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VÊTEMENT POUR LA PARTIE SUPÉRIEURE DU CORPS

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(73) Proprietor: **ASICS Corporation**
Kobe-shi
Hyogo 650-8555 (JP)

(72) Inventors:
- **KOGA Yutaka**
  Kobe-shi
  Hyogo 650-8555 (JP)
- **TAKAMOTO Yoshikuni**
  Kobe-shi
  Hyogo 650-8555 (JP)
- **OMURO Mamoru**
  Kobe-shi
  Hyogo 650-8555 (JP)

(74) Representative: **Grünecker Patent- und Rechtsanwälte**
PartG mbB
Leopoldstraße 4
80802 München (DE)

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Description

Technical Field

[0001] The present invention relates to an upper garment that is provided with underarm gussets and thus can satisfactorily follow even a strong movement of arms.

Background Art

[0002] Up to now, upper garments such as uniforms and underwear used for volleyball, baseball, and the like, particularly, sports that require a strong up-and-down movement of arms have been provided with underarm gussets in order to enable the upper garments to more satisfactorily follow such a strong movement of the arms. Document US 2 426 819 discloses a garment according to the preamble of claim 1.

[0003] Gussets increase the thickness of an upper garment, and give the upper garment a better fit. Fig. 14 illustrates a base portion of a sleeve, in which: a line 10 of a body is indicated by an alternate long and short dash line; a line 11 of an upper garment with a gusset is indicated by a solid line; and a line 12 of an upper garment without a gusset is indicated by a chain line. If the gusset is provided in an underarm portion of the upper garment as illustrated in Fig. 14, an arm hole bottom a (a portion that is most concave under the arm) of the upper garment can be set to a high position, and an underarm size b (a range indicated by an arrow) can be lengthened. Hence, a better fit can be obtained, and the arm can be raised more smoothly.

[0004] Meanwhile, conventional gusset shapes include: a straight gusset 13 that is provided in a region from the hem to the cuff through the underarm and has a substantially constant width, as illustrated in Fig. 15; a spindle-shaped gusset 14 (Patent Literature 1) that is provided in the same region and has a width that gradually becomes larger from each of the hem and the cuff toward the underarm, as illustrated in Fig. 5; and a rhombic gusset 15 provided near the underarm, as illustrated in Fig. 16.

Citation List

Patent Literature

Patent Literature 1: Japanese Utility Model No. 3109859

Summary of Invention

Technical Problem

[0005] Unfortunately, the conventional gussets have the following problems.

[0006] First, when the gusset is attached to a front body piece, a back body piece, and an upper sleeve, if the arm hole bottom a is set to a high position as illustrated in Fig. 14, the underarm portion of the upper garment can be fitted to the body 10, and the underarm size b is lengthened. Hence, the arm can be raised more easily. However, if the arm hole bottom a is set at an excessively high position, when the arm is lowered, the allowance around a shoulder becomes insufficient, so that tightening in the underarm and the shoulder upper part increases.

[0007] This tendency is more remarkable for the straight gusset 13 illustrated in Fig. 15.

[0008] In Fig. 14, a tightening force direction in the shoulder upper part is indicated by an arrow c.

[0009] With regard to the spindle-shaped gusset 14 and the rhombic gusset 15 each having a gusset width that becomes larger under the arm, the cloth can have an allowance under the arm, and hence tightening force in the underarm is alleviated. Unfortunately, the cloth cannot have an allowance in the shoulder upper part, and hence tightening force in the shoulder upper part cannot be alleviated.

[0010] Next, when the arm is raised, a region d in which skin stretching is large in the vertical direction is formed in a side part of the body. Hence, if stitches f for sewing a gusset and a body piece is close in parallel to a skin stretching line e as illustrated in Fig. 11, the stitches f hinder the skin stretching, and unfavorable pulling occurs in the upper garment.

[0011] Such unfavorable pulling is particularly problematic in the straight gusset 13 in which the stitches f run along the side of the body.

[0012] As described above, the conventional gussets have problems that tightening around shoulders is large and that unfavorable pulling by the stitches f is large.

[0013] In view of the above, the present invention has an object to provide an upper garment having a gusset structure that is less likely to cause tightening around shoulders and unfavorable pulling by stitches even if arm hole bottoms are set to high positions in order to facilitate raising of arms.

Solution to Problem

[0014] An upper garment according to the present invention includes: a front body piece; a back body piece; sleeves; and elongated gussets that each extend toward a flank hem and a cuff from each underarm of the front body piece and the back body piece, the front body piece, the back body piece, the sleeves, and the gussets being integrally sewn to each other. Each of the gussets includes three blocks of a flank part, an underarm part, and a sleeve part. The flank part and the sleeve part of the gusset each have both side edges defined by a gently curved line or a straight line. The underarm part of the gusset includes a front convex part and a back convex part at both side edges of a front underarm part and a back underarm part, the front convex part and the back convex part being gradually curved so as to become largest in width in a vicinity of an arm hole bottom. The front

body piece, the back body piece, and each of the sleeves to which the front convex part and the back convex part of the gusset are sewn are configured in different shapes without concaves that are matched with the front convex part and the back convex part of the gusset.

[0015] Further, in the upper garment according to the present invention, a material of the gusset has higher elastic force and is more difficult to bend in a width direction than a material of the body piece.

[0016] Further, in the upper garment according to the present invention, a length of the gusset is larger than a length from a waist line to an elbow line through the underarm.

[0017] Further, in the upper garment according to the present invention, a length of the gusset is smaller than a length from a waist line to an elbow line through the underarm.

[0018] Further, in the upper garment according to the present invention, the gusset extends from a vicinity of a waist line to a vicinity of an elbow line through the underarm.

Advantageous Effects of Invention

[0019] According to the present invention, as described above, the front convex part and the back convex part that are gradually curved so as to become largest in width in the vicinity of the arm hole bottom are formed at both the side edges of the front underarm part and the back underarm part of the gusset, and hence the front convex part and the back convex part serve as an allowance. Moreover, the body piece to which the front convex part and the back convex part are sewn is configured in a different shape without the concaves that are matched with the front convex part and the back convex part of the gusset. As a result, pushing-up force is applied from the gusset to the body piece, tightening force in a shoulder upper part is reduced, and unfavorable pulling by stitches for sewing the gusset and the body piece is less likely to occur.

Brief Description of Drawings

[0020]

Fig. 1 is a schematic view of an embodiment of an upper garment according to the present invention, which illustrates a state before a left gusset is sewn.
Fig. 2A is a schematic view illustrating a relation between a human body part and a gusset according to the present invention.
Fig. 2B is a schematic view illustrating a vicinity of an underarm of the human body on its front side.
Fig. 2C is a schematic view illustrating the vicinity of the underarm of the human body on its back side.
Fig. 3 is a development view illustrating a left body piece of the upper garment according to the present invention.
Fig. 4 is a development view of a conventional straight gusset (Comparative Example 1).
Fig. 5 is a development view of a conventional large-width spindle-shaped gusset (Comparative Example 2).
Fig. 6 is a development view of a conventional small-width spindle-shaped gusset (Comparative Example 3).
Fig. 7 is a development view illustrating a left body piece according to Comparative Example 4.
Fig. 8 is a graph showing results of comparative experiments on a wearing pressure that is applied to an upper arm part when an arm raising angle is 180 degrees.
Fig. 9 is a graph showing a movement of each stitch line when the arm raising angle is 180 degrees.
Fig. 10 is a schematic view illustrating a relation between a stitch line of the gusset used for the upper garment according to the present invention and a skin stretching line.
Fig. 11 is a schematic view illustrating a relation between a stitch line of the conventional straight gusset and the skin stretching line.
Fig. 12 is a graph showing experiment results on the amount of upward shift when the arm raising angle is 180 degrees.
Fig. 13A is a schematic view illustrating another embodiment of the upper garment according to the present invention.
Fig. 13B is a development view of a gusset of the upper garment illustrated in Fig. 13A.
Fig. 14 is a schematic view illustrating a relation between an underarm portion of the upper garment and a body depending on whether or not the gusset is provided.
Fig. 15 is a schematic view of an upper garment with the conventional straight gusset.
Fig. 16 is a schematic view of an upper garment with the conventional rhombic gusset.

Description of Embodiments

[0021] Fig. 1 is a schematic view of an upper garment 1 according to the present invention, which illustrates a state before a left gusset 2 is sewn.

[0022] The gusset 2 according to the present invention includes three blocks of a flank part A, an underarm part B, and a sleeve part C.

[0023] The underarm part B corresponds to a region d in which skin stretching of the body is large during an arm raising motion. A front convex part 3 and a back convex part 4 that are gradually curved so as to become largest in width in the vicinity of an arm hole bottom a are formed on both sides of a front underarm part and a back underarm part of the region d. A chain line with reference sign 5 indicates a profile line of an underarm part of a conventional straight gusset 13.

[0024] Both sides of each of the flank part A and the

sleeve part C are formed in a belt-like pattern that is straight or has substantially constant curvature.

[0025] As described above, the underarm part B corresponds to the region d in which skin stretching of the body is large during an arm raising motion. As illustrated in Fig. 2A, the boundary between the underarm part B and the flank part A is located in a chest cross section passing through a point at which a pectoralis major muscle G is in contact with an anterior layer H of the uppermost part of the rectus sheath in the abdominal part, and the boundary between the underarm part B and the sleeve part C is located in an upper arm cross section passing through a point at which a deltoid muscle I is in contact with a deltoid tuberosity J of the upper arm bone.

[0026] With regard to the positions of protruding parts of the underarm part B, that is, the positions of the apexes of the front convex part 3 and the back convex part 4, the chest-side position is in the vicinity of a front underarm point K, that is, at an upper edge point of a fold in the boundary between the body trunk and the arm on the front side around the arm base as illustrated in Fig. 2B, and the back-side position is in the vicinity of a back underarm point L, that is, at an upper edge point of a fold in the boundary between the body trunk and the arm on the back side around the arm base as illustrated in Fig. 2C.

[0027] The width of the underarm part B, that is, the widths of the front convex part 3 and the back convex part 4, is set to: a range of 10 to 14% of the chest measurement in the boundary portion between the underarm part B and the flank part A; a range of 14 to 22% of the chest measurement at the positions of the apexes of the front convex part 3 and the back convex part 4; and a range of 9 to 13% of the chest measurement in the boundary portion between the underarm part B and the sleeve part C.

[0028] Fig. 3 illustrates a left front body piece D, an upper sleeve E, and a left back body piece F constituting a body piece to which the left gusset 2 according to the present invention is sewn.

[0029] As illustrated in Fig. 3, underarm profile lines of the body piece to which the front convex part 3 and the back convex part 4 of the underarm part B of the gusset 2 according to the present invention are sewn are not matched with profile lines of the front convex part 3 and the back convex part 4. That is, the body piece is not provided with concaves 6 that are coincident with the front convex part 3 and the back convex part 4 of the gusset 2, and the underarm profile lines thereof are curved lines having substantially constant curvature.

[0030] As described above, in the gusset 2 according to the present invention, the front convex part 3 and the back convex part 4 having both sides that are gradually curved so as to become largest in width in the arm hole bottom a are formed in the region d in which skin stretching of the body is large during an arm raising motion. Then, the underarm profile lines of the body piece to which the front convex part 3 and the back convex part 4 of the gusset 2 are sewn are configured in different shapes without the concaves 6 that are matched with the front convex part 3 and the back convex part 4. With this configuration, because pushing-up force is applied from the gusset 2 to the body piece, tightening force in a shoulder upper part decreases, and unfavorable pulling by the stitches 8 for sewing the gusset 2 and the body piece is less likely to occur. In Fig. 1, the pushing-up force applied from the gusset 2 to the body piece is schematically indicated by an arrow 7.

[0031] Experiments were carried out as to how the pushing-up force applied from the gusset to the body piece, the tightening force in the shoulder upper part, and the unfavorable pulling by the stitches 8 for sewing the gusset and the body piece changed depending on a difference in gusset shape, so that the following results were obtained. That is, compared with gusset structures according to Comparative Example 1 to Comparative Example 4 described below, the gusset 2 according to an embodiment of the present invention had larger pushing-up force applied to the body piece, produced a higher effect of reducing the tightening force in the shoulder upper part, and was less likely to cause a phenomenon of the unfavorable pulling of the garment by the stitches 8 for sewing the gusset and the body piece.

[0032] Comparative Example 1 for carrying out a comparative experiment uses the straight gusset 13. The straight gusset 13 is not provided with protruding parts in its underarm part, and has a shape illustrated in Fig. 4, which is equivalent to a shape obtained by removing the front convex part 3 and the back convex part 4 from the gusset 2 in the present invention.

[0033] Comparative Example 2 for carrying out a comparative experiment uses a spindle-shaped gusset 14. The spindle-shaped gusset 14 gradually becomes larger in width toward its underarm part, and has a shape illustrated in Fig. 5. The width L of the arm hole bottom a largest in width of the underarm part of the gusset 14 in Comparative Example 2 is set to be the same as the width of the arm hole bottom a of the front convex part 3 and the back convex part 4 in the present invention.

[0034] Comparative Example 3 for carrying out a comparative experiment uses a spindle-shaped gusset 16. The spindle-shaped gusset 16 gradually becomes larger toward its underarm part. As illustrated in Fig. 6, the width L of the arm hole bottom a of the underarm part of the spindle-shaped gusset 16 is set to be smaller than that in Comparative Example 2, and areas S_1 and S_2 of portions of the spindle-shaped gusset 16 are respectively set to be the same as areas S_1 and S_2 of the front convex part 3 and the back convex part 4 of the gusset in the present invention, the portions spreading outward from a profile line 5 of the straight gusset 13 not including the front convex part 3 and the back convex part 4 in its underarm part.

[0035] Comparative Example 4 for carrying out a comparative experiment uses a gusset having the same gusset shape as that of the gusset 2 according to the present

invention. As illustrated in Fig. 7, the concaves 6 that are matched with the front convex part 3 and the back convex part 4 of the gusset are formed in profile lines of a front body piece, an upper sleeve, and a back body piece to which the front convex part 3 and the back convex part 4 are sewn. Alternate long and short dash lines 9 in Fig. 7 indicate underarm profile lines of the body piece in the present invention.

[0036] Note that, similarly in the gussets in Comparative Examples 1 to 3, the profile lines of the front body piece D, the upper sleeve E, and the back body piece F to which the front line and the back line of the gusset are sewn have shapes matched with the front line and the back line of the gusset.

[0037] First, how a pressure applied to the upper arm part changed in relation to an arm raising angle when each upper garment was worn was measured by attaching a pressure sensor to the upper arm part of the body. As a result, as shown in a graph of Fig. 8, in the embodiment of the present invention, the tightening pressure could be reduced to be equal to or less than half that in Comparative Example 1 using the straight gusset 13, for all the arm raising angles of 0 degrees, 45 degrees, 90 degrees, and 180 degrees. Further, compared with Comparative Example 2 using the large-width spindle-shaped gusset 14, the reducing effect was substantially the same for the arm raising angles of 0 degrees and 45 degrees, whereas the reducing effect was significantly different for an arm raising angle of 90 degrees or more.

[0038] Further, in Comparative Example 4, in which the gusset shape is the same as that in the present invention whereas the body piece is provided with the concaves 6 that are matched with the front convex part 3 and the back convex part 4, the arm hole was smaller, and the allowance in the shoulder upper part decreased by an amount corresponding to the concaves 6 provided in the underarm portion of the body piece. In particular, the tightening pressure when the arm raising angle was equal to or less than 90 degrees significantly increased.

[0039] Next, how stitches for sewing the gusset and the body piece influenced skin stretching of the body when the arm raising angle was 180 degrees was checked by: adding a marker along a stitch line f; and measuring a relative position of the marker from the position of the neck base. As a result, as shown in a graph of Fig. 9, in the embodiment of the present invention, an angle formed by a curved line of the stitch line f and a skin stretching line e represented by the vertical axis of the graph was larger than those in all the comparative examples, and hence it could be confirmed that the stitches 8 did not hinder the skin stretching.

[0040] In the embodiment of the present invention, as illustrated in Fig. 10, in the region d in which skin stretching is large, the stitch line f is curved to a large degree, an angle 0 formed by the stitch line f and the skin stretching line e is large, and the stitch line f does not hinder the skin stretching. As a result, during an arm raising motion, unfavorable pulling can be alleviated, and an upward shift can be reduced. In contrast, in the straight gusset 13, as illustrated in Fig. 15, in the region d in which skin stretching is large, the angle θ formed by the stitch line f and the skin stretching line e is small, and the stitch line f hinders the skin stretching.

[0041] Next, how an upward shift of the hem that was caused by unfavorable pulling by the stitches when the arm raising angle was 180 degrees changed was checked on the basis of by which amount a marker added at a height of 20 cm from the hem was shifted upward in a vertical distance from the position when the arm raising angle was 0 degrees. The results were as shown in Fig. 12. In the embodiment of the present invention, the amount of upward shift was smaller than those in all the comparative examples, and the amount of upward shift was reduced to be half that in Comparative Example 1 using the straight gusset 13.

[0042] The material of the gusset 2 used in the embodiment of the present invention may be the same as that of the body piece, but if a material that has higher elastic force and is more difficult to bend in the width direction than the material of the body piece is used for the gusset 2, the pushing-up force applied from the gusset to the body piece and the tightening force in the shoulder upper part are more improved.

[0043] Further, the length of the gusset 2 used in the embodiment of the present invention may be set to be larger or smaller than the length from a waist line to an elbow line through the underarm. Similar effects can be obtained even in the case as illustrated in Fig. 13A and Fig. 13B where the gusset 2 is extended from the vicinity of a waist line M to the vicinity of an elbow line N through the underarm. Note that the waist line M refers to an outer circumferential line of a cross section passing through a middle point between the rib lower ends and the pelvis upper end, and the elbow line N refers to an outer circumferential line of a cross section passing through the olecranon.

[0044] Note that description is given of the long-sleeved garment in the above embodiment, but the present invention is not limited to long-sleeved garments, and may be applied to short-sleeved garments.

Industrial Applicability

[0045] As described above, an upper garment according to the present invention can apply pushing-up force from a gusset to a body piece, can reduce tightening force in a shoulder upper part, and is less likely to cause unfavorable pulling by stitches for sewing the gusset and the body piece. Accordingly, the upper garment according to the present invention is best suited to, particularly, sportswear for volleyball, baseball, and the like that require a strong up-and-down movement of arms.

Reference Signs List

[0046]

1 upper garment
2 gusset
3 front convex part
4 back convex part

Claims

1. An upper garment comprising:

a front body piece (D);
a back body piece (F);
sleeves (E); and
elongated gussets (2) that each extend toward a flank hem and a cuff from an underarm of the front body piece (D) and the back body piece (F), the front body piece (D), the back body piece (F), the sleeves (E), and the gussets (2) being integrally sewn to each other, wherein
each of the gussets (2) includes three blocks of a flank part, an underarm part, and a sleeve part, the flank part and the sleeve part of the gusset (2) each have both side edges defined by a gently curved line or a straight line,
the underarm part of the gusset (2) includes a front convex part (3) and a back convex part (4) at both side edges of a front underarm part and a back underarm part, the front convex part (3) and the back convex part (4) being gradually curved so as to become largest in width in a vicinity of an arm hole bottom, **characterized in that** the front body piece (D), the back body piece (F), and each of the sleeves (E) to which the front convex part (3) and the back convex part (4) of the gusset (2) are sewn are configured in different shapes without concaves (6) that are matched with the front convex part (3) and the back convex part (4) of the gusset (2),and
wherein a material of the gusset (2) has higher elastic force and is more difficult to bend in a width direction than a material of the body piece (D, F).

2. The upper garment according to claim 1, wherein a length of the gusset (2) is larger than a length from a waist line to an elbow line through the underarm.

3. The upper garment according to claim 1, wherein a length of the gusset (2) is smaller than a length from a waist line to an elbow line through the underarm.

4. The upper garment according to claim 3, wherein the length of the gusset (2) is smaller than a length from the waist line to the elbow line through the underarm and a deltoid tuberosity.

5. The upper garment according to claim 1, wherein the gusset (2) extends from a vicinity of a waist line to a vicinity of an elbow line through the underarm.

6. The upper garment according to claim 1, wherein the gusset (2) extends to the cuff.

7. The upper garment according to claim 1, wherein the gusset (2) extends to the flank hem.

Patentansprüche

1. Oberbekleidung, umfassend:

ein vorderes Körperteil (D);
ein hinteres Körperteil (F);
Ärmel (E); und
längliche Zwickel (2), die sich jeweils von einer Achselhöhle des vorderen Körperteils (D) und des hinteren Körperteils (F) zu einem Flankensaum und einer Manschette erstrecken,
wobei das vordere Körperteil (D), das hintere Körperteil (F), die Ärmel (E) und die Zwickel (2) integral miteinander vernäht sind, wobei
jeder der Zwickel (2) drei Blöcke eines Flankenteils, eines Achselteils und eines Ärmelteils umfasst,
der Flankenteil und der Ärmelteil des Zwickels (2) jeweils beide Seitenkanten aufweisen, die durch eine sanft geschwungene Linie oder eine gerade Linie definiert sind,
der Achselteil des Zwickels (2) ein vorderes konvexes Teil (3) und ein hinteres konvexes Teil (4) an beiden Seitenkanten eines vorderen Achselteils und eines hinteren Achselteils aufweist, wobei das vordere konvexe Teil (3) und das hintere konvexe Teil (4) allmählich gekrümmt sind, um in der Nähe eines Armlochbodens die größte Breite zu erhalten, und
dadurch gekennzeichnet, dass
das vordere Körperteil (D), das hintere Körperteil (F), und jeder der Ärmel (E), an die das vordere konvexe Teil (3) und das hintere konvexe Teil (4) des Zwickels (2) angenäht sind, in verschiedenen Formen ohne Konkavitäten (6) ausgebildet sind, die mit dem vorderen konvexen Teil (3) und dem hinteren konvexen Teil (4) des Zwickels (2) übereinstimmen, und
wobei ein Material des Zwickels (2) eine höhere Elastizitätskraft aufweist und in einer Breitenrichtung schwieriger zu biegen ist, als ein Material des Körperteils (D, F).

2. Oberbekleidung nach Anspruch 1, wobei eine Länge des Zwickels (2) größer ist als eine Länge von einer Taillenlinie zu einer Ellbogenlinie durch die Achselhöhle.

3. Oberbekleidung nach Anspruch 1, wobei eine Länge des Zwickels (2) kleiner ist als eine Länge von einer Taillienlinie zu einer Ellbogenlinie durch die Achselhöhle.

4. Oberbekleidung nach Anspruch 3, wobei die Länge des Zwickels (2) kleiner ist als eine Länge von der Taillienlinie zu der Ellbogenlinie durch die Achselhöhle und einen Tuberositas deltoidea.

5. Oberbekleidung nach Anspruch 1, wobei sich der Zwickel (2) von einer Umgebung einer Taillienlinie zu einer Umgebung einer Ellbogenlinie durch die Achselhöhle erstreckt.

6. Oberbekleidung nach Anspruch 1, wobei sich der Zwickel (2) zu der Manschette erstreckt.

7. Oberbekleidung nach Anspruch 1, wobei sich der Zwickel (2) zu dem Flankensaum erstreckt.

Revendications

1. Haut comprenant :

un élément corporel avant (D) ;
un élément corporel arrière (F) ;
des manches (E) ; et
des goussets allongés (2) qui s'étendent chacun vers un ourlet de flanc et un poignet à partir de l'aisselle de l'élément corporel avant (D) et de l'élément corporel arrière (F),
l'élément corporel avant (D), l'élément corporel arrière (F), les manches (E), et les goussets (2) étant cousus intégralement l'un à l'autre,
chacun des goussets (2) comprenant trois blocs d'une partie de flanc, d'une partie d'aisselle, et d'une partie de manche,
la partie de flanc et la partie de manche du gousset (2) ayant chacune les deux bords latéraux définis par une ligne légèrement incurvée ou une ligne droite,
la partie d'aisselle du gousset (2) comprenant une partie convexe avant (3) et une partie convexe arrière (4) aux deux bords latéraux d'une partie d'aisselle avant et d'une partie d'aisselle arrière, la partie convexe avant (3) et la partie convexe arrière (4) étant progressivement incurvées afin de devenir plus grandes dans la largeur à proximité d'un fond de trou de bras,
caractérisé en ce que l'élément corporel avant (D), l'élément corporel arrière (F), et chacune des manches (E) auxquelles la partie convexe avant (3) et la partie convexe arrière (4) du gousset (2) sont cousues sont configurés de différentes formes sans concavités (6) qui correspondent à la partie convexe avant (3) et la partie convexe arrière (4) du gousset (2), et
un matériau du gousset (2) présente une résistance élastique supérieure et est plus difficile à fléchir dans un sens de la largeur par rapport à un matériau de l'élément corporel (D, F).

2. Haut selon la revendication 1,
une longueur du gousset (2) étant supérieure à une longueur depuis une ligne de ceinture vers une ligne de coude à travers l'aisselle.

3. Haut selon la revendication 1,
une longueur du gousset (2) étant inférieure à une longueur depuis une ligne de ceinture vers une ligne de coude à travers l'aisselle.

4. Haut selon la revendication 3,
la longueur du gousset (2) étant inférieure à une longueur depuis la ligne de ceinture vers la ligne de coude à travers l'aisselle et une tubérosité du deltoïde.

5. Haut selon la revendication 1,
le gousset (2) s'étendant depuis une proximité d'une ligne de ceinture vers une proximité d'une ligne de coude à travers l'aisselle.

6. Haut selon la revendication 1,
le gousset (2) s'étendant vers le poignet.

7. Haut selon la revendication 1,
le gousset (2) s'étendant vers un ourlet de flanc.

Fig. 1

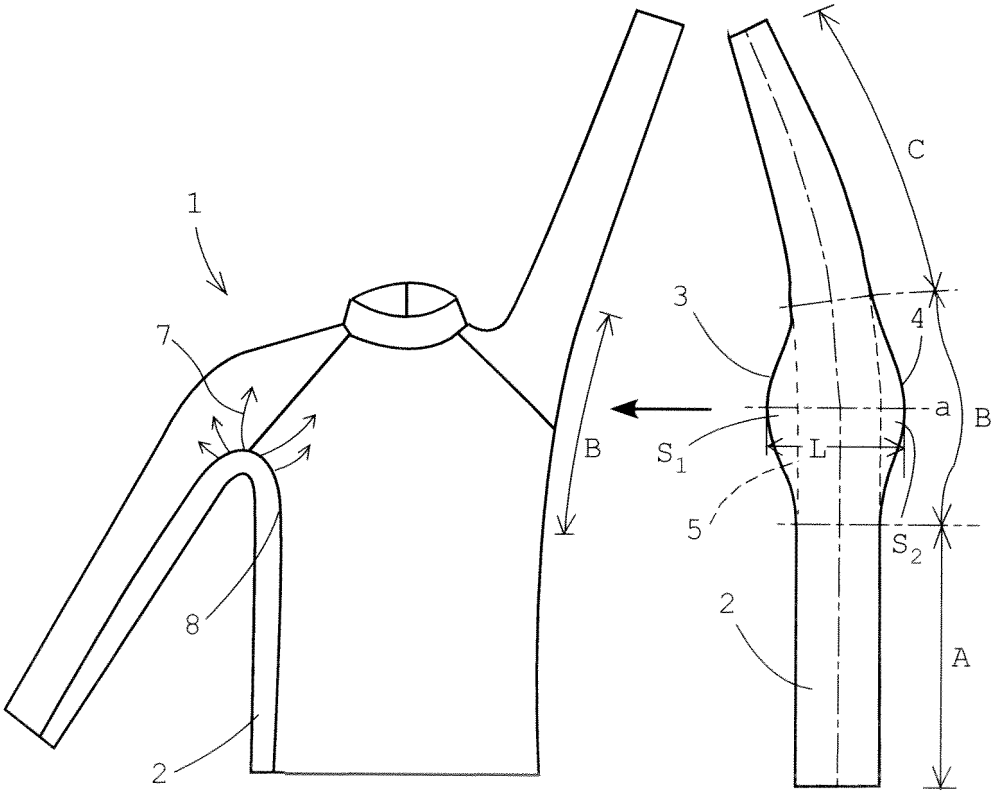


Fig. 2A

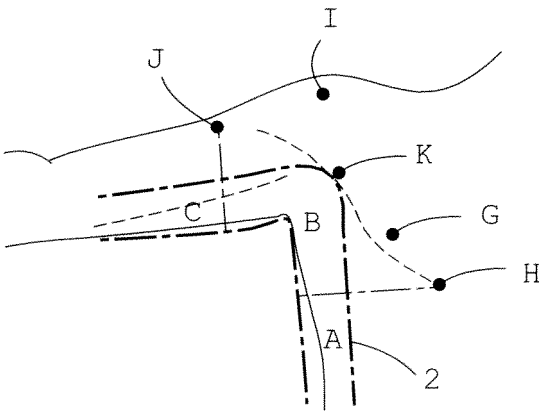


Fig. 2B

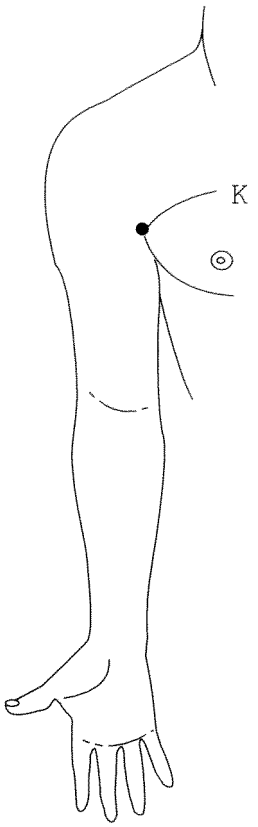


Fig. 2C



Fig. 3

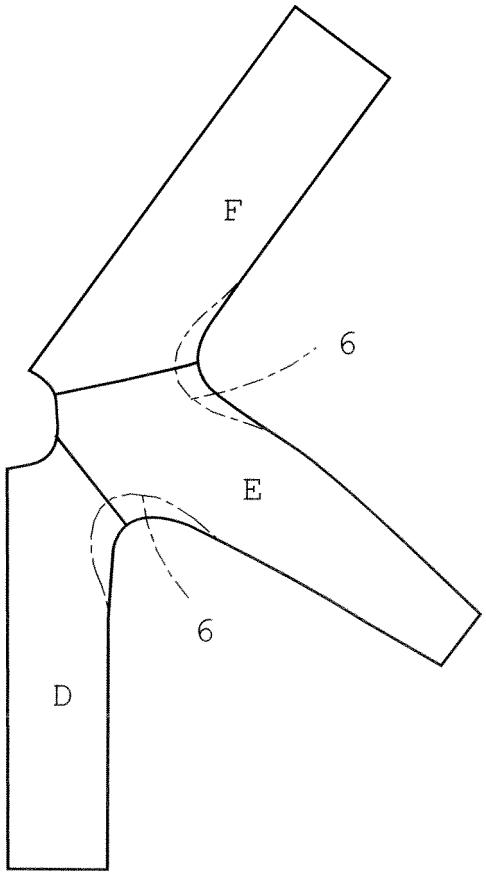


Fig. 4

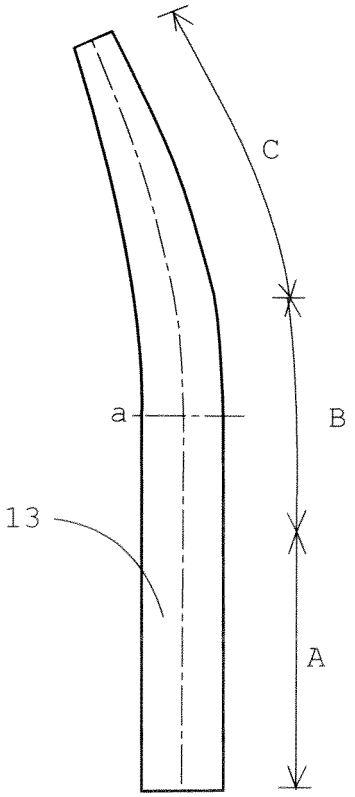


Fig. 5

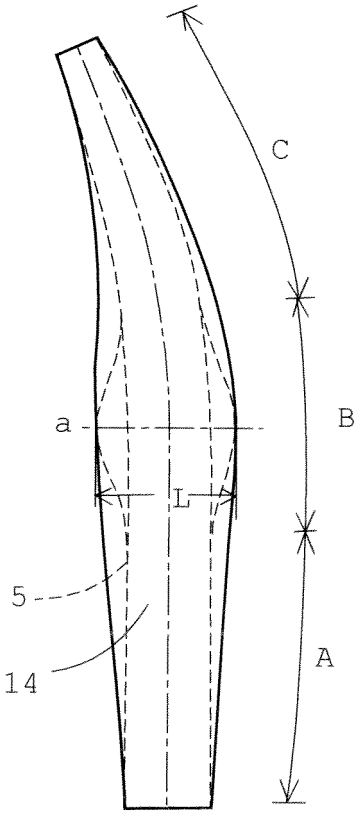


Fig. 6

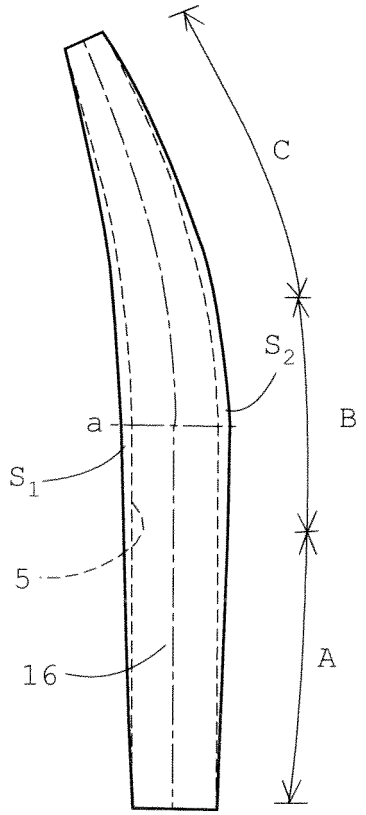


Fig. 7

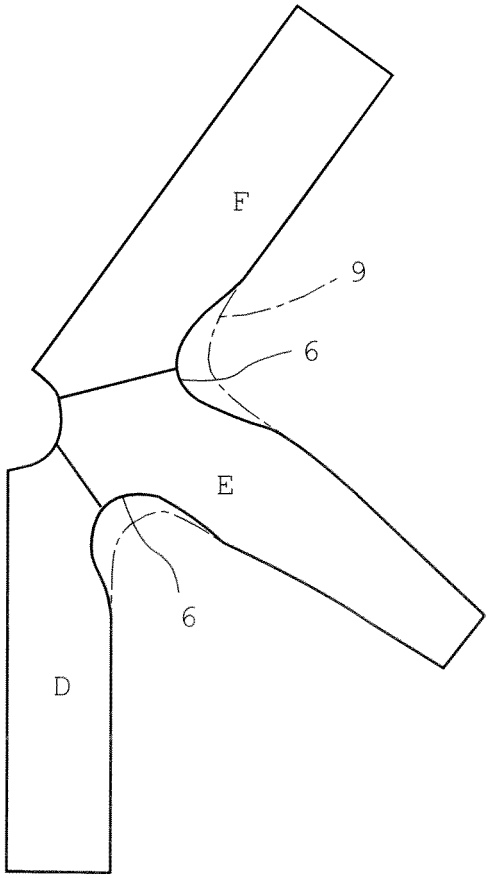


Fig. 8

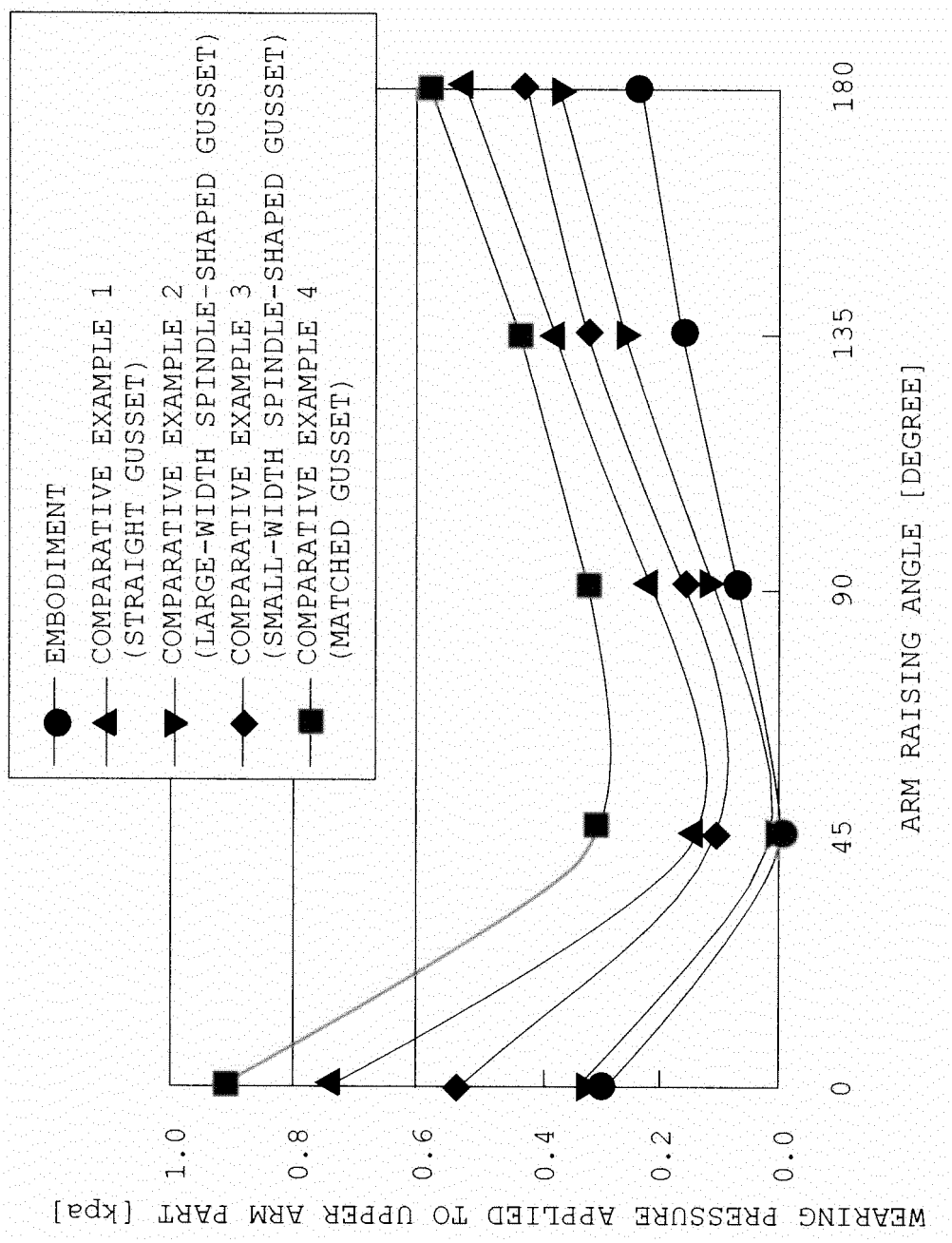

EMBODIMENT
COMPARATIVE EXAMPLE 1 (STRAIGHT GUSSET)
COMPARATIVE EXAMPLE 2 (LARGE-WIDTH SPINDLE-SHAPED GUSSET)
COMPARATIVE EXAMPLE 3 (SMALL-WIDTH SPINDLE-SHAPED GUSSET)
COMPARATIVE EXAMPLE 4 (MATCHED GUSSET)
WEARING PRESSURE APPLIED TO UPPER ARM PART [kpa]
1.0
0.8
0.6
0.4
0.2
0.0
0
45
90
135
180
ARM RAISING ANGLE [DEGREE]

Fig. 9

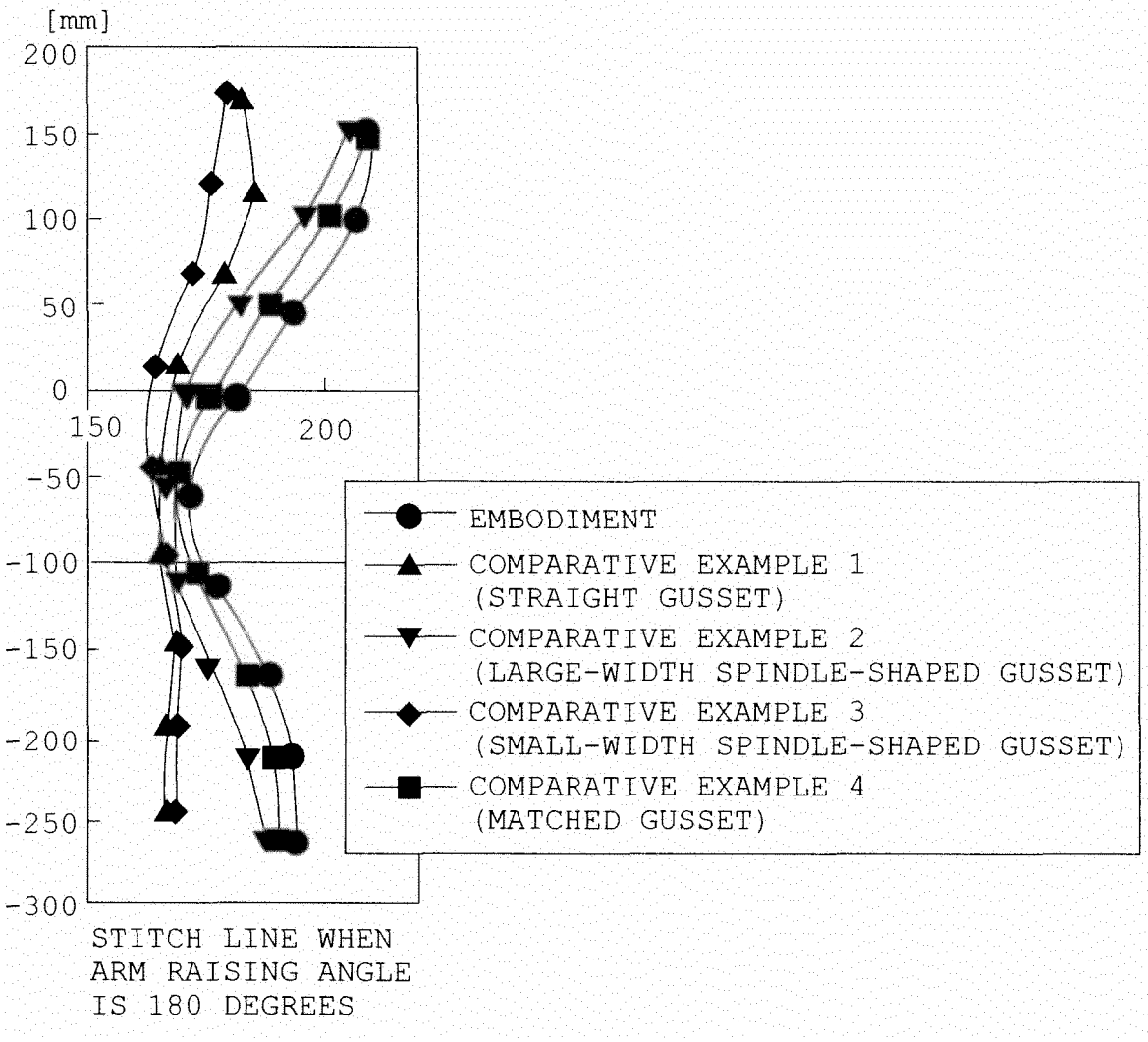

[mm]
200
150
100
50
0
150
200
-50
-100
-150
-200
-250
-300
EMBODIMENT
COMPARATIVE EXAMPLE 1
(STRAIGHT GUSSET)
COMPARATIVE EXAMPLE 2
(LARGE-WIDTH SPINDLE-SHAPED GUSSET)
COMPARATIVE EXAMPLE 3
(SMALL-WIDTH SPINDLE-SHAPED GUSSET)
COMPARATIVE EXAMPLE 4
(MATCHED GUSSET)
STITCH LINE WHEN
ARM RAISING ANGLE
IS 180 DEGREES

Fig. 10

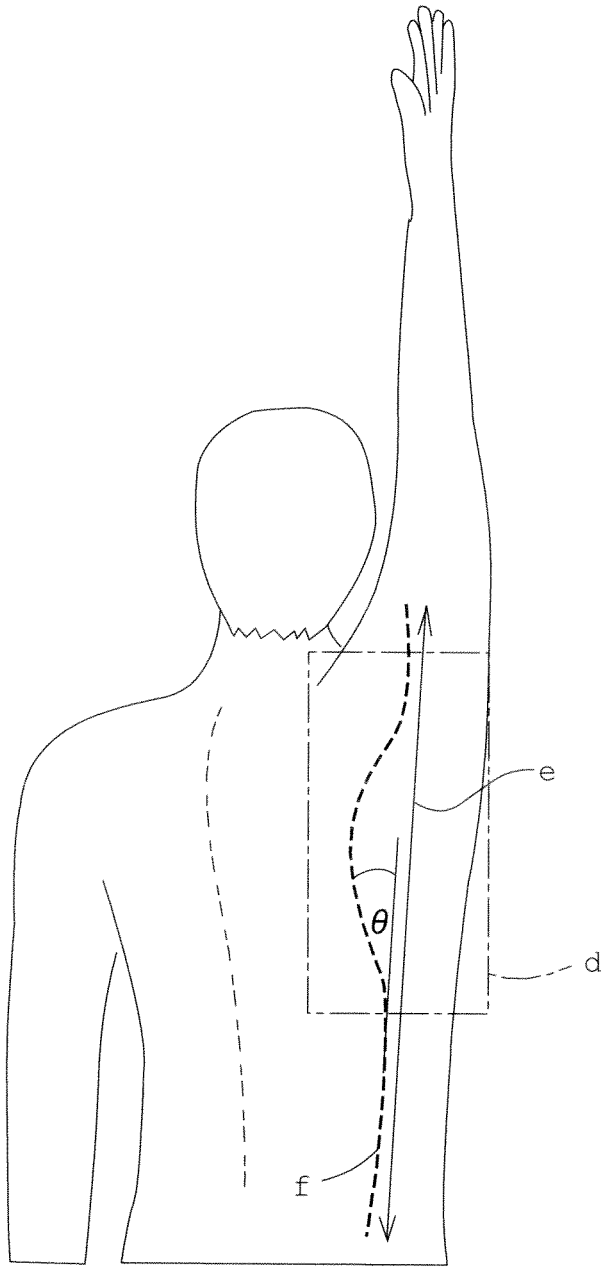


Fig. 11

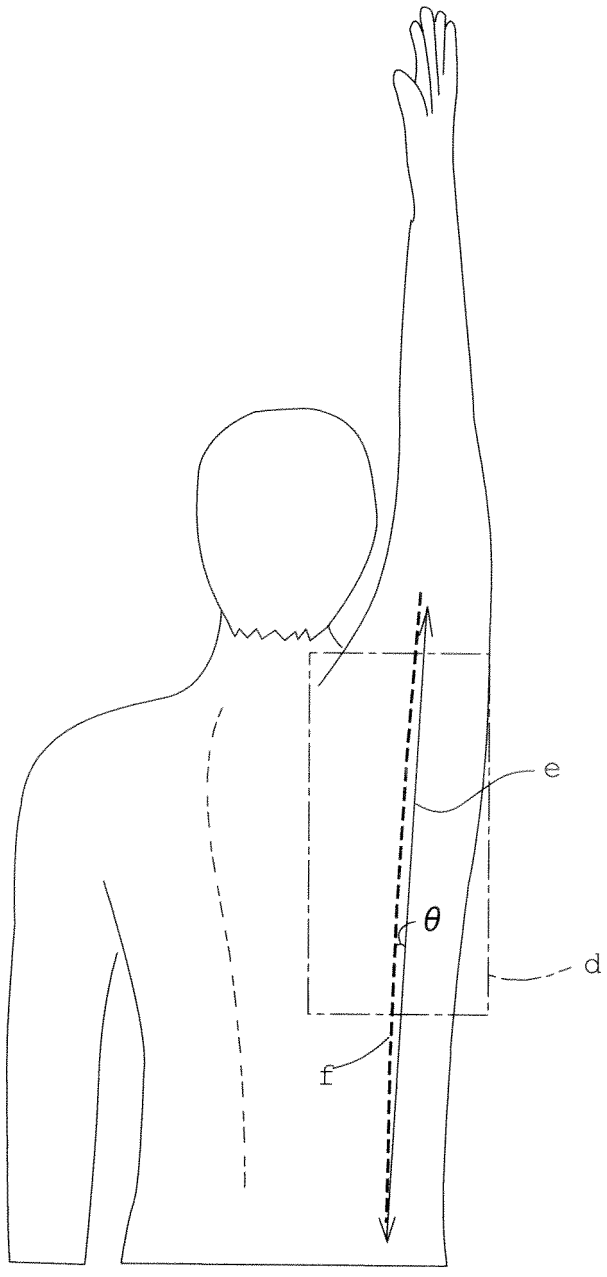


Fig. 12

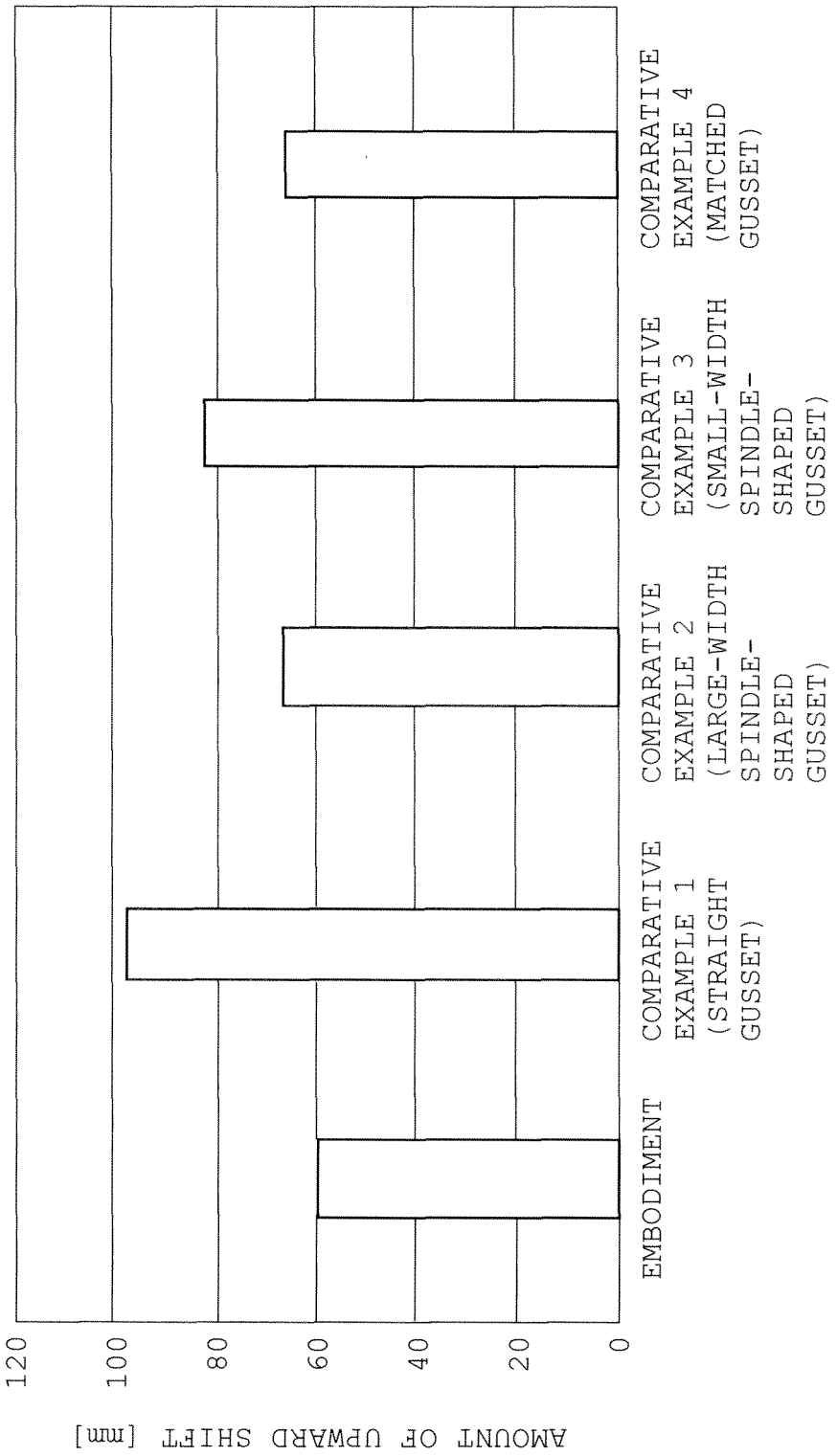

AMOUNT OF UPWARD SHIFT [mm]
120
100
80
60
40
20
0
EMBODIMENT
COMPARATIVE EXAMPLE 1 (STRAIGHT GUSSET)
COMPARATIVE EXAMPLE 2 (LARGE-WIDTH SPINDLE-SHAPED GUSSET)
COMPARATIVE EXAMPLE 3 (SMALL-WIDTH SPINDLE-SHAPED GUSSET)
COMPARATIVE EXAMPLE 4 (MATCHED GUSSET)

Fig. 13A

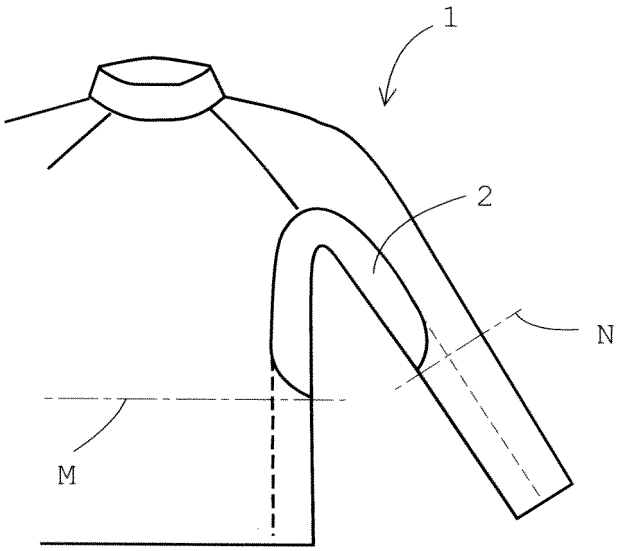


Fig. 13B

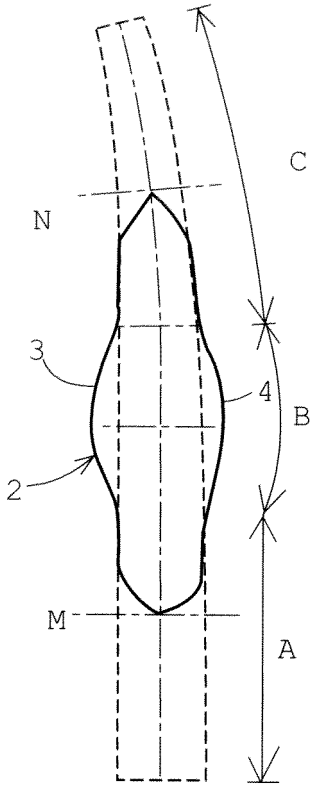


Fig. 14

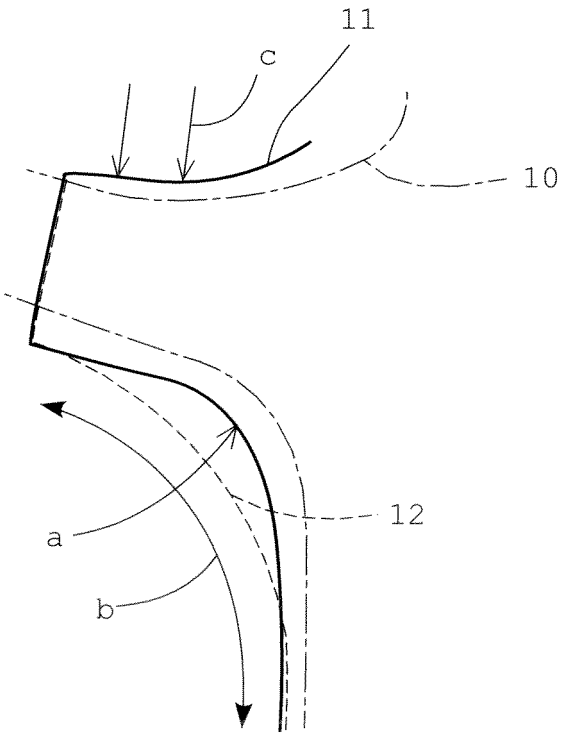


Fig. 15

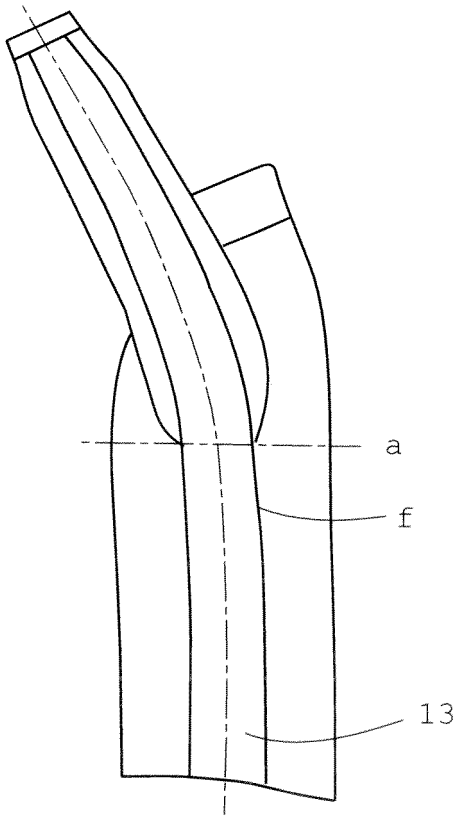
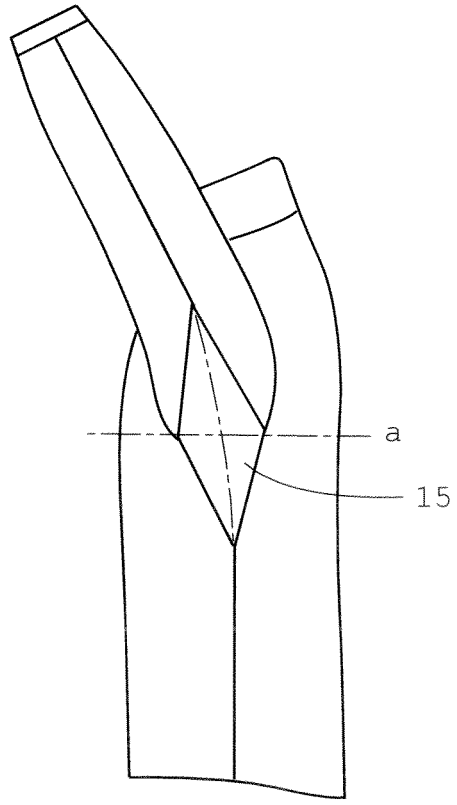


Fig. 16



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- US 2426819 A **[0002]**