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(54) **ELASTIC FIBER FOR A CHAIR**

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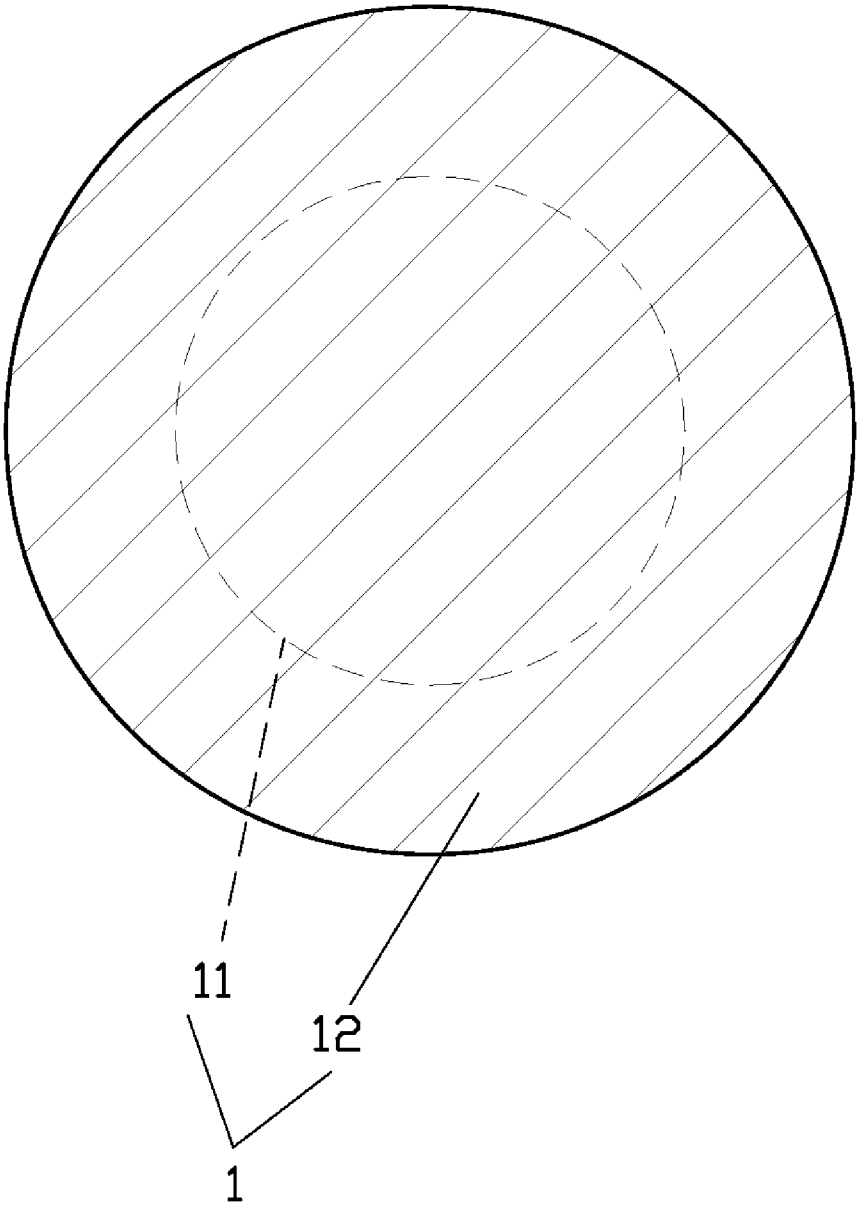
(57) **ABSTRACT**

An elastic fiber for a chair is composed of a core layer and a surface layer formed in a co-extrusion method. The core layer and the surface layer are same serial elastic materials, Thermalplastic Ester Elastomer (TPEE). The core layer has a higher melting point than that of the surface layer. The ratio of the core layer to the surface layer is 9:1, 8:2 or 7:3.



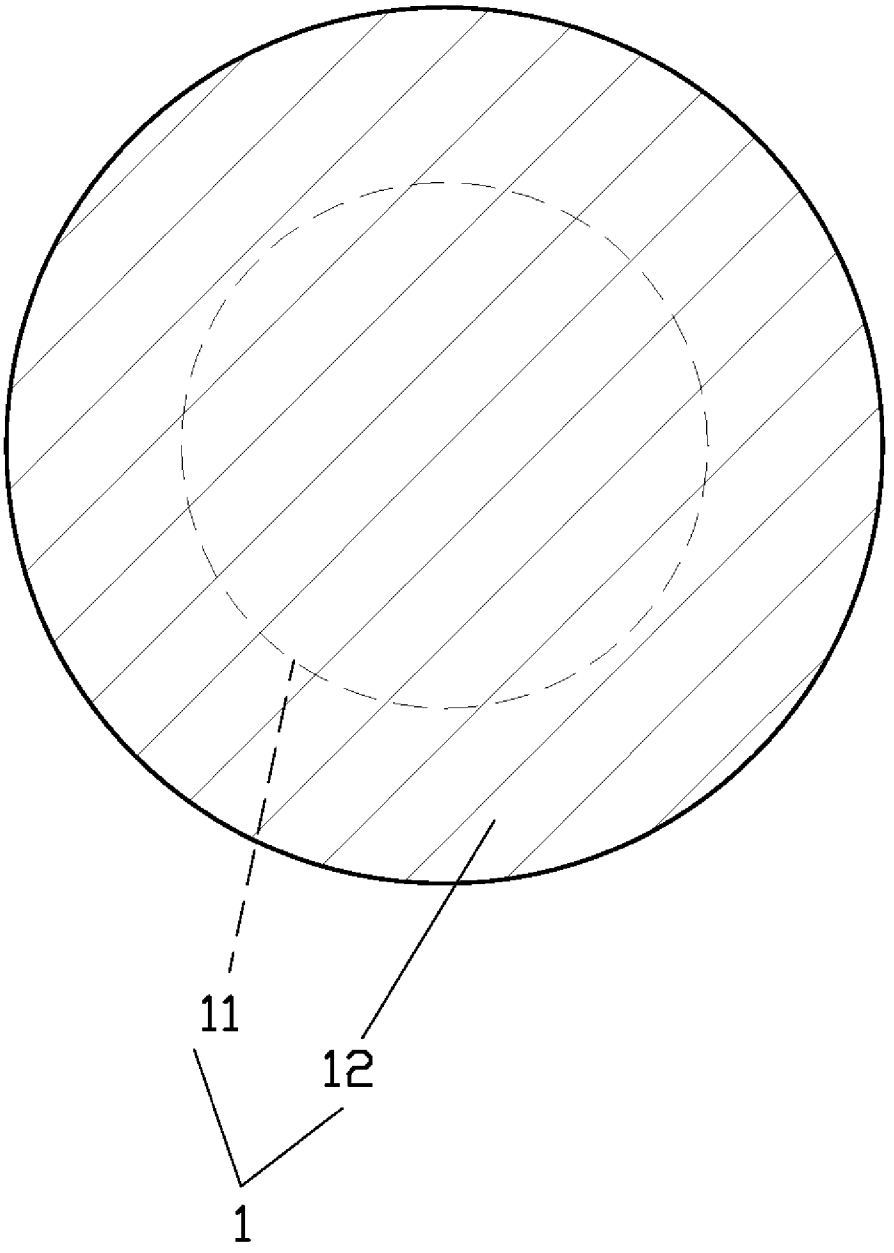


FIG. 1

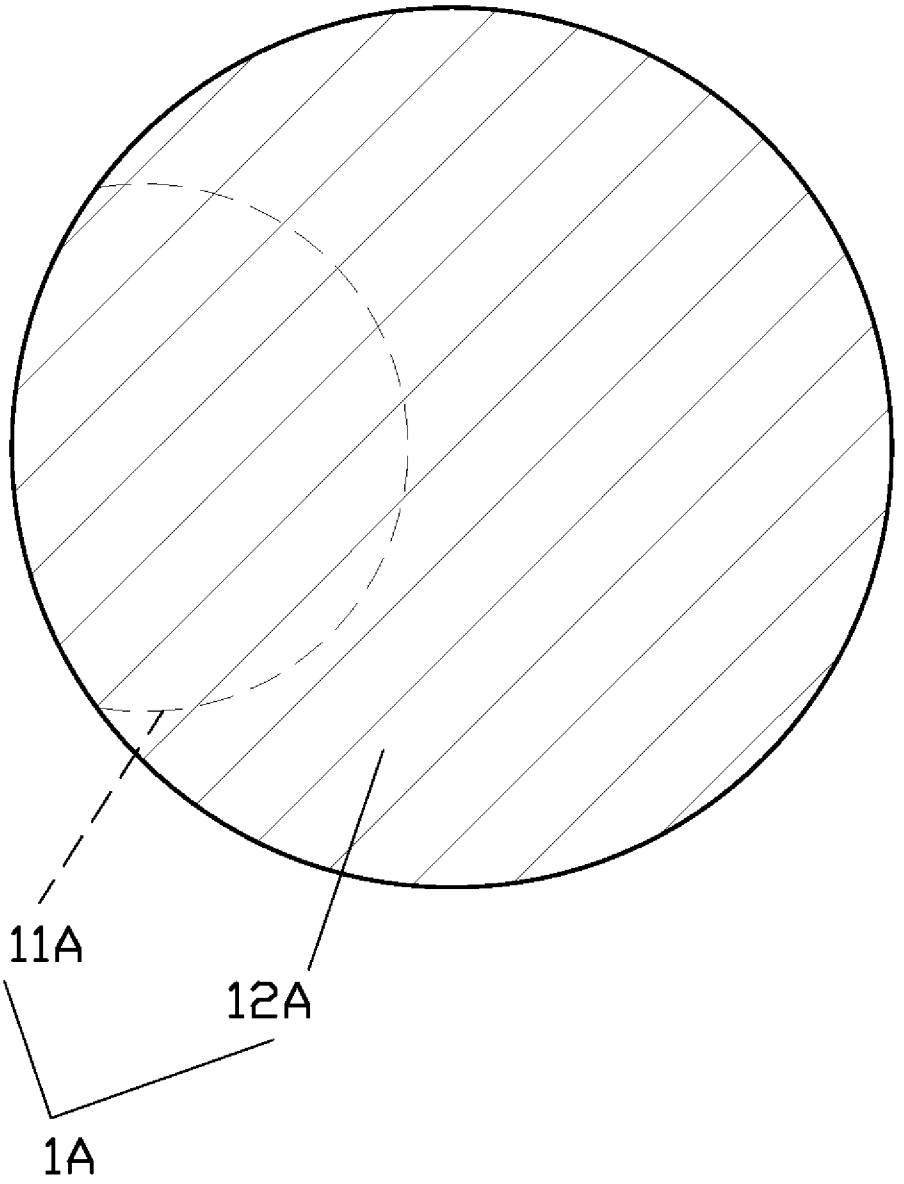


FIG. 2

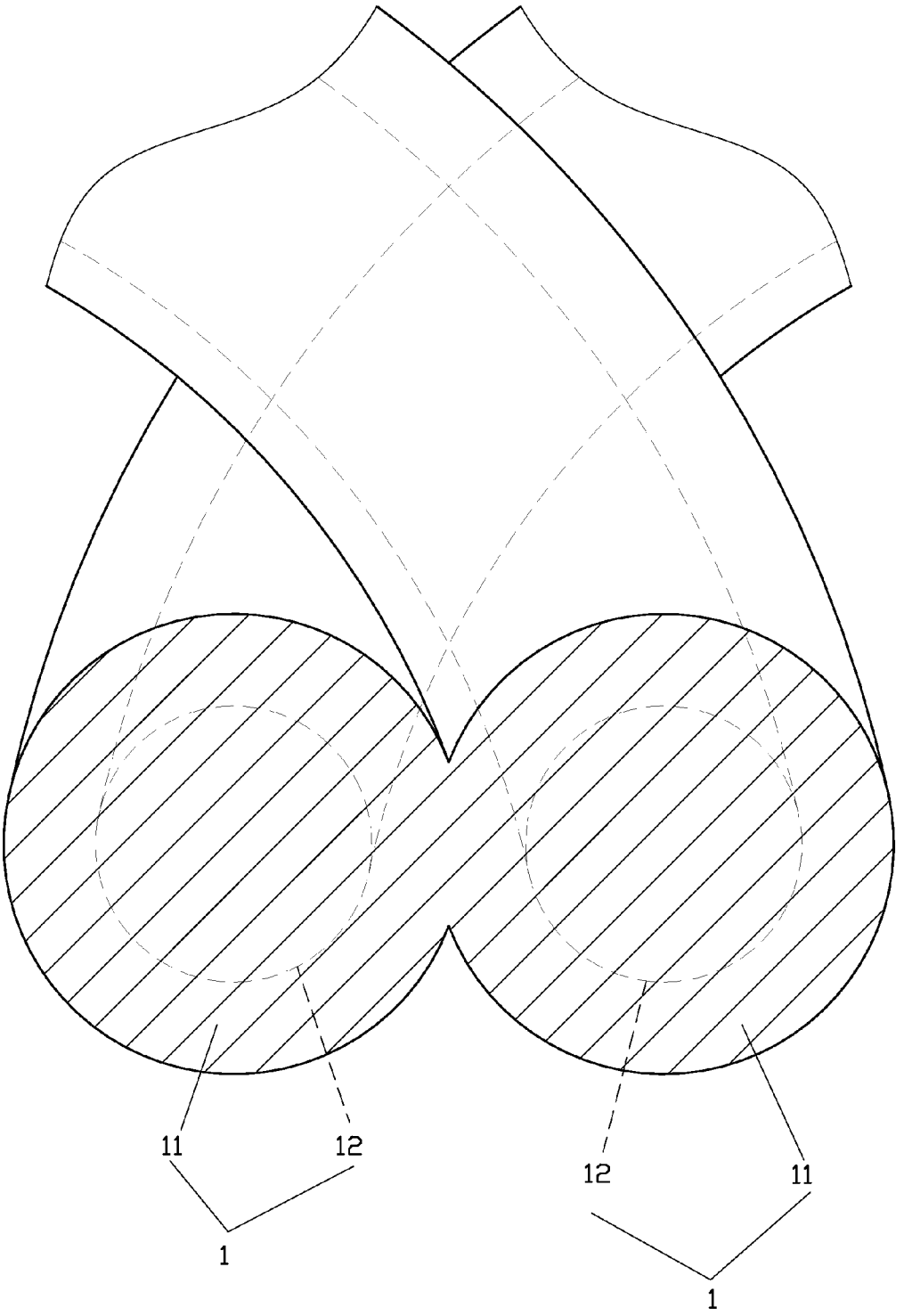


FIG. 3

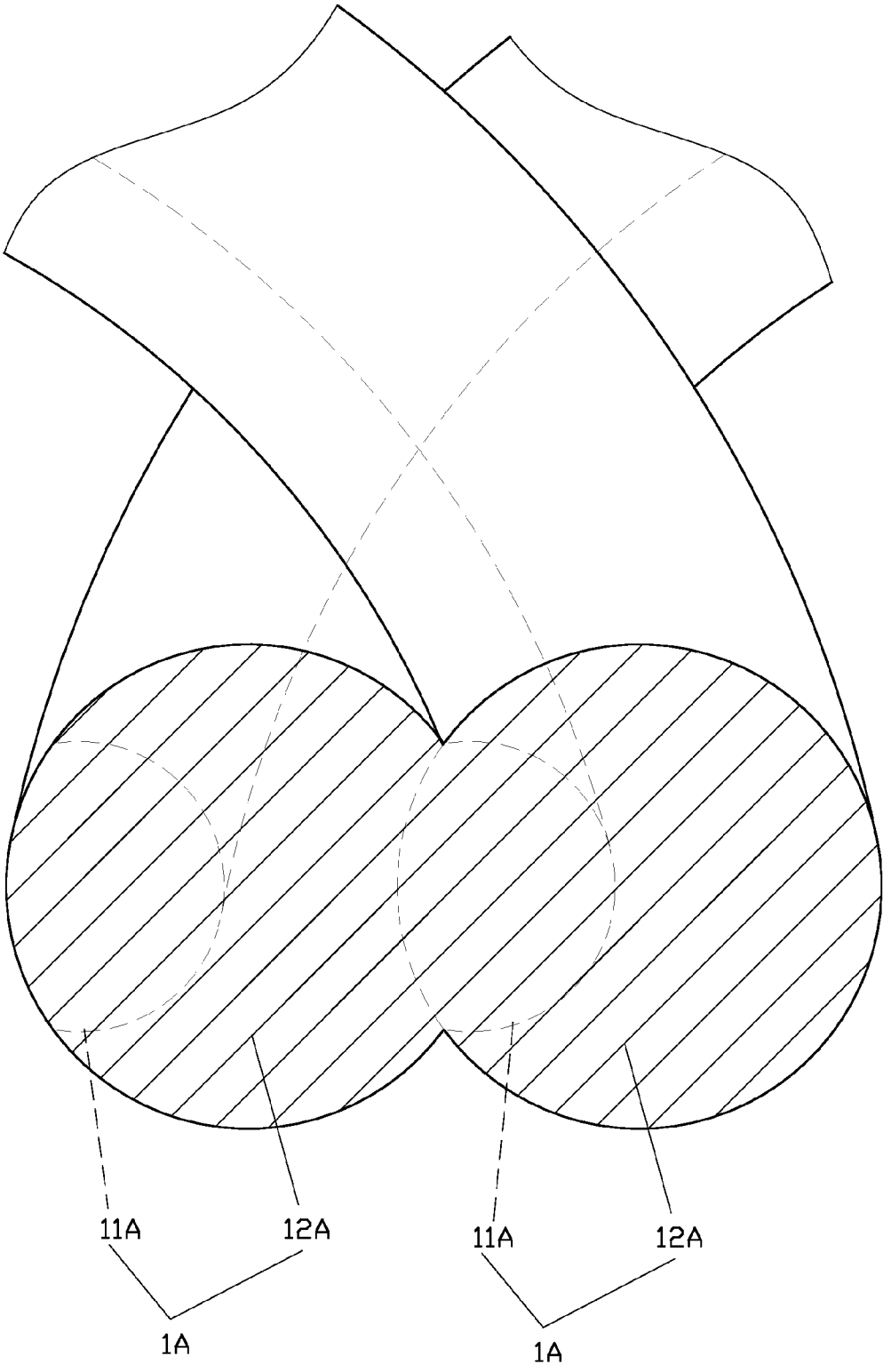


FIG. 4

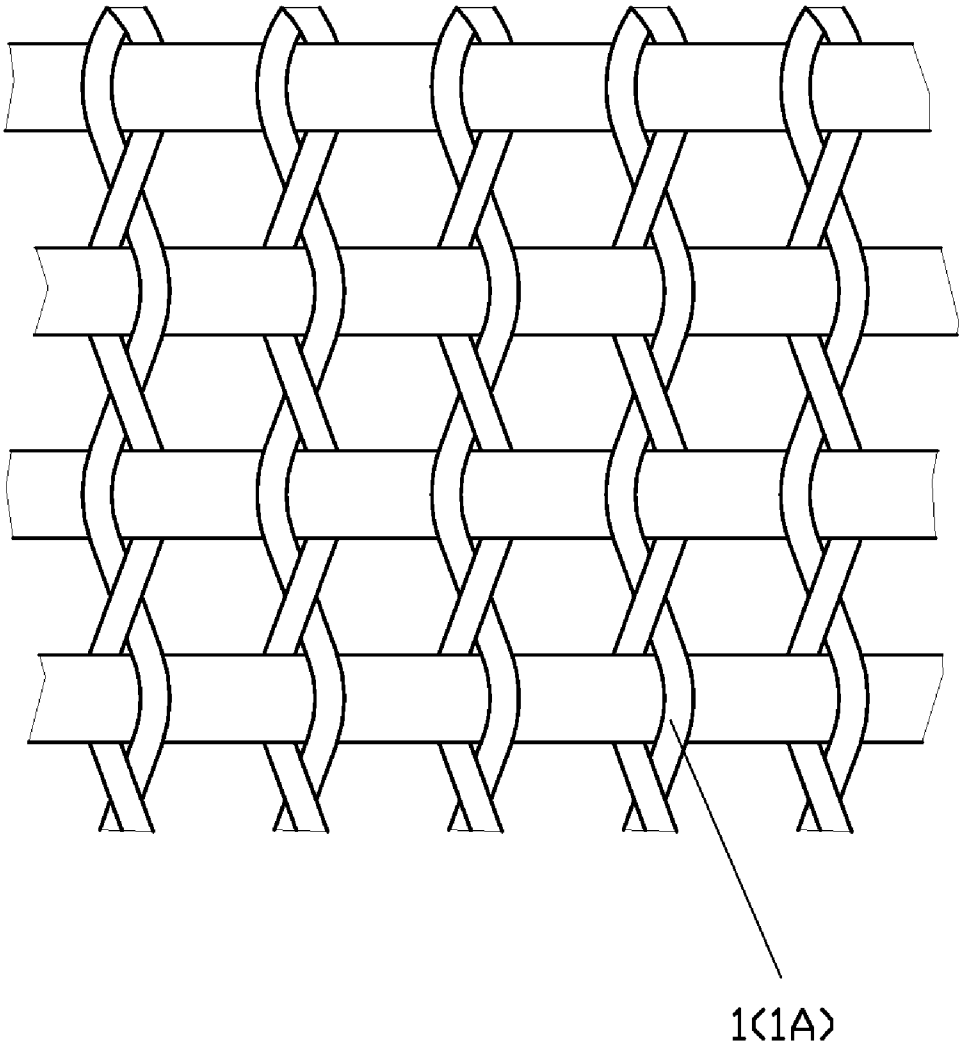


FIG. 5

ELASTIC FIBER FOR A CHAIR

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an elastic fiber for a chair, in particular to an elastic fiber composed of a core layer and a surface layer formed in a co-extrusion method. The core layer has a higher melting point than that of the surface layer.

[0003] 2. Description of the Prior Art

[0004] Conventional fibers, such as U.S. Pat. Nos. 5,677,057 and 5,858,528, comprise a core layer and a surface layer made of different materials having different melting points in a co-extrusion method. This co-extrusion method is to melt and to conjugate the core and the surface layers together. However, the core layer and the surface layer made of different materials have different coefficients of elasticity, causing different deformation speeds. In the beginning, the peeling is slight, but after a period of time the peeling will become serious. Fatigue will eventually affect the material, and it starts to deterioration.

[0005] If this material is used as a chair cloth, the surface tension will restore in a rapid speed at the beginning. However, after a period of time, the cloth will lose its elastic character because of the peeling of the core layer and the surface layer.

SUMMARY OF THE INVENTION

[0006] According to the present invention, there is provided an elastic fiber comprising a core layer and a surface layer formed in a co-extrusion method. The core layer and the surface layer are same serial elastic materials, Thermalplastic Ester Elastomer (TPEE). The core layer has a higher melting point than that of the surface layer. The ratio of the core layer to the surface layer is 9:1, 8:2 or 7:3.

[0007] The present invention provides the following advantages:

[0008] 1. Having a longer life span;

[0009] 2. Restoring its shape at a fast speed

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] FIG. **1** is a cross sectional view of a first embodiment of the present invention;

[0011] FIG. **2** is a cross sectional view of a second embodiment of the present invention;

[0012] FIG. **3** is a cross sectional view showing a heat-bonding connection of the first embodiment of the present invention;

[0013] FIG. **4** is a cross sectional view showing a heat-bonding connection of the second embodiment of the present invention; and

[0014] FIG. **5** is top view of an elastic cloth woven with the elastic fibers of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0015] As shown in FIG. **1**, a first embodiment of the present invention comprises an elastic fiber **1** composed of a core layer **11** and a surface layer **12** formed in a co-extrusion method. The core layer **11** and the surface layer **12** are same serial elastic materials, such as Thermalplastic Ester Elastomer (TPEE). The core layer **11** has a higher melting point than that of the surface layer **12**. The ratio of the core layer **11** to the surface layer **12** is 9:1, 8:2 or 7:3.

[0016] As shown in FIG. **3**, when doing the heat-bonding process, the lower melting point of the surface layer **12** makes it easy to conjugate with the core layer **11**. The core layer **11** having a higher melting point is harder than the surface layer **12**, which produces a higher tension against a pulling force. The surface layer **12** is less hard and is easy to deform when a pulling force is applied. A number of the elastic fibers **1** may be wrung to become one elastic string, which is then applied with heat to conjugate the elastic fibers **1** together. The elastic string may be woven to an elastic cloth, and then do the heat-bonding process.

[0017] As shown in FIG. **2**, a second embodiment of the present invention comprises an elastic fiber **1**A composed of a core layer **11**A and a surface layer **12**A formed in a co-extrusion method. As shown in FIG. **4**, the core layer **11**A and the surface layer **12**A are same serial elastic materials, such as Thermalplastic Ester Elastomer (TPEE). The core layer **11**A has a higher melting point than that of the surface layer **12**A. The ratio of the core layer **11**A to the surface layer **12**A is 9:1, 8:2 or 7:3.

[0018] FIG. **5** shows an elastic cloth (net) woven with the elastic fibers **1** or **1**A of the present invention. The elastic cloth can be used as a chair cloth, which provides a better restoring force after the pulling force is released.

What is claimed is:

1. An elastic fiber for a chair comprising a core layer and a surface layer formed in a co-extrusion method, said core layer and said surface layer being same serial elastic materials, said elastic material being Thermalplastic Ester Elastomer (TPEE), said core layer having a higher melting point than that of said surface layer.

2. The elastic fiber for a chair, as recited in claim **1**, wherein the ratio of said core layer to said surface layer is 9:1.

3. The elastic fiber for a chair, as recited in claim **1**, wherein the ratio of said core layer to said surface layer is 8:2.

4. The elastic fiber for a chair, as recited in claim **1**, wherein the ratio of said core layer to said surface layer is 7:3.

5. An elastic net for a chair made of said elastic fiber recited in claim **1**.

6. An elastic net for a chair made of said elastic fiber recited in claim **2**.

7. An elastic net for a chair made of said elastic fiber recited in claim **3**.

8. An elastic net for a chair made of said elastic fiber recited in claim **4**.

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