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(54) Title: HAIR WEAVE REMOVAL APPARATUS AND METHOD

(57) Abstract: A hair weave removal apparatus for removing hair weave stitches has a handle and a tip extending from and retractable within the handle. The tip has a first extending portion, a second extending portion, a linking portion between the first extending portion and the second extending portion, and a sharp edge. The sharp edge is on the linking portion, the first extending portion, or both. In one embodiment, the first extending portion also includes a blunt surface on an opposite side of the first extending portion than the linking portion. In another embodiment, the first extending portion also includes a distal end with a width smaller than a width of the hair weave stitches. A method for removing a hair weave includes providing a subject having weave hair coupled to the subject through at least one stitch of thread. The method also includes providing a handle with a substantially rigid tip. The tip has a first extending portion with a blunt first side and a distal end, a second extending portion fixed relative to the first extending portion, a linking portion, and a sharp edge on the first extending portion, the linking portion, or both. The first extending portion is inserted into the at least one stitch between the thread and the weave hair, and the sharp edge is pushed against the thread to cut the at least one stitch.



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HAIR WEAVE REMOVAL APPARATUS AND METHOD

5 BACKGROUND

Hair weaving systems and techniques are commonly used to lengthen or increase the fullness of human or animal hair, such as show horses. Hair weaving consists of gluing, heat-bonding, or crocheting synthetic or natural human or animal hair ("weave hair") onto layers of a subject's existing hair. When gluing or heat-bonding the weave hair onto the existing
10 hair, the existing hair is divided into sections, and the weave hair is then either glued or fused with wax onto the existing hair sections. To crochet the weave hair onto the existing hair, the existing hair is braided along the scalp and the weave hair is then stitched with a strong weaving thread onto the braids. Alternatively, the weave hair may be stitched onto a skull cap that is fixed to the subject.

15 Weave hair, particularly when it consists of natural human hair, can be very expensive, so it is frequently used repeatedly before it is discarded. Although some weave hair may be used for up to one year before it should be discarded, it must be frequently removed from the existing hair to allow for tightening and cleaning.

20 Glued or heat-bonded weave hair may be removed through application of hair oils that loosen the chemical bonds between the weave hair and the existing hair. This technique can be messy, however, and is not effective on more attractive, crocheted weaves.

When removing crocheted weave hair, a hair stylist or groomer will typically cut each stitch of the hair weave with clippers or scissors. The hair stylist or groomer typically must tug on the weave hair and attempt to insert a blade of the clippers or scissors between the
25 weave hair and the tight stitches. This process of tugging, inserting, and cutting can be time consuming, painful, unsanitary, and damaging to the expensive weave hair and the subject's body and existing hair. Points of the blades frequently also slip and nick the stylist's, groomer's, or subject's skin, resulting in pain, infections, and even transfer of disease. Even without cutting of the subject's skin, use of the same scissors or clippers on multiple subjects
30 can transfer lice or other contaminants. Because the clippers or scissors are typically reused without being sterilized, techniques such as these can pose a dire risk to all involved.

SUMMARY OF THE INVENTION

35 A hair weave removal apparatus for removing hair weave stitches has a handle and a tip extending from and retractable within the handle. The tip has a first extending portion, a second extending portion, a linking portion between the first extending portion and the second extending portion, and a sharp edge. The sharp edge is on the linking portion, the first extending portion, or both. In one embodiment, the first extending portion also includes a blunt surface on an opposite side of the first extending portion than the linking portion. In another embodiment, the first extending portion also includes a distal end with a width

smaller than a width of the hair weave stitches.

5 A method for removing a hair weave includes providing a subject having weave hair coupled to the subject through at least one stitch of thread. The method also includes providing a handle with a substantially rigid tip. The tip has a first extending portion with a blunt first side and a distal end, a second extending portion fixed relative to the first extending portion, a linking portion, and a sharp edge on the first extending portion, the linking portion, or both. The first extending portion is inserted into the at least one stitch
10 between the thread and the weave hair, and the sharp edge is pushed against the thread to cut the at least one stitch.

BRIEF DESCRIPTION OF THE DRAWINGS

15 FIG. 1 is a partial cross-sectional view of a hair weave removal apparatus in a retracted state according to an embodiment of the invention;

FIG. 2 is a partial cross-section view of the hair weave removal apparatus of FIG. 1 in a non-retracted state;

FIG. 3 is a partial cross-sectional view of a hair weave removal apparatus in a retracted state according to another embodiment of the invention;

20 FIG. 4 is a partial cross-sectional view of the hair weave removal apparatus of FIG. 3 in a non-retracted state;

FIG. 5 is a side perspective view of the hair weave removal apparatus of FIG. 3 as used according to one embodiment of a method according to the invention; and

25 FIG. 6 is a schematic block diagram of one embodiment of a method according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

As shown in FIGs. 1 and 2, a hair weave removal apparatus 10 for removing hair weave stitches has a handle 20 and a tip 30 extendable from and retractable within the handle
30 20. The handle 20 is hollow and includes a rear outer portion 22 with a cap 28, a front outer portion 24, and a central inner portion 26 that slides within the outer portions 22, 24. A retraction assembly 40 is located within the handle.

35 The tip 30 has a first extending portion 32, a second extending portion 34, a linking portion 36 between them. The first extending portion 32 includes a blunt first surface 32a, an inner, second surface 32b adjacent to the linking portion 36, and a distal end 32c. In this embodiment, a sharp edge 38 runs along the inner surface 32b of the first extending portion, the linking portion 36, and an inner surface of the second extending portion 34. However, it is also within the scope of the invention for the sharp edge to be located on any one or more of the first extending portion, the second extending portion, and/or the linking portion. In this embodiment, the second extending portion 34 includes a blunt, curved, end portion 34a.

The retraction assembly 40 includes a first linear, toothed element 42 fixed to a proximal end of the tip 30 and a second linear, toothed element 44 fixed to the cap 28. A central member 46 is fixed to the central inner portion 26 and is located between the first and second toothed elements 42, 44. The central member 46 includes a rotatable toothed wheel 48 that engages the teeth of the first and second toothed elements 42, 44.

When the outer portions 22, 24 of the handle 20 are moved away from each other, the front outer portion 24 pulls the central portion 26 along with it through force of friction. Thus, as the rear outer portion 22 and the central portion 26 are moved apart from each other, the second toothed element 44 rotates the toothed wheel 48 of the central member 46 clockwise through the toothed engagement. The toothed wheel 48 then pushes the first toothed element 42 away from the second toothed element 44. In turn, the first toothed element 42 pushes the tip out of the handle to the position shown in FIG. 2.

Likewise, when the outer portions 22, 24 of the handle 20 are moved toward each other, the front outer portion 24 pushes the central portion 26 along with it through friction force. The toothed wheel 48 then rotates counter-clockwise to pull the first and second toothed elements 42, 44 together, thereby retracting the tip 30 into the handle 20.

The distal end 32c of the first extending portion 32 is sized to be inserted into a stitch of a hair weave (shown in FIG. 5). In this embodiment, a width w of the distal end 32c is less than a typical hair weave stitch width, such as approximately $3/8"$, although one skilled in the art will understand that the width may be changed to fit within different sized stitches. As the width w is increased toward this maximum width, the distal end 32c becomes less sharp, and therefore safer for the subject. As the width w is decreased within this range, the distal end 32c can be more easily inserted into a wide variety of stitch widths at a variety of angles. In one embodiment, therefore, the width of the distal end 32c is approximately between $3/8"$ and $1/2"$, although one skilled in the art will understand that the invention is not limited thereto.

The depth d of the distal end 32c increases from a thin point to the thicker, sharp portion 38 in the proximal direction. The thicker the depth d of the sharp portion 38, the more force is applied by the sharp portion 38 to a stitch when the first extending portion 32 is inserted into it. However, as the depth d of the sharp portion 38 is decreased, the first extending portion 32 can be inserted into the stitch more easily. In one embodiment, therefore, the depth d of the sharp portion is between approximately $1/16"$ and $1/2"$, although one skilled in the art will understand that the invention is not limited thereto.

The first extending portion 32, the second extending portion 34, and the linking portion 36 are formed together in one, rigid piece of metal, such as stainless steel or steel chrome alloy, in the embodiment shown in FIGs. 1 and 2. Although the end 34a of the second extending portion 34 is shown in the form of a ball, any configuration capable of holding a stitch between the first and second extending portions 32, 34 can be substituted. In one embodiment, the second extending portion is a mirror image of the first extending

portion.

The remainder of the tip 30, and the handle 20 are formed of inexpensive plastic, such as thermoplastic polymers, in the embodiment shown to allow for cheap manufacture and disposability. In this embodiment, the handle 20 is approximately 4 or more inches in its non-retracted state so that it may be stably grasped by a hand. However, the invention is not limited to these sizes or materials, and the handle can alternatively comprise aluminum, stainless steel, taklon, etc., and any desirable length.

As shown in FIGs. 3 and 4, another embodiment of a hair weave removal apparatus 100 for removing hair weave stitches has a handle 120 and a tip 130 extendable from and retractable within the handle 120. The handle 120 is hollow and includes an outer housing 122 with a cap 128. The inside surface of the outer housing 122 has two grooves 124 on opposite sides extending from a first inwardly projecting ledge 123 to openings 126 in the outer housing 122. The outer housing 122 also has a second inwardly projecting ledge 128 toward its distal end. A retraction assembly 140 projects through the handle 120 and is fixed to a proximal end of the tip 130.

As discussed above in relation to FIGs. 1 and 2, the tip 130 has a first extending portion 132, a second extending portion 134, a linking portion 136 between them. The first extending portion 132 includes a blunt first surface 132a, an inner, second surface 132b adjacent to the linking portion 136, and a distal end 132c. In this embodiment, a sharp edge 138 runs along the inner surface 132b of the first extending portion, the linking portion 136, and an inner surface of the second extending portion 134. However, it is also within the scope of the invention for the sharp edge to be located on any one or more of the first extending portion, the second extending portion, and/or the linking portion. In this embodiment, the second extending portion 134 includes a blunt, curved, end portion 134a.

The retraction assembly 140 includes a rod having two flanges 142 projecting on opposite sides and pushing through elastic force against the inner surface of the handle 120 within the grooves 124. A compression spring 144 is wound around the rod between the flanges 142 and the second inwardly projecting ledge 128. As the rod is pushed axially against the force of the compression spring 144, the flanges 142 slide along the grooves 124 until they reach the openings 126, thereby pushing the tip 130 out of the handle 120. Due to natural spring force, the flanges 142 project into the openings 126 and stop the rod from moving further.

To retract the tip 130, the flanges 142 projecting outside of the openings 126 are pushed back into the handle 120. The force of the compression spring 144 then pushes the rod backward to the position shown in FIG. 3, thereby retracting the tip 130 back into the handle 120.

In this embodiment, the tip 130 and spring 144 are formed of metal, and the remaining elements are formed of inexpensive plastic to allow for cheap manufacture of the

device. One skilled in the art will understand that other materials may alternatively be used and that the invention is not limited to the embodiments described herein.

5 Although only two embodiments of hair weave removal apparatuses with retractable tips are discussed in detail above, one skilled in the art will understand that many different retractable mechanisms may be suitably substituted, such as those commonly used in retractable pens, etc.

10 Referring to FIGs. 5 and 6, a method for removing a hair weave includes providing a subject 200 having weave hair 202 coupled to the subject through at least one stitch 206 of thread 208. In the embodiment shown, the weave hair 202 is coupled to the subject by being stitched to the subject's hair 204. However, the weave hair 202 can alternatively be coupled to the subject by being stitched to a skull cap (not shown) that is fixed to the subject's head. The method also includes providing a hair weave removal apparatus 10 with a handle 20 and
15 a substantially rigid tip 30, the tip having a first extending portion 32 with a blunt first side and a distal end, a second extending portion 34 fixed relative to the first extending portion, a linking portion 36, and a sharp edge 38 on the first extending portion, the linking portion, or both. The first extending portion 34 is inserted into the at least one stitch 206 between the thread 208 and the weave hair 202. The sharp edge 38 is pushed against the thread 208 to cut
20 the at least one stitch 206.

In one embodiment, the method further includes disposing of the hair weave removal apparatus 10 after cutting the at least one stitch 206. The method may further include retracting the tip 30 into the handle 20. In some embodiments, the method also includes sterilizing the tip 30 before inserting it into the at least one stitch 206.

25 The various embodiments of hair weave removal apparatuses and methods discussed above allow for faster, safer, and less painful hair weave removal, as the apparatus may be quickly slid into hair weave stitches without the need for tugging or snipping. Retractability and the blunt surface of tip being next to the subject's skin can lower the occurrence of accidental nicks and scrapes due to pointy scissors or clippers. Manufacture of the hair
30 weave removal apparatus may also be cheaper than the solid, metal clippers or scissors, so they may be easily sold in bulk units, allowing disposal after each use. Disposability can further increase the safety and cleanliness of the hair weave removal procedure.

35 While this invention has been described in connection with certain examples of embodiments, it is to be understood that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims and equivalents thereof.

WHAT IS CLAIMED IS:

- 5 1. A hair weave removal apparatus for removing hair weave stitches comprising:

 a handle; and

 a tip extending from and retractable within the handle, the tip having a first extending
10 portion, a second extending portion, a linking portion therebetween, and a sharp edge,

 wherein the sharp edge is on the linking portion, the first extending portion, or both.
2. The apparatus of claim 1, wherein the first extending portion further comprises
15 a blunt surface on an opposite side of the first extending portion than the linking portion.
3. The apparatus of claim 1, wherein the first extending portion further includes a
 distal end having a width smaller than a width of said hair weave stitches.
- 20 4. A method for removing a hair weave comprising:

 providing a subject having weave hair coupled to the subject through at least one
 stitch of thread;

25 providing a handle and a substantially rigid tip, the tip including a first extending
 portion, having a blunt first side and a distal end, a second extending portion fixed relative to
 the first extending portion, a linking portion, and a sharp edge on the first extending portion,
 the linking portion, or both;

30 inserting the first extending portion into the at least one stitch between the thread and
 the weave hair;

 pushing the sharp edge against the thread to cut the at least one stitch.
- 35 5. The method of claim 4, further comprising disposing of the handle and the tip.
6. The method of claim 4, further comprising retracting the tip into the handle.
7. The method of claim 4, further comprising sterilizing the tip.

FIG. 1

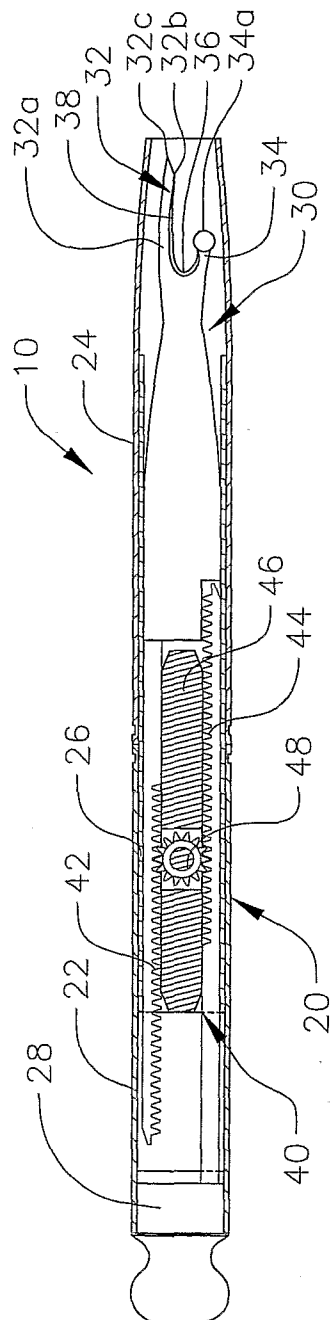


FIG. 2

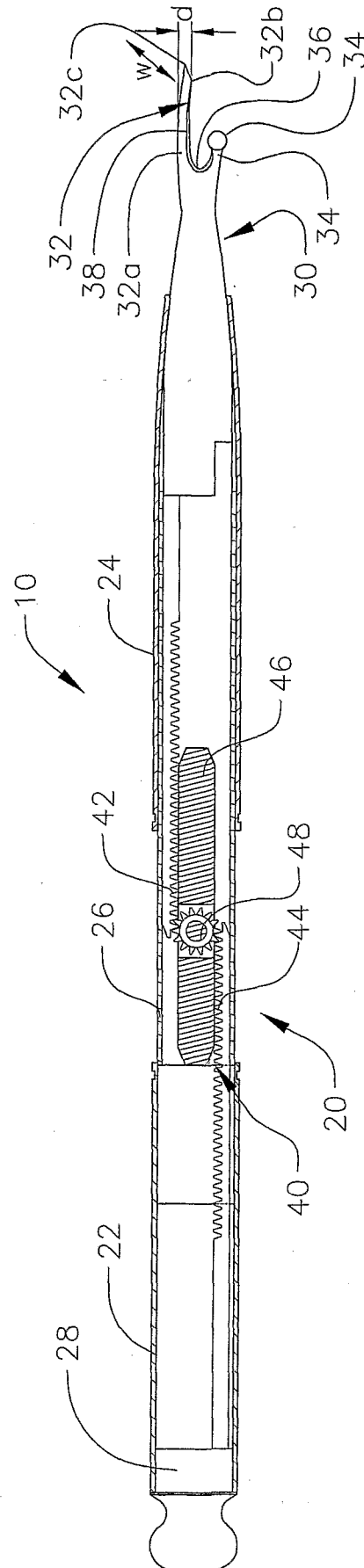


FIG. 3

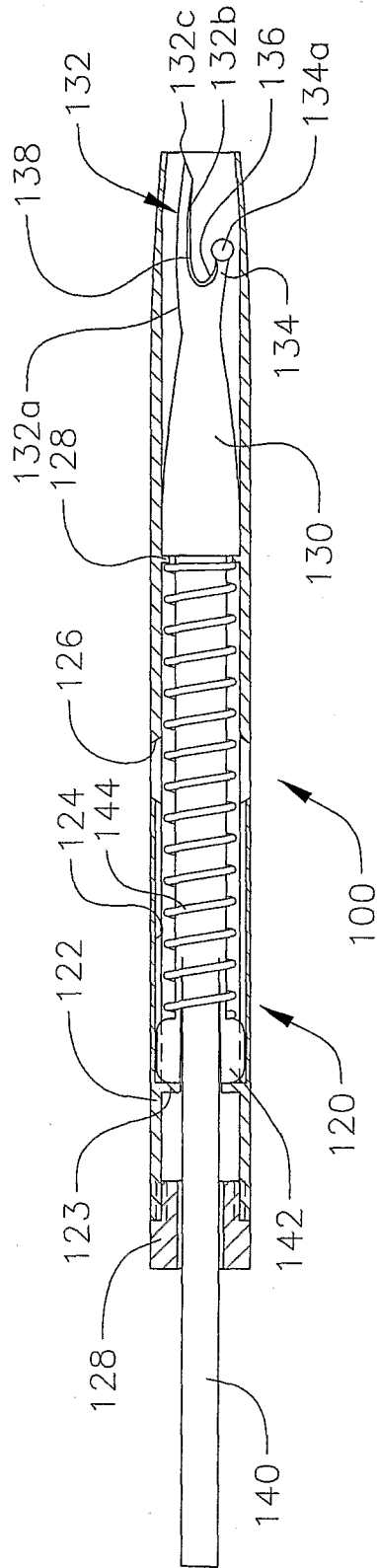
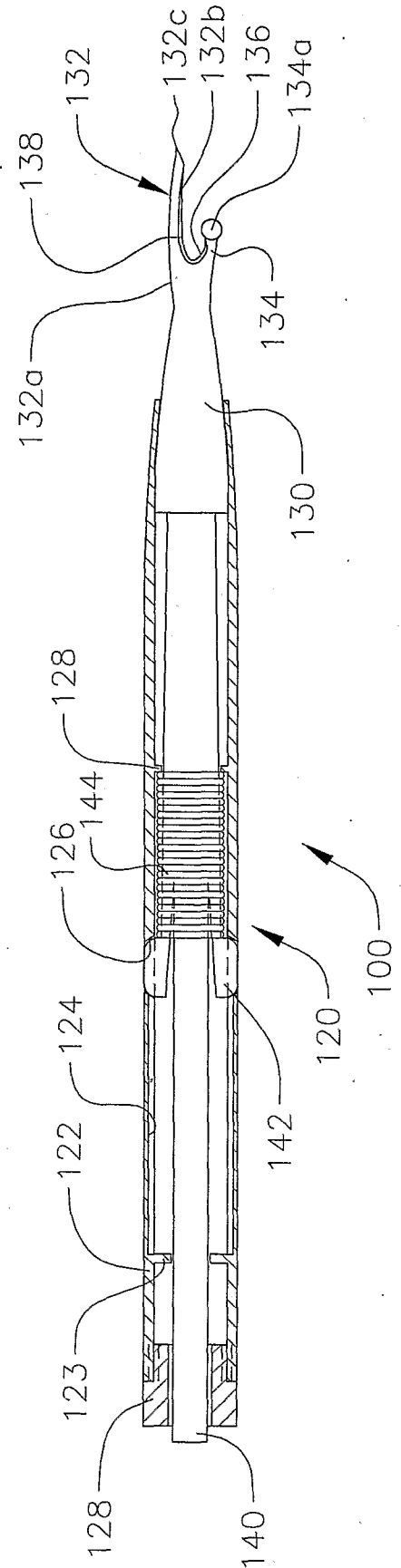
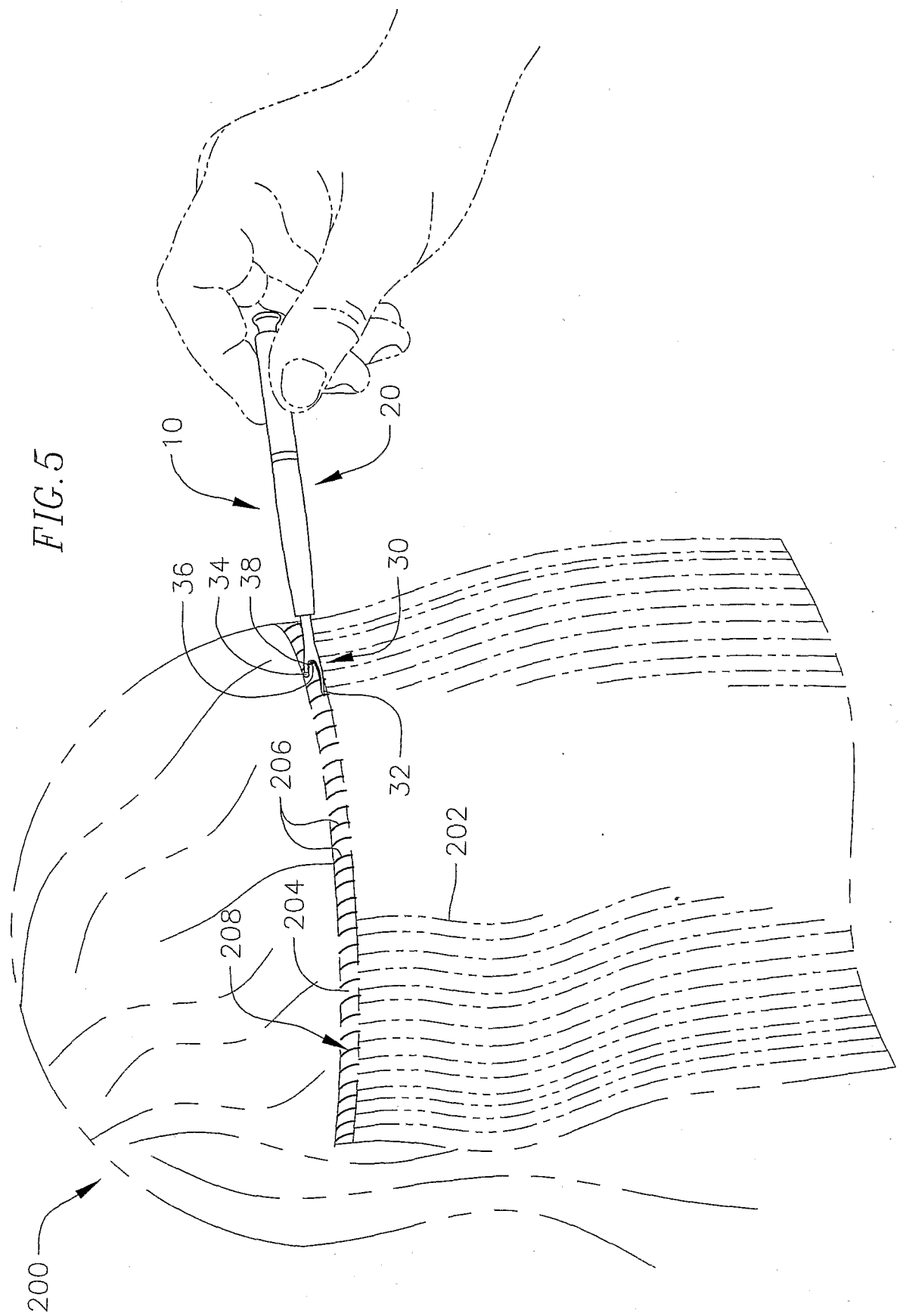


FIG. 4



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FIG. 6