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(54) **A BREAST SUPPORT ARRANGEMENT**

BRUSTSTÜTZANORDNUNG

AGENCEMENT DE SUPPORT DE SEINS

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Description

[0001] This invention relates to a breast support arrangement.

[0002] It is known, for example from international publication number WO 2007/026136, to provide a breast support arrangement, e.g. a brassiere, which is configured such that the movement of one breast is inhibited by the mass of the other breast.

[0003] US 2008/0299870 similarly discloses a brassiere that includes a connecting member that crosses over the back of a wearer to draw a first breast cup towards a second wing portion associated with a second breast cup and draw a second breast cup towards a first wing portion associated with the first breast cup.

[0004] Such breast support arrangements improve the support provided to a wearer's breasts by lifting each breast.

[0005] However, one drawback with breast support arrangements of this type is that once adjusted by a wearer to provide a desired degree of support in a static configuration they are unable to adapt as a wearer moves. As a result, such breast support arrangements cannot provide optimal support and comfort through a range of a wearer's movements, as may be encountered during normal use.

[0006] There is, therefore, a need for an improved breast support arrangement which obviates the aforementioned difficulty.

[0007] According to the invention there is provided a breast support arrangement comprising:

a first breast cup connected with a first wing portion;
and
a second breast cup connected with a second wing portion,
the first and second breast cups and wing portions being interconnected by a connecting member,
the connecting member:

passing from the first breast cup to the second breast cup via the second wing portion then the first wing portion; and
being or including an elastic member to draw the first breast cup towards the second wing portion, the second breast cup towards the first wing portion, and the first and second wing portions towards one another,

each wing portion including a wing guide to couple the connecting member to the wing portion and guide movement of the connecting member relative to the wing portion,
the breast support arrangement being characterised in that each wing guide includes a guide body which has a first side that defines a guide portion to receive the connecting member and maintain the relative orientation of respective portions of the connecting

member, and a second side through which the corresponding wing portion is secured to the wing guide, the breast support arrangement being further characterised in that the connecting member is moveable in use relative to each wing portion and associated wing guide in response to changes in a wearer's body position to adjust dynamically the configuration of the breast support arrangement.

[0008] The provision of a connecting member which is able to move relative to each of the first and second wing portions allows respective portions of the connecting member to adjust their length dynamically as a wearer moves, and so enable the breast support arrangement to continually adapt its configuration to provide optimal support and comfort throughout the wearer's range of movements.

[0009] Drawing the first breast cup towards the second wing portion and the second breast cup towards the first wing portion allows the breast support arrangement to lift each breast relative to a wearer's shoulders, and so provide a desired degree of support to each breast.

[0010] Meanwhile, drawing the first and second wing portions towards one another allows the breast support arrangement to damp around a wearer's torso to a desired extent, and so improves security by minimising the likelihood of the breast support arrangement becoming dislodged from the wearer's breasts.

[0011] In addition, the inclusion of wing guides enables the breast support arrangement to control the relative orientation of a first connecting member portion lying between the first breast cup and the second wing portion and a third connecting member portion lying between the first and second wing portions, and the relative orientation of a second connecting member portion lying between the second breast cup and the first wing portion and the third connecting member portion, and so control the relative extent to which the breast support arrangement provides support or security.

[0012] Furthermore, the provision of a guide body as described hereabove enables the relative extent to which the breast support arrangement provides support or security to be tailored readily during manufacture and assembly of the breast support arrangement.

[0013] In a preferred embodiment of the invention the breast support arrangement further includes a connecting member guide to maintain the relative orientation of a first connecting member portion lying between the first breast cup and the second wing portion and a second connecting member portion lying between the second breast cup and the first wing portion.

[0014] The inclusion of a connecting member guide helps to maintain a desired configuration of the connecting member relative to the first and second breast cups and wing portions during, e.g. washing, and so minimises any configuring a wearer needs to make when coming to put the breast support arrangement on.

[0015] Preferably the connecting member guide in-

cludes a separating portion which lies between the first and second connecting member portions.

[0016] The provision of a separating portion helps to ensure that the first and second connecting member portions are able to move readily relative to one another.

[0017] Conveniently the connecting member is adjustable in length. Such a feature allows a wearer to adjust a given breast support arrangement to fit her particular body shape.

[0018] The connecting member may be adjustable in length towards each end thereof. The ability to adjust the length of the connecting member at either end thereof readily enables a wearer to configure the breast support arrangement in a symmetrical manner.

[0019] Optionally the connecting member is selectively separable from at least one of the first breast cup and the second breast cup.

[0020] Such a feature facilitates assembly and fitting of the breast support arrangement.

[0021] In another preferred embodiment of the invention the connecting member is selectively separable into a plurality of separate connecting member elements. The ability to separate the connecting member into a plurality of connecting member elements provides a wearer with a further option for putting the breast support arrangement on.

[0022] Preferably the first and second breast cups are selectively separable from one another. Such an arrangement provides a wearer with another option of for putting the breast support arrangement on.

[0023] In a further preferred embodiment of the invention the breast support arrangement is in the form of an article of clothing.

[0024] The breast support arrangement may be in the form of one of:

an article of swimwear;
an article of nightwear; and
an article of sportswear.

[0025] In a still further preferred embodiment of the invention the breast support arrangement is in the form of a brassiere.

[0026] There now follows a brief description of a preferred embodiment of the invention, by way of non-limiting example, with reference being made to the accompanying drawings in which:

Figure 1 shows a rear elevational view of a breast support arrangement according to a first embodiment of the invention;

Figure 2 shows a perspective view from behind of the breast support arrangement shown in Figure 1; Figure 3 shows a perspective view from in front of the breast support arrangement shown in Figure 1; Figure 4 shows a wing guide forming part of the breast support arrangement shown in Figure 1; and Figure 5 shows a connecting member guide forming

part of the breast support arrangement shown in Figure 1.

[0027] A breast support arrangement according to a first embodiment of the invention is in the form of a brassiere and is designated generally by the reference numeral 10.

[0028] In other embodiments of the invention (not shown) the breast support arrangement may be in the form of an article of clothing such as an article of swimwear, an article of nightwear, or an article of sportswear.

[0029] The brassiere 10 includes a first breast cup 12 which is connected to a first wing portion 14, and a second breast cup 16 which is connected to a second wing portion 18.

[0030] In the embodiment shown the first breast cup 12 and the first wing portion 14, and the second breast cup 16 and the second wing portion 18, are each integrally formed from a single fabric panel. In other embodiments of the invention (not shown) the respective breast cups 12, 16 and wing portions 14, 18 may be formed from discrete fabric panels which are fastened to one another, e.g. by stitching.

[0031] The first and second breast cups 12, 16 and wing portions 14, 18 are interconnected by a connecting member 20.

[0032] The connecting member 20 passes from the first breast cup 12 to the second breast cup 16 via the second wing portion 18 then the first wing portion 14, and is moveable relative to each of the first and second wing portions 14, 18.

[0033] The connecting member 20 shown is an elastic member 22 which is formed from a conventional woven elastic fabric.

[0034] In other embodiments of the invention (not shown) the connecting member 20 may include one or more elastic members 22 within its length.

[0035] The connecting member 20 is adjustable in length at each end 24, 26 thereof using a buckle arrangement.

[0036] In other embodiments of the invention (not shown) the ends 24, 26 of the connecting member 20 may be separable from the corresponding first and second breast cup 12, 16.

[0037] The connecting member 20 may also be separable into a plurality of separate connecting member elements (not shown).

[0038] Each wing portion 14, 18 includes a wing guide 28 which couples the connecting member 20 to the respective wing portion 14, 18 and guides the movement of the connecting member 20 relative to the given wing portion 14, 18.

[0039] Each wing guide 28 includes a guide body 30 which defines a guide portion 32.

[0040] In the embodiment shown the guide portion 32 is an elongate first aperture 34. Other shapes of first aperture 34 are also possible.

[0041] Each wing guide 28 also includes a second aperture 36 through which the corresponding wing portion 14, 18 is secured to the wing guide 28.

[0042] The first and second apertures 34, 36 are inclined relative to one another.

[0043] The first and second apertures 34, 36 may be inclined at an angle lying between parallel and perpendicular to one another.

[0044] Preferably the inclination angle A lies between 0° and 40°, and in a particularly preferred embodiment of the invention the inclination angle A lies between 15° and 25°.

[0045] In the embodiment shown the inclination angle A is 20°.

[0046] This angle A determines the angle formed between a first connecting member portion 38 lying between the first breast cup 12 and the second wing portion 18 and a third connecting member portion 42 lying between the first and second wing portions 14, 18.

[0047] The aforementioned inclination angle A also determines the angle between a second connecting member portion 40 lying between the second breast cup 14 and the first wing portion 14 and the third connecting member portion 42.

[0048] As a result any tensile force generated in the connecting member 20 is distributed evenly between the first connecting member portion 38 and the third connecting member portion 42, and evenly between the second connecting member portion 40 and the third connecting member portion 42.

[0049] It follows that the brassiere 10 is configured to prioritise evenly between support (as provided by tension in the first and second connecting member portions 38, 40) and brassiere security (as provided by tension in the third connecting member portion 42).

[0050] In other embodiments of the invention (not shown) the angle of inclination of the first aperture 34 to the corresponding wing portion 14, 18 (as defined by the wing guide 28) may be varied in order to alter the distribution of tensile force between each of the first and second connecting member portions 38, 40 and the third connecting member portion 42.

[0051] Accordingly it is possible to alter the manner in which the brassiere prioritises between support and brassiere security. For example, increasing the angle of inclination above 20° will result in a greater proportion of any tensile force in the connecting member 20 acting along the first and second connecting member portions 38, 40, thereby resulting in more support, while the proportion of tensile force acting along the third connecting member portion 42 reduces, thereby reducing the force with the brassiere 10 clamps a wearer's torso, i.e. the brassiere security.

[0052] The brassiere 10 further includes a connecting member guide 44 to maintain the relative orientation of the first and second connecting member portions 38, 40.

[0053] The connecting member guide 44 includes four guide slots 46 arranged as opposed first and second pairs

48, 50.

[0054] The first pair 48 receives the first connecting member portion 38 and the second pair receives the second connecting member portion 40.

5 **[0055]** Together the four guide slots 46 define a separating portion 52 which, in use, lies between the first and second connecting member portions 38, 40.

[0056] In the embodiment shown the first and second breast cups 12, 16 are selectively separable from one another via a clasp 54.

10 **[0057]** In use a wearer may separate the first and second breast cups 12, 16 via the clasp 54 to assist in putting the brassiere 10 on.

[0058] Once in place on a wearer's body the wearer may adjust the length of the connecting member 20 so as to generate a desired degree of tensile force within the connecting member 20.

[0059] The tensile force draws the first breast cup 12 towards the second wing portion 18 and the second breast cup 14 towards the first wing portion 16. In this way each of the breast cups 12, 16 is drawn upwards and so acts to lift each breast and thereby provide support to the breasts.

[0060] Meanwhile the tensile force in the connecting member 20 draws the first and second wing portions 14, 18 towards one another. In this way each of the breast cups 12, 16 is pulled into engagement with the wearer's breasts to provide security.

[0061] The brassiere 10 shown is configured to substantially equally distribute the tensile force in the connecting member 20 between the first connecting member portion 38 and the third connecting member portion 42, and between the second connecting member portion 40 and the third connecting member portion 42, so as to provide equal priority to brassiere support and security.

[0062] As a wearer moves the connecting member 20 is able to move relative to each of the wing guides 28 to allow the relative length of each of the first, second, and third connecting member portions 38, 40, 42 to change. This enables the brassiere to dynamically adjust its configuration, to accommodate the changes in body position, and so continue to provide optimal support and comfort.

[0063] In the meantime the wing guides 28 maintain the relative orientation of the first, second, and third connecting member portions 38, 40, 42 so as to maintain the aforementioned predetermined, e.g. even, distribution of tensile force between brassiere support and security.

[0064] The connecting member guide 44 further assists in maintaining the relative orientation of the first, second, and third connecting member portions 38, 40, 42.

Claims

1. A breast support arrangement (10) comprising;

a first breast cup (12) connected with a first wing

portion (14); and
 a second breast cup (16) connected with a second wing portion (18),
 the first and second breast cups (12, 16) and wing portions (14, 18) being interconnected by a connecting member (20),
 the connecting member (20):

passing from the first breast cup (12) to the second breast cup (16) via the second wing portion (18) then the first wing portion (14);
 and
 being or including an elastic member to draw the first breast cup (12) towards the second wing portion (18), the second breast cup (16) towards the first wing portion (14), and the first and second wing portions (14, 18) towards one another,

each wing portion (14, 18) including a wing guide (28) to couple the connecting member (20) to the wing portion (14, 18) and guide movement of the connecting member (20) relative to the wing portion (14, 18),
 the breast support arrangement (10) being **characterised in that** each wing guide (28) includes a guide body (30) which has a first side that defines a guide portion (32) to receive the connecting member (20) and maintain the relative orientation of respective portions (38, 40) of the connecting member (20), and a second side through which the corresponding wing portion (14, 18) is secured to the wing guide (28), the breast support arrangement (10) being further **characterised in that** the connecting member (20) is moveable in use relative to each wing portion (14, 18) and associated wing guide (28) in response to changes in a wearer's body position to adjust dynamically the configuration of the breast support arrangement (10).

2. A breast support arrangement (10) according to Claim 1 further including a connecting member guide (44) to maintain the relative orientation of a first connecting member portion (38) lying between the first breast cup (12) and the second wing portion (18) and a second connecting member portion (40) lying between the second breast cup (16) and the first wing portion (14).
3. A breast support arrangement (10) according to Claim 2 wherein the connecting member guide (44) includes a separating portion (52) which lies between the first and second connecting member portions (36, 40).
4. A breast support arrangement (10) according to any preceding claim wherein the connecting member

(20) is adjustable in length.

Patentansprüche

1. Bruststützanordnung (10), Folgendes umfassend:

ein erstes Brustkörbchen (12), verbunden mit einem ersten Flügelabschnitt (14); und
 ein zweites Brustkörbchen (16), verbunden mit einem zweiten Flügelabschnitt (18),
 wobei das erste und das zweite Brustkörbchen (12, 16) und die Flügelabschnitte (14, 18) über ein Verbindungselement (20) miteinander verbunden sind,
 wobei das Verbindungselement (20),

vom ersten Brustkörbchen (12) über den zweiten Flügelabschnitt (18) und dann den ersten Flügelabschnitt (14) zum zweiten Brustkörbchen (16) verläuft; und
 ein elastisches Element ist oder ein solches enthält, um das erste Brustkörbchen (12) zum zweiten Flügelabschnitt (18), das zweite Brustkörbchen (16) zum ersten Flügelabschnitt (14), und den ersten und den zweiten Flügelabschnitt (14, 18) zueinander hin zu ziehen,

wobei jeder Flügelabschnitt (14, 18) eine Flügelführung (28) enthält, um das Verbindungselement (20) an den Flügelabschnitt (14, 18) zu koppeln und die Bewegung des Verbindungselements (20) bezogen auf den Flügelabschnitt (14, 18) zu führen,
 wobei die Bruststützanordnung (10) **dadurch gekennzeichnet ist, dass** jede Flügelführung (28) einen Führungskörper (30) enthält, der Folgendes hat: eine erste Seite, die einen Führungsabschnitt (32) definiert, um das Verbindungselement (20) aufzunehmen und die relative Ausrichtung entsprechender Abschnitte (38, 40) des Verbindungselements (20) beizubehalten, und eine zweite Seite, durch die der entsprechende Flügelabschnitt (14, 18) an der Flügelführung (28) gesichert ist, wobei die Bruststützanordnung (10) ferner **dadurch gekennzeichnet ist, dass** das Verbindungselement (20) im Gebrauch bezogen auf jeden Flügelabschnitt (14, 18) und jede damit assoziierte Flügelführung (28) als Reaktion auf Änderungen einer Körperhaltung einer Trägerin beweglich ist, um die Konfiguration der Bruststützanordnung (10) dynamisch anzupassen.

2. Bruststützanordnung (10) nach Anspruch 1, ferner eine Verbindungselementführung (44) enthaltend, um die relative Ausrichtung eines ersten Verbindungs-

5
 dungsselementabschnitts (38), der zwischen dem ersten Brustkörbchen (12) und dem zweiten Flügelabschnitt (18) liegt, und eines zweiten Verbindungselementabschnitts (40), der zwischen dem zweiten Brustkörbchen (16) und dem ersten Flügelabschnitt (14) liegt, beizubehalten.

3. Bruststützanordnung (10) nach Anspruch 2, wobei die Verbindungselementführung (44) einen Trennabschnitt (52) enthält, der zwischen dem ersten und dem zweiten Verbindungselementabschnitt (38, 40) liegt. 10
4. Bruststützanordnung (10) nach einem der vorhergehenden Ansprüche, wobei die Länge des Verbindungselements (20) einstellbar ist. 15

Revendications

1. Agencement de support de poitrine (10) comprenant : 20
 - un premier bonnet (12) raccordé à une première partie d'aile (14) ; et 25
 - un second bonnet (16) raccordé à une seconde partie d'aile (18),
 - les premier et second bonnets (12, 16) et parties d'aile (14, 18) étant interconnectés par un élément de raccordement (20) ; 30
 - l'élément de raccordement (20) :
 - passant du premier bonnet (12) au second bonnet (16) par l'intermédiaire de la seconde partie d'aile (18) puis de la première partie d'aile (14) ; et 35
 - étant ou comportant un élément élastique pour tirer le premier bonnet (12) vers la seconde partie d'aile (18), le second bonnet (16) vers la première partie d'aile (14), et 40
 - les première et seconde parties d'aile (14, 18) l'une vers l'autre,
 - chaque partie d'aile (14, 18) comportant un guide d'aile (28) pour coupler l'élément de raccordement (20) à la partie d'aile (14, 18) et guider le mouvement de l'élément de raccordement (20) par rapport à la partie d'aile (14, 18), 45
 - l'agencement de support de poitrine (10) étant **caractérisé en ce que** chaque guide d'aile (28) 50
 - comporte un corps de guide (30) qui a un premier côté qui définit une partie de guide (32) pour recevoir l'élément de raccordement (20) et maintenir l'orientation relative de parties respectives (38, 40) de l'élément de raccordement (20), 55
 - et un second côté par le biais duquel la partie d'aile correspondante (14, 18) est fixée au guide d'aile (28), l'agencement de support de poitrine

(10) étant **caractérisé en outre en ce que** l'élément de raccordement (20) est déplaçable durant utilisation par rapport à chaque partie d'aile (14, 18) et un guide d'aile associé (28) en réponse à des changements de position du corps de la porteuse afin de régler dynamiquement la configuration de l'agencement de support de poitrine (10).

2. Agencement de support de poitrine (10) selon la revendication 1, comportant en outre un guide d'élément de raccordement (44) pour maintenir l'orientation relative d'une première partie d'élément de raccordement (38) reposant entre le premier bonnet (42) et la seconde partie d'aile (18) et d'une seconde partie d'élément de raccordement (40) reposant entre le second bonnet (16) et la première partie d'aile (14). 20
3. Agencement de support de poitrine (10) selon la revendication 2, dans lequel le guide d'élément de raccordement (44) comporte une partie de séparation (52) qui repose entre les première et seconde parties d'élément de raccordement (38, 40). 25
4. Agencement de support de poitrine (10) selon l'une quelconque des revendications précédentes, dans lequel l'élément de raccordement (20) est réglable en longueur. 30

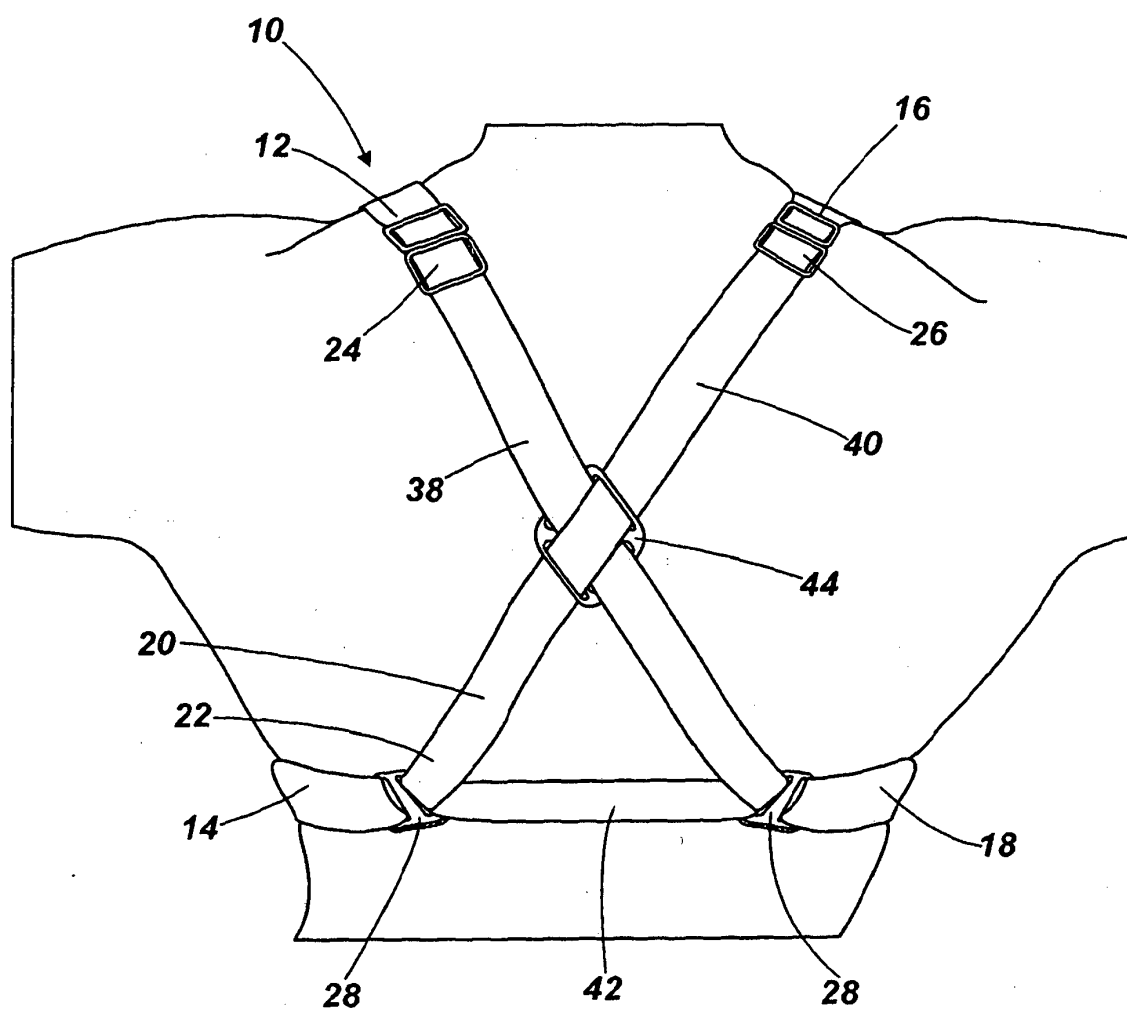


Fig. 1

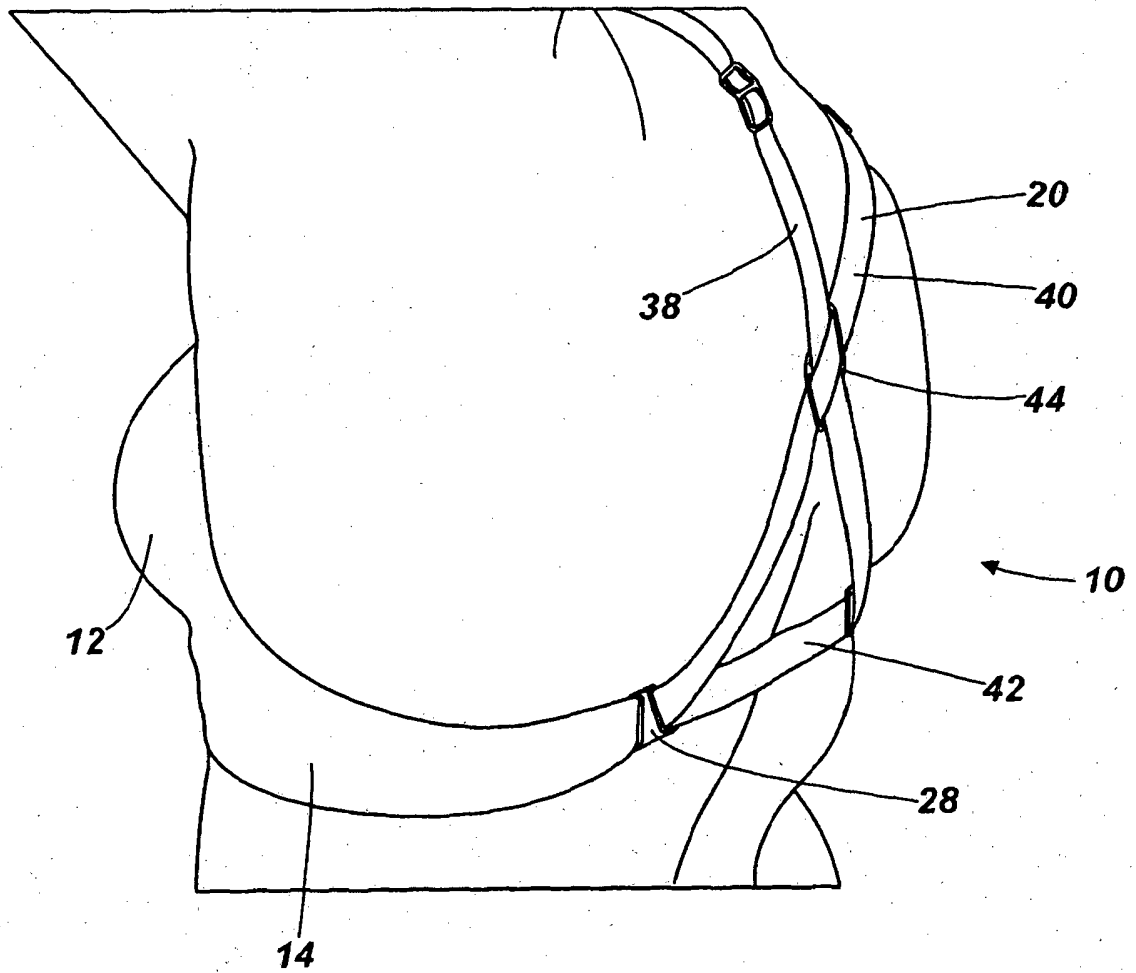


Fig. 2

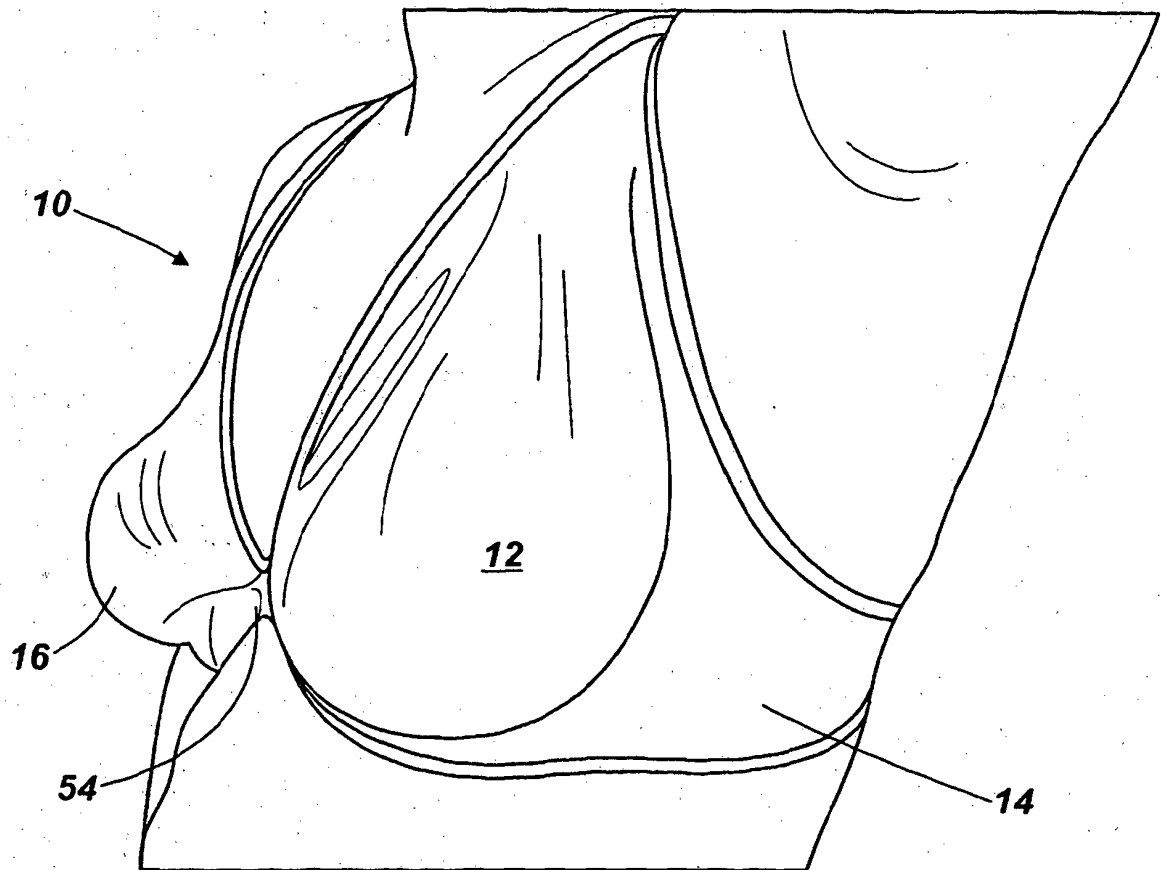
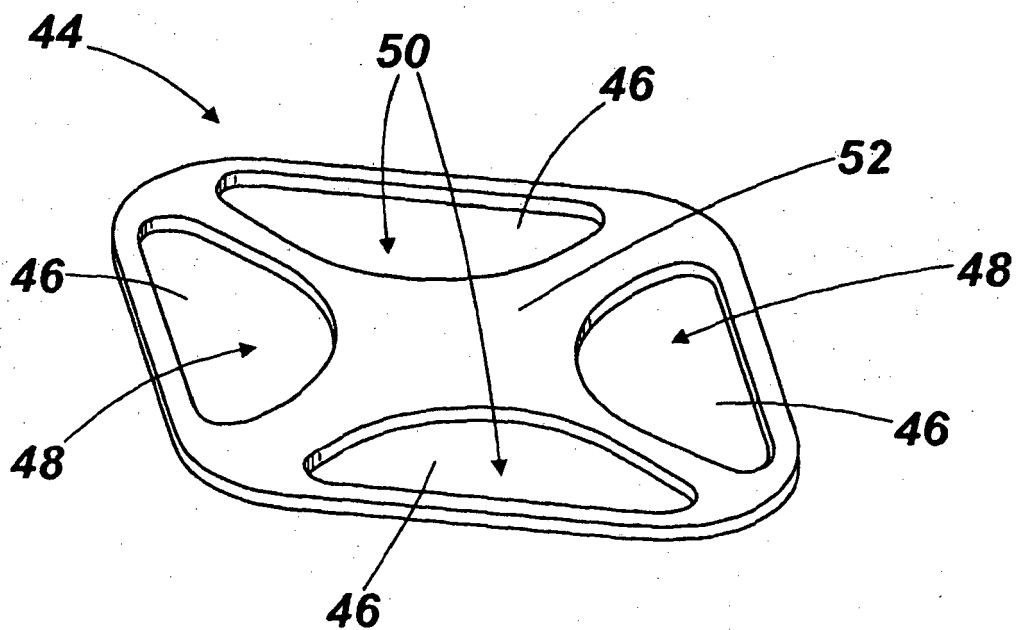
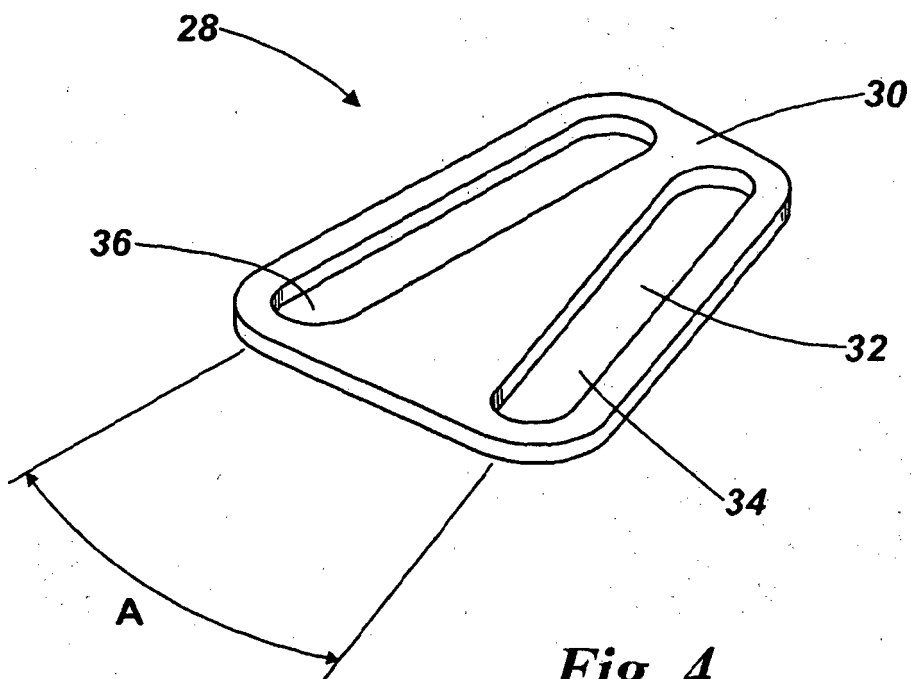


Fig. 3



REFERENCES CITED IN THE DESCRIPTION

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