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(54) **GARMENT**

(57) A garment prevents a wearer from moving a shoulder forward to put an arm in front of the trunk. The garment 1 includes a front body 2, which is a tube extending vertically and has a front body 11 and a rear body. An upper area 13 of the rear body has a minimum horizontal width shorter than an upper area of the front body. The right sleeve 3 is worn on and fits the right arm of the wearer and is connected with the right armhole 8. The right sleeve longitudinally stretched by 50 % generates a longitudinal tension of 100 cN or more. The left sleeve 4 is worn on and fits the left arm of the wearer and is connected with the left armhole 9. The left sleeve 4 longitudinally stretched by 50 % generates a longitudinal tension of 100 cN or more.

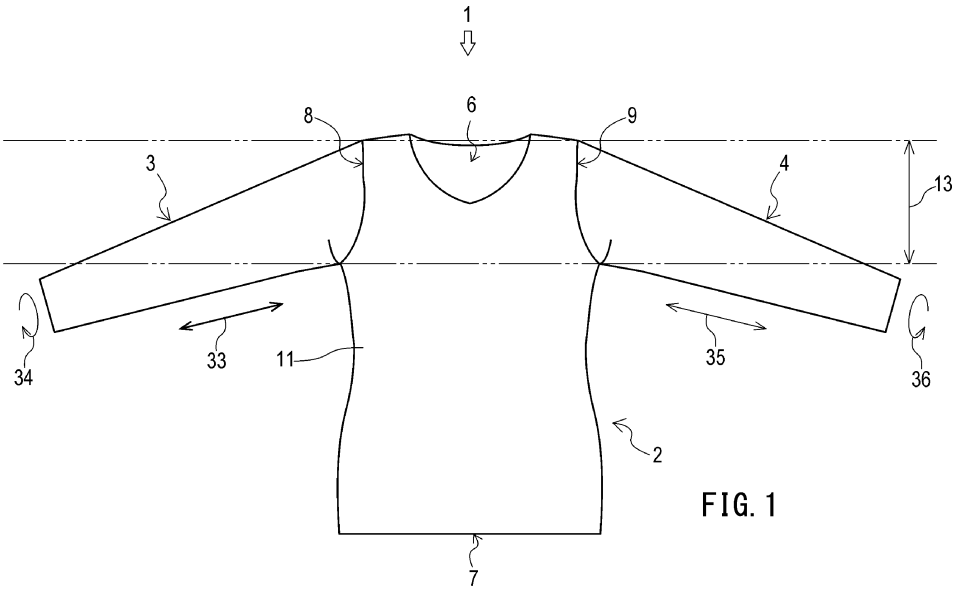

FIG. 1

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Description

TECHNICAL FIELD

[0001] The invention relates to garments.

BACKGROUND ART

[0002] A garment is known, which can cover at least a portion of the upper body of a wearer. See Patent Literature 1, for example.

CITATION LIST

PATENT LITERATURE

[0003] Patent Literature 1: JP 2014-196587 A

SUMMARY OF INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0004] When using a mobile device such as a smartphone, a person tends to change his/her posture to put an arm in front of the trunk to operate the mobile device. In this posture, so-called "rounded shoulders," the person often moves a shoulder forward from a position in a predefined posture. When the person maintains this posture frequently or continuously, he/she can suffer stiff shoulders, a bad posture, or the like.

[0005] Note that the predefined posture is a good posture generally known, more specifically, a posture in which the root of the neck, shoulders, elbows, and ankles of a person standing on a flat surface are aligned in a straight line, when viewed from a side of the person.

[0006] In view of the above-mentioned problems, the invention is devised. An object of the invention is to provide a garment preventing a wearer from moving a shoulder forward to put an arm in front of the trunk.

MEANS FOR SOLVING THE PROBLEMS

[0007] A garment according to the invention can cover at least a portion of the upper body of a wearer. The garment includes a tubular body extending vertically, a right sleeve, and a left sleeve. The body includes a front body and a rear body connected with the front body to form a neckline, a hem, a right armhole, and a left armhole. The hem is disposed below the neckline. The right armhole is disposed right of the neckline. The left armhole is disposed left of the neckline. An upper area of the rear body with four corners at the upper and lower ends of the right armhole and the left armhole has a minimum horizontal width shorter than an upper area of the front body with four corners at the upper and lower ends of the right armhole and the left armhole. The right sleeve is worn on and fits the right arm of the wearer, is connected with the right armhole, and is capable of generating a longitudinal tension of 100 cN or more, when longitudinally stretched by 50 %. The left sleeve is worn on and fits the left arm of the wearer, is connected with the left armhole, and is capable of generating a longitudinal tension of 100 cN or more, when longitudinally stretched by 50 %.

[0008] The tension of 100 cN that the right and left sleeves each generate, a below-mentioned tension that the (front or rear) body generates, and the tensions described in the claims are measured as follows. A piece such as a texture, which is 10 cm long and 2.5 cm wide, is cut out of a cloth used in the manufacture of a garment. The piece is stretched in a predetermined direction at a rate of 30 cm/min. A tension of the piece stretched by 50 % is measured.

[0009] The structure of the garment enables a wearer to pull the garment over his/her head. The structure also enables the area of connection between the right sleeve and the rear side of the right armhole to be larger than the area of connection between the right sleeve and the front side of the right armhole. As a result, a wearer does not easily move the right sleeve forward in relation to the body, while he or she easily moves the right sleeve backward.

[0010] The structure enables the area of connection between the left sleeve and the rear side of the left armhole to be larger than the area of connection between the left sleeve and the front side of the left armhole. As a result, a wearer does not easily move the left sleeve forward in relation to the body, while he or she easily moves the left sleeve backward.

[0011] Since the right sleeve longitudinally stretched by 50 % generates a longitudinal tension of 100 cN or more, the area of connection between the right sleeve and the right armhole can be substantially maintained at a first position relative to the body, at which the area of connection is located immediately after a person wares the garment. Since the left sleeve longitudinally stretched by 50 % generates a longitudinal tension of 100 cN or more, the area of connection between the left sleeve and the left armhole can be substantially maintained at a second position relative to the body, at which the area of connection is located immediately after a person wares the garment.

[0012] Thus, the garment can prevent the wearer from frequently and continuously having the bad posture, i.e. moving the right and left shoulders forward to put the right and left arms in front of the trunk. As a result, the garment can prevent the wearer from suffering rounded shoulders.

[0013] The right sleeve may generate a longitudinal tension of 150 cN or more, when longitudinally stretched by 50 %, and a circumferential tension of 150 cN or more, when circumferentially stretched by 50 %. The left sleeve may generate a longitudinal tension of 150 cN or more, when longitudinally stretched by 50 %, and a circumferential tension of 150 cN or more, when circumferentially stretched by 50 %.

[0014] We newly found that the tension of the right sleeve exerts a strong force to move the area of connection between the right sleeve and the right armhole backward from the first position, i.e. toward the horizontal center of the back of the wearer. We newly found that the tension of the left sleeve exerts a strong force to move the area of connection between the left sleeve and the left armhole backward from the second position, i.e. toward the horizontal center of the back of the wearer.

[0015] This can put a load on the right and left arms, and further the right and left shoulders to move them backward. Accordingly, the wearer hardly has the bad posture, i.e. move the right and left shoulders forward to put the right and left arms in front of the trunk. This effectively prevents the wearer from suffering rounded shoulders. This can also greatly reform rounded shoulders.

[0016] The right and left sleeves may be each a long sleeve covering the upper arm of the wearer and at least a portion of the lower arm of the wearer.

[0017] This structure of the garment enables the right sleeve to be stretched along the upper right arm and at least a portion of the lower right arm to enhance adhesion of the right sleeve to a larger area of the right arm. This structure of the garment also enables the left sleeve to be stretched along the upper left arm and at least a portion of the lower left arm to enhance adhesion of the left sleeve to a larger area of the left arm.

[0018] Accordingly, the right sleeve is prevented from riding up toward the right shoulder, and the left sleeve is prevented from riding up toward the left shoulder. This prevents the area of connection between the right sleeve and the right armhole from biting into the right armpit and prevents the area of connection between the left sleeve and the left armhole from biting into the left armpit. As a result, the garment does not make the wearer feel uncomfortable.

[0019] The right sleeve may be a short sleeve covering the upper right arm of the wearer. The left sleeve may be a short sleeve covering the upper left arm of the wearer.

[0020] The upper area of the rear body circumferentially stretched by a percentage may generate a circumferential tension not weaker than a longitudinal tension that each of the right sleeve and the left sleeve longitudinally stretched by the same percentage generates. The upper area of the front body circumferentially stretched by a percentage may generate a circumferential tension weaker than a circumferential tension that the upper area of the rear body circumferentially stretched by the same percentage generates.

[0021] When the body is stretched, force restoring the body to its initial form (before stretched) acts on each of the front and rear bodies. Since the circumferential tension of the upper area of the rear body is stronger than that of the upper area of the front body, the restoring force acting on the rear body is stronger than that acting on the front body.

[0022] The restoring force acting on the rear body moves the right and left armholes toward the center of the back of the wearer. Since the garment is stretched by the wearer, the restoring force acting on the rear body moves the right and left shoulders of the wearer toward the center of the back of the wearer, as well as the area of connection between the right sleeve and the right armhole and the area of connection between the left sleeve and the left armhole.

[0023] The right sleeve continuously pulls the right arm of the wearer backward, and the left sleeve continuously pulls the left arm of the wearer backward. The restoring force acting on the rear body continuously pulls the right and left shoulders toward the center of the back of the wearer.

[0024] Thus, the garment can more effectively prevent the wearer from frequently and continuously having the bad posture, i.e. moving the right and left shoulders forward to put the right and left arms in front of the trunk. As a result, the garment can greatly prevent the wearer from suffering rounded shoulders.

[0025] When the minimum horizontal width of the upper area of the front body is X and the minimum horizontal width of the upper area of the rear body is Y, Y/X may fall within a range from approximately 0.05 to approximately 0.9.

[0026] This structure can effectively prevent rounded shoulders and reform rounded shoulders.

[0027] The upper area of the rear body circumferentially stretched by a percentage may generate a circumferential tension of the same magnitude as a longitudinal tension that each of the right sleeve and the left sleeve longitudinally stretched by the same percentage generates. The upper area of the front body circumferentially stretched by a percentage may generate a circumferential tension of the same magnitude as a circumferential tension that the upper area of the rear body circumferentially stretched by the same percentage generates. The right sleeve and the left sleeve longitudinally stretched by the same percentage may generate a longitudinal tension of the same magnitude.

[0028] The circumferential tension of the front body and the rear body has the same magnitude as the longitudinal tension of the right sleeve and the left sleeve. Accordingly, the front body, the rear body, the right sleeve, and the left sleeve can be manufactured from the same material. This enables the garment to be made of single material to reduce its manufacture cost.

ADVANTAGEOUS EFFECT OF INVENTION

[0029] The invention can provide the garment preventing a wearer from moving a shoulder forward to put an arm in front of the trunk.

BRIEF DESCRIPTION OF DRAWINGS

[0030]

FIG. 1 is a front view of a garment according to an embodiment of the invention;
FIG. 2 is a rear view of the garment of FIG. 1;
FIG. 3 is a partially enlarged view of FIG. 2;
FIG. 4 is a schematic plan view showing the garment of FIG. 1 worn by a person.

DESCRIPTION OF EMBODIMENTS

[0031] An embodiment of the invention will be explained with reference to the drawings.

[0032] FIG. 1 shows a front view of a garment 1 according to an embodiment of the invention. FIG. 2 shows a rear view of the garment of FIG. 1. FIG. 3 shows a partially enlarged view of FIG. 2. In FIGS. 1 and 2, the garment 1 is spread flat. In FIG. 3, a right sleeve 3 and a left sleeve 4, which are described below, are omitted for the purpose of illustration.

[0033] The garment 1 is stretchy and, as shown in FIGS. 1-3, can cover at least a portion of the upper body of a wearer. The garment 1 may be used as an under garment, or as an intermediate or outer garment, which is worn over an under garment. The garment 1 is a shirt capable of covering almost all the upper body of a wearer.

[0034] The garment 1 includes a body 2, a right sleeve 3, and a left sleeve 4. The body 2 has a neckline 6, a hem 7, a right armhole 8, and a left armhole 9. In relation to the body 2, the neckline 6 and the hem 7 determine a vertical direction, and the right armhole 8 and the left armhole 9 determine a horizontal direction. The hem 7 is disposed below the neckline 6. The right armhole 8 is disposed right of the neckline 6. The left armhole 9 is disposed left of the neckline 6.

[0035] The body 2 is a tube extending vertically and has a front body 11 and a rear body 12. The rear body 12 is connected with the front body 11 to form the neckline 6, hem 7, right armhole 8, and left armhole 9. An upper area 13 of the rear body 12 with four corners at the upper and lower ends of the right armhole 8 and the left armhole 9 has a minimum horizontal width Y shorter than that X of an upper area 13 of the front body 11 with four corners at the upper and lower ends of the right armhole 8 and the left armhole 9.

[0036] The body 2 is a stretchy tube, whose axis extends in the vertical direction. The front body 11 faces the front face of the upper body of a wearer and covers almost all the front face. The rear body 12 faces the rear face of the upper body of the wearer and covers almost all the rear face.

[0037] The front body 11 and the rear body 12 are sewed up to form openings of the neckline 6, hem 7, right armhole 8, and left armhole 9 and to be aligned in a front-back direction to form a tube. Thus, the body 2 has a tubular shape with openings serving as the neckline 6 and hem 7 and can cover almost all the upper body of a wearer. The body 2 is substantially left-right symmetric.

[0038] The body 2 is manufactured from two or more clothes, which have different properties. Concretely, the front body 11 is manufactured from a first cloth and the rear body 12 is from a second cloth. The first and second clothes are stretchy to fit the upper body of a wearer. The second cloth stretched by a percentage generates a tension stronger than the first cloth stretched by the same percentage. More specifically, the second cloth allows the upper area 13 of the rear body 12 circumferentially stretched by a percentage to generate a circumferential tension stronger than a circumferential tension that the upper area 13 of the front body 11 circumferentially stretched by the same percentage generates.

[0039] The body 2 is stretched from an initial form (before the garment 1 is worn) along the upper body of a wearer to fit and cover the upper body. While covering the upper body of the wearer, the body 2 generates restoring forces to restore the front body 11 and the rear body 12 to their respective initial forms.

[0040] The restoring forces include first restoring force and second restoring force. The first restoring force is caused by a tension of the first cloth to restore the upper area 13 of the front body 11 to its initial form. The second restoring force is caused by a tension of the second cloth to restore the upper area 13 of the rear body 12 to its initial form. The second restoring force is stronger than the first restoring force. In other words, the rear body 12 is more easily restored to its initial form than the front body 11.

[0041] As shown in FIG. 3, the right armhole 8 has a right front rim 21 and a right rear rim 22. The right front rim 21 is disposed on a right upper portion of the front body 11, i.e. the right edge of its upper area 13 and extends in substantially the vertical direction. The right rear rim 22 is disposed on a right upper portion of the rear body 12, i.e. the right edge of its upper area 13 and extends in substantially the vertical direction.

[0042] A sewed portion between the front body 11 and the rear body 12 connects the upper end of the right front rim 21 with the upper end of the right rear rim 22. Another sewed portion between the front body 11 and the rear body 12 connects the lower end of the right front rim 21 with the lower end of the right rear rim 22. Thus, the right opening is formed on the body 2 and allows the right arm of a wearer to pass therethrough.

[0043] The right front rim 21 has a curved shape concave to the right side of the front body 11, i.e. convex to the neckline 6. A right front peak 23 is located at the leftmost portion of the right front rim 21. The right rear rim 22 has a curved shape concave to the right side of the rear body 12, i.e. convex to the neckline 6. A right rear peak 24 is located at the leftmost portion of the right rear rim 22.

[0044] The curved shape of the right rear rim 22 has curvature radiuses generally smaller than the curved shape of the right front rim 21 so that the right rear peak 24 is disposed left of the right front peak 23, i.e. horizontally inside it. The lower end of the right front rim 21 is disposed right of the upper end of the right front rim 21, i.e. horizontally outside it.

[0045] The right rear peak 24 is disposed substantially below the neckline 6 since the right rear rim 22 is curved more largely than the right front rim 21. The right rear rim 22 allows the right rear peak 24 to be located in the lower portion of the rear body 12. As a result, the lower portion of the right armhole 8 encloses an area larger than the upper portion of it.

[0046] The left armhole 9 has a left front rim 26 and a left rear rim 27. The left front rim 26 is disposed on a left upper portion of the front body 11, i.e. the left edge of its upper area 13 and extends in substantially the vertical direction. The left rear rim 27 is disposed on a left upper portion of the rear body 12, i.e. the left edge of its upper area 13 and extends in substantially the vertical direction.

[0047] A sewed portion between the front body 11 and the rear body 12 connects the upper end of the left front rim 26 with the upper end of the left rear rim 27. Another sewed portion between the front body 11 and the rear body 12 connects the lower end of the left front rim 26 with the lower end of the left rear rim 27. Thus, the left opening is formed on the body 2 and allows the left arm of a wearer to pass therethrough.

[0048] The left front rim 26 has a curved shape concave to the left side of the front body 11, i.e. convex to the neckline 6. A left front peak 28 is located at the rightmost portion of the left front rim 26. The left rear rim 27 has a curved shape concave to the left side of the rear body 12, i.e. convex to the neckline 6. A left rear peak 29 is located at the rightmost portion of the left rear rim 27.

[0049] The curved shape of the left rear rim 27 has curvature radiuses generally smaller than the curved shape of the left front rim 26 so that the left rear peak 29 is disposed right of the left front peak 28, i.e. horizontally inside it. The lower end of the left front rim 26 is disposed left of the upper end of the left front rim 26, i.e. horizontally outside it.

[0050] The left rear peak 27 is disposed substantially below the neckline 6 since the left rear rim 27 is curved more largely than the left front rim 26. The left rear rim 27 allows the left rear peak 29 to be located in the lower portion of the rear body 12. As a result, the lower portion of the left armhole 9 encloses an area larger than the upper portion of it.

[0051] The upper areas 13 of the front body 11 and the rear body 12 are defined so that the right armhole 8 and the left armhole 9 have their upper ends at substantially the same vertical position and their lower ends at substantially the same vertical position. Note that the upper ends are not required to be located at exactly the same vertical position, one of them may be shifted from the other within an acceptable range. The same is true for the lower ends.

[0052] As shown in FIGS. 1-3, the right sleeve 3 fits and covers the right arm of a wearer. The right sleeve 3 is connected with the right armhole 8 to extend from the body 2. When stretched by 50 % longitudinally, i.e. in the axial direction of the right sleeve 3 (as shown by an arrow 33 of the FIG. 1,) the right sleeve 3 generates a longitudinal tension no less than 100 centinewton (cN) nor more than 600 cN.

[0053] The left sleeve 4 fits and covers the left arm of a wearer. The left sleeve 4 is connected with the left armhole 9 to extend from the body 2. When stretched by 50 % longitudinally, i.e. in the axial direction of the left sleeve 4 (as shown by an arrow 35 of the FIG. 1,) the left sleeve 4 generates a longitudinal tension no less than 100 cN nor more than 600 cN. The right sleeve 3 and the left sleeve 4 are substantially left-right symmetric.

[0054] The right sleeve 3 is a stretchy tube connected with the body 2 such that the hollow of the right sleeve 3 is connected with the inside of the body 2. The longitudinal length of the right sleeve 3, i.e. the length between the right armhole 8 and the lower edge of the right sleeve 3 is at least half the length of the right arm of a wearer. The right sleeve 3 extends along, fits, and covers the right arm of the wearer.

[0055] The right sleeve 3 is manufactured from a third cloth, which is stretchy so that the right sleeve 3 can be stretched mainly in the circumferential direction along the right arm of the wearer. The third cloth stretched by a percentage generates a tension stronger than the first cloth stretched by the same percentage and not weaker than the second cloth stretched by the same percentage. In other words, the third cloth allows the right sleeve 3 longitudinally stretched by a percentage to generate a longitudinal tension stronger than a circumferential tension that the upper area 13 of the front body 11 circumferentially stretched by the same percentage generates.

[0056] The left sleeve 4 is a stretchy tube connected with the body 2 such that the hollow of the left sleeve 4 is connected with the inside of the body 2. The longitudinal length of the left sleeve 4, i.e. the length between the left armhole 9 and the lower edge of the left sleeve 4 is at least half the length of the left arm of a wearer. The left sleeve 4 extends along, fits, and covers the left arm of the wearer.

[0057] The left sleeve 4 is manufactured from a fourth cloth, which is stretchy so that the left sleeve 4 can be stretched mainly in the circumferential direction along the left arm of the wearer. The fourth cloth stretched by a percentage generates a tension stronger than the first cloth stretched by the same percentage and not weaker than the second cloth stretched by the same percentage. In other words, the fourth cloth allows the left sleeve 4 longitudinally stretched by a percentage to generate a longitudinal tension stronger than a circumferential tension that the upper area 13 of the front body 11 circumferentially stretched by the same percentage generates.

[0058] The above-mentioned tensions are measured as follows. A texture, which is 10 cm long and 2.5 cm wide, is cut out of each cloth used in the manufacture of the right sleeve 3, the left sleeve 4, and the body 2. The texture is stretched by a constant-rate-loading tensile machine, an AGS-X made by Shimadzu Corporation, in a predetermined direction at a rate of 30 cm/min. A tension of the texture stretched by 50 % is measured. It is

sufficient that the right sleeve 3 and the left sleeve 4 longitudinally stretched by 50 % generate a longitudinal tension no less than 100 cN nor more than 600 cN; preferably, they generate a longitudinal tension no less than 150 cN nor more than 600 cN; more preferably, they generate a longitudinal tension no less than 200 cN nor more than 600 cN.

[0059] The fourth cloth for the left sleeve 4 has the same properties as the third cloth for the right sleeve 3. This is not a limited condition. For example, the fourth cloth may have the same properties as the second cloth for the rear body 12, which may have properties the same as or different from properties of the third cloth.

[0060] A wearer can pull the garment 1 over his/her head. The wearer can pass the head from the hem 7 through the neckline 6, the right arm from the right armhole 8 through the right sleeve 3, and the left arm from the left armhole 9 through the left sleeve 4 to cover almost all his/her upper body.

[0061] The area of connection between the right sleeve 3 and the right rear rim 22 is larger than the area of connection between the right sleeve 3 and the right front rim 21. This prevents a wearer from moving the right sleeve 3 forward in relation to the body 2 but allows the wearer to easily move the right sleeve 3 backward.

[0062] The area of connection between the left sleeve 4 and the left rear rim 27 is larger than the area of connection between the left sleeve 4 and the left front rim 26. This prevents a wearer from moving the left sleeve 4 forward in relation to the body 2 but allows the wearer to easily move the left sleeve 4 backward.

[0063] Since the right sleeve 3 longitudinally stretched by 50 % generates a longitudinal tension of 100 cN or more, the area of connection between the right sleeve 3 and the right armhole 8 substantially maintains the first position relative to the body 2, at which the area of connection is located immediately after a person wares the garment 1. Since the left sleeve 4 longitudinally stretched by 50 % generates a longitudinal tension of 100 cN or more, the area of connection between the left sleeve 4 and the left armhole 9 substantially maintains the second position relative to the body 2, at which the area of connection is located immediately after a person wares the garment 1.

[0064] Thus, the garment 1 prevents a wearer 51 from frequently and continuously having a posture 60, i.e. moving the right and left shoulders forward to put the right and left arms in front of the trunk. This can prevent the wearer 51 from suffering rounded shoulders and, if the wearer 51 has already had rounded shoulders, can reform the rounded shoulders.

[0065] The right sleeve 3 generates a longitudinal tension of 150 cN or more, when longitudinally (i.e. in the direction of the arrow 33 in FIG. 1) stretched by 50 %, and a circumferential tension of 150 cN or more, when circumferentially (i.e. in the direction of an arrow 34 in FIG. 1) stretched by 50 %. The left sleeve 4 generates a longitudinal tension of 150 cN or more, when longitudinally (i.e. in the direction of the arrow 35 in FIG. 1) stretched by 50 %, and a circumferential tension of 150 cN or more, when circumferentially (i.e. in the direction of an arrow 36 in FIG. 1) stretched by 50 %.

[0066] When a person wears the garment 1, the tension of the right sleeve 3 causes a strong force to act on the area of connection between the right sleeve 3 and the right armhole 8; the force moves the area of connection backward from the first position. Similarly, the tension of the left sleeve 4 causes a strong force to act on the area of connection between the left sleeve 4 and the left armhole 9; the force moves the area of connection backward from the second position.

[0067] This can put heavy loads on the arms and shoulders of the person to be moved backward. Accordingly, the person hardly has the posture 60, in which the person moves the shoulders forward to put the arms in front of the trunk. Thus, the person is more effectively prevented from suffering rounded shoulders. If the person has already had rounded shoulders, the garment 1 can reform the rounded shoulders.

[0068] The right sleeve 3 and the left sleeve 4 circumferentially stretched by 50 %, preferably, generate a circumferential tension no less than 150 cN nor more than 600 cN; more preferably, generate a circumferential tension no less than 200 cN nor more than 600 cN.

[0069] The right sleeve 3 is a long sleeve covering the upper right arm of a wearer and at least a portion of the lower right arm of the wearer. The left sleeve 4 is a long sleeve covering the upper left arm of a wearer and at least a portion of the lower left arm of the wearer. The long sleeve may cover an upper arm and almost the entirety of a lower arm, or like a three-quarter sleeve, may cover an upper arm and only a portion of a lower arm.

[0070] This structure of the garment 1 enables the right sleeve 3 to be stretched along the upper right arm and at least a portion of the lower right arm to enhance adhesion of the right sleeve to a larger area of the right arm. This structure of the garment 1 also enables the left sleeve 4 to be stretched along the upper left arm and at least a portion of the lower left arm to enhance adhesion of the left sleeve 4 to a larger area of the left arm.

[0071] Accordingly, the right sleeve 3 is prevented from riding up toward the right shoulder, and the left sleeve 4 is prevented from riding up toward the left shoulder. This prevents the area of connection between the right sleeve 3 and the right armhole 8 from biting into the right armpit and prevents the area of connection between the left sleeve 4 and the left armhole 9 from biting into the left armpit. As a result, the garment 1 does not make the wearer feel uncomfortable.

[0072] The garment 1 is not required to have the long right and left sleeves 3 and 4. A garment according to the invention may have a short right sleeve covering the upper right arm of a wearer and a short left sleeve covering the upper left arm of the wearer.

[0073] The upper area 13 of the rear body 12 circumferentially stretched by a percentage generates a circum-

ferential tension not weaker than a longitudinal tension that each of the right sleeve 3 and the left sleeve 4 longitudinally stretched by the same percentage generates. The upper area 13 of the front body 11 circumferentially stretched by a percentage may generate a circumferential tension weaker than the upper area 13 of the rear body 12 circumferentially stretched by the same percentage.

[0074] When the body 2 is stretched, force restoring the body 2 to its initial form (before stretched) acts on each of the front body 11 and rear body 12. Since the circumferential tension of the upper area 13 of the rear body 12 is stronger than that of the upper area 13 of the front body 11, the second restoring forces 55 and 56 (cf. FIG. 4) acting on the rear body 12 are stronger than the first restoring force acting on the front body 11.

[0075] The second restoring forces 55 and 56 move the right armhole 8 and the left armhole 9 toward the center of the back of the wearer. Since the body 2 is stretched by the wearer 51, the second restoring forces 55 and 56 moves the right and left shoulders of the wearer 51 toward the center of the back of the wearer 51, as well as the area of connection between the right sleeve 3 and the right armhole 8 and the area of connection between the left sleeve 4 and the left armhole 9.

[0076] The right sleeve 3 continuously pulls the right arm of the wearer backward, and the left sleeve 4 continuously pulls the left arm of the wearer backward. The second restoring forces 55 and 56 acting on the rear body 12 continuously pull the right and left shoulders of the wearer toward the center of the back of the wearer.

[0077] Thus, the garment 1 can more effectively prevent the wearer from frequently and continuously having the bad posture 60, i.e. moving the shoulders forward to put the arms in front of the trunk. As a result, the garment 1 can prevent the wearer from suffering rounded shoulders and can reform rounded shoulders.

[0078] In the embodiment, the properties of the second cloth for manufacture of the rear body 12 solely determine how strongly a tension is generated by the rear body 12 stretched. Alternatively, the rear body 12 may be manufactured from a different cloth and elastic material such as rubber. In this case, the properties of the elastic material may solely, or together with the properties of the different cloth, determine how strongly a tension is generated by the rear body 12 stretched.

[0079] The (first cloth used for manufacture of the) front body 11 acts the first restoring force on the upper area 13 stretched. This is not a limited condition. For example, the (first cloth used for manufacture of the) front body 11 may hardly act the first restoring force on the upper area 13 stretched as long as the first cloth does not cause the garment 1 to be hard to wear.

[0080] The minimum horizontal width Y of the rear body 12 divided by the minimum horizontal width X of the front body 11, Y/X, falls within a range from approximately 0.05 to approximately 0.9. This enables the garment 1 to enhance the effect of preventing and reforming rounded shoulders. Preferably, the quotient Y/X falls within a range from approximately 0.1 to approximately 0.9, more preferably, from approximately 0.2 to approximately 0.8.

[0081] Suppose that, when the upper area 13 of the front body 11 circumferentially stretched by a percentage generates a first circumferential tension, the upper area 13 of the rear body 12 circumferentially stretched by the same percentage generates a second circumferential tension. The right sleeve 3 and the left sleeve 4 longitudinally stretched by the same percentage each generate a longitudinal tension, which is stronger than the first circumferential tension and weaker than the second circumferential tension. Alternatively, when the right sleeve 3 and the left sleeve 4 longitudinally stretched by 50 % each generate a longitudinal tension of 100 cN or more, the upper area 13 of the front body 11 and the upper area 13 of the rear body 12 circumferentially stretched by 50 % may generate a circumferential tension of the same magnitude as the longitudinal tension of the right and left sleeves.

[0082] The upper area 13 of the rear body 12 circumferentially stretched by a percentage may generate a circumferential tension of the same magnitude as a longitudinal tension that each of the right sleeve 3 and the left sleeve 4 longitudinally stretched by the same percentage generates. The upper area 13 of the front body 11 circumferentially stretched by a percentage may generate a circumferential tension of the same magnitude as a circumferential tension that the upper area 13 of the rear body 12 circumferentially stretched by the same percentage generates. The right sleeve 3 and the left sleeve 4 longitudinally stretched by the same percentage may generate a longitudinal tension of the same magnitude.

[0083] Since the circumferential tension of the front body 11 and the rear body 12 has the same magnitude as the longitudinal tension of the right sleeve 3 and the left sleeve 4, the front body 11, the rear body 12, the right sleeve 3, and the left sleeve 4 can be manufactured from the same material. This enables the garment 1 to be made of single material to reduce its manufacture cost.

[0084] In view of the explanation described above, the invention can obviously have many variations and modifications. Accordingly, it should be understood that the invention can have embodiments other than those in the description within the scope of the claims attached to the description.

DESCRIPTION OF REFERENCE SYMBOLS

[0085] 1 garment, 2 body, 3 right sleeve, 4 left sleeve, 6 neckline, 7 hem, 8 right armhole, 9 left armhole, 11 front body, 12 rear body, 13 upper area of front or rear body

Claims

1. A stretchy garment (1) configured to cover at least

a portion of the upper body of a wearer, comprising:

a tubular body (2) extending vertically, including:

a front body (11); and
a rear body (12) connected with the front body (11) to form a neckline (6), a hem (7), a right armhole (8), and a left armhole (9), wherein:

the hem (7) is disposed below the neckline (6);
the right armhole (8) is disposed right of the neckline (6);
the left armhole (9) is disposed left of the neckline (6); and
an upper area (13) of the rear body (12) with four corners at the upper and lower ends of the right armhole (8) and the left armhole (9) has a minimum horizontal width shorter than an upper area (13) of the front body (11) with four corners at the upper and lower ends of the right armhole (8) and the left armhole (9);

a right sleeve (3) configured to be worn on and fit the right arm of the wearer, connected with the right armhole (8), and capable of generating a longitudinal tension of 100 cN or more, when longitudinally stretched by 50 %; and
a left sleeve (4) configured to be worn on and fit the left arm of the wearer, connected with the left armhole (9), and capable of generating a longitudinal tension of 100 cN or more, when longitudinally stretched by 50 %.

2. The garment (1) according to claim 1, wherein:

the right sleeve (3) generates a longitudinal tension of 150 cN or more, when longitudinally stretched by 50 %, and a circumferential tension of 150 cN or more, when circumferentially stretched by 50 %; and
the left sleeve (4) generates a longitudinal tension of 150 cN or more, when longitudinally stretched by 50 %, and a circumferential tension of 150 cN or more, when circumferentially stretched by 50 %.

3. The garment (1) according to claim 1 or 2, wherein:

the right sleeve (3) is a long sleeve covering the upper right arm of the wearer and at least a portion of the lower right arm of the wearer; and
the left sleeve (4) is a long sleeve covering the upper left arm of the wearer and at least a portion of the lower left arm of the wearer.

4. The garment (1) according to claim 1 or 2, wherein:

the right sleeve (3) is a short sleeve covering the upper right arm of the wearer; and
the left sleeve (4) is a short sleeve covering the upper left arm of the wearer.

5. The garment (1) according to any one of claims 1 to 4, wherein:

the upper area (13) of the rear body (12) circumferentially stretched by a percentage generates a circumferential tension not weaker than a longitudinal tension that each of the right sleeve (3) and the left sleeve (4) longitudinally stretched by the same percentage generates; and
the upper area (13) of the front body (11) circumferentially stretched by a percentage generates a circumferential tension weaker than a circumferential tension that the upper area (13) of the rear body (12) circumferentially stretched by the same percentage generates.

6. The garment (1) according to claim 5, wherein:
when the minimum horizontal width of the upper area (13) of the front body (11) is X and the minimum horizontal width of the upper area (13) of the rear body (12) is Y, Y/X falls within a range from approximately 0.05 to approximately 0.9.

7. The garment (1) according to any one of claims 1 to 4, wherein:

the upper area (13) of the rear body (12) circumferentially stretched by a percentage generates a circumferential tension of the same magnitude as a longitudinal tension that each of the right sleeve (3) and the left sleeve (4) longitudinally stretched by the same percentage generates;
the upper area (13) of the front body (11) circumferentially stretched by a percentage generates a circumferential tension of the same magnitude as a circumferential tension that the upper area (13) of the rear body (12) circumferentially stretched by the same percentage generates; and
the right sleeve (3) and the left sleeve (4) longitudinally stretched by the same percentage generate a longitudinal tension of the same magnitude.

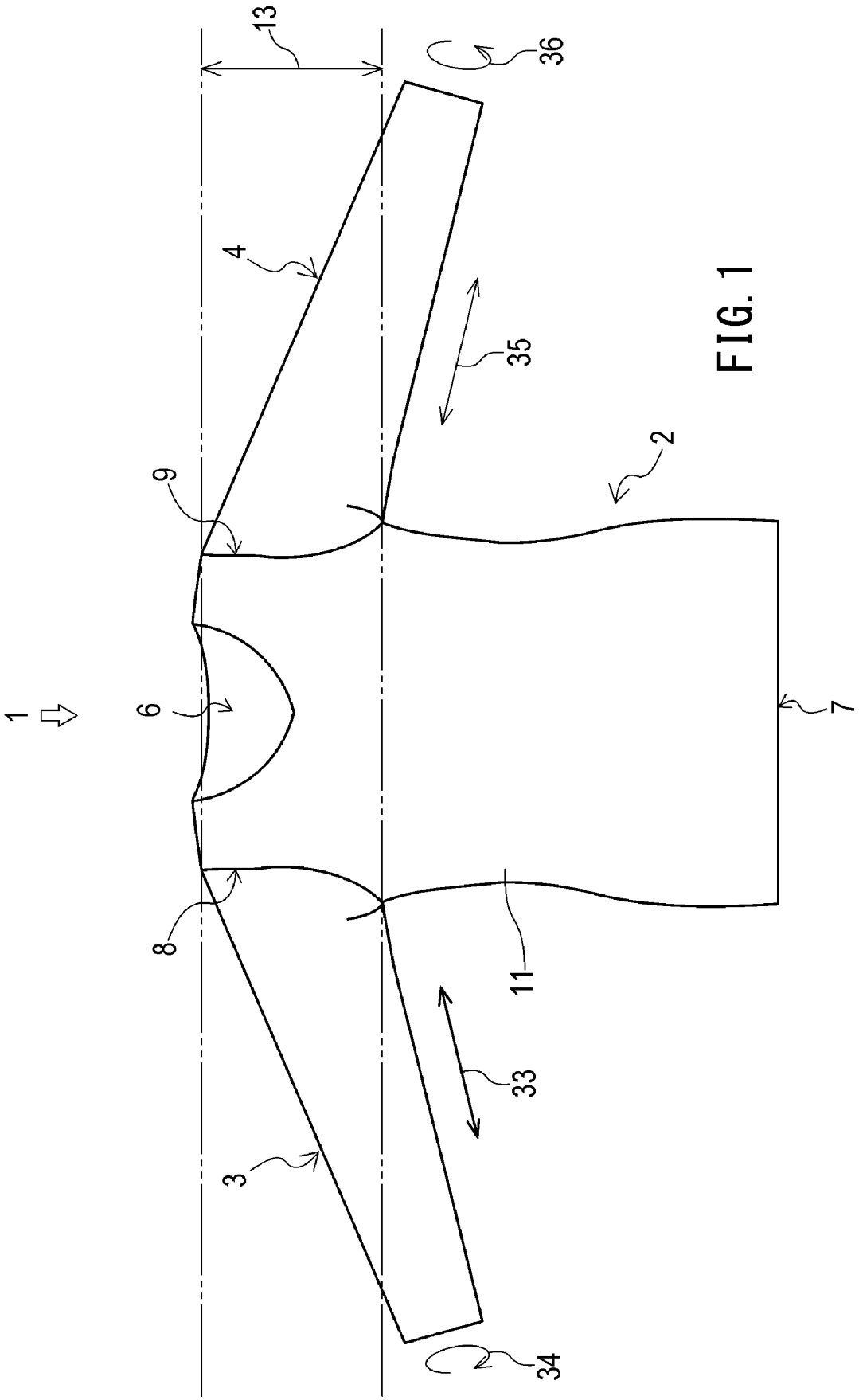


FIG. 1

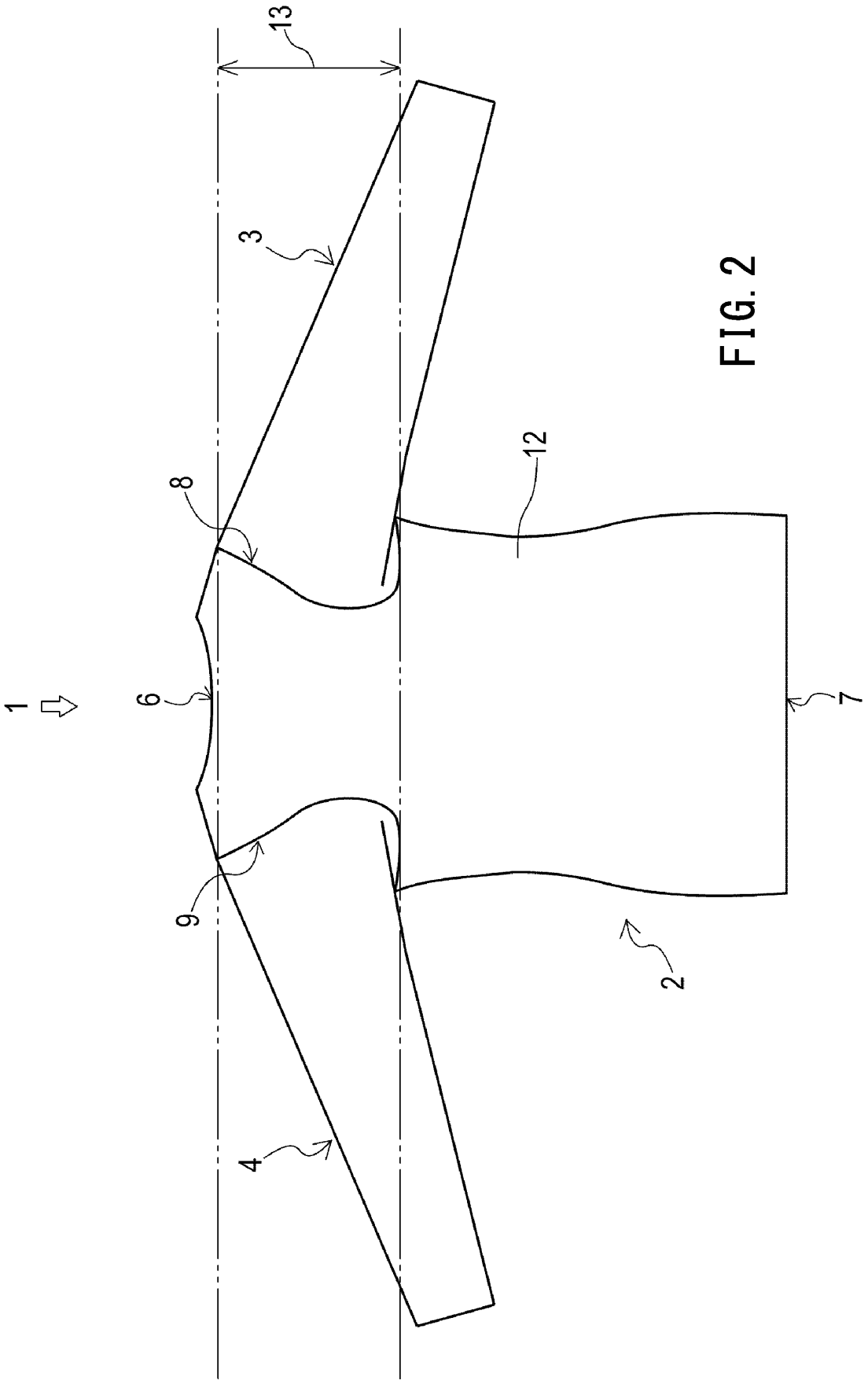


FIG. 2

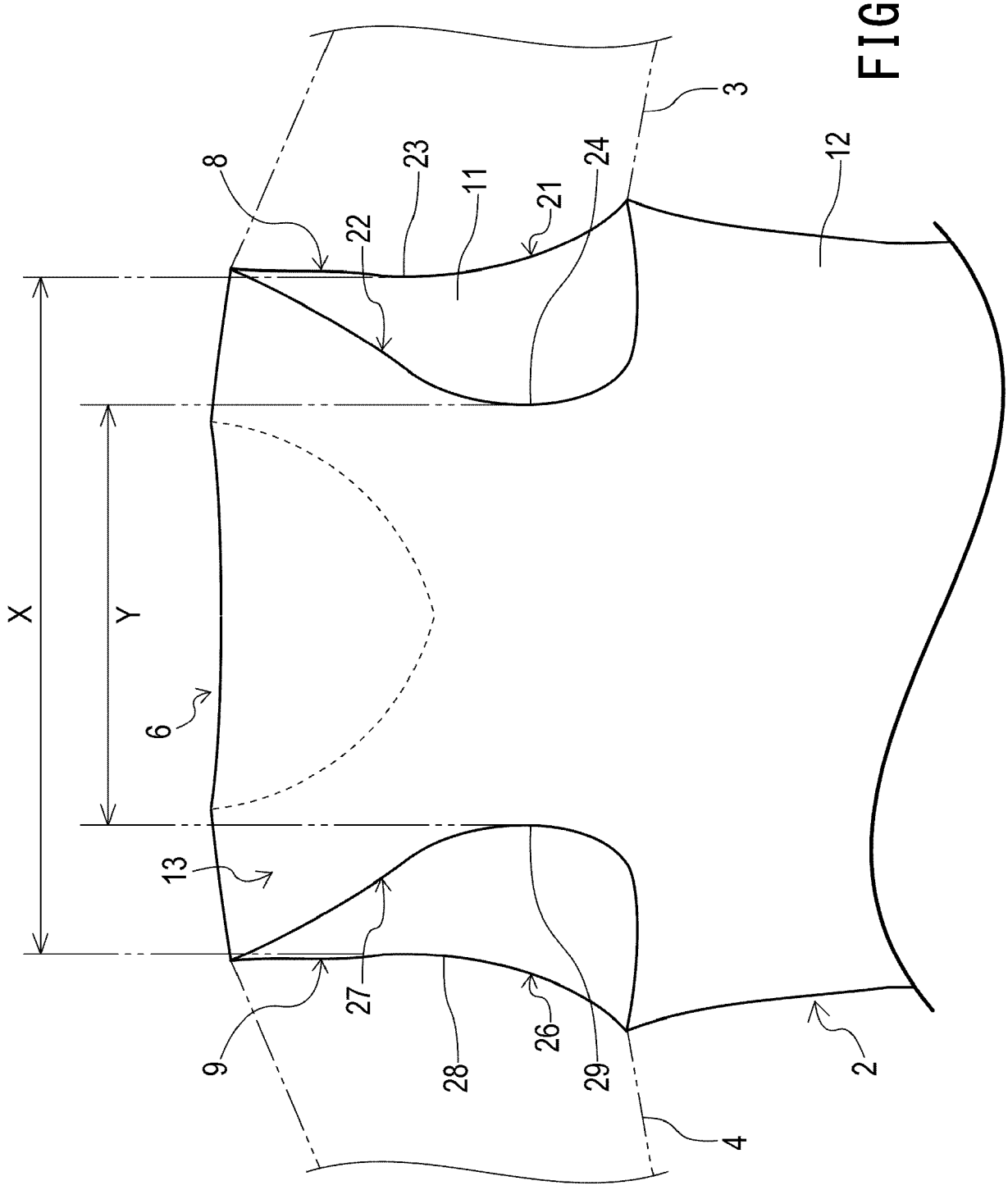
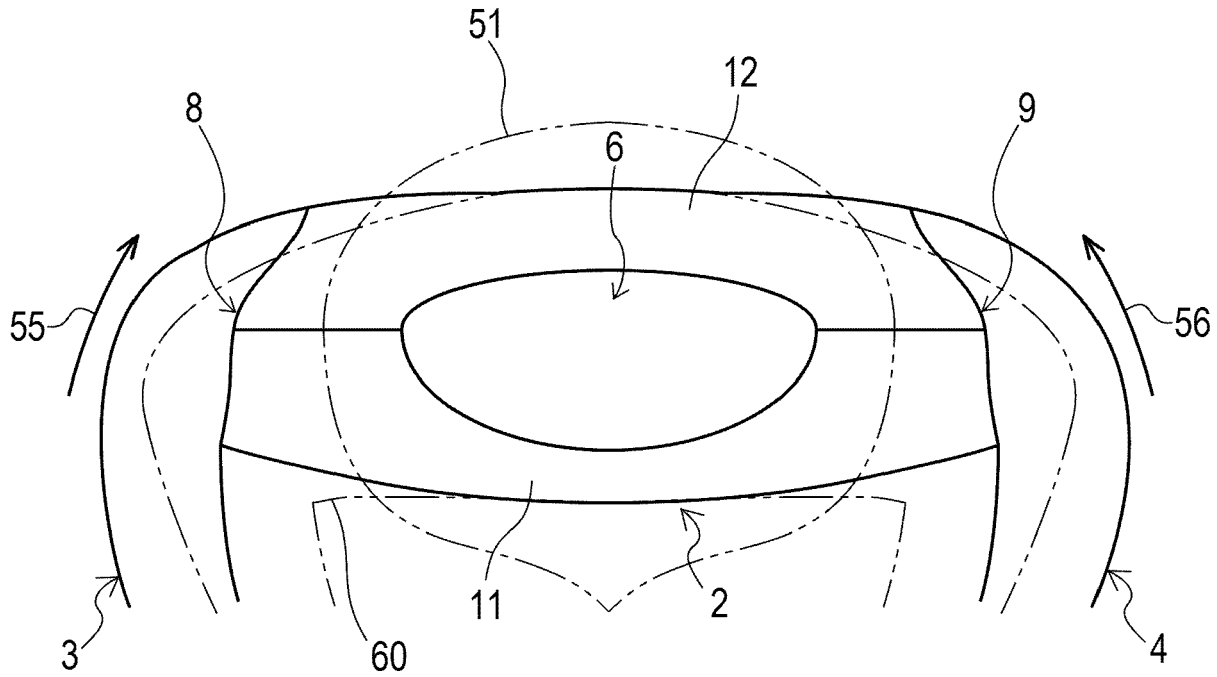


FIG. 3

FIG. 4



INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2017/026122

A. CLASSIFICATION OF SUBJECT MATTER
A41D1/00(2006.01)i, *A41D13/00*(2006.01)i, *A41D27/10*(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
A41D1/00, A41D13/00-13/12, A41D27/10, A41B9/00-9/16, A41C1/00-1/20, A61F5/01-5/02

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2017
Kokai Jitsuyo Shinan Koho 1971-2017 Toroku Jitsuyo Shinan Koho 1994-2017

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2013-151771 A (Toray Industries, Inc.), 08 August 2013 (08.08.2013), & US 2014/0366241 A1 & WO 2013/111660 A1 & EP 2807936 A1 & CA 2861776 A1 & CN 104066347 A	1-7
A	JP 2013-119677 A (Charle Co., Ltd.), 17 June 2013 (17.06.2013), (Family: none)	1-7
A	JP 2014-198912 A (Wacoal Corp.), 23 October 2014 (23.10.2014), (Family: none)	1-7

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

* Special categories of cited documents:
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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
03 October 2017 (03.10.17)	17 October 2017 (17.10.17)
Name and mailing address of the ISA/ Japan Patent Office 3-4-3,Kasumigaseki,Chiyoda-ku, Tokyo 100-8915,Japan	Authorized officer Telephone No.

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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