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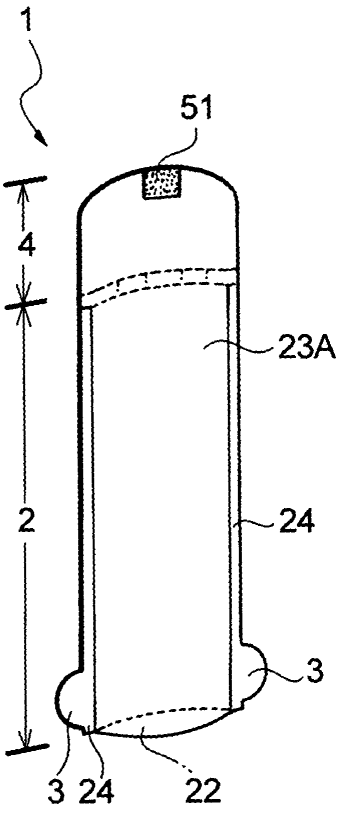
(54) **HAIR HOLDER**

(57) A hair holder 1 including a tube 2 configured to have a strand of hair inserted from its opening (21) at one end toward its opening (22) at the opposite end. The tube 2 is formed of a first side sheet 23A that is to be an inner side when rolled up and a second side sheet 23B that is to be an outer side when rolled up. The first side sheet 23A and/or the second side sheet 23B has a Taber stiffness of 0.4 mN·m or more. The tube 2 is provided, in or on its portion forming the opening 21, with a stress relaxing means that relaxes the stress applied to a hair strand having been inserted through the opening 21.

Fig.1(a)



EP 1 925 228 A1

Description

Technical Field

[0001] The present invention relates to a hair holder used to roll a strand of hair into a desired shape.

Background Art

[0002] Patent Document 1 discloses a hair holder comprising a flat tube formed of a sheet in such a design to allow a strand of hair to be inserted from an opening at one end toward an opening at the other end. Examples of the tube of the hair holder described in Patent Document 1 include a tube having substantially no extensibility in the longitudinal direction formed by joining two sheets along their long side edges, one of the sheets having a Taber stiffness of 0.4 mN·m or less, and the other having a Taber stiffness of more than 0.4 mN·m.
It is possible with the hair holder having the above-specified tube to curl a hair strand inserted into the tube easily, certainly, and neatly without using a curling rod.

[0003] Patent Document 1: JP 2003-319815A

Disclosure of the Invention

[0004] The problem of the hair holder disclosed in Patent Document 1 is that the hair in the tube is liable to bend awkwardly near the inlet (one of the openings) of the tube, for example, when a large amount of hair is inserted into the tube or when damaged hair is rolled up with the tube and permed. Undesirably bent hair will be set as it is and, in extreme cases, may break off at the bend.

[0005] The present invention relates to a hair holder that hardly causes hair to bend undesirably near the inlet of its tube even when a large amount of hair is inserted into the tube or when damaged hair is rolled up with the tube.

[0006] The invention provides a hair holder including a tube having an opening at one end (hereinafter "a first opening") and an opening at the opposite end (hereinafter "a second opening") thereof and configured to have a strand of hair inserted from the first opening toward the second opening. The tube has a first side that is to be an inner side when rolled up and a second side that is to be an outer side when rolled up. The tube is formed of a first side sheet defining the first side and a second side sheet defining the second side. The first side sheet and/or the second side sheet has a Taber stiffness of 0.4 mN·m or more. The tube is provided, around the first opening thereof, with a stress relaxing means that relaxes the stress imposed to a hair strand having been inserted through the first opening.

Brief Description of the Drawings

[0007]

Fig. 1(a) is a perspective front view of a hair holder according to a first embodiment of the present invention.
Fig. 1(b) is a perspective rear view of the hair holder of the first embodiment.
Fig. 1(c) is a cross-section taken along line segment C-C in Fig. 1(b).
Fig. 2 is a perspective of the hair holder of the first embodiment in its self-rolled state.
Fig. 3 is a fragmentary rear view showing the first opening of the tube of the hair holder according to the first embodiment.
Fig. 4(a) is a perspective view illustrating the way of curling a hair strand using the hair holder of the first embodiment.
Fig. 4(b) is a perspective view illustrating the way of curling a hair strand using the hair holder of the first embodiment.
Fig. 4(c) is a perspective view illustrating the way of curling a hair strand using the hair holder of the first embodiment.
Fig. 5 is a perspective view of the hair holder of the first embodiment having a hair strand inserted therein.
Fig. 6(a) is a fragmentary rear view showing the first opening of the tube of a hair holder according to a second embodiment (corresponding to Fig. 3).
Fig. 6(b) is a cross-section taken along line segment X-X in Fig. 6(a).
Fig. 7(a) is a fragmentary perspective view showing the first opening of the tube of a hair holder according to a third embodiment.
Fig. 7(b) is a side view of Fig. 7(a).
Fig. 8 is a fragmentary rear view showing the first opening of the tube of a hair holder according to a fourth embodiment (corresponding to Fig. 3).
Fig. 9 is a fragmentary rear view showing the first opening of the tube of a hair holder according to a fifth embodiment (corresponding to Fig. 3).
Fig. 10(a) is a fragmentary rear view showing the first opening of the tube of a hair holder according to a sixth embodiment (corresponding to Fig. 3).
Fig. 10(b) is a fragmentary view of a sheet material forming the second side sheet of the hair holder of the sixth embodiment.
Fig. 11(a) is a perspective view of a bent-edged plate member used in a hair holder of a seventh embodiment.
Fig. 11(b) is a fragmentary cross-section of the hair holder of the seventh embodiment, showing the first opening of the tube (corresponding to Fig. 6(b)).

Detailed Description of the Invention

[0008] The hair holder of the present invention will be described with reference to its first preferred embodiment by way of the accompanying drawings.
As illustrated in Figs. 1(a) to 3, the first embodiment pro-

vides a hair holder 1 including a tube 2 configured to have a hair strand inserted therethrough from a first opening 21 at one end to a second opening 22 at the other end. The tube 2 has a first side that is to be an inner side when rolled up and a second side that is to be an outer side when rolled up. The tube 2 is formed of a first side sheet 23A defining the first side and a second side sheet 23B defining the second side. The first side sheet 23A and/or the second side sheet 23B has a Taber stiffness of 0.4 mN·m or more. The tube 2 is provided, in or on its portion forming the first opening 21, with a stress relaxing means that relaxes the stress exerted on a hair strand having been inserted through the first opening 21.

[0009] The hair holder 1 of the first embodiment will be described hereunder in detail. As illustrated in Figs. 1(a) to 1(c), the hair holder 1 mainly includes the tube 2, an extension 4, and a pair of tightening tabs 3.

As illustrated, the tube 2 has a flat shape and is configured to have a hair strand H (see Figs. 4(a) to 4(c)) inserted therethrough from the first opening 21 to the opposite second opening 22. The tube 2 is formed by joining the first side sheet 23A and the second side sheet 23B. Specifically, the tube 2 is formed by joining the first side sheet 23A and the second side sheet 23B along their long side edges 24. The first side sheet 23A defines the first side of the tube that is to be an inner side when the tube is rolled up. The second side sheet 23B defines the second side of the tube that is to be an outer side when the tube is rolled up.

[0010] The tube 2 preferably measures 50 to 350 mm in length, 20 to 100 mm in width. These dimensions can be decided as appropriate to the length of the hair, what part of the hair is to be curled, and the amount of hair of the hair strand to be inserted.

[0011] In describing the first side sheet 23A and the second side sheet 23B in common, these two sheets will be generically called base sheets 23. Examples of materials forming the base sheets 23 include nonwoven fabrics (such as polyethylene nonwoven fabric and polyethylene terephthalate nonwoven fabric), woven fabrics, mesh sheets, porous or non-porous resin films (e.g., polyethylene film and polyethylene terephthalate film), paper, polymer sheets, rubber sheets, and composites of these materials. The base sheets 23 each preferably have a thickness of 30 to 500 μm.

[0012] The second side sheet 23B has a plurality of slits 26 that are long in the lateral direction of the sheet 23B and are spacedly arranged in the longitudinal direction of the sheet 23B. The slits 26 are provided primarily for the purpose of enhancing the extensibility of the second side sheet 23B. In the first embodiment, each slit 26 has a circular hole punched out at both ends 26A. The middle part of the slit 26 between the ends 26A is formed by slitting with a thin blade.

[0013] An engageable member 52 engageable with an engaging member 51 (described *infra*) is provided on the second side sheet 23B near the first opening 21. The engageable member 52 also has the slit 26 cut across. The second side sheet 23B, while sectioned by the slits 26, is still a unitary strip-shaped sheet as a whole. The engageable member 52 can be of any material as long as it is engageable with the engaging member 51, for example, nonwovens. The engageable member 52 preferably has a certain amount of length, for example, 2 to 15 cm, in the longitudinal direction of the tube 2 because the longitudinal position of the engagement with the engaging member 51 varies depending on the final diameter of the roll of the tube 2.

[0014] In the first embodiment, the first side sheet 23A is formed of polyester nonwoven fabric having a weight of 150 g/m^2 and has no slits 26, and the second side sheet 23B is formed of polyester nonwoven fabric having a weight of 50 g/m^2 and has ten slits 26.

[0015] One of, or both of, the first side sheet 23A and the second side sheet 23B has/have a Taber stiffness of 0.4 mN·m or more, preferably 1 mN·m or more. With that Taber stiffness, the tube 2 having a hair strand H inserted therethrough is rolled up neatly with no aid of a curling rod. When only one of the base sheets 23 has a Taber stiffness of 0.4 mN-m or more, it is preferred that the base sheet 23 with that Taber stiffness be the first side sheet 23A. It is particularly preferred that both the base sheets 23 have a Taber stiffness of 0.4 mN·m or more.

The upper limit of the Taber stiffness is 10 mN·m in view of ease of rolling the tube 2.

The Taber stiffness is measured in accordance with the stiffness testing method specified in JIS P8125.

[0016] The second side sheet 23B has its long side edges reinforced by bonding thereto a reinforcing member B the width of which is almost the same as the width of the side joints (seal) between the base sheets 23. The reinforcing members B adhered to the second side sheet 23B increase the overall Taber stiffness of the tube 2. The reinforcing member B is provided on only the side edges 24 of the tube 2 so that the ease of widening the first opening 21 of the tube 2 is not affected, nor is affected ease of inserting a hair strand H into the tube 2.

[0017] The tube 2 is adapted to roll itself up into a prescribed shape and keep the rolled state. Specifically, the tube 2 has been adapted by a prescribed means to have the property of reverting to a previously defined rolled-up state with the second side sheet 23B out and keeping the rolled up state as illustrated in Fig. 2.

Therefore, when the tube 2 in the unrolled, straightened state (as illustrated in Figs. 1(a) to 1(c)) is let free, it spontaneously returns to its previously defined rolled shape as illustrated in Fig. 2. The hair holder 1 having such a self-rolling tube 2 needs no rolling operation. There is another advantage that means for maintaining the rolled state, such as a clip, is unnecessary.

The self-rolling tube 2 can be obtained by rolling up a tube, fixing the tube in the rolled up state by a prescribed means, and heating the rolled up tube to a prescribed temperature to make the tube memorize the rolled shape.

[0018] The hair holder 1 has an extension 4 extending from the end of the first side sheet 23A forming the first

opening 21 in the longitudinal direction of the tube 2 (opposite to the direction of inserting a hair strand H) as illustrated in Figs. 1(a) to 1(c). In the first embodiment, the first side sheet 23A and the extension 4 are integral with each other.

[0019] The extension 4 has an engaging member 51 on its side opposite to the second side sheet 23B. After the tube 2 self-rolls, the engaging member 51 engages with the engageable member 52 to maintain the roll shape of the tube 2. The engaging member 51 is exemplified by a male member of a mechanical fastener.

The engaging member 51 may be capable of engaging with the second side sheet 23B depending on the material of the second side sheet 23B.

[0020] A pair of tightening tabs 3 are provided on the long sides 24 of the tube 2 near the second opening 22. Each tightening tab 3 is a semicircle extending laterally outward from the side 24.

The first side sheet 23A, the second side sheet 23B, and the reinforcing member B each has extensions corresponding to the tightening tabs 3. In other words, the tightening tabs 3 are formed of a laminate of the extensions of the first side sheet 23A, the second side sheet 23B, and the reinforcing member B.

The method of forming the tightening tabs 3 and their shape, size, thickness, position, etc. are decided as appropriate.

[0021] A stress relaxing means for relaxing the stress applied to a hair strand H having been inserted through the first opening 21 is provided in a portion of the tube forming the first opening 21 (hereinafter "a first-opening-forming portion"). The stress relaxing means adapted in the first embodiment is a flap 61 provided in the first-opening-forming portion of the second side sheet 23B. The flap 61 is not joined to the first side sheet 23A.

[0022] The flap 61 is a part of the first-opening-forming portion of the second side sheet 23B and is not joined to the first side sheet 23A nor to the extension 4. The length of the flap 61 along the longitudinal direction of the tube 2 is appropriately decided. It is preferably from 1 to 30 mm, more preferably 5 to 15 mm. The flap 61 is configured to bend back from the first side sheet 23A along a base line 61A connecting two first-opening-sided ends of the opposite joined sides 24. The shape of the flap 61 is not limited to a rectangle as in the first embodiment shown and may be, for example, a trapezoid, a semiellipse or a semicircle.

[0023] The flap 61 has at least one slit 62 extending in the longitudinal direction of the tube 2. The length, number, interval of the slits 62 are decided appropriately. The length of the slit 62 is, for example, such that the slit 62 exceeds the above-identified base line 61A, specifically from 2 to 40 mm. The number of the slits 62 is, for example, 1 to 8. The interval of the slits 62 is, for example, 5 to 20 mm.

[0024] Usage of the hair holder according to the first embodiment will be described taking, for instance, application to permanent waving by way of Figs. 4(a) to 4(c). First of all, a hair holder 1 having a tube 2 with appropriate length and width is chosen according to the amount of hair of a hair strand H or a desired curling style. As shown in Fig. 4(a), the first opening 21 of the tube 2 is widened to make an elliptic opening, and a hair strand H is introduced into the first opening 21.

[0025] After the hair strand H is inserted through the tube 2, the tube 2 is rolled up from the second opening 22 with the first side sheet 23A inside as illustrated in Figs. 4(a) and 4(b). While the tube 2 of the first embodiment self-rolls since it has been so adapted as to retain its previously defined rolled state, rolling the tube 2 while pinching the tightening tabs 3 between fingers will ensure the rolling with a desired tightness.

After the tube 2 is rolled up, the engaging member 51 engages with the engageable member 52 as illustrated in Fig. 4(c). As a result, the tube 2 is fixed in its rolled state with a prescribed diameter.

[0026] Thereafter a hair treating agent for permanent waving is applied to the hair strand H from the outside of the tube 2. After an elapse of a given time, the hair strand H is released from the tube 2 and subjected to post-treatment such as shampooing to complete permanent waving.

The first opening 21 of the tube 2 can be widened into a circular shape when a hair strand H is inserted therethrough, which will be more helpful to insert the hair strand H smoothly. A hair inserter (not shown) having a hair catching hook may be used to help a user to insert a hair strand H. The tip of the hair strand H may stick out of the second opening 22.

[0027] After the tube 2 having the hair strand H therein is rolled with the first side sheet 23A inside, the hair strand H inserted in the tube 2 and rolled up generates a force to return to its original straight state. As a result, the part of the hair strand H near the first opening 21 is given a stress to bend.

Hence, the hair holder 1 of the first embodiment has the flap 61 provided at the first-opening-forming end of the tube 2 as a stress relaxing means for relaxing the stress exerted on the hair strand H having been inserted through the first opening 21. The flap 61 is a first-opening-forming portion of the second side sheet 23B that is not joined to the first side sheet 23A.

[0028] As shown in Fig. 5, the flap 61 bends back away from the first side sheet 23A so that the stress imposed to the part of the hair strand H near the first opening 21 of the tube 2 is relaxed. With the flap 61 being pushed to the direction of bending by the hair strand H, a reaction force will be generated to move the rolled tube 2 in the direction indicated by arrow D in Fig. 5. By this movement, the stress on the hair strand H near the first opening 21 will be further relaxed. As a result, even when a large amount of hair is inserted into the tube 2 or when damaged hair is rolled up with the tube 2, the hair strand H is less likely to bend near the first opening 21 of the tube 2. In particular, since the flap 61 used in the first embodiment has slits 62 cut therein, the flap 61 bends back while

spreading in the lateral direction of the tube 2, which enhances the stress relaxing effect on the hair strand H.

[0029] Second to seventh embodiments of the hair holder according to the present invention will then be illustrated. The description will generally be confined to the differences from the first embodiment. The description on the first embodiment applies to the second to seventh embodiments unless otherwise specified. The hair holders of the second to seventh embodiments can be used in the same manner as that of the first embodiment to produce the same effects as in the first embodiment.

[0030] The hair holder of the second embodiment is designed such that the flap 61 exerts a restoring force toward the first side sheet 23A (a restoring force in the direction indicated by the arrow in Fig. 6(b) about the base line 61A as an axis as illustrated in Fig. 6). The hair holder of the second embodiment is otherwise structurally the same as that of the first embodiment. As illustrated in Figs. 6(a) and 6(b), the flap 61 in the second embodiment has the reinforcing member B bonded to its both sides. The reinforcing member B causes, by its stiffness, the flap 61 to exert a restoring force to the first side sheet 23A. The reinforcing member B on both sides of the flap 61 is an extension from the reinforcing member B provided on both sides 24 of the first side sheet 23A. In addition to the provision of the reinforcing member B on the flap 61, configurations by which the flap 61 is made to exert a restoring force to the first side sheet 23A include making the flap 61 of a shape memory material having the property of reverting to its original shape.

[0031] As stated, the hair holder of the second embodiment is structurally the same as that of the first embodiment and is additionally configured so that the flap 61 may exert a restoring force to the first side sheet 23A. It follows that the second embodiment offers the advantage that the flap 61 hardly loses its resilience even after repeated use in addition to the effects of the first embodiment. A flap 61 having lost its resilience would be liable to cause a hindrance in using the hair holder or inconvenience in handling the hair holder and fail to produce the stress relaxing effect (the effect to relaxing the stress applied to the hair strand). Accordingly, the flap 61 that exerts a restoring force to the first side sheet 23A and hardly loses resilience continues exhibiting the stress relaxing effect without causing a hindrance in using the hair holder or inconvenience in handling the hair holder.

If the restoring force of the flap 61 is too strong, which may interfere with stress relaxation, the object primarily aimed at in the invention. Accordingly, the restoring force of the flap 61 is preferably set within a range that does not impair the stress relaxing effect.

[0032] The stress relaxing means adopted in the third embodiment of the hair holder is a bulge provided in the first-opening-forming portion of the second side sheet 23B as illustrated in Figs. 7(a) and 7(b). The bulge is shaped by bending back the first-opening-forming portion of the second side sheet 23B away from the first side sheet 23A. Such a bent-back shape is formed by plastic deformation of first-opening-forming portion (inclusive of the edge 25) of the second side sheet 23B. The amount of bending back L1 of the second side sheet 23B is decided as appropriate and is preferably from 5 to 30 mm.

[0033] According to the third embodiment, after the tube 2 having a hair strand H inserted therein is rolled up, the hair strand H near the first opening 21 of the tube 2 is allowed to move to the second side sheet 23B forming the bulge so that the stress imposed to the hair strand H can be relaxed. Thus, the same effect as in the first embodiment is achieved.

[0034] The stress relaxing means adopted in the fourth embodiment of the hair holder is a cutout 25 made in the first-opening-forming portion of the second side sheet 23B as illustrated in Fig. 8. The cutout 25 is concave toward the second opening 22. The shape of the cutout 25 may be, for example, a semiellipse or a semicircle. The depth L2 of the cutout 25 is decided appropriately. It is preferably 5 to 30 mm.

[0035] According to the fourth embodiment, after the tube 2 having a hair strand H inserted therein is rolled up, the hair strand H near the first opening 21 of the tube 2 is allowed to move to the edge of the cutout 25 so that the stress imposed to the hair strand H can be relaxed. Thus, the same effect as in the first embodiment is achieved.

[0036] A stress relaxing means adopted in the fifth embodiment of the hair holder is a stretch material 63 that is stretchable under a small load provided on the first-opening-forming portion of the second side sheet 23B as illustrated in Fig. 9. The length of the stretch material (in the longitudinal direction of the tube 2) is decided appropriately. It is preferably 10 to 50 mm. The phrase "stretchable under a small load" means to be capable of stretching at 5% or more under a load of 5 N. Examples of such a stretch material include polyethylene nonwovens, polypropylene nonwovens, polyester nonwovens, rubber thread wovens, and rubber fiber nonwovens.

[0037] The stretch material 63 includes a portion E unjoined to the first side sheet 23A and located nearer to the first opening 21 than to the second opening 22 (see Fig. 9).

The tube 2 having the stretch material 63 on the first-opening-forming portion of the second side sheet 23B is obtained by uniting the stretch material 63 to a material that does not stretch under a small load in the longitudinal direction of the tube 2 or by disposing the stretch material 63 longitudinally next to the second described material with an unbonded overlap.

[0038] According to the fifth embodiment, after the tube 2 having a hair strand H inserted therein is rolled up, the hair strand H near the first opening 21 of the tube 2 pushes the stretch material 63 to cause it to stretch and thereby moves away from the first side sheet 23A so that the stress imposed to the hair strand H can be relaxed. Thus, the same effect as in the first embodiment is achieved.

[0039] A stress relaxing means adopted in the sixth embodiment of the hair holder is a folded portion 64 pro-

vided in the first-opening-forming portion of the second side sheet 23B and having a part thereof folded in the lateral direction of the tube 2 as illustrated in Fig. 10(a). The amount of folding in the lateral direction is decided as appropriate to the desired amount of stress relaxation. The second side sheet 23B having the folded portion 64 shown in Fig. 10(a) is obtained using a sheet material having a pentagonal region 64' at its end that will provide the first opening 21 as illustrated in Fig. 10(b). The pentagonal region 64' is folded along V-shaped folding line 64A into a rectangle. The second side sheet 23B with the resulting folded portion 64 is then joined to the first side sheet 23A along both side edges 24 to make the tube 2.

[0040] According to the sixth embodiment, after the tube 2 having a hair strand H inserted therein is rolled up, the hair strand H near the first opening 21 of the tube 2 pushes the folded portion 64 to unfold it and thereby moves away from the first side sheet 23A so that the stress imposed to the hair strand H can be relaxed. Thus, the same effect as in the first embodiment is achieved.

In the sixth embodiment, while not shown, the folded portion as a stress relaxing means may be replaced with a portion slackened in the lateral direction of the tube 2 provided in the first-opening-forming portion of the second side sheet 23B.

[0041] A stress relaxing means adopted in the seventh embodiment of the hair holder is a bent-edged plate member 65 provided along the first-opening-forming portion of the second side sheet 23 B as illustrated in Figs. 11(a) and 11(b). The bent-edged plate member 65 includes a bending portion 65A sticking from the first opening 21 and bending toward the second side sheet 23B away from the first side sheet 23A.

As illustrated in Fig. 11(a), the bent-edged plate member 65 is nearly triangular in a plan view and has its upper side edge bent outward in a side view. The bent-edged plate member 65 is formed of, for example, resin film or metal. As illustrated in Fig. 11(b), the bent-edged plate member 65 is bonded to the inner side of the first-opening-forming portion of the second side sheet 23B with its bending portion 65A sticking outward from the first opening 21 and bending from the first side sheet 23A toward the second side sheet 23B.

[0042] According to the seventh embodiment, after the tube 2 having a hair strand H inserted therein is rolled up, the hair strand H near the first opening 21 of the tube 2 is allowed to move to the bending portion 65A of the bent-edged plate member 65 so that the stress imposed to the hair strand H can be relaxed. Thus, the same effect as in the first embodiment is achieved.

[0043] The bent-edged plate member 65 may be either bonded, as described above, or non-bonded to the second side sheet 23B of the tube 2. The bent-edged plate member 65 that is not bonded is used as disposed at the first opening 21 so that a hair strand H is inserted from the first opening 21 between the member 65 and the first side sheet 23A to generate the same effect as the member 65 bonded to the second side sheet 23B (see Fig. 11(b)).

Alternatively, after the tube 2 having a hair strand H inserted therethrough is rolled up, the bent-edged plate member 65 is inserted between the second side sheet 23B and the hair strand to produce the same effect as the member 65 bonded to the second side sheet 23B (see Fig. 11(b)).

[0044] The hair holder of the present invention is not limited to the above-described embodiments, and various changes and modifications can be made thereto without departing from the spirit and scope thereof.

The stress relaxing means is not limited to those used in the foregoing embodiments. Any stress relaxing means can be used as long as it is capable of relaxing the stress exerted on the hair strand inserted through the first opening of the tube.

The first side sheet 23A and the second side sheet 23B may be formed of a single sheet material. In that case, the sheet material is folded into two along its longitudinal centerline to make the tube 2.

[0045] The application of the hair holder according to the present invention includes not only permanent waving but also other techniques for curling hair such as hot curling (heat is applied to a rolled strand of hair using a hair dryer, etc.), cold curling (a strand of hair, either dry or wet, is rolled up and just left for a period of time to conform to the shape).

Industrial Applicability

[0046] The hair holder according to the present invention hardly causes a strand of hair to bend undesirably near the inlet of its tube.

Claims

1. A hair holder comprising a tube having an opening at one end and an opening at the opposite end thereof and configured to have a strand of hair inserted from the opening at one end toward the opening at the opposite end,
   the tube having a first side that is to be an inner side when rolled up and a second side that is to be an outer side when rolled up and having a first side sheet defining the first side and a second side sheet defining the second side, at least one of the first side sheet and the second side sheet having a Taber stiffness of 0.4 mN·m or more, and
   the tube being provided with a stress relaxing means in or on its portion forming the opening at one end, the stress relaxing means being adapted to relax the stress applied to a hair strand having been inserted through the first opening.

2. The hair holder according to claim 1, wherein the stress relaxing means is a flap provided in the portion

forming the opening at one end of the second side sheet, the flap being not joined to the first side sheet.

3. The hair holder according to claim 2, wherein the flap has a reinforcing member bonded thereto such that the reinforcing member causes, by its stiffness, the flap to exert a restoring force to the first side sheet.

4. The hair holder according to claim 1, wherein the stress relaxing means is a bulge provided in the portion forming the opening at one end of the second side sheet.

5. The hair holder according to claim 1, wherein the stress relaxing means is a cutout made in the portion forming the opening at one end of the second side sheet.

6. The hair holder according to claim 1, wherein the stress relaxing means is a stretch material provided on the portion forming the opening at one end of the second side sheet, the stretch material being stretchable under a small load.

7. The hair holder according to claim 1, wherein the stress relaxing means is a portion folded or slackened in the lateral direction of the tube and provided in the portion forming the opening at one end of the second side sheet.

8. The hair holder according to claim 1, wherein the stress relaxing means is a bent-edged plate member provided on the portion forming the opening at one end of the second side sheet, the bent-edged plate member having a bending portion sticking outward from the opening at one end and bending toward the second side sheet away from the first side sheet.

Fig.1(a)

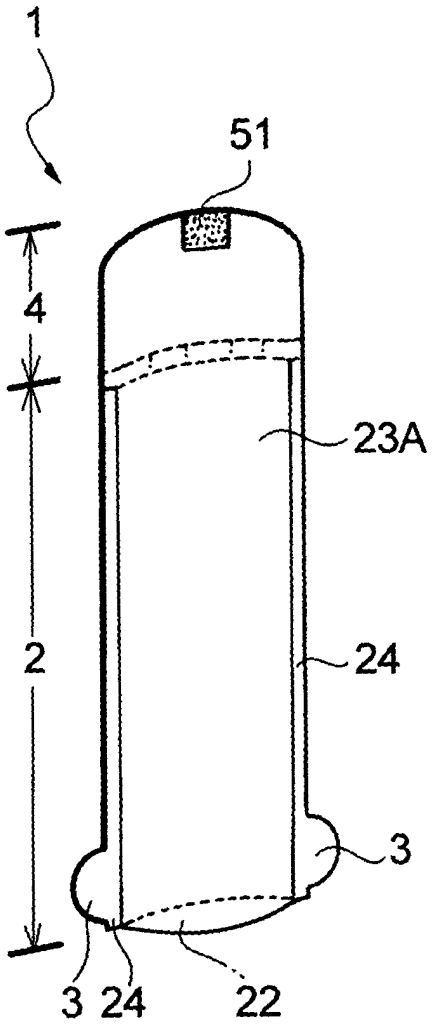


Fig.1(b)

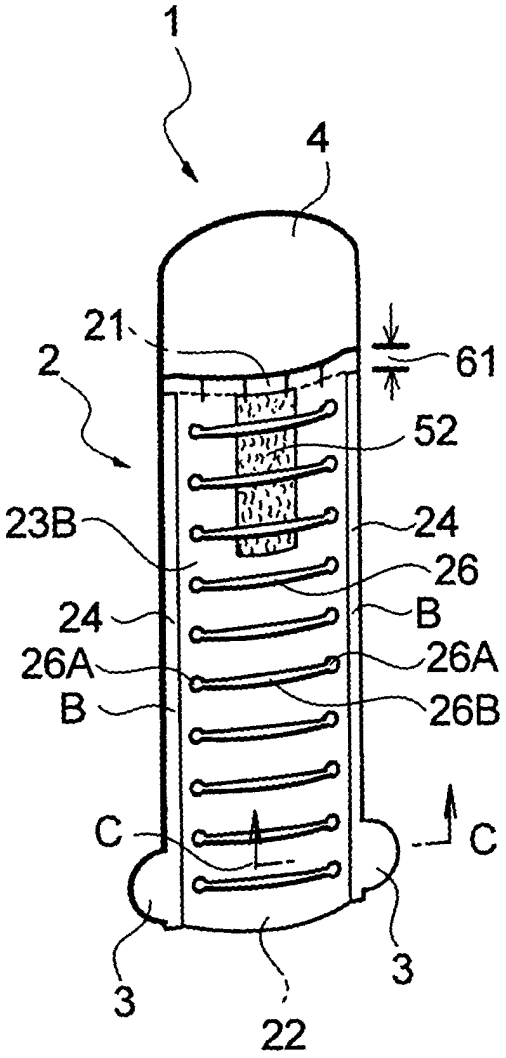


Fig.1(c)

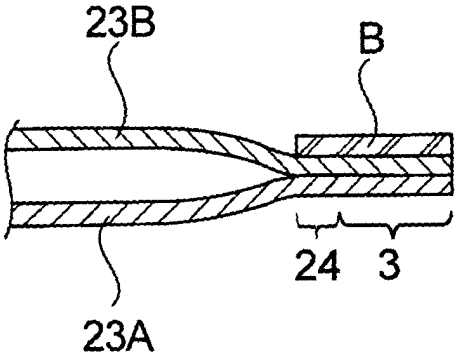


Fig.2

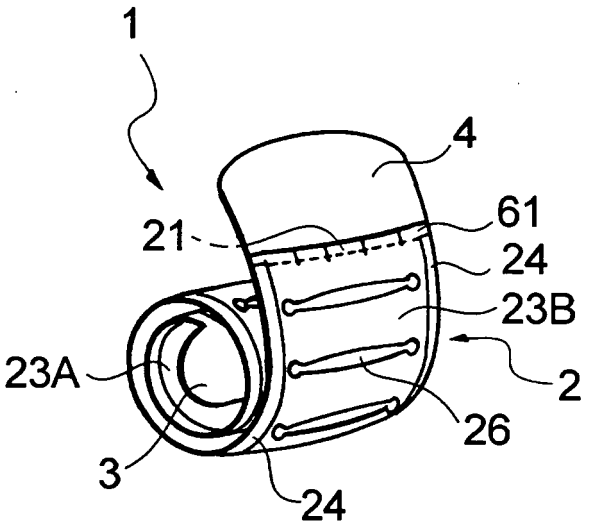


Fig.3

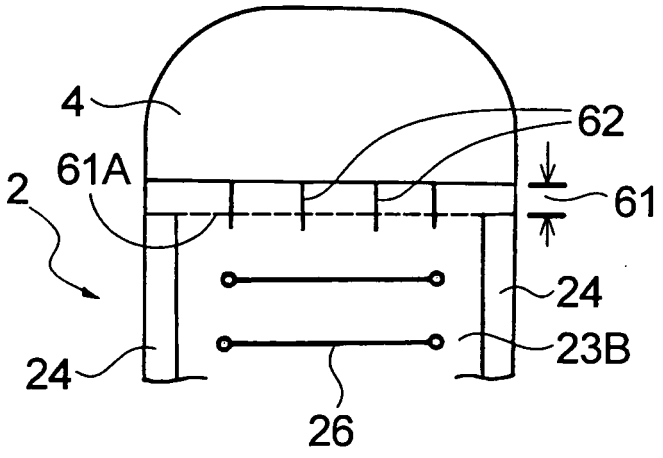


Fig.4(a)

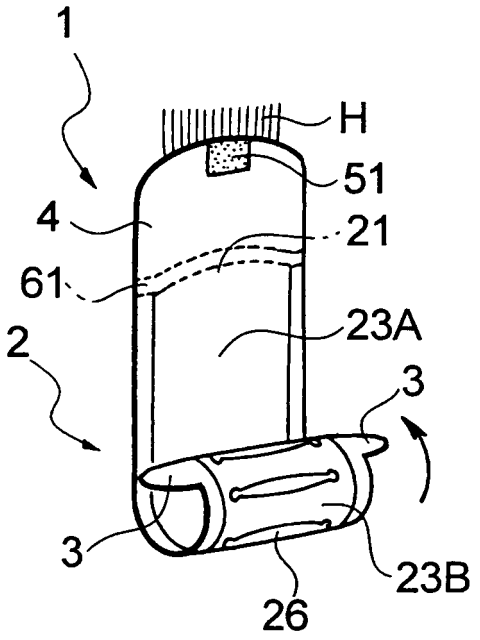


Fig.4(b)

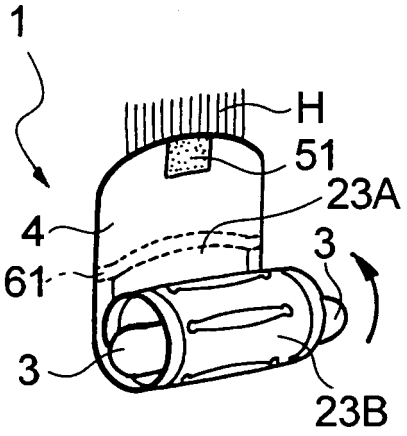


Fig.4(c)

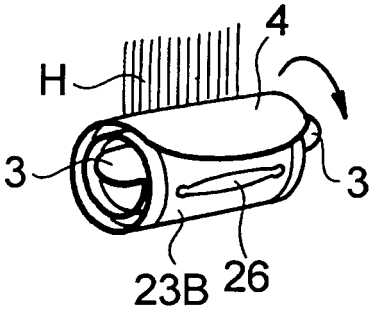


Fig.5

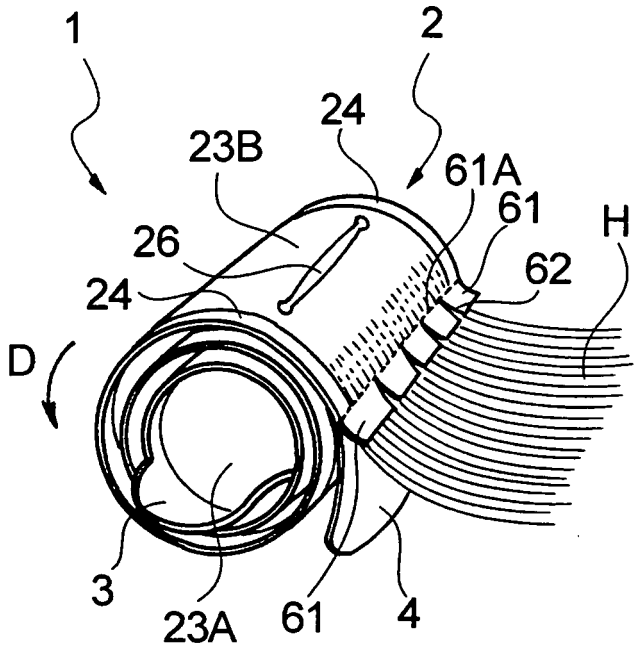


Fig.6(a)

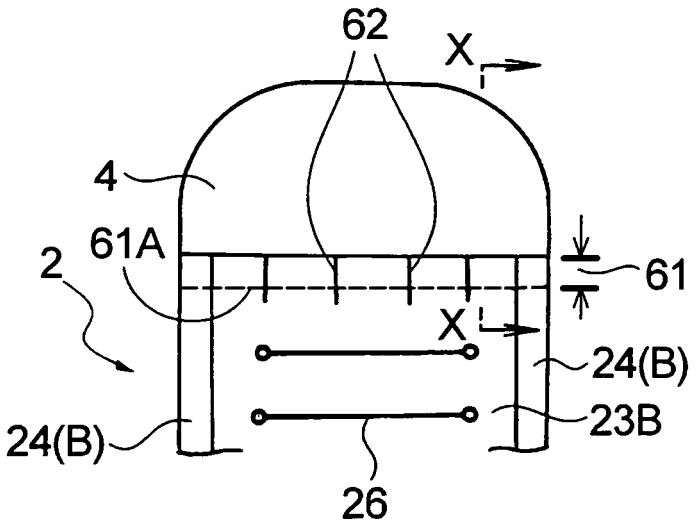


Fig.6(b)

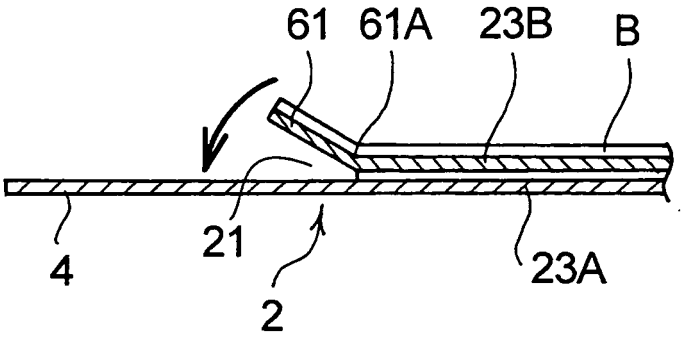


Fig.7(a)

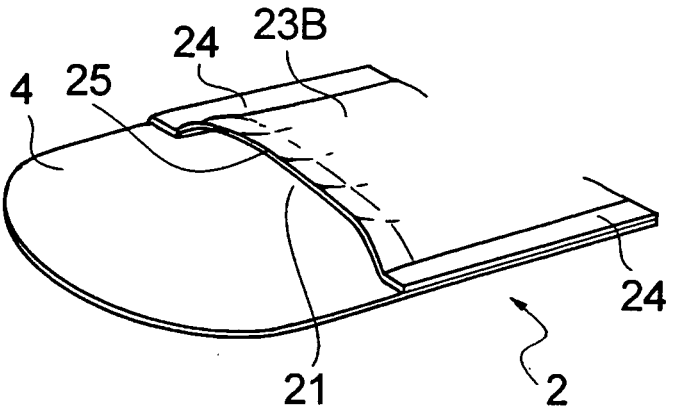


Fig.7(b)

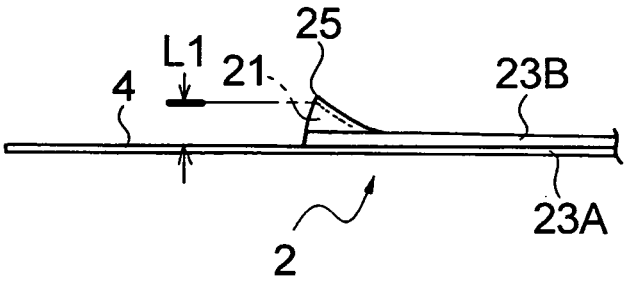


Fig.8

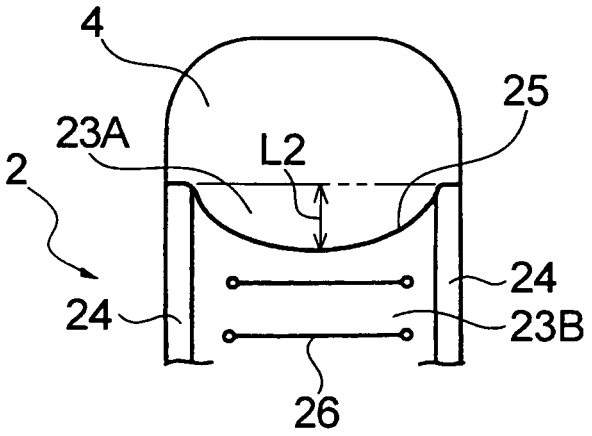


Fig.9

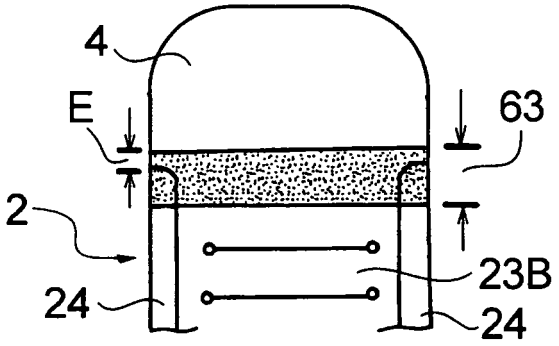


Fig.10(a)

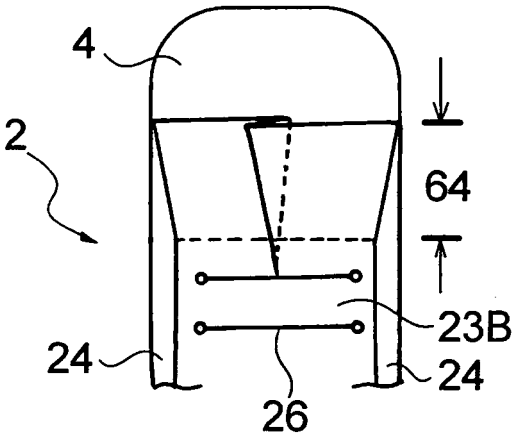


Fig.10(b)

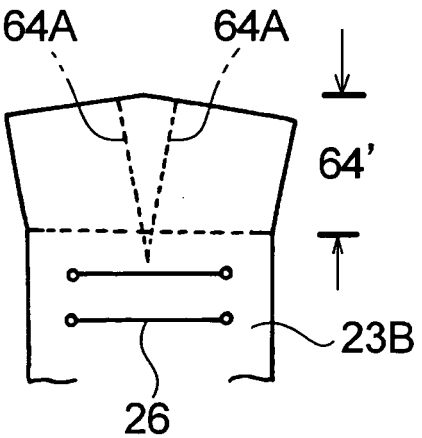


Fig.11(a)

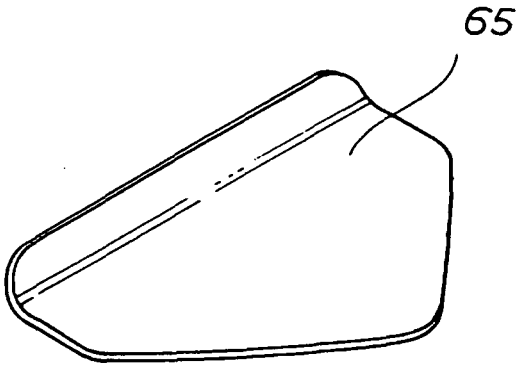
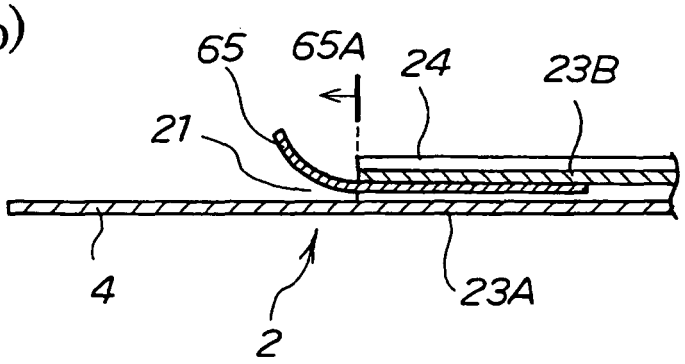


Fig.11(b)



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2006/317629

A. CLASSIFICATION OF SUBJECT MATTER
A45D2/18(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)
A45D2/18, A45D2/08

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 1996-2006
Kokai Jitsuyo Shinan Koho 1971-2006 Toroku Jitsuyo Shinan Koho 1994-2006

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.
X Y A	JP 2003-319815 A (Kao Corp.), 11 November, 2003 (11.11.03), Par. Nos. [0018], [0020]; Figs. 6 to 7 & WO 2003/007752 A1 & EP 1417906 A1 & US 2004/0231689 A1 & CN 1533250 A	1,4,6,7 2,8 3,5
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 32566/1988(Laid-open No. 138301/1989) (Tokuyama Soda Co., Ltd.), 21 September, 1989 (21.09.89), Description, page 6, lines 15 to 16; Fig. 1 (Family: none)	2

☒ 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
01 December, 2006 (01.12.06)	12 December, 2006 (12.12.06)
Name and mailing address of the ISA/ Japanese Patent Office Facsimile No.	Authorized officer Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2006/317629

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. 150606/1975(Laid-open No. 64181/1977) (Matsushita Electric Works, Ltd.), 12 May, 1977 (12.05.77), Description, page 3, lines 12 to 16; Figs. 5 to 6 (Family: none)	8

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2003319815 A **[0003]**