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(US). **KATTULA, Maysoon** [US/US]; 2876 Emmons,
Rochester Hills, MI 48307 (US).

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(74) **Agent: LALONE, Douglas, P.**; Rader, Fishman & Grauer
PLLC, 39533 Woodward Avenue, Suite 140, Bloomfield
Hills, MI 48304 (US).

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(71) **Applicant (for all designated States except US): KLIX
HAIR, INC.** [US/US]; 515 George Street, Birmingham,
MI 48009 (US).

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(72) Inventors; and

(75) **Inventors/Applicants (for US only): KALLABAT, Ken-
nice** [US/US]; 515 George Street, Birmingham, MI 48009

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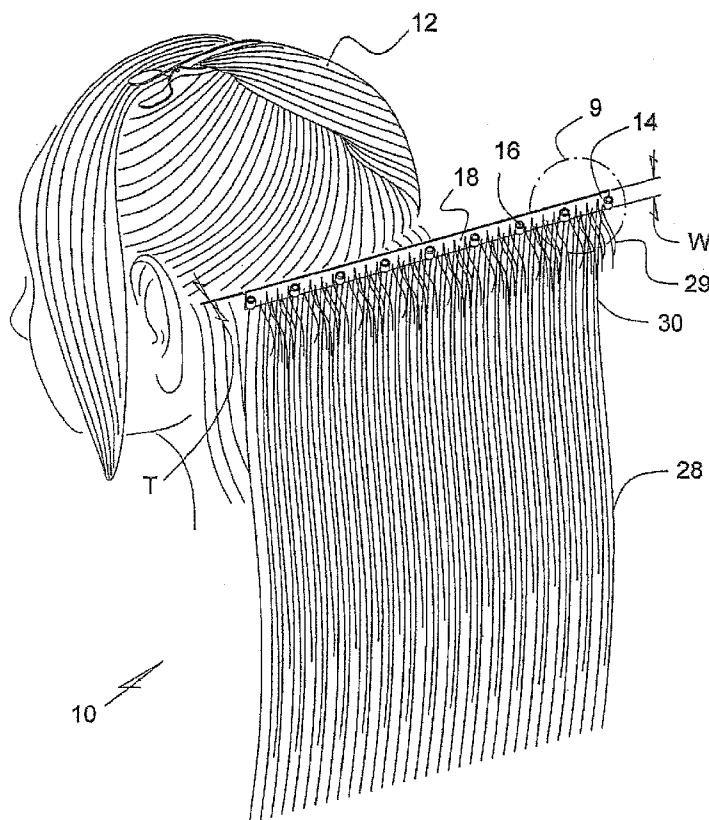


FIG. 1

(57) **Abstract:** A hair extension system provides a skin weft of flexible material having hair like fibers uniformly displaced thereon. Micro rings are fixed to the skin weft and provide an anchoring feature for strands of human hair from a scalp to be secured thereto. The micro rings are deformable and include a flexible protectant so as to minimize damage to the strands of hair. The hair system may be reused by re-opening the micro rings and reinstalling the hair extension system to another location.



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FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL,
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CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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HAIR EXTENSION SYSTEM

TECHNICAL FIELD

[0001] The present invention pertains to hair accessories and more particularly, to a hair extension system and a method of installing a hair extension to human scalp hair.

BACKGROUND AND SUMMARY OF THE INVENTION

[0002] A variety of hair accessories have been developed to adorn the human hair in order to enhance one's beauty. Many of these hair accessories include adding ornaments to the hair as a fashion accessory. Some fashion accessories include use of clips, pony tail holders, and other artificial members in order to further adorn the human hair.

[0003] It has also been desirable to adorn the human hair with artificial hair from others so as to provide varied colorations that are distinct from the natural human head of hair. It has also been desirable to provide both natural and artificial hair in the form of hair extensions that a user can use to adorn their existing head of hair. Some methods of attaching these hair extensions have included taping strands of auxiliary hair to the natural hair of the human head. It has been found that this type of attachment mechanism can fail when the adhesive degrades thus no longer providing its holding characteristics. Thus, there is a need to provide an improvement over this old method of attaching hair to the human scalp.

[0004] Accordingly, there is a need to provide an improved hair extension system as well as an improved method of installing the hair extension system. While this is not to be considered limiting in any way, one form of the present invention includes providing a weft of material, having a plurality of hair fibers secured thereto, locating collapsible micro rings in spaced apart relationship to a side of the weft of material, and having strands of human hair from the scalp passed through each micro ring. Once the hair extension has been properly positioned, the micro rings are then crimped around the strand of natural hair, thus creating a temporary mechanical connection. To remove the hair extension from the scalp, the micro rings can be de-crimped thus allowing the strand of hair to be removed from the micro rings. This allows the hair extension to be removed from the head of hair, without damaging the natural hair fibers of a consumer.

[0005] Another form of the present invention includes providing a hair extension system having a weft of material made of elastomeric material, preferably skin like, with

strands of auxiliary hair being densely positioned throughout the weft of material. Micro rings are positioned at a location near an upper edge or middle of the weft of material, and are secured thereto by a fastening member. The micro rings are comprised of deformable material, and have a silicon insert or film like material positioned within the micro ring, for protecting the human hair of strand that is placed there through. The micro rings may be repeatedly crimped and de-crimped, so as to make the hair extension reusable over and over again.

[0006] According to another aspect of the present invention, a method of installing a hair extension system includes the steps of separating the head of hair and creating a distinct section in which the hair extension will be installed, unrolling a length of hair extension material to a desired length and cutting a desired section of hair extension material. Next, the cut section of hair weft extension material is placed adjacent to the scalp in approximate location to where it is to be installed. Strands of natural hair fiber are then grasped by a hook member and pulled through the opening of the ring member so that the hair strand extends through the micro ring. This step is repeated until strands of hair have been placed through each respective micro ring. The weft of material is then placed into position adjacent or as close to the scalp where the hair extension is to be installed. The micro rings are now closed around each corresponding strand of natural hair material so as to securely yet temporarily, fasten the hair extension system, to the scalp. This completes the initial step of installing the hair extension system to a scalp.

[0007] It will be appreciated that a re-touch process can be employed which allows the hair extension system to be loosened and repositioned as the head of hair grows outwardly over the following months.

[0008] To remove the hair extension system from the scalp, each micro ring is de-crimped, thus allowing the micro rings to disengage from its corresponding strand of hair. This allows the hair system to be uninstalled, and reused, if desired. Thus, a reusable hair extension is provided which is durable, costs less and provides long lasting beauty.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] Referring now to the drawings, illustrative embodiments are shown in detail. Although the drawings represent some embodiments, the drawings are not necessarily to scale and certain features may be exaggerated, removed, or partially sectioned to better

illustrate and explain the present invention. Further, the embodiments set forth herein are not intended to be exhaustive or otherwise limit or restrict the claims to the precise forms and configurations shown in the drawings and disclosed in the following detailed description.

[0010] **Fig. 1** is a rear perspective view of a hair extension section located adjacent to the back of a head;

[0011] **Fig. 2** is a perspective view illustrating the step of cutting the hair extension section to a desired length;

[0012] **Fig. 3** is an enlarged view illustrating a tool extending up through a micro ring and grasping hair fibers;

[0013] **Fig. 4** is an enlarged view illustrating a strand of natural hair being pulled through a micro ring;

[0014] **Fig. 5** illustrates a micro ring being closed round a natural strand of hair;

[0015] **Fig. 6** illustrates the hair extension attached to the back of the head;

[0016] **Fig. 7** illustrates a tool used for re-opening a micro-ring and the jaws opened and surrounding a closed micro ring;

[0017] **Fig. 8** illustrates the step of the hair extension being removed from the natural strands of hair;

[0018] **Fig. 9** is an enlarged perspective view of the micro rings in an opened state illustrating the cushion member positioned within the micro ring;

[0019] **Fig. 10** is an enlarged perspective view of the back side of the weft of the hair extension showing the device for connecting the micro ring to the weft;

[0020] **Fig. 11** is an alternative embodiment hair extension with a double back layer of weft material; and

[0021] **Fig. 12** is a flowchart illustrating the steps associated with installing the hair extension to a head of hair.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] With reference to **Fig. 1**, a hair extension system 10 is illustrated positioned adjacent to the head 12 or scalp of a human. The hair extension system includes a weft 14 of

fibrous material that is provided in continuous lengths from a supplier. The weft may be made of an elastic type material and can be colored so as to match the scalp. The weft 14 has a thin cross section with a width w substantially greater than the thickness t . Micro rings 16 are spaced apart along an outer side 18 of the weft 14 and are secured to the weft 14, by a securing device such as thread or the like. It will be appreciated that the micro rings 16 can be affixed to the weft 14 in other conventional matters, not shown.

[0023] As can be seen in **Fig. 9**, each micro ring 16 has an opening 20 that is operable to receive an insert 22. The insert 22 has an outside diameter that is sized to be received within the opening 20. The insert 22 further has an aperture 24 extending across a substantial portion of the insert so as to be able to receive strands 26 of natural hair from the human. The micro ring 16 is positioned on the weft 18 at a position adjacent to the top surface of the weft or it could be positioned spaced downwardly there from. The micro ring is oriented such that its central axis runs tangent to the top surface of the weft 18.

[0024] With reference to **Fig. 1** again, the hair extension system 10 further includes strands of auxiliary hair 28 that are dispersed evenly along the outer surface 18 of the weft 14. The auxiliary hair 28 can be artificial or natural hair depending upon the desired result. At one end 30, the auxiliary hair 28 is woven into the outer side 18 of the weft 14 in such a manner as to permanently affix the strand of auxiliary hair 28 to the weft of material. Once the auxiliary hair 28 is tied to the weft, a dangling portion or mustache 29 remains and provides thickened portion to the hair extension.

[0025] The weft 14 is preferably made of flexible, resilient skin-like material and is easily blended into the scalp of a human head 12. The micro rings 16 are preferably made of metal, and possibly copper, as this malleable material proves to be reusable. It will be appreciated that other material may be used. The insert 22 is preferably made of silicon, or the like, and is securely positioned within the opening 20 of each micro rings 16. Various fastening means can be utilized in order to secure the insert 22 within the opening 20, including adhesives and a press fit arrangement.

[0026] With reference to **Fig. 2**, the step of cutting the weft 14 to a desired length l is illustrated. The length l should be sufficient so as to span the area the user desires to have covered on her head. The remaining section S , can be later used for installation at a later location and time. The hair extension is oriented such that the micro rings face away from the scalp.

[0027] With reference to **Figs. 3 and 4**, the step of pulling a strand of natural hair 26 through the micro rings 16 are illustrated. During the pulling step, a tool 32 having a hook shaped member 34 is utilized for grasping an entire strand 36 of natural hair 26. This is accomplished by placing the hook shaped member 34 up through the bottom of the aperture 24 and grabbing the natural hair 26 in a U shaped movement so as to capture hair in the area near the micro ring. This step is repeated for each micro ring 16 that is spaced along the weft 14.

[0028] **Fig. 5** illustrates the step of a mechanical crimper 38 collapsing the periphery of a micro rings 16 so as to cause it to deform around the strand 36 of natural hair. This action causes the insert 22, which is pliable, to close tightly around the strand 36 of natural hair thus causing a mechanical grip there between. The insert 22 acts a protectant to the natural hair 28, thus minimizing damage thereto. It will be appreciated that other insert 22 type material may be used, as long as it has memory and provides a positive gripping feature while protecting the hair. The pressure applied by the mechanical closure 38, needs to be sufficient pressure so as to deform the micro rings 16 such that the insert 22 entirely grips the strand 36.

[0029] With reference to **Fig. 6**, each micro ring 16 is shown having been closed and secured onto its own strand 36 of natural hair. The hair extension 10 is preferably positioned such that the weft 14 is positioned up near a parting line 37 and tight against the head 12 as possible. At this point, a new parting line can be established and the next hair extension 10 can be secured to the head 12. This will be repeated until the consumer has the desired number of hair extension installed. At this time, the remainder of the hair can be let down which in turn overlays the hair extensions so as to provide a uniform hair display.

[0030] With reference to **Fig. 7**, another unique aspect of the present invention is illustrated wherein an improved re-opening tool 38 is shown re-opening a micro ring 16. The tool 38 has a crescent shaped portion 39 at its tip 40 that is configured to mateingly engage a closed micro ring. By applying force to the handle of the tool 38, the micro rings 16 can be re-formed back towards their original circular-shaped configuration, thus releasing the strand 36 of hair from the micro rings 16. This action allows the insert 22 to likewise flex back to its original circular-shape, thus creating a clearance for the strand 36 to be removed there from. Thus, it is important for the insert material to have a memory. This step of re-opening is repeated for each of the micro rings 16 on the weft 14.

[0031] With reference to **Fig. 8**, the hair extension 10 is shown being removed from the strands 36 of natural hair 26. This allows a hair extension system 10 to be reused at a later time. This can be accomplished because, in part, due to the resilient nature of the clamping member or micro rings 16.

[0032] It will be appreciated that instead of removing the hair extension from the head, the extension 10 can be repositioned upwards back up near the scalp. This may be particularly useful when the consumer's hair has grown out over a period of time and the consumer would like to reuse the extension.

[0033] **Fig. 9** is a partial view taken from figure 1 showing an end portion of the hair extension 10 enlarged. The micro ring 16 is secured to the weft and a plurality of hair fibers 28 are displaced in a pattern on the face of the weft. Each fiber 28 is preferably tied to the weft, but it will be appreciated that other securing methods could be employed. Each micro ring 16 has the insert 22 shown positioned with the opening 20. The hole 24 provides a clearance for the strands 36 of hair to project there through. The micro ring 16 is placed close to the edge of the weft so as to improve fit and finish to the scalp.

[0034] **Fig. 10** is a view of the back side of a portion of the weft 14 showing the stitches 41 or threads protruding out of the back surface of the weft 14 with the opposite side thereof passing through the opening 24 of the insert 22. It will be preferred that multiple stitches be used to firmly secure each micro ring 16 to the weft 14. The individual hair fibers 28 pierce through the weft too and are weaved back to the front face 18.

[0035] **Fig. 11** is an alternative embodiment hair extension system 50 where the weft 14 is doubled backed with another layer 52 to form two layers which results in a doubling of the hair density. The weft can be cut to a desired length as before describe herein. The micro rings 16 are removed from one of the sides so as to form a single sided configuration. An adhesive 54 may be sandwiched between the two layers so as to secure them together. It will be appreciated that other bonding methods could be used to secure them together. It will be further appreciated that a third layer 56 could be added that too is bonded to its adjacent second layer so as to provide yet additional hair density.

[0036] **Fig. 12** is a schematic diagram of the steps for installing the novel hair extension system 10. This novel method of installation can be repeated due to the reusable nature of the hair extension system 10. To get started the weft 14 of material is unrolled. It

will be appreciated that it can come in a variety of lengths, depending upon the supplier. It will also be appreciated that the micro rings 16 can be spaced at different distances, as desired. The micro rings 16 come already formed on and a part of the weft 14.

[0037] The first step includes separating 60 the hair on the human head into distinct segments on the scalp. It is preferred to start from the occipital section of the hair, and then horizontally separate from ear to ear approximately one inch from the hair line on the sides and one and one-half inches from the nape.

[0038] The next step includes measuring 62 the width of the customer's head section and cutting the proper length l of the weft 14. One should be careful not to cut too close to a micro rings 16. The next step includes placing 64 the cut hair extension 10 section having a length l, and placing the cut section as close as possible to the scalp 12. One should carefully align the cut section relative to the scalp, so as to maintain proper orientation thereof.

[0039] The next step includes pulling strands 36 of natural hair 26 through the micro rings 16 by use of a hook-shaped member 34. This is done by inserting 66 the hook-shaped member 34 up through the bottom of the micro rings 16 and through the corresponding opening 20, of the insert 22. The next step requires threading scalp hair in a "U" shaped movement 68 with the pulling needle 34. The hook shaped member 34 then gathers collected natural hair and then traverses downwardly through the aperture 24 until a strand 36 has been fully extended through the micro ring 16. This step is repeated for each micro ring on the weft.

[0040] The next step includes closing 70 each micro ring 16 so as to allow each strand 36 to be secured to its corresponding micro ring 16. This step is repeated 72 until each micro ring in the row is closed. The hair extension 10 has now been fully connected to the head of hair.

[0041] The final step is to apply 74 your next section of hair extension 10 and repeat the steps above until that new section has been installed.

[0042] To remove the hair extension system 10 from the scalp 12, each micro ring 16 is de-crimped thus allowing the strands 36 of hair to be disengaged from the hair extension system 10. This allows re-use of the extension system 10 over and over again.

[0043] The preceding description has been presented only to illustrate and describe exemplary embodiments of the methods and systems. It is not intended to be exhaustive or to

limit the invention to any precise form disclosed. It will be understood by those skilled in the art that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the invention without departing from the essential scope. Therefore, it is intended that the invention not be limited to the particular embodiment disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the claims. The invention may be practiced otherwise than is specifically explained and illustrated without departing from its spirit or scope. The scope of the invention is limited solely by the following claims.

CLAIMS

WHAT IS CLAIMED IS:

1. A method of attaching a hair extension to human hair comprising the steps of:
 - providing a hair extension of predetermined size, said hair extension including a flattened weft portion with hair portions connected thereto, a plurality of rings secured to one side of the weft, each ring having an opening and a resilient insert located within each said opening;
 - placing the hair extension adjacent to a scalp of a human head;
 - cutting the hair extension to a desired length;
 - organizing a strand of human hair and extending same through said opening in one of said rings;
 - crimping the ring to temporarily secure the ring to the strand of human hair;
 - organizing a second strand of human hair and extending same through an opening in a second ring;
 - crimping the second ring to the second strand of hair to temporarily secure the second strand to the second ring; and
 - repeating the organizing and crimping steps until each ring has its own strand of human hair secured thereto.
2. The method of attaching a hair extension to human hair as claimed in claim 1, further comprising the steps of un-crimping each of said rings that have been crimped, removing each strand of hair positioned within each ring, and removing the hair extension from the scalp.
3. The method of attaching a hair extension to human hair as claimed in claim 2, further comprising the step of re-installing the hair extension to a scalp.
4. The method of attaching a hair extension to human hair as claimed in claim 1, wherein the step of organizing a strand of human hair includes inserting a hooked shaped member thru the opening of the ring and grabbing a plurality of human hair fibers, pulling the hooked shaped member back thru the opening along with the human hair fibers.

5. The method of attaching a hair extension to human hair as claimed in claim 4, further comprising the step of pulling human hair fibers thru each ring.
6. The method of attaching a hair extension to human hair as claimed in claim 1, wherein the rings are located on the side of the weft opposite the scalp.
7. The method of attaching a hair extension to human hair as claimed in claim 1, wherein the hair extension can be reused by re-crimping the rings to new sets of human hair strands.
8. The method of attaching a hair extension to human hair as claimed in claim 1, wherein the step of crimping includes using a mechanical device to apply pressure to a ring, said ring deforms causing the insert to collapse around the strands of human hair.
9. The method of attaching a hair extension to human hair as claimed in claim 1, wherein the hair extension is provided in rolls which can be cut to various lengths according to a users head profile.
10. A method of attaching a hair extension to a scalp comprising the steps of:
providing a length of hair extension, said hair extension having a weft portion with hair members secured thereto, and a securing member positioned on a side of the weft;
cutting a section of the hair extension and placing same near a scalp; and
securing a plurality of strands of human hair to the securing member.
11. The method of attaching a hair extension as claimed in claim 10, further comprising the step of threading strands of natural hair thru the securing member.
12. The method of attaching a hair extension as claimed in claim 10, wherein the securing member is a ring, the ring is operable to selectively engage and disengage strands of hair.
13. The method of attaching a hair extension as claimed in claim 10, further comprising the step of un-securing each strand of hair and re-using the hair extension.

14. The method of attaching a hair extension as claimed in claim 10, further comprising the step of inserting a strand of human hair from a scalp into and thru the securing member, the securing member being deformable and having a cushioned insert that engages said strand of hair.
15. A hair extension system for use in connection with a human scalp, the system comprising:
- a weft having a thin profile and an upper surface;
 - hair fibers affixed to one side of the weft;
 - at least one link secured to said weft at a location near the upper surface, said link having an aperture; and
 - an insert positioned within the aperture of said link, the insert having an opening for receiving hairs from the human scalp.
16. The hair extension system as claimed in claim 15, wherein said insert is made of silicon.
17. The hair extension system as claimed in claim 15, wherein said link is made of formable material.
18. The hair extension system as claimed in claim 15, wherein the aperture in said link has a diameter sufficiently large to receive a hook member.
19. The hair extension system as claimed in claim 15, further comprising a layer positioned adjacent the weft, said layer having hair fibers affixed thereto.
20. The hair extension system as claimed in claim 15, wherein the weft is skin like and the hair fibers are evenly spaced apart on the weft.

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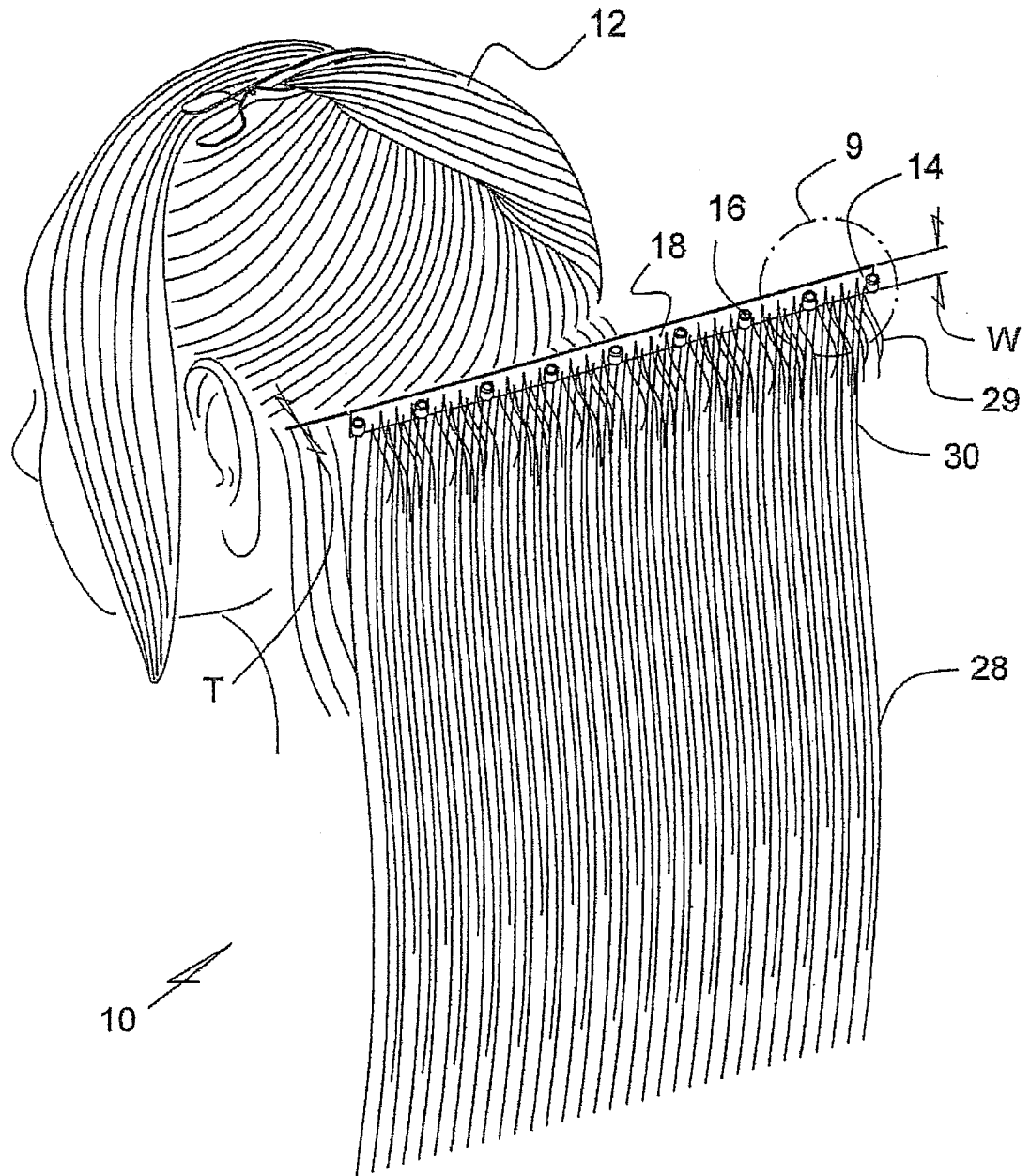


FIG. 1

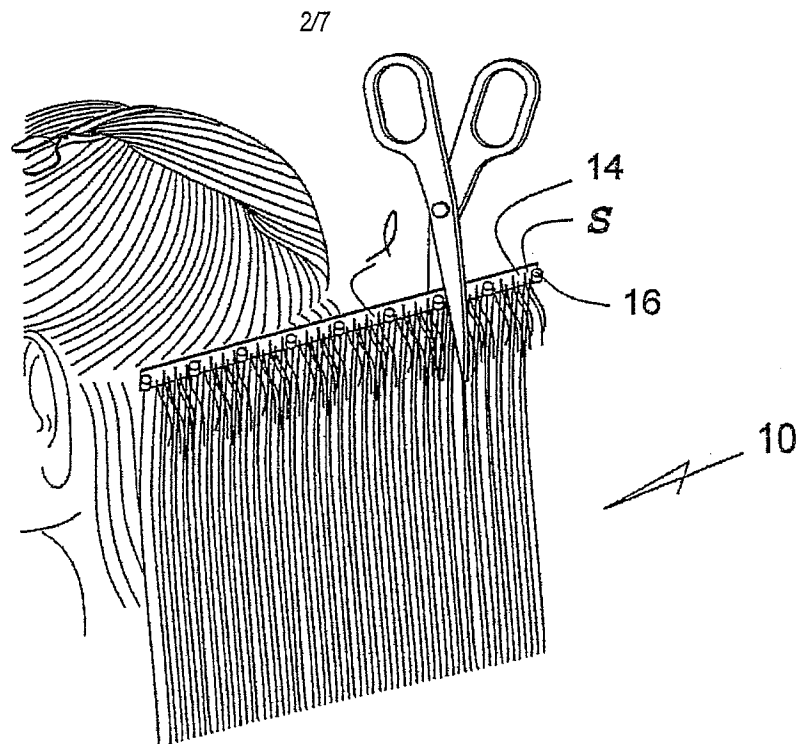


FIG. 2

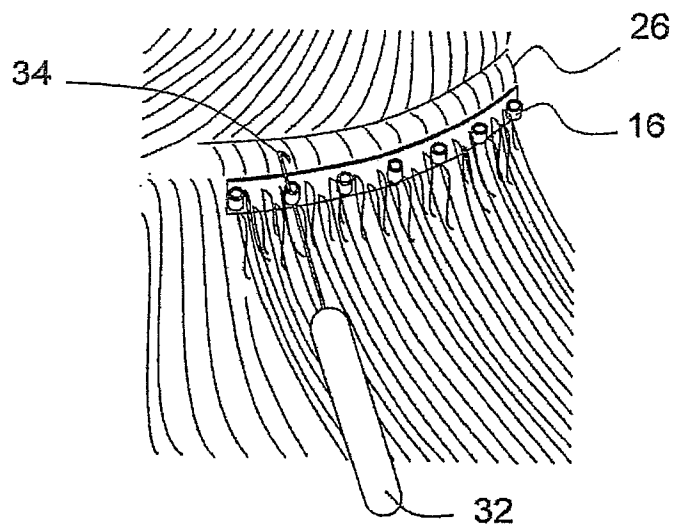


FIG. 3

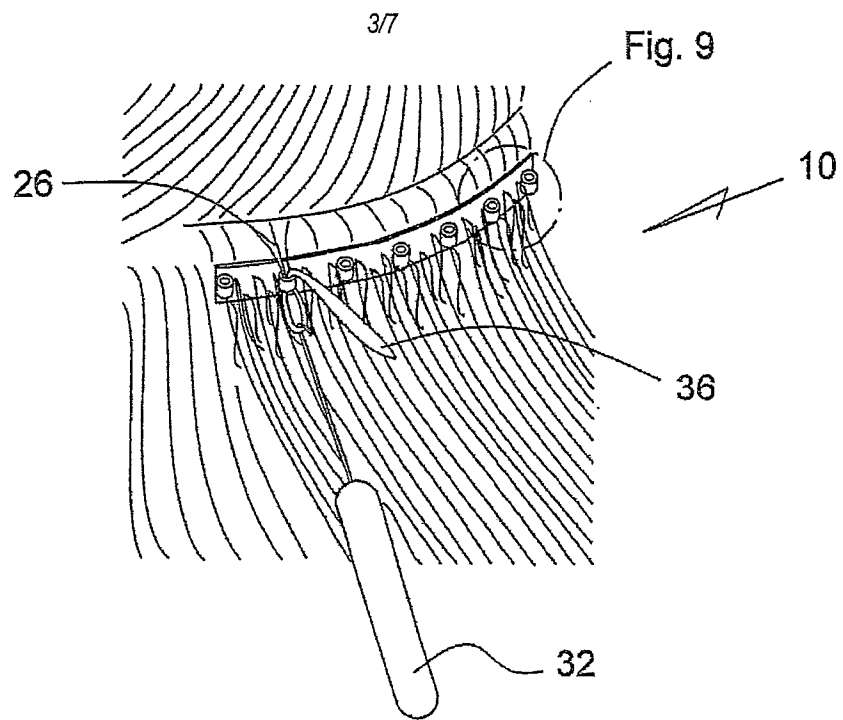


FIG. 4

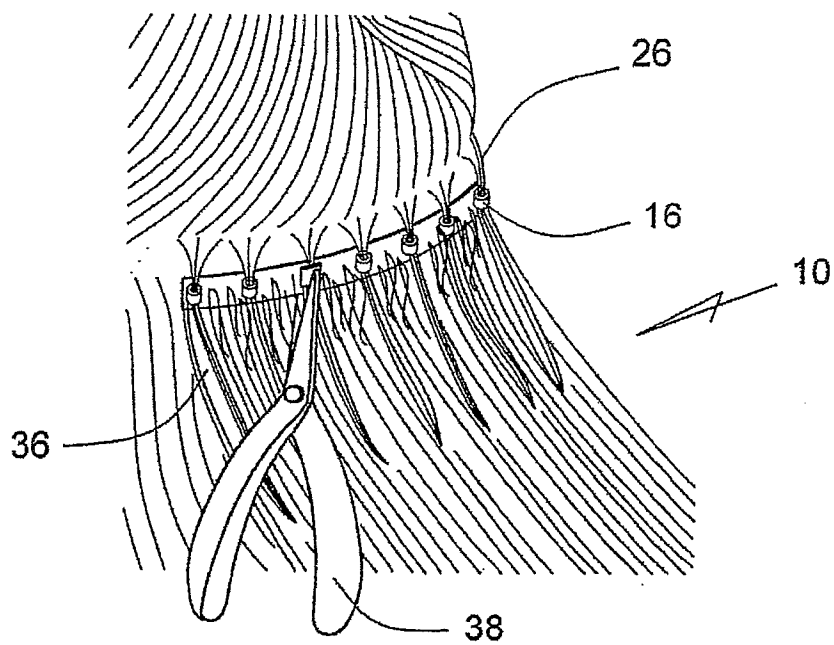


FIG. 5

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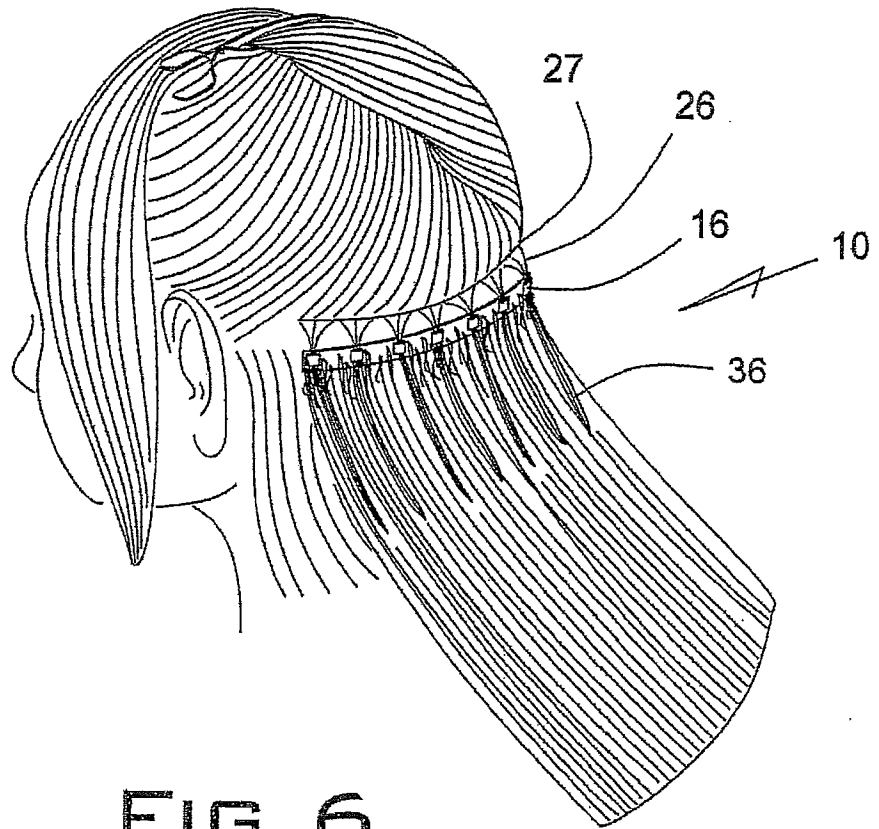


FIG. 6

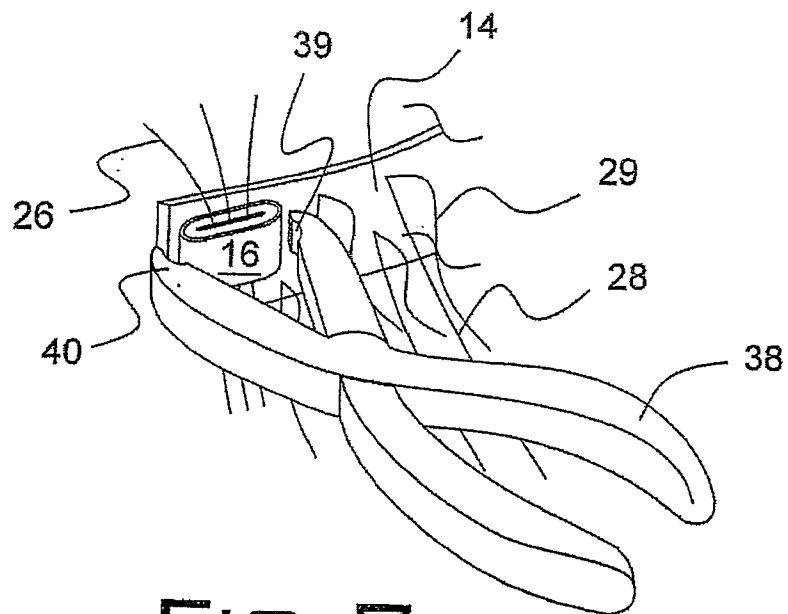


FIG. 7

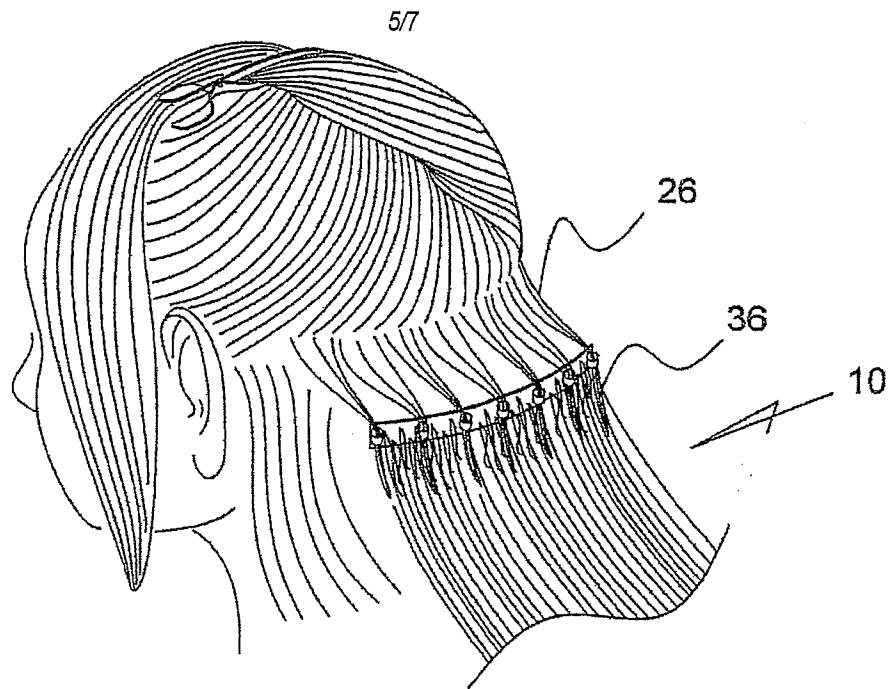


FIG. 8

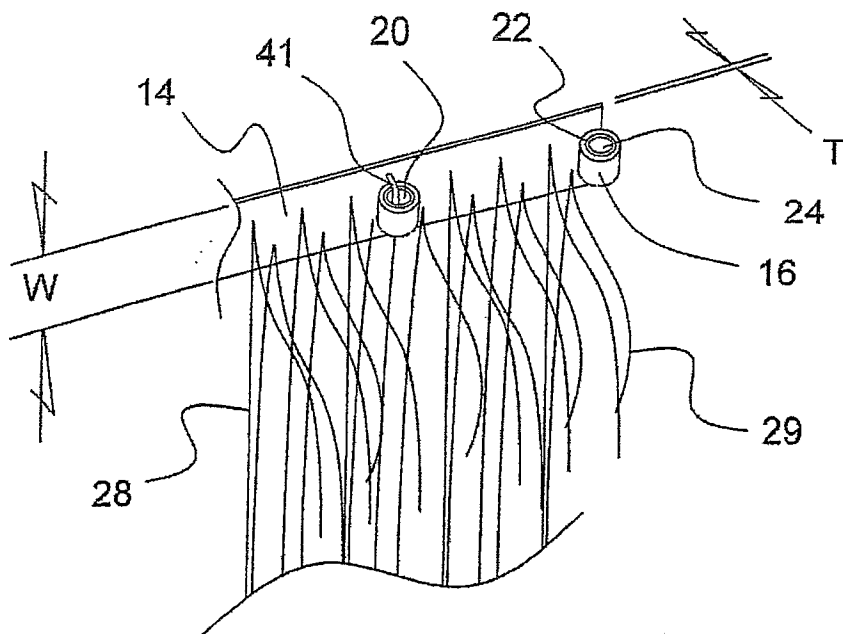


FIG. 9

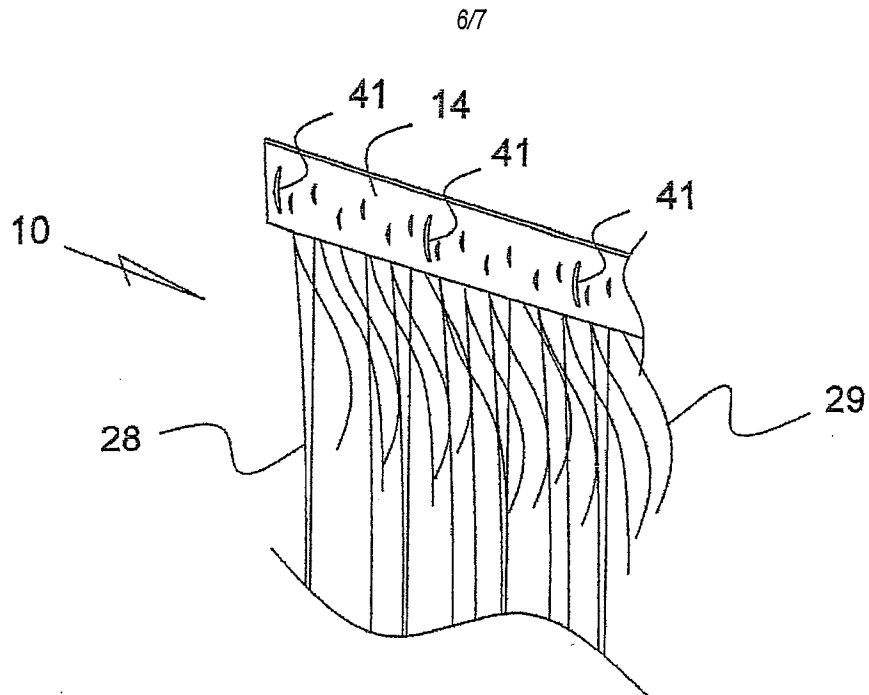


FIG. 10

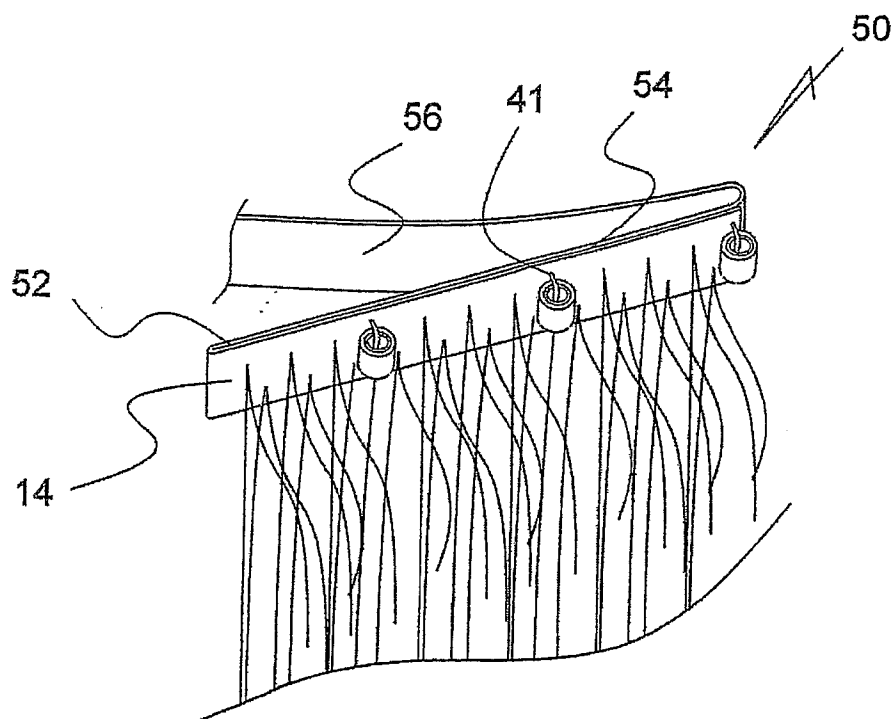
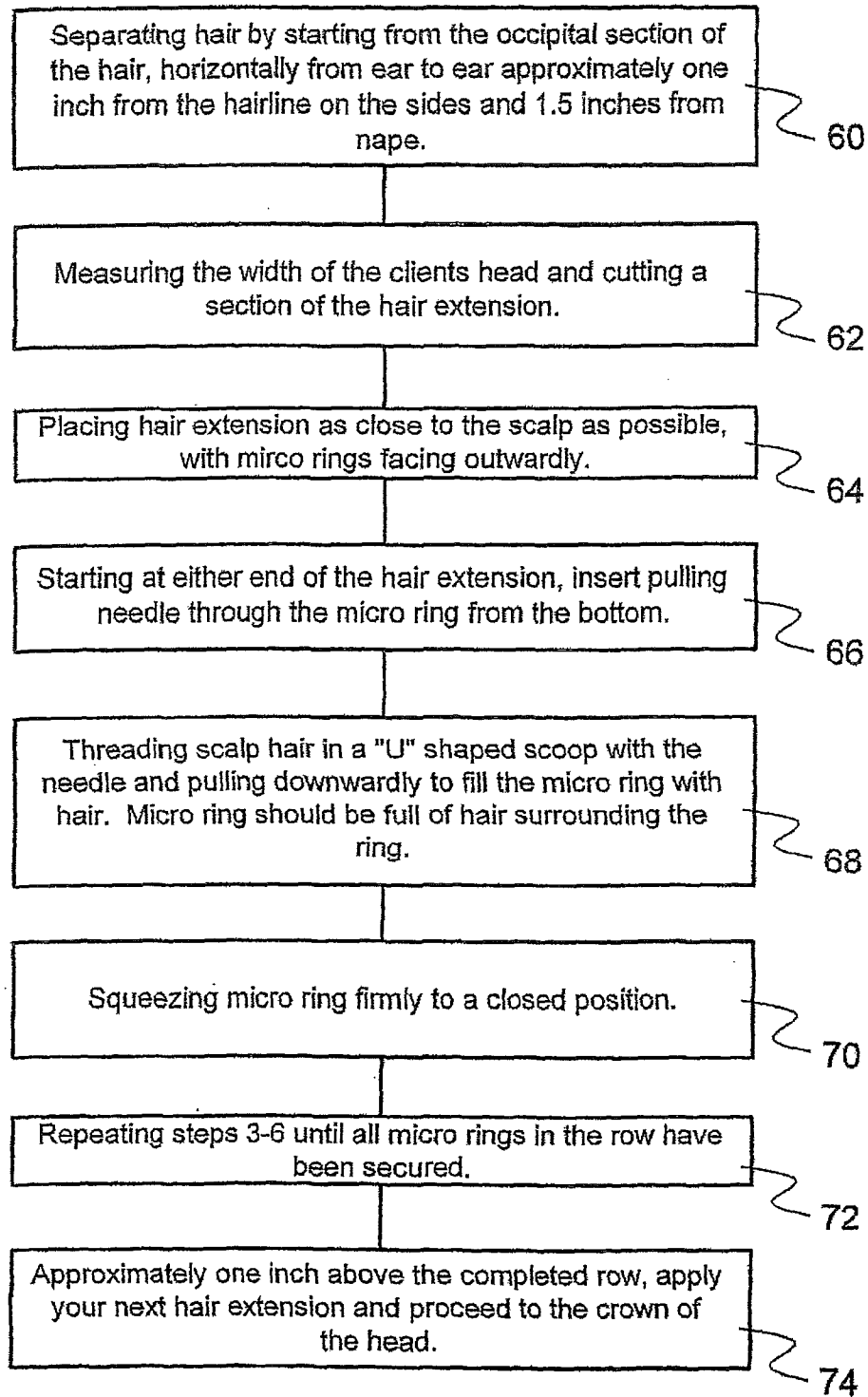


FIG. 11

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**FIG. 12**

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/065511**A. CLASSIFICATION OF SUBJECT MATTER****A41G 3/00(2006.01)i, A41G 5/00(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)

IPC 8 A41G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and application for Utility models since 1975

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

eKIPASS(KIPO internal)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 20-0334383 Y1(JUNG, DAL HYUN) 22 November 2003	1,6,8-11
----- Y	See page 2; claims 1-3; figures 1-3.	----- 2-5,7,12-20
Y	JP 10-060721 A (TERAHARA, MITSUO) 3 March 1998 See claim 1; figures 1-6.	2,3,7,12-14
Y	US 2006/0086368 A1 (SALINAS, HORTENCIA) 27 April 2006 See column 7, lines 8-23; figures 1-18.	4,5,15-20
A	KR 20-0272636 Y1 (PARK, WUNG JUN) 18 April 2002 See figures 1-6 ; abstract.	1-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search

24 JULY 2008 (24.07.2008)

Date of mailing of the international search report

24 JULY 2008 (24.07.2008)

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Authorized officer

LEE, Won Jae

Telephone No. 82-42-481-5620



INTERNATIONAL SEARCH REPORT

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International application No.

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