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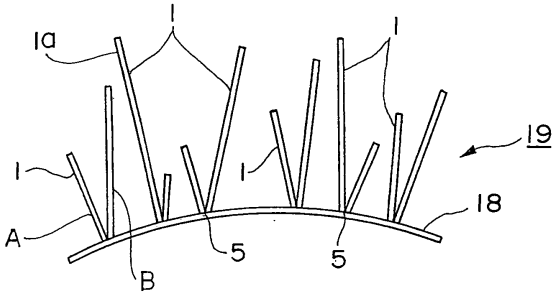
(54) **WIG AND METHOD FOR MANUFACTURING THE WIG**

(57) A wig (19) is obtained by making a bundle of a plurality of strands of hair (1) of about same length, stretching the whole bundled hair to the pre-determined length by shifting the bundled hair in the length direction to random length, assuming the length of the stretched hair bundle as an apparent total length, forming a bent portion (5) of hair at the half position of said apparent total length, and by attaching said bent portion (5) to a wig base (18). Since the position of the bent portion (5) of hair (1) differs from each other, and the length (A) from the bent portion (5) to one end and the length (B) from the bent portion to the other end are configured to differ for each hair, the finished state of the wig can offer a good natural appearance as if the wearer's own hair were grown.

FIG.6



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Description

Technical Field

[0001] This invention relates to a wig comprising a wig base with hair attached thereto, and a method of making the same, and more specifically, to the wig with a wig base using the hair cut to about same length and attached to the wig base by various lengths of the extension from the wig base, and a method of making the wig.

Background Art

[0002] A conventional wig is constituted in general with a wig base made of a net or artificial skin of a synthetic resin as the material formed in a shape of the wearer's head profile, and said wig base has numerous hair attached thereto. As the hair for a wig, artificial hair made of such synthetic fibers as nylon (registered trademark), modacryl, and polyester, or human hair, or the mixture thereof is used.

[0003] The attaching process of hair to a wig base made of artificial skin is, as shown in Fig. 8(A), first preparing the hair 50 cut to a certain length, bending to two in a shape of hairpin at about a center position in its length direction, that is, a bent portion 50A, and, as shown in Fig. 8(B), inserting the bent portion 50A from the surface side of the artificial skin 51 using a planting needle, planting thereafter in a V shape by one side of the bent hair 50 from the reverse side of the artificial skin 51 at a small interval apart, and fixing the bent portion 50A of hair by applying an adhesive to the back side of the artificial skin. As a final step, by adjusting the length to the desired length by cutting the protruding hair from the surface of artificial skin, and further properly adjusting hair lengths to non-uniform lengths with a thinning scissor or the like to make further natural appearance, a wig made of artificial skin is completed.

[0004] In case to attach hair to a wig base made of a net member, the bent portion 50A of hair 50 is tied to the net with a planting needle as mentioned above. Namely, hair 50 is bent at about center position in a hairpin shape, and said bent portion 50A is fixed by tying to a matrix of filaments and their cross points constituting the net. As a final step, adjusting hair lengths to non-uniform lengths with thinning scissors after cutting and combing the tip end of hair 50 extending upward to a desired length, thereby a wig made of a net is completed.

[0005] Whether a wig base is made of a net or of artificial skin, since hair 50 is attached to a wig base at the bent portion 50A of the center in the length direction, the hair 50 fixed to the wig base and protruding from its surface has about equal lengths for the length L1 from the bent portion 50A to one end and the length L2 to the other end in the attached state of Fig. 8(B).

Here, the length of the hair to be prepared is a little longer size than the hair to be finally adjusted, that is, in order to attach the hair (L1 + L2) to the wig base longer by, for example, 2 to 10 cm than the hair length designed in accordance with the wearer's preference or hairstyle, the process is required, after cutting the hair uniformly to the designed length after attaching, to further cut the hair with a thinning scissor or the like to non-uniform length to bring about natural appearance.

[0006] On the other hand, if strands of hair that are cut to a designed equal length are prepared and attached to a wig base, all the hair 50 being in about the same length, the length of hair 50 protruding from the surface of the wig base 51 becomes all equal when its bent portion 50A is attached to the wig base 51, and the appearance of the wig looks flat so as to lose three dimensional appearance, giving appearance considerably different from the natural growth of the wearer's own hair on the scalp. As a result, the whole wig looks thick, and gives unnatural appearance when worn.

[0007] In order to solve such a problem, one might try to shift the bent position of the attached hair by a certain distance from the center in the length direction. If the hair 60 with a bending position so formed to have different lengths to one and the other ends is attached to a wig base 61, then as shown in Fig. 9, the length a from the bending position to one end is different from that b to the other end, but since other plurality of hairs 60 are formed similarly to the lengths a and b, and when a plurality of hairs 60 are attached to the wig base 61, all the lengths of hair 60 protruding from the surface of the wig base 61 are either a or b, resulting in the regularity due to hair shifting in the length direction, and as a result, unnaturalness occurs. Here, Fig. 9 illustrates diagrammatically the state of attaching three strands of hair 60 to the wig base 61, but there are numerous hairs attached to an actual wig.

[0008] In order to avoid the above-mentioned defect, it may be considered to prepare a number of strands of hair with their bending positions of the attached hair variously changed, or to attach each one hair at varied bending position, but it requires an extremely laborious preparatory and attaching processes to attach each one strand of hair at varied bending positions, causing the deteriorated process efficiency.

[0009] Patent Reference 1 discloses a method to bring about a decoration effect which has never been seen in conventional wigs by changing the lengths of a plurality of hairs attached to the wig base. According to this art, hairs are prepared with variously different lengths and tints, and are attached to the wig base mixed randomly with the non-uniform tips.

Also, Patent Reference 2 discloses a method to attain natural appearance by attaching hairs different in lengths, tints, and diameters to a wig base. According to this art, in order to attain natural appearance, hairs of different lengths are attached to a wig base thereby the tips of hairs become non-uniform, and hence it is no longer necessary to apply cutting process to hair for non-uniformity of the hair tips after hair attaching.

[0010]

[Patent reference 1] Japan Patent Laid Open 2002-275719 A

[Patent reference 2] Japan Patent H04-44008 (1992)

Disclosure of the Invention

Problems to be Solved

[0011] However, since it is required to prepare many kinds of hairs of different lengths in the method of Patent Reference 1, its preparatory process is quite laborious as mentioned above. Also, it is not easy to attach hairs of a plurality of different kinds of length while mixing and shifting them as designed.

[0012] Further, in the method of Patent Reference 2 hairs of many kinds of different lengths have to be prepared requiring a quite laborious preparatory process. Also, upon attaching to a wig base, it is required to arrange the hairs of the same lengths not to concentrate at the same position causing a laborious attaching process. Further, it is necessary to select in detail the positions in the wig base to attach the hairs of different lengths, and to instruct in detail the operators to make it well understood, and hence it is not practical as in the case of the technique of Patent Reference 1.

[0013] The present invention was created with the above-mentioned aspects taken into consideration, and it is its first object to use a plurality of hairs of the practically equal lengths, and to provide a wig having hairs protruding from its wig base attached to the wig base so that their lengths differ from each other. A second object of the present invention is to offer a method for making a wig by which hairs of practically equal lengths can be used to be attached to various lengths by an ordinary attaching process.

Means to Solve Problems

[0014] In order to attain the above-mentioned first object, a wig of the present invention is provided with a wig base, and a plurality of strands of hair bent at a bent portion, said bent portion being attached to the wig base, **characterized in that** the total length of said respective hair is substantially the same, but the position of said bent portion differs for respective strand of hair, so that the length from the bent portion to one end and the length from said bent portion to the other end are configured to vary for respective strands of hair.

[0015] Preferably, the strands of hair have the length determined by (1) to (4) below so that the length K from the bent portion to one end of each hair satisfies $(X - Y) \leqq K \leqq X$.

(1) When said bent portions of the strands of hair are attached to said wig base, the length of the hair that extends the farthest from the wig base is designated as X [cm].

(2) The value 2X, said length X multiplied by 2, is designated as an apparent total length of a hair bundle in which a bundled plurality of strands of hair are shifted in the length direction non-uniformly so that said bundle is stretched.

(3) A shifting ratio α [%] of hair is multiplied to said apparent total length 2X, and thereby the value Y [cm] is obtained.

(4) The value Z [cm], obtained by subtracting the value Y from said apparent total length 2X, provides said length of the strands of hair to be prepared.

The apparent total length 2X of a hair bundle can be easily adjusted by shifting each hair using, for example, combing means so that one end of the hair bundle becomes gradually more sparse.

The bent portion of hair can be easily formed by sewing the hair bundle at the position X half of the apparent total length 2X, and deforming by heating the sewn portion of the hair bundle.

[0016] In order to attain the above-mentioned second object, a method of making a wig of the present invention is **characterized in that** the method includes: a first step of making a hair bundle by bundling a plurality of strands of hair each having substantially a same length, a second step of stretching the size of a whole hair bundle to a desired length by shifting said strands of hair non-uniformly, a third step of regarding the length of the hair bundle stretched in the second step as an apparent total length and forming bent portions in the bundled strands of hair at the middle position of said apparent total length, and a fourth step of attaching said bent portion of said strands of hair to a wig base.

[0017] In said second step, it is preferable to shift each hair using, for example, combing means so that one end of the hair bundle becomes gradually more sparse and thereby to adjust the total length of the hair bundle to the desired length 2X.

In said second step, the desired length of the hair bundle may be adjusted to the apparent total length 2X [cm] after preparing the hair of the length determined by (1) to (4) below.

(1) When said bent portions of the strands of hair are attached to said wig base, the length of hair that extends the farthest from the wig base is designated as X [cm].

(2) The value 2X, said length X multiplied by 2, is designated as an apparent total length of a hair bundle stretched in the second step.

(3) A shifting ratio α [%] of hair is multiplied to said apparent total length 2X, and thereby the value Y [cm] is obtained.

(4) The value Z [cm], obtained by subtracting the value Y [cm] from said apparent total length 2X, provides said length of the strands of hair to be prepared.

In said third step, it is preferable to sew the hair bundle at the position half of the apparent total length, to form a

bent portion to each hair by deforming the sewn portion by heating treatment to the sewn portion, and to attach the bent portion of each hair to a wig base in said fourth step.

[0018] In order to attach hair to a wig base according to the present invention, a plurality of strands of hair are prepared which are cut to substantially the same length, said strands of hair of the same length are aligned and bundled to form a hair bundle, and shifting work is applied to said hair bundle. Shifting can be conducted by ordinary hair combing (hereinafter, to be referred to as hackling) using, for example, the known hacklers. By hackling, the hairs in a hair bundle can be shifted within the pre-determined range relative to each other. By said shifted portion, the total length of the hair bundle is stretched. The total length of said stretched hair bundle is defined as an apparent total length, and a bent portion is formed at about the middle position of said apparent total length. Thereafter, a hair planting technician can complete a wig having hair of various lengths attached to the wig base by holding the stretched hair bundle and attaching its bent portion to the wig base. Here, the hair to be prepared in conventional arts is cut to the length 2 to 10 cm longer than hair length of the present invention, but, according to the present invention, hair is cut to the size coinciding with the designed length according to the wig wearer's preference or hairstyle.

[0019] According to the present invention, various kinds of hairs having the length K from the bent portion of each hair to one end within the range of (X - Y) to X can be easily manufactured only by setting said hair shifting ratio α [%] so that hair length becomes the desired Z, and adjusting said hair bundle by hackling to an apparent total length 2X. Therefore, since a wig is completed as a final product only by attaching it to a wig base, such works in the prior parts are not required as cutting further hair length to the desired length, and combing by hackling to attain natural feeling after hair attaching work to a wig base.

[0020] Also, even if each of these hairs is randomly selected and attached to a wig base, since the length K from the bent portion to the end for each hair is designed variously ($(X - Y) \leqq K \leqq X$), hairs of the same length do not concentrate at a specific position of the wig base, and hence the finished state of the wig can offer a good natural appearance as if the wearer's own hair is growing.

Effect of the Invention

[0021] Therefore, according to the present invention, since the tips of hair attached to a wig base are finished in the hackled state, the work is not necessary to hackle anew the hair attached to a wig base with scissors for hackling or the like. Therefore, labor for hairstyle adjustment is saved, and the hairstyle can be made which the wig wearer wants without taking much time. Thereby, a wig with natural appearance can be offered.

[0022] Also, according to the present invention, since the finished state of hair tips can be controlled to the desired length as designed in advance by properly changing the number of hackling operations, the finish of the hair tips attached to a wig base can be of good reproducibility, and hair of the desired length can be easily attached to a wig base even without high techniques.

Brief Description of the Drawings

[0023]

Fig. 1 is a diagonal view explaining the work for making apparent length longer by hackling the hair of the pre-determined length in accordance with an embodiment of the present invention.

Fig. 2 is an explanatory view like Fig. 1 of a shifting work.

Fig. 3 is a view illustrating a hair bundle made by hair shifting work.

Fig. 4 is a view illustrating the sewn state with a sewing thread of the hair bundle of Fig. 3.

Fig. 5 is a view illustrating hair having a bent portion formed.

Fig. 6 is a diagrammatical view illustrating the attached state of hair of Fig. 5 to a wig base.

Fig. 7 is a view explaining the state of being gradually more sparse toward the hair tip by hackling.

Fig. 8 is a view explaining conventional methods of hair attaching in (A) and (B).

Fig. 9 is a view explaining another conventional method of hair attaching.

Explanation of Marks and Symbols

[0024]

1:	Hair
5:	Bent portion
10:	Hair bundle
15:	Sewing thread
18:	Wig base
19:	Wig
20:	Hackling machine
21:	Stage
21S:	Upper surface of stage
22:	Hackling needle

Best Modes for Carrying out the Invention

[0025] A wig in accordance with embodiments of the present invention is **characterized in that** it has a plurality of strands of hair of substantially the same length, and is constituted with them attached to a wig base with different lengths.

Here, the material used in the present invention may be any hair material such as artificial hair made of a synthetic fiber such as nylon, modacryl, and polyester, natural hair (human hair), or the mixture thereof, and also for the wig

base, such known materials as artificial skin made of a synthetic resin, a net, and a rib cage-like frame can be utilized. The wig of the present invention is made by using and planting any of said hair to a wig base by a known method, or knotting or bonding it to a wig base.

[0026] First, in making a wig according to the present invention, hairs cut to about the same length are bundled to one set with about 2000 to 6000 strands as a bundle in the preparatory step for attaching hair to a wig base. In this case, the tips of hair are aligned uniformly. As for said size of hair, as described in detail later, consultation is conducted with the client (the wig wearer) at the time of an order of a wig to determine in advance how many cm of the hair should extend upward from the wig base depending upon the client's preference or hairstyle, and strands of hair are prepared by cutting them to a predetermined length in accordance with the design.

[0027] Hackling work of a hair bundle is conducted next. By said hackling, the total length of the hair bundle is stretched so that one end of the hair bundle extends further to one side, and the other end extends further to the other side, thereby the hairs at respective ends becoming gradually more sparse. For hackling, a hackling machine 20 having a number of hackling needles 22 protruding from the upper surface 21S of a stage 21 can be used conveniently, for example, as shown in Fig. 1.

[0028] More specifically, one end of the hair bundle 10 is grabbed by hand, and the other end of the hair bundle 10 is inserted into hackling needles 22 from above of a hackling machine 20 as shown in Fig. 1, and, as shown in Fig. 2, the hair bundle 10 is pulled in the direction of an arrow mark C with the tip portion of the hair bundle 10 hooked to the hackling machine 20. The hair bundle 10 may include several thousands of strands of hair and may be lightly fixated at its middle with both ends being aligned uniformly respectively. Alternatively, hackling may be conducted by holding the bundle by hand so as not to be disintegrated without fixation.

[0029] Thereby, a part of hair 1 in the tip portion of the hair bundle 10 is hooked to the hackling needle 22, and its position is displaced. Namely, if the hair bundle 10 is pulled in the direction of an arrow mark C with a part of hair 1 in the tip portion of the hair bundle 10 hooked to the hackling needle 22, the hair 1 not hooked to the hackling needle 22 is shifted in the direction of an arrow mark C and stretched.

Such hackling is applied to the other end of the hair bundle 10 as well. Said hackling is repeated several times to each end of the hair bundle 10 till it reaches the desired length. Further, the hair bundle 10 is combed (brushed) with a comb or a brush, thereby each hair 1 of the hair bundle 10 stretched by hackling may be sufficiently mixed.

[0030] By conducting such hackling, as shown in Fig. 3, the position of each hair 1 formed to the hair bundle 10 can be shifted randomly. The distance between the outermost tips of hair in the hair bundle 10 in this case, that is, the distance between the tip portions protruding most is defined as an apparent total length.

If it is assumed to design by consultation with the client the longest hair protruding upward from a wig base to be 12 cm and the shortest to be 8 cm, a hair bundle 10 cut to 20 cm is prepared first. Next, the respective longest shifting on the one side and the other side of the hair bundle 10 is designed to be 2 cm, and hackling work is conducted till the apparent total length of the hair bundle reaches 24 cm, then, upon fixing the bent portion of hair to the wig base, a wig can be obtained which has the attached hair of the length from the wig base to the hair tip in the range of about 8 to 12 cm.

[0031] Next, if each hair 1 in the hair bundle 10 is arranged in the direction perpendicular to the axis as shown in Fig. 4, the middle portion of the apparent total length is sewn with a sewing thread 15 so as not to be disintegrated, and is made to the form of weft, then the work of the next step can be performed efficiently. By heating said sewn hair bundle in a drier, the sewn portion with sewing thread 15 is deformed wavy as shown in Fig. 5. Said deformed portion is a fixed portion to the wig base also called as a bent portion 5. Said deformed portion becomes a mark of the bent portion when hair is attached to the wig base, and the lengths to the one end and to the other end differ from each other. Namely, each hair 1 has the equal total length to each other, but the sewn portion of the sewing thread 15 differs for each hair as shown in Fig. 4, so that the position where the bent portion 5 varies for each hair, and the length A from the bent portion 5 to one end and the length B to the other end are variously designed for each hair 1. In this connection, that the total length of each hair is equal does not necessarily mean that it must have strictly the equal size, but naturally some errors are allowed.

[0032] Thermal deformation may be not only for thus forming the bent portion 5, but also said hair bundle may be heated in a drier in the state of being wound around an aluminum pipe to set waving to each hair of the hair bundle. Thereby, it is also possible to deform the sewn portion with sewing thread 15, and at the same time to set waving to hair.

[0033] The thus made each hair 1 is attached to a wig base 18, and a wig 19 is completed as shown in Fig. 6. The bent portion 5 of each hair 1 is attached and fixed to a wig base by conventionally well known methods such as bonding and knotting. Since the position of the bent portion 5 is set to vary on each hair 1, the lengths from each bent portion 5 to a pair of tip portions vary, as shown also in Fig. 6, in the state in which each hair 1 is attached to a wig base. Fig. 6 diagrammatically illustrates the state in which six strands of hair 1 are attached to a wig base 18, but, in an actual wig, hairs of various lengths are densely attached.

[0034] Thus, by a method of hair attaching in accordance with the embodiments of the present invention, since hair 1 of the same length is used, when compared with the case where hairs of different lengths are prepared in advance, and attached to a wig base as in the

conventional methods described in Patent References 1 and 2, its preparatory works and hence the cost for it can be saved. Also, since a wig of the present invention is completed as a final product only by attaching the hair, the length of which is adjusted within the pre-determined range, to a wig base, there is no need to perform work required in the prior art, such as cutting hair to a desired length after attaching work of hair to a wig base, and hairstyling by thinning to attain natural feeling.

[0035] Further in accordance with the present invention, since the length A from a bent portion 5 of each hair 1 to one end and the length B from a bent portion 5 to the other end are each various, regularity in the length of the hair 1 protruding from the wig base 18 can be avoided, and hairs 1 of various lengths extend out from the wig base 18, resulting in natural feeling as if the wearer's own hair grew.

[0036] If hair 1 of a wig 19 is further cut to make the hairstyle preferred by the wearer of the wig 19, since the hair 1 of the wig 19 has been finished in the state in which the hair tip is thinned, the length of the hair 1 to be cut can be short, and the time for cutting can also be saved.

[Example]

[0037] Explanation is made hereafter further specifically of the present invention referring to Example.

The specification is first decided by thorough consultation with the wig client as to which type of a wig said client prefers. For example, such design specification as the kind of a material and the size of a wig base, how to wear on a scalp, the material, color, density, and the length of the hair to be attached to the wig base, and hairstyle is decided. It is especially an important design item for deciding a hairstyle to decide a method of hair attaching and the length of hair protruding from a wig base.

In the present Example, the length of hair 1 to be prepared is decided as follows.

The length X [cm] of the hair 1 extending the farthest from a wig base 18 is decided. In Fig. 6, the hair extending the farthest as the longest from the wig base 18 is shown as 1a. Here, 2X [cm], the value of X multiplied by 2, is designated as an apparent total length.

[0038] A hair shifting ratio α [%] of hair 1 is multiplied to said apparent total length 2X, and thereby the value Y [cm] is obtained. The value Z [cm] that is obtained by subtracting the value Y [cm] from the apparent total length 2X [cm] is the length of hair 1 to be prepared.

[0039] For example, assuming the longest length X from the bent portion 5 of hair 1 to one end to be 20 [cm], and the ratio of hair shifting of a hair bundle 10 to be 10 [%], the length Z of the hair 1 to be prepared is the apparent total length 2X = 40 [cm] minus the length of 10 [%] Y = 4 [cm], that is, 36 [cm]. Here, depending upon hairstyle or hair length, the hair shifting is possible by the pre-determined ratio higher or lower than 10 %.

[0040] By the above-mentioned standard, hair 1 cut to the length substantially Z = 36 [cm] is prepared, bound to one bundle, and said hair bundle 10 is hackled. More specifically, a hair bundle 10 of 36 [cm] is hackled, as shown in Fig. 7, so that it becomes gradually sparse toward the tip, each hair 1 is shifted as shown in Fig. 3, and adjusted so as to make the apparent length 2X of the hair bundle 10 about 40 [cm]. By such a work, a hair bundle 10 of 40 cm in which hairs 1 are shifted randomly can be prepared.

[0041] The middle position X = 20 [cm] of the apparent total length 2X = 40 [cm] is defined as a bent portion 5, and each hair 1 in a hair bundle 10 is sewn at its middle position as the bent portion 5 with sewing thread using, for example, a sewing machine for randomly disintegrated hairs, and it is marked as a bent position for attaching. Here, in order to form a bent portion 5 to each hair 1, for example, in case of acrylic or human hair, heating treatment is applied at 80 to 100°C for about an hour, and in case of nylon or polyester hair, heating treatment is applied at about 140 to 180°C for about an hour. Thereby, a bent portion 5 deformed to a wavy shape is formed as shown in Fig. 5. Various kinds of hairs 1 exist with the length Y from the bent portion 5 to the tip in the wide range of 16cm to 20 cm.

[0042] If such hair 1 is attached to a wig base 18, since no regularity exists for the length from the bent portion 5 to the tip of each hair 1, it is not necessary to selectively use each hair 1, and attaching work can be conducted by picking up hair arbitrarily, and further, since it is not necessary to select hair 1, work is simplified.

[0043] As described in detail above, the present invention can be implemented in various embodiments within the range of its essential principle. For example, the explanation above did not refer to the color or size of hair 1 utilized by a hair attaching method; needless to say, as long as they have the same length, hair materials of different sizes and/or colors may be mixed for use.

[0044] Also, the values of an apparent total length 2X and a shifting ratio α [%] are not limited to those exemplified, but may be other values. It should also be noted that, in the present invention, the hair shifting ratio is preferably 10 to 30 [%] in case that the apparent total length is 40 [cm].

Claims

1. A wig provided with a wig base and a plurality of strands of hair each of which strands is bent at a bent portion and attached to the wig base at said bent portion, **characterized in that**:

   the total length of different ones of the plurality of strands of hair is substantially the same, but the position of said bent portions differs for those different strands of hair, so that the length from the bent portion to one end and the length from said bent portion to the other end are configured to vary as between those different strands of

hair.

2. The wig as set forth in Claim 1, **characterized in that:**

said strands of hair have the length determined by (1) to (4) below so that the length K from the bent portion to one end of each hair satisfies

$$(X - Y) \leq K \leq X.$$

(1) While said bent portions of the strands of hair are attached to said wig base, the length of a hair piece from the wig base that extends the farthest from the wig base is designated as X [cm].
(2) The value 2X, said length X multiplied by 2, is designated as an apparent total length of a hair bundle in which a bundled plurality of strands of hair are shifted in the length direction non-uniformly so that said bundle is stretched.
(3) A shifting ratio α [%] of hair is multiplied to said apparent total length 2X, and thereby the value Y [cm] is obtained.
(4) The value Z [cm], obtained by subtracting the value Y [cm] from said apparent total length 2X, provides said length of the strands of hair to be prepared.

3. The wig as set forth in Claim 2, **characterized in that:**

the hair bundle is adjusted so as to have said apparent total length 2X by shifting each hair so that one end of said hair bundle becomes gradually more sparse.

4. The wig as set forth in Claim 2, **characterized in that:**

said hair bundle is sewn at the half position X of the apparent total length 2X, said bent portion is formed to each hair by heating and deforming at least the sewn portion of said hair bundle, and the bent portion of each hair is attached to a wig base.

5. A method of making a wig **characterized in that** the method includes:

a first step of making a hair bundle by bundling a plurality of strands of hair each having substantially a same length,
a second step of stretching the size of a whole hair bundle to a desired length by shifting said strands of hair non-uniformly,
a third step of regarding the length of the hair bundle stretched in the second step as an apparent total length and forming bent portions in the bundled strands of hair at the middle position of said apparent total length, and
a fourth step of attaching said bent portion of said strands of hair to a wig base.

6. The method of making a wig as set forth in Claim 5, **characterized in that** the method includes preparing strands of hair having the length determined by (1) to (4) below, and in said second step, said hair bundle is adjusted to have the apparent total length 2X [cm] as determined below.

(1) While said bent portions of the strands of hair are attached to said wig base, the length of hair from the wig base that extends the farthest from the wig base is designated as X.
(2) The value 2X, said length X multiplied by 2, is designated as an apparent total length of a hair bundle stretched in said second step.
(3) A shifting ratio α [%] of hair is multiplied to said apparent total length 2X, and thereby the value Y [cm] is obtained.
(4) The value Z [cm], obtained by subtracting the value Y [cm] from said apparent total length 2X [cm] is designated as the length of the strands of hair to be prepared.

7. The method of making a wig as set forth in Claim 5, **characterized in that**:

the hair bundle is adjusted so as to have said apparent total length 2X by shifting each hair so that one end of the hair bundle becomes gradually more sparse in said second step.

8. The method of making a wig as set forth in Claim 5, **characterized in that**:

the hair bundle is sewn at the half position of the apparent total length in said third step, said bent portion is formed to each hair by applying heating treatment to at least the sewn portion of said hair bundle and deforming the sewn portion, and thereafter the bent portion of each hair is attached to a wig base in said fourth step.

9. The method of making a wig as set forth in Claim 6, **characterized in that**:

the length K from said bent portion of hair to one end is provided by $(X - Y) \leqq K \leqq X$.

FIG.1

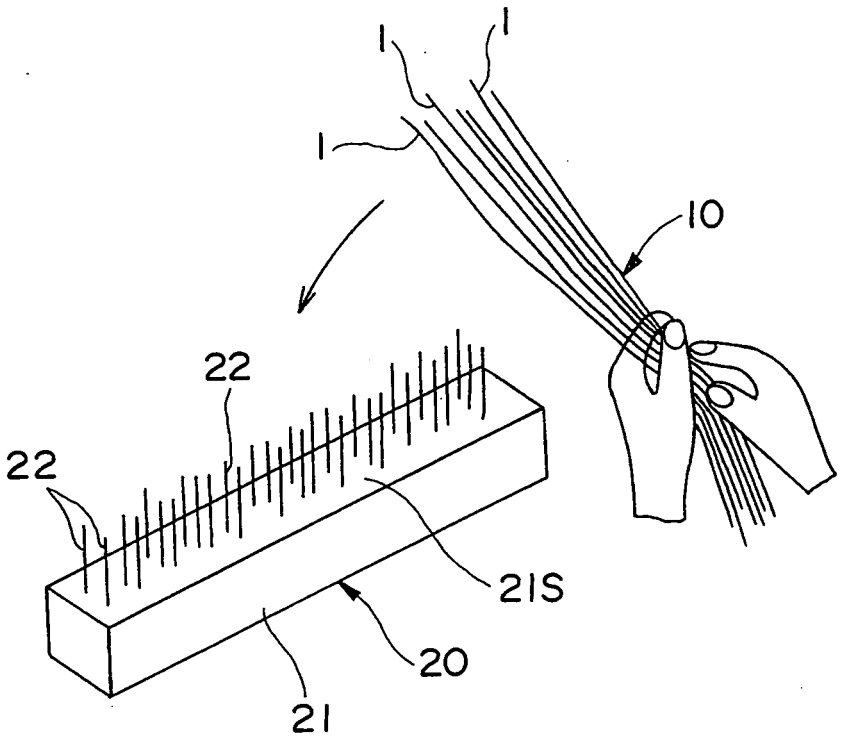


FIG.2

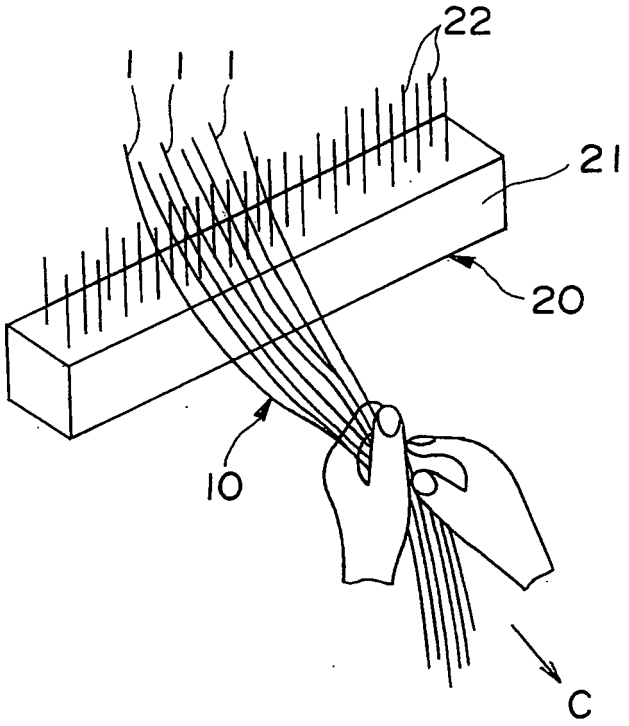


FIG.3

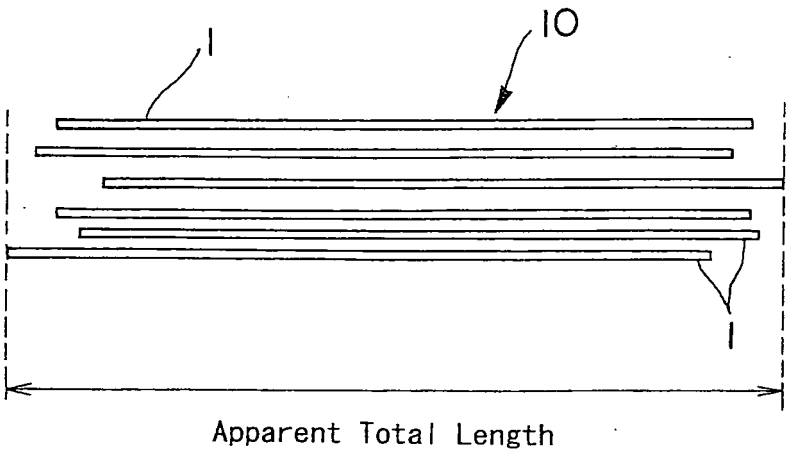


FIG.4

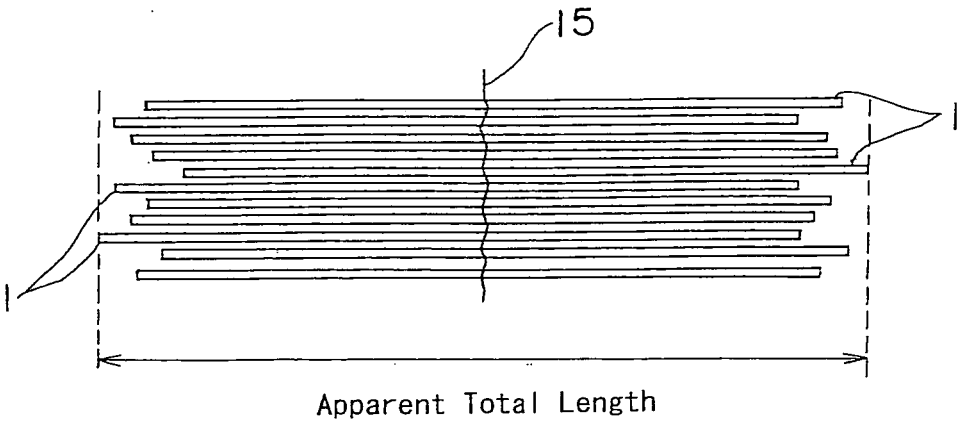


FIG.5

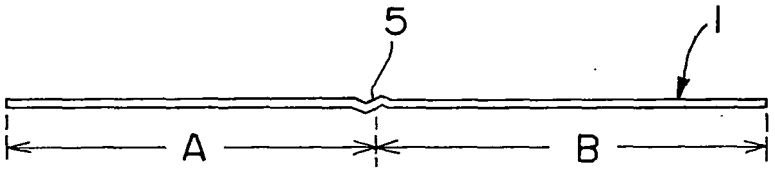


FIG.6

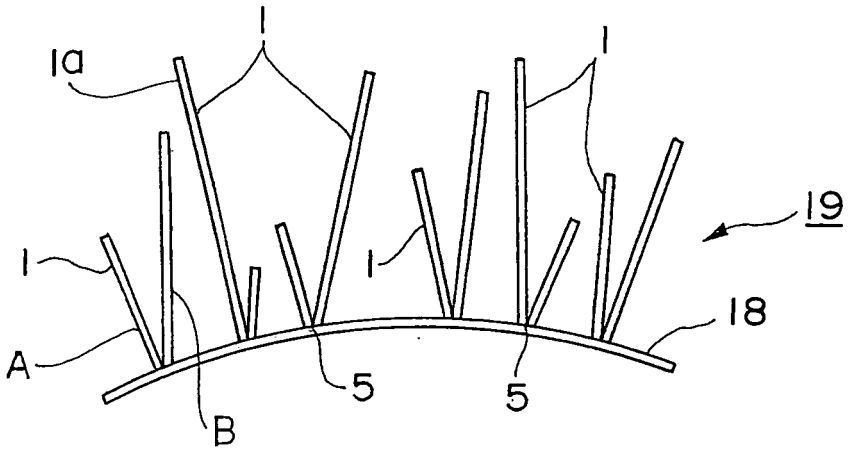


FIG.7

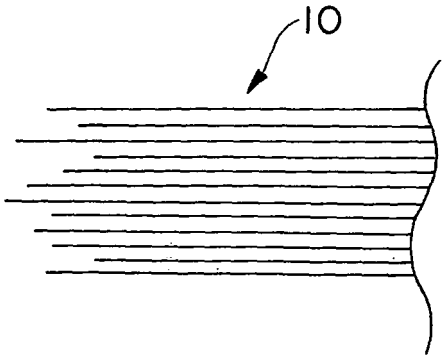


FIG.8

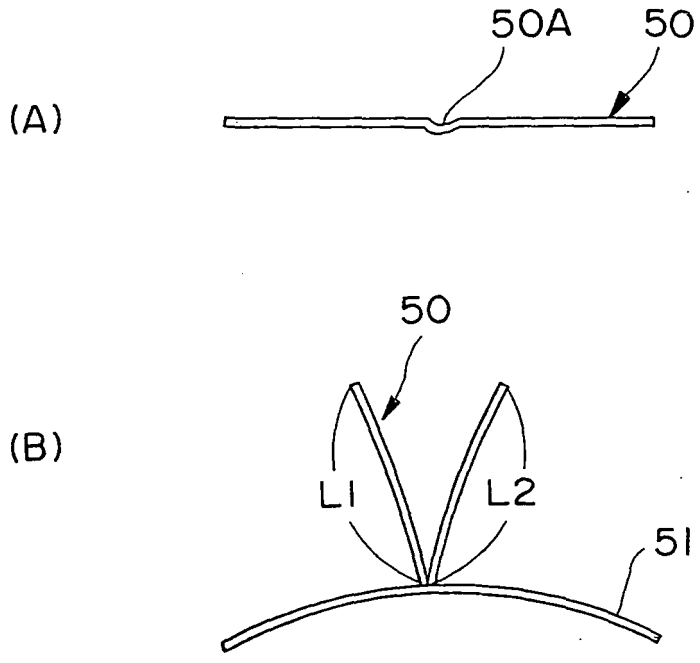
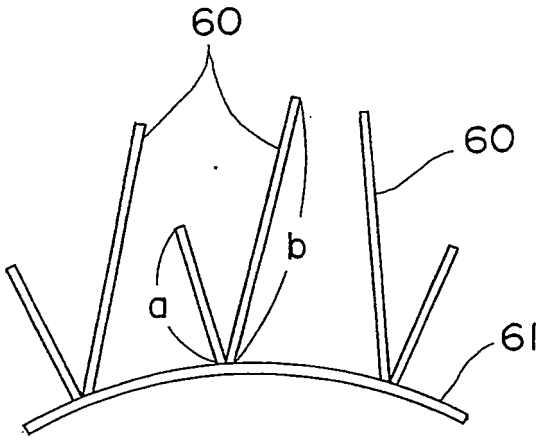


FIG.9



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2007/050396

A. CLASSIFICATION OF SUBJECT MATTER
A41G3/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A41G3/00-5/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2007
Kokai Jitsuyo Shinan Koho 1971-2007 Toroku Jitsuyo Shinan Koho 1994-2007

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 50-73760 A (Kaneka Corp.), 18 June, 1975 (18.06.75), Full text; Figs. 1, 2 (Family: none)	1-9
Y	JP 2002-275719 A (Funny Co., Ltd.), 25 September, 2002 (25.09.02), Par. Nos. [0006] to [0007]; Figs. 3, 4 (Family: none)	1-9

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
23 March, 2007 (23.03.07)	03 April, 2007 (03.04.07)
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer
Facsimile No.	Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2007/050396

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 6460/1972(Laid-open No. 82091/1973) (Brentwood Industries Inc.), 06 October, 1973 (06.10.73), Description, page 3, line 19 to page 4, line 2; Fig. 7 (Family: none)	4,8

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2002275719 A **[0010]**
- JP H0444008 B **[0010]**