

## UNITED STATES PATENT OFFICE

2,624,347

## METHOD OF WAVING HAIR

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1 Claim. (Cl. 132—7)

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This invention relates generally to a method of treating and waving hair and more particularly to the process of applying a permanent wave to hair regardless of its length and for treating it to restore or produce a natural softness of the waved hair.

Unless the human hair is supplied with a sufficient amount of natural oil the treatment and heat applied during the process of affixing a permanent wave thereto leaves the hair lifeless or sometimes brittle causing it to break. If a permanent wave is applied to the same portion of hair that has been previously subjected to a permanent wave it becomes very brittle and will readily break off.

The principal object of this invention is the provision of a process for treating the human hair when a permanent wave is being applied thereto which process will revitalize the cellular pithy interior making it inherently soft. Such a condition may be produced by adding an agent to the hair before, during or after the heat has been applied to affix a permanent wave thereto.

Another object is the provision of a method for applying a permanent wave to the new growth of a long strand of hair extending from the old permanent to the scalp.

Another object is the provision of a process of selecting and blocking proper sections of the hair from the head for applying a permanent wave thereto.

Another object is the provision of a novel step in the process of applying a permanent wave to human hair which consists in the steps of applying oil to the hair during the application of a permanent wave thereto and immediately after oxidation by the application of heat such as by steaming or solution.

Another object is the provision of the novel step of applying oil to the hair so that it is present during the process of applying heat thereto for affixing a permanent wave in the hair.

Another object is the provision of the step of applying oil to the wound hair immediately after it has been subjected to heat in affixing the permanent wave thereto.

Another object is the provision of the method of winding the hair, preparatory to the application of the permanent wave thereto, in such a manner as to place that portion of the strand of hair which would be exposed in the coiffure adjacent the rod on which the strand is wound.

Other objects and advantages appear in the following description and claim.

In carrying out the process comprising this invention it is preferable to employ a hair waving rod that is made in two sections mounted in axial alignment and independently rotatable relative to one another such as shown in United States

Letters Patent No. 2,289,446. However, this process may be carried out by use of the standard spool for uniplanar winding or by the use of the standard spiral rod. The double section independently rotatable rod provides a superior permanent wave by reason of the fact that the inner and outer sections of the strand of hair wound thereon may be independently tightened when mounted on the hair rod clamp. A strand of hair that has been prepared for affixing a permanent wave thereto will provide a deeper and superior wave if it is tightly wound on the rod regardless of the process.

In order to produce a natural softness in the hair after a permanent wave has been applied thereto it is necessary to treat the same with an oil such as a light mineral oil before, during and after the application of heat to form a permanent wave therein. This oil treatment will also revitalize the dry hair and produces a natural softness in the hair during the process of affixing a permanent wave thereto.

In carrying out this process it is preferable to remove the natural oils from the hair by shampooing prior to the application of a permanent wave thereto as the natural oil is gummy and has a tendency to seal the hair against the entrance of permanent wave solution thereto. If the hair is clean and exceedingly dry it is not necessary to employ the step of shampooing. After shampooing the hair is dried in an ordinary manner and a light mineral oil is applied to the hair. This step in the process may be several days before the application of the permanent wave, or immediately before the application of the permanent wave. The essential purpose is to eliminate and replace the natural oils by adding a light oil to the hair.

The hair is blocked off in strands on the head leading from the forehead to the nape of the neck. The width dimensions of the strands are ordinarily transverse of the head or of the sequence of strands and adjacent the scalp. Each strand may be approximately as wide as that portion of the hair waving rod on which it is to be wound.

In winding the hair either by the uniplanar or spiral method particular attention should be given as to which side of the strand of hair is exposed in the coiffure after the permanent wave is applied and the hair is set. Ordinarily that side of the strand of hair facing the front or top of the head, particularly when the strand is held vertically, will be on the surface when the strand is laid back over the head or down the side of the head in arranging the hair for the coiffure. This exposed portion of the strand of hair should be given the tightest and the deepest wave and will give the stylist more latitude in forming the coiffure. In order to accomplish this end the hair

strand, when manipulated either from the back or from the front of the patron, should be wound on the hair waving rod with the front or exposed surface of the strand against the rod. In winding the hair so that the exposed surface of the strand is against the rod it may be necessary to reverse the position of the spacer or clamps so that the gear on the rod will properly fit in the clamp ratchet. Thus, if the operator stands behind the patron and the strand of hair is laid back over the head the strand should be affixed to the rod and the rod rolled forwardly over the top of the strand. If, on the other hand, the operator stands in front of the patron the operator should place the strand of hair over top of the rod and affix it thereto and roll the rod under the strand towards the patron's head. In winding the hair in this manner that portion of the strand which lies against the rod will have the deepest permanent wave and will be exposed when the hair is set.

By winding the hair strand in this manner on a hair waving rod having two sections the wound strand may be further tightened after the rod is journaled on the clamp by manipulating the sections independently of one another thereby providing a very deep wave on that portion that is fully exposed in the coiffure. The hair clamps and rods may thus be pre-positioned to produce this result after the hair strands have been blocked off on the head preparatory to applying the permanent wave thereto. By following this principle a deep and lasting permanent wave may be applied to the hair.

After the hair has been shampooed and dried it is then blocked into strands as previously stated and only that portion which is to receive the permanent wave is saturated with the permanent wave solution and then the proper type of oil is applied immediately before winding the hair. The mandrels or hair waving rods employed and shown in the permanent wave art as it is now being practiced, are provided with a finger clamp which is shaped to fold longitudinally on the rod and thus become a part thereof. The hair strands are then individually placed under this finger clamp and wrapped or wound on the rods and a pad is placed thereover. This pad or envelope may be made of any suitable material that will carry oil but is preferably constructed from a thin sheet of cellophane the surface of which has been impressed to provide fine undulations producing reticulated surfaces on both sides thereof capable of holding a liquid such as oil. Other suitable pads such as cloth or gauze, which is capable of holding oil or a liquid, may be employed. However, it is preferable to use cellophane because it is very tough and thin and inexpensive and provides a hard surface when wound with the hair on the rod.

These pads are dipped in a light oil, such as mineral oil, so that the surfaces are wetted and carry a material amount of oil. The oil wetted pad is then folded around the strand of hair and is placed under the finger clamp of the hair waving rod. Thus, the pad prevents direct contact between the hair and the rod and carries a supply of oil surrounding the strand. As the rod is rotated to wind the strand thereon the pad or envelope soon runs out and a similar pad properly saturated with oil may then be placed around the next section of the strand of hair. The strand may be wound in this manner by adding additional oil saturated pads until the strand is completely wound on the rod or the pads may be

used only to protect the hair from direct contact with the rod and other parts of the apparatus such as the heater, but it is preferable to use the pads all along the strand. The applications of pads on the strand of hair in this manner provides a relatively hard flexible surface between the layers of the strand of hair wound around the rod and when the strand is tightened on the rod these relatively hard surfaces aid in permitting the strand to be drawn very tightly on the rod and provide a deep or permanent wave in that portion of the strand forming the outer section of the outer strand than obtainable without the pads.

Each strand is first saturated with the permanent wave solution and is then treated with oil by means of oil saturated pads, cellophane, gauze, or other suitable material, and is substantially enclosed in an oil envelope, when wound preparatory to apply heat thereto for the purpose of producing the permanent wave. The oil is preferably applied in liquid form but may be cream or other emollient agent.

The heating means or other suitable method of affixing a wave to the hair is applied during the usual time required for the particular type of hair and apparatus employed, and then removed. As soon as the heater is removed the hot wound hair is saturated with oil, such as a thin oil of the proper consistency, which application of oil expedites the cooling of the hair wound upon the rod and aids in furthering the revitalization of the hair without destroying the deep permanent wave. The hot hair strand should preferably remain tightly wound during this saturation with oil until it is completely cooled. The hair may then be unwound from the rods and shampooed to remove the excess oil. This treatment of the hair gives it a natural softness and it is more readily set.

It is highly important to apply the oil to the hair during the process of applying the permanent wave thereto and just as soon as the heat is turned off and the heater quickly removed as the hair absorbs the oil more readily when hot and oil does not disturb the function of the oxidized hair waving solution. It may thus be preferable to energize the heating coils successively rather than simultaneously in order to apply the oil as soon as the heater is de-energized and removed. However, in most machines the heaters are turned off and on simultaneously, in which case all of the heaters are quickly removed at the proper time and a generous amount of oil is applied to the hot wound hair.

This process is equally applicable for treating the hair waved by the so-called cold wave process wherein a hair waving chemical solution known in the art as a reducing agent is applied to soften the hair which is then smoothly wound within the oil saturated envelopes on the rod. A second chemical solution known in the art as an oxidizing agent is then applied to the wound hair to neutralize and oxidize the first or permanent wave solution and thereby affix the shape in the tightly wrapped hair to produce the permanent wave therein with little or no noticeable heat. Immediately following the treatment by the oxidizing solution the hair is then saturated with a light oil before being unwound. However, the cold hair will not absorb the oil as readily as it does when hot but the application of oil immediately after the oxidizing period produces a natural softness which seems to revitalize the hair treated by the so-called cold wave process.

With this process it is preferable not to apply the pads for the full length of the strands.

To apply a permanent wave to the new growth of hair a permanent wave solution is applied only to that portion of the hair that does not have a permanent wave. The permanent wave solution softens the hair tubers. Oil is then applied to the hair strand and it is then wound in the manner previously described so that the end of the old permanent wave, that is closest to the scalp, is under or just beyond the finger clamp of the hair waving rod and the remaining portion forming the outer part of the strand of hair, although treated with oil, is free as this portion contains a permanent wave therein. This loose end of the strand of hair is permitted to pass off the end of the rod and out through the fingers while the other portion of the strand is being wound on the rod in the manner previously described. As the rod is turned and approaches the hair clamp it is seated and locked on the journals of the hair clamp in the usual manner. The rod is then manipulated to tighten the inner and outer hair strand sections relative to each other and relative to the hair clamp while maintaining the free end of the strand away from the clamp. The hair is thus tightly wound on the rod and covered with an oiled pad and may be covered by a masking material such as tape or other suitable means to protect it from the exterior of the heater.

The heater is then inserted over the tightly wound and protected hair and heat is applied to oxidize the permanent wave solution within the hair tubers for the purpose of affixing the cross-linkage or cysteine condition in the tightly wrapped strand to produce a permanent wave therein. Thus, a permanent wave is applied to the new growth of hair by this process.

It is preferable to use a hair waving rod having two independently operable sections in order to properly tighten the strand after it has been wound on the rod. Unless the rod sections are independently rotatable the wound hair cannot be properly tightened on the rod owing to the fact that the free end of the strand extends from the rod. A loosely wound strand of hair will produce a weak or poor wave. However, if a single pieced rod is supported solely at its ratchet end, the other end being free to permit the free end of the strand of hair to pass therefrom, this method of waving a new growth of hair may be practiced to advantage but it is far better to provide a multiple-section rod as it permits the strand of hair to be tightened to a greater degree thereby improving the wave.

In carrying out the process of applying a permanent wave to the new growth of hair it is preferable to block off the scalp in hair strands starting from the center of the forehead straight back to the nape of the neck and form strands from the top of the head at the front down the sides of the head above and in front of the ears. The remaining strands from the top of the head to behind the ears may have to be taken on a second shift or winding owing to the lack of room for the clamps and the same process is carried out that is, blocking, applying hair waving solutions, then oil or emollients, winding and finishing the process either by heat, machineless or cold wave, and the loose ends of the strands of formerly waved hair must be protected from the hair waving solution and heated in the same manner previously described.

If the hair is unusually dry it should be shampooed a day or two before applying the permanent wave thereto and then treated with a light suitable oil that is permitted to soften the hair which is again shampooed to remove the excess oil. This treatment revitalizes the hair a day or so preparatory to the application of a permanent wave thereto. This step provides a natural softness to very dry hair and protects it from becoming brittle due to the permanent wave treatment. Oil is of course again added to the hair strands after they are treated with a permanent wave solution as previously stated.

The application of a permanent wave solution and then oil to a hair strand is preferably practiced before the strand is wound but one or both of these steps may be applied after winding.

As previously stated, it is preferable to employ a double section rod, one section having the finger clamp but both sections being independently rotatable relative to each other although mounted on a common axis as a unit. With this type of rod the aforementioned process may be practiced to provide an ordinary Croquignole or spiral wave or a combination Croquignole and spiral wave.

This application is a division of application, Serial No. 627,630, filed November 9, 1945, and now granted as Patent No. 2,608,194.

I claim:

The method of applying an oil permanent wave to human hair which consists in the successive steps of wetting a strand of hair with a permanent wave solution, saturating pads with oil, placing the oil saturated pads on the wetted strand of hair to retain and directly apply the oil to the hair, winding the strand of hair together with the oil saturated pads about a mandrel, oxidizing the permanent wave solution in the wound strand of hair, the hair absorbing the oil to nourish and revitalize the same, and again applying oil to the wound strand after the oxidizing step.

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