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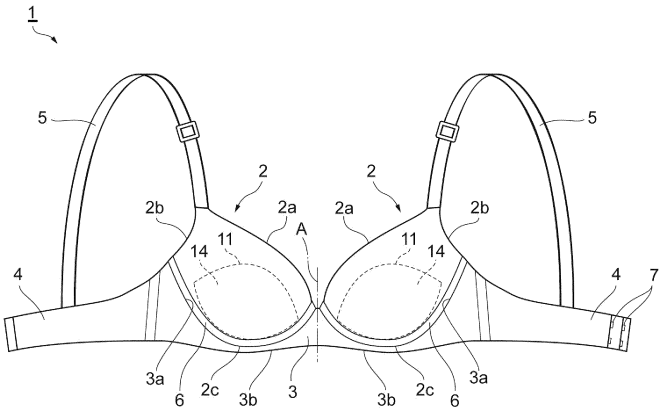
(54) PAD MATERIAL, MATERIAL FOR CUP SECTION, AND GARMENT WITH CUP SECTIONS

(57) When (LC) is defined as compression characteristic linearity and (RC) is defined as compression resilience, a pad material (14) is configured from a urethane material satisfying (LC) ≤ 1 and (RC) ≥ 80. With a garment (1) having cup sections in which pads (11) configured from said pad material (14) are disposed at least in the lower cup sections, compression exerted on the lower sections of the bust by the lower cup sections is limited, making it possible to effectively reduce the total amount of compression exerted on the bust. Pliability, feeling of lightweightness, and feeling of fluffiness of the cup sections (2) are also increased, making it possible to have both bust shape-ability and wearing comfort.

Fig.1



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Description

Technical Field

[0001] The present invention relates to a pad material, a material for a cup section, and a garment with cup sections.

Background Art

[0002] A garment with cup sections typified by a brassiere includes, for example, cup sections for covering a bust, a base part supporting a lower edge of each cup section, back parts stretching from the base part to a back side, and strap parts coupled to the cup sections. One of main performance of such a garment with cup sections is shapeability of the bust. For example, in a brassiere disclosed in Patent Literature 1, each cup section includes a cup main body and a cover for covering a surface of the cup main body. Herein, thick cloth pieces are sewed together along seams in a longitudinal direction so as to form a cup shape, and an edge in a lower part of the cover is sewed to a lower edge of the cup main body.

[0003] On the other hand, there is a growing need for comfortability of the garment with cup sections. The present applicants have targeted on 500 consumers between the age of 16 to 64 and have researched on their frequently-used brassieres. The research shows that nearly 60% of the consumers answered that they emphasized comfortability. Not a few consumers answered that they emphasized items relating to comfortability such as fittability and pleasantness with respect to their bodies. The research shows that the consumers are tend to emphasize not only shapeability of the bust but also comfortability.

Citation List

Patent Literature

[0004] Patent Literature 1: Japanese Unexamined Patent Publication No. 2002-220705

Summary of Invention

Technical Problem

[0005] FIG. 10 is a graph illustrating a relationship between intensity of sense-of-wear and shapeability with regard to ready-made articles of a garment with cup sections. In the drawing, the intensity of sense-of-wear is taken along the abscissa and the shapeability (cup pressure) is taken along the ordinate. Herein, the relationship between the intensity of sense-of-wear and shapeability with regard to ready-made articles A to I are plotted. As illustrated in FIG. 10, in the ready-made articles A to I, the intensity of the sense-of-wear and shapeability are substantially in proportion to each other. In other words, there is a tendency that a garment with cup sections having high shapeability has strong sense-of-wear and that a garment with cup sections having low shapeability has weak sense-of-wear. To achieve both shapeability of a bust and comfortability, it is necessary to develop a garment with cup sections belonging to an X area in FIG. 10.

[0006] To achieve both the shapeability of the bust and the comfortability, the present applicants have analyzed clothing pressure with regard to the ready-made articles of the garment with cup sections in a process of intensive study. In this analysis on the clothing pressure, the applicants have measured the clothing pressure with respect to eight points of a bust of a dummy model as illustrated in FIG. 11(a). The eight points herein are a center of a verge's line (point A), lower parts of the bust (point B to point D), both sides of a central part of the bust (point E, point F), and upper parts of the bust (point G, point H).

[0007] FIG. 11(b) is a graph illustrating analyzed results of the clothing pressure. As illustrated in the drawing, an average of the clothing pressure at the upper parts of the bust (point G, point H) was about 0.35 kPa, while an average of the clothing pressure at the lower parts of the bust (point B to point D) was about 1.3 kPa. According to the results, the clothing pressure applied to the lower parts of the bust from a lower cup section of the garment with cup sections is about four times as large as the clothing pressure applied to the upper parts of the bust from an upper cup section. Therefore, the present applicants have found that both the shapeability of the bust and the comfortability can be achieved if the clothing pressure applied to the lower parts of the bust from the lower cup section can be controlled and if a total amount of the clothing pressure applied to the bust can be reduced, thereby completing the present invention.

[0008] The present invention has been made to solve the aforementioned problem. An object of the present invention is to provide a pad material, a material for a garment with cup sections, and a garment with cup sections in which both the shapeability of the bust and the comfortability can be achieved.

Solution to Problem

[0009] To solve the aforementioned problem, a pad material according to an embodiment of the present invention includes a urethane material which satisfies LC ≤ 1 and RC ≥ 80 where LC represents compression hardness and RC represents compression resilience.

[0010] In this pad material, by using the urethane material satisfying the aforementioned compression characteristics, it is possible to secure both compressibility when applying compressive load and recoverability when releasing the compressive load. Accordingly, in a garment with cup sections in which a pad including the pad material is disposed at least in a lower cup section, the clothing pressure applied to lower parts of a bust from the lower cup section can be controlled and a total

amount of the clothing pressure applied to the bust can be reduced. Furthermore, by securing the compressibility and recoverability of the pad, flexibility, lightweightness, and fluffiness of cup sections are enhanced and both shapeability of the bust and comfortability can be achieved.

[0011] Furthermore, the pad material may satisfy WC $\geq$ 6 where WC represents compression workload. In such a case, it is possible to further improve the compressibility when applying the compressive load and to preferably control the clothing pressure applied to lower parts of the bust from the lower cup section.

[0012] Furthermore, a material for a cup section according to an aspect of the present invention includes urethane which satisfies LC $\leq$ 1 and RC $\geq$ 80 where LC represents the compression hardness and RC represents the compression resilience.

[0013] In this material for a cup section, by applying the urethane material satisfying the aforementioned compression characteristics, it is possible to secure both the compressibility when applying the compressive load and the recoverability when releasing compressive load. Accordingly, in the garment with cup sections in which the material for a cup section is disposed at least in the lower cup section, it is possible to control the clothing pressure applied to the lower parts of the bust from the lower cup section and to reduce the total amount of the clothing pressure applied to the bust. Furthermore, by securing the compressibility and recoverability of the pad, flexibility, lightweightness, and fluffiness of cup sections are enhanced and both shapeability of the bust and comfortability can be achieved.

[0014] Furthermore, the material for a cup section may satisfy WC $\geq$ 6 where WC represents the compression workload. In such a case, it is possible to further improve the compressibility when applying the compressive load and to preferably control the clothing pressure applied to lower parts of the bust from the lower cup section.

[0015] Furthermore, the garment with cup sections according to an embodiment of the present invention includes a pair of right-and-left cup sections shaped to cover a bust of a wearer and includes a pad including the aforementioned pad material and disposed at least in the lower cup section of each cup section.

[0016] In this garment with cup sections, by applying the aforementioned pad material, it is possible to control the clothing pressure applied to the lower parts of the bust from the lower cup section and to reduce the total amount of the clothing pressure applied to the bust. Furthermore, flexibility, lightweightness, and fluffiness of the cup sections are enhanced and both the shapeability of the bust and comfortability can be achieved.

[0017] Furthermore, the garment with cup sections according to an embodiment of the present invention includes a pair of right-and-left cup sections shaped to cover the bust of a wearer and includes the aforementioned material for a cup section disposed at least in the lower cup section of each cup section.

[0018] In this garment with cup sections, by applying the aforementioned material for a cup section, it is possible to control the clothing pressure applied to the lower parts of the bust from the lower cup section and to reduce the total amount of the clothing pressure applied to the bust. Furthermore, flexibility, lightweightness, and fluffiness of the cup sections are enhanced and both the shapeability of the bust and comfortability can be achieved.

Advantageous Effects of Invention

[0019] According to the present invention, it is possible to achieve both shapeability of a bust and comfortability.

Brief Description of Drawings

[0020]

FIG. 1 is a front view illustrating a garment with cup sections including a pad material according to an embodiment of the present invention.

FIG. 2 is an enlarged view of main parts illustrating a cup section in the garment with cup sections illustrated in FIG. 1 seen from a back side.

FIG. 3 is a perspective view illustrating an example of a pad applied to the cup section illustrated in FIG. 2.

FIG. 4 is a graph illustrating compression characteristics of the pad material.

FIG. 5 is a table illustrating an example of characteristic values of pad materials according to Examples and Comparative Examples.

FIG. 6 is a graph schematically illustrating differences of the compression characteristics between the pad material according to Examples and the pad material according to Comparative Examples.

FIG. 7 is a graph illustrating analyzed results of the clothing pressure of the cup section to which the pad material is applied.

FIG. 8 is a graph illustrating results of a monitor test with regard to the cup section to which the pad material is applied.

FIG. 9 is an enlarged view of the main parts illustrating the cup section in the garment with cup sections including a material for a cup section according to an embodiment of the present invention seen from the back side.

FIG. 10 is a graph illustrating a relationship between intensity of sense-of-wear and shapeability with regard to ready-made articles of the garment with cup sections.

FIGS. 11(a) and 11(b) are a view and a graph illustrating a clothing pressure analysis with regard to the ready-made articles of the garment with cup sections. FIG. 11(a) illustrates measurement positions of the clothing pressure and FIG. 11(b) illustrates the analyzed results.

Description of Embodiments

[0021] Hereinafter, a preferable embodiment of a material for a cup section and a garment with cup sections according to an aspect of the present invention will be described in detail with reference to the drawings.

[0022] FIG 1 is a front view illustrating a garment with cup sections including a material for a cup section according to an embodiment of the present invention. As illustrated in the drawing, the garment with cup sections 1 is configured, for example, as a brassiere for women. This garment with cup sections 1 includes a pair of right-and-left cup sections 2, a base part 3 supporting a lower edge of each cup section 2, back parts 4 stretching from both sides of the base part 3 till reaching a back side, and strap parts 5 connecting the cup sections 2 and back parts 4.

[0023] Each cup section 2 is formed of a material having regular shape retainability and elasticity such as a non-woven fabric and polyurethane foam and is shaped like a bowl corresponding to a shape of a human bust. An upper edge 2a of each cup section 2 is curved along an upper part of a bust and is protruded upward, for example, at a substantially central part of each cup section 2. A side edge 2b of each cup section 2 is slowly curved in a recessed manner toward a center so as not to disturb motions of each arm. A lower edge 2c of each cup section 2 is curved along a verge's line of the bust and is protruded downward.

[0024] A wire part 6 is provided to the lower edge 2c of each cup section 2. A wire member which is a core material, for example, is sealed inside a bias tape and is included in the wire part 6. Examples of the wire member include metals and plastic. Examples of the bias tape include soft materials such as fabric and knit.

[0025] The base part 3 includes a top cloth formed of a material such as fabric and knit having stretchability (especially stretchability in a horizontal direction), for example, a bare yarn gray sheeting. The top cloth is backed with a material having no (few) stretchability such as marquisette so that the base part 3 as a whole has no (few) stretchability. Each top side 3a of the base part 3 is curved into a recess along the lower edge 2c of each cup section 2 and is sewed to the lower edge 2c of each cup section 2. In a bottom side 3b of the base part 3, in order to enhance the stretchability and restorability, a hem part formed of a material having excellent high stretchability may be provided in a longitudinal direction. An example of the material used for the hem part includes a stretch tape.

[0026] Each back part 4 is formed, for example, of a material having stretchability such as a power net. A base end of each back part 4, shaped like a band, is continuously stretching from each side of the base part 3 toward the back side. Hocks 7 are provided to an end in the back side of each back part 4. Due to the hocks 7, the right-and-left back parts 4 are detachable.

[0027] A cloth such as fabric is formed into a string and is sewed so as to form each strap part 5. A material such as fabric applied to each strap part 5 preferably has stretchability in the longitudinal direction. Each strap part 5 is disposed over and between each cup section 2 and each back part 4, serving as a shoulder strap. One end of each strap part 5 is coupled to an upper edge in the side of each cup section 2, and the other end of each strap part 5 is coupled to an upper edge of each back part 4.

[0028] Hereinafter, a structure of the cup sections 2 will be described in more detail.

[0029] FIG. 2 is an enlarged view of main parts illustrating one cup section 2 seen from a back side. As illustrated in the drawing, a pocket 12 is provided to a skin side of the cup section 2 so that a pad 11 can be detachably mounted. A cloth having a pleasant texture such as tricot fabric is sewed to the skin side of the cup section 2 so as to form the pocket 12.

[0030] The pocket 12 of the embodiment is provided to a part corresponding to a lower side of the cup section 2 (lower cup section) and includes a lower edge 12a, upper edge 12b, and side edge 12c.

The lower edge 12a is provided along the top side 3a of the base part 3. The upper edge 12b, stretching along a part lower than the upper edge 2a of the cup section 2, is stretching from an end in a front-center A side of the lower edge 12a toward the side edge 2b. The side edge 12c linearly connects a side part of the lower edge 12a and a side part of the upper edge 12b. The lower edge 12a is sewed to the top side 3a of the base part 3. The upper edge 12b is sewed to the part lower than the upper edge 2a in the cup section 2. The side edge 12c is not sewed to any part so that the pad 11 is detachable from the side of the cup section 2.

[0031] The pad 11 includes a substantially elliptical main body 13 as illustrated in FIG. 3. Both ends of the main body 13 in a long axis direction has a tapered shape (are shaped like a beak). An elastic core material is wrapped with a thin cloth having a pleasant texture such as gray sheeting and circular rib fabric so as to form the main body 13. The main body 13 has a thickness appropriately designed in accordance with required shapeability of the bust.

[0032] The core material used in the main body 13 is formed by a pad material 14. The pad material 14 is formed of, for example, a foamable urethane material. FIG. 4 is a graph illustrating compression characteristics of the pad material. As illustrated in the drawing, the compression characteristics of the pad material is represented by a relationship between the thickness and pressure.

[0033] Examples of characteristic values of the pad material herein include compression hardness (compression linearity) LC, compression workload (compression energy per 1 cm^2) WC, and compression resilience RC. The compression hardness LC is a parameter indicating compressibility at the beginning of compression. The smaller the value, the more the material is compressed easily at the beginning of the compression. The

compression workload is a parameter indicating overall compressibility. The larger the value, the more the material is compressed easily. The compression resilience is a parameter indicating recoverability after the compression. The larger the value, the more the shape of the material recovers easily. Examples of other parameters include a thickness T_0 when applying pressure P_0 (= 0.5 gf/cm^2), and a thickness T_m when applying pressure P_m (= 50 gf/cm^2).

[0034] The compression hardness LC is represented by the following formula (1).

[Mathematical Formula 1]

$$LC = 2WC/\{(T_0 - T_m)P_m\} \cdots (1)$$

[0035] The compression workload WC is represented by the following formula (2).

[Mathematical Formula 2]

$$WC = \int_{T_m}^{T_0} \vec{P} dT \cdots (2)$$

[0036] The compression resilience RC is represented by the following formula (3).

[Mathematical Formula 3]

$$RC = \left\{\int_{T_m}^{T_0} \vec{P} dT / WC\right\} \times 100 \cdots (3)$$

[0037] The characteristic values of the urethane material included in the pad material 14 of the present embodiment satisfy the compression hardness LC ≤ 1 and the compression resilience RC ≥ 80. Furthermore, the characteristic values of the urethane material satisfy the compression workload WC ≥ 6. Each characteristic value of the urethane material can be measured, for example, by an automatic compression tester (KESFB3-AUTO-A) manufactured by Kato Tech Co., Ltd. Air permeability of the urethane material included in the pad material 14 is preferably 250 cm^3/cm^2· sec or more when measured by a method A based on JIS L-1096 (Fraziere method). Furthermore, water absorbency of the urethane material included in the pad material 14 is preferably five seconds or less when measured by a dropping method based on JIS L1907.

[0038] The urethane material included in the pad material 14 of the present embodiment can be obtained, for example, by reacting and curing polyol and isocyanate (non-yellowing isocyanate). The urethane material applied herein has density (foam specific gravity) of 35 kg/m^3 and 45 kg/m^3.

[0039] Hereinafter, effectiveness of the pad material 14 will be described.

[0040] FIG. 5 is a table illustrating an example of characteristic values of pad materials according to Examples and Comparative Examples. As illustrated in the table, a material applied in each of Examples 1 to 3 is a urethane material satisfying LC ≤ 1, RC ≥ 80, and WC ≤ 6. Example 3 applies a material in which the urethane material is laminated with, for example, a cloth including knit and fabric such as gray sheeting, circular rib fabric, and tricot fabric.

[0041] The characteristic values of Example 1 are LC = 0.618, WC = 6.045 (gf/cm^2), RC = 87.77 (%), T_0 = 4.853 (mm), and TM = 0.941 (mm). The characteristic values of Example 2 are LC = 0.695, WC = 11.850 (gf/cm^2), RC = 89.97 (%), T_0 = 8.230 (mm), and TM = 1.409 (mm). The characteristic values of Example 3 are LC = 0.844, WC = 13.738 (gf/cm^2), RC = 83.54 (%), T_0 = 8.450 (mm), and TM = 1.943 (mm).

[0042] A material applied in each of Comparative Examples 1 and 2 is a conventional material satisfying LC > 1, RC < 80, and WC > 6. Comparative Example 1 applies a urethane material. Comparative Example 2 applies a material in which a non-woven fabric is laminated with, for example, a cloth including knit and fabric such as gray sheeting, circular rib fabric, and tricot fabric. The characteristic values of Comparative Example 1 are LC = 1.820, WC = 8.719 (gf/cm^2), RC = 49.24 (%), T_0 = 5.352 (mm), and TM = 3.434 (mm). The characteristic values of Comparative Example 2 are LC = 1.054, WC = 1.775 (gf/cm^2), RC = 77.02 (%), T_0 = 5.182 (mm), and TM = 4.508 (mm).

[0043] FIG. 6 is a graph schematically illustrating differences of the compression characteristics between the pad materials according to Examples and the pad materials according to Comparative Examples. In an example illustrated in the graph, the compression characteristics of Comparative Example 1 is represented by X1, and the compression characteristics of Comparative Example 2 is represented by X2. The compression characteristics according to Examples 1 to 3 are represented by Y

[0044] Analyzing these compression characteristics, with regard to the conventional urethane material applied in the Comparative Example 1, it is clear that the overall compressibility is relatively high, but the compressibility with respect to the beginning of the compression and the recoverability after the compression are inclined to be low. Furthermore, with regard to the non-woven fabric applied in Comparative Example 2, the compressibility with respect to the beginning of the compression and the recoverability after the compression is higher than those in Comparative Example 1, but the overall compressibility is inclined to be low. On the other hand, in the urethane materials applied in Examples 1 to 3, the compressibility with respect to the beginning of the compression is sufficiently higher than that in Comparative Examples 1 and 2, the overall compressibility is similar to or more than that in Comparative Example 1, and the recoverability after the compression is similar to or more than that in Comparative Example 2.

[0045] As described above, by applying the urethane

material satisfying LC ≤ 1 and RC ≥ 80, it is possible to secure in the pad material 14 both the compressibility when applying the compressive load and the recoverability when releasing the compressive load. Accordingly, with regard to the garment with cup sections 1 in which the pad 11 including the pad material 14 is disposed at least in the lower cup section, it is possible to control the clothing pressure applied to the lower parts of the bust from the lower cup section and the total amount of the clothing pressure applied to the bust can be reduced efficiently. Furthermore, by securing the compressibility and recoverability of the pad 11, flexibility, lightweightness, and fluffiness of the cup sections 2 are enhanced and both the shapeability of the bust and comfortability can be achieved. The pad material 14 applies the urethane material further satisfying WC ≥ 6. Therefore, it is possible to further improve the compressibility when applying the compressive load and to preferably reduce the clothing pressure applied to the lower parts of the bust from the lower cup section.

[0046] FIG. 7 is a graph illustrating analyzed results of the clothing pressure of the cup section to which the material for a cup section is applied. The analyzed results illustrated in the graph is obtained by measuring the clothing pressure applied to the bust from the lower cup section with respect to samples A, B, C, and D. In the sample A, the whole cup section is formed of a non-woven fabric. In the sample B, the upper cup section is formed of a material similar to that of the pad material 14 and the lower cup section is formed of a non-woven fabric. In the sample C, the upper cup section is formed of a non-woven fabric and the lower cup section is formed of a material similar to that of the pad material 14. In the sample D, the whole cup section is formed of a material similar to that of the pad material 14.

[0047] As a result of the clothing pressure measurement, as illustrated in FIG. 7, the clothing pressure applied to the bust from the lower cup section (a sum of the clothing pressure at points B, C, and D in FIG. 11(a)) was 5.5 kPa or more in the samples A and B. On the other hand, the clothing pressure applied to the bust from the lower cup section (a sum of the clothing pressure at points B, C, and D in FIG. 11(a)) was 3.0 kPa or less in the samples C and D. Accordingly, it is concluded that the clothing pressure applied to the lower parts of the bust from the lower cup section can be reduced to about half and the total amount of the clothing pressure applied to the bust can be reduced by applying the material for a cup section according to an aspect of the present invention at least to the lower cup section.

[0048] Furthermore, FIG. 8 is a graph illustrating results of a monitor test with regard to the cup section in which the material for a cup section is applied. In the monitor test illustrated in the graph, a plurality of monitors evaluated subjective comfortability of the garment with cup sections with respect to each of the samples A to D illustrated in FIG. 7. Three evaluation items were prepared as the comfortability, that is, flexibility, lightweightness, and flufliness. Each item was evaluated on 5-point scale (+2, +1, 0, -1, -2) and an average value of each monitor's answer was referred to as a subjective value. The larger the subjective value (the more the subjective value approaches + side), the more the wearer feels the garment flexible, lightweight, and fluffy. The smaller the subjective value (the more the subjective value approaches - side), the more the wearer feels the garment stiff, heavyweight, and harsh.

[0049] As a result, in the samples A and B, the subjective values regarding all the three items were found to be negative, and in the samples C and D, the subjective values regarding all the three items were found to be positive. In other words, it was admitted that there is a significant difference in the evaluation of the comfortability between the samples A, B in which the material for a cup section according to an aspect of the present invention is not applied in the lower cup section and the samples C, D in which the material for a cup section according to an aspect of the present invention is applied at least to the lower cup section.

[0050] The present invention should not be restricted to the aforementioned embodiment. For example, the embodiment has illustrated that the pad 11 is formed by using the pad material 14 and that the cup section 2 includes the pad 11 applicable to the pocket 12 of the cup section 2. However, as illustrated in FIG. 9, a cup section 2 may include a skin-side cloth with a pad 22 provided with a material for a cup section 24 having compression characteristics similar to those of the pad material 14.

[0051] In this embodiment, the skin-side cloth with a pad 22 includes a lower edge 22a, upper edge 22b, and side edge 22c. The lower edge 22a is provided along a top side 3a of a base part 3. The upper edge 22b, stretching along a part lower than the upper edge 2a of the cup section 2, is stretching from an end in a front-center A side of the lower edge 22a toward a side edge 2b. The side edge 22c is provided along the side edge 2b of the cup section 2. The skin-side cloth with a pad 22 includes the material for a cup section 24 formed in a shape substantially similar to the pad 11 illustrated in FIG. 3. The skin-side cloth with a pad 22 is disposed in the skin side of the cup section 2 so that the material for a cup section 24 is placed in the lower cup section. The lower edge 22a is sewed to the top side 3a. The upper edge 22b is sewed to the part lower than the upper edge 2a in the cup section 2. The side edge 22c is sewed to the side edge 2b of the cup section 2.

[0052] In such an embodiment, as similar to the aforementioned embodiment, clothing pressure applied to lower parts of a bust from the lower cup section can be controlled and a total amount of the clothing pressure applied to the bust can be reduced. Furthermore, flexibility, lightweightness, and fluffiness of the cup sections 2 are enhanced and both shapeability of the bust and comfortability can be achieved.

[0053] Furthermore, in the aforementioned embodiment, for example, a brassiere has been illustrated as

the garment with cup sections. However, in addition to the brassiere, examples of the garment with cup sections to which the present invention is applicable include foundation garments such as bra-slips, bra camisoles, body suits and also include swimming suits and leotards. Furthermore, the features of the present invention are applicable to all types of brassieres such as full cup brassieres, 3/4 cup brassieres, and 1/2 cup brassieres. With regard to the sewing of the cup section, various embodiments are applicable such as sewing one dart or two darts, patching two pieces or three pieces, gathering, and not sewing (formed cup).

Reference Signs List

[0054] 1...garment with cup sections, 2...cup section, 11...pad, 14...pad material, 24...material for cup section

Claims

1. A pad material including a urethane material satisfying $LC \leq 1$ and $RC \geq 80$ where LC represents compression hardness and RC represents compression resilience.

2. The pad material according to claim 1, satisfying $WC \geq 6$ where WC represents compression workload.

3. A material for a cup section including a urethane material satisfying $LC \leq 1$ and $RC \geq 80$ where LC represents compression hardness and RC represents compression resilience.

4. The material for a cup section according to claim 3, satisfying $WC \geq 6$ where WC represents compression workload.

5. A garment with cup sections comprising a pair of right-and-left cup sections which is formed to cover a bust of a wearer, wherein
the garment with cup sections is provided with a pad including the pad material according to claim 1 or 2 at least at each lower cup section of the cup sections.

6. A garment with cup sections comprising a pair of right-and-left cup sections which is formed to cover a bust of a wearer, wherein
the garment with cup sections is provided with the material for a cup section according to claim 3 or 4 at least at each lower cup section of the cup sections.

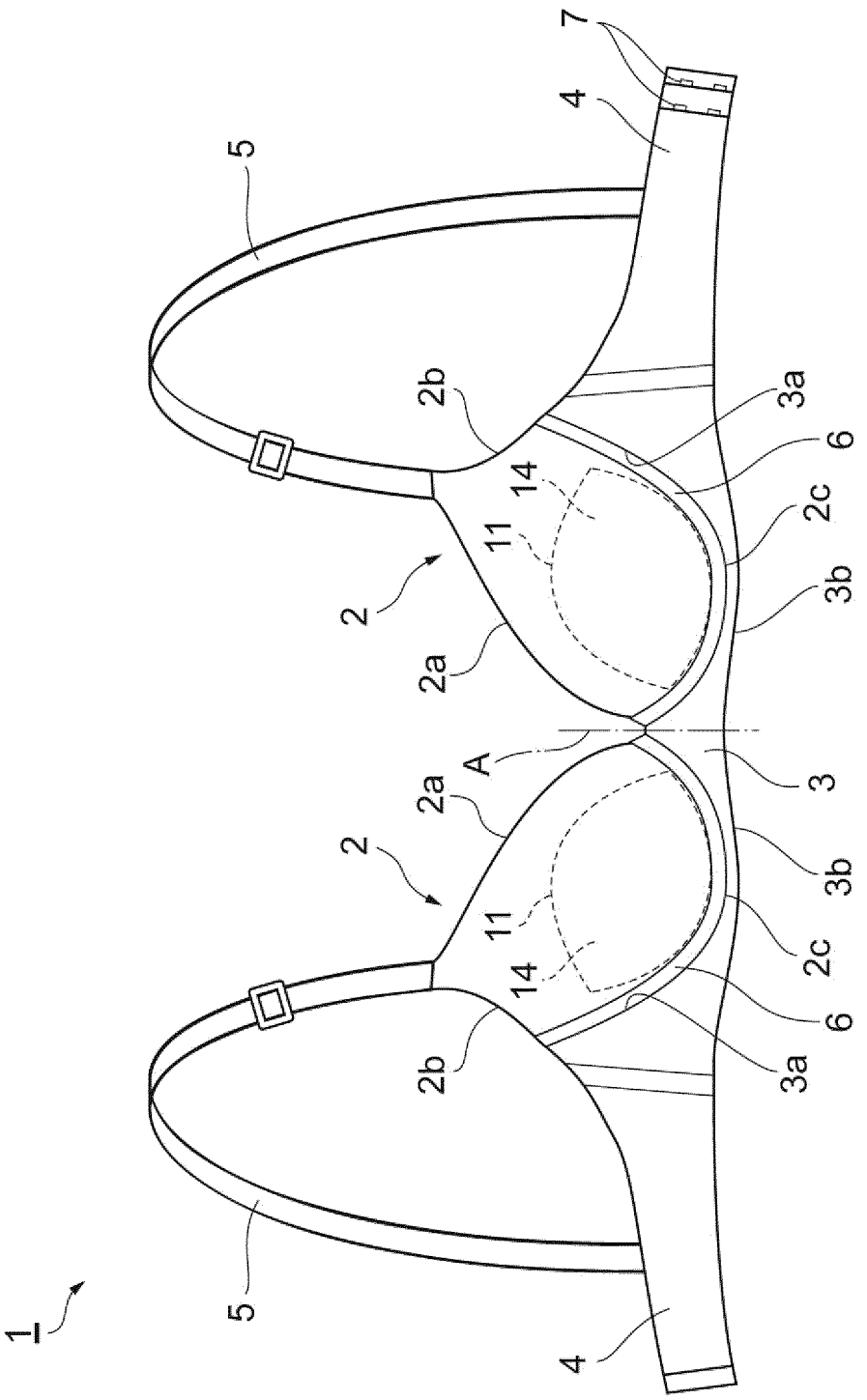


Fig.1

Fig.2

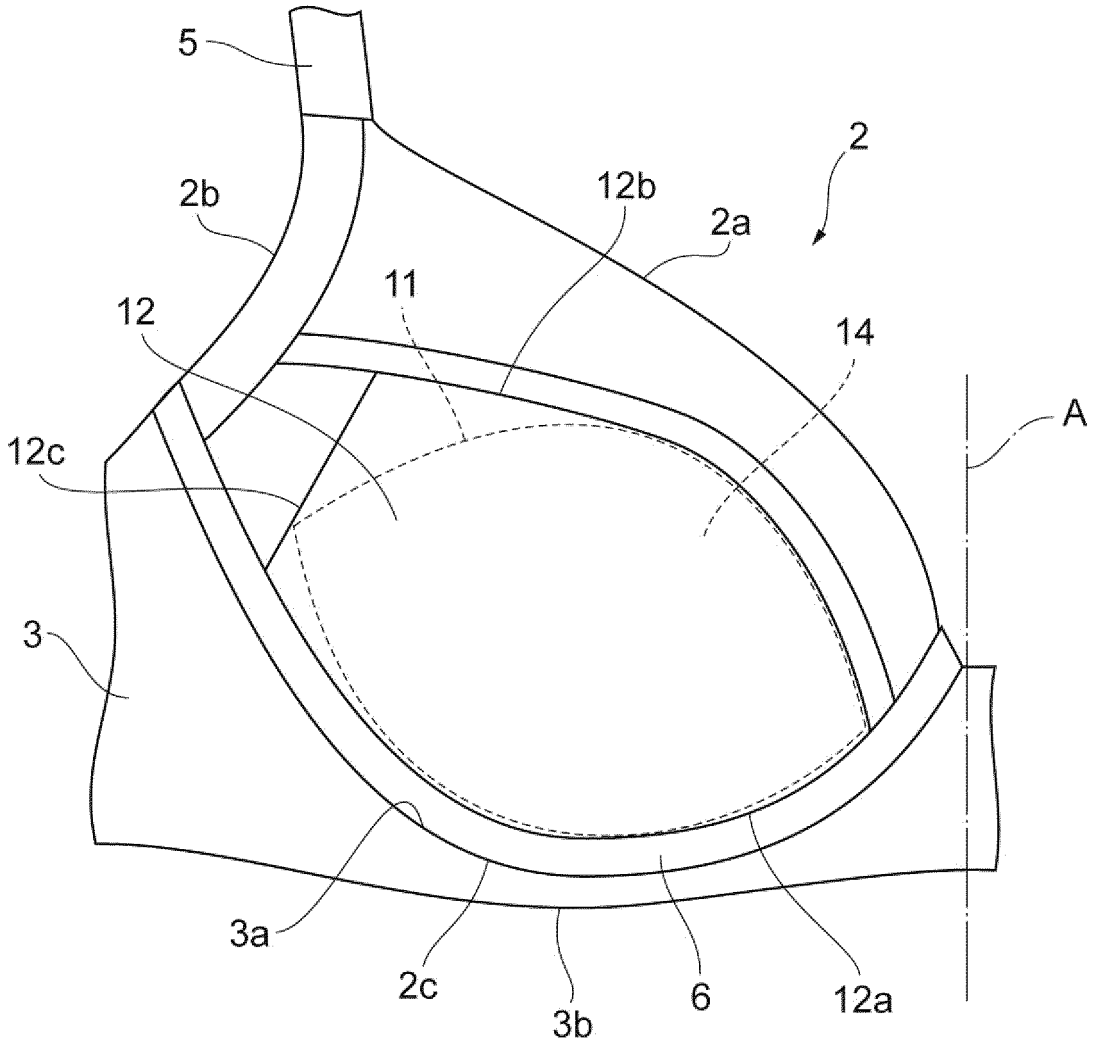


Fig.3

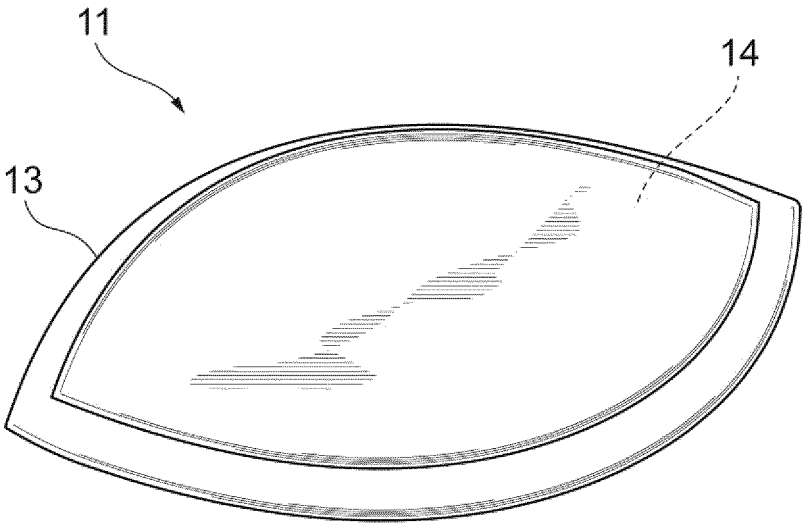


Fig.4

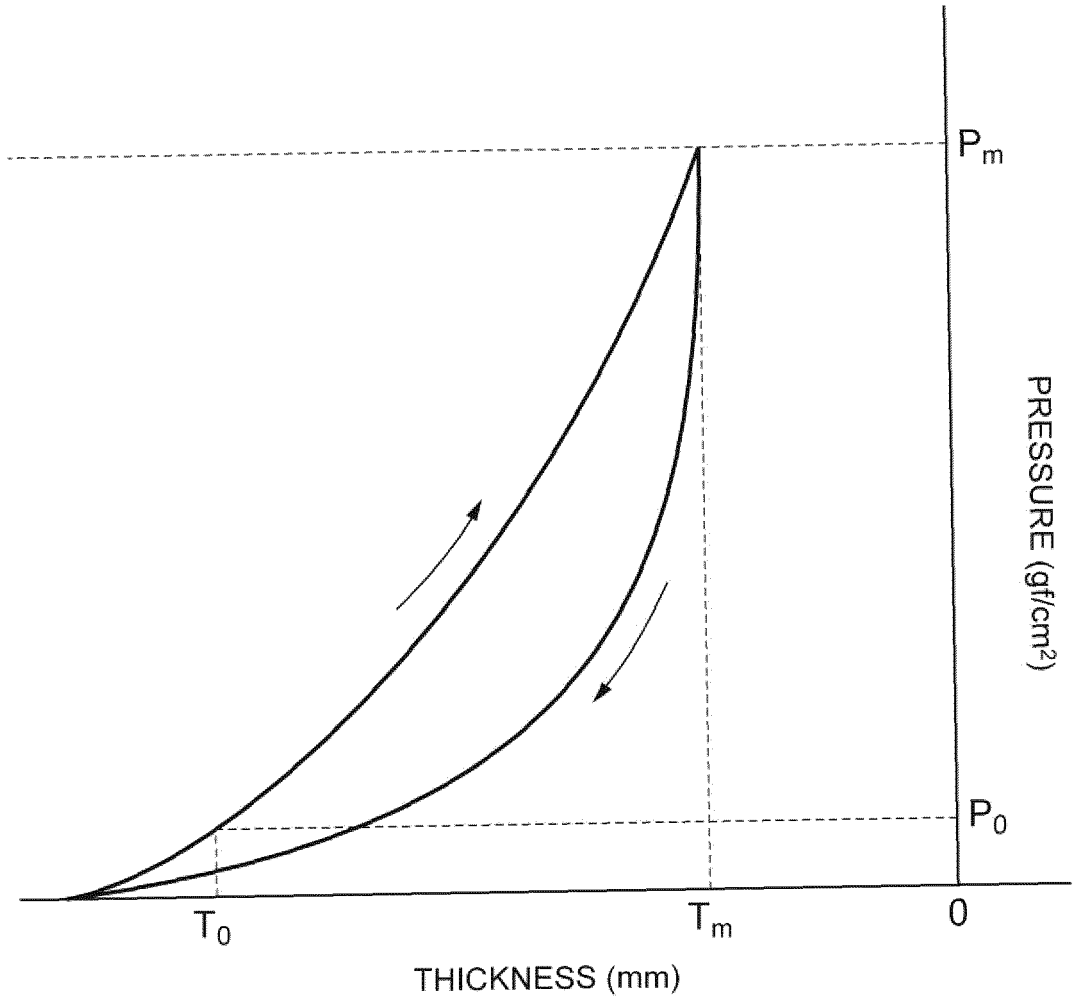


Fig.5

	FORMABLE MATERIAL	LC	WC (gf·cm/cm^2)	RC(%)	T_O(mm)	T_M(mm)
EXAMPLE 1	URETHANE (NEW MATERIAL)	0.618	6.045	87.77	4.853	0.941
EXAMPLE 2	URETHANE (NEW MATERIAL)	0.695	11.850	89.97	8.230	1.409
EXAMPLE 3	URETHANE (NEW MATERIAL)+ LAMINATED MATERIAL	0.844	13.738	83.54	8.450	1.943
COMPARATIVE EXAMPLE 1	URETHANE (CONVENTIONAL)	1.820	8.719	49.24	5.352	3.434
COMPARATIVE EXAMPLE 2	NON-WOVEN FABRIC+ LAMINATED MATERIAL	1.054	1.775	77.02	5.182	4.508

Fig.6

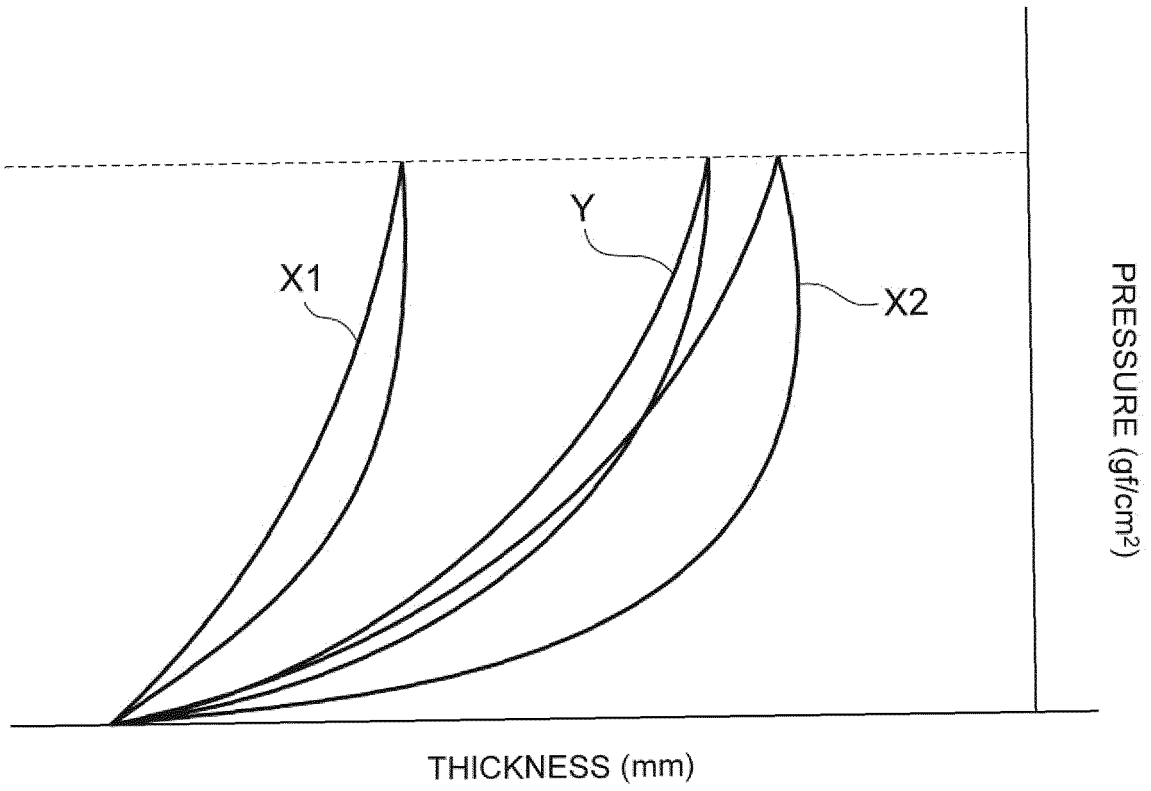


Fig.7

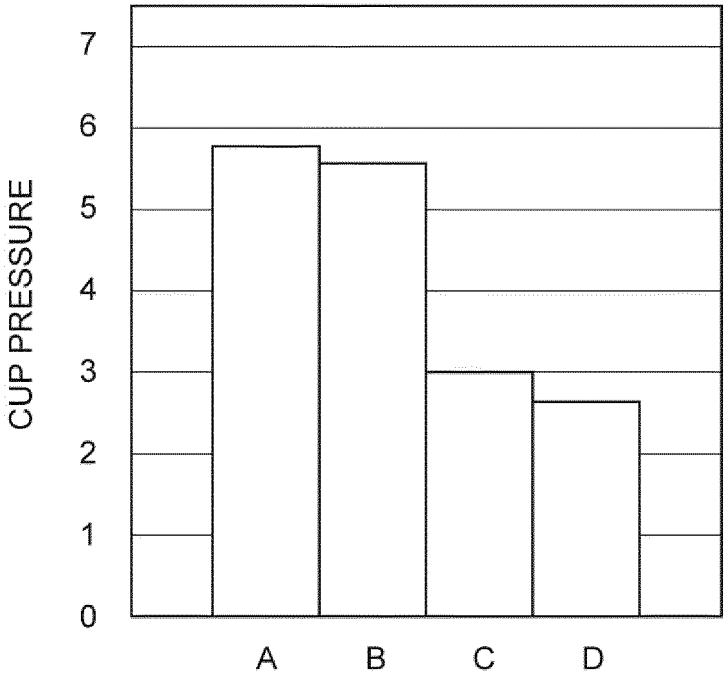


Fig.8

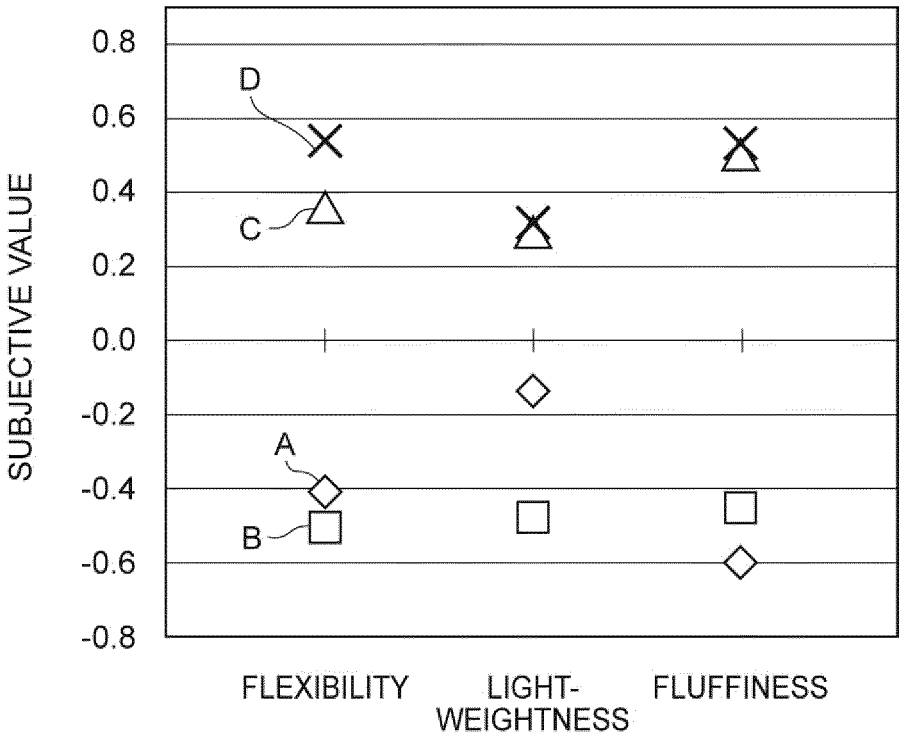

0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
SUBJECTIVE VALUE
D
C
A
B
FLEXIBILITY
LIGHT-WEIGHTNESS
FLUFFINESS

Fig.9

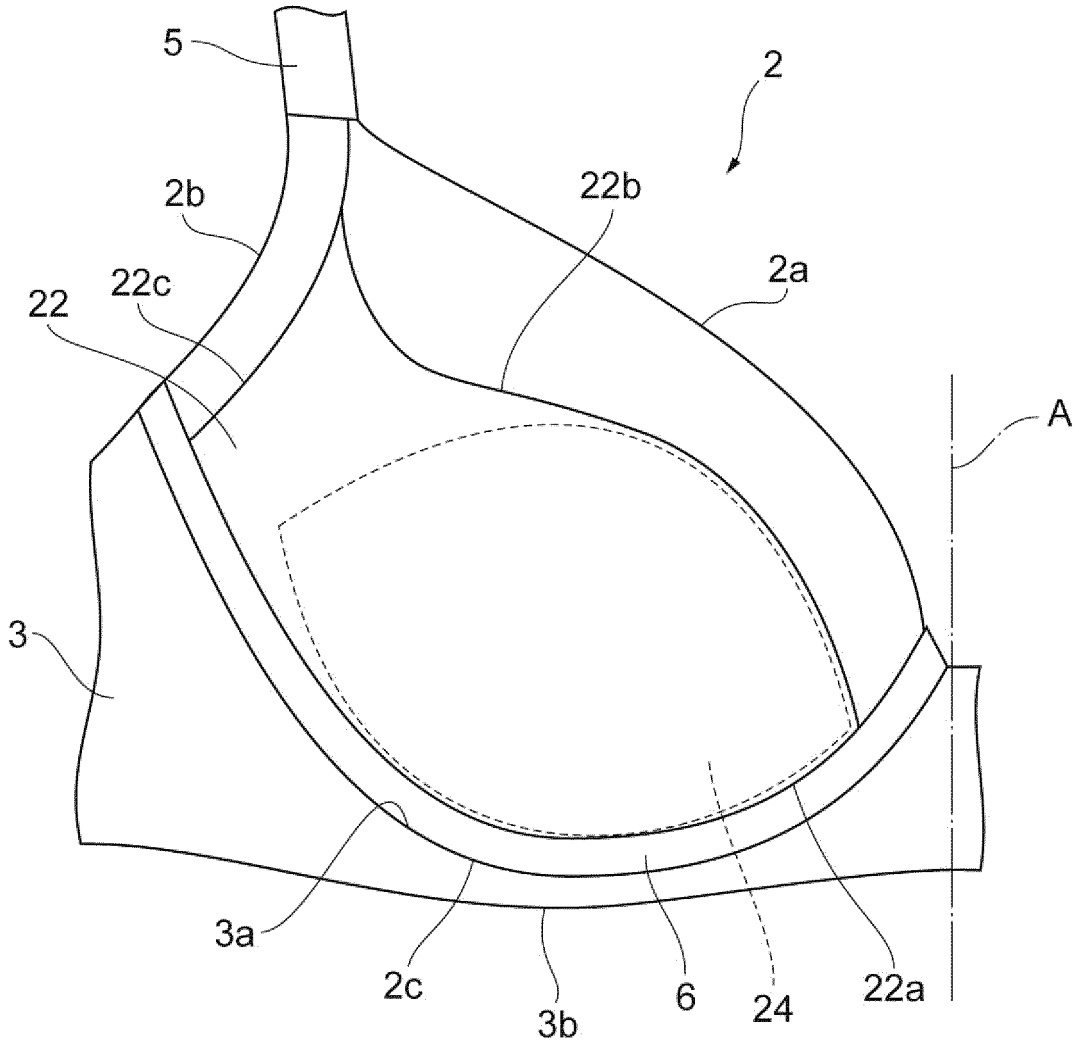


Fig.10

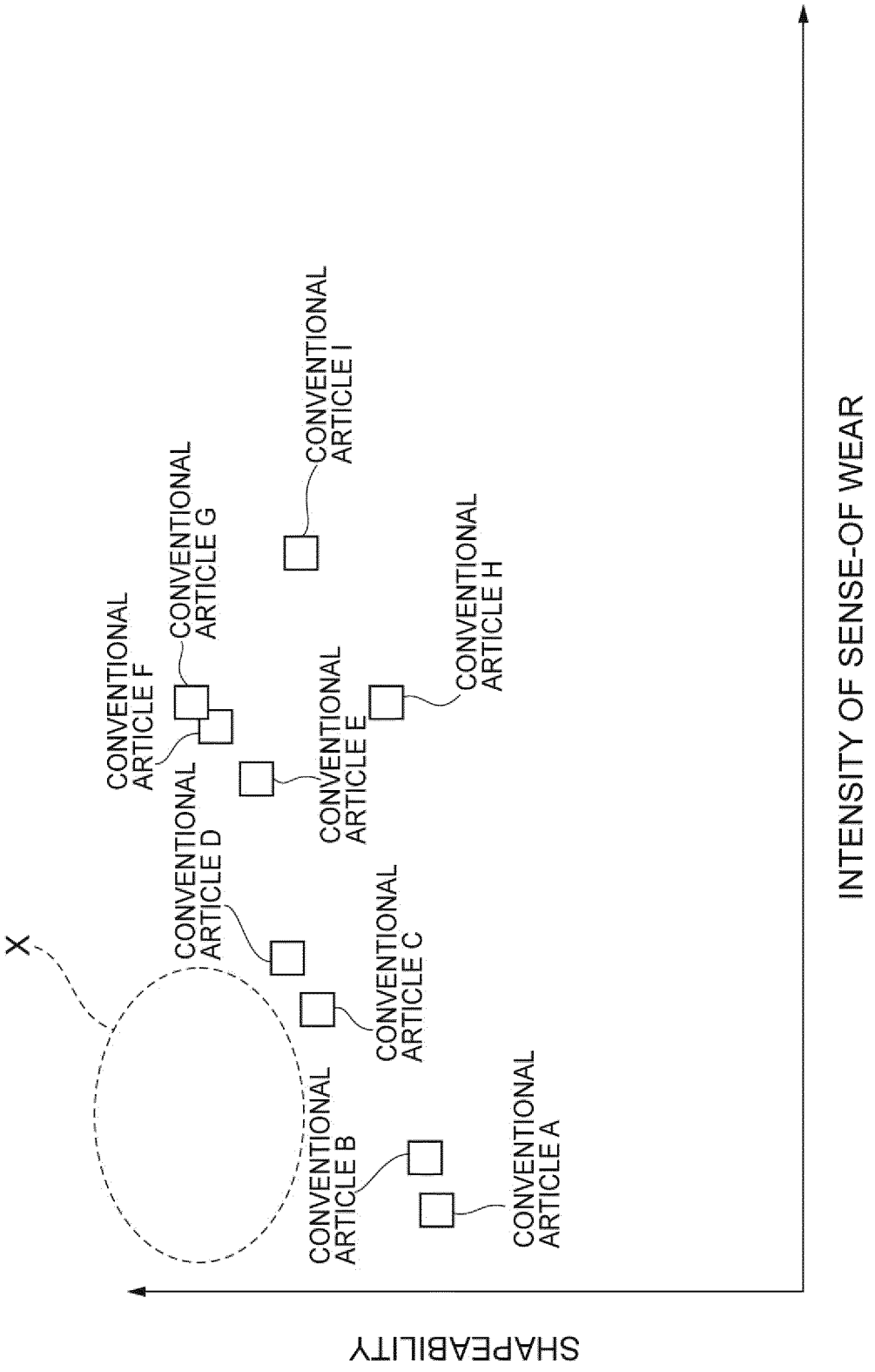
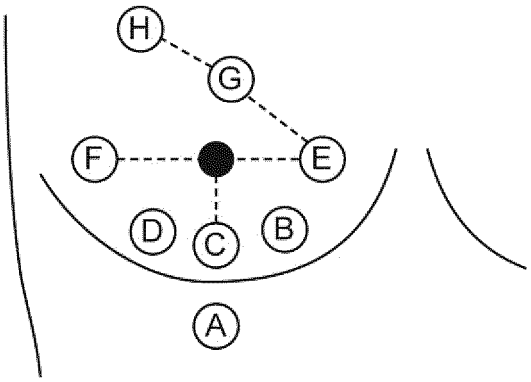
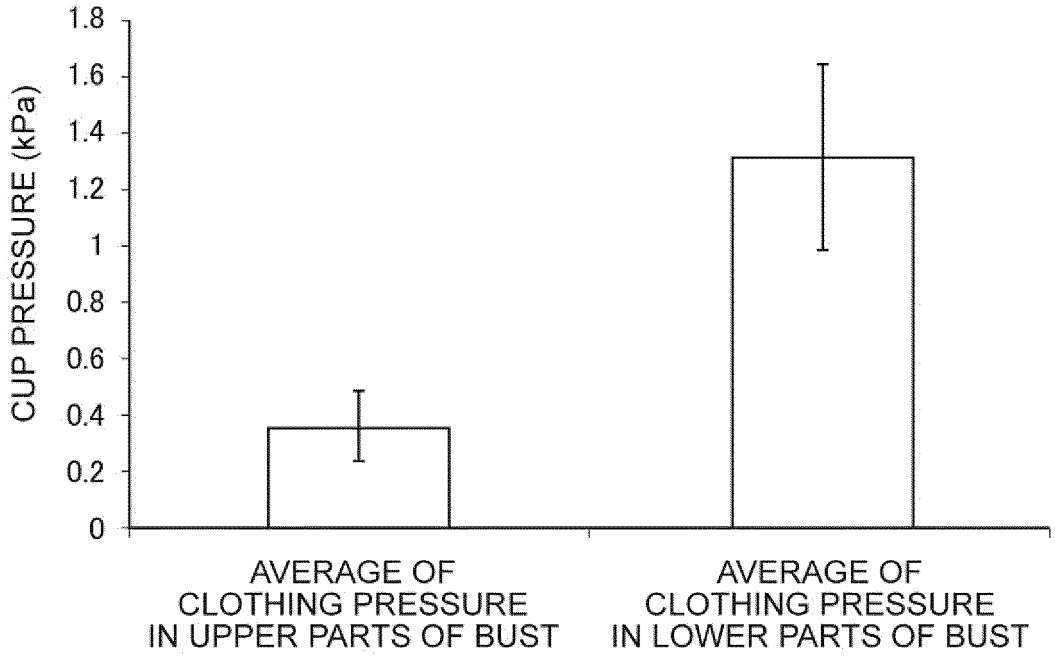

INTENSITY OF SENSE-OF WEAR
SHAPEABILITY
X
CONVENTIONAL ARTICLE A
CONVENTIONAL ARTICLE B
CONVENTIONAL ARTICLE C
CONVENTIONAL ARTICLE D
CONVENTIONAL ARTICLE E
CONVENTIONAL ARTICLE F
CONVENTIONAL ARTICLE G
CONVENTIONAL ARTICLE H
CONVENTIONAL ARTICLE I

Fig.11

(a)


H
G
F
E
D
C
B
A

(b)


CUP PRESSURE (kPa)
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
AVERAGE OF CLOTHING PRESSURE IN UPPER PARTS OF BUST
AVERAGE OF CLOTHING PRESSURE IN LOWER PARTS OF BUST

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2015/073583

A. CLASSIFICATION OF SUBJECT MATTER
A41C3/14(2006.01)i, *A41C3/10*(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)
A41C3/14, A41C3/10

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	1996-2015
Kokai Jitsuyo Shinan Koho	1971-2015	Toroku Jitsuyo Shinan Koho	1994-2015

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.
Y	WO 2009/020048 A1 (Inoac Corp.), 12 February 2009 (12.02.2009), paragraphs [0008], [0028] to [0031] & JP 2009-35697 A & US 2010/0291835 A1 paragraphs [0025] to [0036], [0063] to [0067] & EP 2174968 A1 paragraphs [0008], [0029] to [0032] & CN 101754992 A & HK 1141544 A1	1-6
Y	JP 11-200106 A (Asahi Chemical Industry Co., Ltd.), 27 July 1999 (27.07.1999), paragraph [0012]; table 1 (Family: none)	1-6

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

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"P" document published prior to the international filing date but later than the priority date claimed
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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
27 October 2015 (27.10.15)	02 November 2015 (02.11.15)

Name and mailing address of the ISA/	Authorized officer
Japan Patent Office 3-4-3,Kasumigaseki,Chiyoda-ku, Tokyo 100-8915,Japan	Telephone No.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2015/073583

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 2005-290613 A (Wacoal Corp.), 20 October 2005 (20.10.2005), paragraphs [0007] to [0024] (Family: none)	1-6
Y	JP 2007-303013 A (Wacoal Corp.), 22 November 2007 (22.11.2007), paragraphs [0020] to [0021] (Family: none)	1-2,5

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Patent documents cited in the description

- JP 2002220705 A **[0004]**