is in an expanded position surrounding a wave or bunch of hair 20 as shown in Figure 2, the air will be constrained to flow through the hair and out the openings 15 and thus cause the apparatus to be used in the most efficient manner in drying all parts of the hair enclosed by the tube.

After the hair has been properly wetted and the desired finger wave placed therein, each wave is surrounded by a suitably located wave dryer 10. Sufficient of the dryers are used to cover the desired number of waves. Heated air is then introduced through the tube 17, and

thence through tube 11 and allowed to escape through the openings 15 to dry the hair.

In Figure 4 of the drawing there is shown a 5 invention by means of which a strand of hair can be rapidly curled and dried. The apparatus consists of a pair of semi-cylindrical levers or members 21 and 22 connected together adjacent one end by a pivot pin 23 so as to form a cylindrical 10 tube. The levers are movable relative to each other in scissor-like fashion and for that purpose are provided with expander portions or handles 24 and 25. The levers 21 and 22 are preferably 15 formed from metal, but any other suitable material may be satisfactorily employed. Along each of the levers 21 and 22, outlet openings 26 are provided of various sizes and shapes. In Figure 4, rectangular openings are illustrated. A stopper 27 is rotatably secured on the end of arms 28, the 20 opposite end of the arms being pivotally secured in a ring 29 which is rotatably secured to the handles 24 and 25 by projecting lugs 30 and 31. The arrangement is such that the stopper 27 may be swung from the position shown in full lines 25 in that figure where the stopper 27 closes the end of the chamber formed by levers 21 and 22. Air from the interior of the apparatus will then be compelled to pass outwardly through the 30 openings 26.

An air supply tube 32 is disposed so as to lead air at an appropriate temperature and pressure into the chamber formed by the co-operating semi-circular levers 24 and 25. When a strand 35 of hair is to be waved, the levers 24 and 25, are spread apart and retracted to seize the strand of hair between its edges and the hair is wound on the cylinder formed by the levers 24 and 25 to the desired extent. The arms 28 are swung 40 from the full line position to the dotted line position and serve to hold the hair and the curler in position, while the stopper 27 is inserted in the open end of the levers 24 and 25 opposite the handle end. The heated air is then passed 45 through tube 32 into the chamber formed by the levers 24 and 25 and out the openings 26, and dries the hair which is curled around the levers 24 and 25.

In Figures 5 and 6 there is illustrated a device 50 for forming small curls which are sometimes referred to as button curls. The apparatus consists of a circular disc 33 having upstanding projections 34 disposed thereon. An air supply cylindrical tube 35 is secured to the disc and the 55 end closed thereby. In the bottom part of the tube 35 a series of openings 36 are arranged. Fitting over the tube 35 is a cap member 37. This cap member has a sleeve portion 38 which closely fits around the tube 35 and an enlarged 60 cup-shaped portion 39 which is of sufficient diameter to fit loosely around the disc 33 and of sufficient depth to accommodate the upstanding projections 34. Holes 40 are arranged around the sides of the cup-shaped portion 39, as illustrated. 65 In use a strand of hair is wetted to the desired degree and then is wound around the tube 35, after which the coil of hair is pressed downwardly against disc 33 by means of the cap member 37 which, when in the curling position, assumes the position shown in dotted lines in Figure 5. The projections 34 help to keep the curl 70 in position.

In the different forms of the apparatus herein shown, after the hair is positioned, heated air 75 from a suitable source (not shown) and at a de-

sirable pressure is supplied, preferably by means of connecting flexible tubes to the various tubes 17, 32 and 35.

Apparatus constructed according to my invention is of inexpensive and durable construction 5 and of a character to be readily usable in hair manipulation. The various units can be quickly and easily placed in position on and removed from the hair, so that hair dressing is facilitated, and the person whose hair is being treated is sub- 10 jected to a minimum of discomfort.

While I have illustrated and described certain preferred embodiments of my invention, it will be understood that the invention is not limited 15 thereto, and that various changes may be resorted to within the scope of the following claims.

I claim:

1. A hair setting device comprising a structure having co-operating parts dependently supported for relative movement into and out of closed position and which cooperate when closed 20 to form a chamber, and means whereby heated air may be introduced into the chamber, there being openings in at least one of the cooperating chambers forming parts of the structure along a considerable portion thereof for the distributed 25 escape of air from the chamber to the atmosphere.

2. A hair setting device comprising a structure having co-operating parts dependently supported 30 for relative movement into and out of closed position and which cooperate when closed to form a chamber, means whereby the co-operating parts may be moved, and means whereby heated air may be introduced into the chamber, there being 35 openings in at least one of the cooperating chambers forming parts of the structure along a considerable portion thereof for the distributed escape of air from the chamber to the atmosphere.

3. A hair setting device comprising a structure 40 having co-operating parts dependently supported for relative movement into and out of closed position and which cooperate when closed to form a chamber, means for closing the chamber at one end, and means whereby air may be introduced 45 into the chamber, there being openings in at least one of the cooperating chambers forming parts of the structure along a considerable portion thereof for the distributed escape of heated air from the chamber to the atmosphere.

4. A hair setting device comprising a structure 50 having co-operating parts dependently connected for limited relative movement into and out of closed position, the parts when in closed position forming a chamber and being adapted when 55 closed to clamp the hair, and means whereby heated air may be introduced into the interior of said structure and into contact with the hair clamped therein.

5. A hair setting device comprising a structure 60 having co-operating parts pivotally connected for limited relative movement into and out of closed position and being adapted when closed to clamp the hair and to form a chamber, and means 65 whereby heated air may be introduced into said chamber structure, said co-operating parts having openings therein through which the air may escape from the interior to the atmosphere.

6. In hair drying and waving apparatus, a split cylindrical tube the parts of which are pivotally 70 connected and on which the hair may be wound, means for securing the wound hair in position on the tube, removable means connected to the last mentioned means for closing one end of the cylindrical tube and means through which heated air 75

may be supplied to the tube and passed through the hair from the inside of the winding outwardly to the atmosphere.

7. In hair drying and waving apparatus, a cylindrical tube formed by two semi-circular levers, said levers being pivotally connected for movement toward and away from each other whereby the ends of a strand of hair to be treated can be clamped, said tube having openings therethrough, and means through which heated air may be supplied to the tube and from thence through the hair wound on the tube to the atmosphere.

8. In hair drying and waving apparatus, an open end cylindrical tube formed by two semi-circular levers, said levers being pivotally connected for movement toward and away from each other whereby the end of the hair to be treated may be clamped, said tube having openings therethrough, the outside dimension of the open end of the tube being not greater than the outside dimension of the remainder of the tube, handles on the levers for moving them, and means through which heated air may be supplied to the tube and from thence through the hair wound on the tube to the atmosphere.

9. In hair drying and waving apparatus, a cylindrical tube formed by two semi-circular levers, pivotally connected for movement toward and away from each other and having openings therethrough, said tube having an open end, means pivotally connected to the apparatus for closing said open end and for holding hair wound on the apparatus in position thereon, and means through which heated air may be supplied to the tube and from thence through the hair wound on the tube to the atmosphere.

10. In hair drying and waving apparatus, a perforate tube having perforations in part of its length and adapted to be connected to a source of heated air, a disc connected to one end of the tube, a cap member for slidably embracing the tube and movable into position for surrounding the disc.

11. In hair drying and waving apparatus, a tube having perforations in part of its length only and adapted to be connected to a source of heated air, a disc connected to one end of the tube, projections on the disc extending along and parallel to the tube, a cap member for slidably embracing the tube and movable into position for surrounding the disc, the portion of the tube beyond the cap member being imperforate.

12. Wave setting apparatus comprising an elongated hollow body with closed ends and divided along a median plane at one side thereof and flexibly connected along a median plane opposite the division whereby the two halves of the body are relatively movable in a direction transverse to the longitudinal axis of the body, and means for introducing air to the interior of the body, the body having openings therein extending along the greater portion of the length thereof for the escape of air.

13. Wave setting apparatus comprising an elongated hollow body with closed ends and divided along a median plane at one side thereof and flexibly connected along a median plane opposite the division whereby the two halves of the body are relatively movable in a direction transverse to the longitudinal axis of the body, and means for introducing air to the interior of the body, the body having openings therein extending along the greater portion of the length thereof for the escape of air, the said escape openings being cylindrically removed from the means for introducing the air.

14. Wave setting apparatus comprising an elongated hollow body with closed ends and divided along a median plane at one side thereof and flexibly connected along a median plane opposite the division whereby the two halves of the body are relatively movable in a direction transverse to the longitudinal axis of the body, means whereby the halves of the body may be moved, and means for introducing air to the interior of the body, the body having openings therein extending along the greater portion of the length thereof for the escape of air.

15. In hair drying and waving apparatus, a drying chamber closed at both ends, the walls of the chamber being connected for limited rotation around a point adjacent the periphery and capable of being moved in one direction so as to prevent a longitudinal opening along the median line and when moved in the opposite direction to form the drying chamber, means whereby the walls may be rotated, means through which a current of heated air may be passed into the drying chamber, the walls of the chamber having openings along a considerable portion thereof to permit the distributed escape of air from the chamber to the atmosphere.

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