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Heat dissipative brassiere cup

BACKGROUND OF THE INVENTION

Field of the Invention

5 The present invention relates to a brassiere cup, more particularly to an improved brassiere cup with the ventilation and heat dissipation functions.

Description of the Prior Art

 In general, the breasts of oriental women are smaller, therefore brassiere cups with support and centralized effect is desired when they select their
10 purchase. However the structure of prior-art brassiere cup is roughly divided into foam cups and silk floss cups. Please refer to FIG. 1. The foam cup A is composed of an outer lining layer B, a foam layer C and an inner lining layer D, and the foam layer is disposed between the outer lining layer B and the inner layer D. The brassiere cup is formed after the thermal pressing by molds.
15 The lower edge of the inner surface of the brassiere cup is generally made thicker to give a better support to the breast, and thus makes the ventilation more difficult. Further, after the washing of the brassiere for many times, the brassiere cup will be deformed. This is the issue that the manufacturer needs to break through and improve.

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Summary of the Invention

The primary objective of the present invention is to overcome the shortcoming of the poor ventilation of the prior-art brassiere, and to provide a brassiere cup with good ventilation and heat dissipation while avoiding
5 deformations to the brassiere cup.

The design of the brassiere cup in accordance with the present invention has air passages or ventilation holes in the foam layer of the brassiere cup, so that the wearer's body heat can be dissipated from the inner lining layer to the outer lining layer to effectively attain the ventilation and heat dissipation effect
10 and provide a more comfortable underwear for the wearer. Furthermore, the present invention also designs a gauze layer between the inner and outer lining layers to reinforce the strength of the brassiere cup and prevent it from being deformed, so that the curve of the brassiere cup can be more upstanding and protrusive.

To make it easier for our examiner to understand the objective of the invention, its structure, innovative features, and performance, we use a preferred embodiment together with the attached drawings for the detailed description of the invention.
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BRIEF DESCRIPTION OF THE DRAWINGS

Other features and advantages of the present invention will become apparent in the following detailed description of the preferred embodiments with reference to the accompanying drawings, in which:
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FIG. 1 is a cross-sectional diagram of a prior-art brassiere cup.

FIG. 2 is an illustrative diagram of the dissembled structure of each layer of
25 the brassiere cup according to a preferred embodiment (I) of the

present invention.

FIG. 3 is a perspective diagram of the brassiere cup according to a preferred embodiment (I) of the present invention.

FIG. 4 is a cross-sectional diagram of the cross-section A-A of FIG. 3.

5 FIG. 5 is an illustrative diagram of the dissembled structure of each layer of the brassiere cup according to a preferred embodiment (II) of the present invention.

FIG. 6 is a perspective diagram of the brassiere cup according to a preferred embodiment (II) of the present invention.

10 FIG. 7 is a cross-sectional diagram of the cross-section B-B of FIG. 6.

FIG. 8 is an illustrative diagram of the dissembled structure of each layer of the brassiere cup according to a preferred embodiment (III) of the present invention.

15 FIG. 9 is a perspective diagram of the brassiere cup according to a preferred embodiment (III) of the present invention.

FIG. 10 is a cross-sectional diagram of the cross-section A-A of FIG. 9.

FIG. 11 is an illustrative diagram of the dissembled structure of each layer of the brassiere cup according to a preferred embodiment (IV) of the present invention.

20 FIG. 12 is a perspective diagram of the brassiere cup according to a preferred embodiment (IV) of the present invention.

FIG. 13 is a cross-sectional diagram of the cross-section D-D of FIG. 12.

FIG. 14 is an illustrative diagram of the dissembled structure of each layer of the brassiere cup according to a preferred embodiment (V) of the present invention.

5 FIG. 15 is a perspective diagram of the brassiere cup according to a preferred embodiment (V) of the present invention.

FIG. 16 is a cross-sectional diagram of the cross-section E-E of FIG. 15.

FIG. 17 is an illustrative diagram of the dissembled structure of each layer of the brassiere cup according to a preferred embodiment (VI) of the present invention.

10 FIG. 18 is a perspective diagram of the brassiere cup according to a preferred embodiment (VI) of the present invention.

FIG. 19 is a cross-sectional diagram of the cross-section F-F of FIG. 18.

15 FIG. 20 is an illustrative diagram of the dissembled structure of each layer of the brassiere cup according to a preferred embodiment (VII) of the present invention.

FIG. 21 is a perspective diagram of the brassiere cup according to a preferred embodiment (VII) of the present invention.

FIG. 22 is a cross-sectional diagram of the cross-section G-G of FIG. 21.

20 FIG. 23 is an illustrative diagram of the dissembled structure of each layer of the brassiere cup according to a preferred embodiment (VIII) of the present invention.

FIG. 24 is a perspective diagram of the brassiere cup according to a preferred embodiment (VIII) of the present invention.

FIG. 25 is a cross-sectional diagram of the cross-section H-H of FIG. 24.

FIG. 26 is an illustrative diagram of the dissembled structure of each layer of the brassiere cup according to a preferred embodiment (IX) of the present invention.

5 FIG. 27 is a perspective diagram of the brassiere cup according to a preferred embodiment (IX) of the present invention.

FIG. 28 is a cross-sectional diagram of the cross-section I-I of FIG. 27.

FIG. 29 is a diagram of the dissembled structure of the brassiere cup according to a preferred embodiment (X) of the present invention.

10 FIG. 30 is a cross-sectional diagram of the brassiere cup according to FIG. 29 after it is sewed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please refer to FIGs. 2, 3, and 4 for the disclosure of a first preferred embodiment (I). The wavy dissipative foam brassiere cup 10 of the present invention comprises an outer lining layer 11, a foam layer 12, and an inner lining layer 13, wherein the foam layer 12 is disposed between the outer lining layer 13 and the inner lining layer 11, and forms a three-dimensional shape of the brassiere cup after the thermal pressing by a mold, and the foam layer 12 has a plurality of cuts 14, and the cuts form an air passage 15 for ventilation and heat dissipation at predetermined positions, and these layers are stacked in order before forming the three-dimensional brassiere cup 10 by the thermal pressing of the mold.. The transversal depth of the cut after its formation will be decreased according to the thickness of the brassiere cup, so that the body heat can be dissipated quickly from the inner lining layer 13 to the outer lining layer 11. Such arrangement shortens the ventilation distance between the inner and outer lining layers 13, 11 without changing the thickness of the brassiere cup, and effectively maximizes the ventilation and heat dissipation effect. The trouble caused by body heat can be eliminated effectively, so that the wearer may have a more comfortable underwear.

From the structure described above, if further requirement for reinforcing the strength of the brassiere cup 10 is needed to prevent deformation, various embodiments as described below can be used. Please refer to FIGs. 5, 6, and 7 for a second preferred embodiment (II) of the present invention. The foam layer 12 comprises a plurality of cuts 14 at predetermined positions, and the cuts 14 form an air passage 15 for ventilation and heat dissipation, and a gauze layer 16 is disposed between the foam layer 12 and the inner and outer lining layers 13, 11. The gauze layer 16 is a grid gauze (the gauze shown in the figure is represented by illustrative lines and not represented by the lines of the actual object), which can adopt a polyton material or other equivalent material.

These layers are stacked in order before processing with the thermal pressing by a mold. Thus, the gauze layer 16 increases the structural strength of the brassiere cup 10 and makes it more upstanding and protrusive, and not to be deformed easily.

5 The inner lining layer 13 and the outer lining layer 11 of the structure described above could use a piece of cloth or a foam with a predetermined thickness at the lower edge of the cloth. The one with foam makes the sewing or the manufacturing process more easily and also improves the production efficiency. The cut 14 on the foam layer 12 could be made in horizontal
10 direction, vertical direction, titled direction, or any unspecified direction.

To accomplish the foregoing performance, the aforementioned structure is not limited to this embodiment, but any of the following embodiments could be employed. Please refer to FIGs. 8, 9, and 10 for the third preferred
15 embodiment (III) of the present invention. The structure comprises a foam layer 12 having a plurality of embossments 17, and forms an air passage 15 for ventilation and heat dissipation between two embossments 17. A gauze layer 16 is disposed between the inner and outer lining layers 13, 11. These layers are stacked in order before being processed by the thermal pressing of the mold to form the shape of the brassiere cup 10, reinforce the structure of the brassiere
20 cup 10, reduce the deformation, and facilitate the ventilation effect.

Please refer to FIGs. 11, 12, and 13 for the fourth preferred embodiment (IV) of the present invention. The foam layer 12 has a plurality of embossments 17 on its upper and lower surfaces, such that an air passage 17 is formed between two embossments 17. A gauze layer 16 is disposed between the foam layer 12
25 and the inner and outer lining layers 13, 11. These layers are stacked in order before being processed by the thermal pressing of the mold to form the shape of the brassiere cup 10 and reinforce the structure of the brassiere cup 10.

Please refer to FIGs. 14, 15, and 16 for the fifth embodiment of the present invention. The foam layer 12 is arranged so that it has a plurality of embossments 17 in the shape of a bar and an air passage 17 is formed between two embossments 17. A gauze layer 16 is disposed between the foam layer 12 and the inner and outer lining layers 13, 11. These layers are stacked in order before being processed by the thermal pressing of the mold to form the shape of the brassiere cup 10 and reinforce the structure of the brassiere cup 10.

Please refer to FIGs. 17, 18, and 19 for the sixth embodiment of the present invention. The foam layer 12 is arranged so that it has a plurality of embossments 17 in the shape of a semicircle and an air passage 17 is formed between two embossments 17. A gauze layer 16 is disposed between the foam layer 12 and the inner and outer lining layers 13, 11. These layers are stacked in order before being processed by the thermal pressing of the mold to form the shape of the brassiere cup 10 and reinforce the structure of the brassiere cup 10.

Please refer to FIGs. 20, 21, and 22 for the seventh embodiment of the present invention. The foam layer 12 is arranged so that it has a plurality of embossments 17 in the shapes of a bar and a semicircle, such that an air passage 17 is formed between two embossments 17. A gauze layer 16 is disposed between the foam layer 12 and the inner and outer lining layers 13, 11. These layers are stacked in order before being processed by the thermal pressing of the mold to form the shape of the brassiere cup 10 and reinforce the structure of the brassiere cup 10.

Please refer to FIGs. 23, 24, and 25 for the eighth embodiment of the present invention. The foam layer 12 is arranged so that the embossments on two foam layers 17 are aligned with each other to form an air passage 15 for ventilation and heat dissipation, and sewed with the inner lining layer 13 and the outer lining layer 11. These layers are stacked in order before being

processed by the thermal pressing of the mold to form the shape of the brassiere cup 10 and reinforce the structure of the brassiere cup 10.

Please refer to FIGs. 26, 27, and 28 for the ninth embodiment of the present invention. The foam layer 12 is arranged so that it has a plurality of concave
5 holes 18 in vertical depth, and the concave hole could be in the shapes of a groove or a hole, so that an air passage 15 is formed in the groove hole 18. A gauze layer 16 is disposed between the foam layer 12 and the inner and outer lining layers 13, 11. These layers are stacked in order before being processed by the thermal pressing of the mold to form the shape of the brassiere cup 10.

10 Please refer to FIGs. 29, 30, and 31 for the tenth embodiment of the present invention. The foam layer 12 has a plurality of ventilation holes 19. A gauze layer 16 is disposed between the foam layer 12 and the inner and outer lining layers 13, 11. These layers are stacked in order before being processed by the thermal pressing of the mold to form the shape of the brassiere cup 10 and to
15 attain the effects of reinforcing the structure, reducing the deformation, and facilitating the ventilation of the brassiere cup 10.

While the present invention has been described in connection with what is considered the most practical and preferred embodiments, it is understood that this invention is not limited to the disclosed embodiments but is intended to
20 cover various arrangements included within the spirit and scope of the broadest interpretations and equivalent arrangements.

WHAT IS CLAIMED IS:

1. A heat dissipative brassiere cup having a foam layer, an inner layer, and an outer layer, characterized in that said foam layer having a plurality of cuts and being disposed between the inner lining layer and the outer lining layer,
5 and these layers being coupled by a thermal pressing mold to form a three-dimensional shape of the brassiere cup.
2. A heat dissipative brassiere cup having a plurality of ventilation holes, a foam layer, an inner lining layer, an outer lining layer, and a gauze layer, characterized in that said gauze layer being disposed between the inner
10 lining layer and the outer lining layer, and these layer being stacked in order and coupled by a thermal pressing mold to form a three-dimensional shape of the brassiere cup for strengthening the structure, reducing the deformation, and facilitating the ventilation of the brassiere cup.
3. A heat dissipative brassiere cup as claimed in claim 1, wherein said inner
15 lining layer and outer lining layer at the lower edges has a piece of foam of predetermined thickness.
4. A heat dissipative brassiere cup as claimed in claim 1, wherein said foam layer having a cut being made in the direction selected from the collection of vertical direction, horizontal direction, and unspecified direction.
- 20 5. A heat dissipative brassiere cup as claimed in claim 2, wherein said foam layer further comprises a plurality of embossments, and an air passage is formed between two embossments for ventilation and heat dissipation.
6. A heat dissipative brassiere cup as claimed in claim 2, wherein said foam
25 layer comprises a foam comprising a plurality of groove holes, and said groove holes form an air passage for ventilation and heat dissipation.

7. A heat dissipative brassiere cup as claimed in claims 2, 5, or 6, wherein said gauze layer is made of a polylon material.
8. A heat dissipative brassiere cup as claimed in claim 5, wherein said plurality of embossments between two foam layers forms an air passage for ventilation and heat dissipation after said embodiments are coupled.
9. A heat dissipative brassiere cup as claimed in claim 5, wherein said embossment has a shape selected from a collection of a square, a semicircular, polygonal geometric shapes, lines, and patterns.