DESCRIPTION

FASTENING TOOL FOR WIG, AND WIG USING THE SAME

Technical Field

[0001]

The present invention relates to a fastening tool for a wig, for fixing the wig to the head of a wearer, and a wig using the same.

Background Art

[0002]

Wigs are required to be fixed to the head of a wearer so as not to be displaced while being worn. One well-known method for fixing a wig involves, for example, applying an adhesive to a backside of a wig base with hairs implanted therein, that is, a part of one surface of the wig base in contact with the head of a wearer to fix the wig at the head of the wearer.

[0003]

In this method, however, the adhesive comes into contact with the head of the wearer, which might make the wearer feel uncomfortable, for example, feel that the scalp is pulled.

[0004]

Another method for fixing a wig to the head of a wearer without using the adhesive is used which involves holding the wearer's own hair by a "fastening tool" disposed at the backside

of the wig base.

[0005]

Fig. 7 is a top view of such a fastening tool for a wig (which is also referred to as a "wig stopper") disclosed in Patent Document 1. The fastening tool for a wig disclosed in Patent Document 1 includes a frame body (curved reverse member) 7 that can be curved such that its upper surface side becomes convex and its lower surface side becomes concave, and comb teeth (protrusions) 3 each having its base end fixed to one side of the frame 7 and its tip end as a free end exceeding beyond another side of the frame body 7.

[0006]

The center of the frame body 7 is pushed to change the curved direction of the frame body 7 to make its upper surface convex, so that the tip end of each of the comb teeth 3 moves away from the frame body 7. The wearer's hairs are inserted into between the comb teeth 3 and the frame 7. Thereafter, the center of the frame body 7 is pushed in the opposite direction to change the curved direction of the frame body 7 to make its lower surface convex, which is so-called curve reversion. Thus, the tip end of each of the comb teeth 3 is brought close to ((in some cases) into contact with) the frame to hold the wearer's own hair by the frame 7 and the comb teeth 3.

In this way, the wig can be fixed to the head of the wearer.

[0007]

Patent Document 2 discloses a fastening tool using a substantially rectangular frame body that can be curved and reversed. The fastening tool includes comb teeth disposed at two respective short sides of the substantially rectangular frame body and extending to the substantial center of the frame body along the longitudinal direction of the frame body.

[0008]

Patent Document 3 discloses a fastening tool using two frame bodies that can be curved and reversed, and each of which includes one claw piece having its base end fixed to one side of the frame and its tip end extending as a free end in the longitudinal direction of the frame body. The two frame bodies are arranged to be partially superimposed on each other, and coupled together by a tightening force of a rubber pipe surrounding the outer periphery of the superimposed parts.

Conventional Art Document

Patent Document

[0009]

Patent Document 1: JP UM 56-23294 A

Patent Document 2: JP 56-165006 A

Patent Document 3: JP 58-78926 A

Summary of Invention

Problems to be Solved by the Invention

[0010]

Most of wig fastening tools, including the above-mentioned fastening tools, however, do not have a sufficient holding force generated between the frame and comb teeth or claw piece. As a result, in use of the wig, the wearer's own hairs positioned between the frame and comb teeth or claw piece slide and cannot be held sufficiently, so that the wig cannot be firmly fixed in some cases.

[0011]

Accordingly, it is an object of the present invention to provide a fastening tool for a wig which can surely fix a wig by a sufficient holding force, and a wig using the tool.

Means for Solving the Problems

[0012]

According to a first aspect of the present invention, a fastening tool for a wig, that is adapted for fixing the wig, includes a stopper frame body including a first frame body, a second frame body, and a bonding portion in which a part of the first frame body and a part of the second frame body are superimposed over each other and bonded together; a first comb tooth having (first comb teeth each having) one end thereof fixed to the first frame body and the other end thereof acting as a free end, and extending from the one end toward an inside of the first frame body; and a second comb tooth having (a second comb teeth each having) one end thereof fixed to the second frame body and the other end thereof

acting as a free end, and extending from the one end toward an inside of the first frame body, wherein the stopper frame body can arbitrarily select two states of a first state of being curved to protrude toward an upper surface side thereof, and a second state of being curved toward a lower surface side thereof, and wherein the other end of the first comb tooth and the other end of the second comb tooth are in contact with or close to the stopper frame body in the second state.

[0013]

In the fastening tool for a wig in a second aspect of the present invention according to the first aspect, in the second state, the other end of the first comb tooth and the other end of the second comb tooth are in contact with the portion where the part of the first frame body and the part of the second frame body are superimposed over each other.

[0014]

In the fastening tool for a wig in a third aspect of the present invention according to the first or second aspect, the first frame body and the second frame body each have a substantially rectangular shape in a planar view, and one short side of the substantially rectangular shape of the first frame body and one short side of the substantially rectangular shape of the second frame body are superimposed on each other to form the bonding portion.

[0015]

In the fastening tool for a wig in a fourth aspect of the present invention according to the third aspect, the one end of of the first comb tooth is fixed to one of two short sides of the rectangular shape of the first frame body not having the bonding portion, and the one end of the second comb tooth is fixed to one of two short sides of the rectangular shape of the second frame body not having the bonding portion.

[0016]

In the fastening tool for a wig in a fifth aspect of the present invention according to the third or fourth aspect, a width of an opening formed in the first frame body is narrower on one of the two short sides of the rectangular shape of the first frame body not having the bonding portion than that on the other short side having the bonding portion. Further, a width of an opening formed in the second frame body is narrower on one of the two short sides of the rectangular shape of the second frame body not having the bonding portion than that on the other short side having the bonding portion.

[0017]

In the fastening tool for a wig in a sixth aspect of the present invention according to any one of the first to fifth aspects, the bonding portion is a caulked portion in which the part of the first frame body and the part of the second frame body are superimposed over each other and caulked together.

[0018]

In the fastening tool for a wig in a seventh aspect of the present invention according to the sixth aspect, the first frame body includes a metal piece having one end and the other end thereof caulked together, the second frame body includes another metal piece having one end and the other end thereof caulked together, and the bonding portion is the caulked portion, the caulked portion including the one end of the metal piece of the second frame body, the one end of the metal piece of the first frame body, the other end of the metal piece of the second frame body, and the other end of the metal piece of the first frame body which are superimposed and caulked together in that order.

[0019]

The fastening tool for a wig in an eighth aspect of the present invention according to any one of the first to seventh aspects further includes a pipe-like tubula body covering at least a part of the first frame body including the bonding portion, and at least a part of the second frame body.

[0020]

In the fastening tool for a wig in a ninth aspect of the present invention according to any one of the first to eighth aspects, the stopper frame body has a through hole through which a thread passes to fix the wig to the stopper frame body.

[0021]

The fastening tool for a wig in a tenth aspect of the present invention according to any one of the first to eighth aspects further

includes a sheet made of a resin, the sheet having an upper surface thereof fixed in contact with a lower surface of the stopper frame body, and a lower surface thereof fixable to the wig via an adhesive.

[0022]

In an eleventh aspect of the present invention, a wig is provided which includes the fastening tool for the wig according to the first to tenth aspects.

Effects of the Invention

[0023]

The fastening tool (stopper) for a wig according to the invention has the high holding force, and thus can hold the wearer's own hair. Thus, the wig using the fastening tool for a wig according to the invention can be surely fixed to the head of the wearer.

Brief Description of the Drawings

[0024]

Fig. 1 is a perspective view showing a fastening tool 100 for a wig before holding hairs (so-called "opened state") according to the present invention.

Fig. 2 is a perspective view showing the fastening tool 100 for a wig during holding hairs (so-called "closed state") according to the present invention.

Fig. 3 is a cross-sectional view of the fastening tool 100 for a wig in the closed state.

Fig. 4 is a cross-sectional view of a fastening tool 200 for a wig in variation of the present invention.

Fig. 5 is a top view of a wig 500 including the fastening tool 100 for a wig in the present invention.

Fig. 6 is a perspective view showing a metal piece 11A used for manufacturing a first frame 11 and a second frame 21 respectively.

Fig. 7 is a top view of such a fastening tool for a wig disclosed in Patent Document 1.

Mode for Carrying Out the Invention

[0025]

Embodiments of the invention will be described in detail below based on the accompanying drawings. In the description below, if necessary, the terms indicative of the specific direction or position (for example, "upper", "lower", "right", "left", and other words including these words) are used for easy understanding of the invention with reference to the figures. The meanings of the terms do not limit the technical scope of the invention. The same parts or members are designated by the same reference numerals throughout the drawings.

[0026]

Fig. 1 shows a perspective view of a fastening tool 100 for a wig (hereinafter simply referred to as a "fastening tool", or also as a "wig stopper") before holding hairs (wearer's own

hair) (so-called "opened state") according to the present invention. Fig. 2 shows a perspective view of the fastening tool 100 for a wig during holding the hairs (so-called "closed state") according to the present invention.

[0027]

The fastening tool 100 to be mentioned later in detail includes a frame superimposed portion 14 in which a part of a first frame 11 and a second frame 21 are superimposed over each other. The fastening tool 100 also includes a stopper frame body 31 formed by bonding the frame 11 and frame 21, and comb teeth 36 (a first comb tooth 16 and a second comb tooth 26 (first comb teeth 16 and second comb teeth 26)) each having its one end (base end) fixed to the stopper frame body 31 and its other end (tip end) serving as a free end.

The stopper frame body 31 is formed of elastically deformable material. The stopper frame body 31 can be switched between two states, specifically, a state in which the frame body is curved to protrude toward its upper surface (in a +Z direction of Fig. 1) (so as to form a convex portion on the upper surface side) as exemplary shown in Fig. 1, and another state in which the frame body is curved to protrude toward its lower surface (in a -Z direction of Fig. 2) (so as to form a convex portion on the lower surface side) as exemplary shown in Fig. 2.

[0028]

As shown in Fig. 1, when the stopper frame body 31 is curved

to protrude toward its upper surface side, the tips of the comb teeth 36 are spaced away from the stopper frame body 31, so that the wearer's own hairs (hereinafter simply referred to as a "wearer's hair") can be easily inserted into between the comb teeth 36 and the stopper frame body 31. The fastening tool 100 in this state can often be called the fastening tool in "an opened state".

[0029]

As shown in Fig. 2, when the stopper frame body 31 is curved to protrude toward its lower surface side, the tips of the comb teeth 36 are moved closer to, or preferably closest to (including the case of "in contact with") the stopper frame body 31, so that the wearer's hair inserted into between the stopper frame body 31 and the comb teeth 36 can be held by the stopper frame body 31 and the comb teeth 36 in this opened state. The fastening tool 100 in this state can often be called the fastening tool in "a closed state". The fastening tool 100 is brought into the closed state, so that the wig including the fastening tool 100 can be fixed to the head of the wearer. In this way, the term "curve reversion" means that the curved direction of the stopper frame body 31 is changed from the direction of protruding toward one of its upper and lower surfaces to the direction of protruding toward the other surface.

[0030]

In the fastening tool 100, two frame bodies 11 and 21 are bonded together to form the longer stopper frame body 31. As will

be described in detail below, the stopper frame body 31 includes a frame superimposed part 14 where the first frame body 11 and the second frame body 21 are superimposed on each other, and thus can have advantages of having a high holding force and being capable of being curved and reversed by a relatively weak force.

The details of each element of the fastening tool 100 will be described below.

[0031]

(1) Stopper Frame Body

The fastening tool 100 includes the stopper frame body 31 formed by connecting the first frame body 11 and the second frame body 21 together as mentioned above. A part of the first frame body 11 and a part of the second frame body 21 are superimposed over each other to form the frame superimposed portion 14 (as shown in Fig. 1, one short side of the first frame body 11 is superimposed on one short side of the second frame body 21 to thereby form the frame superimposed portion 14).

[0032]

In the frame superimposed portion 14, the first frame body 11 and the second frame body 21 are bonded together. The bonding therebetween needs to be performed such that the first frame body 21 and the second frame body are integral with each other without disposing a binding jig or the like, such as a rubber pipe, around the outer periphery of the frame bodies.

[0033]

This is based on the following reasons. For example, like the fastening tool for a wig like that disclosed in Patent Document 3, two frame bodies are in contact with each other while not being bonded together, and then bound from the outside using a bonding jig, such as a fastening force of the binding rubber enclosing the frame bodies, to form an seemingly integrated structure of the two frame bodies coming into contact with each other. Even the use of the above structure cannot provide the same effects as those of the present invention. More specifically, upon curving and reversing the frame body, the binding jig made of rubber or the like is apt to be deformed to generate a clearance between the first frame body and the second frame body. For example, only one of the two frame bodies is curved and reversed, which cannot obtain the sufficient holding force.

[0034]

That is, in the present invention, the bonding between the first frame body 11 and the second frame body means the state in which a part exhibiting a bonding force for bonding between both frame bodies exists within the frame superimposed portion 14 where the first frame body 11 and the second frame body 21 are superimposed over each other.

In this way, the bonding of the frame superimposed portion 14 can be carried out by any method as long as the first frame body 11 and the second frame body 21 are bonded together not to cause any problem, including separation or relatively movement

of both frame bodies in curving and reversing the stopper frame body. Such bonding methods can include caulking, weld, soldering, press-fitting, solvent welding and adhesive.

[0035]

Among them, caulking is one of preferred embodiments because of the following reasons.

Fig. 3 is a cross-sectional view of the fastening tool 100 in the closed state.

The first frame body 11 and the second frame body 21 are caulked together to form a caulked portion (bonded portion) 33 inside the frame superimposed portion 14 (see Fig. 2). In the embodiment shown in Fig. 3, the caulked portion 33 is formed to penetrate the frame superimposed portion 14, whereby the first frame body 11 and the second frame body 21 are bonded together to form the stopper frame body 31.

[0036]

In the embodiment shown in Figs. 1 to 3, the caulk portion 33 also has functions of forming the frame bodies 11 and 21 as well as of curving and reversing the stopper frame body 31.

Such functions will be described in details below together with the description of a method for manufacturing the stopper frame body 31.

[0037]

Method for Manufacturing Stopper Frame Body

In the following, a method for manufacturing the stopper

frame body 31 that can be curved and reversed will be exemplified. The manufacturing method below is only illustrative, and does not intend to limit the manufacturing method.

[0038]

Fig. 6 is a perspective view showing a metal piece 11A used for manufacturing the first frame 11 and the second frame 21 respectively.

As mentioned above, the stopper frame body 31 can be curved and reversed. That is, the stopper frame body 31 can be curved such that its upper surface side and lower surface side protrude. In this way, one method for enabling the stopper frame body 31 to be curved involves forming the first frame body 11 and the second frame body 21 using the metal piece 11A.

The metal piece 11A can be formed, for example, by punching a flat metal plate. In this state, the metal piece 11A is flat (in parallel to an XY plane of Fig. 6).

[0039]

The frame body 11 and the frame body 21 have a substantially rectangular shape in a planar view from the upper side (in the direction Z of Figs. 1 and 2). Thus, the metal piece 11A also has a substantially rectangular shape in the planar view from the upper side (in the direction Z of Fig. 6). The metal piece 11A has a discontinuous portion (formed of a part of the outer periphery cut) 18 at a short side serving as the frame superimposed portion 14 of two short sides of the substantially rectangular shape. At

least one of the end portions 17A and 17B positioned at both ends of the discontinuous portion 18 is moved (that is, moved along the direction Y of Fig. 6) so as to eliminate the discontinuous portion 18 to bring the end portion 17A into contact with the end portion 17B, so that the first frame body 11 and the second frame body 21 that can be curved and reversed can be produced from the flat metal piece 11.

[0040]

More specifically, the method will be exemplified. The end portion 17A is provided with a through hole 19A, and the end portion 17B is provided with a through hole 19B.

The end portion 17A and the end portion 17B are superimposed on each other such that the through hole 19A and the through hole 19B are aligned (for example, arranged coaxially), and then the through holes 19A and 19B are caulked. As a result, the respective parts of the outer periphery of the metal piece 11A continuously link together to bring the metal piece into the curved state (specifically, so that the metal piece is switched between two states, namely, a curved state of protruding toward its upper surface side, and another curved state of protruding toward its lower surface side), which can produce the first frame body 11 and the second frame body that can be curved and reversed.

[0041]

In the embodiment shown in Figs. 1 to 3, one part of the frame superimposed portion 14 is caulked to form the caulked portion

33, thereby simultaneously performing a step of arranging and caulking the through holes 19A and 19B of the metal piece 11A for the first frame body 11 (for example, arranging coaxially) in order to form the first frame body 11, another step of arranging and caulking the through holes 19A and 19B of the metal piece 11A for the second frame body 21 (for example, arranging coaxially) in order to form the second frame body 21, and yet another step of bonding the first frame body 11 to the second frame body 21.

That is, as can be seen from Fig. 3, the caulked portion 33 includes one end portion 17A of the metal piece 11A for the second frame body 21 (through hole 19A), one end portion 17A of the metal piece 11A for the first frame body 11 (through hole 19A), the other end portion 17B of the metal piece 11A for the second frame body 21 (through hole 19B), and the other end portion 17B of the metal piece 11A for the first frame body 11 (through hole 19B) which are superimposed on each other such that the through respective holes 19A and 19B are aligned. These four metal plates, that is, four metal plates comprised of two metal pieces 11A, each piece including two end portions 17A and 17B are caulked to form the caulked portion 33, and bonded together.

In this way, four metal plates are caulked at one time to form the caulked portion 33, whereby at the same time, the first frame body 11 and the second frame body 21 can be formed to be curved in a desired shape and bonded together to produce the stopper frame body 31. Thus, the stopper frame body 31 can be formed with

an excessively high productivity.

[0042]

In this way, an end portion of the metal piece 11A for the first frame body 11 and an end portion of the metal piece 11A for the second frame body 21 are alternately stacked on each other and bonded together, which can firmly bond the first frame body 11 to the second frame body 21.

[0043]

The stopper frame body 31 is not limited to that disclosed in the embodiments shown in Figs. 1 to 3.

As to the order of stacking the above four metal plates, for example, instead of alternately stacking the end portion of the metal piece 11A for the first frame body 11 and the end portion of the metal piece 11A for the second frame body 21, the end portions 17A and 17B of one of the first frame body 11 and second frame body 21 may be stacked over each other, and under the above-mentioned ends, the end portions 17A and 17B of the other of the first frame body 11 and second frame body 21 may be stacked to form the caulked portion 33.

[0044]

Further, for example, the shape of the first frame body 11 and the second frame body 21 in the planar view is not limited to the substantial rectangle, and may be any shape including a circle, an ellipse, a trapezoid, and a part thereof.

[0045]

The portion for connecting two end portions of the metal piece to curve the first or second frame body 11 or 21 is not limited to the frame superimposed portion 14, and may be located in any position. In other words, a portion for connecting two end portions of the metal pieces to curve the first frame body 11 and/or second frame body 21 may be different from the bonding portion 33 for bonding the first body 11 and the second frame body 22 via the frame superimposed portion 14 formed by superimposing a part of the first frame body 11 over a part of the second frame body 21.

[0046]

The first frame body 11 and the second frame body 21 may have the same shape or different shapes, but preferably the same shape. This is because the stopper frame body 31 is curved symmetrically with respect to the frame superimposed portion 14 centered, so that the first frame body 11 and the second frame body 21 can have the equal holding force.

[0047]

When the planar shape of the first frame body 11 and the second frame body 21 each have the longitudinal direction and the short direction, preferably, the parts in the short direction of the first and second frame bodies 11 and 21 are superimposed on each other to form the frame superimposed portion 14, and the first and second frame bodies 11 and 21 are aligned in the longitudinal direction (aligned in the direction X of Fig. 1) to form the stopper frame body 31. This is because the stopper frame body 31 has an

elongate shape and can be curved and reversed by a relatively weak force, while obtaining a high holding force.

[0048]

An opening (hole within the frame body) 12 formed in the first frame body 11 (that is, opening 12 enclosed by the first frame body 11), and an opening (hole within the frame body) 22 formed in the second frame body 21 (that is, opening 22 enclosed by the second frame body 21) each have its width (length in the direction y of Fig. 1) on the side (outer side) opposite to the frame superimposed portion 14 side smaller than its width on the frame superimposed portion 14 side (inner side). That is, when the first frame body 11 and the second frame body 21 are rectangular as shown in Fig. 1, each of the frame body opening 12 and the frame body opening 22 preferably has its width on the other short side (on the short side not provided with the caulked portion 33) smaller than its width on one short side provided with the caulked portion (bonding portion) 33.

This arrangement can improve the stability of the curved shape of the stopper frame body 31, particularly, the stability of the curved shape of the stopper frame body 31 with the fastening tool 100 being closed, and can more stably obtain the holding force.

[0049]

(2) Comb Tooth

The first comb tooth 16 and the second comb tooth 26 will be described below.

The first comb tooth 16 (first comb teeth 16) has a base end thereof fixed to the first frame body 11, and extend toward the inside of the first frame body 11 as shown in Figs. 1 to 3. More specifically, when the fastening tool 100 is opened, as shown in Fig. 1, the first comb tooth 16 extends in the direction toward the inside of the first frame body 11 (in the direction parallel to the X-axis of Fig.1), and in the direction apart from the upper surface of the stopper frame body 31 (in the direction Z of Fig. 1). In contrast, when the fastening tool 100 is closed, as shown in Figs. 2 and 3, the first comb tooth 16 extends in the direction toward the inside of the first frame body 11, and in the direction substantially parallel to the upper surface of the stopper frame body 31.

[0050]

The tip (end) of the first comb tooth 16 becomes a free end. In many cases, the first comb tooth 16 extends from one part of the first frame body 11 as a base end substantially in the longitudinal direction of the stopper frame body 31 (in the direction parallel to the X-axis of Figs. 1 and 2) (also including the case where the first comb tooth extends to be away from the stopper frame body 31 in the height direction (in the direction of the Z-axis of Fig. 1)). Preferably, when the fastening tool 100 is closed, the tip of the first comb tooth 16 is in contact with the side opposite to the side where the base end of the first frame body 11 is fixed. This arrangement can obtain the high

holding force.

For example, when the first frame body 11 has the substantially rectangular shape as shown in Fig. 2, the first comb tooth 16 has the base end thereof fixed to one of two short sides of the rectangular frame body 11 not provided with the caulked portion (bonding portion) 33, and extends toward the short side (that is, the frame superimposed portion 14) provided with the caulked portion 33. When the fastening tool 100 is closed, preferably, the tip of the first comb tooth 16 is in contact with the frame superimposed portion 14.

[0051]

The same goes for the second comb tooth 26 (second comb teeth 26).

The second comb tooth 26 has a base end thereof fixed to the second frame body 21, and is extended toward the inside of the second frame body 21 as shown in Figs. 1 to 3. More specifically, when the fastening tool 100 is opened, as shown in Fig. 1, the second comb tooth 26 extends in the direction toward the inside of the second frame body 21, and in the direction (in the direction Z of Fig.1) apart from the upper surface of the stopper frame body 31. In contrast, when the fastening tool 100 is closed, as shown in Figs. 2 and 3, the second comb tooth 26 extends in the direction toward the inside of the second frame body 21, and in the direction substantially parallel to the upper surface of the stopper frame body 31.

[0052]

The tip (end) of the second comb tooth 26 becomes a free end. In many cases, the second comb tooth 26 extends from one part of the second frame body 21 as a base end substantially in the longitudinal direction of the stopper frame body 31 (also including the case where the second comb tooth extends in the direction away from the stopper frame body 31 in the height direction (in the direction of a Z-axis of Fig. 1)). Preferably, when the fastening tool 100 is closed, the tip of the second comb tooth 26 is in contact with the side opposite to the side where the base end of the second frame body 21 is fixed. This arrangement can obtain the high holding force.

For example, when the second frame body 21 has the substantially rectangular shape as shown in Fig. 2, the second comb tooth 26 has the base end thereof fixed to one of two short sides of the rectangular frame body 21 not provided with the caulked portion (bonding portion) 33, and extends toward the short side (that is, the frame superimposed portion 14) provided with the caulked portion 33. When the fastening tool 100 is closed, preferably, the tip of the second comb tooth 26 is in contact with the frame superimposed portion 14.

[0053]

Preferably, a plurality of the first teeth 16 and a plurality of second comb teeth 26 are provided so as to surely hold the wearer's own hair.

In this case, more preferably, the first comb teeth 16 are disposed not in parallel but radially as shown in Fig. 2. Likewise, more preferably, the second comb teeth 26 are disposed not in parallel but radially as shown in Fig. 2.

In this way, the first comb teeth 16 and/or the second comb teeth 26 can be arranged radially to stably hold the wearer's own hair.

[0054]

Preferably, the tip end of the first comb tooth 16 and/or the tip end of the second comb tooth 26 are provided with spherical portions, which can surely prevent the tip ends from damaging the wearer's hair.

[0055]

The comb teeth 36 (first comb tooth 16 and second comb tooth 26) and the stopper frame body 31 (first frame body 11 and second frame body 21) described above are made of flexible material. Suitable flexible materials preferably include metal material, more preferably, stainless steel, and most preferably, austenite stainless steel such as SUS 304. The stainless steel, particularly, austenite stainless steel has excellent corrosion resistance and high fatigue strength. The repeated curve and reversion of the fastening tool 100 (changes thereof from one of the closed state and the opened state to the other) can be prevented from causing the fatigue failure or breakdown.

However, suitable materials for the comb teeth 36 and the

stopper frame body 31 are not limited thereto, and may be material having the flexibility other than metal, for example, a resin.

[0056]

The comb tooth 36 (first comb tooth 16 and second comb tooth 26) and the stopper frame body 31 (first frame body 11 and second frame body 21) described above may be made of the same material or different materials.

[0057]

A method for fixing the base end of the first comb tooth 16 to the first frame body 11 for use may be any method including welding, soldering, pressure-fitting, solvent welding, and adhesion using an adhesive. When the first comb tooth 16 and the first frame body 11 are made of metal, such as austenite stainless steel, the base end of the first comb tooth 16 is preferably fixed to the first frame body 11 by welding, particularly, electric welding. This is because the method can fix the first comb tooth in a predetermined position with high accuracy to obtain high bonding strength.

[0058]

A method for fixing the base end of the second comb tooth 26 to the second frame body 21 can also be the same as the method for fixing the base end of the first comb tooth 16 to the first frame body 11.

[0059]

The present inventors have found that the fastening tool

100 including the stopper frame body 31 and the comb teeth 36 with the above structure can hold the wearer's own hair with a strong force between the stopper frame body 31 and the comb teeth 36. Thus, the use of the fastening tool 100 can surely fix the wig to the head of the wearer.

[0060]

The reason why such a fastening tool 100 has a strong holding force is that the frame superimposed portion 14 is thicker than the outer periphery of the stopper frame body 31 (part other than the frame superimposed portion 14). That is, the outer periphery of the stopper frame body is relatively thin, and thus can have the sufficient flexibility, which allows the stopper frame body 31 to be curved and reversed. In contrast, the frame superimposed portion 14 is thicker than the outer periphery of the stopper frame body to improve the toughness of the stopper frame body 31. As a result, when the fastening tool 100 is closed, the diameter of the curved portion of the stopper frame body 31 protruding toward its lower surface side becomes larger, which can suppress the reduction in force holding the wearer's own hair.

The frame superimposed portion 14 is positioned at the center of the stopper frame body 31, whereby the stopper frame body 31 can be easily curved and reversed with the frame superimposed portion 14 as a base point to easily keep the curved and reversed state.

[0061]

Any embodiments satisfying such a mechanism other than the embodiment shown in Figs. 1 to 3 also fall within the scope of the present invention.

For example, in the embodiment shown in Figs. 1 to 3, there is a difference in level between a part of the outer periphery of the first frame body 11 other than the frame superimposed portion 14 and a part of the outer periphery of the second frame body 21 other than the frame superimposed portion 14. However, the part of the outer periphery of the first frame body 11 other than the frame superimposed portion 14 and the part of the outer periphery of the second frame body 21 other than the frame superimposed portion 14 may be integrally formed (without a difference in level), and a part corresponding to the frame superimposed portion and having a larger thickness than the integrated structure may be provided at the center of the outer periphery of the integrated structure (outer periphery of the stopper frame body). This structure also falls within the scope of the present invention.

[0062]

The fastening tool 100 in the present invention can hold the wearer's own hair with the strong force as mentioned above. Additionally, the fastening tool 100 can advantageously be curved and reversed by the relatively weak force.

The conventional fastening tool for a wig is used to strongly hold the wearer's own hair with a strong force by largely curving a frame body (for example, corresponding to the frame body

7 shown in Fig. 7). In contrast, the fastening tool 100 in the present invention ensures the length of the frame body by connecting two frame bodies and also has at its center the frame superimposed portion 14 thicker than other parts as mentioned above. Thus, the fastening tool 100 can be curved and reversed by respectively pushing the frame superimposed portion 14 and parts of the stopper frame body 31 other than the superimposed portion with a relatively weak force in opposite directions (for example, one of the two short sides (sides substantially in parallel to the Y-axis of Fig. 1) of the rectangular first frame body 11 not provided with the caulked portion 33, and one of the two short sides (sides substantially in parallel to the Y-axis of Fig. 1) of the rectangular second frame body 21 not provided with the caulked portion 33).

[0063]

The fastening tool 100 preferably includes a tubular member 41 made of, for example, a rubber pipe to cover a part of the outer periphery of the stopper frame member 31, specifically, the frame superimposed portion 14 and at least a part of each of the frame body hole 12 and the frame body hole 22 (preferably, 50 % or more of the total area of the frame hole 12 and the frame hole 22 in the planar view from the upper side (in the -Z direction of Fig. 1).

[0064]

In this way, the provision of the tubular member 41 allows the wearer's own hair to be held between the comb teeth 36 and

the tubular member 41 even at the frame body holes 12 and 22, and thus can surely fix the wig. The tubular member 41 is preferably formed of a resin, and more preferably formed of a silicone resin.

[0065]

The stopper frame body 31 has preferably sewing holes 43 for fixing the wig. A thread is passed through the sewing holes 43, so that the fastening tool 100 can be easily sewed and fixed to the wig.

The fastening tool 100 includes preferably two or more sewing holes 43 for fixing the wig, and more preferably four or more holes 43. The plurality of sewing holes 43 for fixing the wig can be provided to surely fix the wig. In the embodiment shown in Figs. 1 and 2, the stopper frame member 31 has at its four corners, the sewing holes 43 for fixing the wig.

[0066]

Fig. 5 shows a top view of a wig 500 including the fastening tool 100 for a wig in the present invention.

The wig 500 preferably includes a plurality of fastening tools 100 for the wig because the fastening tools can surely fix the wig 500 to the wearer's own hair.

In the embodiment shown in Fig. 5, the wig 500 includes a wig base 510 in which artificial hairs or natural hairs are implanted. The artificial hairs or natural hairs implanted in the wig base 510 extend toward the front surface side of the wig base. In the embodiment shown in Fig. 5, four fastening tools

100 are fixed to the backside of the wig base 510. Fig. 5 shows a top view of the wig base 510 with its backside positioned on the upper side.

[0067]

The fastening tool 100 may be attached to the wig base 510 by any method. In the embodiment shown in Fig. 5, the thread is passed through the sewing holes 43 for fixing the wig to sew the fastening tool 100 to the backside of the wig base 510.

[0068]

In the wig 500, first, the wearer's own hairs are inserted into between the comb teeth 36 and the stopper casing 31 with all fastening tools 100 being opened. Then, all the fastening tools 100 are sequentially curved and reversed into the closed state, so that each fastening tool 100 holds the wearer's own hair between the comb teeth 36 and the stopper casing 31.

In this way, the wig 500 can be fixed to the head of the wearer.

[0069]

(3) Variation

Fig. 4 shows a perspective view of a fastening tool 200 for a wig in variation of the present invention.

The fastening tool 200 for a wig is the same as the fastening tool 100 for a wig except that a sheet 45 for fixing is used. The description of the same parts will be omitted below.

[0070]

The sheet 45 for fixing is formed of a resin, for example, a silicone resin. The sheet 45 has its upper surface fixed in contact with the lower surface of the stopper frame body 31.

An adhesive is applied to the lower surface of the sheet 45 for fixing, and then the lower surface is brought into contact with the backside of the wig base 510, so that the fastening tool 200 for a wig can be fixed to the wig base 510.

In this way, the fastening tool for a wig can be fixed using the adhesive, which eliminates the necessity of forming seams in the wig base 510 for fixing the fastening tool for a wig.

This means that there is no possibility that a third party can recognize the seams formed for fixing the fastening tool for the wig when the wearer puts on the wig, which can further reduce the possibility that the wig is recognized by the third party.

[0071]

The length of the sheet 45 for fixing (the length thereof in the x-axis direction of Fig. 4) is preferably longer than that of the stopper frame body 31 as shown in Fig. 4. The fastening tool 200 for the wig can be surely fixed to the wig base.

[0072]

As mentioned above, the sheet 45 for fixing is fixed to the lower surface of the stopper frame body 31. A method for fixing the sheet 45 for fixing to the lower surface of the stopper frame 31 may be performed using any means, including an adhesive. When the tubular member 41 is disposed as shown in Fig. 4, at least

a part of the sheet 45 for fixing may be inserted into the tubular member 41 to be held between the sheet stopper frame body 31 for fixing and the tubular member 41, thereby fixing the sheet 45 for fixing to the lower surface of the stopper frame body 31.

[0072]

The present application claims priority on Japanese Patent Application No. 2011-179669, the disclosure of which is incorporated by reference herein.

Description of Reference Numerals

[0074]

11 First frame

11A Metal piece

12 Frame body hole of first frame

14 Frame superimposed portion

16 First comb tooth (First comb teeth)

17A One end of metal piece

17B Other end of metal piece

19A, 19B

21 Second frame

22 Frame body hole of second frame

26 Second comb tooth (Second comb teeth)

31 Stopper frame body

33 Caulked portion

36 Comb teeth

41 Tubular member

43 Sewing holes for fixing a wig

45 Sheet for fixing

100, 200 Fastening tool for a wig

500 Wig

510 Wig base

CLAIMS

1. A fastening tool for a wig, adapted for fixing the wig, comprising:

a stopper frame body including a first frame body, a second frame body and a bonding portion, a part of the first frame body and a part of the second frame body being superimposed over each other and bonded together in the bonding portion;

a first comb tooth having one end thereof fixed to the first frame body and the other end thereof acting as a free end, and extending from the one end toward an inside of the first frame body; and

a second comb tooth having one end thereof fixed to the second frame body and the other end thereof acting as a free end, and extending from the one end toward an inside of the first frame body;

wherein the stopper frame body can arbitrarily select two states of a first state of being curved to protrude toward an upper surface side thereof, and a second state of being curved toward a lower surface side thereof, and

wherein the other end of the first comb tooth and the other end of the second comb tooth are in contact with or close to the stopper frame body in the second state.

2. The fastening tool for a wig according to claim 1, wherein,

in the second state, the other end of the first comb tooth and the other end of the second comb tooth are in contact with the portion where the part of the first frame body and the part of the second frame body are superimposed over each other.

3. The fastening tool for a wig according to claim 1 or 2, wherein the first frame body and the second frame body each have a substantially rectangular shape in a planar view, and one short side of the substantially rectangular shape of the first frame body and one short side of the substantially rectangular shape of the second frame body are superimposed on each other to form the bonding portion.

4. The fastening tool for a wig according to claim 3, wherein the one end of the first comb tooth is fixed to one of two short sides of the rectangular shape of the first frame body not having the bonding portion, and the one end of the second comb tooth is fixed to one of two short sides of the rectangular shape of the second frame body not having the bonding portion.

5. The fastening tool for a wig according to claim 3 or 4, wherein a width of an opening formed in the first frame body is narrower on one of the two short sides of the rectangular shape of the first frame body not having the bonding portion than that on the other short side having the bonding portion, and

a width of an opening formed in the second frame body is narrower on one of the two short sides of the rectangular shape of the second frame body not having the bonding portion than that on the other short side having the bonding portion.

6. The fastening tool for a wig according to any one of claims 1 to 5, wherein the bonding portion is a caulked portion in which the part of the first frame body and the part of the second frame body are superimposed over each other and caulked together.

7. The fastening tool for a wig according to claim 6, wherein the first frame body comprises a metal piece having one end and the other end thereof caulked together,

the second frame body comprises another metal piece having one end and the other end thereof caulked together, and

the bonding portion is the caulked portion, the caulked portion including the one end of the metal piece of the second frame body, the one end of the metal piece of the first frame body, the other end of the metal piece of the second frame body, and the other end of the metal piece of the first frame body which are superimposed and caulked together in that order.

8. The fastening tool for a wig according to any one of claims 1 to 7, further comprising a pipe-like tubular body covering at least a part of the first frame body including the bonding portion,

and at least a part of the second frame body.

9. The fastening tool for a wig according to any one of claims 1 to 8, wherein the stopper frame body has a through hole through which a thread passes to fix the wig to the stopper frame body.

10. The fastening tool for a wig according to any one of claims 1 to 8, further comprising a sheet made of a resin, the sheet having an upper surface thereof fixed in contact with a lower surface of the stopper frame body, and a lower surface thereof fixable to the wig via an adhesive.

11. A wig comprising the fastening tool for the wig according to any one of claims 1 to 10.