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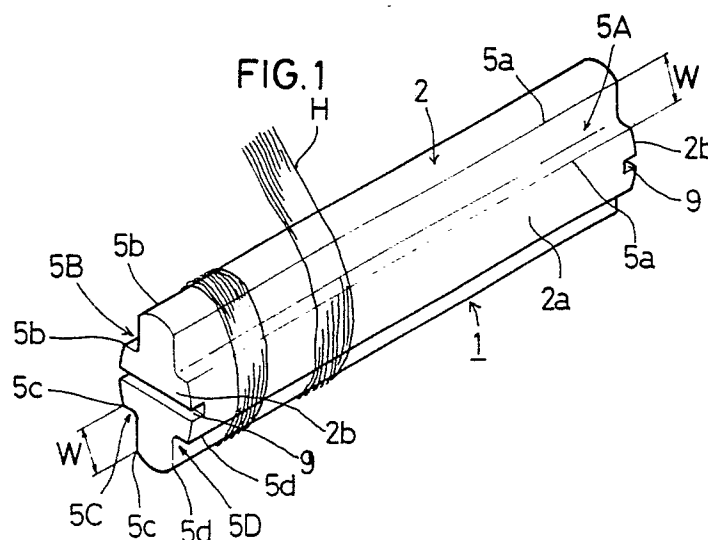
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London WC1R 5DJ(GB)(54) **Perming rod.**

(57) A perming rod (1) is formed in its outer periphery with axially extending grooves (5) for discharging excessive perming treatment solution. Each groove has its edges cornered sharply and suitably spaced apart from each other so that a bundle of hair wound around the rod will be brought into engagement with the outer periphery along the edges of the grooves with a large frictional force. The hair can be permed strongly so that fold lines will be formed along the edge lines of the grooves by pulling the hair with a large tensile force.



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PERMING ROD

The present invention relates to a perming rod used in perming.

As shown in Fig. 9, a prior art perming rod designated generally by numeral 51 is cylindrically shaped and has its outer periphery 51a formed with a plurality of apertures 60 for discharging an excessive perming treatment solution to prevent it from being left on the hair.

With this type of perming rod, when a bundle of hair is wound around the cylindrical periphery of the rod with a suitable tensile force applied thereto, the hair comes into contact with the periphery 52 over its entire surface. Thus the tension to the hair is undesirably distributed over the entire length. This will make it difficult to have the hair permed sufficiently. Especially if a weak and soft perming solution is used to prevent the hair from being damaged, not only will the permed wave become flat before long but also it will take a long time to have the hair permed. Hair can be permed for a shorter time so as to last longer if a strong and hard perming solution is used. But such a strong solution might damage the hair.

It is an object of the present invention to provide a perming rod which obviates the abovesaid shortcomings and which is capable of perming the hair for a shorter time without damaging it so that the wave will last longer.

According to the present invention, the axial grooves serve not only to discharge an excessive perming solution but also to engage the hair at their edges. Thus, each hair makes point-to-point contact with the outer periphery of the rod along the edges of the axial grooves, producing a large friction therebetween. The hair can thus be pulled with a large tension so as to be formed with fold lines along the edges of the axial grooves.

Other features and objects of the present invention will become apparent from the following description taken with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of the first embodiment of the perming rod according to the present invention;

Fig. 2 is a cross-sectional view of the same;

Figs. 3 to 6 are cross-sectional views of the second to fifth embodiments of the perming rod, respectively;

Figs. 7 and 8 show modifications of the preferred embodiments; and

Fig. 9 is a perspective view of a prior art perming rod.

Figs. 1 and 2 show the first embodiment of the

present invention in which a perming rod 1 has a body 2 made of a solid wooden material and has a substantially elliptical cross-section. Four axial grooves 5A to 5D are formed in its outer periphery. The rod body may be made of other materials than wood such as synthetic resin.

The rod should have such a length that a bundle of hair H can be rolled therearound to its root. If the user has short hair, each bundle of the hair may be wound around the rod so as to be stacked one upon another on a limited area of the periphery of the rod. Conveniently, a plurality of rods of various lengths may be prepared so as to cope with various lengths of hair. The outer periphery 2a of the rod is partitioned into four arcuate surfaces by the grooves 5A to 5D. The rod body 2 is formed in its elliptical end faces 2b with grooves 9 diametrically extending along their minor axes.

A rubber band (not shown) is adapted to be put on the rod from one end to the other so as to be engaged in the grooves 9, thus holding the bundle of hair H in position on the outer periphery 2a of the rod body. The grooves 9 may be formed along the major axes of the elliptical end faces or may be in the shape of a cross.

The axial grooves 5A to 5D have suitable depth and are arranged so that the respective two of them will be in a symmetrical relationship with respect to the plane including the major axes of the elliptical end faces. They serve to discharge an excessive perming treatment solution, thus preventing it from being left on the hair.

The axial grooves 5A to 5D have their respective pairs of edges 5a, 5b, 5c and 5d sharply cornered with each pair of edges spaced from each other by a distance W. When the bundle of hairs H are wound around the rod body 2 while applying a tensile force, they will be brought into contact with the rod at points P (Fig. 2) along the edges of the axial grooves with a fairly large frictional force.

More specifically, in Fig. 2, hair portion Ha on the top of the periphery 2a will be engaged by the adjacent ones of the edges 5a and 5b of the grooves 5A and 5B, hair portion Hb on the lefthand side of the periphery 2a will be engaged by the adjacent ones of the edges 5b and 5c, hair portion Hc on the bottom of the periphery will be engaged by the adjacent ones of the edges 5c and 5d, and hair portion Hd will be engaged by the adjacent ones of the edges 5d and 5a. Since the hair wound around the rod is thus strongly held on the periphery 2a of the rod with a large frictional force, the tension to the hair can be increased. This will allow the bundle of hair to be permed in a short time into a shape substantially in conformity with the ellip-

tical shape of the periphery 2a of the rod body 2.

Next, the operation of the perming rod in the first embodiment will be described. Before subjecting the hair to a perming treatment, a first perming treatment solution (which is alkaline and serves to cut off the cystine bonds in each hair to cause it to swell) is applied all over the hair. Then, as shown in Fig. 1, a bundle of hair H of a desired number are wound around the rod 1. The rod is then turned with fingers to roll up the bundle of hair H to their root while pulling them with a suitable tension. They have to be rolled helically so as not to overlap one turn upon another. When the bundle of hair H has been rolled up around the rod on its periphery 2, a rubber band (not shown) is put on the rod 1 from one end to the other so as to engage in the grooves 9 to hold the hair in position. A plurality of such rods are used to roll up all the hair. The hair is left as it is until the first treatment solution acts on it. Then a second perming treatment solution is applied through the hair. The second solution is acidic and serves to neutralize the hair to reunite the cystine bonds. After the second solution has been allowed to act on the hair, the rods are removed from the hair. With the perming rod according to the present invention, a large tensile force can be applied to the hair H on the points P along the edges 5a, 5b, 5c and 5d of the axial grooves 5A, 5B, 5C and 5D, respectively. Thus, the hair will be permed in a short period of time even if rather weak perming solutions (first and second solutions) are used, so that the wave of the hair will last long.

Fig. 3 shows the perming rod 11 of the second embodiment formed in its outer periphery with three axial grooves 15A, 15B and 15C so that the rod 11 will have a substantially regular triangular section. Each of the grooves 15A, 15B and 15C have its respective pair of edges 15a, 15b and 15c kept at a rather large distance from each other so that hair will be permed with a small radius of curvature and the adjacent waves will be a larger distance away from each other.

Fig. 4 shows the perming rod 21 of the third embodiment formed in its outer periphery with four axial grooves 25A to 25D having pairs of edges 25a to 25d, respectively. The distances between the respective pairs of edges are equal to one another so that the rod will have a substantially square section. With this rod, a bundle of hairs can be permed into a substantially square shape.

Fig. 5 shows the perming rod 31 of the fourth embodiment formed in its outer periphery with five axial grooves 35A to 35E so that the rod will be given a substantially regular pentagonal section. The distances between respective pairs of edges 35a to 35e of the axial grooves 35A to 35E are equal to each other and smaller than the distances

between the pairs of edges in the second embodiment shown in Fig. 4 so that the hairs wound around the rod 31 will be permed with a larger radius of curvature.

Fig. 6 shows the perming rod 41 of the fifth embodiment having a substantially rectangular cross-section and formed in its four sides with axial grooves 45A to 45D. In this embodiment, the distances between respective pairs of edges 45a, 45c and those between respective pairs of edges 45b and 45d are different from each other, thus allowing the hair to be permed in a variety of ways.

Throughout the preferred embodiments, the rods have solid cores but may have their cores hollow as shown in Fig. 7 by way of example. Further, the perming rods throughout the preferred embodiments may have both ends thereof somewhat bulged as shown in Fig. 8 by way of example so as to prevent a rubber band put on the rods from pressing too tight against the hair wound around the rod.

Claims

1. A perming rod comprising a rod body formed in its outer periphery with a groove extending axially from one end thereof to the other to discharge excessive perming treatment solution adhering to hair, said groove having two opposite edges spaced from each other to such an extent that hair can be wound around said rod body on said outer periphery with a suitable tension.

2. A perming rod comprising an elongate body having at least two re-entrant portions in the periphery of the cross-section thereof.

3. A method of perming hair comprising the step of winding hair around a rod as claimed in claim 1 or 2, the hair being treated with perming fluid, and excess fluid being permitted to escape via the groove or re-entrant portions.

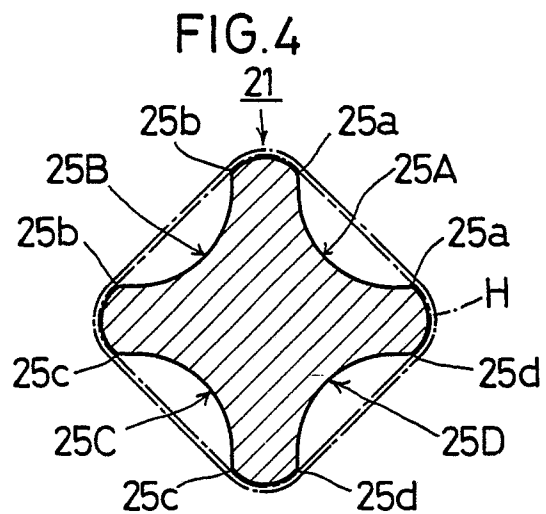
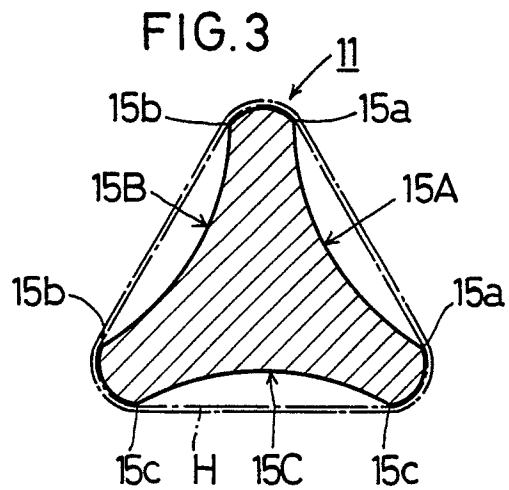
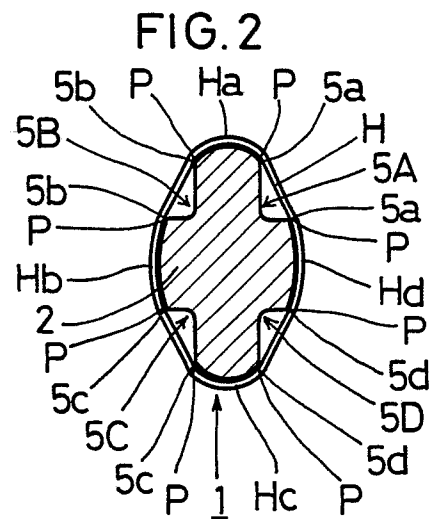
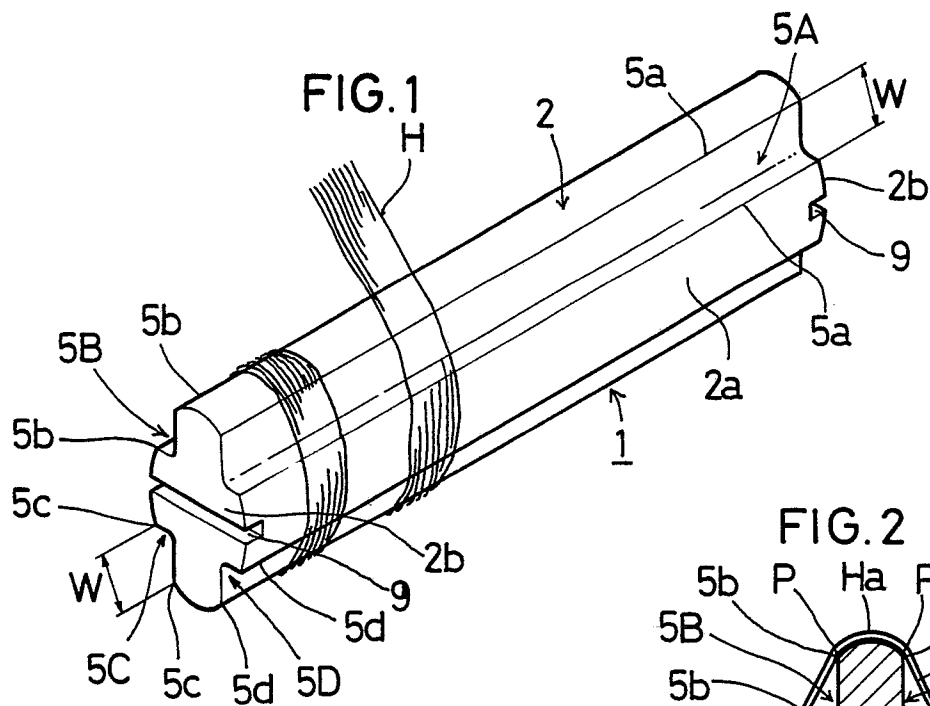


FIG. 5

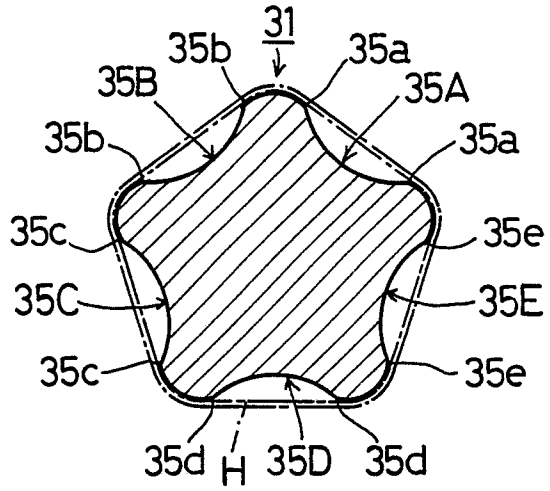


FIG. 6

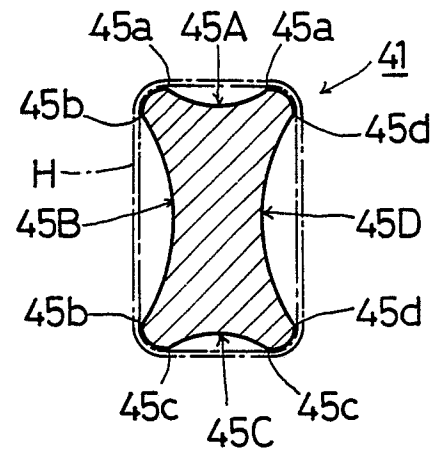


FIG. 7

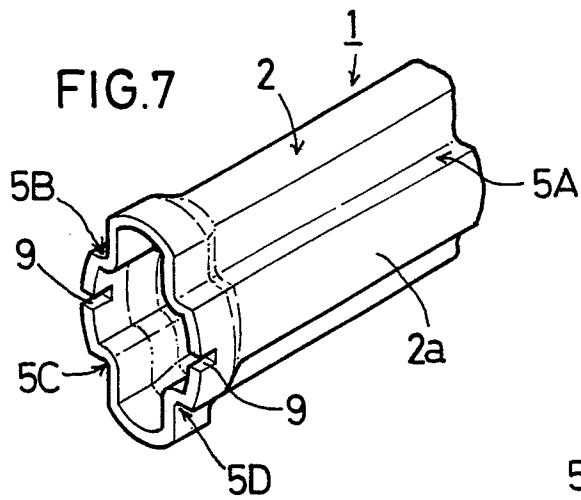


FIG. 8

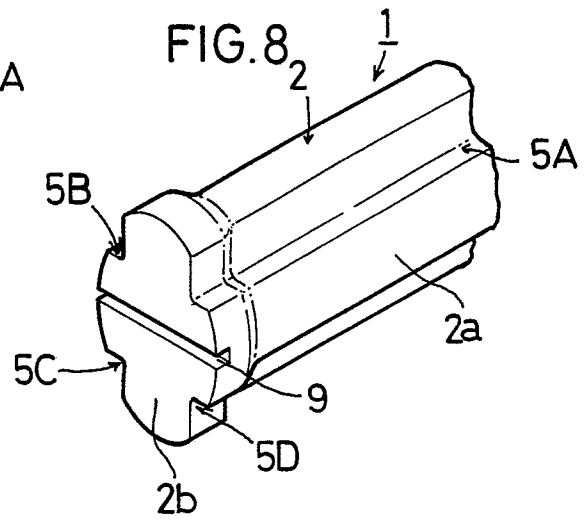


FIG. 9

