Disclosed is a hair knotting method using a skin net and a wig manufactured thereby. Since the skin net is laid on the upper surface of a net and hairs knotted onto the net are pulled out of the upper surface of the skin net, knots of the hairs fixed to the net are not exposed to the outside and the bottom surface of the skin net, on which hair roots are positioned, has a texture similar to the skin, thereby inducing the natural external appearance of the knotted hairs.
Fig. 4d

Fig. 4e
HAIR KNOTTING METHOD USING SKIN NET AND WIG MANUFACTURED THEREBY

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a hair knotting method using a skin net and a wig manufactured thereby, and more particularly to a hair knotting method using a skin net (hereinafter, referred to as a “New French Part (NFP) hair knotting method”), in which the skin net having a texture similar to the skin is laid on the upper surface of a net and hairs are knotted onto the net and are then pulled out of the upper surface of the skin net, so that knots of the hairs are not exposed to the outside of the skin net and a portion of the skin net having hair roots forms a plane having a texture similar to the skin to form the natural external appearance of the knotted hairs, and a wig manufactured thereby.

[0003] 2. Description of the Related Art

[0004] Generally, wigs are manufactured by a finished net obtained by knotting hairs onto a net having a small thickness, and are worn by a user onto a portion without hairs or the overall portions of his/her head, thereby serving to improve the hair style of the user.

[0005] In a conventional hair knotting method for producing a finished net used to manufacture the above wigs, as shown in FIGS. 1A to 1C, hairs 3 are knotted onto a net 1 with a knitting needle 5, thereby producing the finished net, onto which the hairs 3 are knotted.

[0006] With reference to FIG. 1A, under the condition that a worker holds a designated amount of hairs 3 using the thumb and the forefinger of his/her one hand H1, a single hair 3a to be knotted is picked up using the needle 5 and is fixed to the net 1. Preferably, the length of portions of the hairs 3 positioned on the portions of the hairs 3, held by the thumb and the forefinger of the worker, is approximately one-third of the overall length of the hairs 3, and the length of portions of the hairs positioned under the portions of the hairs 3, held by the thumb and the forefinger of the worker, is approximately two-thirds of the overall length of the hairs 3.

[0007] FIG. 1C illustrates the enlarged state of the knot of the hair 3a onto the net 1.

[0008] Conventional methods for knotting the single hair 3a onto a thread 7 of the net 1 are divided into six methods according to shapes of the hair 3a fixed to the net 1.

[0009] FIGS. 2A to 2F illustrate the above six methods, and more particularly, sequentially illustrate a single knotting method, a half single knotting method, a half double knotting method, a double knotting method, a half single knotting and single knotting method, and a V knotting method.

[0010] Hereinafter, the above conventional knotting methods will be described in brief.

[0011] In the single knotting method, as shown in FIG. 2A, two strands of divided portions of the hair 3a are picked up by a hook of the needle 5, are rotated 360 degrees, and are then pulled to pass through a portion of the hair 3a caught by the hook of the needle 5, thereby fixing the hair 3a to the net 1.

[0012] In the half single knotting method, as shown in FIG. 2B, only one strand of the divided portions of the hair 3a, close to the needle 5 (having a small length), is picked up by the hook of the needle 5, is rotated 360 degrees, and is then pulled to pass through the portion of the hair 3a caught by the hook of the needle 5, thereby fixing the hair 3a to the net 1.

[0013] In the half double knotting method, as shown in FIG. 2C, one strand of the divided portions of the hair 3a, distant from the needle 5 (having a large length), is picked up by the hook of the needle 5, is rotated 360 degrees, and is then pulled to pass through the central portion of the hair 3a, and the other strand is picked up by the hook of the needle 5, is rotated 360 degrees, and is then pulled to pass through the portion of the hair 3a caught by the hook of the needle 5, thereby fixing the hair 3a to the net 1.

[0014] In the double knotting method, as shown in FIG. 2D, two strands of the divided portions of the hair 3a are simultaneously picked up by the hook of the needle 5, are rotated 360 degrees, are pulled to pass through the portion of the hair 3a caught by the hook of the needle 5, and the two strands are picked up again by the hook of the needle 5 and are then pulled to pass through the central portion of the hair 3a, thereby fixing the hair 3a to the net 1.

[0015] In the half single knotting and single knotting method, as shown in FIG. 2E, after a process the same as the half single knotting method is performed, two strands of the divided portions of the hair 3a are simultaneously picked up by the hook of the needle 5, are rotated 360 degrees, are pulled to pass through the portion of the hair 3a caught by the hook of the needle 5, thereby fixing the hair 3a to the net 1.

[0016] In the V knotting method, as shown in FIG. 2F, the hair 3a passes through without knotting when the needle 5 is pulled out of the net 1, thereby fixing the hair 3a to the net 1.

[0017] When the hair 3a is fixed to the net 1 using the above described conventional knotting methods, the worker must firmly fasten the hair 3a so as not to be separated from the net 1, and be careful not to damage the hair 3a and the net 1 by means of the sharp needle 5.

[0018] Hereinafter, a conventional process for manufacturing a wig using the above methods for knotting the hair 3a onto the net 1 will be described.

[0019] The conventional process comprises polyurethane (PU)-forming, basing, cutting, sewing machine (M/C) operating, hand joining (HU), cap coating, EPC setting, remodeling, cap testing, ventilating, final coating, final testing, and packing. The hair knotting method is performed in the ventilating step after the cap testing step. That is, in the ventilating step, one strand or two strands of hairs are knotted by hand directly onto the upper portion of a cap, which have passed the cap testing step. Here, one selected from the above six knotting methods is applied.

[0020] For reference, the above steps of the conventional process will be described in brief, as follows.

[0021] In the PU-forming step, which is the first step of the manufacture of the cap, the size and contour of a pattern is marked on a mold. Here, the size, shape and contour of the cap are fitted with those of the pattern of a user.
In the basing step, the shape of a net is formed based on the user’s pattern so that the mold firmly contacts the cap. In the cutting step, unnecessary portions of a patch and a skin are cut off. In the sewing M/C operating step, connecting portions, such as patch portions, are sewn.

In the HJ step, overlapped portions between nets are not joined using PU, but are wound with a thread. In the cap coating step, joined portions between the PU-skin and the PU-patch are coated with PU three to five times so that PU is not separated from the net in the subsequent step so as to prevent the generation of rough sewing portions. In the EPI setting step, the net is treated with a designed material, such as EPI, so as not to separate any net texture from the net. Here, the treated net is still, thereby maintaining its fixed state.

In the re-molding step, the cap is stretched and fixed to the mold such that the cap has a size corresponding to the contour size, and heated so as to maintain its shape. In the cap testing step, the size and contour of the cap and whether or not the net is broken are tested.

FIGS. 3A and 3B are enlarged views of knot portions between the hairs 3a and the net 1, in a state in which the hairs 3a are knotted to the net 1 by the above conventional knotting methods.

As shown in FIGS. 3A and 3B, knots 3b are formed on the upper surface of the net 1, to which the hairs 3a are fixed, and are exposed to the outside, thereby spoiling the external appearance of the wig. Further, the upper surface of the net 1 contacting the lower portions of the hairs 3a is rough, and, as shown in FIG. 3a, the hairs 3a are laid in the horizontal direction, thereby further spoiling the external appearance of the wig.

SUMMARY OF THE INVENTION

Therefore, the present invention has been made in view of the above problems, and it is an object of the present invention to provide a hair knotting method using a skin net, in which the skin net is laid on the upper surface of a net and hairs knotted onto the net are pulled out of the upper surface of the skin net, so that knots of the hairs fixed to the net are not exposed to the outside and the hairs on the skin net are naturally protruded in the erected state from the skin of the user’s head to improve the external appearance of the knotted hairs, and a wig manufactured thereby.

In accordance with one aspect of the present invention, the above and other objects can be accomplished by the provision of a hair knotting method using a skin net comprising: laying a skin net on a net, and inserting a knotting needle from the upper surface of the skin net into the lower surface of the skin net so that the knotting needle is positioned between the skin net and the net; fixing hairs to the exposed knotting needle, and knotting the hairs onto the net below the knotting needle; pulling simultaneously the hairs, knotted onto the net, and the needle out of the upper surface of the skin net; and repeating the laying of the skin net on the net and inserting of the knotting needle into the skin net, the fixing of the hairs and the knotting of the hairs, and the pulling of the hairs and the needle, wherein knots formed by the fixing of the hairs to the net are not formed on the upper surface of the skin net.

In accordance with another aspect of the present invention, there is provided a hair knotting method using a skin net comprising: knotting hairs onto a designated region of a net; laying a skin net on the net, onto which the hairs are knotted; inserting a knotting needle into the lower surface of the skin net, causing the hairs knotted onto the net to be caught by the knotting needle, and pulling simultaneously the hairs, knotted onto the net, and the needle out of the upper surface of the skin net; and repeating the knotting of the hairs, the laying of the skin net on the net, and the inserting of the knotting needle, catching of the hairs by the knotting needle and pulling of the hairs and the knotting needle, wherein knots formed by the fixing of the hairs to the net are not formed on the upper surface of the skin net.

The knotting of the hairs onto the net is performed by one method selected from the group consisting of a single knotting method, a half single knotting method, a half double knotting method, a double knotting method, a half single knotting and single knotting method, and a V knotting method.

Preferably, the length of portions of the hairs pulled out of the upper surface of the skin net is one half to two-thirds of the overall length of the hairs.

A portion of the net, onto which the hairs are knotted, is formed in a region of the net, positioned at a designated portion, such as the user’s brow, or in the whole area of the net.

In accordance with yet another aspect of the present invention, there is provided a wig manufactured using a net obtained by one of the above hair knotting methods.

BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

FIGS. 1A to 1C are views illustrating a conventional hair knotting method using a net with a knotting needle to manufacture a wig;

FIGS. 2A to 2F are views illustrating various conventional knotting methods;

FIGS. 3A and 3B are enlarged views of knot portions between hairs and a net, in a state in which the hairs are knotted to the net by the conventional knotting methods;

FIGS. 4A to 4F are views illustrating a hair knotting method using a skin net in accordance with one embodiment of the present invention;

FIGS. 5A to 5D are views illustrating a hair knotting method using a skin net in accordance with another embodiment of the present invention;

FIG. 6 is an enlarged view illustrating the state of hairs knotted by the method of the present invention;

FIGS. 7A and 7B are views illustrating one example of a wig manufactured using a finished net obtained by the hair knotting method of the present invention; and

FIG. 8 is a perspective view of a state in which a user wears the wig shown in FIGS. 7A and 7B.
DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0043] Now, preferred embodiments of the present invention will be described in detail with reference to the annexed drawings.

[0044] In an NFP hair knotting method of the present invention, a skin net is laid on the upper surface of the conventional net.

[0045] FIGS. 4A to 4F are views illustrating an NFP hair knotting method using a skin net in accordance with one embodiment of the present invention.

[0046] With reference to FIG. 4A, a silk skin net 13 is laid on the upper surface of a net 11, and a knotting needle 15 is inserted into the silk skin net 13 from the upper surface to the lower surface of the silk skin net 13 so that the needle 15 is positioned between the net 11 and the skin net 13.

[0047] Here, one hand h1 of a worker grasps the skin net 13 and the other hand h2 of the worker holds a rod, to which the knotting needle 15 is fixed. FIG. 4A illustrates a state in which the above work is being performed for a designated period.

[0048] With reference to FIG. 4B, one hair 17a out of a plurality of hairs 17 held by one hand h1 is caught and pulled by a hook of the knotting needle 15 protruded from the lower surface of the skin net 13.

[0049] In FIG. 4B, reference numeral 17 represents portions of hairs, which are exposed to the outside through the skin net 13.

[0050] With reference to FIG. 4C, the hair 17a caught by the hook of the knotting needle 15 is laid on the net 11 using the knotting needle 15. Here, one method selected from the above conventional six knotting methods is used.

[0051] With reference to FIG. 4D, after the hair 17a is laid on the net 11, the knotting needle 15 and the hair 17a are simultaneously pulled out of the upper surface of the skin net 13. Preferably, the length of the pulled portion 17a of the hair 17a is one half to two-thirds of the overall length of the hair 17a.

[0052] FIG. 4E illustrates states of the portions 17 of the hairs 17, which are completely pulled out of the upper surface of the skin net 13.

[0053] FIG. 4F illustrates states of the portions 17 of the hairs 17, which are pulled out of the upper surface of the skin net 13, and hang down by repeating the steps shown in FIGS. 4A to 4E.

[0054] In the above method, a connection portion of the skin net 13 in which the NFP knotting is performed is fixed by a separate knotting step, and an unnecessary extended portion of the skin net 13 in which the NFP knotting is not performed is cut off with scissors and eliminated.

[0055] FIGS. 5A to 5D are views illustrating an NFP hair knotting method using a skin net in accordance with another embodiment of the present invention.

[0056] With reference to FIG. 5A, the hairs 17 are knotted onto a designated region of the net 11, and the skin net 13 is laid on the upper surface of the above region of the net 11 onto which the hairs 17 are knotted.

[0057] With reference to FIG. 5B, the knotting needle 15 is inserted into the skin net 13 from the upper surface to the lower surface of the skin net 13, the knotted hair 17 is caught by the hook of the needle 15, and the hair 17 and the needle 15 are simultaneously pulled out of the upper surface of the skin net 13.

[0058] With reference to FIG. 5C, the hairs 17 are knotted again onto another designated region of the net 11, and the skin net 13 is laid on the upper surface of the above region of the net 11 onto which the hairs 17 are knotted. With reference to FIG. 5D, the knotting needle 15 is inserted again into the skin net 13 from the upper surface to the lower surface of the skin net 13, the knotted hair 17 is caught by the hook of the needle 15, and the hair 17 and the needle 15 are simultaneously pulled out of the upper surface of the skin net 13.

[0059] In steps as shown in FIGS. 5B and 5D, since positions of the hairs 17 knotted onto the net 11 are visible from the outside through the skin net 13 on the net 11, the worker can easily pull the knotted hairs 17 out of the upper surface of the skin net 13.

[0060] In FIGS. 5A to 5D, reference numeral 17 represents portions of hairs, which are pulled out of the skin net 13.

[0061] FIG. 6 is an enlarged view illustrating the states of hairs knotted by the NFP hair knotting method of the present invention.

[0062] As shown in FIG. 6, the portions 17 of the hairs knotted onto the skin net 13 do not have knots on the lower ends thereof, i.e., on the upper surface of the skin net 13. Accordingly, the portions 17 of the hairs are protruded directly from the skin net 13, thereby forming a natural appearance.

[0063] A process for manufacturing a wig using a finished net obtained by the above NFP hair knotting method will be described, as follows.

[0064] That is, the above process comprises PU-forming, basting, cutting, sewing, M/C operating, H/J, cap coating, EPC setting, re-molding, cap testing, ventilating, final testing, and packing.

[0065] Compared to the conventional wig manufacturing process, the above process does not comprise the final coating step. In the final coating step, an adhesive agent or polyurethane is applied to a PU-skin or PU-patch, onto which hairs are knotted. Since it takes approximately 22 to 24 hours to perform the final coating step, the employment of the finished net obtained by the method using the skin net of the present invention shortens the process time by the above hours.

[0066] FIGS. 7A and 7B are views illustrating one example of a wig manufactured by the NFP hair knotting method of the present invention.

[0067] FIG. 7A illustrates the external appearance of the wig, and FIG. 7B illustrates the internal state of the wig, seen from the bottom.

[0068] With reference to FIGS. 7A and 7B, the wig 30 includes a net 20, which is cut to have a designated size and
shape in consideration of the size of a portion of a user's head to be covered, and a plurality of hairs 31 uniformly fixed to the net 20.

[0069] The net 20 includes an NFP hair knotting portion 25, onto which the hairs 31 are knotted by the NFP hair knotting method of the present invention, and a general hair knotting portion 28.

[0070] In FIG. 7B, a portion 21, which is extended from the net 20, is protruded from the upper part of the NFP hair knotting portion 25, and is eliminated, if necessary, after the NFP hair knotting portion 25 and the edge thereof are completed. Here, reference numeral 23 represents a hand line formed by sewing, and reference numeral 27 represents a hand joint portion. The hand line 23 and the hand joint portion 27 serve to uniformly maintain the overall shape of the net 20 and the knotting of the hairs 31 onto the net 20, and have a width of approximately 5 mm.

[0071] Further, reference numeral 29 represents the outermost end line of the net 20, and has a width of approximately 15 mm.

[0072] FIG. 8 is a perspective view of a state in which a user wears the wig 30 shown in FIGS. 7A and 7B.

[0073] In FIG. 8, reference numeral 25 represents the NFP hair knotting portion onto which the hairs are knotted by the NFP hair knotting method of the present invention. The NFP hair knotting portion 25 is positioned at the most conspicuous portion of a user's head, seen from the front, for example, a portion, in which a part of the user's hair is located, from the user's brow.

[0074] The NFP hair knotting portion 25 of the wig 31 of the present invention is positioned around the user's brow. However, the position of the NFP knotting portion 25 of the wig 31 may be modified according to user's tastes, or if necessary, may be formed throughout the overall regions of the net, onto which the hairs 31 are knotted.

[0075] As apparent from the above description, the present invention provides a hair knotting method using a skin net, in which the skin net is laid on the upper surface of a net and hairs knotted onto the net are pulled out of the upper surface of the skin net, so that knots of the hairs fixed to the net are not exposed to the outside and the bottom surface of the skin net, on which hair roots are positioned, has a texture similar to the skin of a user's head to induce the natural external appearance of the knotted hairs, and a wig manufactured thereby.

[0076] Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

1. A hair knotting method using a skin net comprising:
   fixing hairs to the exposed knotting needle, and knotting the hairs onto the net below the knotting needle;
   pulling simultaneously the hairs, knotted onto the net, and the needle out of the upper surface of the skin net; and
   repeating the laying of the skin net on the net and inserting of the knotting needle into the skin net, the fixing of the hairs and the knotting of the hairs, and the pulling of the hairs and the needle.

wherein knots formed by the fixing of the hairs to the net are not formed on the upper surface of the skin net.

2. The hair knotting method as set forth in claim 1, wherein the knotting of the hairs onto the net is performed by one method selected from the group consisting of a single knotting method, a half single knotting method, a half double knotting method, a double knotting method, a half single knotting and single knotting method, and a V knotting method.

3. The hair knotting method as set forth in claim 1, wherein the length of portions of the hairs pulled out of the upper surface of the skin net is one half to two-thirds of the overall length of the hairs.

4. The hair knotting method as set forth in claim 1, wherein a portion of the net, onto which the hairs are knotted, is formed in a region of the net, positioned at a designated portion, such as the user's brow, or in the whole area of the net.

5. A hair knotting method using a skin net comprising:
   laying a skin net on the net, onto which the hairs are knotted;
   inserting a knotting needle into the lower surface of the skin net, causing the hairs knotted onto the net to be caught by the knotting needle, and pulling simultaneously the hairs, knotted onto the net, and the needle out of the upper surface of the skin net; and
   repeating the knotting of the hairs, the laying of the skin net on the net, and the inserting of the knotting needle, catching of the hairs by the knotting needle and pulling of the hairs and the knotting needle,

wherein knots formed by the fixing of the hairs to the net are not formed on the upper surface of the skin net.

6. The hair knotting method as set forth in claim 5, wherein the knotting of the hairs onto the net is performed by one method selected from the group consisting of a single knotting method, a half single knotting method, a half double knotting method, a double knotting method, a half single knotting and single knotting method, and a V knotting method.

7. The hair knotting method as set forth in claim 5, wherein the length of portions of the hairs pulled out of the upper surface of the skin net is one half to two-thirds of the overall length of the hairs.

8. The hair knotting method as set forth in claim 5, wherein a portion of the net, onto which the hairs are knotted, is formed in a region of the net, positioned at a designated portion, such as the user's brow, or in the whole area of the net.

9. A wig manufactured using a net obtained by the hair knotting method as set forth in claim 1.