

DESCRIPTION

DISPOSABLE DIAPER

Technical Field

5 The present invention relates to disposable diapers.

Background

Conventionally, open-type disposable diapers have been widely used. Such open-type disposable diapers are widely used particularly
10 with newborns and babies and infants since they are easy to attach and detach.

Citation List

Patent Literature

15 PTL 1: Patent Application Laid-open Publication No. 11-47189

Summary

Technical Problem

In open-type disposable diapers, detaching and attaching is easy,
20 however the texture of the leg-surrounding part when wearing the diaper may become a problem. In particular, when putting the disposable diaper on a wearer, in the case that the fitting of the leg-surrounding part is tight, there may be a case where the wearer feels uncomfortable.

The present invention has been made in view of the above problems,
25 and this invention aims to provide a disposable diaper that has a good texture.

Solution to Problem

An aspect of the invention is a disposable diaper having a
30 longitudinal direction and a width direction intersecting the longitudinal direction, the disposable diaper comprising:

an absorbent body that absorbs liquid;

side flaps positioned in both side portions in the width direction;

and

35 a stretchable member that stretches along the longitudinal

direction,

an end edge portion in an outer side in the width direction of the side flap having a wave form part that is a wave form in which a projected portion projected to the outer side in the width direction and a depressed portion depressed to the outer side in the width direction are repeated alternately in the longitudinal direction,

the stretchable member being provided, in the width direction, in either one of an inner side position and a further inner side than the inner side position, the inner side position being away from a depressed portion tip of the depressed portion to an inner side by a distance between tips, the distance between tips being a distance between the depressed portion tip and a projected portion tip of the projected portion in the width direction.

Other features of this invention will become clear from the description in this specification and the attached drawings.

Advantageous Effects of Invention

According to this invention, a disposable diaper having a good texture can be provided.

Brief Description of Drawings

[Fig. 1] Fig. 1 is a developed plan view of a diaper 1 according to the present embodiment mode.

[Fig. 2] Fig. 2A to Fig. 2C are exploded views of each parts of the diaper 1 according to this embodiment mode. Fig. 2A is an exploded explanatory view of a front portion 3. Fig. 2B is an exploded explanatory view of a crotch portion 5. Fig. 2C is an exploded explanatory view of a rear portion 7.

[Fig. 3] Fig. 3 is a front view showing a form of the diaper 1 when worn.

[Fig. 4] Fig. 4 is a side view showing a form of the diaper 1 when worn.

[Fig. 5] Fig. 5 is a schematic plan view explaining a side flap 14 and its peripheral configurations according to this embodiment mode.

[Fig. 6] Fig. 6 is a view showing enlarged an end edge portion 14Lg

of the side flap 14 according to this embodiment mode.

[Fig. 7] Fig. 7 is a first explanatory schematic view for explaining superiority due to arrangement of a rubber thread 27 according to this embodiment mode.

5 [Fig. 8] Fig. 8 is a second explanatory schematic view for explaining superiority due to arrangement of the rubber thread 27 according to this embodiment mode.

[Fig. 9] Fig. 9 is a schematic plan view explaining the side flap 14 and its peripheral configurations according to a second embodiment
10 mode.

[Fig. 10] Fig. 10 is a schematic plan view explaining the side flap 14 and its peripheral configurations according to a third embodiment mode.

15 Description of Embodiments

At least the following matters will become clear with the description of this specification and the attached drawings.

A disposable diaper having a longitudinal direction and a width direction intersecting the longitudinal direction, the disposable
20 diaper comprising:

an absorbent body that absorbs liquid;

side flaps positioned in both side portions in the width direction;

and

a stretchable member that stretches along the longitudinal
25 direction,

an end edge portion in an outer side in the width direction of the side flap having a wave form part that is a wave form in which a projected portion projected to the outer side in the width direction and a depressed portion depressed to the outer side in the width direction are repeated
30 alternately in the longitudinal direction,

the stretchable member being provided, in the width direction, in either one of an inner side position and a further inner side than the inner side position, the inner side position being away from a depressed portion tip of the depressed portion to an inner side by a distance
35 between tips, the distance between tips being a distance between the

depressed portion tip and a projected portion tip of the projected portion in the width direction.

According to such a disposable diaper, not only the mountain portion having the projected portion edge line, but also the mountain
5 portion having the depressed portion edge line can achieve a sufficient cushion effect, and a disposable diaper having a good texture can be provided.

With the disposable diaper, it is preferable that the stretchable member is a rubber thread.

10 According to such a disposable diaper, a joining area of the stretchable member to the disposable diaper can be kept to a minimum, and thus the effect on texture can also be kept to a minimum. Therefore, a disposable diaper having a more satisfactory texture can be provided.

With the disposable diaper, it is preferable that
15 the side flap has a leak prevention sheet setting portion provided with a leak prevention sheet and a leak prevention sheet non-setting portion positioned to the outer side in the width direction than the leak prevention sheet setting portion,

a boundary between the leak prevention sheet setting portion and
20 the leak prevention sheet non-setting portion is positioned to the inner side in the width direction than the depressed portion tip, and a distance between a tip and a boundary between the depressed portion tip and the boundary in the width direction is equal to or more than twice the distance between the tips,

25 the rubber thread is provided, in the width direction, between a center of the depressed portion tip and the boundary in the width direction, and the boundary.

According to such a disposable diaper, the mountain portion having a longer depressed portion edge line can be formed. Thus, a more
30 appropriate cushion effect can be given to the skin, and a disposable diaper having a more satisfactory texture can be provided.

With the disposable diaper, preferably
comprising leg side gathers formed along the longitudinal direction and having a supporting point,

35 wherein the side flap has a leak prevention sheet setting portion

provided with a leak prevention sheet and a leak prevention sheet non-setting portion positioned to the outer side in the width direction than the leak prevention sheet setting portion,

5 a boundary between the leak prevention sheet setting portion and the leak prevention sheet non-setting portion is positioned to the inner side in the width direction than the depressed portion tip,

the supporting point is positioned to the inner side in the width direction than the boundary,

10 the rubber thread is provided, in the width direction, between the boundary and the supporting point.

According to such a disposable diaper, even if the body wastes move to the outer side in the product width direction over the supporting point, there is the leak prevention sheet before reaching the rubber thread, thus the body wastes reach the rubber thread without leaking, 15 and are blocked by the rubber thread. Thus, liquid leakage can be appropriately prevented.

With the disposable diaper, preferably

comprising leg side gathers formed along the longitudinal direction and having a supporting point,

20 wherein the rubber thread is provided, in the width direction, to the inner side than the supporting point.

According to such a disposable diaper, the manner of the leg side gathers can be visibly confirmed appropriately from the outside. Thus, checking of the body wastes can be performed with the disposable diaper 25 in a worn state and without having to inadvertently move the wearer.

With the disposable diaper, preferably

the leg side gathers have an inner side tip positioned to the inner side in the width direction than the supporting point,

30 a part near the supporting point of a part from the supporting point to the inner side tip of the leg side gathers is made of a sheet with only one layer.

According to such a disposable diaper, the part near the supporting point is a place where the body wastes can be first seen, thus by making the part near the supporting point a sheet with only one 35 layer, checking of the body wastes can be performed more easily.

With the disposable diaper, preferably

the leg side gathers have an inner side tip positioned to the inner side in the width direction than the supporting point,

a distance between supporting point inner side tips in the width
 5 direction between the supporting point and the inner side tip is greater than a distance between supporting point projected portion tips in the width direction between the supporting point and the projected portion tip.

According to such a disposable diaper, the part that protrudes
 10 to the outer side than the end edge portion in the width direction of the side flap is formed in at least one part of the leg side gathers, thus the one part is a place where the body wastes can be particularly easily seen. Thus, checking of the body wastes can be performed more easily.

15 With the disposable diaper, preferably

the wave form part is a wave form part in the longitudinal direction,
 the side flap has a front portion positioned to an abdomen side of
 a wearer when wearing the disposable diaper, a rear portion positioned
 to a back side of the wearer, and a crotch portion positioned between
 20 the front portion and the rear portion,

the rear portion is provided with a rear portion protruding portion
 that protrudes toward the outer side in the width direction and that
 has a rear portion outermost end along the longitudinal direction,

the rear portion protruding portion is attached with a fastening
 25 tape,

the end edge portion has a non-longitudinal direction wave form part
 that is a wave form in which the projected portion and the depressed
 portion are alternately repeated in a direction slanted with respect
 to the longitudinal direction, between the longitudinal direction wave
 form part and a front portion side end that is to the most front portion
 30 side in the longitudinal direction of the rear portion outermost end,

an end of the rubber thread to a rear portion side is positioned,
 in the longitudinal direction, to a rear portion side than the front
 portion side end and to a front portion side than the fastening tape.

35 According to such a disposable diaper, the mountain portion

provided in the non-longitudinal direction wave form part can be formed as a mountain portion having the depressed portion edge line, thus a more appropriate cushion effect can be applied to the skin, and a diaper with a more satisfactory texture can be provided. Further, excessive creases can be prevented from being made in the fastening tape, and loss of the function of the fastening tape can be prevented.

With the disposable diaper, preferably

the side flap has a front portion positioned to an abdomen side of a wearer when wearing the disposable diaper, a rear portion positioned to a back side of the wearer, and a crotch portion positioned between the front portion and the rear portion,

the front portion is provided with a front portion protruding portion that protrudes toward the outer side in the width direction and that has a front portion outermost end along the longitudinal direction,

an end of the rubber thread to a front portion side is positioned, in the longitudinal direction, to a rear portion side than a rear portion side end to the most rear portion side in the longitudinal direction of the front portion outermost end.

According to such a disposable diaper, excessive creases can be prevented from being formed in the engageable region of the fastening tape, and loss of the function of the fastening tape can be prevented.

===Regarding Disposable Diaper according to the present Embodiment Mode===

A disposable diaper of the present embodiment mode (hereinafter, referred to simply as diaper 1) is a disposable diaper that targets mainly newborns and babies and infants as wearers, and is preferably used in low weight infants with a weight equal to or smaller than 3000 grams, and in particular is preferably used in low birth weight infants with a weight of less than 2500 grams. It should be noted that, low weight infants include not only low birth weight infants (with a weight of less than 2500 grams), but also very low birth weight infants (with a weight of less than 1500 grams), and extremely low birth weight infants (with a weight of less than 1000 grams).

Fig. 1 is a developed plan view of the diaper 1 according to this

embodiment mode. Fig. 2A to Fig. 2C are exploded explanatory views of each portion of the diaper 1 according to this embodiment mode. Fig. 2A is an exploded explanatory view of a front portion 3. Fig. 2B is an exploded explanatory view of a crotch portion 5. Fig. 2C is an exploded explanatory view of a rear portion 7. Fig. 3 is a front view showing a form of the diaper 1 when worn. Fig. 4 is a side view showing a mode of the diaper 1 when worn.

The diaper 1 in this embodiment mode is a disposable diaper of a so-called open type, and as shown in Fig. 1, the diaper has a front portion 3, a crotch portion 5, and a rear portion 7. The front portion 3 is a part that is to be positioned in the front portion (an abdomen side, a front part of the body) of a wearer. Further, the rear portion 7 is a part that is to be positioned in the rear portion (a back side, a back part of the body) of a wearer. The crotch 5 is a part to be positioned in between the front portion 3 and the rear portion 7.

In the below explanation, as shown in Fig. 1, each direction is defined. In other words, a direction from the front portion 3 toward the rear portion 7 is referred to as a "product longitudinal direction L", a direction orthogonal to the product longitudinal direction L is referred to as a "product width direction W". CL shown in Fig. 1 is a line showing a center of the diaper 1 in the product longitudinal direction L. Further, as shown in Fig. 2, the direction orthogonal to the product longitudinal direction L and the product width direction W is referred to as a "thickness direction", and the side to the skin of the wearer is referred to as a "skin side", and the opposite side is referred to as a "non-skin side".

The diaper 1 has a central strip region 12, side flaps 14, leg side gathers 16, and waist gathers 18. Each of the pair of the side flaps is attached with a fastening tape 30.

The central strip region 12 is a strip region positioned in a central portion in the product width direction W configured with the front portion 3, the crotch portion 5, and the rear portion 7 (refer to Fig. 1). The central strip region 12 is a part that absorbs and retains liquid such as urine excreted by the wearer. The central strip region 12 has a vertically long shape (a shape along the product longitudinal

direction L) including an absorbent body 21 that has liquid retainability. The central strip region 12 mainly has an absorbent body 21, a top sheet 22, a leak prevention sheet 23, and a back sheet 24 (refer to Fig. 2A to Fig. 2C).

5 The absorbent body 21 is a member made by laminating liquid absorbent raw material that can absorb excretions such as urine, and the absorbent body 21 is arranged over the front portion 3, the crotch portion 5, and the rear portion 7. The region indicated as a shaded portion in Fig. 1 shows a region occupied with the absorbent body 21.

10 The absorbent body 21 has an hourglass shape in which the width of a central portion in the product longitudinal direction L becomes narrow. The shape of the absorbent body 21 however is not limited to the shape shown in Fig. 1, and may be a simple rectangular shape. Further, the absorbent body 21 may be provided in at least the crotch portion 5. The

15 absorbent body 21 is arranged sandwiched with the top sheet 22 and the leak prevention sheet 23. As the liquid absorbent material structuring the absorbent body 21, for example, a liquid absorbent fiber such as a pulp fiber, and liquid absorbent particles such as superabsorbent polymers can be used. Further, a liquid absorbent material other than

20 the liquid absorbent fiber and the liquid absorbent particles may be included.

 The crotch portion 5 of the absorbent body 21 is formed with a pair of dart portions 211f near the front portion 3 in both end portions in the product width direction W. Similarly, a pair of dart portions

25 211b is formed near the rear portion 7 in both end portions in the product width direction W. The dart portions 211f and 211b are narrowed portions that are notched in a substantially bell-shaped shape as shown in Fig. 1. In this way, the absorbent body 21 can be easily bent in the dart portion regions, and can also be easily deformed in a round dimension

30 to fit the body (the crotch portion) of the wearer, and the fitting of the diaper 1 can be improved. It should be noted that, the shape of the dart portions 211f and 211b is not limited to the shape shown in Fig. 1.

 It should be noted that, with the diaper 1, the position of the

35 crotch portion 5 is set so that the center portion of the groin of the

wearer and the center portion of the crotch portion 5 match. The center portion of the groin of the wearer is the center position at the base of the legs, and is a position shifted to the front portion side than the central position CL of the diaper 1 in the product longitudinal direction L (refer to Fig. 1). Since the center portion of the crotch portion 5 is positioned to the front portion side than the central position CL of the diaper 1, the wearer can easily move his/her legs to the front side (the abdomen side), and further an area of the rear portion 7 of the diaper 1 can be made relatively wide, so that the buttocks of the wearer can be sufficiently covered.

The top sheet 22 is a liquid permeable member arranged to the skin side of the absorbent body 21. The leak prevention sheet 23 is a liquid non-permeable member arranged to the non-skin side of the absorbent body 21. The back sheet 24 is a member that configures the exterior to the non-skin side of the diaper 1 (an exterior sheet), and is configured with for example, non-woven fabric. The back sheet 24 is arranged to the non-skin side of the leak prevention sheet 23 (refer to Fig. 2A to Fig. 2C).

In the crotch portion 5 in the central strip region 12, a stretchable film 25 is arranged between the absorbent body 21 and the back sheet 24. The stretchable film 25 is a member that applies stretchability to the central strip region 12 of the crotch portion 5. In this embodiment mode, the stretchable film 25 is attached in a state stretched in the product longitudinal direction L. In this way, the stretchable film 25 shows shrinkage force along the product longitudinal direction L with respect to the crotch portion 5 in the central strip region 12. When wearing the diaper 1, the crotch portion 5 contracts along the product longitudinal direction L, and thus with the above described dart portions 211f and 211b the central strip region 12 deforms dimensionally into a rounded shape to fit the body of wearer. In this way, the central strip region 12 is retained in a shape that surrounds the crotch portion of the wearer, and thus the fitting of the diaper 1 is improved, and leaking of excretions to outside of the diaper 1 can be easily suppressed.

The side flaps 14 are parts positioned in both side portions of

the diaper 1 in the product width direction W, in other words the side flaps are parts positioned to both sides than the central strip region 12 in the product width direction W. The side flaps 14 are formed over the front portion 3, the crotch portion 5, and the rear portion 7 (refer to Fig. 1). The length (width) in the product width direction W of the side flaps 14 in the crotch portion 5 is narrower than the length (width) in the product width direction W of the side flaps 14 in the front portion 3 and the rear portion 7. Further, a length w_b in the product width direction W of the rear portion 7 of the side flaps 14 is longer than a length w_f in the product width direction W of the front portion 3 of the side flaps 14 (refer to Fig. 1).

The side flaps are mainly configured from the skin-side sheet 26 and the back sheet 24 (refer to Fig. 2a to Fig. 2C). The skin-side sheet 26 is a member to the skin side formed over the front portion 3, the crotch portion 5, and the rear portion 7, and for example, is configured from nonwoven fabric. The skin-side sheet 26 is a member structuring the leg side gathers 16 (stand-up gathers), and the outer side part of the skin-side sheet 26 (a part to the outer side than a joining portion 26A of a thick dotted line in Fig. 1) configures the side flaps 14.

Each of the pair of the side flaps 14 is provided with leg gathers 15 (leg surrounding stretchable portion) that stretches along the product longitudinal direction L. In between the skin-side sheet 26 and the back sheet 24 of the side flap 14 is arranged the rubber thread 27 that stretches along the product longitudinal direction L, and the rubber thread 27 applies stretchability to the skin-side sheet 26 and the back sheet 24 of the crotch portion 5, and thus the leg gathers 15 are configured. It should be noted that, the side flaps 14 and the rubber thread 27 will be described in detail later.

The leg side gathers 16 are stand-up gathers to prevent liquid leakage from gaps around the leg. The pair of the leg side gathers 16 is formed along the product longitudinal direction L over the front portion 3, the crotch portion 5, and the rear portion 7 (refer to Fig. 1). The leg side gathers 16 are formed so as to cover both edges of the central strip region 12 in the inner side of the side flaps 14.

The leg side gathers 16 are configured from mainly the parts of the inner side of the skin-side sheet 26 (refer to Fig. 2). The skin-side sheet 26 (the leg side gathers 16) is joined along the product longitudinal direction L in a joining portion 26A between the central strip region 12 and the side flaps 14 (thick dotted lines in Fig. 1).
5 A region to the inner side than the joining portion 26A of the skin-side sheet 26 configures the leg side gathers 16 (stand-up gathers) with the joining portion 26A as a supporting point 16a (In other words, the position of the supporting point 16a matches the position of a boundary
10 between the central strip region 12 and the side flap 14, in the product width direction W). In other words, the leg side gathers 16 (stand-up gathers) have the supporting point 16a and an inner side tip 16b positioned to an inner side in the product width direction W than the supporting point 16a, and the part between the supporting point 16a to
15 the inner side tip 16b (the skin-side sheet 26) stands up from the supporting point 16a.

Further, the number of layers of the skin-side sheet 26 of the part 16c near the supporting point, of the part between the supporting point 16a to the inner side tip 16b, and the number of layers of the
20 skin-side sheet 26 of the part 16d near the inner side tip are different from each other. In other words, the skin-side sheet 26 is folded back in the part near the inner side tip 16d, thus the number of layers is two layers. The stretchable member such as the rubber thread is provided sandwiched by the aforementioned two layers. Therefore, the inner edges
25 of the skin-side sheet 26 in the crotch portion 5 have stretchability. On the other hand, the part 16c near the supporting point is made of the skin-side sheet 26 of only one layer.

The waist gathers 18 are a waist circumference stretchable portion arranged along the product width direction W in the rear portion 7 (refer
30 to Fig. 1). In the rear portion 7, a waist gather film 28 is arranged between the absorbent body 21 and the back sheet 24 (refer to Fig. 2C). The waist gather film 28 is a belt-like stretchable member that stretches along the product width direction W. The waist gather film 28 applies stretchability to such as the back sheet 24, and thus the waist gathers
35 18 are configured. The length of the waist gather film 28 in the product

width direction W is longer than the absorbent body 21. Thus, the waist gathers 18 are formed protruding to the outer side in the product width direction W from the absorbent body 21. It should be noted that, the waist gathers 18 do not have to be provided.

5 The fastening tapes 30 are attached to the side flaps 14 in the rear portion 7 (specifically, a rear portion protruding portion 14b to be described later) (refer to Fig. 1). The fastening tape 30 is attached by sandwiching a portion of the fastening tape 30 between the skin-side sheet 26 and the back sheet 24 which configure the side flap 14 (refer to Fig. 2C).

10 A target tape 29 is provided in the front portion 3 (refer to Fig. 1). The target tape 29 is arranged to the non-skin side of the back sheet 24 in the front portion 3 (refer to Fig. 2A). The target tape 29 is a member that is engageable with the fastening tape 30, and is formed with for example nonwoven fabric. The target tape 29 configures a target region that engages with the fastening tape 30. It should be noted that, instead of arranging the target tape 29 to the non-skin side of the back sheet 24, the target region may be formed on a nonwoven fabric in the outermost layer of the back sheet 24.

20 Then, as shown in Fig. 3 and Fig. 4, the fastening tape 30 is engaged to the target tape 29 or other fastening tapes 30, and thus the diaper 1 is worn.

25 The length of the product of the diaper 1 in the product longitudinal direction L for low weight infants in this embodiment mode is (a size of the product in a stretched state with no creases in the longitudinal direction) in a range of 210 to 330 mm. For example, the length of the product of the diaper 1 for low birth weight infants with a weight of less than 2500 grams is 310mm. The length of the product of the diaper 1 for very low birth weight infants with a weight of less than 1500 grams is 270mm. The length of the product of the diaper 1 for extremely low birth weight infants with a weight of less than 1000 grams is 230mm.

35 Further, the waist size of the diaper 1 for low weight infants in this embodiment mode is in a range of 160 to 295 mm. It should be noted that the waist size is a size in which an end portion of one of

the fastening tape 30 is in a state matched to an end portion to the side flap 14 side in a hook sheet region of the other fastening tape 30, and is in a state in which the product is spread out without creases. In other words, the size is of the product in a state extended in the width direction. For example, the waist size of the diaper 1 for low birth weight infants is 273.5 mms and the waist size of the diaper 1 for extremely low birth weight infants with a weight of less than 1500 grams is 220 mms.

<Regarding the Configuration of the Side Flap 14 according to this Embodiment Mode>

Fig. 5 is a schematic plan view explaining the side flap 14 and its peripheral configurations according to this embodiment mode. As described above, the side flap 14 of this embodiment mode is a long part along the product longitudinal direction L and is mainly configured with the skin-side sheet 26 and the back sheet 24.

The front portion 3 of the side flap 14 is provided with a front portion protruding portion 14f protruding toward the outer side in the product width direction W. In this front portion protruding portion 14f, an end to the outermost side in the product width direction W is along the product longitudinal direction L. In other words, the front portion protruding portion 14f has a front portion outermost end 14fa along the product longitudinal direction L. Similarly, in the rear portion 7 of the side flap 14, a back portion protruding portion 14b is provided protruding toward the outer side in the product width direction W. In this rear portion protruding portion 14b, an end to the outermost side in the product width direction W is along the product longitudinal direction L. In other words, the rear portion protruding portion 14b has a rear portion outermost end 14ba along the product longitudinal direction L. The fastening tape 30 is provided to the rear portion protruding portion 14b, and with the fastening tape 30 the rear portion protruding portion 14b is fixed overlapping the rear portion protruding portion 14f in the waist circumference of the wearer.

The outer side end portion region in the product width direction W between the front portion protruding portion 14f and the rear portion protruding portion 14b of the side flap 14 is made from an end edge portion

14Lg that forms a leg surrounding opening portion of the diaper 1. The end edge portion 14Lg in this embodiment mode is formed over the front portion 3 to the back portion 7 with the crotch portion 5 as the center, and is a wave form shape in which a plurality of projected portions projected to the outer side in the product width direction W and a plurality of depressed portions depressed to the outer side in the product width direction W are alternately repeated. In Fig. 5, a plurality of projected portions 145a and a plurality of depressed portions 145b are formed in the crotch portion 5 of the end edge portion 14Lg. Similarly, the front portion 3 of the end edge portion 14Lg is formed with a plurality of projected portions 143a and a plurality of depressed portions 143b, and the rear portion 7 of the end edge portion 14Lg is formed with a plurality of the projected portions 147a and a plurality of the depressed portions 147b.

Fig. 6 is a drawing showing the enlarged end edge portion 14Lg of the side flap 14 according to this embodiment mode. The end edge portion 14Lg has five projected portions 145a and five depressed portions 145b in the region of the crotch portion 5. The projected portion 145a and the depressed portion 145b each have a slight curve in a predetermined curvature, and is a so-called R shape, and is formed with a curvature of, for example, approximately $R=6\text{mm}$ to 10mm s. In this embodiment mode, the five projected portions 145a are each formed with the same curvature, and the five depressed portions 145b are each formed with the same curvature. In other words, the projections and depressions formed in the region of the crotch portion 5 all have the same shape.

Further, the projected portions 145a and the depressed portions 145b are each arranged to be in a linear positional relationship along the product longitudinal direction L. In other words, in the region of the crotch portion 5 of the end edge portion 14Lg, the depressed portion tips 145d of the five depressed portions 145b are each in the same position in the product width direction W, and as shown in Fig. 6, are positioned on the same line along the product longitudinal direction L. Similarly, the projected portion tips 145c of the five projected portions 145a are each in the same position in the product

width direction W, and are positioned on the same line along the product longitudinal direction L. In this way, the end edge portion 14Lg has, in the crotch portion 5, a wave form part (in the longitudinal direction) that is a waveform in which the projected portion 145a projected to the outer side in the product width direction W and the depressed portion 145b depressed to the outer side in the product width direction W are alternately repeated in the product longitudinal direction L. In Fig. 6, the distance between tips in the product width direction W between the depressed portion tip 145d and the projected tip 145c is a length w1. The length of w1 is, for example, approximately 2mms.

It should be noted that, the shape, the size, and the arrangement number and the like of the projected portions 145a and the depressed portions 145b are not limited to the example shown in Fig. 5 and Fig. 6, and can be changed appropriately depending on the target wearer and the difference in size of the diaper 1.

In Fig. 5, two projected portions 143a and two depressed portions 143b are formed in the region of the front portion 3 of the end edge portion 14Lg. The projected portions 143a and the depressed portions 143b have substantially the same configuration as each of the projected portions 145a and the depressed portions 145b. In the region of the front portion 3 however, the wave form shape formed with the projected portions 143a and the depressed portions 143b do not have to be formed along the product longitudinal direction L. In other words, the wave form shape of the end edge portion 14Lg with respect to the product longitudinal direction L may be inclined or bent.

In the region of the back portion 7 of the end edge portion 14Lg are formed three projected portions 147a and three depressed portions 147b. In this region, the end edge portion 14Lg becomes wider to the outer side in the product width direction W as it nears toward the rear portion side in the product longitudinal direction L, and is a slanted wave form shape with respect to the product longitudinal direction L. In other words, the end edge portion 14Lg has in the rear portion 7, a non-longitudinal (slanted direction) wave form part in which the projected portion 147a projected to the outer side in the product width direction W and the depressed portions 147b depressed to the outer side

in the product width direction W are alternately repeated in the slanted direction with respect to the product longitudinal direction L. That is to say, the end edge portion 14Lg has the non-longitudinal direction wave form part in between the longitudinal direction wave form part and the front portion side end 14bb to the most front portion side in the product longitudinal direction L of the above described rear portion outermost end 14ba. It should be noted that, as shown in Fig. 6, the three projected portions 147a and the depressed portions 147b provided in the region of the rear portion 7 each have different shapes (curvature and size).

There has already been described the configuration of the side flap 14 being formed mainly with the skin side sheet 26 and the back sheet 24, and a part of the side flap 14 is also provided with the above described leak prevention sheet 23. As shown in Fig. 1, the leak prevention sheet 23 has a rectangular shape (a rectangular shape with the longitudinal direction of the rectangular shape along the product longitudinal direction L), and the outer side end portion in the product width direction W of the prevention sheet 23 reaches the side flaps 14 extending over the central strip region 12. Thus, the end to the most outer side in the product width direction W of the leak prevention sheet 23 is positioned to the outer side than the boundary between the central strip region 12 and the side flaps 14 (that is to say, the supporting point 16a of the leg side gathers 16), in the product width direction W.

In other words, the side flap 14 has a leak prevention sheet setting portion 14c provided with the leak prevention sheet 23 and a leak prevention sheet non-setting portion 14d positioned to the outer side in the product width direction W than the leak prevention sheet setting portion 14c. Then, a boundary 14e between the leak prevention sheet setting portion 14c and the leak prevention sheet non-setting portion 14d (in other words, the end to the most outer side in the product width direction W of the leak prevention sheet 23) is positioned to the inner side of the product width direction W than the above described recessed portion tip 145d, and further, the supporting point 16a is positioned to the inner side in the product width direction W than the

boundary 14e (in other words, in the direction from the outer side to the inner side in the product width direction W, the recessed tip 145d, the boundary 14e, and the supporting point 16a are provided in that order). It should be noted that, in this embodiment mode, a distance between a tip and a boundary w2 in the product width direction W between the recessed portion tip 145d and the boundary 14e is equal to or more than twice that of the above described distance between tips w1.

<Regarding the Configuration of the Rubber Thread 27 according to this Embodiment Mode>

As described above, the side flap 14 is provided with the rubber thread 27, and the leg gathers are configured by the rubber thread 27 applying stretchability to the skin-side sheet 26 and the back sheet 24 of the crotch portion 5.

Here, referring to Fig. 5 and Fig. 6, the rubber thread 27 is described in further details. The rubber thread 27 is a stretchable member that applies stretchability to the leg surrounding opening portion, when wearing the diaper 1. In other words, the rubber thread 27 is a leg surrounding elastic member that makes a leg surrounding portion of the diaper 1 fit the leg of the wearer. Further, the rubber thread 27 is a linear stretchable member that stretches along the product longitudinal direction L. In other words, the rubber thread 27 is provided so that its longitudinal direction is along the product longitudinal direction L. The rubber thread 27 is joined to the skin-side sheet 26 and the like in a stretched state along the product longitudinal direction L. Thus, when wearing the diaper 1, a stretching force acts in a direction in which the leg surrounding opening portion shrinks.

The rubber thread 27 is provided to an inner side than the wave form part in the crotch portion 5, in the product width direction W. That is to say, the rubber thread 27 is provided to the inner side in the product width direction W than the above described recessed portion tip 145d. Further, the rubber thread 27 is provided, in the product width direction W, from the recessed portion tip 145d, in an inner side position (a two-dotted chain line shown by reference character L1 in Fig. 6) or a further inner side than the inner side position, the inner

side position being away from the depressed portion tip 145d to the inner side by the distance between tips w1.

The reason that the rubber thread 27 was provided to the inner side position L1 or further to the inner side than the inner side position L1 in this way will be explained referring to Fig. 7. Fig. 7 is a first explanatory schematic diagram for explaining superiority that occurs with the arrangement of the rubber thread 27 according to this embodiment mode. Fig. 8 is a second explanatory schematic diagram for explaining superiority that occurs with the arrangement of the rubber thread 27 according to this embodiment mode. It should be noted that, in Fig. 7, the left diagram in Fig. 7 is a diagram of the right diagram in Fig. 7 seen from the white arrow direction. Similarly, in Fig. 8, the left diagram in Fig. 8 is a diagram of the right diagram in Fig. 8 seen from the white arrow direction. With the diaper 1 according to this embodiment mode, by making the end edge portion 14Lg a wave form shape, an uncomfortable feeling when wearing the diaper can be decreased.

Namely, supposing that the end edge portion is a linear shape, there is formed a part that becomes an "edge" that directly contacts the skin of the wearer in the leg surrounding opening portion of the diaper 1, and thus the linear edge is pressed against the skin, and the shape of the edge part is liable to remain as a mark as is. Thus, that becomes a reason to give an uncomfortable feeling to the wearer. On the other hand, the end edge portion 14Lg is made as a wave form shape, thus the length of the edge part becomes long, and the force that acts on the end edge portion 14Lg is dispersed, and the mark is not easily made on the skin of the wearer. Thus, the uncomfortable feeling when wearing the diaper can be lessened, and a comfortable texture can be provided

Further, the end edge portion 14Lg is a wave form shape, and the rubber thread 27 is provided in the inner side in the product width direction W in the wave form part, thus the contractile force of the rubber thread 27 is acting on the end edge portion 14Lg (wave form part). Thus, a crease due to the contractile force is made in the end edge portion 14Lg (wave form part), and a mountain portion with this crease as an edge line may be made. Then, this mountain portion contacts the skin

and gives a cushion effect to the skin, and a comfortable texture can be realized.

For example, as shown in the right diagram in Fig. 7, in the case where the rubber thread 27 is provided in the depressed portion tip 145d in the product width direction W, with the contractile force of the rubber thread 27, the crease with a length w_1 (the same length as the distance between tips) that extends to the inner side in the product width direction W from the projected portion tip 145c is made. Then, as shown in the left diagram in Fig. 7, the mountain portion with the crease as the edge line may be made. When the mountain portion contacts the skin, the wearer feels a comfortable texture.

Here, in the example in Fig. 7, the rubber thread 27 is provided in the recessed portion tip 145d, but when the rubber thread 27 is separated from the recessed portion tip 145d to the inner side in the product width direction W, as shown in Fig. 8, a different crease, namely, a crease extending from the recessed portion tip 145d to the product width direction is made, and the mountain portion with this crease as the edge line (this edge line is referred to as the recessed portion edge line to differentiate from the edge line in Fig. 7, and the edge line in Fig. 7 is referred to as the projected portion edge line.) is made. This mountain portion can also provide a comfortable texture to the wearer when contacting the skin.

In the case that the rubber thread 27 is separated by a small degree from the depressed portion tip 145d, however, a length of the crease (edge line) is too short, and a sufficient cushion effect cannot be achieved. Then, in this embodiment mode, the length of the depressed portion edge line is made to be at least approximately the length of the projected portion edge line (namely, the distance between tips w_1), and in order to provide the cushion effect of the mountain portion having the projected edge line to the mountain portion having the depressed portion edge line, the rubber thread 27 is provided in an inner position L_1 away from the depressed portion tip 145d to the inner side by the distance between tips w_1 , or a further inner side than the inner side position L_1 . Thus, in this embodiment mode, with not only the mountain portion having the projected portion edge line, but also with the

mountain portion having the depressed portion edge line, a sufficient cushion effect is obtained, and the diaper 1 having good texture can be provided.

It should be noted that, there are cases where the above described edge line of the mountain portion (the tips of the mountain portion shown in the left diagram in Fig. 7 or Fig. 8) faces the skin side (opposes the skin) and there are cases where the edge line faces the non-skin side (which way it faces, occurs randomly). Then, when the edge line is facing the skin side, the above described cushion effect occurs.

Further, in this embodiment mode, as shown in Fig. 6, the rubber thread 27 is provided, in the product width direction W, between the depressed portion tip 145d and the boundary 14e between the leak prevention sheet setting portion 14c and the leak prevention sheet non-setting portion 14d. In other words, the rubber thread 27 is provided in the leak prevention sheet non-setting portion 14d where there is no leak prevention sheet 23 of the side flap 14. Thus, the rubber thread 27 is sandwiched between the skin side sheet 26 and the back sheet 24. The rubber thread 27 is provided, in the product width direction W, in between the center between the depressed portion tip 145d and the boundary 14e in the product width direction W, and the boundary 14e. In other words, the rubber thread 27 is positioned, in the product width direction W, not near the depressed portion tip 145d of the leak prevention sheet non-setting portion 14d but near the boundary 14e. Thus, it becomes possible to take the rubber thread 27 further away from the depressed portion tip 145d, and form the mountain portion with a longer depressed portion edge line. Thus, a more appropriate cushion effect can be provided to the skin, and the diaper 1 with a more satisfactory texture can be provided.

Further, when considering the position of the rubber thread 27 in the product longitudinal direction L, as shown in Fig. 6, an end 27a to the rear portion 7 side of the rubber thread 27 is positioned, in the product longitudinal direction L, to the rear portion side than the above described front portion side end 14bb and to the front portion side than the fastening tape 30 (in other words, the end is positioned in a range shown by L2 in Fig. 5). In other words, the rubber thread

27 is stretched and arranged beyond the front portion side end 14bb.

The reason that the end 27a is positioned to the rear portion side than the front portion side end 14bb and to the front portion side than the fastening tape 30 in this manner is explained. As described
5 above, the end edge portion 14Lg has a non-longitudinal direction wave form part in between the front portion side end 14bb and the longitudinal direction wave form part. Thus, in the case that the end 27a is positioned to the rear portion side than the front portion side end 14bb, in other words, in the case that the rubber thread 27 is stretched and
10 arranged beyond the front portion side end 14bb, the depressed portion 147b provided in the non-longitudinal direction wave form part can also be formed with the mountain portion having the depressed portion edge line, thus a more appropriate cushion effect can be provided to the skin, and the diaper 1 with a more satisfactory texture can be provided.
15 Further, by positioning the end 27a to the front portion side than the fastening tape 30, excessive creases can be prevented from being formed in the fastening tape 30, and loss of the function of the fastening tape 30 can be prevented.

Further, as shown in Fig. 6, an end 27b of the rubber thread 27
20 to the front portion 3 side is positioned to the rear portion side than a rear portion side end 14fb to the most rear portion side in the product longitudinal direction L of the above described front portion outermost end 14fa (in other words, the end is positioned in a range shown by L3 in Fig. 5). In other words, the rubber thread 27 is not stretched beyond
25 the rear portion side end 14fb.

The reason that the end 27b is positioned to the rear portion side than the rear portion side end 14fb in this manner is explained. As described above, the front portion 3 is provided with the target tape 29 that engages with the fastening tape 30. When a user uses the
30 fastening tape 30 however, the fastening tape is not always engaged with the target tape 29, and a region to the front portion side in the product longitudinal direction L than the rear portion side end 14fb becomes the region to which there is a possibility of engaging the fastening tape 30 (hereinafter, for the sake of convenience, is referred to as
35 an engageable region). Thus, when the end 27b is positioned to the rear

portion side than the rear portion side end 14fb, excessive creases can be prevented from being formed in the engageable region, and loss of the function of the fastening tape 30 can be prevented.

===Regarding Disposable Diaper according to a Second Embodiment

5 Mode===

Next, a diaper 1 according to a second embodiment mode is explained with reference to Fig. 9. Fig. 9 is a diagram that corresponds to Fig. 5, and is a schematic plan view explaining a side flap 14 and its peripheral configurations according to the second embodiment mode.

10 The only difference between the diaper 1 according to the second embodiment mode and that in the above described embodiment mode (hereinafter, referred to as a first embodiment mode) is a position in the product width direction W of the rubber thread 27 (It should be noted that, the position of the rubber thread 27 in the product longitudinal
15 direction L is not different from that in the first embodiment mode.). In the second embodiment mode, as similar to the first embodiment mode, the rubber thread 27 is provided, in the product width direction W, in an inner position away from the depressed portion tip 145d to the inner side by the distance between tips w1, or in a further inner side than
20 the inner side position. Thus, in the second embodiment mode, similar to the first embodiment mode, not only in the mountain portion having a depressed portion edge line, but also in the mountain portion having the depressed portion edge line, a sufficient cushion effect is achieved, and the above described effect of being able to provide the diaper 1
25 having a good texture is achieved.

On one hand, in the first embodiment mode, the rubber thread 27 is provided, in the product width direction W, in between the depressed portion tip 145d, and the boundary 14e between the leak prevention sheet setting portion 14c and the leak prevention sheet non-setting portion
30 14d, but on the other hand, in the second embodiment mode, the rubber thread 27 is provided, in the product width direction W, between the boundary 14e and the above described supporting point 16a of the leg side gathers 16. In other words, in the first embodiment mode, the rubber thread 27 is provided in the leak prevention sheet non-setting
35 portion 14d, whereas in the second embodiment mode, the rubber thread

27 is provided in the leak prevention sheet setting portion 14c.

Thus, the below described superiority occurs. As described above, the leg side gathers 16 have the function to prevent leakage of liquid (in other words, body wastes such as urine and excrements excreted inside the diaper 1) from the gap around the legs. Thus, when the body wastes move to the outer side in the product width direction W, the leg side gathers 16 block such move, and thus the body wastes do not exceed the above described supporting point 16a.

Further, the rubber thread 27 (in other words, the leg gathers 15) has a function as a second block member. In other words, the leg side gathers 16 block the move of the body wastes to the outer side in the product width direction W, but even if the leg side gathers could not block the move and the body wastes move to the outer side in the product width direction W going over the supporting point 16a, the rubber thread 27 can stop the move of the body wastes. In this way, with the double mechanism, the liquid leakage from the gaps can be prevented (the rubber thread 27 is a precautionary function).

Here, in the second embodiment mode, the rubber thread 27 is provided between the boundary 14e and the supporting point 16a, in the product width direction W, and the leak prevention sheet 23 exists between the rubber thread 27, and the supporting point 16a in the product width direction W. Thus, even if the body wastes move to the outer side in the product width direction W going over the supporting point 16a (the leg side gathers 16) which is a first block member, there is the leak prevention sheet 23 until the rubber thread 27 (leg gathers 15) which is the second block member, thus the body wastes reach the rubber thread 27 without leaking, and are blocked with the rubber thread 27. Therefore, according to the second embodiment mode, the liquid leakage can be appropriately prevented.

===Regarding Disposable Diaper according to a Third Embodiment Mode===

Next, a diaper 1 according to a third embodiment mode is explained with reference to Fig. 10. Fig. 10 is a diagram corresponding to Fig. 5 and Fig. 9, and is a schematic plan view explaining a side flap 14 and its peripheral configurations according to the third embodiment

mode.

The only difference between the diaper 1 according to the third embodiment mode and those in the first embodiment mode and the second embodiment mode is a position of the rubber thread 27 in the product width direction W (It should be noted that, the position of the rubber thread 27 in the product longitudinal direction L is not different from those in the first embodiment mode and the second embodiment mode.). In the third embodiment mode, as similar to the first embodiment mode and the second embodiment mode, the rubber thread 27 is provided, in the product width direction W, in an inner position away from the depressed portion tip 145d to the inner side by the distance between tips w1, or in a further inner side than the inner side position. Thus, in the third embodiment mode, similar to the first embodiment mode and the second embodiment mode, not only in the mountain portion having the projected portion edge line, but also in the mountain portion having the depressed portion edge line, a sufficient cushion effect is achieved, and the above described effect of being able to provide the diaper 1 having a good texture is achieved.

On one hand, in the second embodiment mode, the rubber thread 27 is provided, in the product width direction W, in between the boundary 14e and the supporting point 16a, namely, to the outer side than the supporting point 16a, but on the other hand, in the third embodiment mode, the rubber thread 27 is provided to the inner side than the supporting point 16a, in the product width direction W.

Thus, the below described superiority occurs. In other words, in the third embodiment mode, the rubber thread 27 that configures the leg gathers 15 which is a leg surrounding stretchable portion is provided to the inner side than the supporting point 16a of the leg side gathers 16. Thus, the supporting point 16a of the leg side gathers 16 is positioned to the outer side than the rubber thread 27 configuring the leg side gathers 15 which are the leg surrounding stretchable portion, and the state of the leg side gathers 16 can be visibly confirmed appropriately from the outside by looking into the leg surrounding opening portion of the diaper 1. Thus, checking of body wastes can be carried out with the diaper 1 in the worn state and without having to

inadvertently move the wearer.

In particular, in the case that the wearer is a low body weight baby with a weight equal to or smaller than 3000 grams, the wearer is prone to dyschezia, and guiding of defecation by such as giving an enema is aggressively performed. Further, in the case that the wearer is a low weight baby, of course, the need for minimum handling is high. Thus, in this case, there is a greater meaning in being able to check body wastes, with the diaper 1 being worn, and without inadvertently moving the wearer.

Further, in the third embodiment mode, as already described (in the explanation in the first embodiment mode), the part near the supporting point 16c of the part from the supporting point 16a of the leg side gathers to the inner side tip 16b is formed from a sheet with only one layer (skin side sheet 26).

The part near the supporting point 16c is a part where the body wastes are first seen (in other words, before the part near the inner side tip 16d) when feces and the like are excreted. Thus, the part near the supporting tip 16c can be a sheet with only one layer, and thus the color of the body wastes such as feces can be seen through the part 16c, and checking of excretions can be more easily performed.

Further, in the third embodiment, a distance between supporting point inner side tips w3 of the supporting point 16a and the inner side tip 16b in the product width direction W is larger than a distance between supporting point projected portion tips w4 of the supporting point 16a and the projected portion tip 145c in the product width direction W.

Thus, when the leg side gathers 16 (the inner side tip 16b thereof) are tilted to the outer side in the product width direction W, with the supporting point 16a as a starting point, the leg side gathers 16 protrude out from the above described end edge portion 14Lg (wave form part). Thus, when the diaper 1 is worn in such a form, the part that protrudes out to the outer side than the end edge portion 14Lg is in at least one part of the leg side gathers 16, thus the one part is a place where the body wastes can be seen easily seen in particular (on the contrary, in the case that the distance between supporting point inner side tips w3 is smaller than the distance between supporting point projected portion

tips w4, there is no part that protrudes to the outer side than the end edge portion 14Lg, and since there is no such part, the body wastes are hard to see). Thus, checking of the body wastes can be more easily performed.

5 It should be noted that, in the third embodiment mode, the rubber thread 27 is provided to the inner side than the supporting point 16a in the product width direction W, and different from the second embodiment, the rubber thread 27 does not have the function as the second block member when the body wastes have gone over the supporting point
10 16a (the first block member). The function as the second block member however, is as described above, a precautionary function, and a choice of omission thereof may be considered.

 Further, in the case that the rubber thread 27 is provided to the inner side than the supporting point 16a, although the rubber thread
15 27 does not function as the second block member, the rubber thread blocks the move of the body wastes in the inner side. Further, in the third embodiment mode, the stretching magnification of the rubber thread 27 (in other words, the magnification that the rubber thread 27 has been stretched and attached when the rubber thread 27 is being attached to
20 the diaper 1) is made greater than the stretching magnification of the stretchable member of the leg side gathers 16 (specifically, the former is 2.4 times, whereas the latter is 2.0 times), thus the liquid leakage prevention ability is not lessened so much.

===Other Points===

25 The above embodiment modes are to facilitate understanding of the present invention, and do not limit understanding of the present invention in any way. This invention may be changed and modified without departing from its scope thereof, and it is needless to say that this invention includes its equivalents.

30 Further, in the above embodiment mode, the rubber thread 27 is given as an example of a stretchable member and explained, but it is not limited thereto. For example, the stretchable member may be a stretchable sheet. In other words, the stretchable sheet (specifically, when the stretchable sheet is a member having a width in the product
35 width direction W, the part positioned to the outermost side of the

stretchable sheet) which is a stretchable member may be provided, in the product width direction W, in an inner position away from the depressed portion tip 145d to the inner side by the distance between tips w1, or in a further inner side than the inner side position.

5 In the case that the stretchable member is the rubber thread 27 however, compared to the stretchable sheet, a joining area to the diaper 1 can be kept small, thus there is little effect on texture. In other words, in the case that the stretchable member is a stretchable sheet, a feeling that the stretchable sheet is contacting the skin occurs
10 significantly, thus there is a possibility of an uncomfortable feeling regarding texture, but in the case of the rubber thread 27, such a feeling can be kept to a minimum. Thus, the diaper 1 with a more satisfactory texture can be provided.

15 Reference Signs List

- 1 diaper
- 3 front portion
- 5 crotch portion
- 7 rear portion
- 20 12 central strip region
- 14 side flap
- 14Lg end edge portion
- 14b rear portion protruding portion
- 14ba rear portion outermost end
- 25 14bb front portion side end
- 14c leak prevention sheet setting portion
- 14d leak prevention sheet non-setting portion
- 14e boundary
- 14f front portion protruding portion
- 30 14fa front portion outermost end
- 14fb rear portion side end
- 15 leg gathers
- 16 leg side gathers
- 16a supporting point
- 35 16b inner side tip

- 16c part near supporting point
- 16d part near inner side tip
- 18 waist gathers
- 21 absorbent body
- 5 22 top sheet
- 23 leak prevention sheet
- 24 back sheet
- 25 stretchable film
- 26 skin-side sheet
- 10 26A joining portion
- 27 rubber thread
- 27a end
- 27b end
- 28 waist gather film
- 15 29 target tape
- 30 fastening tape
- 143a projected portion
- 143b depressed portion
- 145a projected portion
- 20 145b depressed portion
- 145c projected portion tip
- 145d depressed portion tip
- 147a projected portion
- 147b depressed portion
- 25 211b dart portion
- 211f dart portion
- L product longitudinal direction
- W product width direction
- CL central position
- 30 L1 inner side position
- w1 distance between tips
- w2 distance between a tip and a boundary
- w3 distance between supporting point inner side tips
- w4 distance between supporting point projected portion tips

CLAIMS

1. A disposable diaper having a longitudinal direction and a width direction intersecting the longitudinal direction, the disposable diaper comprising:

an absorbent body that absorbs liquid;

side flaps positioned in both side portions in the width direction; and

a stretchable member that is arranged in between a skin-side sheet and a back sheet of each of the side flaps, and that configures a leg gather by applying stretchability to the skin-side sheet and the back sheet,

the diaper having a front portion, a crotch portion and a rear portion in the longitudinal direction,

an end edge portion in an outer side in the width direction of the side flap having a wave form part that is a wave form in which a projected portion projected to the outer side in the width direction and a depressed portion depressed to the outer side in the width direction are repeated alternately in the longitudinal direction,

the wave form part having the projected portion and the depressed portion along the longitudinal direction in a region of the crotch portion,

a part positioned at an outmost side of the stretchable member being provided, in the width direction, in either one of an inner side position and a further inner side than the inner side position, the inner side position being away from a depressed portion tip of the depressed portion in the region of the crotch portion to an inner side by a distance between tips, the distance between tips being a distance between the depressed portion tip and a projected portion tip of the projected portion in the region of the crotch portion in the width direction.

2. A disposable diaper according to claim 1, wherein

the side flap has a leak prevention sheet setting portion provided with a leak prevention sheet and a leak prevention sheet non-setting portion positioned to the outer side in the width direction than the leak prevention sheet setting portion,

a boundary between the leak prevention sheet setting portion and the leak prevention sheet non-setting portion is positioned to the inner side in the width direction than the depressed portion tip, and a distance between a tip and a boundary between the depressed portion tip and the boundary in the width direction is equal to or more than twice the distance between the tips,

the stretchable member is provided, in the width direction, between a center of the depressed portion tip and the boundary in the width direction, and the boundary.

3. A disposable diaper according to claim 1,

comprising leg side gathers formed along the longitudinal direction and having a supporting point,

wherein the supporting point is a joining portion where the skin-side sheet is joined along the longitudinal direction,

the side flap has a leak prevention sheet setting portion provided with a leak prevention sheet and a leak prevention sheet non-setting portion positioned to the outer side in the width direction than the leak prevention sheet setting portion,

a boundary between the leak prevention sheet setting portion and the leak prevention sheet non-setting portion is positioned to the inner side in the width direction than the depressed portion tip,

the supporting point is positioned to the inner side in the width direction than the boundary,

the stretchable member is provided, in the width direction, between the boundary and the supporting point.

4. A disposable diaper according to claim 1,
comprising leg side gathers formed along the longitudinal direction and having a supporting point,
wherein the supporting point is a joining portion where the skin-side sheet is joined along the longitudinal direction,
the stretchable member is provided, in the width direction, to the inner side than the supporting point.
5. A disposable diaper according to claim 4, wherein
the leg side gathers have an inner side tip positioned to the inner side in the width direction than the supporting point,
a part near the supporting point of a part from the supporting point to the inner side tip of the leg side gathers is made of a sheet with only one layer.
6. A disposable diaper according to claim 4 or 5, wherein
the leg side gathers have an inner side tip positioned to the inner side in the width direction than the supporting point,
a distance between supporting point inner side tips in the width direction between the supporting point and the inner side tip is greater than a distance between supporting point projected portion tips in the width direction between the supporting point and the projected portion tip.
7. A disposable diaper according to any one of claims 1 to 6, wherein
the wave form part is a wave form part in the longitudinal direction,
the side flap has a front portion positioned to an abdomen side of a wearer when wearing the disposable diaper, a rear portion positioned to a back side of the wearer, and a crotch

portion positioned between the front portion and the rear portion,

the rear portion is provided with a rear portion protruding portion that protrudes toward the outer side in the width direction and that has a rear portion outermost end along the longitudinal direction,

the rear portion protruding portion is attached with a fastening tape,

the end edge portion has a non-longitudinal direction wave form part that is a wave form in which the projected portion and the depressed portion are alternately repeated in a direction slanted with respect to the longitudinal direction, between the longitudinal direction wave form part and a front portion side end that is to the most front portion side in the longitudinal direction of the rear portion outermost end,

an end of the stretchable member to a rear portion side is positioned, in the longitudinal direction, to a rear portion side than the front portion side end and to a front portion side than the fastening tape.

8. A disposable diaper according to any one of claims 1 to 7, wherein

the side flap has a front portion positioned to an abdomen side of a wearer when wearing the disposable diaper, a rear portion positioned to a back side of the wearer, and a crotch portion positioned between the front portion and the rear portion,

the front portion is provided with a front portion protruding portion that protrudes toward the outer side in the width direction and that has a front portion outermost end along the longitudinal direction,

an end of the stretchable member to a front portion side is positioned, in the longitudinal direction, to a rear

portion side than a rear portion side end to the most rear portion side in the longitudinal direction of the front portion outermost end.