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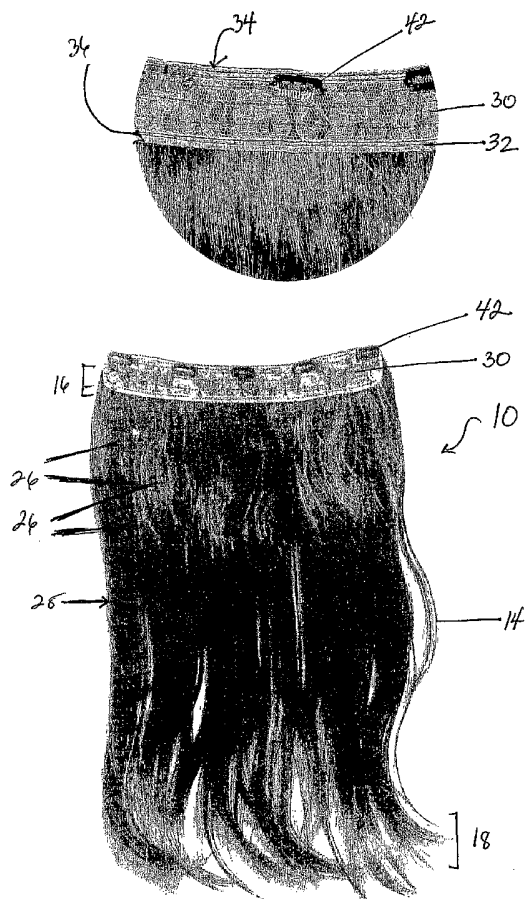
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(54) Title: REMOVABLE AND REUSABLE HAIR EXTENSION



(57) Abstract: The present invention is a hair extension device that can be easily applied to a wearer's hair, wherein the device comprises artificial hair strands secured together in sheets to a sturdy yet flexible weft, said weft being supplied with means for removably securing the weft to the natural hair of the wearer. The hair extension device of the invention further includes a specialized layering of multiple sheets of hair strands, to produce a natural-looking hairstyle.



— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

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REMOVABLE AND REUSABLE HAIR EXTENSION

RELATED APPLICATION DATA

[0001] This application is based on and claims the benefit of U.S. Provisional Patent Application No. 60/581,060 filed on June 18, 2004, the disclosure of which is incorporated herein by this reference.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] Hair extensions are used to increase the length and/or volume and fullness of a person's natural hair. Hair extensions may also be used to add different colors to one's hair. Further, hair extensions may be used to change the texture of a person's hair, such as by making a person's hair appear wavy even though the person's natural hair is straight.

[0004] In the past, extensions have involved permanently or semi-permanently attaching artificial hair made from either synthetic hair, or from natural hair, such as human or animal hair, to a person's existing hair. Such attachment has been accomplished by various means, including bonding (such as using heat and/or chemicals) or sewing (such as by braiding one's natural hair, and then sewing foreign hair onto the braid) either synthetic or natural hair strands onto a person's natural hair. Typically these types of prior art extensions are permanent or semi-permanent, and the process is quite costly and time consuming.

[0005] 2. Description of the Prior Art

[0006] One of the drawbacks to the above-described prior art permanent and semi-permanent hair extension methods is that they are damaging to the wearer's natural hair, due to the chemicals, pressure, heat and/or mechanical handling used to fuse the artificial hair to the person's natural hair. This may result in a wearer's own natural hair becoming unattractive and easily breakable. In addition, also damaging is the process of removing the

extensions from time to time in order to replace the artificial hair, which may be needed or desirable to maintain the look or change the look of the wearer's hairstyle.

[0007] A further drawback to the prior art is that these methods by their very nature take a significant amount of time to apply the extensions, and require professional hairstylists trained and skilled in the art and technology of hair extensions in order to accomplish the permanent and semi-permanent methods. This translates into high expense for a person to obtain extensions and sometimes also to have them removed. Further, there are costs associated with maintaining the extensions. One must also treat extended hair carefully, as it is more susceptible to drying and breakage than hair that has not been extended.

[0008] In an effort to avoid some of the drawbacks of the prior art, temporary hair extensions are growing in popularity. Temporary hair extensions have the advantage that they may comparatively easily be attached to and removed from a wearer's natural hair. In addition, temporary hair extensions are much less likely to damage a wearer's natural hair during use and removal. Temporary hair extensions are intended to more convenient, because they usually do not require a trained hairstyling or hair extension professional to apply them.

[0009] Temporary hair extensions of the prior art tend to consist of relatively small sections of artificial hair, in part because it is difficult to very securely attach a temporary extension due to the weight of the large pieces of artificial hair, which tends to cause the clip or other means for securing the hair extension to not hold adequately to the wearer's natural hair. Thus, a relatively lightweight temporary hair extension is less likely to be inadvertently released from the wearer's hair due to the effects of gravity and the movement of the wearer's body and head.

[0010] Using only small sections of hair means that a person wanting to extend his or her hair must attach numerous sections. This is a process than takes a long

period of time. Moreover, for hairstyles requiring a natural look wherein the extensions are evenly distributed, it is difficult for a person self-attaching the extensions to evenly distribute the extensions. In addition, to achieve a multi-layered look, prior art temporary hair extensions need to be attached to the wearer's natural hair in several individual layers. Thus, oftentimes a wearer will need to employ a skilled hairdresser to attach even temporary extensions, thereby raising the cost.

OBJECTS OF THE INVENTION

[0011] One object of the extensions of the present invention is to provide a hair extension device which may be easily placed onto and secured to a wearer's existing natural hair, in a relatively quick and easy manner. The extensions of the present invention may be placed on and removed from the wearer's head without damaging the wearer's natural hair. There are no chemicals or heat required to attach the extensions to the hair.

[0012] The wearer can easily apply the hair extension device to the wearer's own hair, with little effort and in a minimal amount of time.

[0013] A further object of the invention is to provide a hair extension device which, when secured to a wearer's hair, stays in place until it is intentionally removed.

[0014] Yet another object is to provide a hair piece that may be easily removed by the wearer.

[0015] Further, the extensions of the present invention permit one to enhance a wearer's natural hair with artificial hair, by placing a single extension device into the wearer's hair, but making possible the creation of multi-layered hairstyles.

[0016] Yet another object of this invention is to provide a hair extension device that can be quickly and easily placed and secured onto a wearer's head, and removed when the wearer desires, without requiring the services of another person.

SUMMARY OF THE INVENTION

[0017] The present invention is a hair extension device that can be easily applied to a wearer's hair, wherein the device comprises artificial hair strands secured together in sheets to a sturdy yet flexible weft, said weft being supplied with means for removably securing the weft to the natural hair of the wearer. The hair extension device of the invention further includes a specialized layering of multiple sheets of hair strands, to produce a natural-looking hairstyle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0018] The accompanying drawings, which are incorporated in and constitute a part of the specification, illustrate the presently preferred methods and embodiments of the invention. Together with the general description given above and the detailed description of the preferred methods and embodiments given below, they serve to explain the principles of the invention.

[0019] FIGURE 1 is an illustration of a hair extension device according to the invention in use on the head of a wearer.

[0020] FIGURE 2 is a front view of the hair extension device.

[0021] FIGURE 3 is a back view of the hair extension device.

[0022] FIGURE 4 is a front view of the hair extension device, and a close up to show details thereof, illustrating a weft comprised of lace.

[0023] FIGURE 5 front perspective view of a portion of one embodiment of the hair piece showing the placement of the sheets of hair on the back of the weft relative to one another.

[0024] FIGURE 6 is a front perspective view of a portion of another embodiment of the hair piece showing the placement of the sheets of hair on the back of the weft relative to one another.

[0025] FIGURE 7 is a front view of a portion of the hair extension device, illustrating certain details of the device.

[0026] FIGURES 8, 9 and 10 are back views of embodiments of the hair extension device.

[0027] FIGURE 11 illustrates a method for forming the sheets of artificial hair used in the invention.

DRAWING REFERENCE NUMBERS

10 Hair extension device

12 Natural hair

14 Artificial hair strands

16 Proximal end of hair strands

18 Distal end of hair strands

20 Support for artificial hair strands

22 Means for securing artificial hair strands to support for artificial hair strands

24 Sheet of artificial hair strands

26 Inner sheet of artificial hair strands

28 Outer sheet of artificial hair strands

30 Weft

31 Front face of weft

33 Back face of weft

32 Binding of weft

34 Top margin of weft

36 Bottom margin of weft

38 Side margin of weft

40 Means for attaching hair extension device to natural hair

42. Miniclip comb

[0028] **DETAILED DESCRIPTION OF THE INVENTION**

[0029] The term “artificial hair” is used herein to describe any hair used in the device of the invention, other than the wearer’s hair which grows from the wearer’s scalp.

The term “natural hair” as used herein denotes the wearer’s hair that grows from the wearer’s head, without regard to whether or not that hair has been chemically, mechanically and/or thermally treated. The artificial hair used in the device of this invention may be synthetic fibers, or may be human or animal hair in its natural state, e.g. not chemically processed with bleaching, coloring, waving, straightening or other agents. Alternatively, the artificial hair may have been treated to change its color and/or texture (wavy, straight) prior to attaching it to the hair extension device. Due to the high cost of human hair, and the increasing quality of synthetic hair, as well as the much lower cost for synthetic hair, the use of synthetic hair is preferred.

[0030] The extensions of the present invention are less costly, both in terms of materials and services of a hairstylist, as compared with the permanent and semi-permanent extension methods.

[0031] The hair extension device of the invention is comprised of three main components, as follows: a first portion, called a weft **30**, a second portion comprising sheets **24** of artificial hair strands **14**, and a third portion comprising means **40** for attaching the weft to the wearer’s natural hair.

[0032] The weft **30** is the portion to which the artificial hair strands or fibers **14** (synthetic or of human or animal origin) are attached. The weft **30** must be of sufficient width that the artificial hair strands **14** can be sewn, glued or otherwise secured thereto to the weft.

[0033] The weft **30** has a top margin **34**, a bottom margin **36**, and two side margins **38**. The weft **30** has a front face **31**, to which the means **40** for securing the device to the wearer’s hair are attached. The weft **30** also has a back face **33**, to which sheets **24** of artificial hair strands **14** are attached.

[0034] The weft 30 can be of any width, but is preferably of sufficient width to span the back of the wearer's head, in a distance equal approximately to the distance from one of the wearer's ear to the wearer's other ear, along a plane substantially parallel to the ground (assuming that the wearer is standing or sitting straight up). As described in more detail below, the wearer uses the device by placing the weft 30 against the wearer's head where the top and bottom margins of the weft 34, 36 are at a position substantially parallel to the ground (assuming that the wearer is standing or sitting straight up while the device is being applied to the wearer's natural hair 12). The hair extension device 10 can be placed at ear level, below ear level, or more preferably, above ear level. A device 10 having a width which substantially traverses the distance between the average person's ears on the back of the person's head provides the unexpected advantage of ease of application of a full-looking hair extension with minimal effort.

[0035] The sheets 24 of artificial hair strands 14 are obtained by laying the strands 14 over a support means 22 at about the half-way point in the length of each strand 14, and securing the strands 14 to the support means 22.

[0036] Alternatively, the sheets 24 of artificial hair strands 14 can be obtained by sewing, fusing or using other means to secure the hair strands 14 together at one end sufficiently long enough to permit the sheets 24 so produced to be permanently secured to the weft 30.

[0037] The weft 30 may be made of any suitable, flexible, strong material. The material should be somewhat flexible, so that the hair extension device 10 can bend to the curvature of the wearer's head. It is desirable that the weft 30 be of a material that is durable and does not change shape other than to bend as heretofore described. The weft 30 may be made of a piece of lace fabric or webbing. Optionally, the weft 30 is provided with binding material on its margins. The binding 32 material on the edges may be used for aesthetic purposes, such as to improve the attractiveness of the weft, or for functional

reasons, or for a combination of aesthetic and functional. For example, the binding 32 material on the edges may also be used to keep intact and/or soften the raw edges of the fabric or webbing comprising the weft 30.

[0038] In a preferred embodiment of the hair extension device 10 of the invention, the inner sheet 26 of artificial hair strands 24 is of a shorter overall length than the other sheet or sheets 24 of artificial hair strands 14. In a still more preferred embodiment, the inner sheet 26 is about half the length of the other sheet or sheets. The term “length of sheet” or “length of sheets”, means the distance from the top margin 34 of the weft 30 to the distal ends of the hair strands 18.

[0039] To produce a hair extension 10 having the appearance of a blunt cut hairstyle, the hair extension should be made using sheets 24 wherein the distal ends of the hair strands 18 in all sheets 24 meet at the same distance from the top margin of the weft 34.

[0040] To produce a hair extension 10 having the appearance of a layered hairstyle, the hair extension should be made using sheets 24 wherein the distal ends of the hair strands 18 in each sheet 24 are of differing lengths relative to the other sheet or sheets, when measured from the top margin of the weft 34.

[0041] In one embodiment of the hair extension device of the invention, the sheets of hair at the top margin of the weft are arranged closely together, and the remaining sheets are spaced apart. For example, the following illustrates an embodiment comprising three sheets 24 of artificial hair strands 14. There is a first artificial hair sheet 24 attached proximal to the top margin 34 of the weft 30, and a third artificial hair sheet 24 attached proximal to the bottom margin 36 of the weft 30, wherein the second sheet 24 is attached between the first and third sheets, but is spaced closer to the first sheet 24 than to the third sheet 24. Other embodiments may use a greater number of sheets 24.

[0042] For example, the following illustrates an embodiment comprising five sheets 24 of artificial hair strands 14. The first sheet 24 is attached proximal to the upper

margin of the weft **30** and the second sheet and third sheet are attached below and proximal to the first sheet, and the fifth sheet is attached proximal to the bottom margin of the weft and the fourth sheet is attached between the third sheet and fifth sheet.

[0043] In yet another embodiment, the sheets of hair at the bottom margin of the weft are arranged more closely together than the remaining sheets are spaced from one another.

[0044] In one embodiment, the weft **30**, beginning from the top **34** margin down to the bottom margin **36**, is divided into four equally sized quarters, the first quarter being from the top margin **34** and comprising at least two sheets **24** of hair, that are attached proximal to the top margin **34** of the weft; the second and third quarters of the weft **30** optionally comprising at least one sheet **24** of hair; and the bottom quarter of the weft **30** comprising at least one sheet **24** of hair proximal to the bottom margin **36**.

[0045] The sheets of artificial hair strands **24** can be comprised of relatively straight artificial hair strands **14**, thereby providing the wearer with a hairstyle that is straight and sleek. Alternatively, the sheets of artificial hair strands **24** can be comprised of relatively wavy or curly hair strands, thereby providing the wearer with a hairstyle that is wavy and and/or bouncy. Yet another alternative is to produce a single hair extension incorporating sheets of artificial hair strands **24** of different textures (i.e., straight and wavy or curly artificial hair strands **14**) to produce a desired hairstyle.

[0046] In a specific embodiment, the weft **30** is made of nylon lace to which the artificial hair strands are sewn via stitches transversing the length of the weft **30**. Other means for attaching the artificial hair may be used, such as gluing, hot melt adhesive, stapling, tacking, etc.

[0047] The weft **30** must also be suitable for attaching a means **40** for attaching the hair extension device **10** to the wearer's natural hair **12**.

[0048] Regarding means 40 for attaching the weft 30 (and the device 10) to the wearer's natural hair 12, any number of mechanisms may be employed, provided that the mechanism reliably secures the weft 30 to the wearer's natural hair 12. Preferably, the means 40 comprises a flexible mini-clip comb which has small comb-like rounded projections which are slid onto the wearer's natural hair 12 while the mini-clip comb is flexed in the open position. Once the projections are in contact with the hair, the mini-clip combs are flexed into closed position, thereby clamping the mini-clip combs onto the natural hair 12 and securing the hair extension device in place.

[0049] The mini-clip comb 42 preferably is comprised of a flexible material such as metal.

[0050] The device is used by the wearer by temporarily securing, such as by hair clip or bobby pin, in an upright position a swath of hair to form a substantially horizontal part in the wearer's natural hair 12, thereby exposing a section of the wearer's natural hair 12 underneath. Next, the hair extension device 10 is aligned proximate to the horizontal part in the natural hair 12 so formed, and then the device 10 is secured to the exposed section of natural hair. The wearer then contacts the natural underneath hair with the means 40 for attaching the hair extension device 10, and those means 40 secured. If a miniclip comb 42 style means 40 is used, then the wearer places the miniclip combs in their open position prior to contacting them with the natural hair. Once the device 10 is positioned to the wearer's liking, using the comb or tines portions of the miniclip combs 42 to temporarily maintain the device 10 in the desired position, the wearer will then bend the miniclip comb 42 so that it clamps down on the hair, achieving the closed position. In the closed position the wearer's hair is sandwiched between the two portions of the miniclip comb 42. Thereafter, the temporarily secured swath of hair is released and laid on top of the device 10.

WHAT IS CLAIMED IS:

1. A hair extension device comprising:

a substantially planar weft having a top margin, a bottom margin, two side margins, a front face and a back face;

means for attaching said weft to a wearer's natural hair, said means for attaching secured to the front face of the weft and below the top margin of the weft;

at least two sheets of artificial hair strands attached to the back face of the weft;

wherein a first sheet of artificial hair strands is attached to the back face of the weft proximal to the top margin of the back face weft, and a second sheet of artificial hair strands is attached to the back face of the weft between the first sheet of artificial hair strands and the bottom margin of the weft.
2. The device of claim 1, wherein the artificial hair strands are attached to a support member along the length of the support member, and wherein the strands and support together form a sheet of artificial hair strands.
3. The device of claim 1, wherein the means for attaching the weft is aligned in a substantially linear fashion with the top margin of the weft.
4. The device of claim 2 having a width sufficient to attach substantially from ear to ear to the back of the wearer's head.
5. The device of claim 1 wherein the bottom margin of the weft is shorter in length than the top margin of the weft, and the side margins of the weft form curves where the bottom margin and side margins of the weft meet.

6. The device of claim 1 wherein the weft further comprises binding material at the top, bottom and side margins on the front face and the back face of the weft.
7. The device of claim 1 comprising at least three sheets of artificial hair strands attached to the backface of the weft.
8. The device of claim 7, wherein the first sheet is attached proximal to the top margin of the weft, and the third sheet is attached proximal to the bottom margin of the weft, and the second sheet is attached between the first and third sheets, but closer to the first sheet than the third sheet.
9. The device of claim 7, wherein the device has at least five sheets of artificial hair strands attached to the back of the weft, wherein the first sheet is attached proximal to the top margin of the weft and the second sheet and third sheet are attached below and proximal to the first sheet, and the fifth sheet is attached proximal to the bottom margin of the weft and the fourth sheet is attached between the third sheet and fifth sheet.
10. The device of claim 7, wherein the device has at least five sheets of artificial hair strands attached to the back of the weft, wherein the first sheet is attached proximal to the top margin of the weft and the fifth sheet is attached proximal to the bottom margin of the weft and the third sheet and forth sheet are attached above and proximal to the fifth sheet, and the second sheet is attached between the first sheet and third sheet.
11. The device of claim 7, wherein the weft, beginning from the top margin down to the bottom margin, is divided into four equally sized quarters, the first quarter being from the top margin and comprising at least two sheets of hair, that are attached proximal to the top

margin of the weft; the second and third quarters of the weft optionally comprising at least one sheet of hair; and the bottom quarter of the weft comprising at least one sheet of hair proximal to the bottom margin.

12. The hair extension of claim 1, wherein the artificial hair is selected from the group consisting of synthetic hair, natural hair, natural hair that has been chemically treated, natural hair that has been mechanically treated, natural hair that has been thermally treated, or a combination of one or more of the foregoing.

13. The hair extension device of claim 1, wherein the sheet of artificial hair strands attached proximal to the bottom margin of the weft is shorter in length than at least one other sheet of artificial hair strands.

14. The hair extension device of claim 1, wherein the first sheet of artificial hair strands consist essentially of artificial hair strands having distal ends which meet at substantially the same spot as the distal ends of the artificial hair strands of the second sheet.

15. The hair extension device of claim 1, wherein each of the first and second sheets of artificial hair strands are substantially comprised of artificial hair strands which are substantially the same length within each sheet, and wherein the artificial hair strands of the second sheet are longer or shorter than the first sheet.

16. The hair extension device of claim 1, wherein the sheets of artificial hair strands layers consist of hair fibers that are of differing length.

17. The hair extension device of claim 8, wherein artificial hair strands of the first sheet are substantially longer or shorter than the artificial hair strands of the sheet attached proximal to the bottom margin.

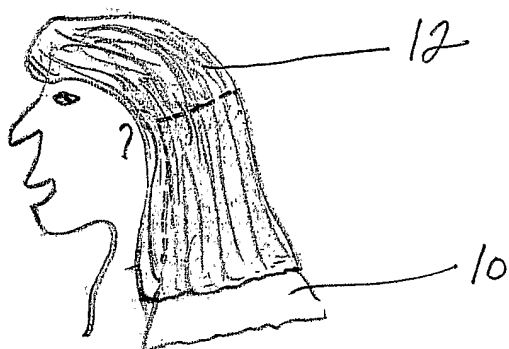


Fig 1

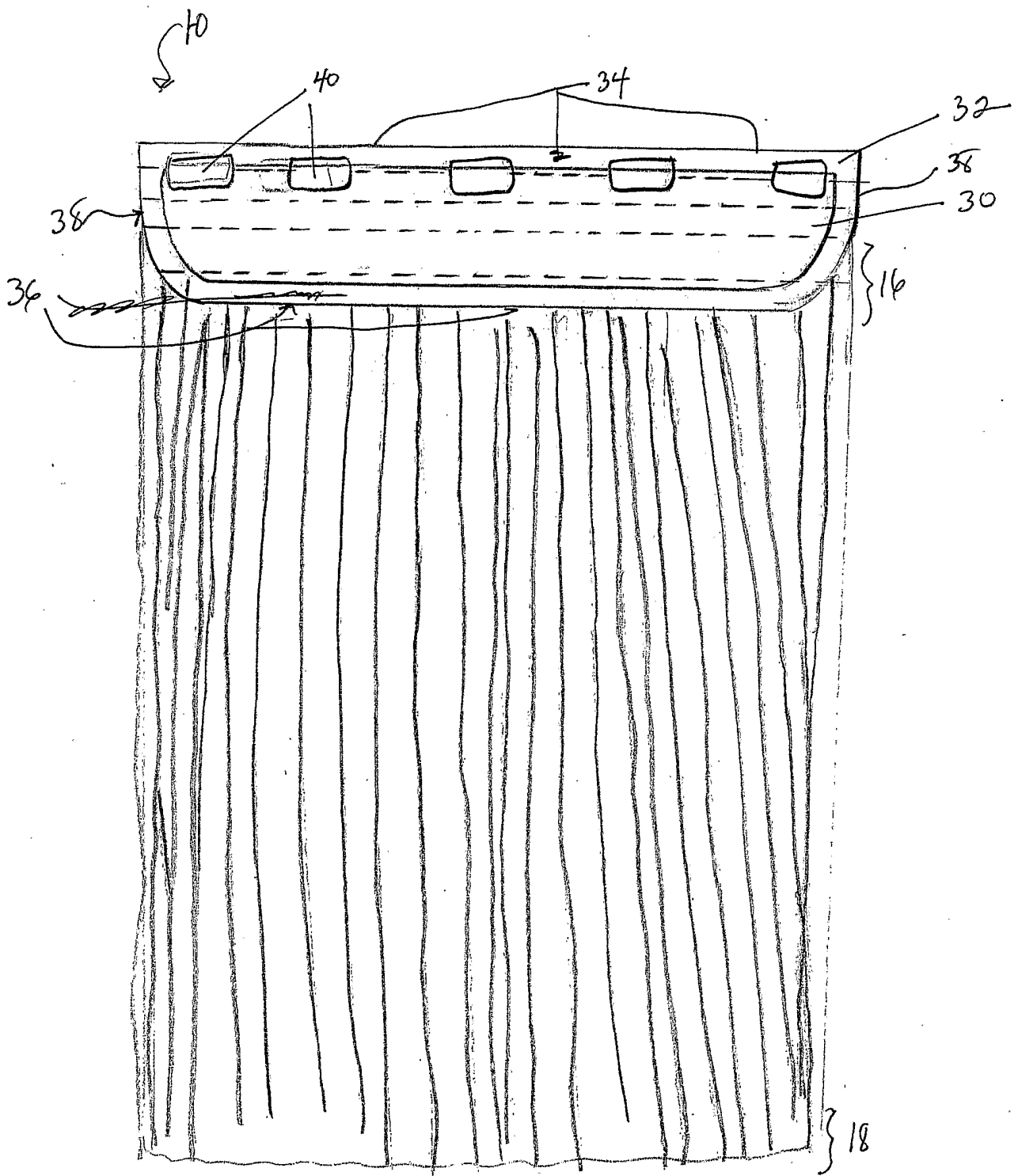


Fig 2

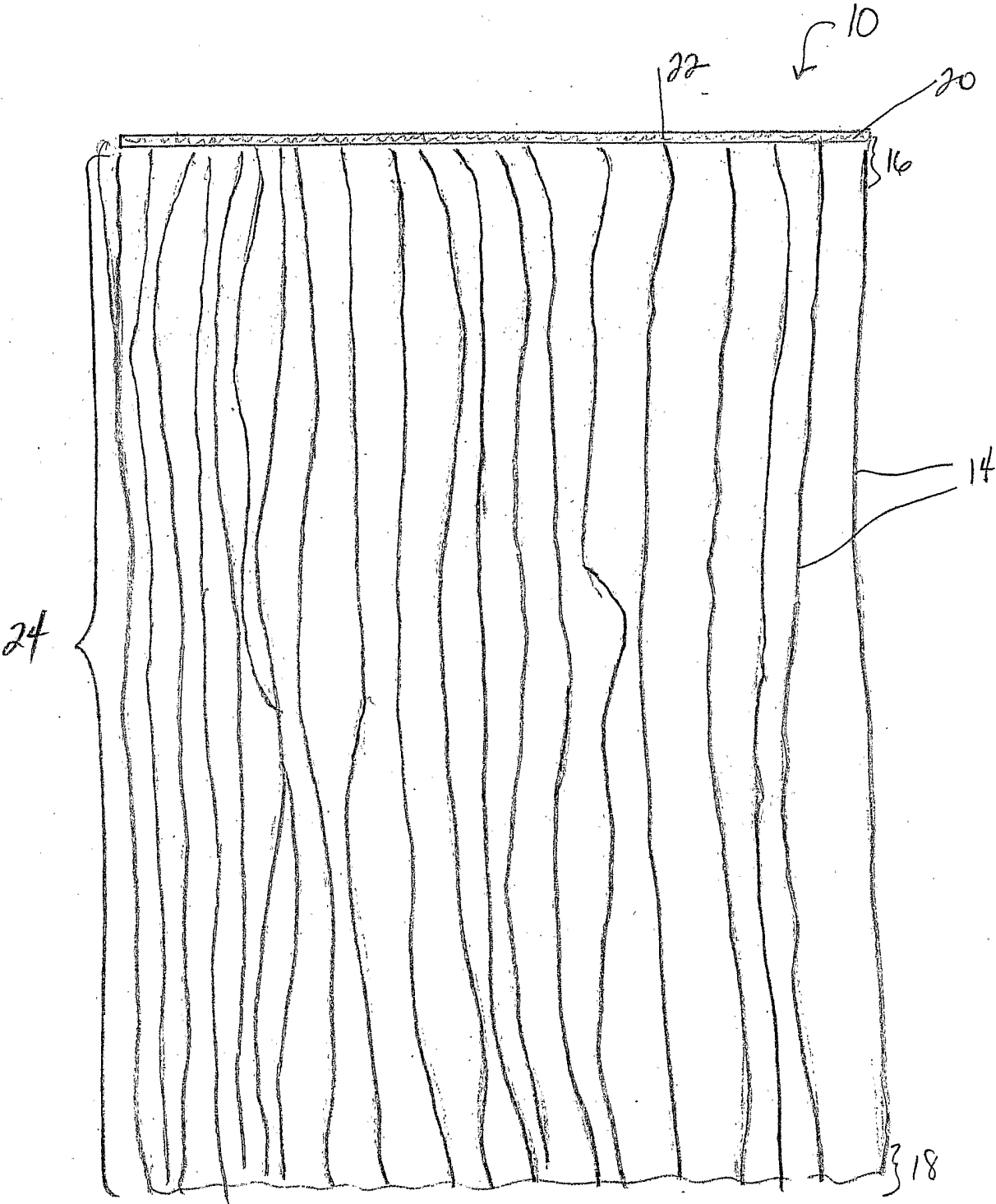


Fig 3

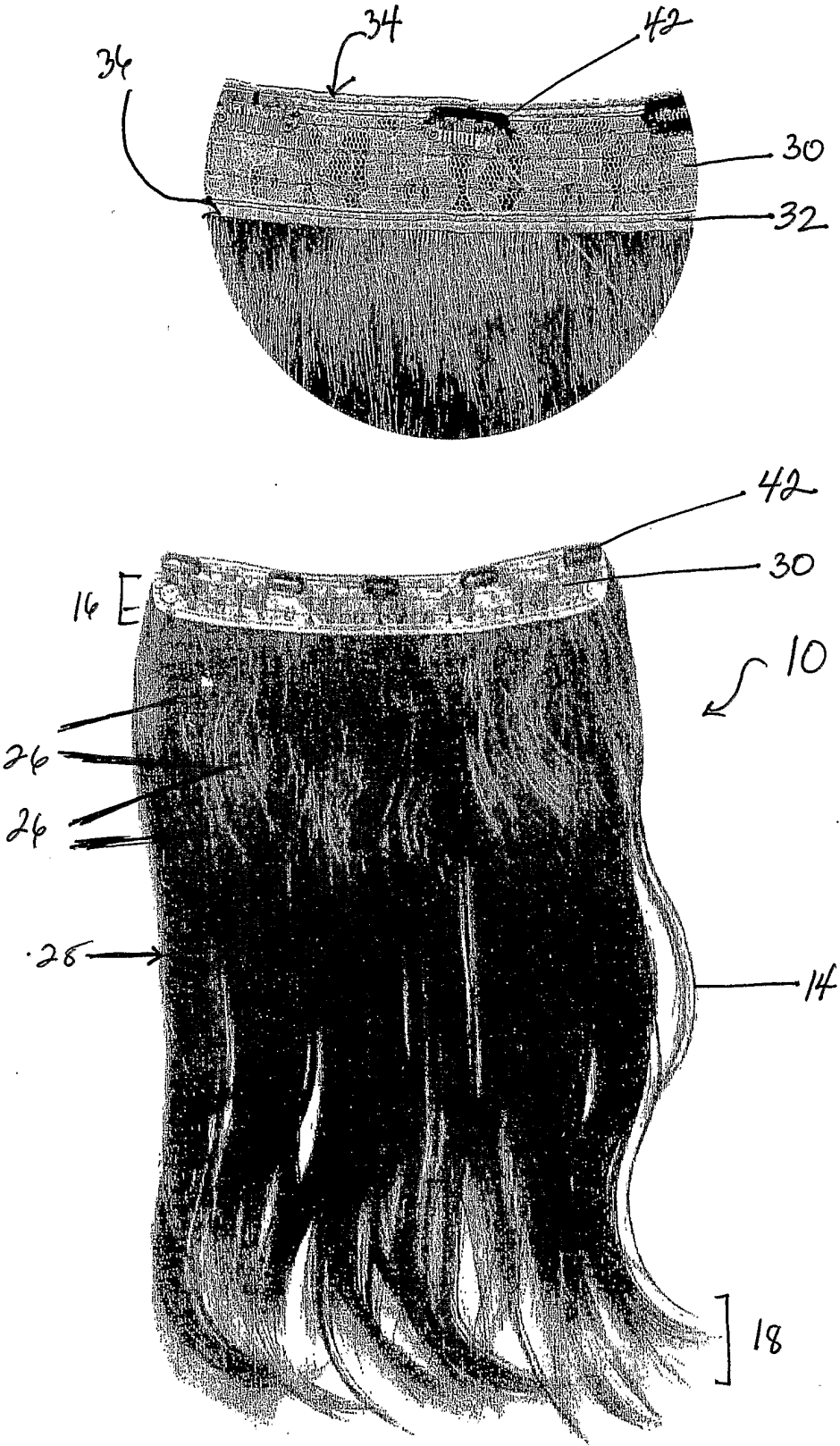


Fig. 4

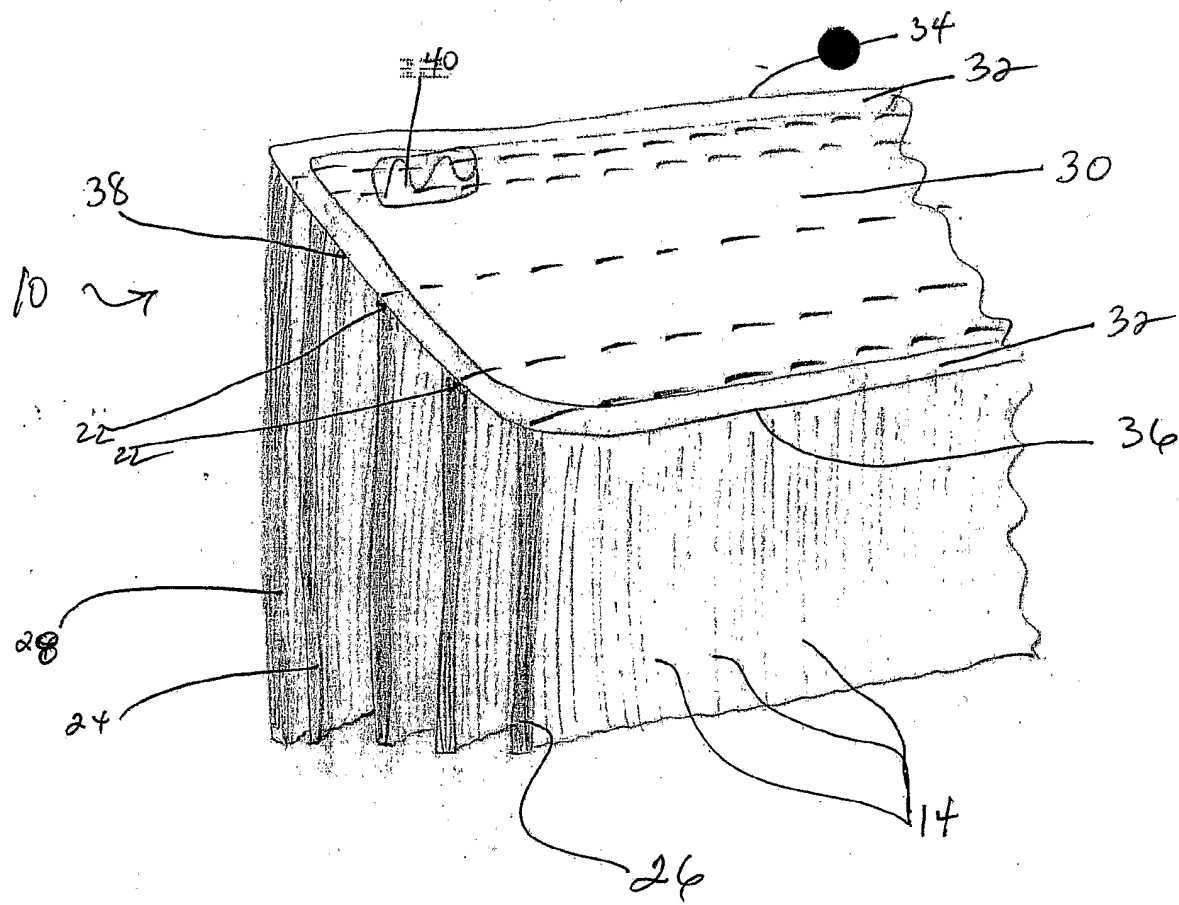


Fig. 5

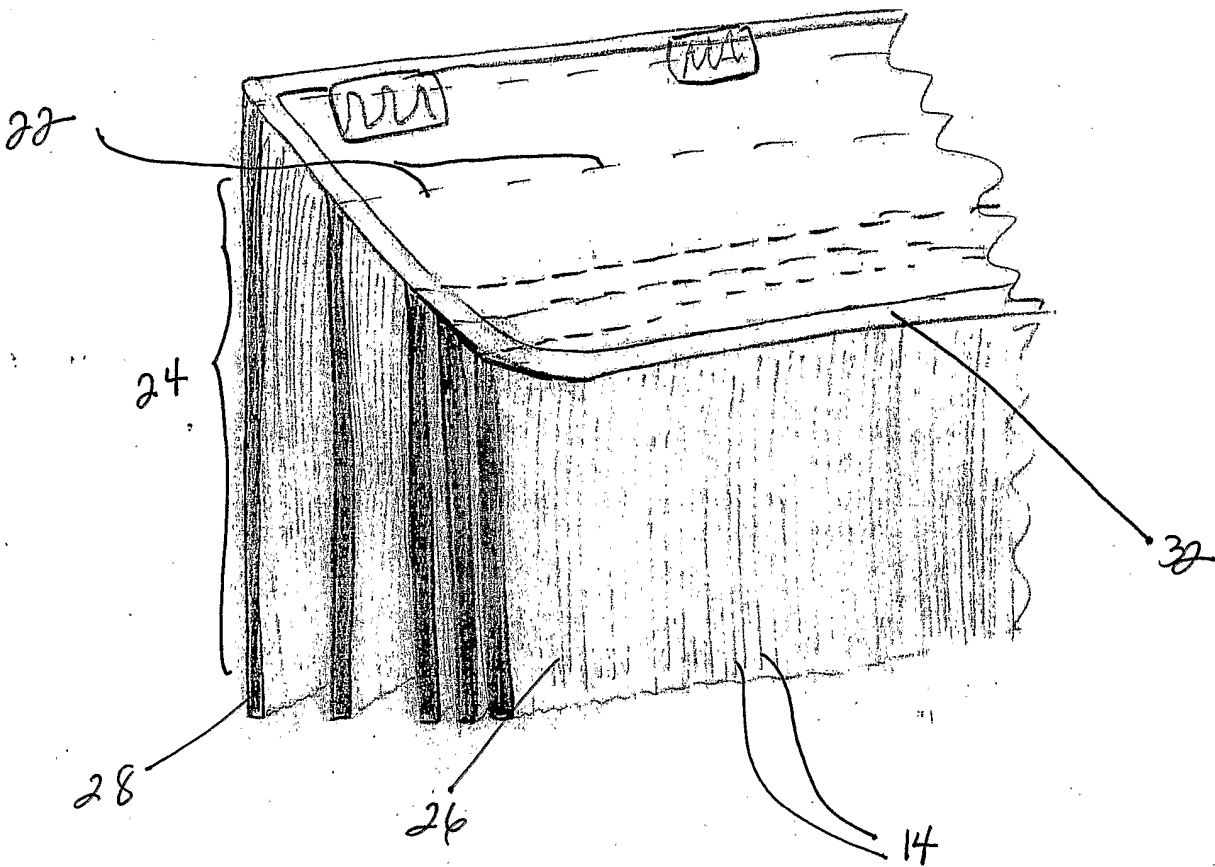


Fig. 6

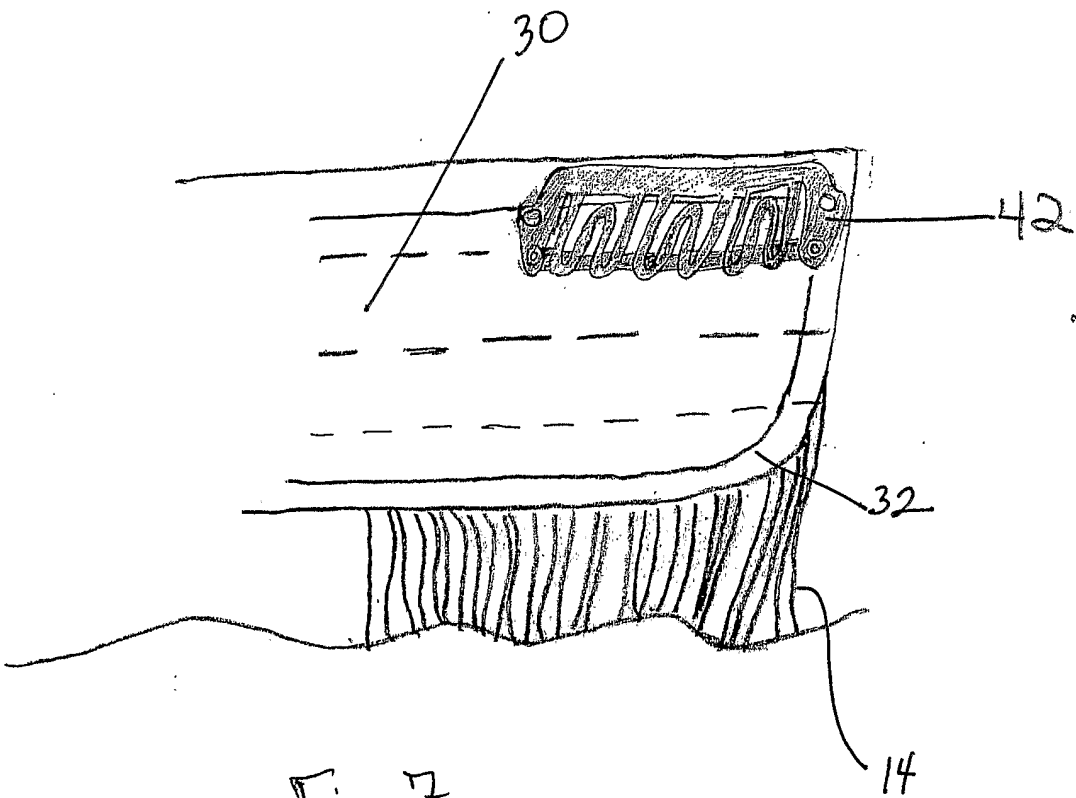


Fig. 7

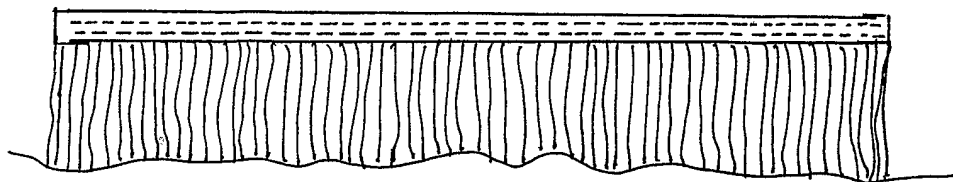


Fig. 8

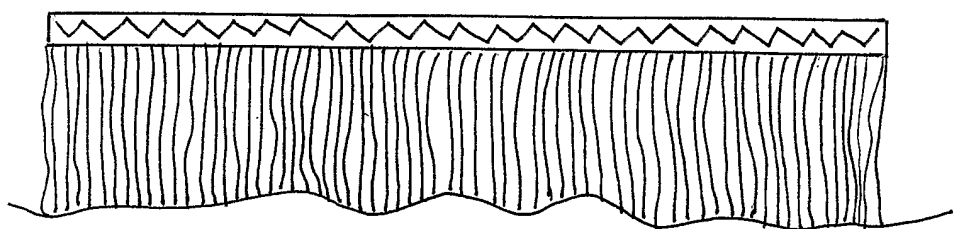


Fig. 9

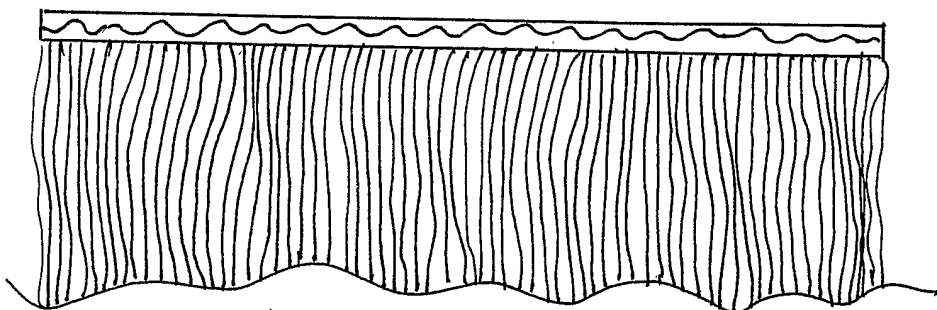


Fig. 10

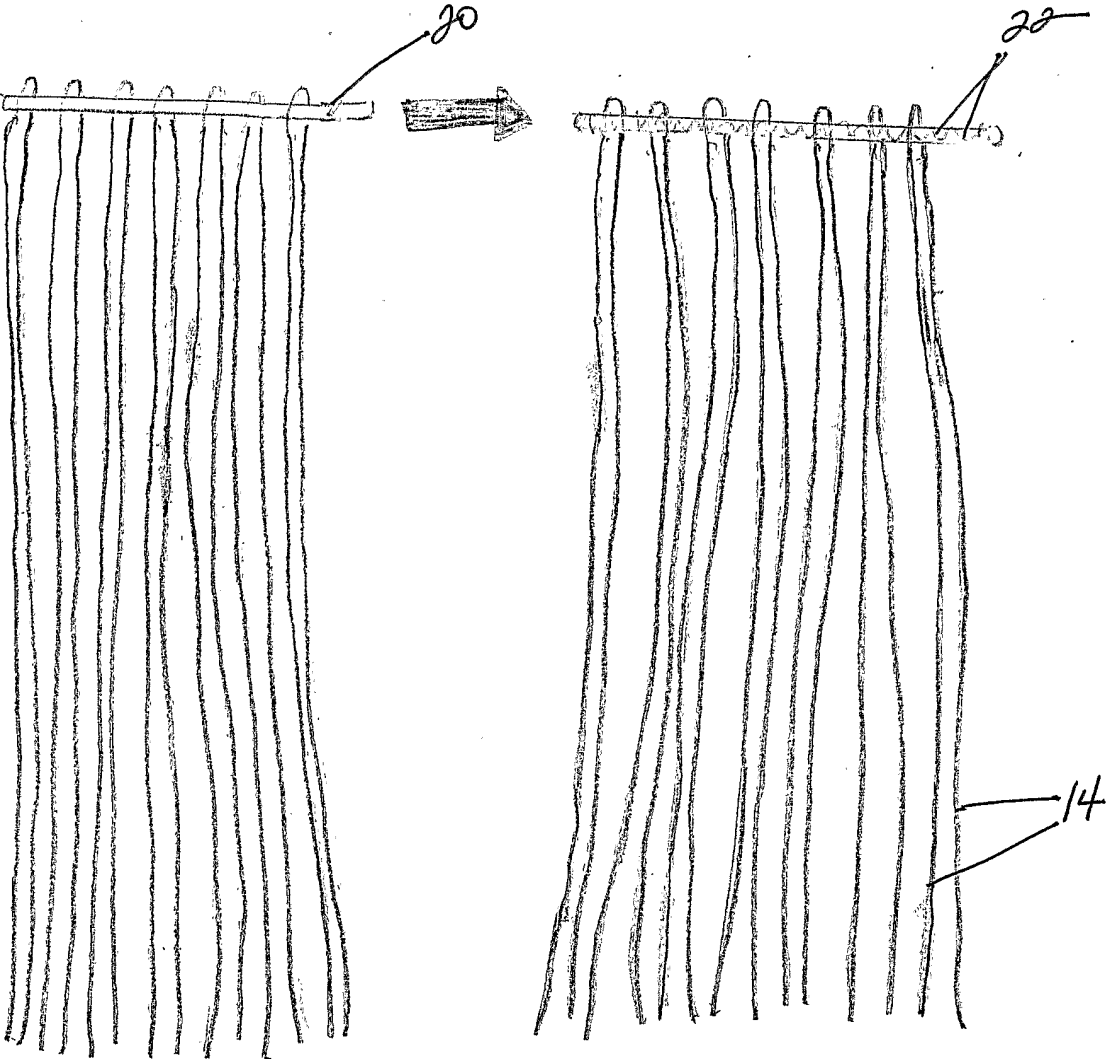


FIG. 11

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/22082

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A41G 3/00, 5/00

US CL : 132/201,53,54

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)

U.S. : 132/201,53,54

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

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.
E, X --- E, Y	US 2005/0194015 A1 (Watts) 08 September 2005 (09.08.2005), column 1, lines 20-30.	1-5,7,12-16 ----- 6,8,9-11,17
P,X --- P,Y	US 2004/012985 A1 (Frazier) 8 July 2004 (07.08.2004), column 8, lines 60-70.	1,2,3,4,7,8,12,14, ----- 5,6,9,10,11,13,15,16,1 7
X --- Y	US 3,280,826 (Jenkins) 25 October 1966 (25.10.1966), column 1, lines 60-70. column 2, lines 20-30.	1-4,6,7,8,12,15 ----- 5,9,10,11,13,14,16,17

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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Date of the actual completion of the international search

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