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(54) **BREAST SUPPORT, BREAST SUPPORT CUSHION AND METHOD FOR MAKING A BREAST SUPPORT**

(57) A breast support (11) comprising a band (8) provided with cushion (5) such that when worn, the cushion is an element of separation between the breasts.

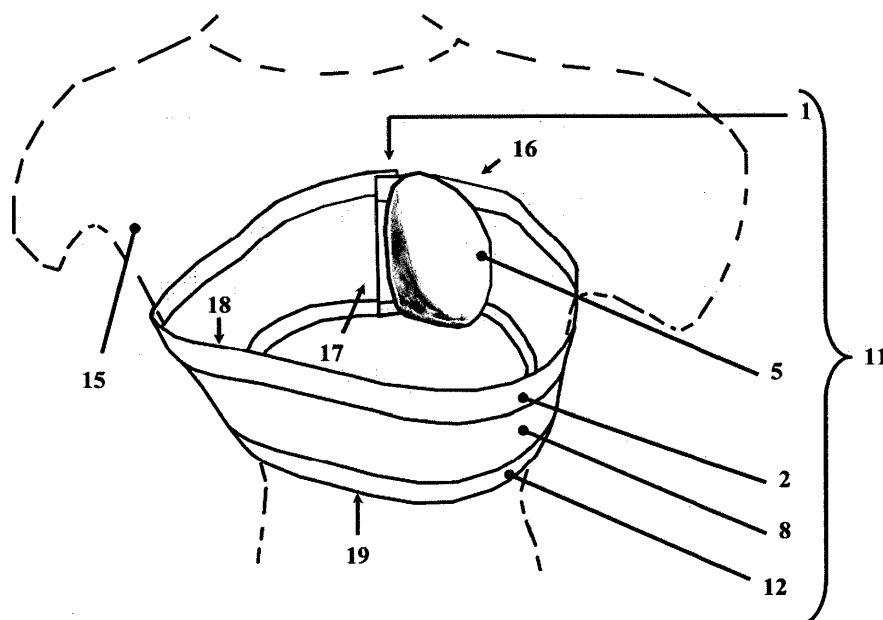


Fig. 1

Description

TECHNICAL FIELD

[0001] The present invention relates to a breast support according to the characteristics of the pre-characterizing part of claim 1.

[0002] The present invention also relates to a cushion (5) of separation between the breasts according to the characteristics of the pre-characterizing part of claim 17.

[0003] The present invention also relates to a method for making a breast support according to the characteristics of the pre-characterizing part of claim 23.

PRIOR ART

[0004] In the field of production of brassieres and breast supports solutions are known which are adapted for night use in order to reduce at least partially the discomfort given by the posture assumed while sleeping.

[0005] Further known are solutions related to brassieres for users who underwent breast surgery.

[0006] Patent application US5538502 describes a surgical chest dressing, which is constructed of a band of stretchable material having a pair of panels of non-stretchable material attached thereto, the non-stretchable panels biasing the side and breast tissue of a patient inwardly toward a sutured incision in the centre of a patient's chest to support and substantially immobilize the patient's side and breast tissue and to minimize stress on the sutured incision.

[0007] Patent application US5098331 describes a therapeutic chest dressing having implants including a chest encircling, flexible band provided with front flaps whereby the band is disposed against the back of a person and the front flaps overlap and fasten to each other. A chest encircling strip is attached to the flexible band for preventing movement or distortion of the implants for breasts received in the flexible band. Patent application US 2004/185748 describes a brassiere to be worn after breast surgery. The fabric of the brassiere includes antimicrobial fibres that control microbes on the skin of the woman's breast area both before and after surgical incisions are healed. The antimicrobial fibre is a synthetic fibre incorporating an ion exchange resin. The antimicrobial fibre contains silver ions in antimicrobial amounts.

[0008] Patent application US5152741 describes a surgical dressing, which is constructed of a chest encircling flexible band formed primarily of a stretchable material with free overlapping ends that engage each other between the breasts of a person. The band includes a differential support structure to provide more support for the sides of the user.

PROBLEMS OF THE PRIOR ART

[0009] The prior art solutions of brassieres and breast supports are designed, in general, for a daytime use in

which it is essential to have a support function when the user of the brassiere assumes an upright position. The prior art solutions, therefore, are not suitable for night use in which the lying position causes a distribution of weight and of stress on the body, which is completely different with respect to the upright position. For this reason, the use of a traditional brassiere is not comfortable at night or when resting in a lying position because too much strain of the shoulder straps and a too strong supporting action exerted on the breast cause uncomfortable and sometimes painful pressure on the skin, so much that often, in these situations, the woman prefers not to wear the brassiere.

[0010] Although solutions of brassieres for night use are known, these do not allow to obtain a suitable support of the breasts with a suitable condition of separation between the breasts, above all when the user of the brassiere assumes a position lying on one side. The prior art solutions of brassieres to be used by users who underwent breast surgery do not allow an effective adaptation of the brassiere to the different conditions of the user, for example in the case of mastectomies in which each user has different needs with respect to the needs of other users of the brassiere who underwent a similar operation.

[0011] Furthermore, the prior art solutions are not suitable to be used after radiotherapy sessions due to the fact that the fabrics used and the shapes used for the brassiere are uncomfortable for the user after such sessions due to the presence of skin redness and irritations. In particular the prior art solutions cannot effectively prevent the reciprocal contact of skin for example as to the contact zone between the breasts of the user of the prior art brassiere.

AIM OF THE INVENTION

[0012] The aim of the present invention is to provide a breast support, which is comfortable during night use.

[0013] A further aim of the present invention is to provide a breast support, which is adapted for use by people who underwent breast surgery.

[0014] A further aim of the present invention is to provide a breast support, which is adapted for use in case of radiotherapy sessions, in particular after a session.

[0015] A further aim of the present invention is to provide a breast separation cushion to be used in combination with a breast support.

[0016] Finally, a further aim of the present invention is to provide a method for personalizing a breast support.

CONCEPT OF THE INVENTION

[0017] The aim is achieved with the characteristics of the main claim. The sub-claims represent advantageous solutions.

ADVANTAGEOUS EFFECTS OF THE INVENTION

[0018] The solution according to the present invention, by the considerable creative contribution the effect of which constitutes an immediate and important technical progress, has various advantages.

[0019] The solution according to the present invention allows to obtain a correct wearability of the breast support according to body shape without creating discomfort following its prolonged use.

[0020] Furthermore, the solution according to the present invention allows to obtain an effective reciprocal positioning of the breasts with a function of reciprocal separation between the breasts in order to prevent rubbing between the breasts which may cause irritations, sweating and even dermatitis.

[0021] The solution according to the present invention allows to make a breast support without supporting shoulder straps, so that the user can wear it during the night and in the moments of rest or anyway for prolonged periods of time without any problems of wrinkles or posture arising, it being very simple and comfortable to wear.

[0022] As to the users who underwent breast surgery, after a mastectomy or quadrantectomy or plastic surgery operation, it is particularly suitable to use the solution according to the invention because it prevents the non-operated breast from lying over the operated one, preventing sweating and rubbing and resulting irritations because the skin, after the operation, is sensitive and delicate.

[0023] Furthermore, the solution according to the invention also allows an effective, comfortable use in case of dermatitis.

[0024] The solution according to the invention, moreover, is adapted to be used after radiotherapy sessions, ensuring the maintenance of conditions of great comfort also after such sessions, when the user's skin is irritated or red.

DESCRIPTION OF THE DRAWINGS

[0025] In the following a solution is described with reference to the included drawings, which are to be considered as a non-exhaustive example of the present invention, in which:

Fig. 1 shows a perspective view from the back and from above of the breast support made in accordance with the present invention in a condition worn by a user.

Fig. 2 shows a perspective view from the front of the breast support of Fig. 1 in a condition worn by a user.

Fig. 3 shows a perspective view from the front and from above of the breast support of Fig. 1 in a condition worn by a user.

Fig. 4 shows a front perspective view of the breast support made in accordance with the present invention in a condition worn by a user.

Fig. 5 shows a back perspective view of the breast support made in accordance with the present invention in a condition worn by a user.

Fig. 6 shows a perspective view from above of the breast support made in accordance with the present invention in a condition worn by a user.

Fig. 7 shows a perspective view of the back side of the breast support made in accordance with the present invention with a partially turned-up end.

Fig. 8 shows a perspective view of the front side of the breast support of Fig. 7.

Fig. 9 shows a perspective view of the back side of the breast support according to the invention in a different configuration of the fixing system.

Fig. 10 shows a view of the back side of the breast support made in accordance with the present invention.

Fig. 11 shows a view of the front side of the breast support of Fig. 10.

Fig. 12 shows a plan view of a first embodiment of the cushion made in accordance with the present invention.

Fig. 13 shows a side view of the cushion of Fig. 12.

Fig. 14 shows a plan view of a second embodiment of the cushion made in accordance with the present invention.

Fig. 15 shows a plan view of a third embodiment of the cushion made in accordance with the present invention.

Fig. 16 shows a plan view of a fourth embodiment of the cushion made in accordance with the present invention.

Fig. 17 shows a plan view of a fifth embodiment of the cushion made in accordance with the present invention.

DESCRIPTION OF THE INVENTION

[0026] With reference to the figures the breast support (11) made according to the present invention includes (Fig. 1, Fig. 2, Fig. 3, Fig. 4, Fig. 5, Fig. 6, Fig. 7, Fig. 8, Fig. 9, Fig. 10, Fig. 11) a band (8) provided with a cushion (5) which is applicable on the band (8) in an application zone which, when the breast support (11) is in a condition worn by a user (15), is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts.

[0027] Preferably the band (8) has an elongate shape (Fig. 1, Fig. 2, Fig. 3, Fig. 4, Fig. 5, Fig. 6, Fig. 7, Fig. 8, Fig. 9, Fig. 10, Fig. 11) and is provided with at least one portion having a greater height (22) with respect to the rest of the band, said portion having greater height being placed on a front side (16) of the band (8), the term front referring to a position corresponding to the position of the breasts of the user (15) of the breast support (11) when the breast support (11) is in a condition worn by the user (15). Therefore, the band (8) is shaped and ar-

ranged according to a shape that is higher on the front side (16) with respect to the user (15) and lower on the back side (17), the term back referring to a position corresponding to the position of the back of the user (15) of the breast support (11) when the breast support (11) is in a condition worn by the user (15). Such a solution of breast support (11) shaped like a band (8), which is provided with a portion having a greater height (22) with respect to the rest of the band, is a further relevant element with respect to the prior art solutions in which the bands have the same height both on the back and on the breast.

[0028] The band (8) is preferably made of a non-allergenic and transpiring material, woven or non-woven.

[0029] In a particular embodiment adapted for use after radiotherapy sessions, the band (8) is made of a non-allergenic and transpiring material, woven or non-woven, which is suitable for use after radiotherapy sessions, when the user's skin is red or irritated. For example the fabric can be made of silk, a combination of polyamide, elaston and polyester. Unlike the prior art solutions, the solution according to the invention is made with such fabrics and such a shape that it is possible to effectively prevent the reciprocal contact of the skin for example as to the contact zone between the breasts, making it particularly adapted also for use after radiotherapy sessions.

[0030] In general the band (8) or at least the parts of band, which are in contact with the user's skin when the breast support (11) is in a worn condition, are made of a material, woven or non-woven, of the non-allergenic type or of silk or of a combination of polyamide, elaston and polyester.

[0031] In the preferred embodiment of the present invention the band (8) is an open band, meaning that it is not closed on itself in a circular form, but it is an elongate element (Fig. 7, Fig. 8, Fig. 9, Fig. 10, Fig. 11) provided with a first end (20) and with a second end (21) opposite to each other with respect to the elongate shape of the band (8). The band (8) is provided (Fig. 1, Fig. 2, Fig. 3, Fig. 4, Fig. 5, Fig. 6, Fig. 7, Fig. 8, Fig. 9, Fig. 10, Fig. 11) with a fastening (1) which enables the reciprocal connection of the first end (20) and second end (21) with the formation of a breast support (11) having a circular shape adapted to encircle the chest of the user (15). The fastening (1) is positioned on the front side (16) of the band (8) in a position corresponding to the position of the breasts of the user (15) of the breast support (11) when the breast support (11) is in a worn condition.

[0032] The fastening (1) is preferably of the adjustable type in such a way as to allow to obtain a condition of support of the breasts and of great comfort depending on the shape of the chest of the user (15) and on the size of the breasts of the user (15). It is provided to realize different bands (8) each corresponding to a size or to a plurality of sizes in order to facilitate the finding of the band (8) whose size suits best depending on the shape of the chest of the user (15) and on the size of the breasts of the user (15).

[0033] The fastening (1) is preferably of the tear-away type with male-female coupling, that is to say, of the type comprising (Fig. 1) a first fastening coupling (4) placed on the first end (20) of the band (8) and a second fastening coupling (14) placed on the second end (21) of the band (8) wherein the first fastening coupling (4) and the second fastening coupling (14) are provided with a releasable textile hook and loop system. The tear-away fastening (1) is advantageous because it allows to obtain a high degree of adjustment in such a way as to be able to correspondingly adjust the tension exerted by the band (8). In this way the user can obtain a correct wearability according to the shape of the chest and of the breasts favouring the obtainment of a condition of comfort and support of the breasts along with the function of reciprocal separation of the breasts obtained by means of the cushion (5).

[0034] The band (8) is provided with a first elastic element (2) and with a second elastic element (12) which are placed on opposite edges (18, 19) of the band (8) and which extend for at least one part of the length development of the band (8), preferably for almost the entire length development of the band (8). In particular the first elastic element (2) is placed along an upper edge (18) of the band (8), in which the term upper refers to the gravity direction when the breast support (11) is in a condition worn by the user (15). In particular the second elastic element (12) is placed along a lower edge (19) of the band (8), in which the term lower refers to the gravity direction when the breast support (11) is in a condition worn by the user (15). The elastic elements (2, 12) are made in the form of a soft elastic tape, tolerable by the skin, non-constrictive. Preferably the elastic elements (2, 12) are coated with the same material, woven or non-woven, non-allergenic with which the band (8) is made and have the seams made, like the band (8), turned inwards, in such a way that the seams are not in contact with the user's skin, since the elastic elements (2, 12) are the main point of contact with the skin and, therefore, of greater friction.

[0035] In the embodiment adapted for use after radiotherapy sessions, the elastic elements (2, 12) are coated with the same material, woven or non-woven, adapted for use after radiotherapy sessions. The elastic elements (2, 12) advantageously provide a greater breast containment effect without causing compressions of the breast because the elastic elements (2, 12) are placed on the upper part and on the lower part with respect to the breast when the breast support (11) is in a condition worn by a user (15). Preferably the band (8) is further provided with at least one pair of sticks (3, 13) which are placed essentially transversely with respect to the elongate shape of the band (8), for example a first stick (3) and a second stick (13) which are placed laterally outside with respect to the breasts, the expression laterally outside referring to the breasts of the user (15) when the breast support (11) is in a condition worn by the user (15). The sticks (3, 13) are preferably made of a soft but resistant plastic

material. The sticks (3, 13) prevent the band (8) from rolling up on itself, both in the phase in which the band is worn and during its use.

[0036] The combination of the adjustable tear-away fastening (1) and elastic elements (2, 12) also allows to obtain a sufficient tension of the band (8) so as not to require the use of supporting shoulder straps. This solution is advantageous because, as the band (8) is especially designed without shoulder straps, it allows the woman to wear the band (8) for prolonged periods of time and also during the night or in the moments of rest without the problems of the prior art solutions relating to the occurrence of wrinkles on the shoulders, postural problems, uncomfortableness.

[0037] The breast support (11) is provided (Fig. 1, Fig. 2, Fig. 3, Fig. 4, Fig. 5, Fig. 6, Fig. 7, Fig. 8, Fig. 9, Fig. 10, Fig. 11) with at least one breast separating cushion (5) which can be made (Fig. 12, Fig. 13, Fig. 14, Fig. 15, Fig. 16, Fig. 17) according to different shapes depending on the shape of the chest of the user (15) and on the size of the breasts of the user (15) or depending on the type of mastectomy or quadrantectomy or plastic surgery operation underwent by the user (15). For example (Fig. 12, Fig. 13) the cushion (5) can have an essentially ovoid shape in which the thickness (X) of the cushion (5) is smaller with respect to its width (Y) and to its height (Z).

[0038] As an alternative, the cushion (5) can have (Fig. 15) a plan shape essentially symmetrical in two directions of which a vertical direction and a horizontal direction in which the plan shape of the cushion is essentially "8-shaped" with a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a seat for housing the breasts in a more comfortable way keeping the function of separation between the user's breasts.

[0039] As an alternative, the cushion (5) can have (Fig. 14) a plan shape essentially symmetrical in a one direction only according to a vertical symmetry direction with a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a seat for housing the breasts in a more comfortable way keeping the function of separation between the user's breasts and in which one of the protrusions has a greater protrusion extension than the other protrusion.

[0040] As an alternative, the cushion (5) can have (Fig. 17) a plan shape essentially symmetrical in one direction only according to a horizontal symmetry direction in which a first half-portion is essentially shaped as a "half-8" and a second half-portion is shaped with an arched portion (26) in which the first half-portion includes a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a seat for housing the breast in a more comfortable way keeping the function of separation between the user's breasts. This shape of the cushion (5) can for example be adapted in the case in which the user (15) underwent a mastectomy or quadrantectomy or plastic surgery operation on one breast only.

[0041] As an alternative, the cushion (5) can have (Fig.

16) a plan shape essentially asymmetrical in the two directions in which there are a first half-part and a second half-part opposite to each other with respect to a vertical direction. The first half-part is provided with a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a seat for housing the breasts in a more comfortable way keeping the function of separation between the breasts of the user and in which one of the protrusions has a greater protrusion extension than the other protrusion. The second half-part, on the other hand, comprises one arched portion (26) only. This shape of the cushion (5) can for example be adapted in the case in which the user (15) underwent a mastectomy or quadrantectomy or plastic surgery operation on one breast only.

[0042] With reference to the cushions (5) the vertical and horizontal symmetry directions refer to the gravity direction when the cushion (5) is applied on the breast support (11) and the breast support (11) is in the condition worn by the user (15).

[0043] The cushion (5) is provided with a system of fixing (6) to the band (8) for anchoring the cushion (5) to the band (8) in an internal front position, this system of fixing (6) of the cushion (5) being of the tear-away type with male-female coupling, that is to say, of the type comprising (Fig. 10) a first fixing coupling (9) positioned on the cushion (5) and a second fixing coupling (10) positioned on the band (8) in which the first fixing coupling (9) and the second fixing coupling (10) are provided with a releasable textile hook and loop system. For example, the cushion (5) can be provided with a first fixing coupling (9) of the female type and the band (8) can be provided with a second fixing coupling (10) of the male type or vice-versa. The fixing system (6) is placed in the region of contact between the band (8) and the cushion (5) in such a way that the zone of the cushion in contact with the skin has no seams or the like in order to prevent rubbing. The described cushion (5) has the specific function of separating the breasts.

[0044] All the seams present on the cushion (5) or on the band (8) are turned inwards in such a way as not to be in contact with the user's skin when the breast support (11) is in a worn condition, thus preventing rubbing with the skin. When one refers to the seams present on the band (8), one wants to also indicate the seams present in correspondence of the elastic elements.

[0045] The cushion (5) is a padded cushion in which the padding is made of natural fibres, preferably of kapok fibre or ceiba pentandra or anyway a fibre having a density of approximately 0.35 g/cubic cm.

[0046] The shape of the cushion may vary according to personal requirements and it is provided that in some embodiments it can be modified upon request at specialized retailers adding or removing some padding portions. For this purpose there is also provided the supply of a kit with additional padding material and the cushion can also be provided with fastening means which allow to open the cushion to access the internal padding in order to add

or remove padding material.

[0047] The band (8) can also be provided with shaped cups (7) for accommodating the breasts in a more comfortable way and keeping them in position more effectively. The cups (7) can be shaped according to different sizes.

[0048] One can provide, therefore, series of breast supports (11) in which there are different combinations of size of the shaped cups (7) and of length of the band (8). For example one can provide bands (8) adapted for the circumference of the chest of the user (15) which are between 60 cm and 110 cm and cups (7) which are adapted for breast sizes between 32 and 46 according to different combinations between sizes of the band (8) and sizes of the cups (7). For instance one can have a series of bands (8) adapted for a circumference of the chest of the user (15) of 80 cm which are different on the basis of the size of the cups (7), that is to say, A, B, C, D, E, F, G, etc. For instance one can have a series of bands (8) adapted for a circumference of the chest of the user (15) of 110 cm which are different on the basis of the size of the cups (7), that is to say, A, B, C, D, E, F, G, etc.

[0049] Also the transverse height extension of the band (8) can be variable depending, for example, on the sizes of the cups (7).

[0050] In cases of large breasts or breast surgery, the breast support (11) is particularly advantageous because, thanks to the breast separating cushion (5), it is possible to prevent rubbing between the breasts, with consequent irritations, sweating or dermatitis. Furthermore, the breast support (11) according to the invention is especially adapted also for use during night or resting hours, thus slowing the ageing of the breasts.

[0051] As to women who underwent breast surgery, after a mastectomy or quadrantectomy or plastic surgery operation, the use of the breast support (11) according to the invention is particularly advantageous because, thanks to the cushion (5), it prevents the healthy breast from lying over the operated one, preventing sweating and rubbing and consequent irritations above all considering that the skin, after the operation, is sensitive and delicate. Thanks to its shape, to the fabrics used for making it and to the characteristic of having all the internal seams turned inwards, therefore not in contact with the skin, it is also indicated in case of dermatitis. In a particular embodiment, as previously explained, the breast support (11) according to the invention can also be made in a version, which is adapted to be worn after radiotherapy sessions.

[0052] The solution according to the present invention, therefore, has advantages for the user (15) who underwent mastectomy or quadrantectomy, breast plastic surgery or reconstruction operations because the solution of the band (8) according to the invention, which is provided with a separation cushion (5) and which is preferably without shoulder straps, allows to prevent rubbing and transpiration problems on the skin, which is already sensitive and delicate. Furthermore, the same benefits

are immediately extended also to the case of a user (15) with allergy or dermatological problems.

[0053] In general also in the case of users who are not subject to the previously described problems or diseases, the solution according to the present invention allows to obtain a high degree of comfort, particularly but not necessarily in the resting phases preventing problems of rubbing between the breasts and of transpiration in the groove between the breasts. Furthermore, the solution according to the invention, by keeping the breasts in a condition of reciprocal separation with a containment action, also allows to reduce the occurrence of wrinkles in the groove between the breasts.

[0054] In conclusion the present invention relates to (Fig. 1, Fig. 4, Fig. 5, Fig. 7, Fig. 10) a breast support (11) provided with a band (8) having an elongate shape which, when the breast support (11) is in a condition worn by a user (15), encircles the chest of the user (15) in correspondence of a front side (16) of the breast support that corresponds to the zone of the breasts, the term front referring to a position corresponding to the position of the breasts of the user (15) of the breast support (11) when the breast support (11) is in a condition worn by the user (15), in which the breast support comprises at least one cushion (5) of separation between the breasts which is applicable to the band (8) by means of a fixing system (6) in an application zone which, when the breast support (11) is in a condition worn by the user (15), is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts.

[0055] The present invention also relates to (Fig. 1, Fig. 4, Fig. 5, Fig. 7, Fig. 10, Fig. 12, Fig. 13, Fig. 14, Fig. 15, Fig. 16, Fig. 17) a cushion (5) of separation between the breasts which includes a fixing system (6) for the application of the cushion (5) to a band (8) in an application zone which, when the breast support (11) is in a condition worn by the user (15), is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts, according to a configuration in which the cushion (5) and the band (8) together form a support for the breast (11) according to what has been previously described.

[0056] The present invention also relates to a method for making a breast support (11) wherein the method includes a step of providing a breast supporting band (8) having an elongate shape which, when the breast support (11) is in a condition worn by a user (15), encircles the chest of the user (15), the method being characterised in that it further includes the steps of:

- providing a cushion (5) for the separation of the breasts;
- providing a fixing system (6) between the cushion (5) and the band (8) wherein the fixing system (6) is configured in such a way that, when the breast support (11) is in a condition worn by the user (15), the

cushion (5) fixed to the band (8) is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts.

[0057] Furthermore, the manufacturing method can further comprise a phase of personalization and change of a padding of the cushion (5) in such a way as to change the shape, width, height or thickness of the cushion according to the shape of the breasts of the user.

[0058] The realization of the band (8) can occur according to any construction technique adopted for the realization of specialized underwear, essential for the comfort and for the improvement of women's quality of life.

[0059] The breast support according to the invention is essentially included in the category of "shaped breast supports", where by shaped breast support one means a product that keeps differentiated the size related to the circumference of the torso from that of the breast cups.

[0060] In general it can be provided that the method for manufacturing the breast support comprises the steps of:

- identifying the build of the person for example by measuring the circumference of the chest and the size of the cup;
- identifying the breast separating cushion (5) by the same criterion of realization of the shaped sizes, that is to say, on the basis of the principle according to which to larger cups (7) corresponds a larger cushion (5) and vice-versa.

[0061] The description of the present invention has been made with reference to the enclosed figures in a preferred embodiment, but it is evident that many possible changes, modifications and variations will be immediately clear to those skilled in the art in the light of the previous description. Thus, it must be underlined that the invention is not limited to the previous description, but includes all the changes, modifications and variations in accordance with the appended claims.

NOMENCLATURE USED

[0062] With reference to the identification numbers in the enclosed figures, the following nomenclature has been used:

1. Fastening
2. First elastic element
3. First stick
4. First fastening coupling
5. Cushion
6. Fixing system
7. Cup
8. Band
9. First fixing coupling

10. Second fixing coupling
11. Breast support
12. Second elastic element
13. Second stick
14. Second fastening coupling
15. User
16. Front side
17. Back side
18. Upper edge
19. Lower edge
20. First end
21. Second end
22. Greater height portion
23. Recess
24. First protrusion
25. Second protrusion
26. Arched portion
- X. Thickness
- Y. Width
- Z. Height

Claims

1. Breast support (11) provided with a band (8) having an elongate shape which, when the breast support (11) is in a condition worn by a user (15), encircles the chest of the user (15) in correspondence of a front side (16) of the breast support that corresponds to the zone of the breasts, the term front referring to a position corresponding to the position of the breasts of the user (15) of the breast support (11) when the breast support (11) is in a condition worn by the user (15), **characterised in that** the breast support comprises at least one cushion (5) of separation between the breasts which is applicable to the band (8) by means of a fixing system (6) in an application zone which, when the breast support (11) is in a condition worn by the user (15), is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts.
2. Breast support (11) according to the previous claim, **characterised in that** the band (8) is an open band, meaning that it is not closed on itself in a circular form, but it is an element with an elongate shape which is provided with a first end (20) and with a second end (21) opposite to each other with respect to the elongate shape of the band (8), the band (8) being provided with a fastening (1) of reciprocal connection of a first end (20) and second end (21) with the formation of an essentially circular shape.
3. Breast support (11) according to the previous claim, **characterised in that** the fastening (1) is placed on the front side (16) of the band (8) in a position corresponding to the position of the breasts of the user

- (15) of the breast support (11) when the breast support (11) is in a worn condition.
4. Breast support (11) according to the previous claim, **characterised in that** the fixing system (6) of the cushion (5) is placed in a condition of proximity to the fastening (1). 5
 5. Breast support (11) according to any of the previous claims, **characterised in that** the fixing system (6) of the cushion (5) is a fixing system of the tear-away type with male-female coupling. 10
 6. Breast support (11) according to any of the previous claims 2 to 5, **characterised in that** the front fastening (1) is a fastening of the tear-away type with male-female coupling. 15
 7. Breast support (11) according to any of the previous claims, **characterised in that** the band (8) comprises at least one elastic element (2, 12) which is placed along an edge (18, 19) of the band (8), the at least one elastic element developing for at least one part of the length development of the band (8). 20
 8. Breast support (11) according to the previous claim, **characterised in that** the band (8) includes: 25
 - a first elastic element (2) which is placed along an upper edge (18) of the band (8), in which the term upper refers to the gravity direction when the breast support (11) is in a condition worn by the user (15); 30
 - a second elastic element (12) which is placed along a lower edge (19) of the band (8), in which the term lower refers to the gravity direction when the breast support (11) is in a condition worn by the user (15). 35
 9. Breast support (11) according to any of the previous claims 7 to 8, **characterised in that** the at least one elastic element (2, 12) is made in the form of a soft elastic tape. 40
 10. Breast support (11) according to any of the previous claims, **characterised in that** seams present on the band (8) or on the cushion (5) are turned inwards in such a way as not to be in contact with the user's skin when the breast support (11) is in a worn condition. 45
 11. Breast support (11) according to any of the previous claims, **characterised in that** the band (8) or at least the parts of band which are in contact with the user's skin when the breast support (11) is in a worn condition are made of a material, woven or non-woven, of the non-allergenic type or of silk or of a combination of polyamide, elaston and polyester. 50
 12. Breast support (11) according to any of the previous claims, **characterised in that** the band (8) comprises at least one pair of sticks (3, 13) placed essentially transversely with respect to the elongate shape of the band (8). 55
 13. Breast support (11) according to the previous claim, **characterised in that** the band (8) includes a first stick (3) and a second stick (13) which, when the breast support is in a condition worn by the user (15), are placed laterally outside with respect to the breasts.
 14. Breast support (11) according to any of the previous claims 12 to 13, **characterised in that** the sticks (3, 13) are made of a soft and resistant plastic material.
 15. Breast support (11) according to any of the previous claims, **characterised in that** the band (8) is provided with at least one portion having a greater height (22) than the rest of the band, said portion having a greater height being placed on the front side (16) of the band (8) in correspondence of the zone of the breasts of the user (15), the band (8) being shaped in such a way as to have the portion having a greater height (22) on the front side and a portion having a smaller height on the back side (17) of the band (8), the term back referring to a position corresponding to the position of the back of the user (15) of the breast support (11) when the breast support (11) is in a condition worn by the user (15).
 16. Breast support (11) according to any of the previous claims, **characterised in that** it is without supporting shoulder straps.
 17. Cushion (5) of separation between the breasts, **characterised in that** it includes a fixing system (6) for the application of the cushion (5) to a band (8) in an application zone which, when the breast support (11) is in a condition worn by the user (15), is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts, according to a configuration in which the cushion (5) and the band (8) together form a breast support (11) according to any of the previous claims.
 18. Cushion (5) of separation between the breasts according to the previous claim, **characterised in that** it has an essentially ovoid shape in which the thickness (X) of the cushion (5) is smaller than its width (Y) and than its height (Z).
 19. Cushion (5) of separation between the breasts according to claim 17, **characterised in that** it has a plan shape essentially symmetrical in two directions of which a vertical direction and a horizontal direction

in which the plan shape of the cushion is essentially "8-shaped" with a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a housing seat of the breasts.

20. Cushion (5) of separation between the breasts according to claim 17, **characterised in that** it has a plan shape essentially symmetrical in one direction only according to a vertical symmetry direction with a first protrusion (24) and a second protrusion (25) separated by a recess (23) for housing the breasts in which one of the protrusions has a greater protrusion extension than the other protrusion.

21. Cushion (5) of separation between the breasts according to claim 17, **characterised in that** it has a plan shape essentially symmetrical in one direction only according to a horizontal symmetry direction in which a first half-portion is essentially shaped as a "half-8" and a second half-portion is shaped with an arched portion (26) in which the first half-portion includes a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a housing seat of the breast.

22. Cushion (5) of separation between the breasts according to claim 17, **characterised in that** it has a plan shape essentially asymmetrical in the two directions in which there are a first half-part and a second half-part which are opposite to each other with respect to a vertical direction, the first half-part being provided with a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a housing seat of the breasts and in which one of the protrusions has a greater protrusion extension than the other protrusion, the second half-part comprising one arched portion (26) only.

23. Method for manufacturing a breast support (11), wherein the method includes a step of providing a breast supporting band (8) having an elongate shape which, when the breast support (11) is in a condition worn by a user (15), encircles the chest of the user (15) in correspondence of a front side (16) of the breast support that corresponds to the zone of the breasts, the method being **characterised in that** it further includes the steps of:

- providing a cushion (5) for the separation of the breasts;
- providing a fixing system (6) between the cushion (5) and the band (8) wherein the fixing system (6) is configured in such a way that, when the breast support (11) is in a condition worn by the user (15), the cushion (5) fixed to the band (8) is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between

the breasts.

24. Method for manufacturing a breast support (11) according to the previous claim, **characterised in that** it further includes a step of personalization and change of a padding of the cushion (5) in such a way as to change the shape, width, height or thickness of the cushion according to the shape of the breasts of the user.

Amended claims in accordance with Rule 137(2) EPC.

1. Breast support (11) provided with a band (8) having an elongate shape which, when the breast support (11) is in a condition worn by a user (15), encircles the chest of the user (15) in correspondence of a front side (16) of the breast support that corresponds to the zone of the breasts, the band (8) being an open band, meaning that it is not closed on itself in a circular form, but it is an element with an elongate shape which is provided with a first end (20) and with a second end (21) opposite to each other with respect to the elongate shape of the band (8), the band (8) being provided with a fastening (1) of the tear-away type with male-female coupling for reciprocal connection of a first end (20) and second end (21) with the formation of an essentially circular shape, the fastening (1) being placed on the front side (16) of the band (8) in a position corresponding to the position of the breasts of the user (15) of the breast support (11) when the breast support (11) is in a worn condition, the term front referring to a position corresponding to the position of the breasts of the user (15) of the breast support (11) when the breast support (11) is in a condition worn by the user (15), in which the breast support comprises at least one cushion (5) of separation between the breasts which is applicable to the band (8) by means of a fixing system (6) in an application zone which, when the breast support (11) is in a condition worn by the user (15), is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts **characterized in that** the band (8) comprises:

- at least one elastic element (2, 12) which is placed along an edge (18, 19) of the band (8), the at least one elastic element developing for at least one part of the length development of the band (8); and
- at least one pair of sticks (3, 13) placed essentially transversely with respect to the elongate shape of the band (8), of which a first stick (3) and a second stick (13) which, when the breast support is in a condition worn by the user (15), are placed laterally outside with respect to the

breasts.

2. Breast support (11) according to the previous claim, **characterised in that** the fixing system (6) of the cushion (5) is placed in a condition of proximity to the fastening (1). 5
3. Breast support (11) according to any of the previous claims, **characterised in that** the fixing system (6) of the cushion (5) is a fixing system of the tear-away type with male-female coupling. 10
4. Breast support (11) according to any of the previous claims, **characterised in that** the band (8) includes: 15
 - a first elastic element (2) which is placed along an upper edge (18) of the band (8), in which the term upper refers to the gravity direction when the breast support (11) is in a condition worn by the user (15); 20
 - a second elastic element (12) which is placed along a lower edge (19) of the band (8), in which the term lower refers to the gravity direction when the breast support (11) is in a condition worn by the user (15). 25
5. Breast support (11) according to any of the previous claims, **characterised in that** the at least one elastic element (2, 12) is made in the form of a soft elastic tape. 30
6. Breast support (11) according to any of the previous claims, **characterised in that** seams present on the band (8) or on the cushion (5) are turned inwards in such a way as not to be in contact with the user's skin when the breast support (11) is in a worn condition. 35
7. Breast support (11) according to any of the previous claims, **characterised in that** the band (8) or at least the parts of band which are in contact with the user's skin when the breast support (11) is in a worn condition are made of a material, woven or nonwoven, of the non-allergenic type or of silk or of a combination of polyamide, elaston and polyester. 40
8. Breast support (11) according to any of the previous claims, **characterised in that** the sticks (3, 13) are made of a soft and resistant plastic material. 45
9. Breast support (11) according to any of the previous claims, **characterised in that** the band (8) is provided with at least one portion having a greater height (22) than the rest of the band, said portion having a greater height being placed on the front side (16) of the band (8) in correspondence of the zone of the breasts of the user (15), the band (8) being shaped in such a way as to have the portion having a greater 50

height (22) on the front side and a portion having a smaller height on the back side (17) of the band (8), the term back referring to a position corresponding to the position of the back of the user (15) of the breast support (11) when the breast support (11) is in a condition worn by the user (15).

10. Breast support (11) according to any of the previous claims, **characterised in that** it is without supporting shoulder straps.
11. Cushion (5) of separation between the breasts, in which the cushion (5) includes a fixing system (6) for the application of the cushion (5) to a band (8) in an application zone which, when the breast support (11) is in a condition worn by the user (15), is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts, according to a configuration in which the cushion (5) and the band (8) together form a breast support (11) according to any of the previous claims, the fixing system (6) for the application of the cushion (5) being of the tear-away type with male-female coupling, that is to say, of the type comprising a first fixing coupling (9) positioned on the cushion (5) and a second fixing coupling (10) positioned on the band (8) in which the first fixing coupling (9) and the second fixing coupling (10) are provided with a releasable textile hook and loop system, **characterized in that** the cushion (5) is a padded cushion and the cushion (5) is provided with fastening means which allow to open the cushion to access the internal padding in order to add or remove padding material so that the shape of the cushion can be varied.
12. Cushion (5) of separation between the breasts according to the previous claim, **characterised in that** it has an essentially ovoid shape in which the thickness (X) of the cushion (5) is smaller than its width (Y) and than its height (Z).
13. Cushion (5) of separation between the breasts according to claim 11, **characterised in that** it has a plan shape essentially symmetrical in two directions of which a vertical direction and a horizontal direction in which the plan shape of the cushion is essentially "8-shaped" with a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a housing seat of the breasts.
14. Cushion (5) of separation between the breasts according to claim 11, **characterised in that** it has a plan shape essentially symmetrical in one direction only according to a vertical symmetry direction with a first protrusion (24) and a second protrusion (25) separated by a recess (23) for housing the breasts in which one of the protrusions has a greater protru-

sion extension than the other protrusion.

15. Cushion (5) of separation between the breasts according to claim 11, **characterised in that** it has a plan shape essentially symmetrical in one direction only according to a horizontal symmetry direction in which a first half-portion is essentially shaped as a "half-8" and a second half-portion is shaped with an arched portion (26) in which the first half-portion includes a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a housing seat of the breast. 5
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16. Cushion (5) of separation between the breasts according to claim 11, **characterised in that** it has a plan shape essentially asymmetrical in the two directions in which there are a first half-part and a second half-part which are opposite to each other with respect to a vertical direction, the first half-part being provided with a first protrusion (24) and a second protrusion (25) separated by a recess (23) which forms a housing seat of the breasts and in which one of the protrusions has a greater protrusion extension than the other protrusion, the second half-part comprising one arched portion (26) only. 15
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17. Method for manufacturing a breast support (11), wherein the method includes a step of providing a breast supporting band (8) having an elongate shape which, when the breast support (11) is in a condition worn by a user (15), encircles the chest of the user (15) in correspondence of a front side (16) of the breast support that corresponds to the zone of the breasts, in which the method further includes the steps of: 30
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 - providing a cushion (5) for the separation of the breasts;
 - providing a fixing system (6) between the cushion (5) and the band (8) wherein the fixing system (6) is configured in such a way that, when the breast support (11) is in a condition worn by the user (15), the cushion (5) fixed to the band (8) is in an intermediate position between the breasts of the user (15) in such a way that the cushion (5) is an element of separation between the breasts **characterised in that** it further includes a step of personalization and change of a padding of the cushion (5) in such a way as to change the shape, width, height or thickness of the cushion according to the shape of the breasts of the user, the cushion (5) being a padded cushion in which the padding is made of natural fibres and the cushion (5) being provided with fastening means which allow to open the cushion to access the internal padding in order to add or remove padding material so that the shape of the cushion can be varied during the 40
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step of personalization and change of a padding of the cushion (5).

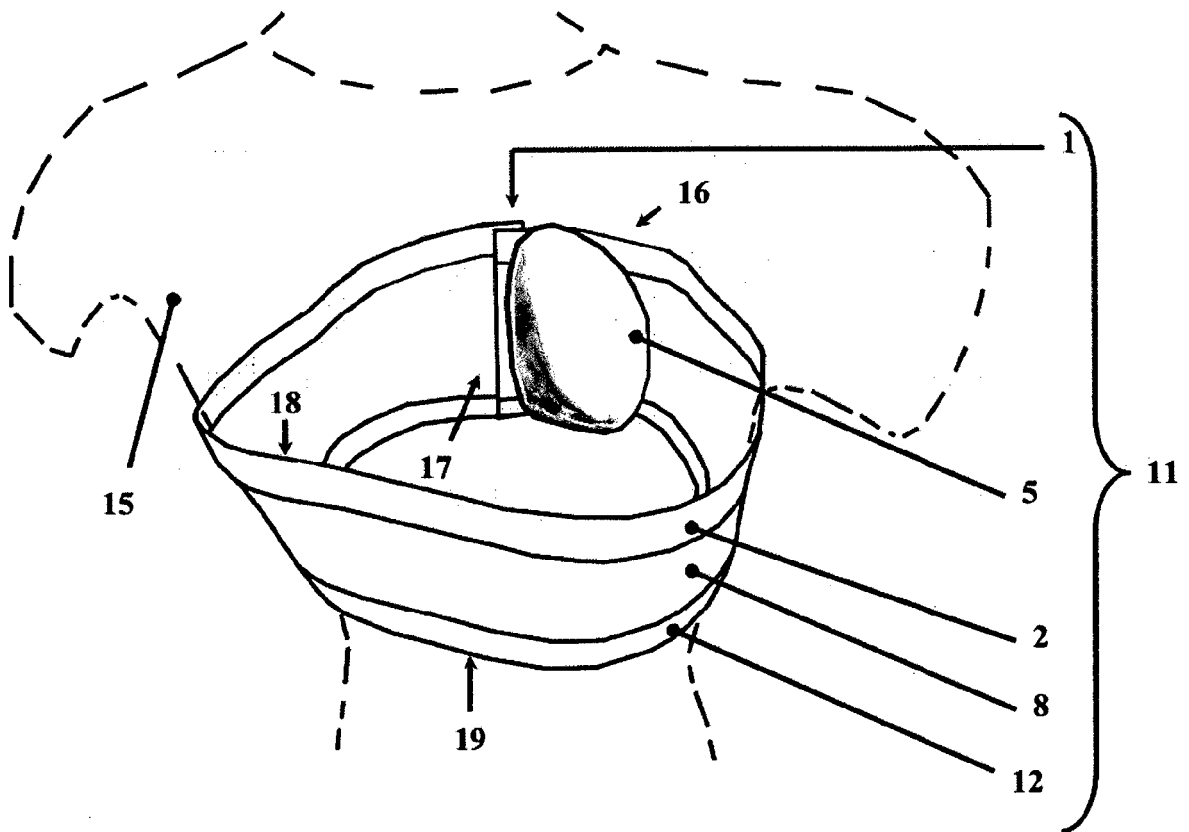


Fig. 1

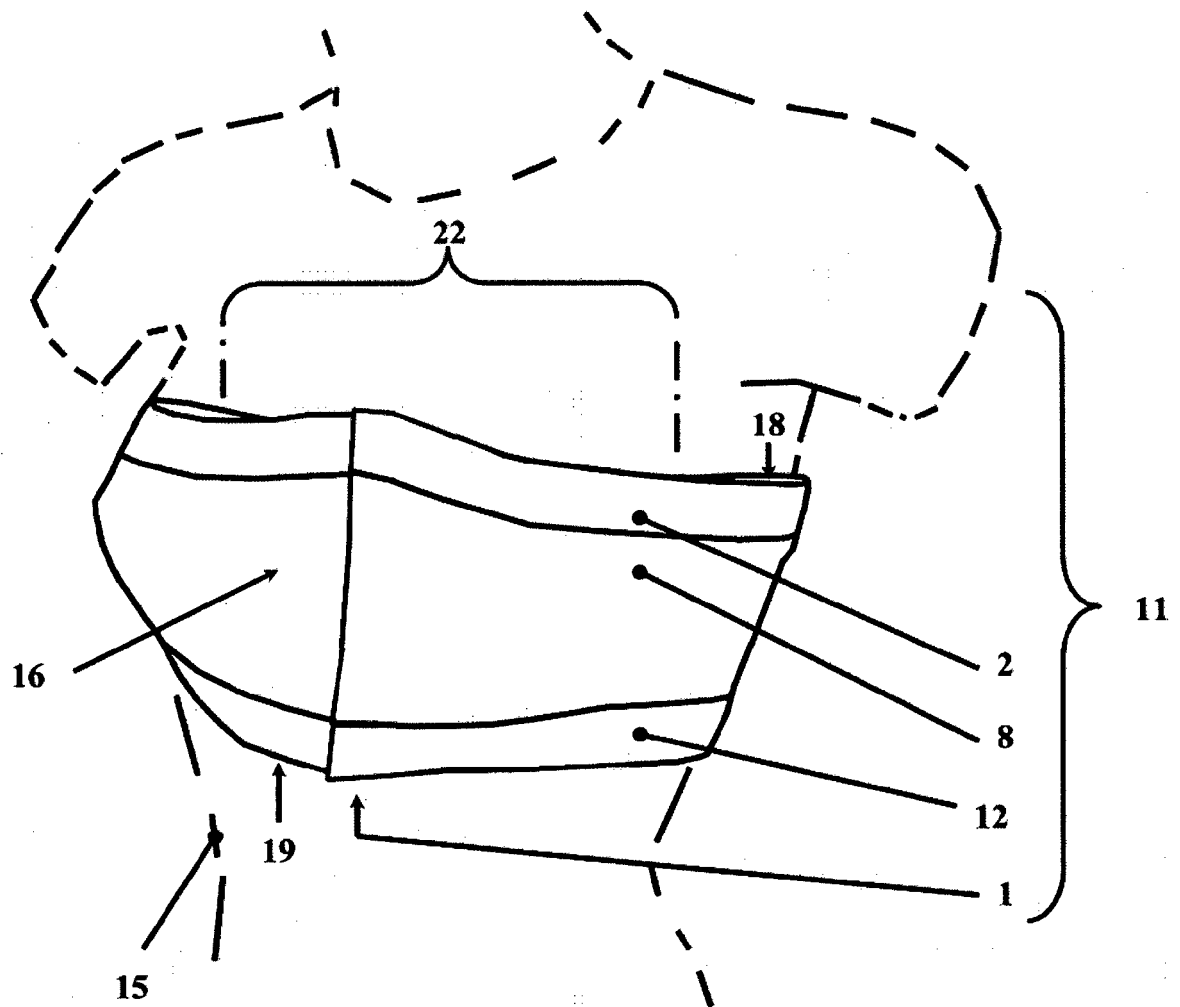


Fig. 2

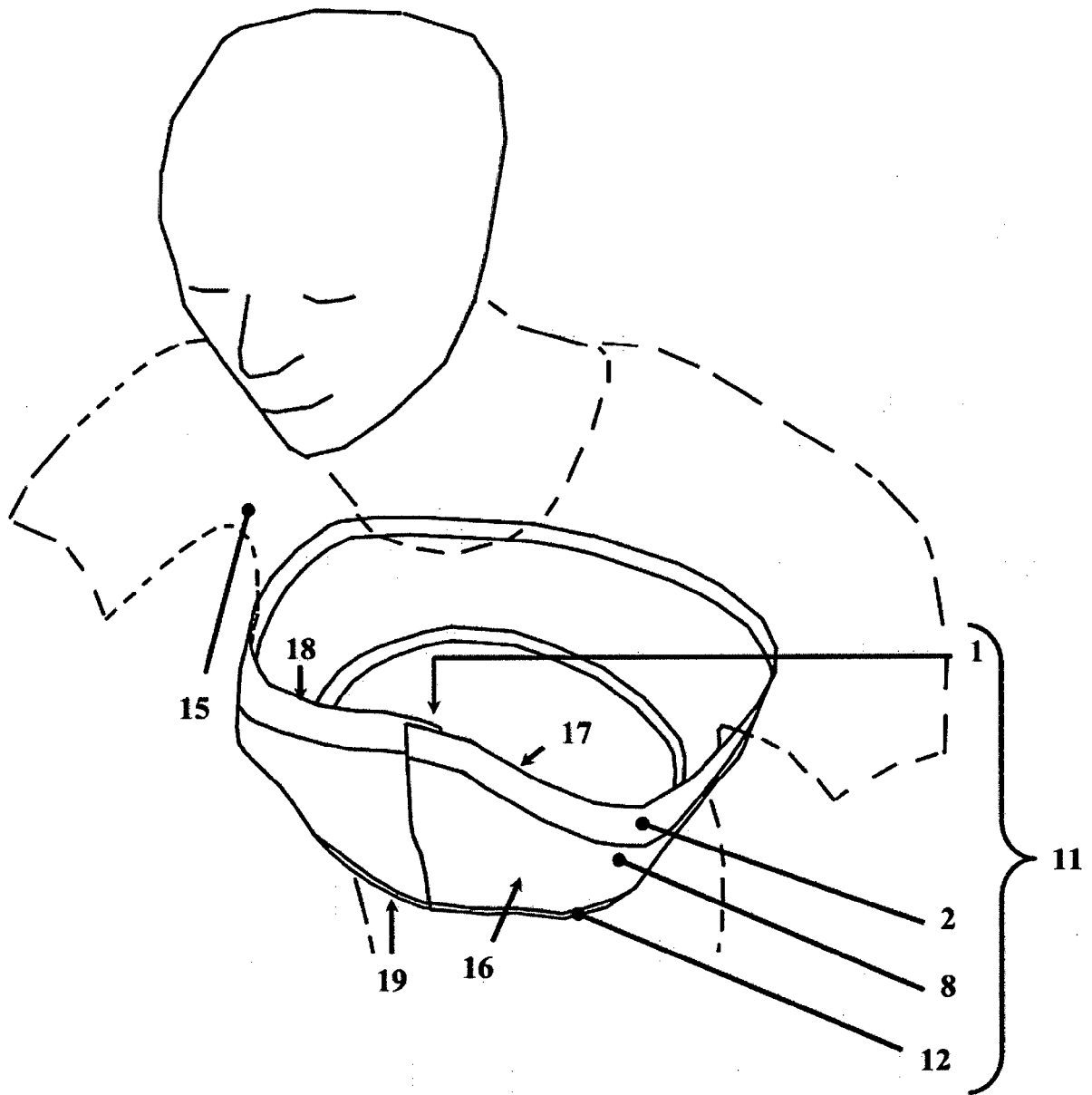


Fig. 3

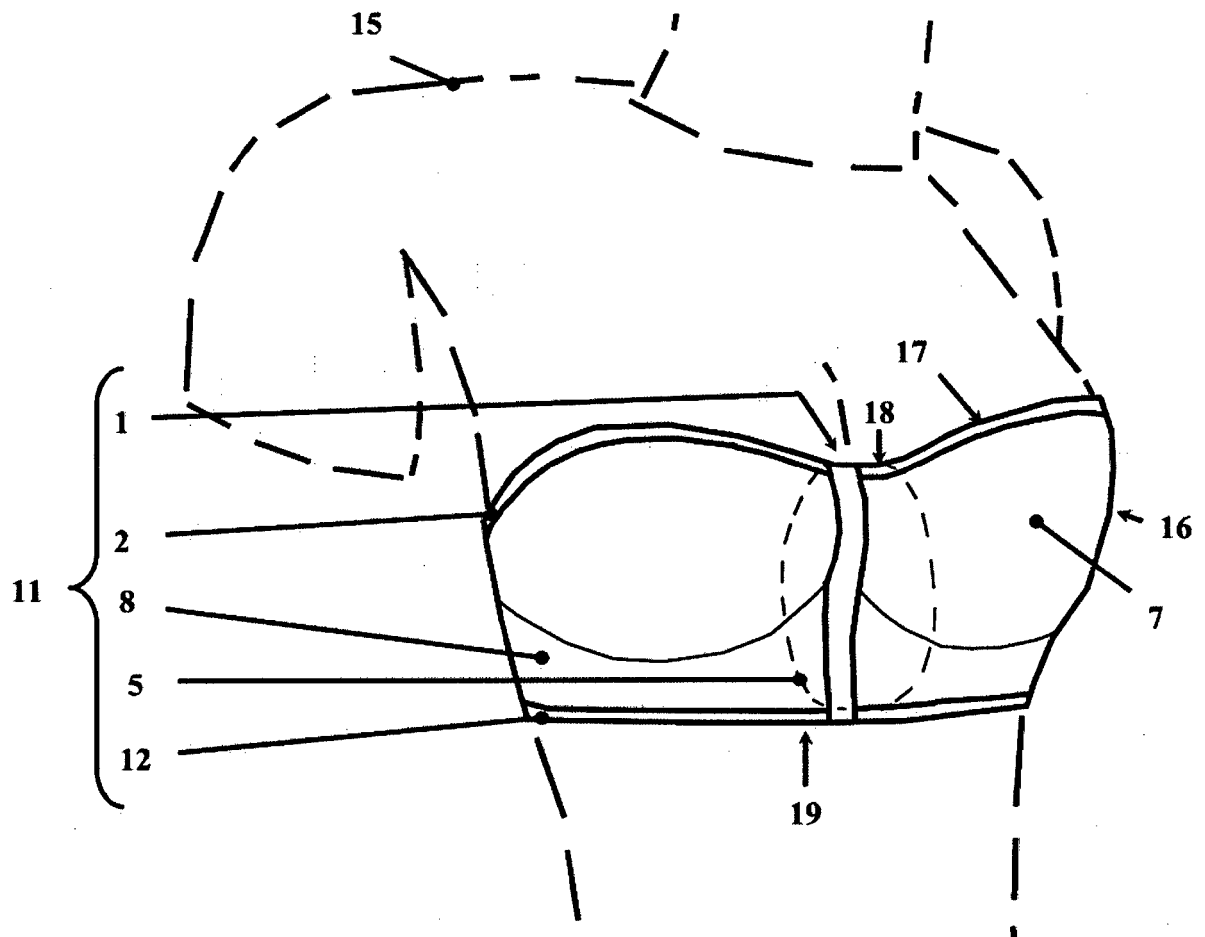


Fig. 4

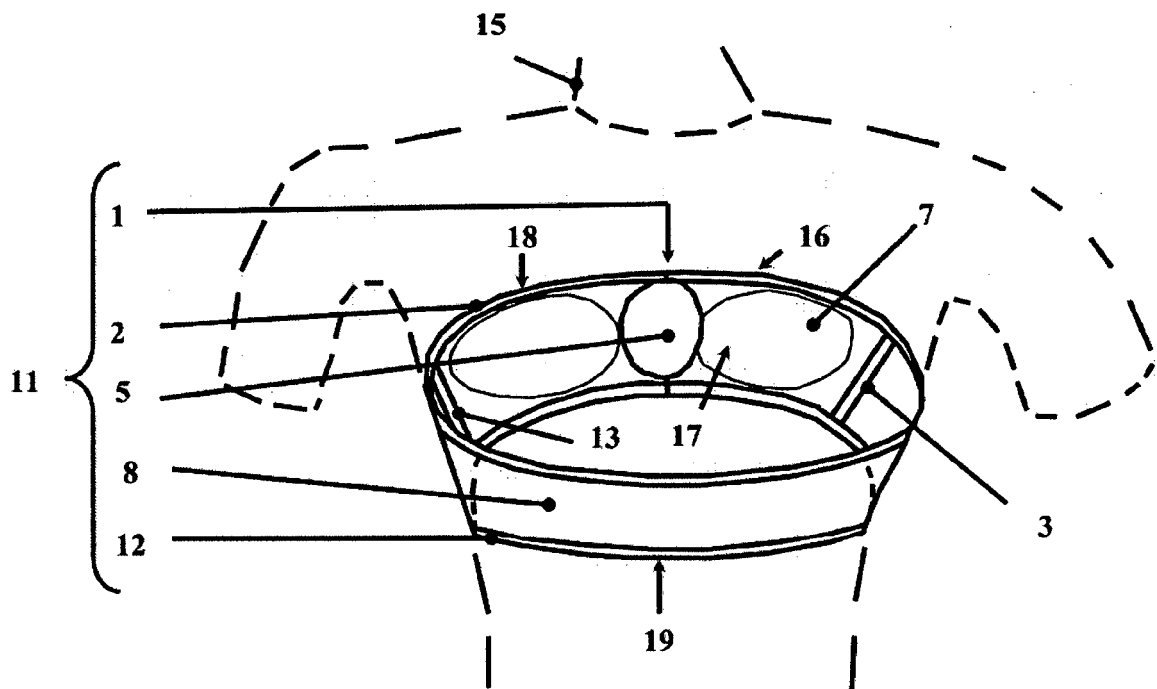


Fig. 5

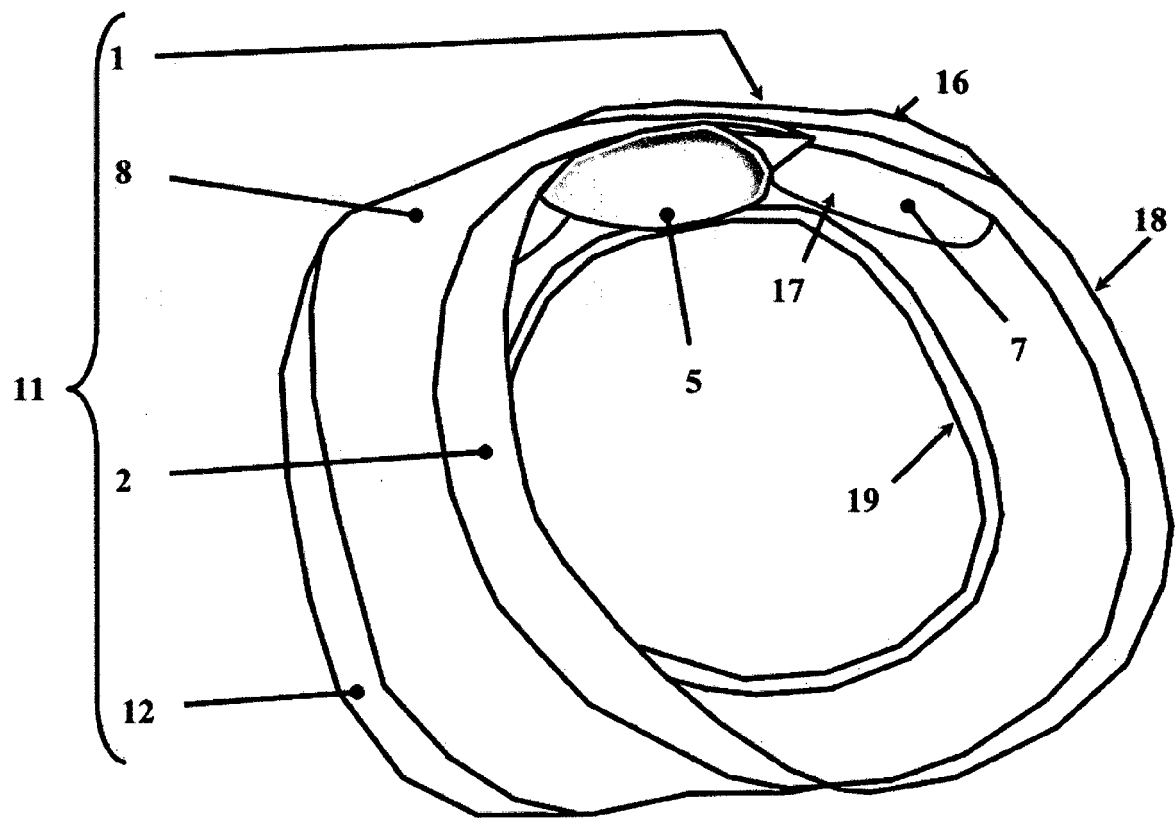


Fig. 6

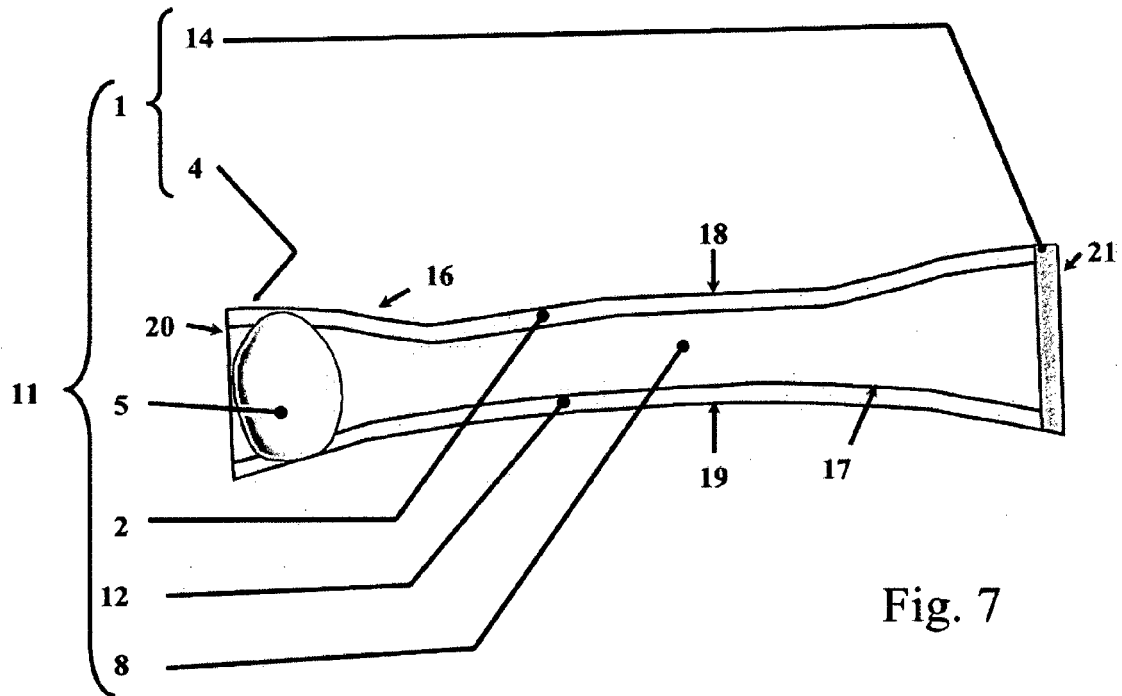


Fig. 7

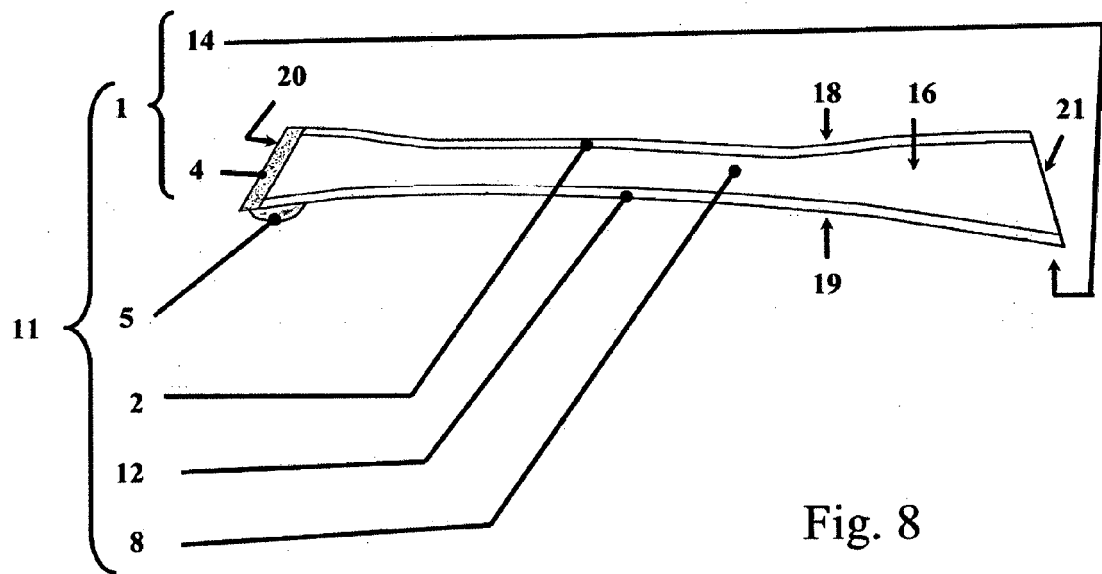


Fig. 8

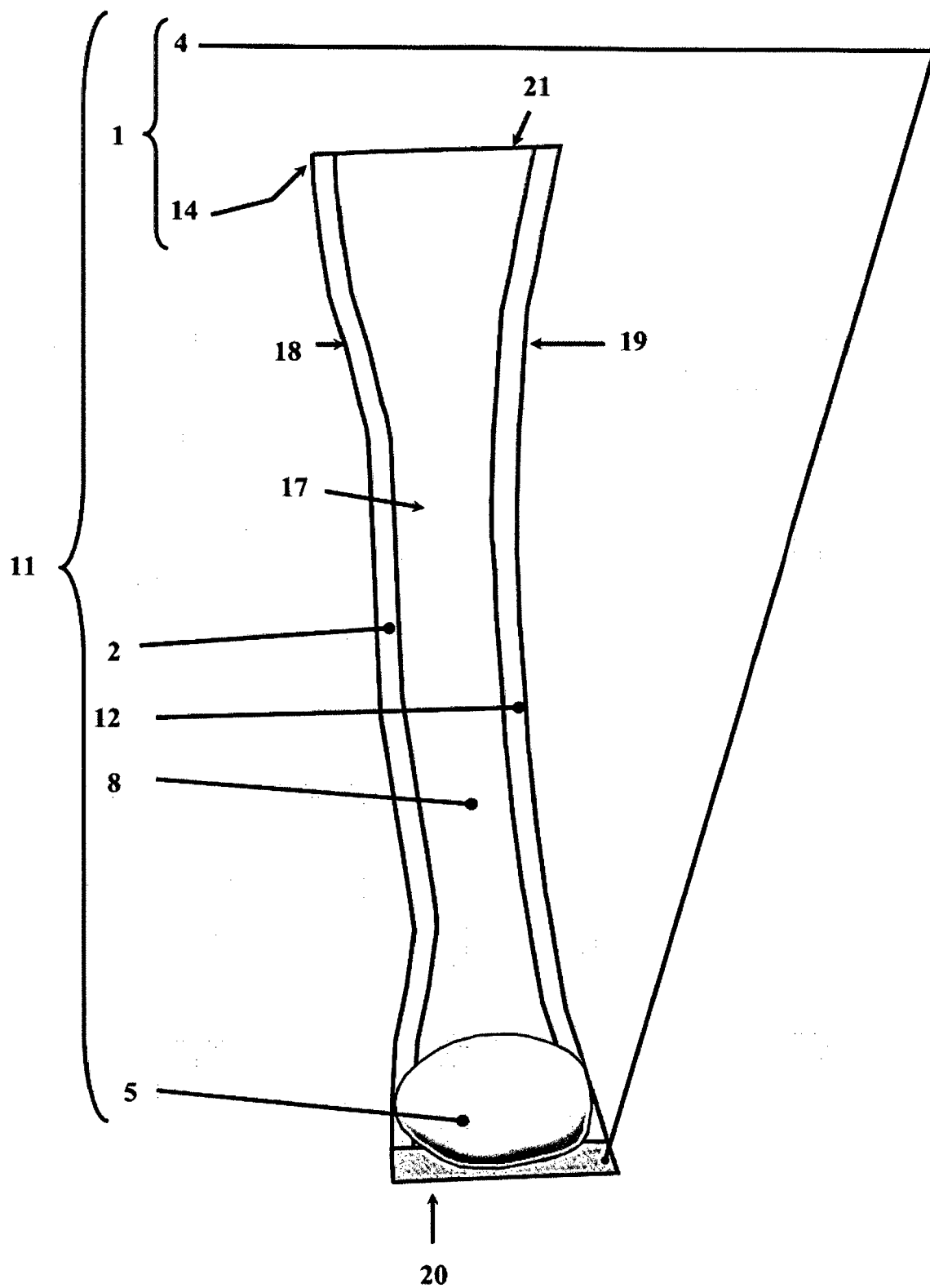


Fig. 9

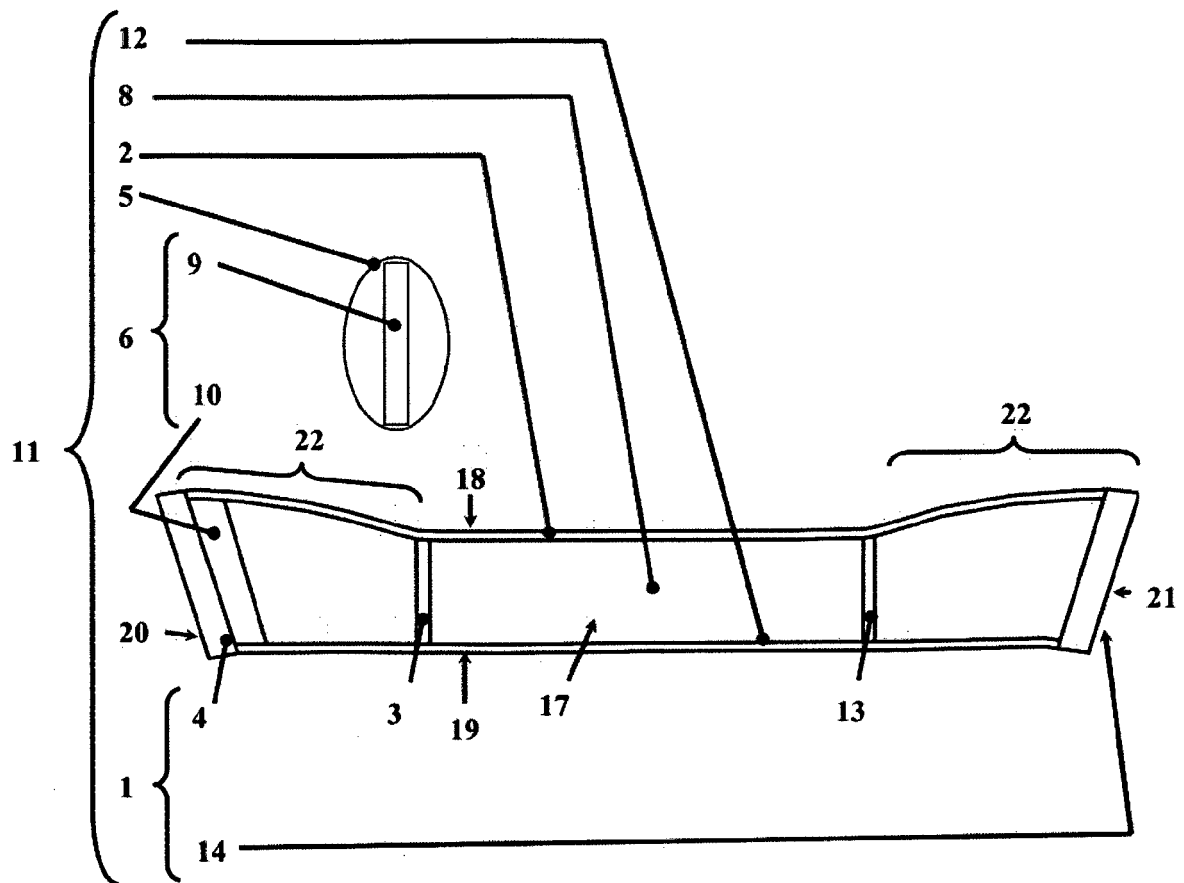


Fig. 10

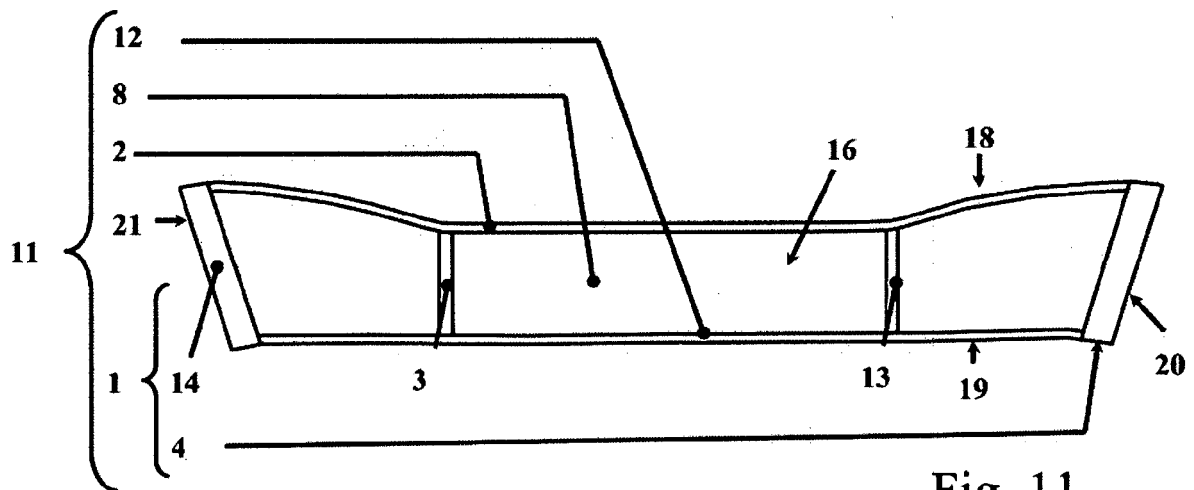


Fig. 11

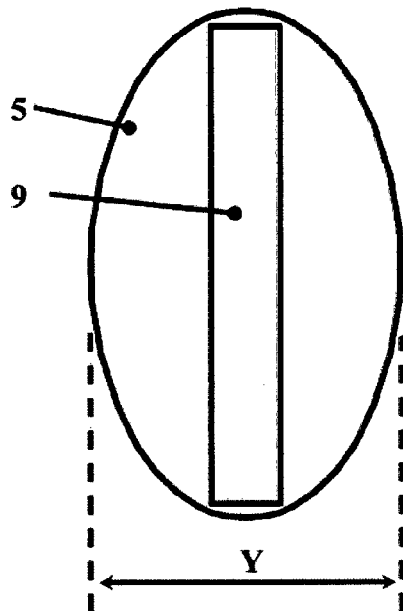


Fig. 12

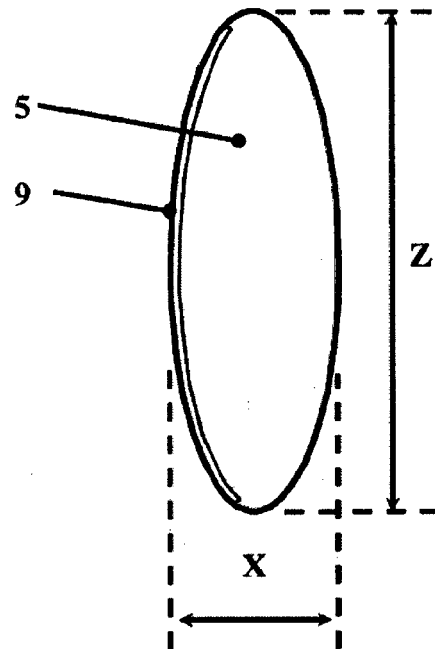


Fig. 13

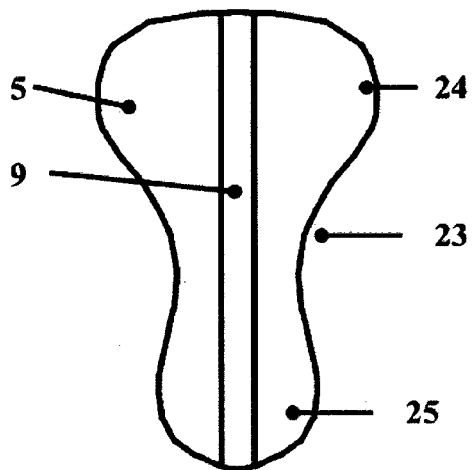


Fig. 14

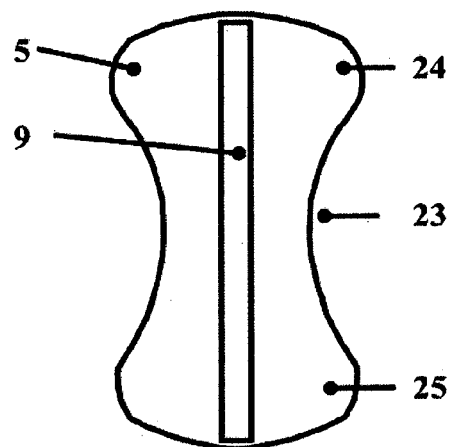


Fig. 15

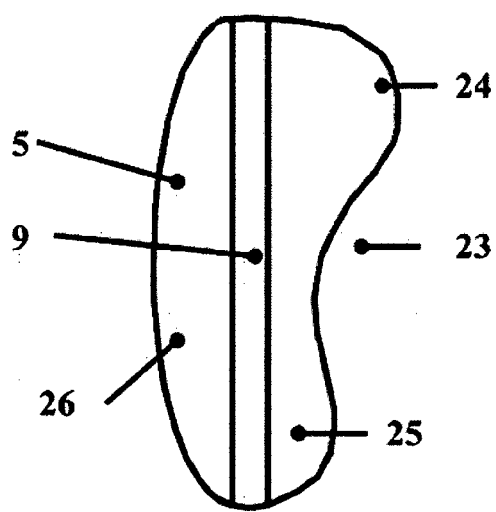


Fig. 16

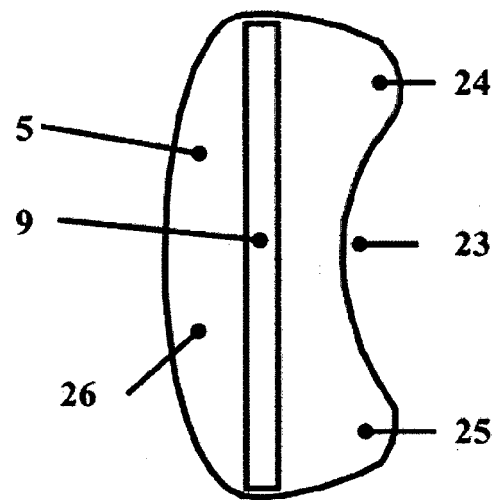


Fig. 17



EUROPEAN SEARCH REPORT

 Application Number
 EP 15 00 1014

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Y	* paragraphs [0041] - [0048], [0052]; figures 1,4,5 *		
X	US 8 047 892 B1 (DEMPSEY DARLENE S [US]) 1 November 2011 (2011-11-01) * column 4, line 65 - column 6, line 10; figures 1a1b,5b,8 *	1,2, 7-11,15, 17-23	
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Y	US 2 912 983 A (HORN THELMA P) 17 November 1959 (1959-11-17) * column 1, line 55 - column 2, line 16; figures 1,5 *	12-14	
A	DE 20 2013 011873 U1 (HERRMANN BRIGITTE [DE]) 9 September 2014 (2014-09-09) * paragraphs [0023] - [0027]; figure 1 *	1,17,23	TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 10 September 2015	Examiner D'Souza, Jennifer
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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The members are as contained in the European Patent Office EDP file on
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