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**(54) Three-dimensional brassiere cup support loop**

(57) A brassiere component is disclosed. In one embodiment, the component comprises a three-dimensional brassiere cup support loop comprising a semi-circular arc-shaped structure, wherein blank of the support loop is structured as a wide flat wire; a lower portion of a plane

of the wide flat wire inclines inwardly to form an inclined plane (4) of the wide flat wire with an upper edge (2) facing outwards and a lower edge (3) facing inwards, which inclined plane of the wide flat wire forms an inclined angle of 15°-85° with respect to a horizontal plane.

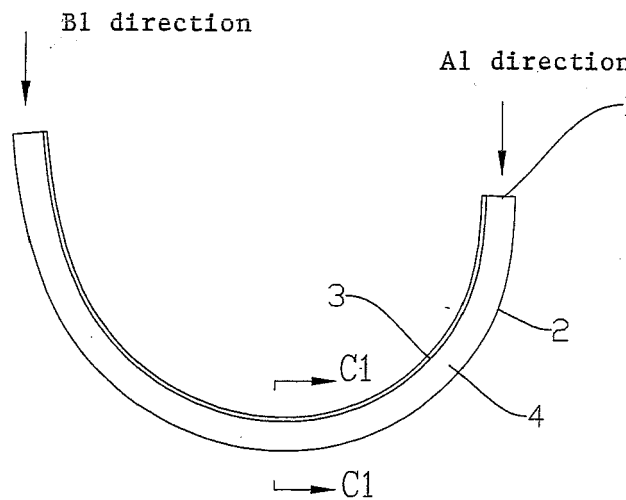


Fig 1

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**Description****TECHNICAL FIELD**

[0001] The invention relates to a three-dimensional brassiere cup support loop, which belongs to the field of garment accessories, and in particular, to a cup support component for a brassiere.

**BACKGROUND ART**

[0002] Generally, the existing woman's underwear such as a brassiere or a bodice is provided with components having bracing and supporting functions in cups so as to brace and support the breasts by means of the cups. Semi-circular steel loops are generally used in the prior art to be disposed at the lower edge portions of the cups. The existing steel loops mostly use a stainless steel wire with a circle cross-section shape as the material for making the steel loops. Because of such a structure, a protruding ridge will be formed on the cups due to the bad dressing performance of the stainless steel wire with a circle cross-section shape, which ridge not only affects aesthetics of such underwear as a brassiere, but also makes a wearer feel somewhat uncomfortable.

**SUMMARY OF THE INVENTION**

[0003] The objective of the invention is to provide a three-dimensional brassiere cup support loop which is easy to coordinate with a profile of a cup and can be comfortably dressed without showing any signs of the brassiere.

[0004] The objective of the invention is achieved by means as illustrated in the following examples:

A three-dimensional brassiere cup support loop, the support loop being of a semi-circular arc-shaped structure, wherein blank of the support loop is structured as a wide flat wire; a lower portion of a plane of the wide flat wire inclines inwardly to form an inclined plane of the wide flat wire with an upper edge facing outwards and a lower edge facing inwards, which inclined plane of the wide flat wire forms an inclined angle of 30°-85° with respect to a horizontal plane.

[0005] The inclined plane of the wide flat wire forming the support loop is at an inclined angle of 30° with respect to the horizontal plane.

[0006] The inclined plane of the wide flat wire forming the support loop is at an inclined angle of 60° with respect to the horizontal plane.

[0007] The inclined plane of the wide flat wire forming the support loop is at an inclined angle of 85° with respect to the horizontal plane.

[0008] The inclined plane of the wide flat wire forming the support loop is at an inclined angle of 15° with respect to the horizontal plane, and the wide flat wire has a cross-section shape of a trapezoid.

[0009] The wide flat wire has a cross-section shape of

an ellipse.

[0010] The wide flat wire forming the support loop is of a stainless steel material.

[0011] The wide flat wire forming the support loop is a wire of polyester plastic or a wire of resin plastic.

[0012] The wide flat wire forming the support loop is a silica gel wire or a nylon wire.

**BRIEF DESCRIPTION OF THE DRAWING**

[0013]

Fig.1 is a plane schematic structural view of the invention;

Fig.2 is a schematic view of inclined angle of an end surface in an A1 direction in

Fig.1 of the invention;

Fig.3 is a schematic view of inclined angle of an end surface in a B1 direction in Fig.1 of the invention;

Fig.4 is a schematic view of inclined angle of a C1-C1 sectional portion in Fig.1 of the invention;

Fig.5 is a perspective schematic structural view of the first embodiment of the invention;

Fig.6 is a plane schematic structural view of the second embodiment of the invention;

Fig.7 is a schematic view of inclined angle of an end surface in an A2 direction in

Fig.6 of the invention;

Fig.8 is a schematic view of inclined angle of an end surface in a B2 direction in Fig.6 of the invention;

Fig.9 is a schematic view of inclined angle of a C2-C2 sectional portion in Fig.6 of the invention;

Fig.10 is a perspective schematic structural view of the second embodiment of the invention;

Fig.11 is a plane schematic structural view of the third embodiment of the invention;

Fig.12 is a schematic view of inclined angle of an end surface in an A3 direction in

Fig.11 of the invention;

Fig.13 is a schematic view of inclined angle of an end surface in a B3 direction in

Fig.11 of the invention;

Fig.14 is a schematic view of inclined angle of a C3-C3 sectional portion in Fig.11 of the invention;

Fig.15 is a perspective schematic structural view of the third embodiment of the invention;

Fig.16 is a plane schematic structural view of the fourth embodiment of the invention;

Fig.17 is a schematic view of inclined angle of an end surface in an A4 direction in

Fig.16 of the invention;

Fig.18 is a schematic view of inclined angle of an end surface in a B4 direction in

Fig.16 of the invention;

Fig.19 is a schematic view of inclined angle of a C4-C4 sectional portion in Fig.16 of the invention;

Fig.20 is a perspective schematic structural view of the fourth embodiment of the invention;

Fig.21 is a perspective schematic structural view of the fifth embodiment of the invention;

Fig.22 is a schematic structural view of a cross-section of the wide flat wire of the fifth embodiment of the invention.

### **DESCRIPTION OF SPECIFIC EMBODIMENTS**

**[0014]** A detailed description of specific embodiments of the present invention is given below with reference to the above drawings:

The first embodiment is shown in Figs. 1, 2, 3, 4 and 5.

In the present embodiment, a wide flat stainless steel wire is selected as blank of the invention, and a support loop 1 made thereof is of a semi-circular arc-shaped structure. In order to achieve the objective of the invention, the blank of the support loop is structured as a wide flat wire; a lower portion of a plane of the wide flat wire inclines inwardly to form an inclined plane 4 of the wide flat wire with an upper edge 2 facing outwards and a lower edge 3 facing inwards, which inclined plane 4 of the wide flat wire forms an inclined angle of 30°-80° with respect to a horizontal plane. In the present embodiment, the inclined plane 4 of the wide flat wire forming the support loop is at an inclined angle of 30° with respect to the horizontal plane. As can be seen from Figs.2, 3 and 4, when an inclined plane 4 is formed by configuring the upper edge 2 of the wide flat wire outwardly and the lower edge 3 inwardly, the inclined plane 4 of the finally completed support loop 1 is at an angle of 30° with respect to the horizontal plane as viewed in an A1 direction, is at an angle of 30° with respect to the horizontal plane as viewed in a B1 direction, and is also at an angle of 30° with respect to the horizontal plane as viewed from a C1-C1 sectional portion. In this case, when the invention is inserted into a cup, the lower edge 3 of the inclined plane 4 thereof is configured inwardly and the upper edge 2 outwardly, which just coordinates with shape of the braced breast portion such that the cup can fit with the breast more closely, that is, it can prevent from the ridge structure caused in the prior art, provide a smooth appearance and keep dressing more fitting and comfortable.

The second embodiment is shown in Figs. 6, 7, 8, 9 and 10.

In the present embodiment, a wide flat polyester plastic or resin plastic wire is selected as blank of the invention, and a support loop made thereof is of a semi-circular arc-shaped structure. In the present embodiment, the blank of the support loop is structured as a wide flat wire; a lower portion of a plane of the wide flat wire inclines inwardly to form an inclined plane 7 of the wide flat wire with an upper edge 5 facing outwards and a lower edge 6 facing inwards,

which inclined plane 7 of the wide flat wire forming the support loop, in the present embodiment, is at an inclined angle of 60° with respect to a horizontal plane. As can be seen from Figs.7, 8 and 9, when an inclined plane 7 is formed by configuring the upper edge 5 of the wide flat wire outwardly and the lower edge 6 inwardly, the inclined plane 7 of the finally completed support loop is at an angle of 60° with respect to the horizontal plane as viewed in an A2 direction, is at an angle of 60° with respect to the horizontal plane as viewed in a B2 direction, and is also at an angle of 60° with respect to the horizontal plane as viewed from a C2-C2 sectional portion.

Other portions of this embodiment are completely the same as those of the first embodiment.

The third embodiment is shown in Figs. 11, 12, 13, 14 and 15.

In the present embodiment, a wide flat silica gel or nylon wire is selected as blank of the invention, and a support loop made thereof is of a semi-circular arc-shaped structure. In the present embodiment, the blank of the support loop is structured as a wide flat wire; a lower portion of a plane of the wide flat wire inclines inwardly to form an inclined plane 10 of the wide flat wire with an upper edge 8 facing outwards and a lower edge 9 facing inwards, which inclined plane 10 of the wide flat wire forming the support loop, in the present embodiment, is at an incline angle of 85° with respect to a horizontal plane. As can be seen from Figs.12, 13 and 14, when an inclined plane 10 is formed by configuring the upper edge 8 of the wide flat wire outwardly and the lower edge 9 inwardly, the inclined plane 10 of the finally completed support loop is at an angle of 85° with respect to the horizontal plane as viewed in an A3 direction, is at an angle of 85° with respect to the horizontal plane as viewed in a B3 direction, and is also at an angle of 85° with respect to the horizontal plane as viewed from a C3-C3 sectional portion.

Other portions of this embodiment are completely the same as those of the first embodiment.

The fifth embodiment is shown in Figs. 16, 17, 18, 19 and 20.

In the present embodiment, a wide flat stainless steel wire is selected as blank of the invention, and a support loop made thereof is of a semi-circular arc-shaped structure. A lower portion of a plane of the wide flat wire inclines inwardly to form an inclined plane 13 of the wide flat wire with an upper edge 11 facing outwards and a lower edge 12 facing inwards, which inclined plane 13 of the wide flat wire is at an inclined angle of 15°-80° with respect to a horizontal plane. In the present embodiment, the inclined plane 13 of the wide flat wire forming the support loop is at an inclined angle of 15° with respect to the horizontal plane. As can be seen from Figs.17, 18 and 19, when an inclined plane 13 is formed by configuring the upper edge 11 of the wide flat wire outward-

ly and the lower edge 12 inwardly, the inclined plane 13 of the finally completed support loop is at a clockwise angle of 15° with respect to the horizontal plane as viewed in an A4 direction, is at an anticlockwise angle of 15° with respect to the horizontal plane as viewed in a B4 direction, and is also at a clockwise angle of 15° with respect to the horizontal plane as viewed from a C4-C4 sectional portion.

The sixth embodiment is shown in Figs. 21, 22.

The wide flat wire 14 selected in the present embodiment has a cross section of an ellipse. Blank of the wide flat wire is of a polyester plastic or a resin plastic. Other portions of this embodiment are completely the same as those of the first embodiment.

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7. The three-dimensional brassiere cup support loop according to Claim 1 or 2 or 3 or 4 or 5 or 6, wherein the wide flat wire forming the support loop is of a stainless steel material.

8. The three-dimensional brassiere cup support loop according to Claim 1 or 2 or 3 or 4 or 5 or 6, wherein the wide flat wire forming the support loop is a wire of polyester plastic or a wire of resin plastic.

9. The three-dimensional brassiere cup support loop according to Claim 1 or 2 or 3 or 4 or 5 or 6, wherein the wide flat wire forming the support loop is a silica gel wire or a nylon wire.

## Claims

1. A three-dimensional brassiere cup support loop, the support loop (1) being of a semi-circular arc-shaped structure, wherein blank of the support loop is structured as a wide flat wire; a lower portion of a plane of the wide flat wire inclines inwardly to form an inclined plane (4) of the wide flat wire with an upper edge (2) facing outwards and a lower edge (3) facing inwards, which inclined plane (4) of the wide flat wire forms an inclined angle of 15°-85° with respect to a horizontal plane. 20
2. The three-dimensional brassiere cup support loop according to Claim 1, wherein the inclined plane (4) of the wide flat wire forming the support loop is at an inclined angle of 30° with respect to the horizontal plane. 25
3. The three-dimensional brassiere cup support loop according to Claim 1, wherein the inclined plane (7) of the wide flat wire forming the support loop is at an inclined angle of 60° with respect to the horizontal plane. 30
4. The three-dimensional brassiere cup support loop according to Claim 1, wherein the inclined plane (10) of the wide flat wire forming the support loop is at an inclined angle of 85° with respect to the horizontal plane. 35
5. The three-dimensional brassiere cup support loop according to Claim 1, wherein the inclined plane (12) of the wide flat wire forming the support loop is at an inclined angle of 15° with respect to the horizontal plane, and the wide flat wire has a cross-section shape of a trapezoid. 40
6. The three-dimensional brassiere cup support loop according to Claim 1, wherein the wide flat wire has a cross-section shape of an ellipse. 45

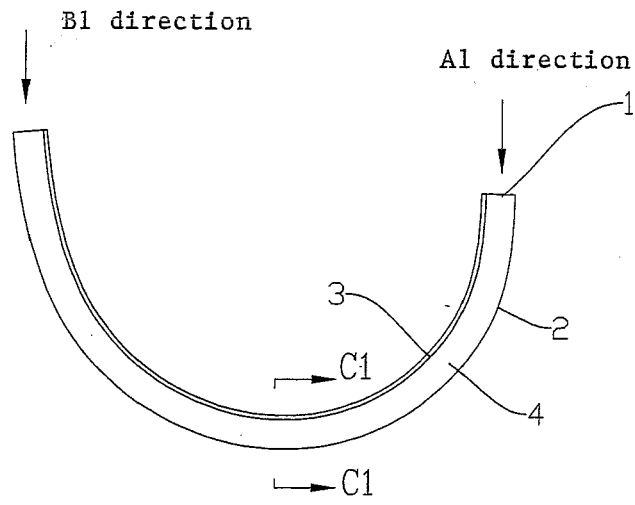


Fig 1

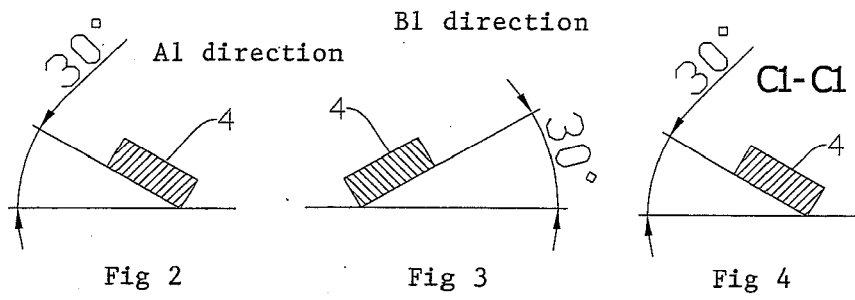


Fig 2

Fig 3

Fig 4

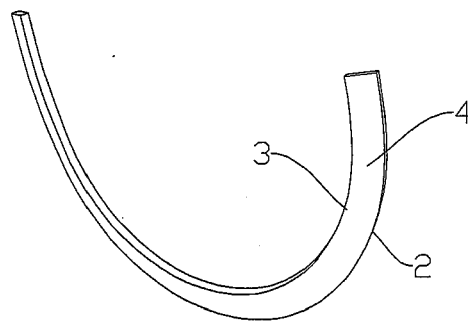


Fig 5

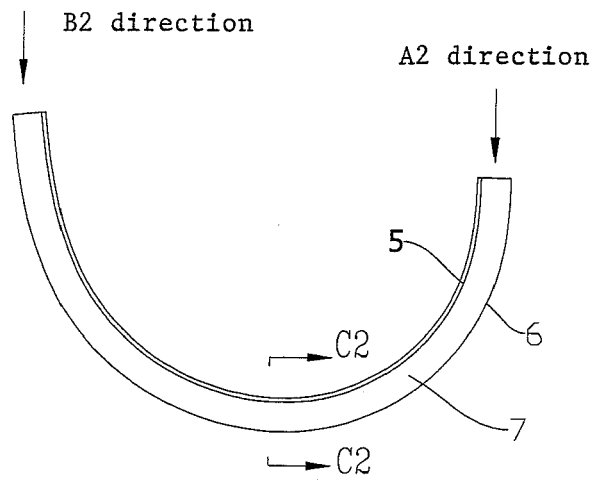


Fig 6

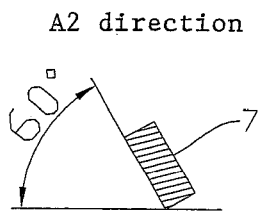


Fig 7

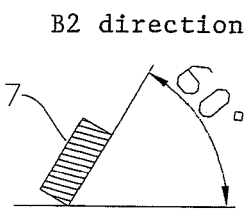


Fig 8

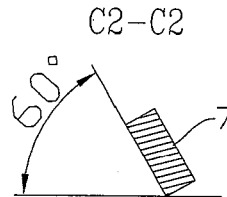


Fig 9

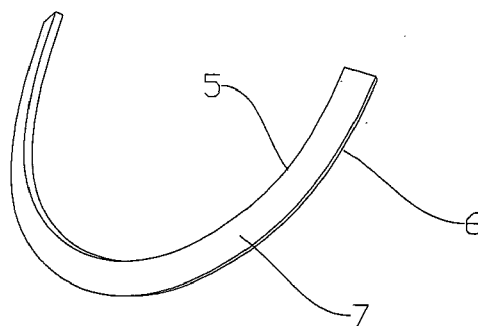


Fig 10

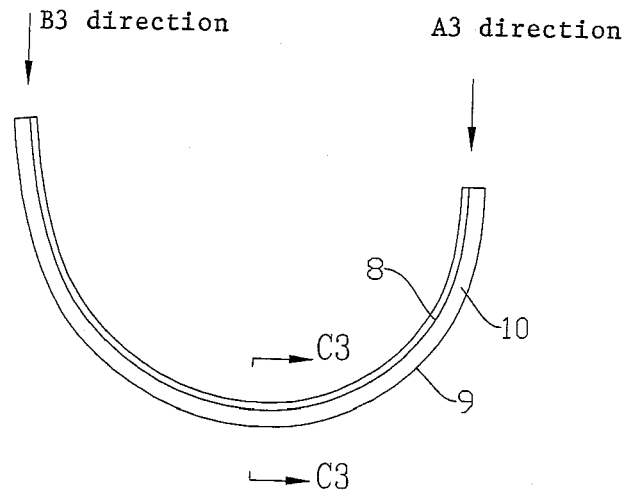


Fig 11

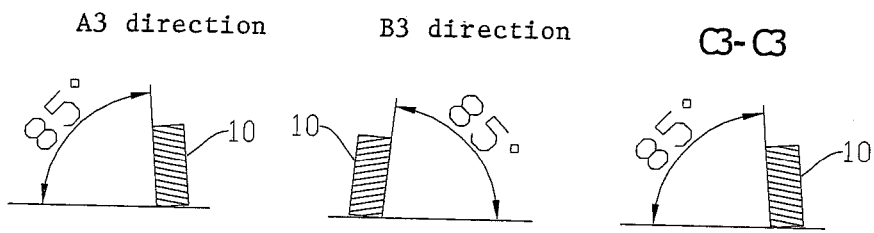


Fig 12

Fig 13

Fig 14

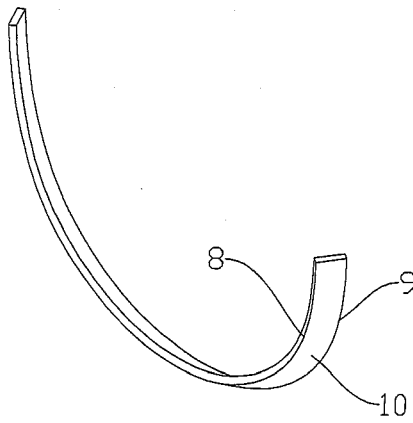


Fig 15

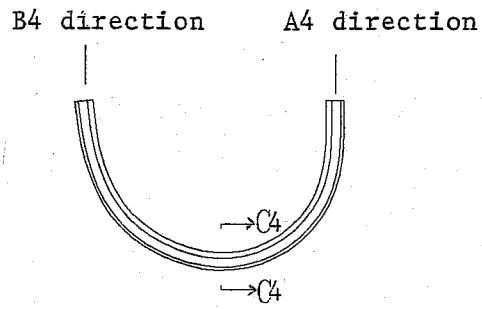


Fig 16

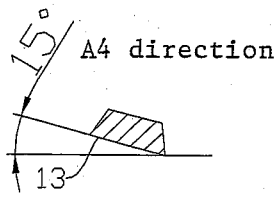


Fig 17

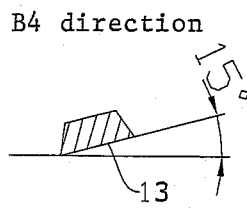


Fig 18

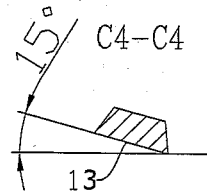


Fig 19

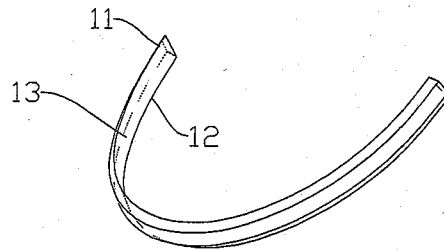


Fig 20

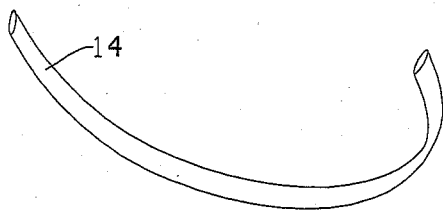


Fig 21

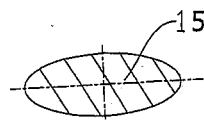


Fig 22



EUROPEAN SEARCH REPORT

Application Number  
EP 10 19 0066

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X	US 2008/274669 A1 (LIU ZHEN QIANG [HK]) 6 November 2008 (2008-11-06) * abstract; figures 1,3-5,7 * * paragraphs [0001], [0002], [0007] - [0013], [0065], [0087], [0091] - [0097] * -----	1-9	
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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 9 March 2011	Examiner da Silva, José
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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