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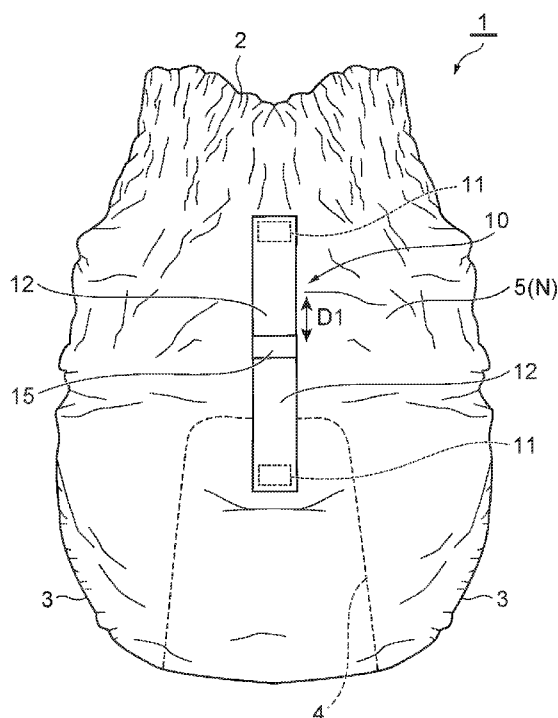


FIG. 1

(57) Abstract: To provide a hygiene product and a winding tape capable of improving user-friendliness when pulling. A hygiene product according to one embodiment includes a nonwoven fabric (N) and a winding tape (10) affixed to the nonwoven fabric (N). The winding tape (10) includes elastic portions (12) and a tab (15) located between the elastic portions (12).



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HYGIENE PRODUCT AND WINDING TAPE**Technical Field**

One aspect of the present disclosure relates to a hygiene product and a winding tape.

Background

JP2001-137287A describes a disposable diaper. The diaper includes a liquid-permeable front surface sheet, a liquid-impermeable rear surface sheet, and a liquid-retaining absorbent body interposed between the front surface sheet and the rear surface sheet. A belt-shaped elastic member used for discarding the diaper is provided on the outer surface of the diaper. Both ends of the elastic member are fixed to the outer surface of the diaper. A middle portion of the elastic member is separated from the outer surface of the diaper.

Both ends of the elastic are fixed to the outer surface of the diaper in a substantially non-removable manner via a fixing member such as an adhesive, and are firmly fixed so as to not peel off when the middle portion is pulled by a finger. The middle portion is an elastic portion that is entirely elastic. That is, the middle portion stretches when pulled by a finger and elastically contracts when the finger is removed. The diaper is rolled from a crotch portion and the elastic member is pulled by a finger and stretched to pass the rolled diaper between the elastic member and the outer surface of the diaper such that, when the finger is removed from the elastic member, the rolled diaper can be held by the elastic member.

Summary**Technical Problem**

In the diaper described above, the elastic member is pulled by a finger and the rolled diaper is passed between the middle portion of the pulled elastic member and the outer surface of the diaper. Then, the finger is removed from the elastic member and the rolled diaper is held by the elastic member. However, when the elastic member is pulled by the finger, the width of the elastic member reduces and the elastic member digs into the finger, which may place burden on the finger. Therefore, there is a need to improve user-friendliness when the elastic member is pulled.

Solution to Problem

A hygiene product according to one aspect of the present disclosure includes a nonwoven fabric, a winding tape affixed to the nonwoven fabric, and a fixing portion at which the winding tape is fixed to the nonwoven fabric. The winding tape includes an elastic portion and a tab provided on the elastic portion.

In the hygiene product according to the aspect described above, the winding tape fixed at the fixing portion includes the elastic portion and the tab provided on the elastic portion. Thus, the elastic portion can be stretched by gripping the tab and pulling the elastic portion, and this can prevent an elastic portion having a reduced width from digging into a finger. In other words, the elastic portion does not need to be directly stretched by a finger and can be stretched by gripping the tab; this can avoid a situation in which an elastic portion with a reduced width digs into a finger. Thus, it is possible to improve user-friendliness when pulling an elastic portion of a winding tape fixed to a hygiene product.

The fixing portion may be provided on each of both end sides of the elastic portion in a longitudinal direction of the winding tape.

The winding tape may be affixed along a longitudinal direction of an absorbent body in the hygiene product.

The tab includes a joining portion joined to the elastic portion and a grip portion protruding in the out-of-plane direction of the winding tape from the joining portion. A raised portion rising from the joining portion is provided between the joining portion and the grip portion. A width of the raised portion may be greater than or equal to 50% of a width of the elastic portion.

A winding tape according to one aspect of the present disclosure is a winding tape configured to be affixed to a nonwoven fabric and includes an elastic portion and a tab provided on the elastic portion.

In the winding tape according to the aspect described above, the elastic portion is provided with the tab. Thus, the elastic portion can be pulled by gripping the tab on the winding tape affixed to the nonwoven fabric, and this can prevent an elastic portion having a reduced width from digging into a finger. In other words, a situation where the elastic portion digs into the finger can be avoided. Thus, user-friendliness when the elastic portion is pulled can be improved.

A fixing portion configured to be fixed to the nonwoven fabric at each of both end sides of the elastic portion in the longitudinal direction of the winding tape may be provided.

The tab includes a joining portion joined to the elastic portion, and a width of the joining portion may be greater than or equal to 50% of a width of the elastic portion.

The tab may include a grip portion protruding in the out-of-plane direction of the winding tape.

The grip portion may extend in a width direction of the winding tape.

The grip portion may extend along a longitudinal direction of the winding tape.

A tensile strength of the elastic portion may be greater than or equal to 10 N/25 mm.

Advantageous Effects of Invention

According to one aspect of the present disclosure, it is possible to improve user-friendliness when pulling.

Brief Description of the Drawings

FIG. 1 is a diagram illustrating a winding tape and a hygiene product according to an embodiment.

FIG. 2 is a diagram schematically illustrating the winding tape and the hygiene product in FIG. 1.

FIG. 3 is a diagram schematically illustrating a layer structure of a fixing portion of the winding tape in FIG. 1.

FIGS. 4A and 4B are diagrams each illustrating an exemplary tab of the winding tape in FIG. 1.

FIG. 5A is a view illustrating an exemplary cross-section of a tab. FIG. 5B is a plan view of the tab in FIG. 5A when viewed from an out-of-plane direction of the winding tape.

FIG. 6A is a perspective view illustrating an example of an operation of pulling the winding tape in FIG. 1. FIG. 6B is a perspective view illustrating an example of an operation of pulling the winding tape according to a comparative example in which the tab is not included.

FIGS. 7A, 7B, 7C, and 7D are plan views illustrating various examples of tabs of the winding tape.

FIG. 8 is a diagram illustrating an example of a step of placing the winding tape on a nonwoven fabric.

FIG. 9 is a diagram illustrating an example of an operation of wrapping a hygiene product with the winding tape in FIG. 1.

FIG. 10A is a diagram schematically illustrating an abdominal side portion of a hygiene product and illustrates the following operation of that in FIG. 9. FIG. 10B is a diagram schematically illustrating a back side portion of a hygiene product and illustrates the following operation of that in FIG. 9.

Detailed Description

A detailed description of embodiments of a hygiene product and a winding tape according to the present disclosure will be given below with reference to the attached drawings. In the description of the drawings, identical or equivalent elements are denoted by the same reference signs, and duplicate descriptions of such elements are omitted. Further, the drawings

are given with a portion simplified or embellished for easy understanding, and the dimensional ratios and the like are not limited to those illustrated in the drawings.

Herein, “winding tape” refers to a tape configured to fasten a rolled hygiene product and includes, for example, a disposal tape configured to fasten a rolled hygiene product for disposal in a rolled state. “Rolled” refers to a state where the hygiene product is rolled, folded, or wound to contain its contents. “Hygiene product” is a product used to maintain a hygienic state and includes, for example, disposable material/equipment. The “hygiene product” includes absorbent articles such as disposable diapers, sanitary napkins, and incontinence pads, and hygiene products such as hemostatic tape.

“Nonwoven fabric” refers to a fabric made by bonding or entangling fibers by mechanical or chemical treatment. “Absorbent body” refers to a site or member that is capable of absorbing a liquid. “Fixing portion” refers to a portion or member that is fixed to an object. The “fixing portion” may be a portion or member that is detachably fixed to an object, or may be a portion or member that is permanently fixed to an object. “Locking portion” indicates a portion or member that is to be locked to an object. “Locked” refers to being removably attached and includes a state where two objects are locked at a fixed position.

“Elastic portion” refers to a site that can contract and expand and refers to, for example, a portion or member that can be changed to any length by being stretched by a finger or the like. “Hook” refers to a site or member that is hooked on an object. “Male hook parts” refer to a plurality of fine protruding sites provided on a mechanical fastener or the like, and “female hook parts” refer to a plurality of fine circular sites that the male hook parts hook into.

FIG. 1 is a diagram illustrating an exemplary hygiene product 1 and an exemplary winding tape 10 according to an embodiment. FIG. 2 is a diagram schematically illustrating the hygiene product 1 and the winding tape 10. In FIGS. 1 and 2, the hygiene product 1, which is a pull-up diaper, is illustrated as an example. However, the hygiene product 1 as a diaper may be, for example, a tab-style (open) diaper or a pad-style diaper, and the type of diaper can be changed as appropriate.

For example, the hygiene product 1 is a disposable diaper. The hygiene product 1 includes a waist opening 2 that extends in a direction around a waist, a pair of leg openings 3, and an absorbent body 4 positioned between the pair of leg openings 3. The hygiene product 1 includes an abdominal side portion 6 (see FIG. 10A) and a back side portion 5 located on the rear of the abdominal side portion 6. For example, the winding tape 10 is affixed to a nonwoven fabric N constituting the back side portion 5. The absorbent body 4 has a rectangular shape, for example, and extends from the abdominal side portion 6 toward the back side portion 5.

The winding tape 10 is affixed along the longitudinal direction of the absorbent body 4, for example. The winding tape 10 includes a pair of fixing portions 11 fixed to the nonwoven fabric N, an elastic portion 12 provided between the pair of fixing portions 11, and a tab 15 provided on the elastic portion 12. For example, the fixing portions 11 are sites fixed to the nonwoven fabric N at both ends of the winding tape 10 in a longitudinal direction D1 of the winding tape 10. The tab 15 is a site that is gripped by fingers or the like.

The fixing portions 11 may be made from an adhesive, for example, and may be a pressure-sensitive adhesive (PSA). However, the fixing portions 11 may be welded portions fixed to the nonwoven fabric N through welding, and the material of the fixing portions 11 is not particularly limited to a specific material. For example, the fixing portions 11 are non-removably fixed to the nonwoven fabric N. However, the fixing portions 11 may be removably fixed to the nonwoven fabric N and may be made from a releasable PSA.

Each fixing portion 11 has, for example, a quadrangular shape (a rectangular shape as one example). However, the shape, size, quantity, and arrangement of the fixing portions 11 can be changed as appropriate. As an example, as illustrated in FIG. 3, each fixing portion 11 may include a base portion 11b fixed to the elastic portion 12 with an adhesive layer 14 interposed therebetween, and a male member 11c including a plurality of protrusions protruding from the base portion 11b.

In other words, each fixing portion 11 may be a hook including the male member 11c. The adhesive layer 14 is a PSA, for example. Furthermore, each fixing portion 11 may also be made from a non-adhesive material. In this case, the fixing portions 11 do not adhere to fingers or the like even when grasped by fingers or the like, and this can further improve user-friendliness when performing an operation of wrapping the hygiene product 1 with the winding tape 10.

The elastic portion 12 is, for example, a single layer of an elastic film. The tensile strength of the elastic portion 12 is, for example, greater than or equal to 10 N/25 mm. The tensile strength of the elastic portion 12 refers to a value obtained when the tensile direction is the width direction of the winding tape 10, the length in the width direction (distance between chucks) is 25 mm, and the chuck speed is 50 mpm. Note that the elastic portion 12 may have a three-layer structure formed of a core layer containing an elastomer and skin layers provided on both main surfaces of the core layer. The material of the skin layers of the elastic portion 12 is, for example, polypropylene resin (PP), but can be changed as appropriate.

The elastic portion 12 includes an elastomer, and the elastomer of the elastic portion 12 includes an olefin-based elastomer, a styrene isoprene block copolymer (SIS), and a polyurethane-based thermoplastic elastomer, for example. However, the material of the elastic

portion 12 is not particularly limited to a specific material. For example, the thickness of the elastic portion 12 may be 5 μm or greater and 500 μm or less, 20 μm or greater and 200 μm or less, or 40 μm as one example.

FIGS. 4A and 4B are enlarged views of an exemplary tab 15. The tab 15 is provided on the elastic portion 12 and, for example, may be fixed to the elastic portion 12 while protruding in an out-of-plane direction D2 of the winding tape 10. For example, the tab 15 is fixed using an adhesive, a film, or through welding. As illustrated in FIGS. 4A and 4B, the size of the tab 15 can be changed as appropriate. Further, the entire tab 15 may be fixed to the elastic portion 12, or a portion of the tab 15 may be fixed to the elastic portion 12. The material of the tab 15 is not limited to a specific material. The tab 15 may be made from a non-adhesive material. In this case, the tab 15 does not adhere to fingers or the like when gripped by fingers or the like, and this further improves user-friendliness when performing an operation of wrapping the hygiene product 1 with the winding tape 10.

For example, the material of the tab 15 may be a thermoplastic resin, and specific examples include polypropylene resin (PP), polyethylene resin (PE), vinyl chloride resin (PVC), ethyl-methyl methacrylate resin (EMMA), ethyl-acrylate resin (EA), and ethylene-vinyl acetate copolymer (EVA) resin, and mixtures of two or more thereof. Examples of a PE include low density polyethylene (LDPE), high density polyethylene (HDPE), and linear low density polyethylene (LLDPE). Furthermore, the material of the tab 15 may also be a material in which an additive is added to one of the above-described resins or another material.

As illustrated in FIGS. 5A and 5B, the tab 15 may be fixed to the elastic portion 12 via a joining portion 15b. The tab 15 illustrated in FIGS. 5A and 5B includes the joining portion 15b joined to the elastic portion 12, and a grip portion 15c that protrudes in an out-of-plane direction D2 of the winding tape 10 from the joining portion 15b. The tab 15 includes, for example, a pair of the joining portions 15b disposed along the longitudinal direction D1, and the grip portion 15c that protrudes between the pair of joining portions 15b. However, the joining portion 15b need not be provided in a pair along the longitudinal direction D1 and may be provided at only one location (one side), for example.

The joining portion 15b is joined to the elastic portion 12 with an adhesive layer 16 interposed therebetween, for example. The adhesive layer 16 is made of a PSA, for example. For example, the grip portion 15c rises in the out-of-plane direction D2 from one of the pair of joining portions 15b and is bent in a reverse U-shape to extend to the other joining portion 15b. The grip portion 15c is a portion that is gripped by a finger or the like, and is also referred to as a pull tab.

A raised portion 15d, which is, for example, a site where the joining portion 15b changes to the grip portion 15c, is formed between the joining portion 15b and the grip portion 15c. The raised portion 15d may be a boundary portion between the joining portion 15b and the grip portion 15c and may be a root portion (base portion) of the grip portion 15c.

5 For example, the tab 15 extends from one of the joining portions 15b to the other joining portion 15b with one raised portion 15d, the grip portion 15c, and another raised portion 15d interposed between the pair of joining portions 15b. The length of each joining portion 15b in a width direction D3, the length of each grip portion 15c in the width direction D3, and the length of the raised portion 15d in the width direction D3 are the same as each other, for example.
10 However, the length of the joining portion 15b in the width direction D3, the length of the grip portion 15c in the width direction D3, and the length of the raised portion 15d in the width direction D3 need not be the same as each other.

A width B1 of the raised portion 15d, which is the length of the raised portion 15d in the width direction D3, is, for example, greater than or equal to 50% of a width B2 of the elastic
15 portion 12. In this case, the elastic portion 12 can be more reliably prevented from bending or twisting when the grip portion 15c is gripped and the elastic portion 12 is pulled.

For example, as illustrated in FIG. 6B, when an elastic portion 112 that does not have the tab 15 is pulled by fingers, the width of the elastic portion 112 reduces and the elastic portion 112 digs into the fingers. This may place burden on the fingers. In contrast, as illustrated in FIG.
20 6A, when the tab 15 is gripped and the elastic portion 12 is pulled, the elastic portion 12 can be more reliably prevented from bending and twisting, and hence user-friendliness can be improved.

The upper limit of the width B1 of the raised portion 15d may be, for example, 200% of the width B2 of the elastic portion 12, or may be changed to 180%, 150%, 120% or 100% of the
25 width B2 as appropriate. The lower limit of the width B1 of the raised portion 15d may be, for example, 50% as described above, or may be changed to 60%, 70%, 80%, 90% or 100% as appropriate.

As illustrated in FIG. 7A, for example, the winding tape 10 has a rectangular shape extending in the longitudinal direction D1 and the width direction D3. As one example, the tab
30 15 is provided at the center of the winding tape 10 in the longitudinal direction D1, and the fixing portions 11 are provided on both ends of the winding tape 10 in the longitudinal direction D1. In addition, the elastic portion 12 extends between each of the pair of fixing portions 11 and the tab 15. For example, the tab 15 includes the grip portion 15c, and the grip portion 15c extends in the width direction D3 of the winding tape 10. Further, as described above, the elastic
35 portion 12 is able to expand and contract, and the length of the winding tape 10 can be changed

through the elastic portion 12 expanding and contracting with both of the fixing portions 11 as an origin.

Each fixing portion 11 has, for example, a quadrangular shape (a rectangular shape as one example). However, the shape, size, quantity, and arrangement of the fixing portions 11 can be changed as appropriate. Further, as illustrated in FIG. 7B, the fixing portions 11 may be omitted from the winding tape 10. That is, the winding tape 10 including the elastic portion 12 and the tab 15 provided on the elastic portion 12 may not include a fixing portion. In the winding tape 10 with such a configuration, for example, a fixing portion is later provided and affixed to the nonwoven fabric N at any location of the elastic portion 12.

Further, the grip portion 15c of the tab 15 may extend in a direction intersecting the width direction D3 of the winding tape 10. FIG. 7C illustrates the tab 15 including the grip portion 15c extending in the longitudinal direction D1 of the winding tape 10. As illustrated in FIG. 7D, the tab 15 may be a tab 15 not including the grip portion 15c and the raised portion 15d. The tab 15 illustrated in FIG. 7D is constituted by a non-adhesive joining portion 15b, and the joining portion 15b extends along the elastic portion 12, for example.

Even with the tab 15 illustrated in FIG. 7D, the non-adhesive joining portion 15b is gripped with fingers or the like, and thereby the elastic portion 12 can be stretched by gripping a portion other than the elastic portion 12. Note that the width B3 of the joining portion 15b may be greater than or equal to 50% of the width B2 of the elastic portion 12. The upper and lower limits of the width B3 of the joining portion 15b may be the same as the above-described upper and lower limits of the raised portion 15d, for example.

Next, an exemplary method of manufacturing the hygiene product 1 in which the winding tape 10 is affixed to the nonwoven fabric N of the hygiene product 1 will be described with reference to FIG. 8. FIG. 8 is a diagram schematically illustrating flow of the nonwoven fabric N and the winding tape 10 constituting the hygiene product 1. As illustrated in FIG. 8, the winding tape 10 is formed as a roll-shaped member R1 prior to being affixed to the nonwoven fabric N, and a portion extending from the roll-shaped member R1 is cut in the width direction of that portion to form the winding tape 10. Note that in the state of the roll-shaped member R1, the winding tape 10 may not include at least one of the fixing portion 11 and the tab 15, and at least one of the fixing portion 11 and the tab 15 may be retrofitted. FIG. 8 illustrates an example in which a winding tape 10 not including the fixing portion 11 is the roll-shaped member R1.

The nonwoven fabric N of the hygiene product 1 is conveyed from a roll R2, and the winding tape 10 is affixed to the conveyed nonwoven fabric N (back side portion 5 of the hygiene product 1) at fixed intervals. At this time, for example, the winding tape 10 is affixed along the longitudinal direction of the absorbent body 4. However, the winding tape 10 may be

affixed in a direction intersecting the longitudinal direction of the absorbent body 4. Then, the nonwoven fabric N to which the winding tape 10 is affixed is cut, and the hygiene product 1 affixed with the winding tape 10 is complete.

Next, an exemplary method of wrapping the hygiene product 1 with the winding tape 10 will be described with reference to FIGS. 9, 10A, and 10B. First, as illustrated in FIG. 9, the tab 15 is gripped by fingers, and the elastic portions 12 located between the pair of fixing portions 11 are pulled. At this time, the fingers need not be in contact with the elastic portions 12, and thus the elastic portions 12 are prevented from digging into the fingers. Then, as illustrated in FIGS. 10A and 10B, for example, the hygiene product 1 is rolled along the longitudinal direction of the absorbent body 4 such that the back side portion 5 faces outward and the abdominal side portion 6 faces inward, and the stretched elastic portions 12 are moved toward the abdominal side portion 6 of the hygiene product 1 and released from the fingers. Thus, the action of wrapping the hygiene product 1 with the winding tape 10 is complete. After the hygiene product 1 is wrapped, the hygiene product 1 wrapped with the winding tape 10 is placed in a bag, and the bag is discarded in a dust box or the like in a tied state, for example.

Next, the operation and effects of the hygiene product 1 and the winding tape 10 according to the present embodiment will be described.

In the hygiene product 1, the winding tape 10 fixed to the fixing portions 11 includes the elastic portion 12 and the tab 15 provided on the elastic portion 12. Thus, the elastic portion 12 can be stretched by gripping the tab 15 and pulling the elastic portion 12, and this can prevent the elastic portion 12 having a reduced width from digging into a finger. That is, the elastic portion 12 does not need to be gripped by a finger directly, and the elastic portion 12 can be stretched by gripping the tab 15. This can avoid a situation where the elastic portion 12 digs into a finger. As a result, it is possible to improve user-friendliness when pulling the elastic portion 12 of the winding tape 10 fixed to the hygiene product 1.

The fixing portion 11 may be provided on each of both end sides of the elastic portion 12 in the longitudinal direction D1 of the winding tape 10. In this case, both end sides of the elastic portion 12 can be firmly fixed by a pair of the fixing portions 11.

The winding tape 10 may be affixed along the longitudinal direction of the absorbent body 4 of the hygiene product 1. In this case, the winding tape 10 can be easily affixed to the nonwoven fabric N.

As illustrated in FIGS. 5A and 5B, the tab 15 includes the joining portion 15b joined to the elastic portion 12, and the grip portion 15c that protrudes in the out-of-plane direction D2 of the winding tape 10 from the joining portion 15b. The tab 15 is further provided with the raised portion 15d that rises from the joining portion 15b between the joining portion 15b and the grip

portion 15c, and the width B1 of the raised portion 15d may be greater than or equal to 50% of the width B2 of the elastic portion 12. In this case, the width B1 of the raised portion 15d located between the grip portion 15c and the joining portion 15b of the tab 15 is greater than or equal to 50% of the width B2 of the elastic portion 12. Thus, since the width B1 of the raised portion 15d of the tab 15 is wide, the winding tape 10 can be more reliably prevented from bending and twisting when pulled. Therefore, user-friendliness when pulling the winding tape 10 can be further improved.

As illustrated in FIG. 7D, the tab 15 includes the joining portion 15b joined to the elastic portion 12, and the width B3 of the joining portion 15b may be greater than or equal to 50% of the width B2 of the elastic portion 12. In this case, the width B3 of the joining portion 15b of the tab 15 is greater than or equal to 50% of the width B2 of the elastic portion 12. Thus, since the width B3 of the joining portion 15b of the tab 15 is wide, the elastic portion 12 can be prevented from bending and twisting when pulled. As a result, user-friendliness when pulling the winding tape 10 can be further enhanced.

The tab 15 may include the grip portion 15c that protrudes in the out-of-plane direction D2 of the winding tape 10. In this case, since the grip portion 15c of the tab 15 protrudes in the out-of-plane direction D2 of the winding tape 10, the tab 15 can be more easily gripped with the grip portion 15c.

The grip portion 15c may extend in the width direction D3 of the winding tape 10. In this case, since the tab 15 is attached to the elastic portion 12 such that the direction of the grip portion 15c follows the width direction D3 of the winding tape 10, the manufacturability of the winding tape 10 can be enhanced, and the tab 15 can be made easier to be gripped.

The grip portion 15c may extend in the longitudinal direction D1 of the winding tape 10. In this case, since the tab 15 is attached to the elastic portion 12 such that the direction of the grip portion 15c follows the longitudinal direction D1 of the winding tape 10, the tab 15 can be made easier to be gripped.

In the winding tape 10, the tensile strength of the elastic portion 12 may be greater than or equal to 10 N/25 mm. In this case, since the strength of the elastic portion 12 is greater than or equal to 10 N/25 mm, it is possible to further reduce the possibility of the elastic portion 12 being torn when pulled.

Embodiments of a hygiene product and a winding tape according to the present disclosure have been described above. However, the present invention is not intended to be limited to the embodiments described above. The present invention can be modified in various ways within a scope that does not alter the gist described in the claims. For example, as

described above, the shape, size, quantity, material, and arrangement of the portions constituting the hygiene product and the winding tape can be changed as appropriate.

Claims

1. A hygiene product, comprising:

a nonwoven fabric;

a winding tape affixed to the nonwoven fabric; and

a fixing portion at which the winding tape is fixed to the nonwoven fabric,

wherein the winding tape includes:

an elastic portion; and

a tab provided on the elastic portion.

2. The hygiene product according to claim 1, wherein

the fixing portion is provided on each of both end sides of the elastic portion in a longitudinal direction of the winding tape.

3. The hygiene product according to claim 1 or 2, wherein

the winding tape is affixed along a longitudinal direction of an absorbent body in the hygiene product.

4. The hygiene product according to any one of claims 1 to 3, wherein:

the tab includes a joining portion joined to the elastic portion, and a grip portion protruding in an out-of-plane direction of the winding tape from the joining portion;

a raised portion rising from the joining portion is provided between the joining portion and the grip portion; and

the raised portion has a width greater than or equal to 50% of a width of the elastic portion.

5. A winding tape configured to be affixed to a nonwoven fabric, the winding tape comprising:

an elastic portion; and

a tab provided on the elastic portion.

6. The winding tape according to claim 5, further comprising:

a fixing portion configured to be fixed to the nonwoven fabric on each of both end sides of the elastic portion in a longitudinal direction of the winding tape.

7. The winding tape according to claim 5 or 6,
wherein the tab includes a joining portion joined to the elastic portion; and
the joining portion has a width greater than or equal to 50% of a width of the elastic
portion.

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8. The winding tape according to any one of claims 5 to 7,
wherein the tab includes a grip portion protruding in an out-of-plane direction of the
winding tape.

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9. The winding tape according to claim 8,
wherein the grip portion extends in a width direction of the winding tape.

10. The winding tape according to claim 8,
wherein the grip portion extends along a longitudinal direction of the winding tape.

15

11. The winding tape according to any one of claims 8 to 10,
wherein the elastic portion has a tensile strength of greater than or equal to 10 N/25 mm.

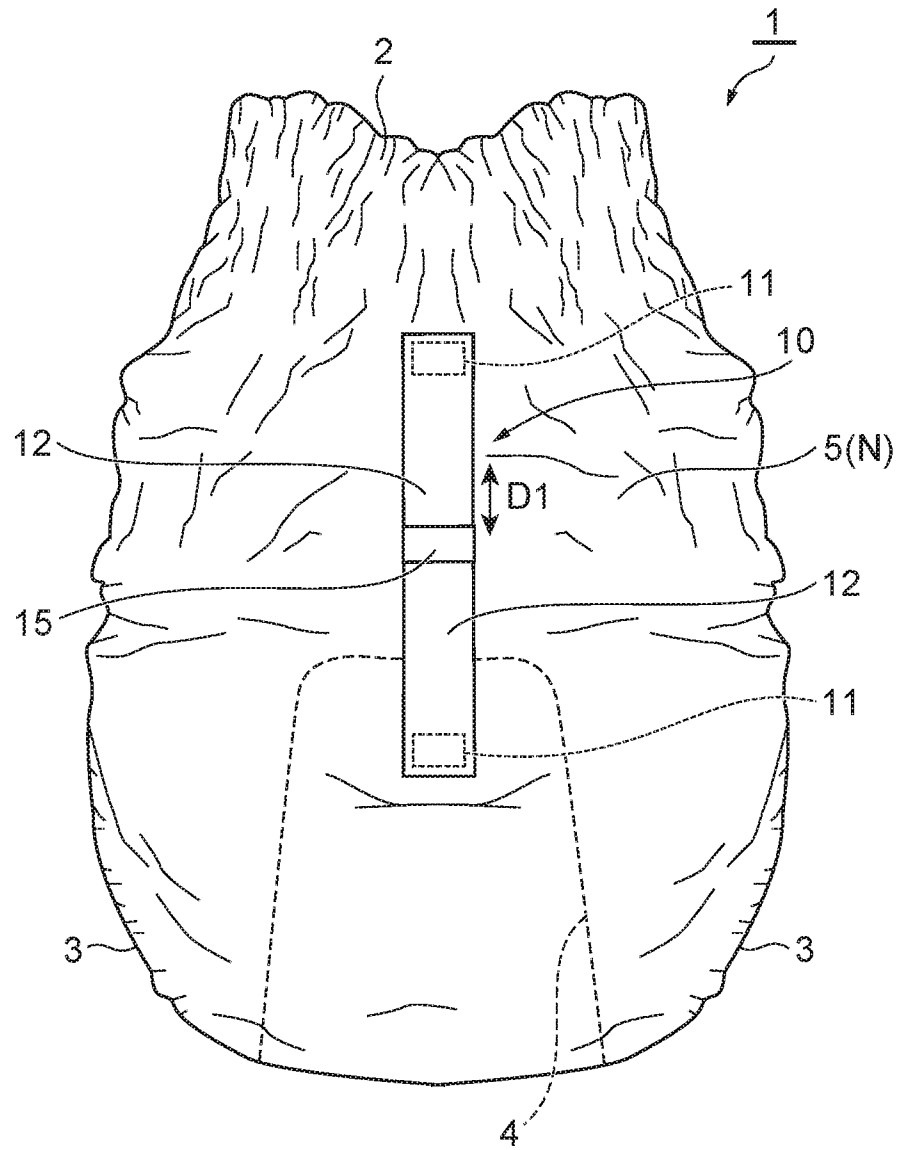


FIG. 1

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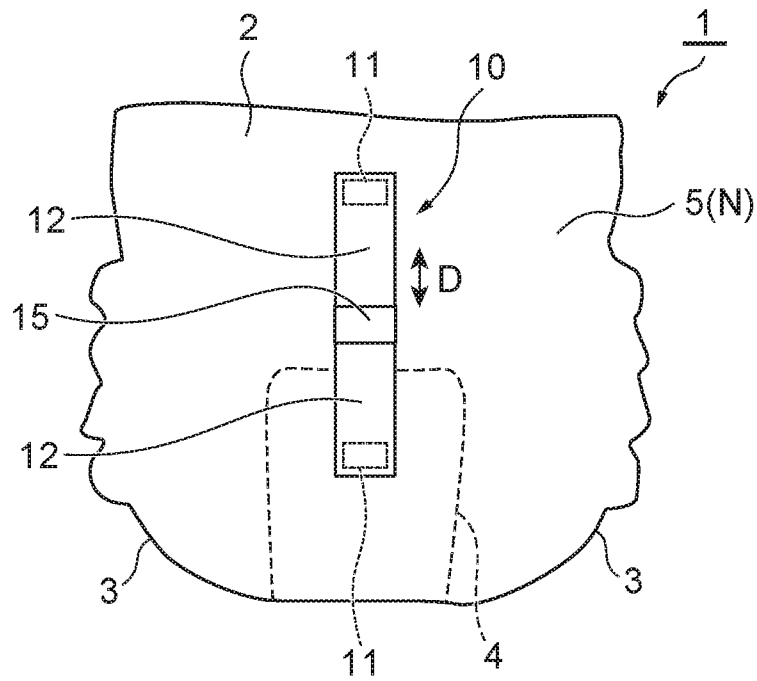


FIG. 2

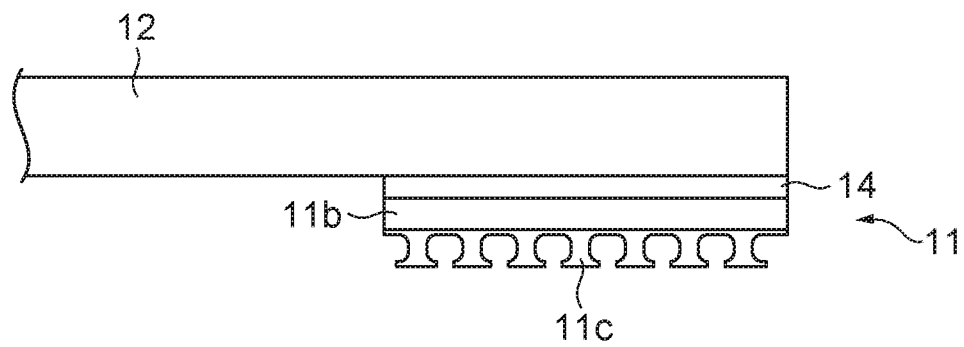
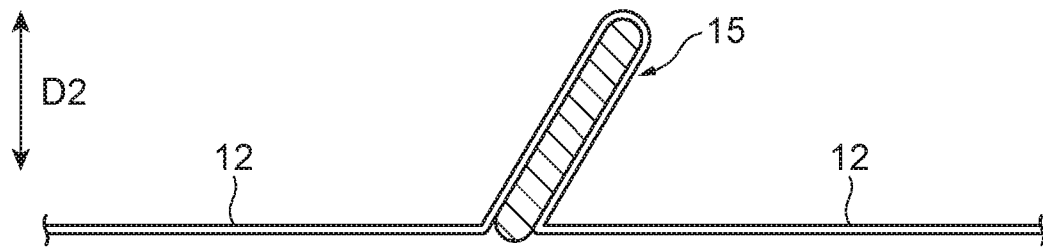
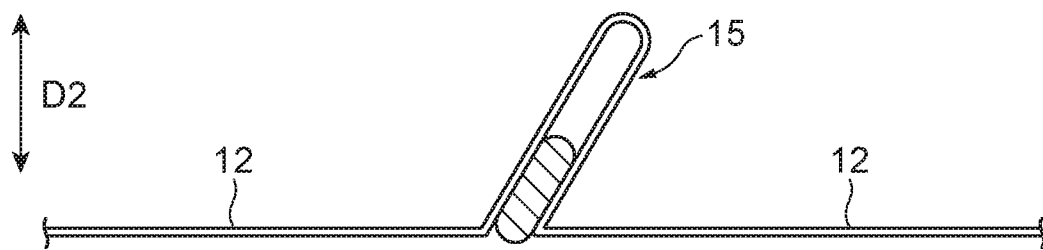
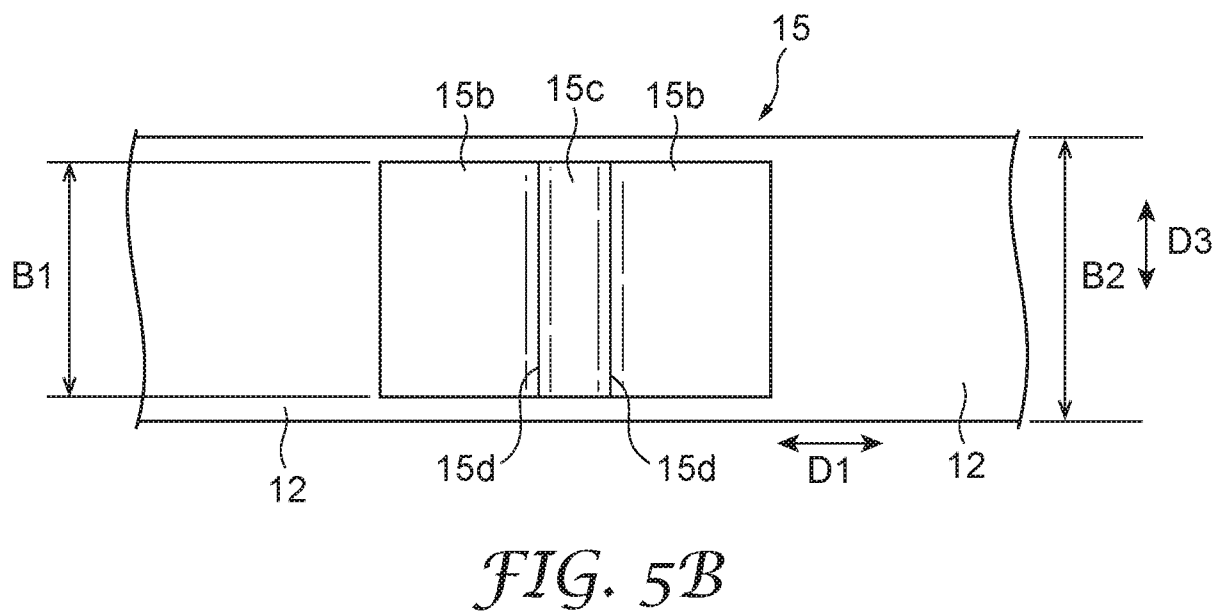
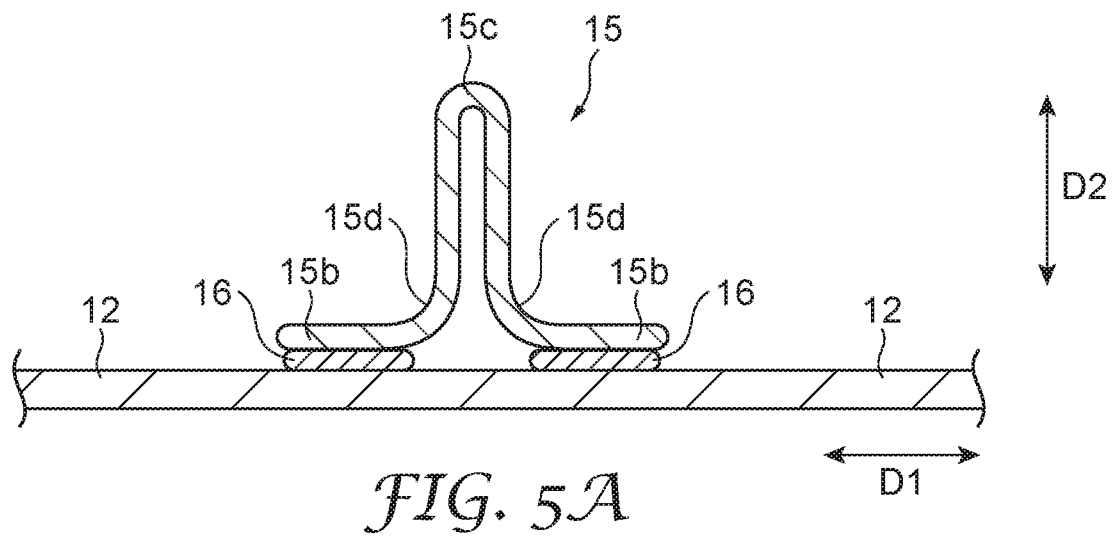


FIG. 3

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*FIG. 4A**FIG. 4B*

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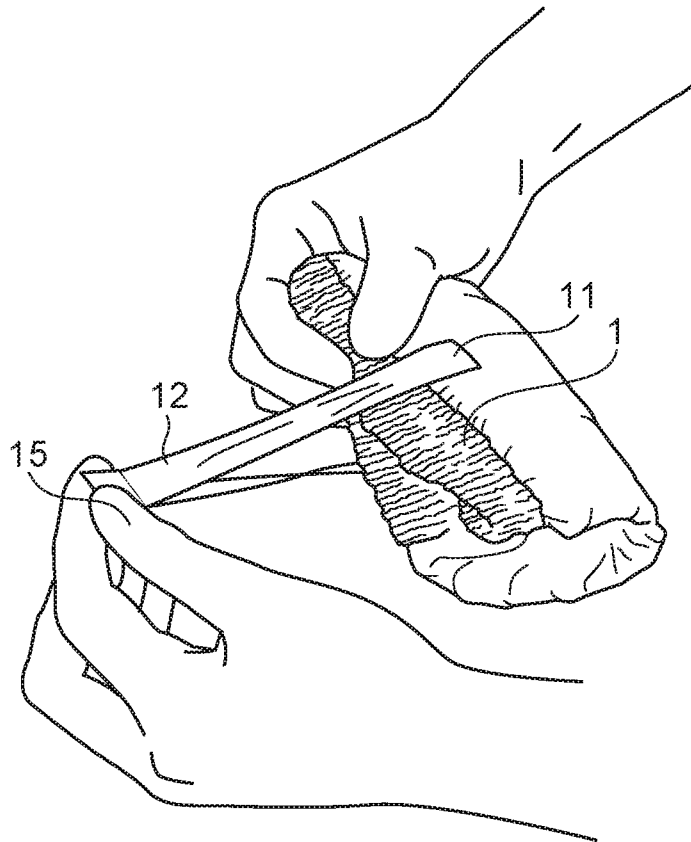


FIG. 6A

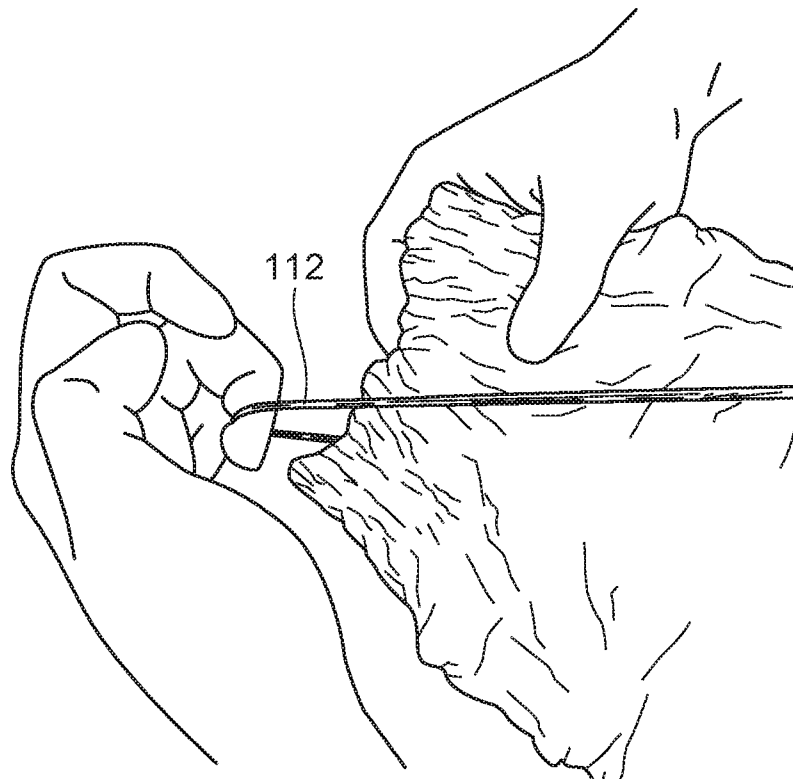


FIG. 6B

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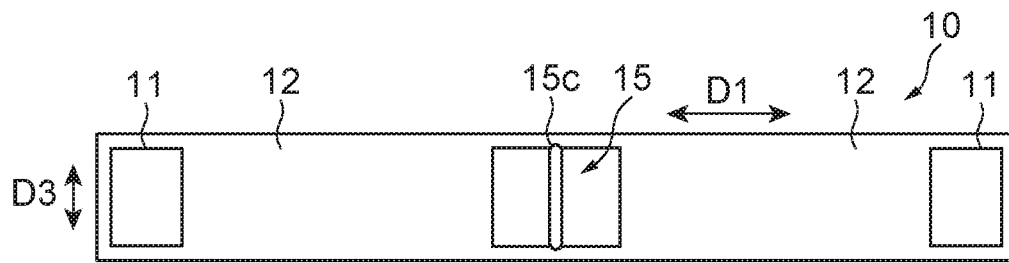


FIG. 7A

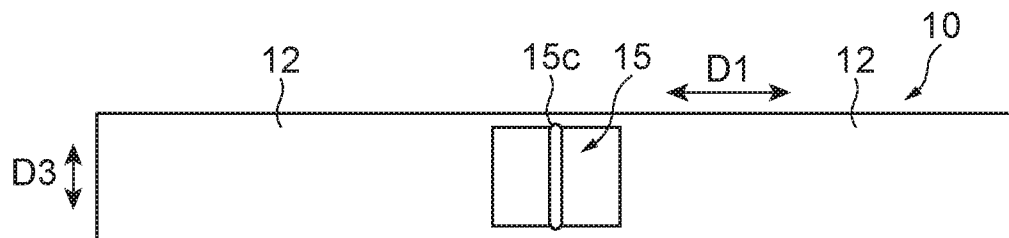


FIG. 7B

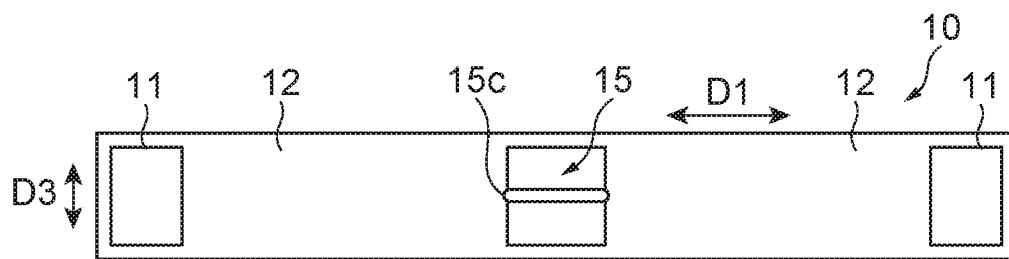


FIG. 7C

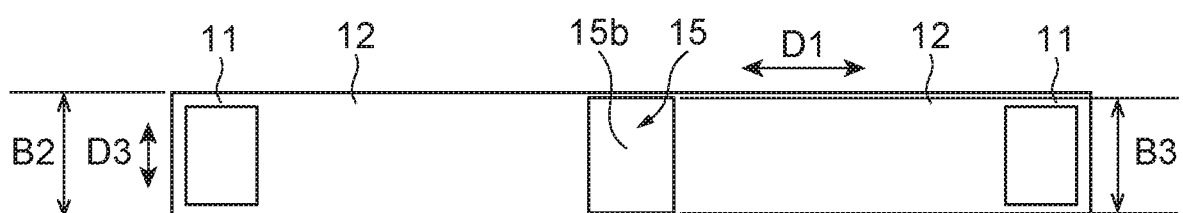
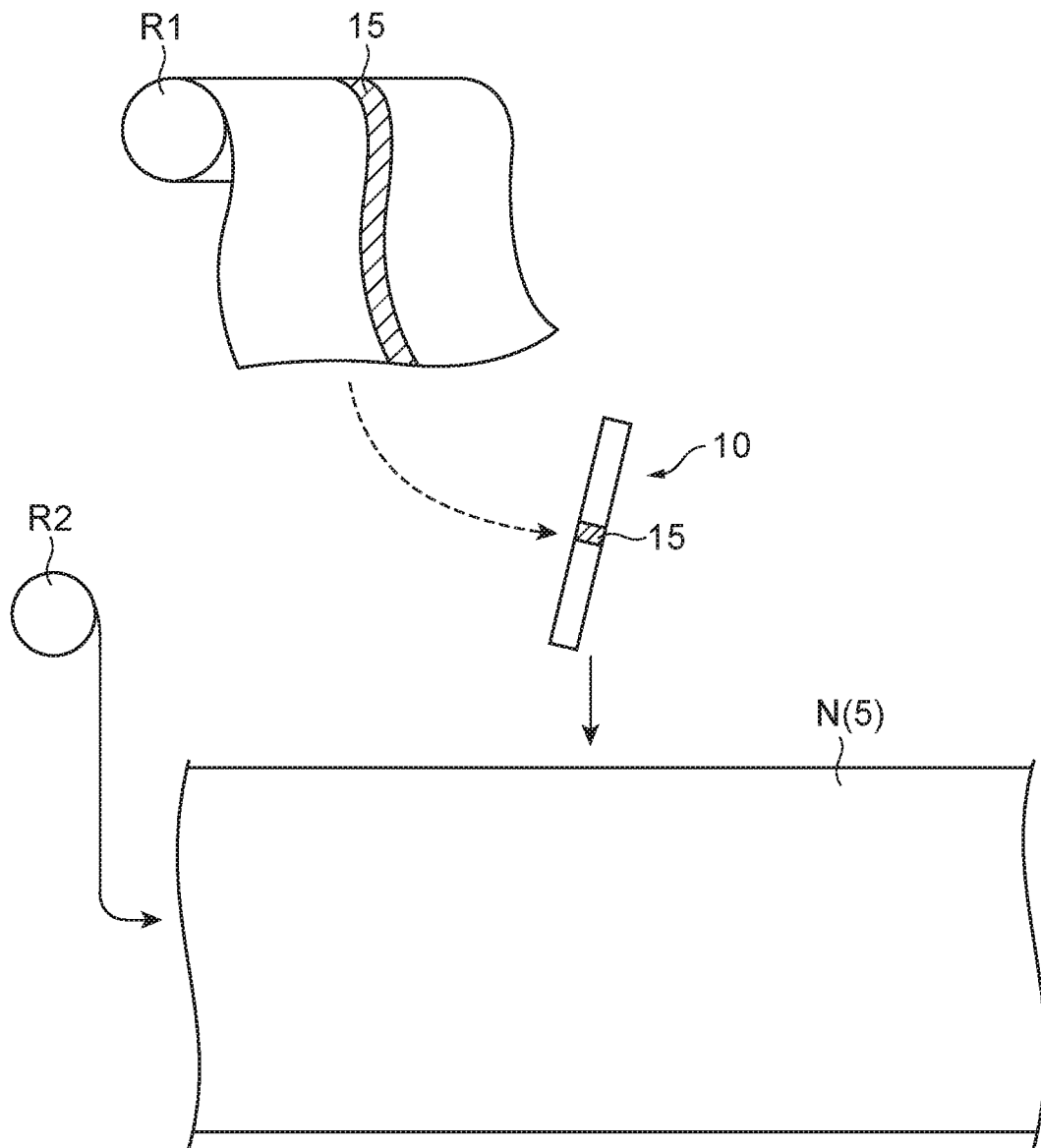


FIG. 7D

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*FIG. 8*

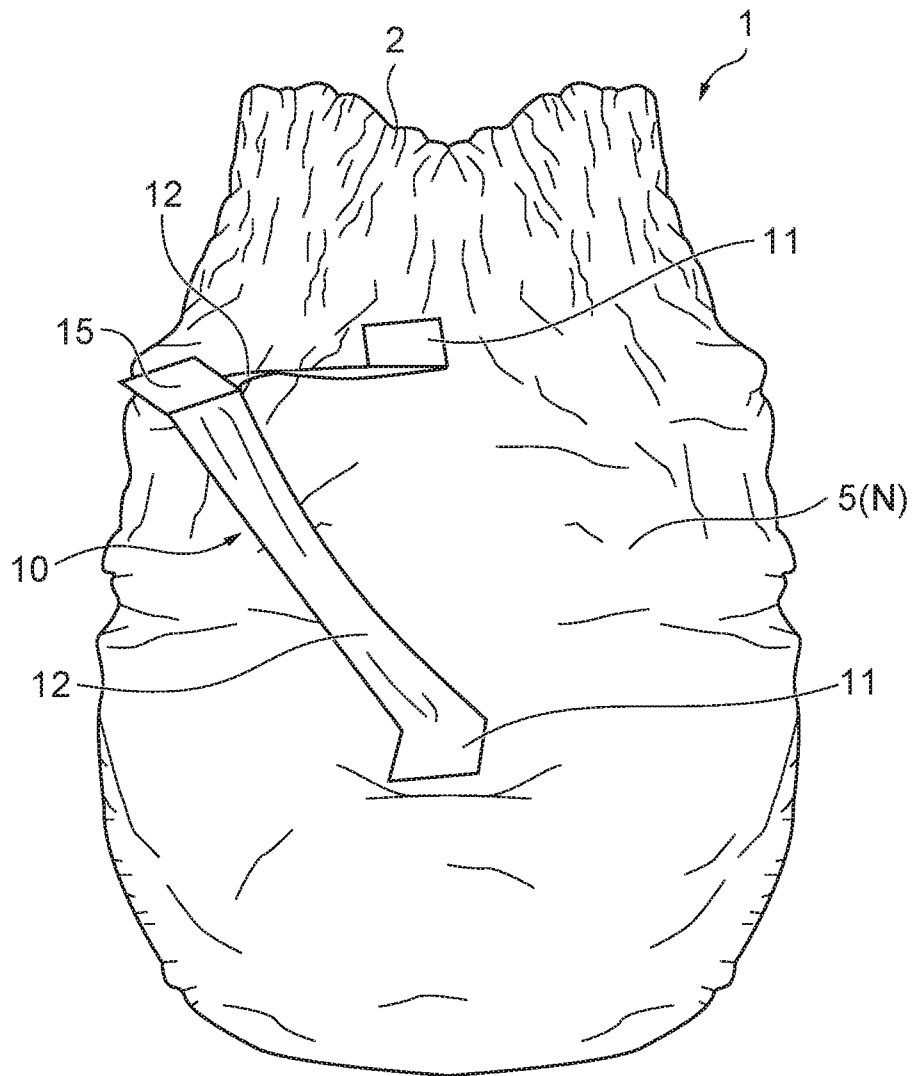


FIG. 9

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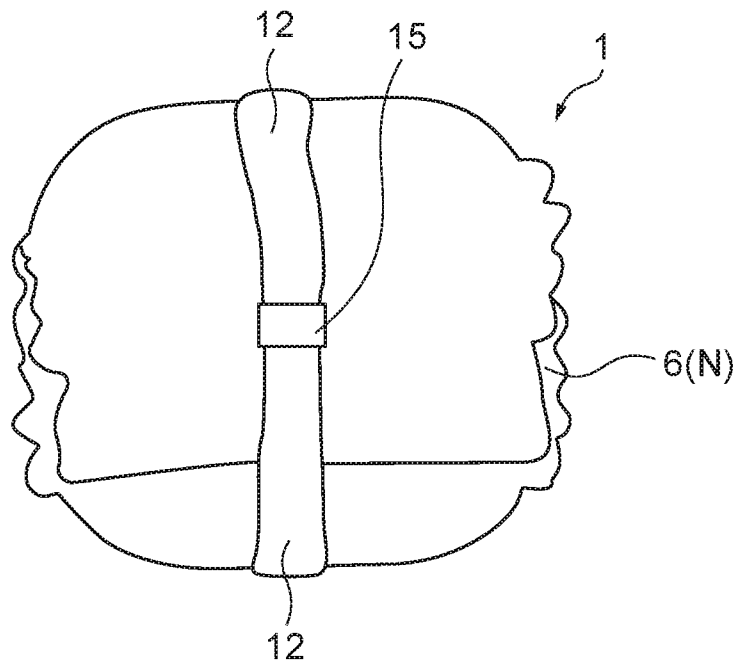


FIG. 10A

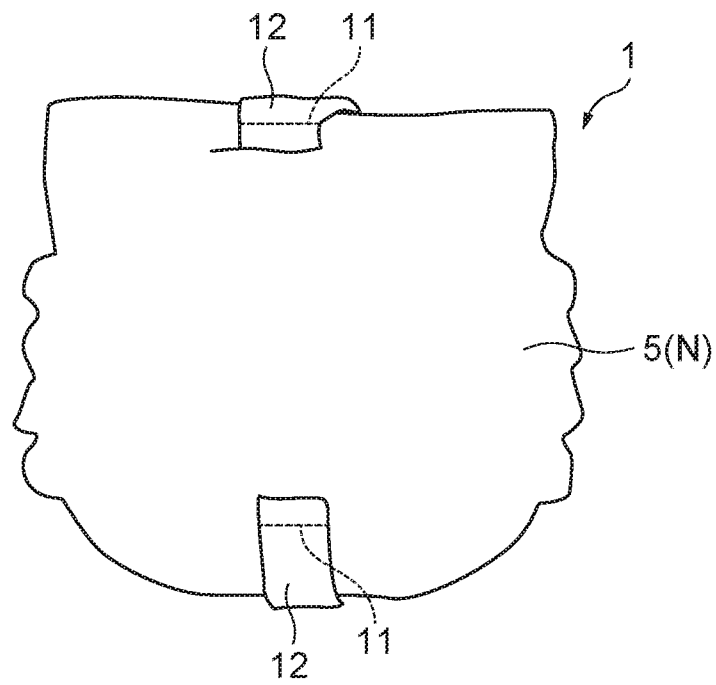


FIG. 10B

INTERNATIONAL SEARCH REPORT

International application No. .

PCT/IB 20/53511

A. CLASSIFICATION OF SUBJECT MATTER

IPC - A61F 13/551 (2020.01)

CPC - A61F 13/5512

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)

See Search History document

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

See Search History document

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

See Search History document

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 6,994,697 B2 (SHIMADA et al.) 07 February 2006 (07.02.2006), entire document, especially Fig 1-3; col 2, ln 64-67; col 3, ln 1, 3-7, 33-37, 39-48, 57-59; col 5, ln 67; col 6, ln 1-12, 28-32	1-2, 5-7 ----- 3
Y	US 2002/0177836 A1 (HAYASE et al.) 28 November 2002 (28.11.2002), entire document, especially Fig 1A-1B; para [0044]	3
A	US 7,875,012 B2 (ARCO et al.) 25 January 2011 (25.01.2011), entire document	1-3, 5-7
A	US 7,867,208 B2 (SAMUELSSON et al.) 11 January 2011 (11.01.2011), entire document	1-3, 5-7
A	US 6,645,189 B2 (KURITA et al.) 11 November 2003 (11.11.2003), entire document	1-3, 5-7
A	US 5,942,308 A (ARAKAWA et al.) 24 August 1999 (24.08.1999), entire document	1-3, 5-7

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"D" document cited by the applicant in the international application

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

30 June 2020

Date of mailing of the international search report

03 AUG 2020

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Authorized officer

Lee Young

Telephone No. PCT Helpdesk: 571-272-4300

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 20/53511

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☒ Claims Nos.: 4 and 8-11
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.