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(54) **Foundation garment with improved support**

(57) The present invention relates to the field of foundation garments, and in particular, to cleavage enhancing garments such as brassieres, undergarments and

swimwear. The foundation garment (10) utilises additional breast uplifting means (12a/12b) within an outer cup (111a/111b) of a breast cup (11a/111b) to provide uplift to the breast independently to the outer cup (111a/111b).

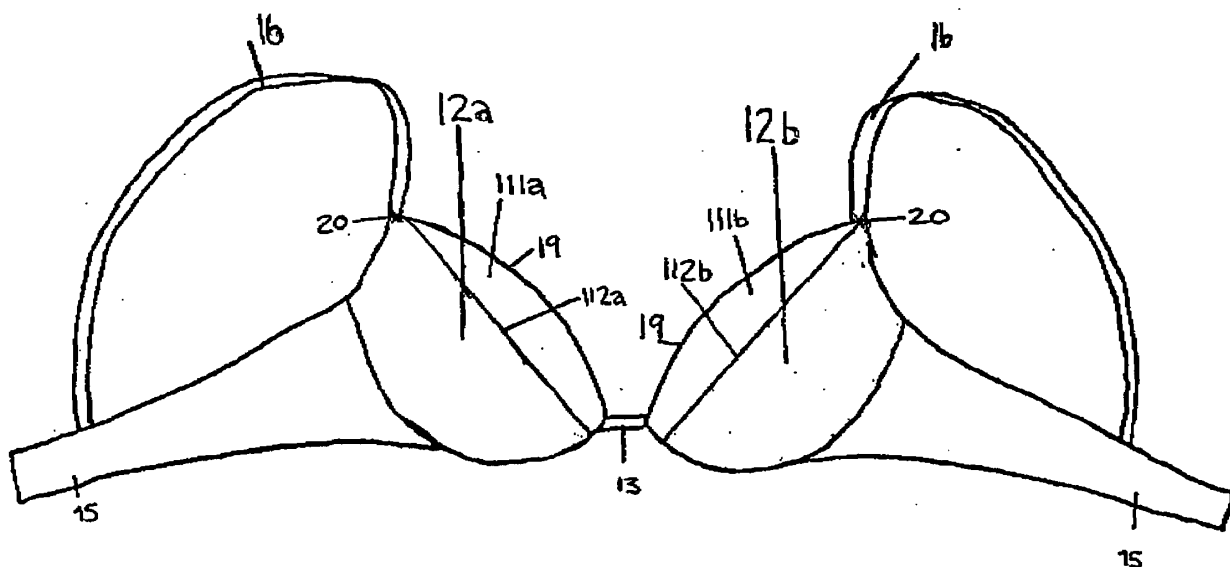


Figure 2.

Description

[0001] The present invention relates to the field of foundation garments, and in particular, to cleavage enhancing garments such as brassieres, undergarments and swimwear.

[0002] Herein the term foundation garment is intended to mean any garment providing breast support, e.g. undergarments such as brassieres (bras), including balcony type, plunge type, front fastening, midi bras, full-cup bras, underwired bras and bra slips; halterneck and multi-way bras, corsets including corselets and panty corselets; basques, bustiers, bodices, or the like and outergarments such as swimsuits, bikini bras, bodices or the like.

[0003] Cleavage enhancing undergarments or "push-up" bras are commonly used by females to enhance the look of the cleavage. This is generally achieved by providing "uplift" to raise the level of the breasts and/or by including additional padding or cushioning within the garment to give a fuller shape to the breasts.

[0004] Within this type of garment, support for the bust is typically provided in the form of underwiring, which is fitted in the base of each cup of the bra and which provides support from underneath the breast. Any uplift provided by the garment is generally brought about by the straps of the brassiere which conventionally attach to the garment at the top outer edge of the cup and can be adjusted to pull the breast upwards.

[0005] The appearance of a fuller bust is typically achieved by the inclusion of padded inserts inside the cups of the garment. Such garments are well known.

[0006] However, these known "push-up" bras suffer from a number of problems including, for example, the weight of the padding, comfort, reliability, and, crucially, the "overspill" effect which can result from the wearing of such garments and which gives rise to an unsightly and bulging appearance.

[0007] Conventional uplift bras are provided with underwiring which gives support to the breast along with straps, which pull the breast from above, in order to give an uplift effect. Padding, when provided, is usually in the form of foam inserts fitted within the cups, although alternative forms of padding such as gel, fluid or air-filled pouches are known. This padding is provided within the cup in a permanent or removable fashion and the breast essentially sits on padding and is raised accordingly.

[0008] An inherent problem with the use of such uplift bras is that they tend to cause compression of the breast at the top edge of the bra cup. This arises from the pressure that is exerted by the bra at the base of the cup and the padding which tends to sit against the breast, causing compression of the flesh. The straps of the garment, which are typically attached to the cup at a top outside edge, exert a further pressure on the breast. These forces combine to push the breast up from the bottom, without any further support from the cup, which can cause the breast to spill over the top edge of the bra cup. This results in an unsightly appearance with the breasts bulging over

the top of the bra.

[0009] In certain garments, which are targeted primarily at women with larger bust sizes it is known to provide elements of additional support to account for the size and weight of the breasts. One known form of additional support uses a web inside the cups in addition to the underwiring. In these garments, the inner web is typically the same size to the outer cup and is contoured and attached to the inner conformation of the cup. In such a garment the internal sling provides additional support to the breast in a similar fashion to that provided by underwiring i.e. by supporting the breasts at their natural height, and does not provide any uplift or pushing together of the breasts.

[0010] The present invention identifies the drawbacks of conventional cleavage enhancing garments and proposes a cleavage enhancing garment which mitigates one or more of the limitations previously addressed.

[0011] The aims and objects of the invention will become apparent from reading the following description.

[0012] According to a first aspect of the present invention, there is provided a foundation garment having two breast cups, each breast cup having an outer cup and an additional breast uplifting means located therewithin, where said additional breast uplifting means is configured to provide uplift to the breast independently to the outer cup.

[0013] Essentially, the breast uplifting means is in the form of a sling. Preferably the sling is of a size substantially smaller to the outer cup.

[0014] As the sling is undersized in comparison to the outer cup, the breast is *supported* and lifted *within* the breast cup such that the breast exerts pressure on the upper edge of the outer cup giving particularly good cleavage and shape.

[0015] Preferably the outer cup is moulded to the shape of a breast. Advantageously this ensures that in use, whilst the breast uplifting means provides uplift to the breast, the majority of the breast is held within the breast cup to provide a smooth silhouette.

[0016] Preferably, the breast uplifting means is formed of a fabric with little or no elasticity. This is commonly termed a rigid material or fabric within the clothing manufacture field. Use of this type of material ensures the breast support means provides adequate support without sagging under the weight of the breast.

[0017] More preferably the breast uplifting means is formed of rigid woven satin.

[0018] Even more preferably, the rigid woven satin fabric is cut on the bias as this cut allows the breast uplifting means to yield very slightly under the weight of a breast while still providing adequate support.

[0019] Preferably, the breast uplifting means is attached to the breast cup along the lower inside edge of the outer cup and at an additional point at the apex of the outer cup. This attachment is such that the angle of the breast uplifting means provides directional support for the breast directing the breast both upward and inward due to the resulting angle of the breast uplifting means.

[0020] Optionally the breast uplifting means is attached continuously along the lower and side edge of the outer cup from the bottom to the apex of the breast cup.

[0021] Preferably, the outer cup extends beyond the breast uplifting means to give the appearance of a fuller breast.

[0022] Preferably the inner surface of the outer cup and outer surface of the breast uplifting means define a cavity space.

[0023] Optionally the foundation garment comprises non-supportive padding within the cavity between the outer cup and the breast uplifting means.

[0024] The non-supportive padding does not provide any uplift or directional support to the breast however it prevents the breast cup from deforming by preventing the outer cup from being pushed inwards towards the breast uplifting means if external pressure is supplied.

[0025] Optionally, the padding inserts are integrally formed with the outer cup.

[0026] Optionally the padding inserts may be removable.

[0027] The padding inserts may be formed of foam or a gel.

[0028] Optionally, the padding inserts may comprise a fluid or air-filled bag.

[0029] Preferably, the outer cups are seam free, that is, have no seam on an outer surface thereof.

[0030] Optionally the foundation garment is provided with strap means.

[0031] The strap means may comprise two shoulder straps which are provided in a conventional manner or one strap which circumvents the neck in a halter style.

[0032] Optionally the strap means comprise two straps which are adjustable with respect to the garment such that they can be adapted in a multi-way manner.

[0033] In one embodiment the garment is an undergarment. In another embodiment the cleavage enhancing garment is an outer garment, for example a swimming costume or a bikini brassiere.

[0034] A preferred embodiment of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 shows a perspective front view of the foundation garment according to a preferred embodiment of the invention; and

Figure 2 shows a cutaway back view of the foundation garment showing the inside of the breast cups; and

Figure 3 is a perspective side view of the foundation garment, cutaway to show the layered structure of the garment.

[0035] With reference to Figure 1, there is shown a foundation garment generally depicted at **10**. The garment comprises a pair of laterally positioned breast cups,

11a and **11b**. The garment further comprises a back strap **15**, and shoulder straps **16** as are conventional. The outer appearance is therefore that of a standard brassiere.

[0036] Referring now to Figure 2, it can be seen that each of the cups **11a** and **11b** is made up of an outer cup **111a** and **111b** and a breast sling **12a** and **12b**. Each breast sling **12a**, **12b** is positioned within one of the respective outer cups **111a**, **111b**. The breast slings **12a**, **12b** are of a smaller size to outer cups **111a**, **111b** such that they are wholly contained within outer cups **111a** and **111b**, and are neither visible in use, nor extend as far as the outer cup **111a**, **111b**, as is clearly visible in Figure 3. The breast slings **12a**, **12b** provide a smaller support area in comparison to outer cups **111a** and **111b** and it is in these smaller breast slings **12a** and **12b** that the breast sits in use. Essentially the sling acts as a cup within a cup, where the majority of the breast is held and supported by the inner sling **12a**, **12b**, as opposed to the outer cup **111a**, **111b**.

[0037] In the depicted embodiment, the two breast cups **11a**, **11b** are joined by a central front bar **13** which serves to separate the breasts. However, it will be appreciated that the breast cups **11a**, **11b** can be integrally joined together or linked by alternative means such as zippers, ties or fasteners.

[0038] In the preferred embodiment, an underwire **14** is provided at the base of each of the breast cups **11a**, **11b**. Each breast sling **12a**, **12b** is attached to the respective outer cup **111a**, **111b** along the lower edge of the outer cup **111a**, **111b** and at an additional point **20** at the apex of the cup in the proximity of the point of attachment of the strap means **16**. In the depicted embodiment the means of attachment of the breast sling **12a**, **12b** to the outer cup **111a**, **111b** is stitching **18**, which is provided continuously along the edges of the outer cup **111a**, **111b** from the bottom edge to the apex. However, it will be appreciated that it is not necessary for attachment to be provided continuously along this length. In the depicted and preferred embodiment the attachment means is double stitching which confers an additional level of security to the garment although single stitching or alternative means of attachment may be used. As is most clearly depicted in Figure 3, each of the breast slings **12a**, **12b** is positioned between the outer cup **111a**, **111b** and the underwire **14**. The positioning of each of the breast slings **12a**, **12b** between the outer cup **111a**, **111b** and the underwire **14** provides a higher level of security to hold the breast sling **12a**, **12b** in position although it is not essential to the working of the invention.

[0039] The breast slings **12a**, **12b** are formed of a material with a low level of elasticity, typically termed a "rigid material" in the field of clothing manufacture, which in the depicted embodiment is a rigid woven satin. In this embodiment, the fabric has been cut on the bias, as is clearly evident in Figure 2. Bias cut fabric is utilised as, although the material has little or no natural elasticity, this cut allows the fabric to yield slightly under the weight of the

breast, thus increasing the level of comfort to the wearer. The fabric employed for the construction of the sling must be rigid enough to support the breast without relying on any additional support from a padding insert.

[0040] The top inner edge **112a, 112b** of the breast sling **12a, 12b**, which is an open edge, is folded over itself to give a smooth edge both to provide improved comfort and appearance.

[0041] In the preferred embodiment, and as depicted in Figure 3, a padding insert **17** is provided in the space between each of the outer cups **111a, 111b** and the inner breast slings **12a, 12b**.

[0042] In the preferred embodiment, this padding insert **17** is a foam, which is integrally moulded with the outer cup **111a, 111b**. Optionally, any other known padding material such as gel, fluid or air filled pouches can be used to form the padding insert. The padding insert is non-supporting as all of the requisite support for the breast will be provided by the breast slings **12a, 12b**. This prevents a situation where the padding is pushing the breast upwards from a single point resulting in unsightly overspill. As the breast will be cradled within a breast sling **12a, 12b** which will lift the breast up within the breast cup **11a, 11b** this will give a more natural cleavage and shape. Additionally, it is not essential that the padding insert is integral with the outer breast cups. The padding insert can be provided as a removable pouch which can be inserted in the space between the breast slings **12a, 12b** and the outer cups **111a, 111b** or alternatively can be provided integral with the breast slings **12a, 12b**. The space between the breast slings **12a, 12b** and the outer cups **111a, 111b** serves to create the appearance of a fuller bust, and, as such, a padding insert is not essential to maintain the appearance of a fuller bust. However, an advantage of incorporating a padding insert is that it can prevent decompression of the cups **11a, 11b** under external forces, e.g. to avoid deflation of the space between the outer cup **111a, 111b** and the breast slings **12a, 12b**, for example by compression due to tight clothing.

[0043] In the preferred and depicted embodiment, the angle of the breast slings **12a, 12b** serve to provide both upward and inward directional support to the breast. In alternative embodiments, however, the breast slings **12a, 12b** could be angled to provide a different type of support, e.g. to provide more uplift and less inward directional support.

[0044] As full support is provided to the breast by the breast slings **12a, 12b**, there will advantageously be less pull on the breast from the weight of the padding insert.

[0045] Additionally, as the breast sling provides support directly to the breast, the reliability of the garment is increased and the risk that the breasts of the wearer would become dislodged from the garment, for example when leaning forward, is decreased.

[0046] It will be evident that various modifications and improvements could be made to the above-described garment within the scope of the invention. For example,

the above description is written in the context of push up brassiere, however it could equally apply to another style wherein the inward directional breast support is reduced relative to the upward breast support, as controlled by the angle of the breast slings within the outer breast cups.

[0047] The present invention in one of its aspects provides an improved cleavage enhancing garment which provides directional support to the breast along with the appearance of an increased breast size, which overcomes some of the limitations previously addressed.

[0048] As the uplift is provided by the breast sling, more directional support can be provided to the breast for example by attaching the breast sling at a point within the outer cup at the upper outside edge. Advantageously, this results in a more contoured appearance to the bust, and decreases the appearance of unsightly bulges which can arise from conventional cleavage enhancing garments.

[0049] Further modifications may be made without departing from the scope of the invention herein intended.

Claims

1. A foundation garment (10) having breast cups (11a/11b), **characterised in that** each breast cup (11a/11b) has an outer cup (111a/111b) and a breast uplifting means (12a/12b) located therewithin, said breast uplifting means (12a/12b) being configured to provide uplift to the breast independently to the outer cup (111a/111b).
2. A foundation garment (10) as claimed in Claim 1, wherein the breast uplifting means (12a/12b) is in the form of a sling (12a/12b).
3. A foundation garment (10) as claimed in Claim 2, wherein the sling (12a/12b) is of a size substantially smaller than the outer cup (111a/111b).
4. A foundation garment (10) as claimed in any of the previous Claims, wherein the outer cup (111a/111b) is moulded to the shape of a breast.
5. A foundation garment (10) as claimed in any of the previous Claims, wherein the breast uplifting means (12a/12b) is formed of a fabric with little or no elasticity.
6. A foundation garment (10) as claimed in any of the previous Claims, wherein the breast uplifting means (12a/12b) is attached to the breast cup (11a/11b) along the lower inside edge of the outer cup (111a/111b) and at an additional point at the apex of the outer cup.
7. A foundation garment (10) as claimed in any of the previous Claims, wherein the breast uplifting means (12a/12b) is attached continuously along the lower

and side edge of the outer cup (111a/111b) from the bottom to the apex of the breast cup (11a/11b).

8. A foundation garment (10) as claimed in any of the previous Claims, wherein the outer cup (111a/111b) extends beyond the breast uplifting means (12a/12b) to give the appearance of a fuller breast. 5
9. A foundation garment (10) as claimed in any of the previous Claims, wherein the inner surface of the outer cup (111a/111b) and outer surface of the breast uplifting means (12a/12b) define a cavity space. 10
10. A foundation garment (10) as claimed in Claim 9, wherein the foundation garment (10) comprises non-supportive padding (17) within the cavity between the outer cup (111a/111b) and the breast uplifting means (12a/12b). 15
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11. A foundation garment (10) as claimed in Claim 10, wherein the padding (17) is integrally formed with the outer cup (111a/111b).
12. A foundation garment (10) as claimed in Claim 10, wherein the padding (17) is removable. 25
13. A foundation garment (10) as claimed in any one of Claims 10 to 12, wherein the padding (17) is formed of a foam, gel or a fluid or air-filled bag. 30

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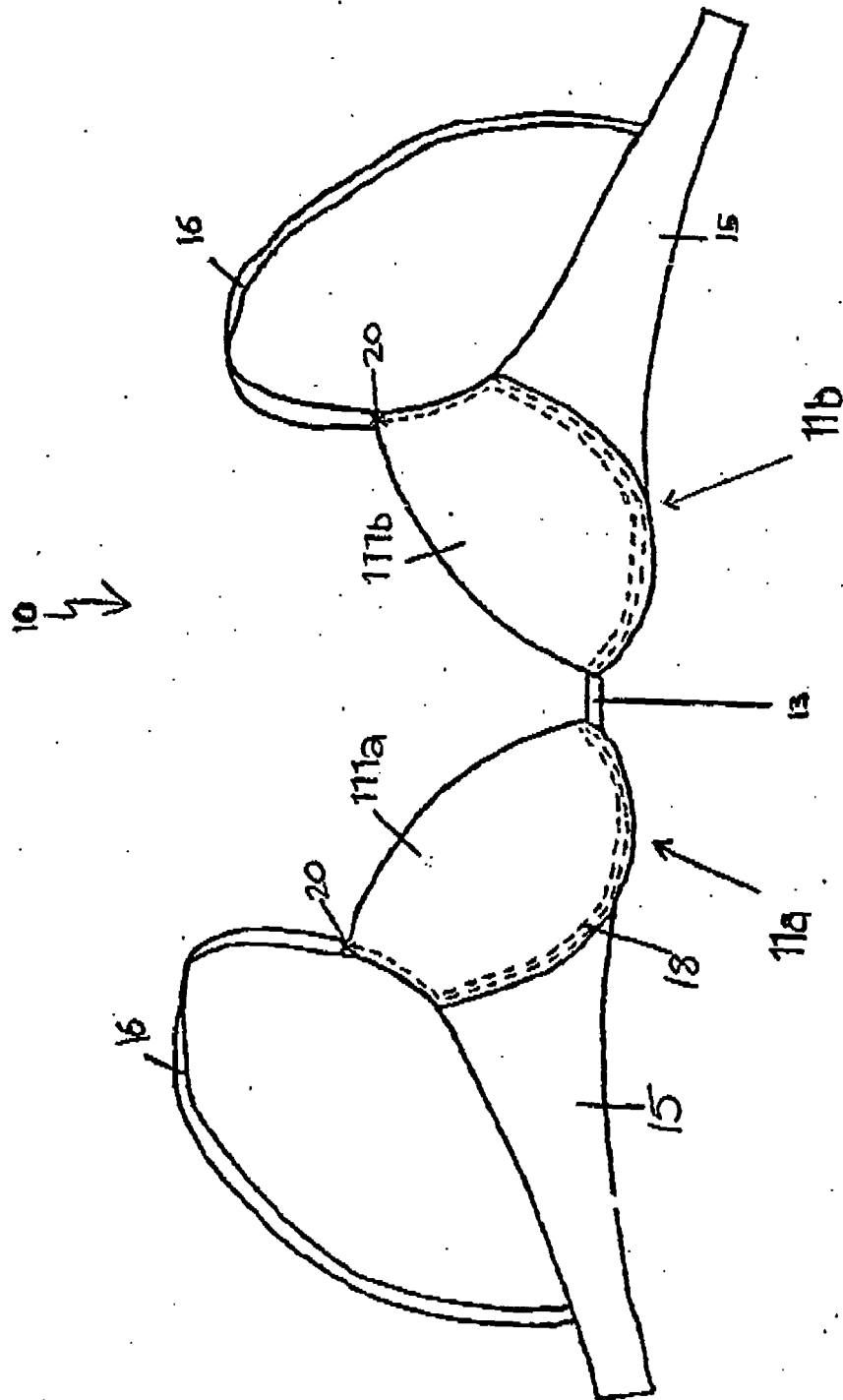


Figure 1

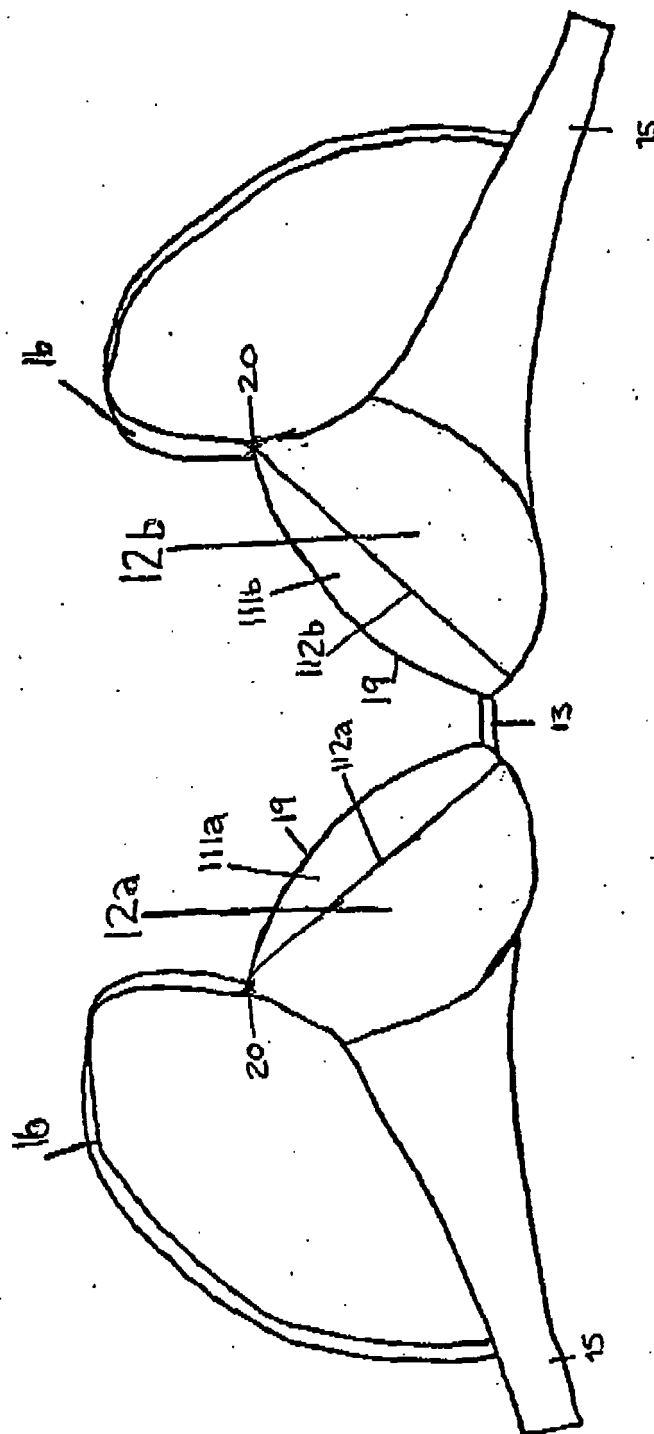


Figure 2:

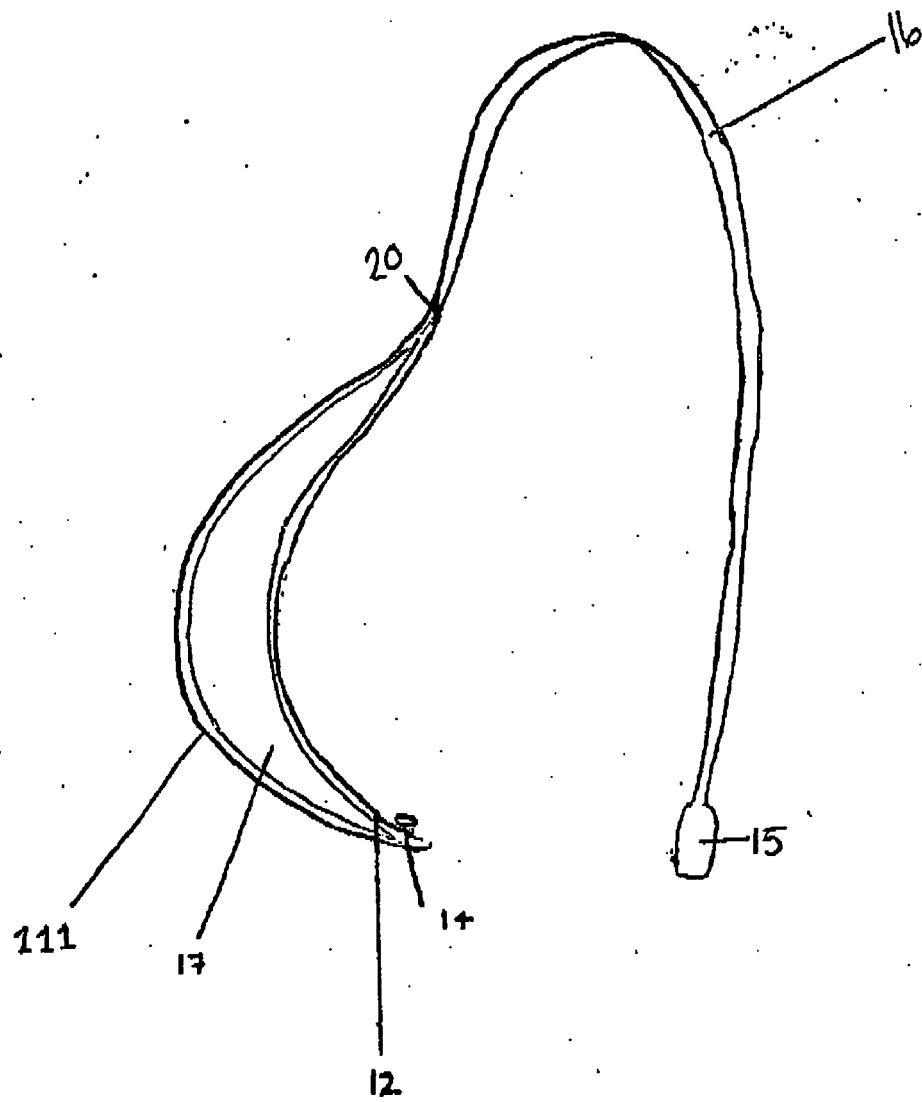


Figure 3



European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 06 25 3412

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 24 November 2006	Examiner HERRY-MARTIN, D
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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