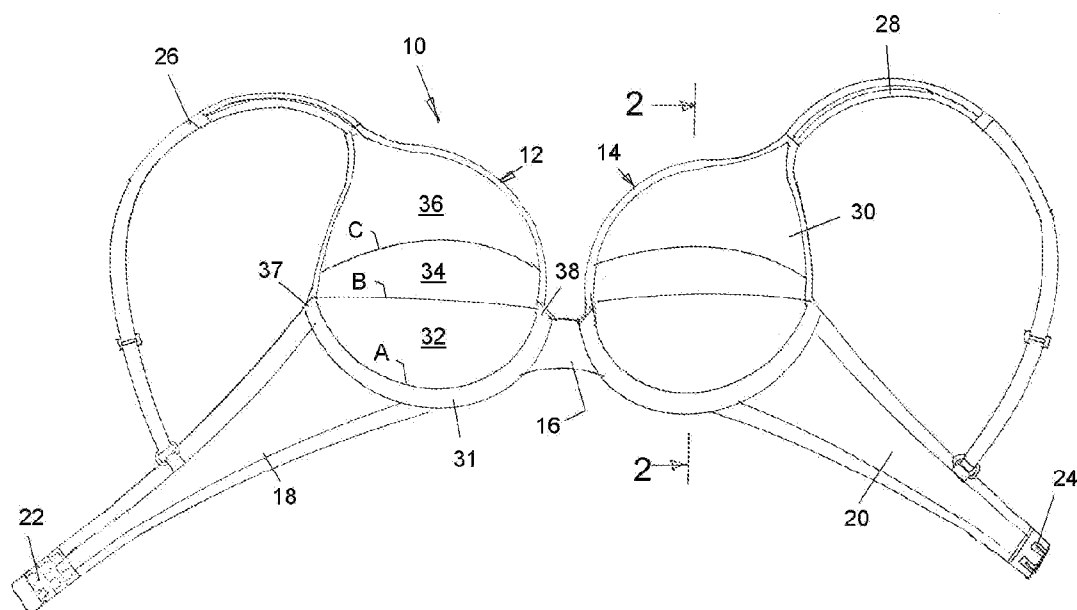




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(19) **United States**(12) **Patent Application Publication**
Martinet et al.(10) **Pub. No.: US 2007/0298680 A1**(43) **Pub. Date: Dec. 27, 2007**(54) **BRA STRUCTURES WITH VARIABLE
RIGIDITY FABRICS****Publication Classification**(51) **Int. Cl.**
A41C 3/00 (2006.01)(52) **U.S. Cl.** **450/39**(57) **ABSTRACT**

A bra cup component has an inner fabric layer with lower, middle and lower cup areas. The lower cup area is knit fabric of a first synthetic yarn that is initially flexible and then becomes more rigid after being heated to a temperature higher than any temperature the bra would experience during washing and wearing. The upper cup area knit of a second polyester yarn. An outer fabric layer over the inner fabric layer is attached around the perimeter and is closely adjacent the upper cup area and spaced from the lower cup area to form a support space. An underwire area is around a lower portion of the lower cup area so that the lower cup area extending between opposite ends of the underwire area for creating a bust lifting effect.

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ORANGEBURG, NY 10962-2100(21) **Appl. No.: 11/425,435**(22) **Filed: Jun. 21, 2006**

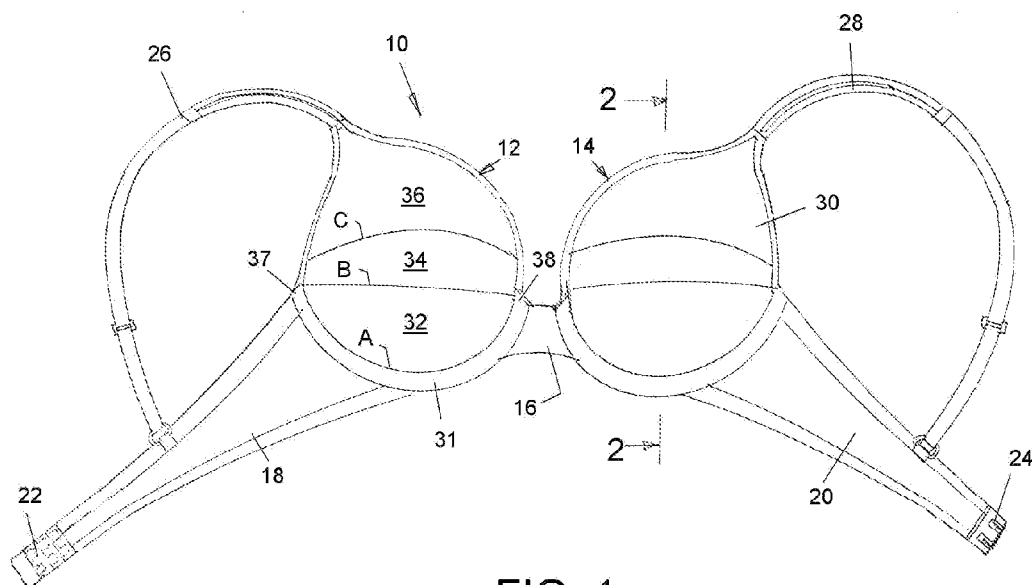


FIG. 1

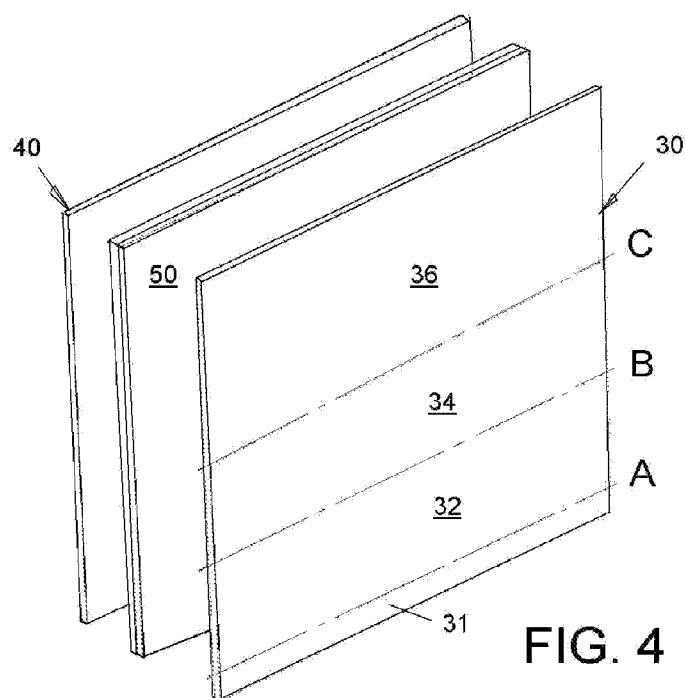


FIG. 4

FIG. 2

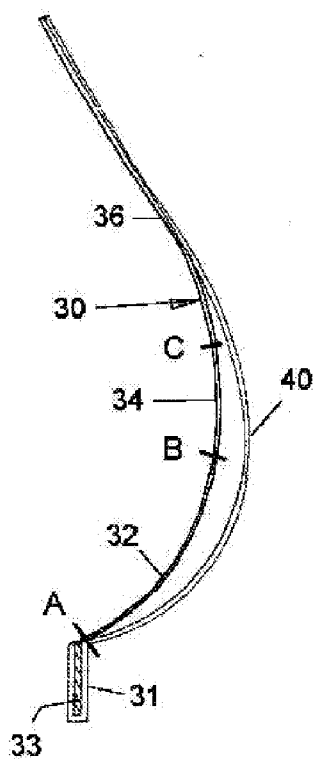
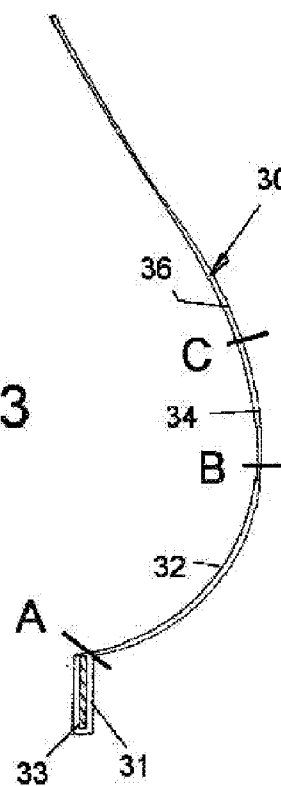


FIG. 3



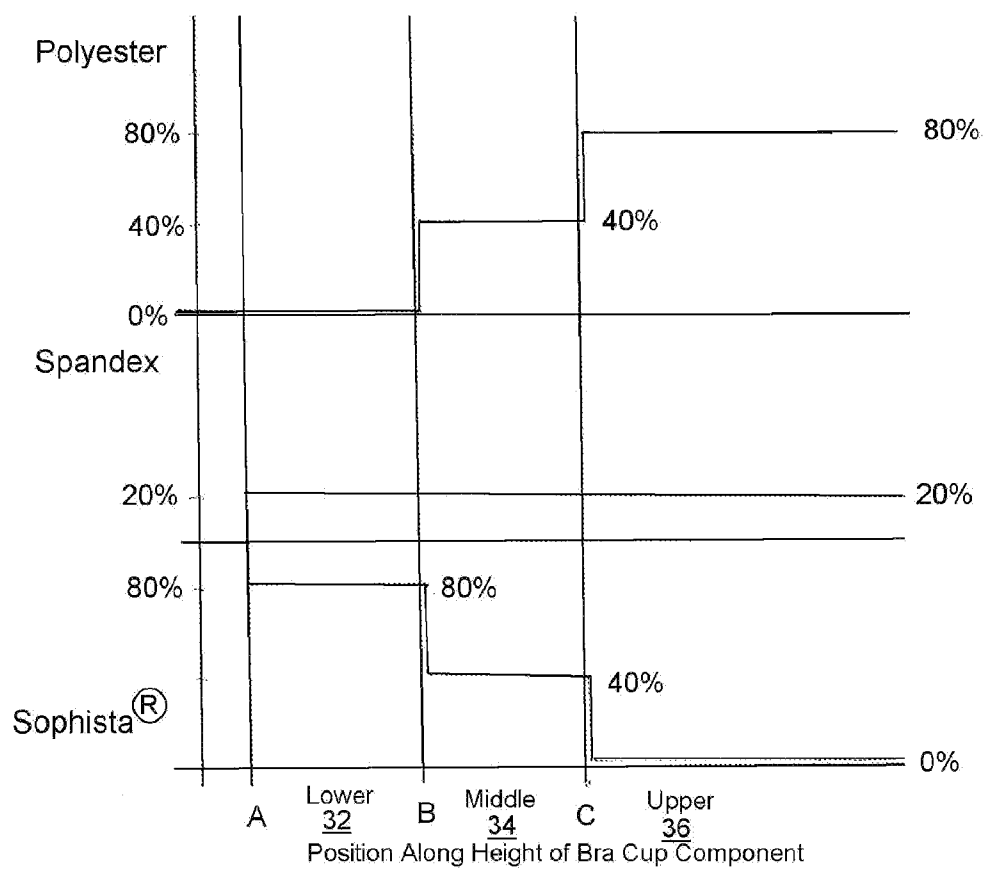


FIG. 5

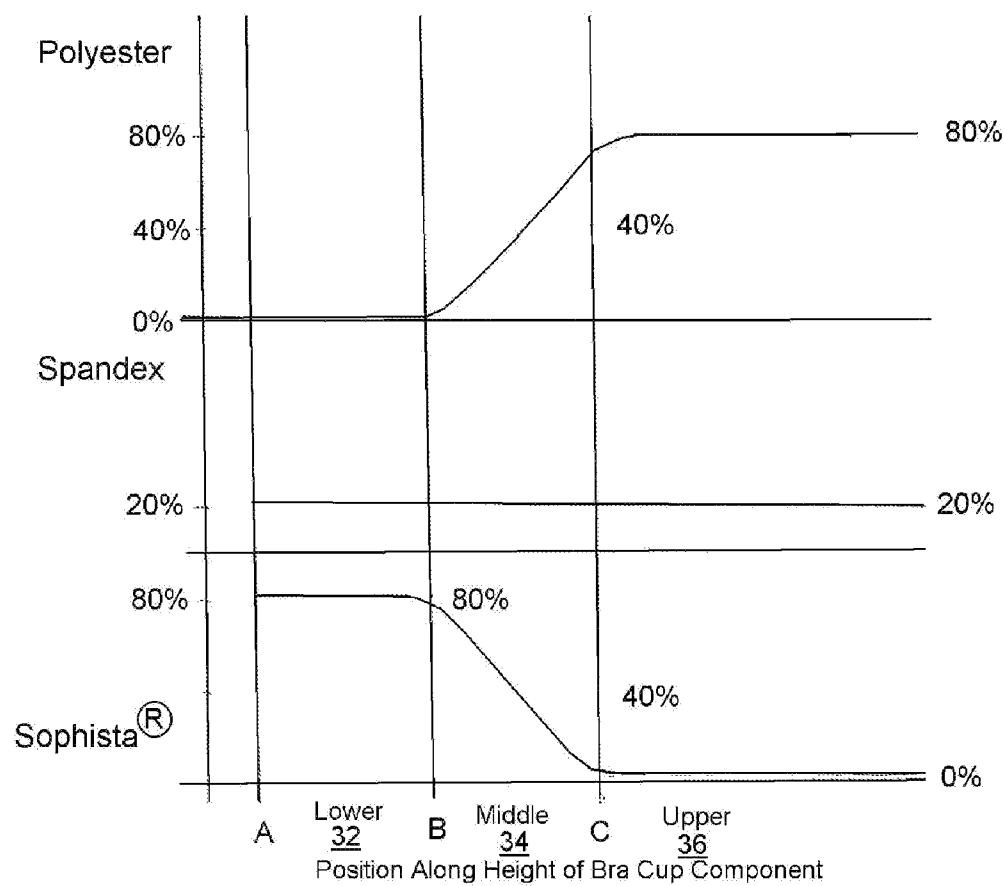
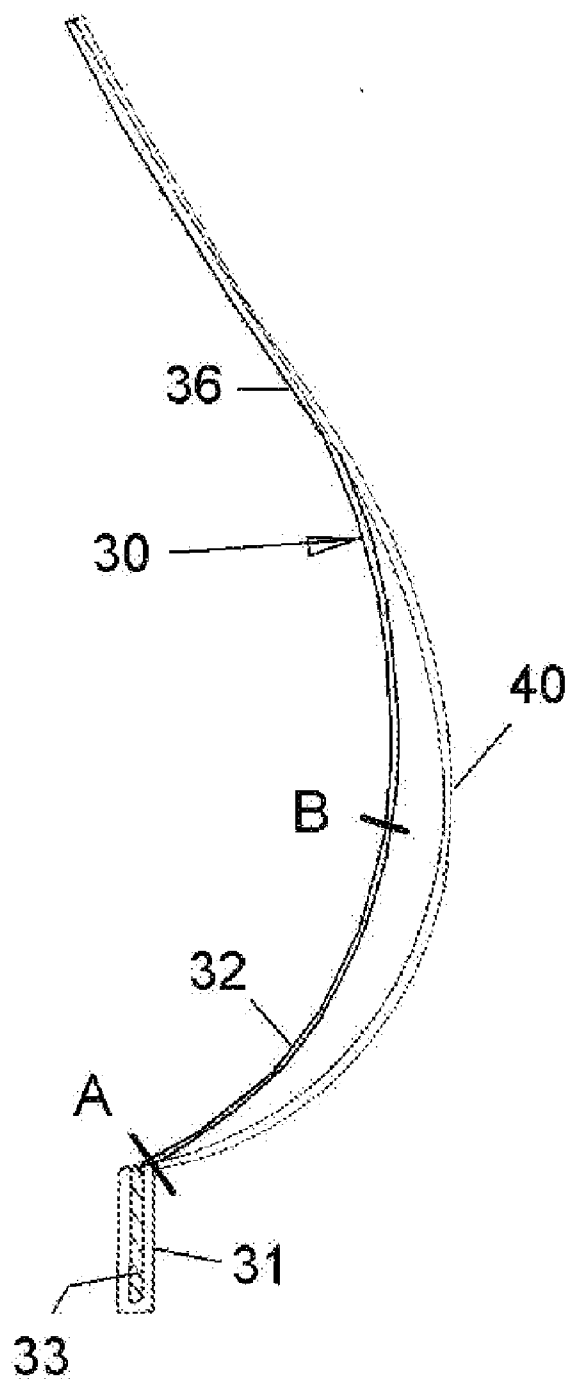


FIG. 6

FIG. 7



BRA STRUCTURES WITH VARIABLE RIGIDITY FABRICS

FIELD AND BACKGROUND OF THE INVENTION

[0001] The present invention relates in general to the construction and design of bras and other bust covering garments, and, in particular, to a new and useful bra cup component for extending over at least part of a women's bust, the component being made at least partly of a yarn having the characteristic of being initially flexible and then becoming more rigid after being heated to a temperature that is higher than any temperature the component would normally experience during washing and wearing.

[0002] Patents that were found to be pertinent to the present invention are:

U.S. Pat. No.	Inventor(s)
2,727,278	Thompson
2,891,544	London
3,164,655	Howard et al.
4,025,597	Sawamoto
4,795,399	Davis
4,920,575	Bartasis et al.
5,059,482	Kawamoto et al.
5,082,721	Smith et al.
5,087,519	Yamaguchi et al.
5,692,935	Smith
5,766,758	Hirakawa et al.
6,235,063	Nakayama et al.
6,248,418	Taguchi et al.
6,645,040	Rabinowicz
6,811,464	Li
6,811,874	Tanaka et al.
6,881,123	Klakauskas.

[0003] U.S. Pat. No. 5,059,482 to Kawamoto et al. (assigned to Kuraray Company, Ltd.) discloses a composite fiber comprising an ethylene vinyl alcohol copolymer and polyester heterogeneously blended with each other. The fiber has a feeling similar to a natural fibers. This patent discloses a yarn know by the trademark Sophista® and owned the Kuraray Company, Ltd.

[0004] U.S. Pat. No. 4,920,575 to Bartasis et al. discloses a protective garment made of synthetic cloth-like material. The material includes an outer film laminated to an inner substrate of spun-bonded polyester material. The outer film has five layers with the center layer being ethylene vinyl alcohol, the outer layers being polyethylene, and the layers in between being adhesive.

[0005] Bartasis '575 does not teach or suggest use of a knitted blend of ethylene vinyl alcohol and polyester (e.g., Sophista® yarn). Nor does it teach or suggest heating to make the ethylene vinyl alcohol more rigid while leaving other fabric portions softer.

[0006] U.S. Pat. No. 5,082,721 to Smith et al. discloses a fabric for use in the manufacture of garments protecting against hazardous liquids and vapors. The fabric includes an inner layer of tear resistant fabric, a film layer of resin bonded on the top surface of the tear resistant fabric, and a film layer of ethylene vinyl alcohol copolymer bonded on the bottom surface of the tear resistant fabric. The intermediate fabric may be woven, knitted, non-woven, spun bonded, melt spun, or porous fabric and is required to

provide flex resistance and tear strength. Smith '721 also does not teach or suggest use of a knitted blend of ethylene vinyl alcohol and polyester (e.g., Sophista®) or heat treatment to make the ethylene vinyl alcohol more rigid while leaving other fabric portions softer.

[0007] Various patents also disclose pads having different fabrics of varying softness and rigidity.

[0008] U.S. Pat. No. 6,645,040 to Rabinowicz discloses bra cups in which some portions of the cups are substantially less stretchable than other portions, enhancing support where it is needed. The cups include spandex to impart resiliency to the fabric. Heat bondable film is disposed between plies in one or more selected areas and heat treated via a heat press for example. The bonded areas give a substantially greater resistance to stretching than the fabric alone, so as to provide greater support and shaping in those areas of the garment. Rabinowicz '040 does not teach or suggest a knitted blend of ethylene vinyl alcohol and polyester. Also, heating only bonds the film to cause the bonded areas to be more resistant to stretching. Heating is not taught to change the characteristics of the film to make the film more rigid, and thus portions of the cup more rigid.

[0009] U.S. Pat. No. 4,795,399 to Davis teaches a shoulder pad having two plies of dissimilar material. The upper ply is made of rigid stiff material like polyethylene and the lower ply is made of a soft cushion-like material like a non-woven polyester fabric. Davis '399 does not teach or suggest a blend of rigid material and a stiff material or heating ethylene vinyl alcohol copolymer to produce a more rigid material.

[0010] Other patents disclose heat treatment of bra cups made up of varying materials. U.S. Pat. No. 4,025,597 to Sawamoto discloses heat treating and molding a bra cup comprising polyester fibers impregnated with latex resin. One portion of the latex resin corresponding to the central portion of the fiber layer is not heated to a softening temperature while the remaining area of the latex corresponding to the peripheral portion of the fiber layer is heated to a softening temperature. As a result, the central portion of the fiber layer expands due to resiliency while the peripheral portion of the fiber layer maintains a molded shape. Sawamoto '597 does not teach or suggest a knitted blend of ethylene vinyl alcohol copolymer and polyester or selective heating of the ethylene vinyl alcohol copolymer resulting in a more rigid material.

[0011] U.S. Pat. No. 2,727,278 to Thompson discloses a method for making a bra cup fabric rigid with heat treatment. Filler, in the form of a stiffener such as starch, is applied to the fabric before insertion into the mold so that the filler penetrates into the fabric. A heat molding form of complementary contour is pressed down into the fabric to conform it to the contour of the mold surface. As a result of the stiffener being applied to the fabric, the filled fabric is formed into a stiff contoured wall.

[0012] Another patent of interest is U.S. Pat. No. 6,811,464 to Li, which discloses a process for making a bra pad in which a first pre-laminated sheet of fabric and soft foam is pressed by a breast-shaped mold against a second pre-laminated sheet of fabric and soft foam. A hard support foam wire is placed in a channel in the first pre-laminated sheet of fabric and soft foam so that when the first and second pre-laminated sheets are pressed by the mold, the hard foam wire is laminated between the fabric layers and adjacent to

the melded soft foam. After removal from the mold, the brassiere cup can then be trimmed to shape with a knife or other cutting implement.

[0013] U.S. Pat. No. 3,164,655 to Howard et al., teaches a method of making breast pads and cups by molding of a blank to give it a desired shape and contour. A blank in the form of a concavo-convex blank, which generally follows the contours of the mold and resembles the contour of a female breast, is placed in a two-part mold of smaller dimensions and subjected to heat and pressure in order to mold it permanently into the precise contours of the final product. Different portions of the pad are compressed to a greater or lesser degree during the molding operation. Thus, the rigidity of the various portions of the pad varies in accordance with the degree of compression. The edges of the pad are subjected to greater pressure and provide a more rigid area which is substantially self-supporting. The center portions of the pad are less compressed and provide a softer area.

SUMMARY OF THE INVENTION

[0014] It is an object of the present invention to provide a component for a bra cup that achieves a bust lifting effect with little or no padding and in a bra or other garment that is extremely light for the lifting effect achieved.

[0015] According to one aspect of the invention, at least one fabric component of the part of a bra that is meant to extend over at least part of a women's bust, includes a knitted fabric blend of one natural or synthetic yarn, such as polyester or other synthetic yarn, and another synthetic yarn having a core of one synthetic material, and a sheath of another synthetic material that has the characteristic of becoming more rigid after it has been heated. An example of this other synthetic yarn has a polyester core and an ethylene vinyl alcohol copolymer (EVOH) sheath surrounding the core. A commercially available example of such a yarn is known by the trademark Sophista® and is disclosed, for example, in U.S. Pat. Nos. 5,087,519; 5,766,758; 6,235,063; and 6,811,874.

[0016] According to another aspect of the invention, at least one fabric component of a bra, or a part of the bra pad or cup which is meant to extend over at least part of a women's bust, includes a flexible outer shell and an inner shell that either defines a volume with the outer shell or lies flat against the outer shell. The outer shell may include a foam laminated with a nylon micro/spandex blend, or may have no such foam and the inner shell may include a foam laminated with a support fabric, or may have no such foam. The fabric of the inner shell is a knitted fabric blend of polyester and Sophista® yarn or other synthetic yarn containing a polyester core and an ethylene vinyl alcohol copolymer (EVOH) sheath surrounding the core.

[0017] In one embodiment of the invention, the bra component, or the inner and outer shells are molded to form cups and, if inner and outer shells are involved, are then molded together. Heat is applied above about 220° C. (e.g. about 180° to 240° C.) resulting in the outer shell fabric, or any parts made only of polyester, including parts of the inner shell fabric blend, remaining soft while the Sophista® yarn portion of the component or the inner shell fabric blend becoming more rigid (i.e., less stretchy). This is particularly useful for manufacturing because the inner shell is sewn into the product when it is still very flexible, and only after

heating treatment, the Sophista® portion of the inner shell becomes more rigid and structurally firm to help shape and support the bust.

[0018] Accordingly, another object of the invention is to provide a component for a bra cup comprising: a fabric layer having a lower cup area and an upper cup area; the lower cup area being a fabric including at least a first fraction by weight of a first yarn comprising a synthetic yarn having a characteristic of being initially flexible, and then becoming more rigid after being heated to at least a selected temperature that is higher than any temperature the component would experience during washing and wearing; and the upper cup area being a fabric including a second yarn that is different from the first yarn and which has a characteristic of being initially flexible and remaining flexible after being heated to at least the selected temperature.

[0019] A further object of the invention is to provide such a component wherein the fabric layer includes a middle cup area between the lower and the upper cup areas, the middle cup area being a knitted fabric blend of the first and second yarns, and including less than the first fraction by weight of the first yarn.

[0020] Another object is to provide such a component including, in the lower and the upper cup areas, an elastic yarn knitted respectively with the first and second yarns.

[0021] Another object is to provide such a component including an underwire area containing an underwire below the lower cup area, the underwire area having upwardly extending opposite ends with an upper portion of the lower cup area extending between the opposite ends of the underwire area for creating a bust lifting effect.

[0022] Various percentages by weight of the yarns in the various fabric layers and areas, various dimensions and other parameters of the invention are also disclosed and considered novel and unobvious for producing a light bra that have exceptional bust lifting effect.

[0023] The various features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and specific objects attained by its uses, reference is made to the accompanying drawings and descriptive matter in which preferred embodiments of the invention are illustrated.

BRIEF DESCRIPTION OF THE DRAWINGS

[0024] In the drawings:

[0025] FIG. 1 is an inside plan view of a bra containing the bra cup component of the present invention;

[0026] FIG. 2 is a vertical, sectional view taken along line 2-2 of FIG. 1;

[0027] FIG. 3 is a vertical, sectional view similar to FIG. 2 but of another embodiment of the invention;

[0028] FIG. 4 is a perspective, exploded view of some of the parts of the bra cup component of the present invention, before they have been assembled, cutout and otherwise finished into a bust cup;

[0029] FIG. 5 is a graph showing a preferred yarn type and blend for the various areas of the fabric component of the present invention;

[0030] FIG. 6 is a graph similar to FIG. 5 but of another embodiment of the inventions; and

[0031] FIG. 7 is a view similar to FIG. 2 but illustrating a still further embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0032] Referring now to the drawings, in which like reference numerals are used to refer to the same or similar elements, FIG. 1 shows a bra generally designated 10 having a pair of cups 12 and 14, connected to each other by a fabric band 16, and including a pair of side straps 18 and 20, connected to outer ends of the respective cups 12 and 14, and terminating in either a loop arrangement 22, or a hoop arrangement 24, on conventional design. Shoulder straps 26 and 28 are also provided between the top of each cup 12, 14, and an intermediate location on each respective band 18, 20.

[0033] An embodiment of the bust or bra cup component of the present invention is shown in conjunction with the bra 10, but is not limited for use to such a bra, or to a bra at all, but may be unitized in any bust covering garment such as a bathing suit, a camisole, a slip, or any other garment having portions meant to extend over a woman's bust. The component is referred to as a component for a bra cup in to most general sense in that a primary purpose of the component is to provide a bust lifting function for any garment containing the component of the present invention.

[0034] With that understanding, and referring to FIGS. 1, 2 and 3, the component for a bra cup according to the invention comprises an inner or only fabric layer 30, having a lower cup area 32, extending from an underwire area 31 to a line A of the cup, and an upper cup area 34 above a line C, and preferably also, a middle cup area 32 between lines B and C of the cup. Although the lifting effect of the invention will work with only lower and upper areas 32, 36, and no middle area 34, it was found that a middle area that this transitional characteristics between those of the lower and upper areas as will be explained later in this disclosure, produces a more comfortable garment since it avoids an abrupt line of different flexibility between lower and upper areas.

[0035] The lower cup area 32 is a preferably knitted fabric including about 50% to 95% by weight of a first yarn and, in a preferred embodiment, about 80% by weight of the first yarn. The first yarn is a synthetic yarn best exemplified by Sophista® yarn commercially available from Kuraray Company, Ltd., but more generally any yarn having the characteristic of being initially flexible, and then becoming more rigid after being heated to at least a selected temperature that is higher than any temperature the bra would experience during normal washing and wearing, e.g. 160 to 240° C. or preferably 180 to 220° C. The yarn may be, as in the case of the Sophista® yarn, a sheath of ethylene vinyl alcohol and a core of another polymer, such as polyester.

[0036] The upper cup area 36 is also preferable a knitted fabric including a second yarn such as polyester, which has a characteristic of being initially flexible and remaining flexible even after being heated to at least the selected temperature (e.g. 170 to 220° C. or preferably 190° C.), the second yarn being present in the upper cup area in an amount of between about 50% to 95% by weight, or, in a preferred embodiment of the invention, about 80%.

[0037] An elastic yarn, such as rubber yarn, spandex yarn or other elastic yarn suitable for use in garments, is also preferable present in the lower and in the upper cup areas as a knit blend with the respective first and second yarns, and

in amounts of between about 5% to 40% by weight, or, in a preferred embodiment, about 20% by weight.

[0038] When the inner fabric layer (in FIG. 2) or the only fabric layer (in FIG. 3), includes the middle cup area 34 between the lower and the upper cup areas, 32, 36, the middle cup area is also preferably a knitted fabric blend of the first and second yarns and the elastic yarn, but including less than the first fraction by weight of the first yarn. There may be about 30% to 50% of the first and second yarns in middle area 34, which may be present in equal or non-equal amounts. In a preferred embodiment there is about 40% by weight of each of the first and second yarns, and about 20% of the elastic yarn.

[0039] FIG. 5 graphically illustrates the amounts of polyester, spandex and Sophista® yarns present in the lower, middle and upper areas of a preferred embodiment of the present invention.

[0040] The relative vertical height of the areas have also been found to advance the lifting effect of the component. The lower cup area 32 may have a maximum height of between about 20% to 70% of a maximum height of the component, the upper cup area having a maximum height of between about 20% to 70% of the maximum height of the component, and the middle cup area having a maximum height of between about 0% (no middle areas) or 5% to 50% of the maximum height of the component.

[0041] The lifting and breast cradling effect of the invention in a very light bra, will little or no padding (although some foam padding may be present in various embodiment of the invention) is believed to be enhanced by the presence of a curved underwire area 31, extending below or partly around the lower area 32.

[0042] The underwire area 31 contains a U-shaped underwire 33 of any conventional design, below the lower cup area 32. The underwire area 31 has upwardly extending opposite ends 37 and 38 in FIG. 1, with an upper portion of the lower cup area 32 extending along the line B, between the opposite ends of the underwire area for creating a bust lifting or cradling effect like that of a hammock. This effect is enhanced by the fact that the lower areas 32 is more rigid, i.e. less flexible, than the middle or the upper layers 34 and 36. This increased rigidity is due to the processing and manufacture of the component as will be explained later in this disclosure.

[0043] In the embodiment of FIG. 3, only the fabric layer 30 is included in the component of the invention. In a bra or other bust covering garment unitizing the invention of FIG. 3, additional inner and/or outer fabric layers, with or without padding or foam layers may be present as well.

[0044] In the embodiment of FIG. 2, however, an outer fabric layer 40 is provided over the inner fabric layer 30, the outer fabric layer being attached to the lower and upper cup areas around a perimeter of the component, e.g. with a sewn or heat-sealed seam around each cup 12 and 14, as shown in FIG. 1. The outer fabric layer 40 is preferably knitted fabric made like the upper area 36 of layer 30, or using some other flexible yarn or yarn blend that is conventional for bra fabrics. An important feature of the invention where both inner and outer fabric layers are used, is that the outer layer 40 is closely adjacent, and preferably adhered to most or all of the upper cup area 36, but is spaced outwardly from the lower cup area 32, and from the middle areas 34 as well if the component includes the middle area, to form a support space shown in FIG. 2.

[0045] With the underwire area 31 around at least the lower portions of the lower cup area 36, this support space and the more rigid lower areas 32, and also the somewhat more rigid middle area 34, result in a bust lifting effect with very little weight in the bra cup.

[0046] The component of the invention may also include one or more flexible foam layers shown at 50 in FIG. 4, between the inner and outer fabric layers 30 and 40.

[0047] Referring now to FIG. 4, in manufacturing the component including the inner or only fabric layer 30, the fabric is made on a knitting machine, which to produce the areas 31 and 32, is fed with elastic yarn such as spandex and the first yarn having variable rigidity, such as the Sophista® yarn. Once knitted to the line B, the knitting machine is supplied with a reduced amount of the first yarn, for example 40% by weight, and an additional component of 40% by weight polyester is added. The 20% elastic yarn content is maintained and knitting continues up to line C. This completes formation of the middle area 34. To produce the upper area 36, the polyester content is increased, for example to 80% by weight, the first yarn is eliminated and the 20% content of the spandex is continued.

[0048] This fabric can then be joined with or without foam 50, which is provided in one or more layers, and with or without the outer fabric layer 40 which may be a pure polyester plus spandex blend of conventional composition. The layers are then formed into a cup shape and the cups are cut out. In this condition and before heating the component to the temperature that is high enough to vary the rigidity of the first yarn, the layers are sewn into the bra 10 of FIG. 1. Sewing is facilitated since all of the layers maintain their flexibility.

[0049] After sewing the layers into the cups of the bra, the bra can then be subjected into the elevated temperature, for example between 180° C. and 240° C., preferably 220° C., and this has the effect of increasing the rigidity of the first yarn. The other yarns maintain their flexibility, however, and this produces a more rigid lower area 32 and a middle area 34 of intermediate rigidity, and an upper area 36 which remains flexible. This increased rigidity toward the bottom of the cup, alone or in conjunction with the support space of FIG. 2, and without, but preferably with the underwire area 31 with its underwire 33, produces a lifting or cradling effect without adding any additional weight or padding to the bra.

[0050] According to the present invention, push-up or enhanced cleavage bras containing liquid or gel pads are eliminated. Other bras which have included air spaces cause noise and this has been eliminated with the present invention. The lifting of the present invention due to the increased rigidity, yet still flexible. It is noted that by increased rigidity is also meant to convey reduced elasticity or stretching effect of the lower area 32 and, to a lesser extent, the middle area 34.

[0051] FIG. 6 illustrates another embodiment of the invention where the content of the first yarn, e.g. the Sophista® yarn, falls gradually after the lower area, or may even fall gradually within the lower area, and through the middle area. In similar fashion, the polyester or second yarn content increases gradually in the middle area and reaches its maximum in the upper area. Any scheduled change of content of the first and second yarns may be used to achieve an desired varying of the rigidity characteristics for the fabric layer and to even more eliminate any abrupt changes

that would produce a well defined line that might be felt by a women wearing the garment containing the component of the present invention.

[0052] FIG. 7 illustrated an embodiment that is similar to that of FIG. 2 in the sense of including an inner fabric layer 30 having areas of different rigidity, and an outer layer 40, but wherein the inner layer 30 has only two areas 32 (of higher rigidity) and 36 (of lower rigidity). The boundary B between areas 32 and 36 may abruptly change from one level of rigidity to the other by eliminating the variably rigidity yard as the knitting process progresses from area 32 to area 36, in the case of knitted fabric. Where other methods are used to create the fabric, the variable yarn is eliminated or reduce in an appropriate fashion that would be known to those skilled in the art.

[0053] While specific embodiments of the invention have been shown and described in detail to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

1. A component for a bust cup comprising:

a fabric layer having a lower cup area and an upper cup area;

the lower cup area being a fabric including at least a first by weight of a first yarn comprising a synthetic yarn having a characteristic of being initially flexible, and then becoming a more rigid after being heated to at least a selected temperature that is higher than any temperature the component would experience during washing and wearing; and

the upper cup area being a fabric including a second yarn that is different from the first yarn and which has a characteristic of being initially flexible and remaining flexible after being heated to at least the selected temperature.

2. A component according to claim 1, wherein the fabric layer includes a middle cup area between the lower and the upper cup areas, the middle cup area being a fabric blend of the first and second yarns, and including less than the first fraction by weight of the first yarn.

3. A component according to claim 1, including, in the lower and the upper cup areas, an elastic yarn blended respectively with the first and second yarns.

4. A component according to claim 1, wherein the fabric layer includes a middle cup area between the lower and the upper cup areas, the middle cup area being a fabric blend of the first second yarns, and including less than the first fraction by weight of the first yarn, the lower, middle and upper cup areas each including an elastic yarn blended respectively with the first and second yarns of the lower, middle and the upper cup areas.

5. A component according to claim 1, wherein the fabric layer includes a middle cup area between the lower and the upper cup areas, the middle cup area being a knitted fabric blend of the first and second yarns, and including less than the first fraction by weight of the first yarn, the lower, middle and upper cup areas each including an elastic yarn knitted respectively with the first and second yarns of the lower, middle and upper cup areas, the first yarn having a sheath of ethylene vinyl alcohol and a core of a synthetic polymer, the second yarn being a synthetic polymer that is different from ethylene vinyl alcohol.

6. A component according to claim 1, wherein the first yarn has a sheath of ethylene vinyl alcohol and a core of polyester, and the second yarn is polyester.

7. A component according to claim 1, wherein the fabric layer includes a middle cup area between the lower and upper cup areas, the middle cup area being a knitted fabric blend of the first and second yarns, and including less than the first fraction by weight of the first yarn, the lower, middle and upper cup areas each including elastic yarn knitted respectively with the first and second yarns of the lower, middle and upper cup areas, the first yarn having a sheath of ethylene vinyl alcohol and a core of polyester, the second yarn being a polyester, the first fraction by weight of the first yard in the lower cup area being between about 50% to 95%, the second yard being present in the upper cup area in an amount of between about 50% to 95% by weight, and the elastic yarn being present in the lower, middle and upper cup areas in amounts of between about 5% to 40% by weight, the first and second yards each being present in the middle cup area in amounts of between about 30% to 50% by weight.

8. A component according to claim 1, including an underwire area containing an underwire below the lower cup area, the underwire area having upwardly extending opposite ends with an upper portion of the lower cup area extending between the opposite ends of the underwire area for creating a bust lifting effect.

9. A component according to claim 1, including an outer fabric layer over an outer surface of the lower and upper cup areas of the first-mentioned fabric layer, the outer fabric layer being attached to the lower and upper cup areas around a perimeter of the component with the outer fabric layer being closely adjacent the upper cup area and being spaced from the lower cup area to form a support space, the component also including an underwire area containing an underwire below the lower cup area the underwire area having upwardly extending opposite ends with an upper portion of the lower cup area extending between the opposite ends of the underwire areas for creating, along with the support space, a bust lifting effect.

10. A component according to claim 1, including an outer fabric layer over an outer surface of the lower and upper cup areas of the first-mentioned fabric layer, the outer fabric layer being attached to the lower and upper cup areas around a perimeter of the component with the outer fabric layer being closely adjacent the upper cup area and being spaced from the lower cup area to form a support space, and underwire area containing an underwire below the lower cup area, the underwire area having upwardly extending opposite ends of the underwire area for creating, along with the support space a bust lifting effect, and a middle cup area between the lower and the upper cup areas, the middle cup area being a knitted fabric blend of the first and second yarns, and including less than the first fraction by weight of the first yarn the middle cup area also being spaced from the outer fabric layer to contribute to the support space.

11. A component according to claim 3, wherein the elastic yarn is spandex.

12. A component according to claim 1, wherein the first yarn has a sheath of ethylene vinyl alcohol and a core of polyester and the second yarn is polyester the selected temperature being above about 220° C.

13. A component according to claim 1, wherein the lower cup area has a maximum height of between about 20% to 60% of a maximum height of the component, the upper cup

area having a maximum height of between about 20% to 60% of the maximum height of the component.

14. A component according to claim 1, wherein the fabric layer includes a middle cup area between the lower and the upper cup areas, the middle cup area being a knitted fabric blend of the first and second yarns and including less than the first fraction by weight of the first yarn, the lower cup area having a maximum height of between about 20% to 70% of a maximum height of the component the upper cup area having a maximum height of between about 20% to 70% of the maximum height of the component and the middle cup area having a maximum height of between about 5% to 50% of the maximum height of the component.

15. A component for bra cup comprising:

an inner fabric layer having a lower cup area and an upper cup area;

the lower cup area being a knitted fabric including about 50% to 95% by weight of a first yarn comprising a sheath of ethylene vinyl alcohol and a core of polyester and having a characteristic of being initially flexible and then becoming more rigid after being heated to at least a selected temperature that is higher than any temperature the component would experience during washing and wearing.

the upper cup area being a knitted fabric including a second yarn of polyester which has a characteristic of being initially flexible and remaining flexible after being heated to at least the selected temperature the second yarn being present in the upper cup area in an amount of between about 50% to 95% by weight, and an elastic yarn being present in the lower and the upper cup areas in amounts of between about 5% to 40% by weight and

the lower and upper cup areas both including at least some elastic yarn.

16. A component according to claim 15, wherein the inner fabric layer includes a middle cup area between the lower and the upper cup areas the middle cup area being a knitted fabric blend of the first and second yarns and the elastic yarn and including less than the first fraction by weight of the first yarn, the lower cup area having a maximum height of between about 20% to 70% of a maximum height of the component the upper cup area having a maximum height of between about 20% to 70% of the maximum height of the component and the middle cup area having a maximum height of between about 5% to 50% of the maximum height of the component.

17. A component according to claim 15, including an outer fabric layer over the inner layer, the outer fabric layer being attached to the lower and upper cup areas around a perimeter of the component with the outer fabric layer being closely adjacent the upper cup area and being spaced from the lower cup area to form a support space, the component including an underwire area containing an underwire around at least lower portions of the lower cup area, the underwire area having upwardly extending opposite ends with an upper portion of the lower cup areas extending between the opposite ends of the underwire area for creating along with support space a bust lifting effect.

18. A component according to claim 15, including a flexible foam layer between the inner and outer fabric layers.

19. A component according to claim 15, wherein the first yarn has a sheath of ethylene vinyl alcohol and a core of

polyester and the second yarn is polyester the selected temperature being above about 180° C.

20. A component according to claim **15**, wherein the elastic is spandex.

21. A component for bra cup comprising:

an inner fabric layer having a lower cup area and an upper cup area; and

an outer fabric layer over the inner fabric layer the outer fabric layer being attached to the lower and upper cup areas around a perimeter of the component with the outer fabric layer being closely adjacent the upper cup area and being spaced away from the lower cup area to form a support space.

22. A component according to claim **21**, including an underwire area containing an underwire around at least lower portions of the lower cup area the underwire area having upwardly extending opposite ends with an upper portion of the lower cup area extending between the opposite ends of the underwire area for creating, along with the support space a bust lifting effect.

23. A component according to claim **21**, wherein at least one of the inner and outer fabric layers includes a foam layer.

24. A component according to claim **21**, including a flexible foam layer between the inner and outer fabric layers.

25. A component according to claim **21**, wherein at least one of the inner and outer fabric layers is a knitted fabric including a yarn of polyester and an elastic yarn of spandex.

26. A component for bra cup comprising:

an inner fabric layer having a lower cup area and an upper cup area;

and outer fabric layer over the inner fabric layer, the outer fabric layer being attached to the lower and upper cup areas around a perimeter of the component with the outer fabric layer being closely adjacent the upper cup area and being spaced away from the lower cup area to form space; and

an underwire area containing an underwire around at least lower portions of the lower cup area the underwire area having upwardly extending opposite ends with an upper portion of the lower cup area extending between the opposite ends of the underwire area for creating along with the support space a bust lifting effect.

at least one of the inner and outer fabric layer including a foam layer and at least one of the inner and outer layers being a knitted fabric including a yarn of polyester and an elastic yarn of spandex.

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