Aug. 3, 1948. S. GRANT 2,446,227

METHOD OF PERMANENT WAVING OF HAIR

Filed June 11, 1945

Fig. 1.

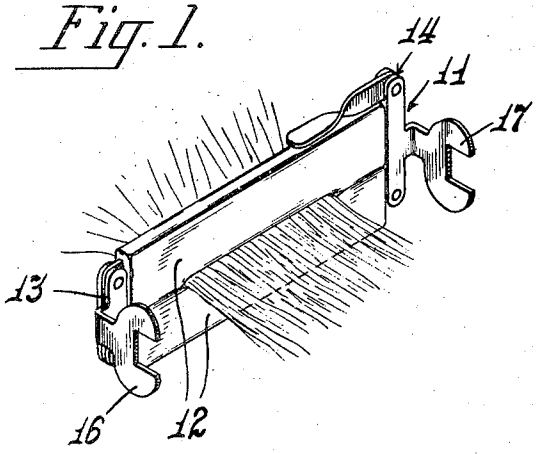


Fig. 2.

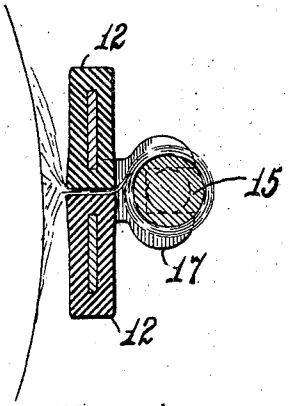


Fig. 3.

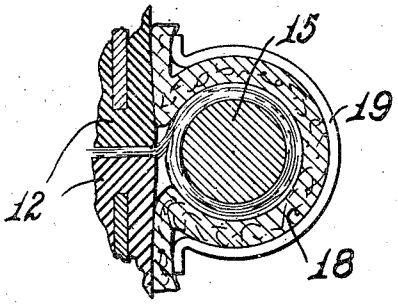
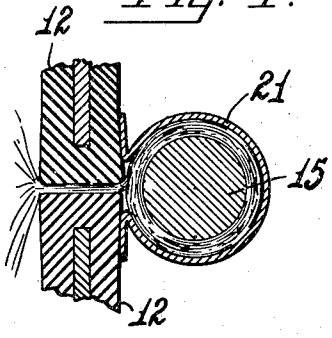


Fig. 4.



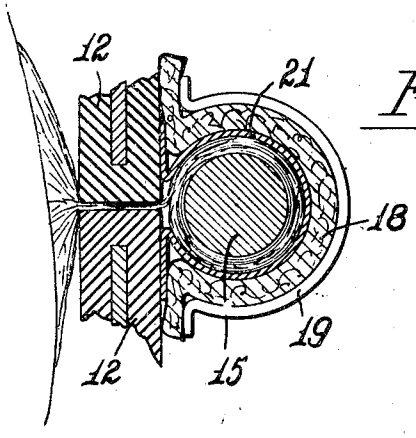


Fig. 5.

INVENTOR.
SAMUEL GRANT
BY Maurice L. Cayne
ATTORNEY

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METHOD OF PERMANENT WAVING OF HAIR

Samuel Grant, Chicago, Ill., assignor, by mesne assignments, to Helene Curtis Industries, Inc., a corporation of Illinois

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13 Claims. (Cl. 132—36)

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The invention relates to the art of waving hair upon the human head to produce permanent waves and is more particularly concerned with improvements in the method of so treating the hair as to obtain a soft, lustrous permanent wave within a minimum period of time.

In certain methods heretofore practiced for permanent waving of hair, the waving has been accomplished by what is known as cold permanent waving and machineless waving. The former method has been satisfactory insofar as the type of permanent wave produced is concerned, since the curls resulting from cold waving have the much desired soft texture and lustrous appearance. However, the practice of the cold waving method has involved an excessive amount of time because the intervals required between various applications of solutions employed have been necessarily long.

In the method known as machineless waving the curls are treated with various solutions, heat pads are applied to generate the heat required to cause softening of the hair, and the shaped hair is subsequently treated with a solution to again render it substantially firm. The curls resulting from this treatment usually have a characteristically undesirable texture, that is to say, the hair fibers are coarse and harsh.

The present method contemplates are adoption of the most desirable characteristics of both of said former methods of hair waving, so that a soft, lustrous curl is produced within an extremely short period of time.

It is, therefore, an object of the present invention to provide a method of producing a permanent wave having all the desirable characteristics of a wave produced by the method known as cold permanent waving within less time than is ordinarily required for such waving operation.

Another object of the invention is to provide a method of permanent waving hair which combines the desirable characteristic qualities of the cold permanent waving process and the machineless wave process.

Another object of the invention is to provide a method of permanent waving wherein artificially applied heat is utilized to hasten the action of the lotion customarily employed to effect cold permanent waving without sacrificing the characteristic qualities of the cold permanent waving process.

Other and further objects of the present invention will be apparent from the following description and claims and are illustrated in the

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accompanying drawing which illustrates the preferred method of applying the principles herein involved. Other embodiments embodying the same or equivalent principle may be used and mechanical devices other than those illustrated may be employed by those skilled in the art without departing from the spirit of the present invention and a purview of the appended claims.

In the drawing:

Fig. 1 is a perspective view showing a conventional spacer attached to a hair strand as a preliminary step in practicing the present method.

Fig. 2 is a transverse sectional view of the hair spacer showing the hair strand rolled upon a hair curling rod mounted upon the spacer.

Fig. 3 is an enlarged detail sectional view similar to Fig. 2, showing the wound strand of hair enclosed within a heat pad secured thereto by a clamp.

Fig. 4 is a sectional detail view similar to Fig. 3, showing another step involved in practicing the method of the present invention, wherein the wound curl is enclosed within a wrapper of absorbent paper.

Fig. 5 is a sectional detail view similar to Fig. 4, showing the final step in practicing the method of the present invention.

In practicing the method of the present invention, the hair on the head is separated or blocked off into a plurality of hair strands of convenient size, and these strands subsequently are rolled upon curling rods and treated with various solutions and subjected to heat above the normal temperatures of the body. It is important, however, that the scalp be suitably insulated to prevent excessive heat from reaching the scalp, and to this end any suitable spacer, such as for example the spacer 11, best illustrated in Fig. 1 of the accompanying drawings, is applied to the strand of hair. As shown, the spacer may consist of two parallel bars 12 pivotally connected at one end, as by a bracket 13, so as to be moved pivotally towards and away from each other in a manner to enable it to be fitted over the strand of hair and then clamped tightly with the hair between the bars 12, as by a clamp generally indicated at 14. When the spacer is properly positioned on the strand of hair, it is located as close to the scalp as possible to expose the maximum amount of hair for curling. Prior to applying the spacer 11 to the strand of hair, the hair is, of course, thoroughly shampooed and dried.

After the hair strand has been secured by the

spacer 11, a softening solution is applied to the hair strand and said strand is then wound upon a suitable curling rod 15 (Fig. 2), which preferably is formed of aluminum. The rod 15 is formed at its ends to seat snugly in and be held by forked brackets 16 and 17 formed integral with the hinge bar 13 and clamp 14, respectively. After the saturated hair is thus rolled upon the curling rod and secured, a heating pad 18 (Fig. 3), commonly referred to as a machineless pad, which includes ingredients that react upon the application of moisture to generate heat, is applied over the wound hair strand and clamped thereto, as by a clamp 19. The wound, saturated strand is subjected to the heat of this pad for a period of about five (5) to eight (8) minutes, whereupon the clamp and the pad are removed.

A piece of absorbent paper 21, such as the kind commonly known as "Kimpak," is saturated with a neutralizing solution or lotion and is then applied over the wound hair strand, as illustrated in Fig. 4. The heat pad 18 may then be replaced over the saturated absorbent paper 21 and the curl is again subjected to about five (5) minutes of additional heat from the pad. At the end of this period of time the pad and absorbent paper are removed and the hair strand is allowed to cool and set on the curling rod. The curling rod then is removed and the permanent wave is complete.

In practice it has been found that a satisfactory solution useful for softening the hair during the application of heat may consist of a 1%, 3% or 5% solution of thioglycolic acid, preferably in the form of ammonium salt, having a pH in the vicinity of 7 to 8.5. If desired, the range of the pH may be slightly wider than that specified hereinabove and the concentration of thioglycolic acid may cover a wider range depending, of course, upon the texture of the hair to be treated. It has been established, however, that the pH hereinabove noted is very satisfactory for most types of hair treated. The softening solution is applied to the hair strand preferably by combing it in, although, of course, it may be otherwise applied with equally satisfactory results, care being taken, however, that all of the strands and the hair in each strand are entirely and thoroughly saturated.

The neutralizing solution with which the absorbent paper is impregnated prior to being applied to the wound hair strand, after preliminary heating and softening, consists of an oxidizing agent mixed in solution with an acid rinse. While the oxidizing agent may consist of any of the bromates, chlorates or iodates, it is preferred that from ½ to 1 oz. of peroxide be used and that the acid rinse consist of one or two teaspoons of vinegar. These agents in the proportions stated are thoroughly mixed with 4 ounces of water. The neutralizing solution is effective during the second period of heat application to neutralize the softening or breaking down action of the softening lotion previously applied so that at the end of five (5) minutes all of the lotion is completely neutralized and the hair strand is entirely free of further softening or breaking down action.

When the wound strand is allowed to cool, the hair is substantially self sustaining in its wound shape and, when the curling rod is removed, the hair strand will retain its wound condition.

It will be noted that the practice of the present method makes it possible for the operator to complete the treatment of a hair strand within a period of ten (10) to fifteen (15) minutes, whereas the treatment of a single strand by the prior cold permanent waving method has been from twenty (20) minutes to one and one-half (1½) hours, depending upon the character of the hair being treated. Also, the curl produced has the fine, soft texture and lustrous appearance obtainable by the aforesaid cold permanent waving method and is entirely devoid of the characteristic harsh, coarse texture resulting from excessive application of heat as by the process of machineless heat waving. Also, the number of strands required in waving a complete head of hair is less than that required in cold waving, thereby reducing the time necessary to complete the wave.

It has been found in practice that very satisfactory waves are produced by the use of only one application of heat. In this case the heating pad is applied to the wound strand of hair after it has been treated with the softening solution and is permitted to remain thereon for a period of from five (5) to eight (8) minutes. The pad is then removed and the oxidizing agent is applied to the hair. The period of time that the heating pad is allowed to remain on the wound tress of hair depends upon the pH of the softening solution used. The lower the pH, the longer the heating time required for satisfactory results; the higher the pH, the shorter the heating time.

The specific examples and details disclosed herein are not intended to define the limits of the scope of this invention, it being intended that the protection offered shall extend to the full spirit of this invention, as defined by the appended claims.

I claim:

1. The process of permanent waving hair which comprises applying a 1–5% thioglycolic acid solution to a hair strand, winding said hair strand onto a curling rod, applying a heating pad to said wound strand and allowing said pad to remain for a period of from five (5) to eight (8) minutes, removing said pad, applying a neutralizing solution to said wound strand, reapplying said heating pad and allowing it to remain for a period of approximately five (5) minutes, and finally removing said pad and curling rod.

2. The process of permanent waving hair which comprises applying a 1–5% thioglycolic acid solution to a hair strand, winding said hair strand onto a curling rod, applying a heating pad to said wound strand and allowing said pad to remain for a period of from five (5) to eight (8) minutes, removing said pad, applying an absorbent element saturated with a neutralizing solution to said wound strand, applying said heating pad over said absorbent element and allowing the same to remain for a period of approximately five (5) minutes, and finally removing said pad, absorbent element and curling rod.

3. The process of permanent waving hair on a human head which comprises separating the hair into a plurality of strands, securing a spacer around a hair strand closely adjacent to the scalp, applying a 1–5% thioglycolic acid solution to said hair strand, winding said hair strand onto a curling rod, applying a heating pad to said wound strand and allowing said pad to remain for a period of from five (5) to eight (8) minutes, removing said pad, applying an absorbent element saturated with a neutralizing solution to said wound strand, allowing the same to remain for a period of approximately five (5) minutes, and finally removing said absorbent element and curling rod.

4. The process of permanent waving hair on a human head which comprises separating the hair into a plurality of strands, securing a spacer around a hair strand closely adjacent to the scalp, applying a 1–5% thioglycolic acid solution having a pH of about 7 to 8.5 to said hair strand, winding said hair strand onto a curling rod, applying a heating pad to said wound strand and allowing said pad to remain for a period of from five (5) to eight (8) minutes, removing said pad, applying an absorbent element saturated with a neutralizing solution to said wound strand, applying said heating pad over said absorbent element and allowing the same to remain for a period of approximately five (5) minutes, and finally removing said pad, absorbent element and curling rod.

5. The process of permanent waving hair on a human head which comprises applying to the hair a hair softening agent, forming the hair into a desired shape, applying heat to the shaped hair for a sufficient period of time to soften the hair, applying a neutralizing solution to said shaped hair, reapplying heat to said hair for a sufficient period of time to completely neutralize said agent, and finally allowing the hair to cool.

6. The process of permanent waving hair on a human head which comprises applying to the hair a thioglycolic acid solution, forming the hair into a desired shape, applying a machineless heating pad to the shaped hair for a sufficient period of time to soften the hair, applying an oxidizing agent to said shaped hair, reapplying said machineless heating pad to said hair for a sufficient period of time to completely neutralize said acid solution, and finally allowing the hair to cool.

7. The process of permanent waving hair which comprises saturating a strand of hair with a solution of an ammonium salt of thioglycolic acid having a pH of 7 to 8.5, forming the saturated strand of hair into a desired shape, subjecting the saturated hair to heat for a sufficient period of time to soften the hair, and subsequently applying an oxidizing agent and additional heat to said hair.

8. The process of permanent waving hair which comprises saturating a strand of hair with a solution of an ammonium salt of thioglycolic acid having a pH of 7 to 8.5, forming the saturated strand of hair into a desired shape, subjecting the saturated hair to heat for a sufficient period of time to bring out the softening properties of said solution, and subsequently applying an oxidizing agent and additional heat to said hair to fix a permanent wave therein.

9. The process of permanent waving hair which comprises saturating a strand of hair with a solution of an ammonium salt of thioglycolic acid having a pH of 7 to 8.5, forming the saturated strand of hair into a desired shape, subjecting the saturated hair to heat for a sufficient period of time to soften the hair, and subsequently applying an aqueous solution including peroxide and an acid rinse and additional heat to said hair.

10. The process of permanent waving hair which comprises saturating a strand of hair with a solution of an ammonium salt of thioglycolic acid having a pH of 7 to 8.5, forming the saturated strand of hair into a desired shape, subjecting the saturated hair to heat for a sufficient period of time to soften the hair, and subsequently applying an aqueous solution including peroxide and additional heat to said hair.

11. The process of imparting a permanent wave to a wound hair strand saturated with a thioglycolic acid solution having a pH of about 7 to 8.5, which includes applying heat for a sufficient period of time to soften said saturated wound hair strand, applying a neutralizing solution to said hair strand and reheating the same for an additional period of time to completely neutralize said acid solution, and finally allowing said wound hair strand to dry and cool.

12. The process of permanent waving hair which comprises subjecting a wound hair strand saturated with a thioglycolic acid solution to heat for a sufficient period of time to soften the hair and subsequently applying a neutralizing solution and additional heat to said wound hair strand.

13. The process of permanent waving hair which comprises subjecting a wound hair strand saturated with a thioglycolic acid solution to heat for a sufficient period of time to soften the hair and subsequently applying an oxidizing agent and additional heat to said wound hair strand.

SAMUEL GRANT.

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