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54 CIRCULAR KNITTED GARMENTS HAVING BANDS WITH INTEGRALLY KNIT CUSHION LOOPS

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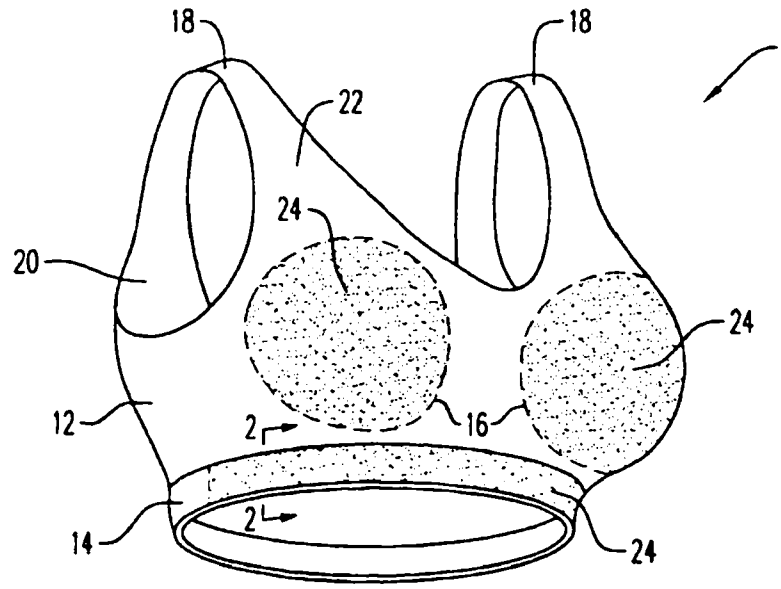

(57) Abstract: A circular knit garment having a main section, a band, and an area of terry loops is provided. The band is integrally knit to the main section. The terry loops are integrally knitted in the area of the band.

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CIRCULAR KNITTED GARMENTS HAVING BANDS WITH INTEGRALLY KNIT CUSHION LOOPS

BACKGROUND OF THE INVENTION

1. Field of the Invention

[0001] The present invention is related to circular knitted garments. More particularly, the present invention is related to circular knitted garments having bands with integrally knit cushion loops.

2. Description of Related Art

[0002] Circular knitting processes have found wide use in the production of seamless tubular garment blanks. Circular knitting processes can be carried out by commercially available equipment, such as a SANTONI SM8 knitting machine. Seamless tubular garment blanks of this nature can be used in the production of a variety of garments, such as a pair of pantyhose, a stocking, a brassiere, a blouse, a leotard, a swimsuit, a pair of underwear, a pair of panties, and other apparel items.

[0003] Seamless tubular garment blanks have been widely used in the production of garments where seams and other garment discontinuities can be physically and/or aesthetically unpleasing. For example, seams in a brassiere can chaff, exert pressure points and, thus, be a source of physical discomfort. In addition, seams in a brassiere and/or an undergarment can often be visible

through an outer layer of clothing, which can be aesthetically unpleasing.

[0004] Seamless tubular garment blanks can include an elasticized band or welt (hereinafter band) disposed in one or more regions. Typically, the band is disposed at a periphery of the blank in order to aid in retaining the resultant garment against the body of the wearer. Since the band exerts pressure on the wearer, it can also be a source of physical discomfort.

[0005] Accordingly, there is a continuing desire for garments having bands that provide improved comfort to the wearer.

SUMMARY OF THE INVENTION

[0006] It is an object of the present invention to provide a circular knitted garment having a band with a soft or plush inner surface.

[0007] It is another object of the present invention to provide a circular knitted garment having a band with integrally knit cushion loops.

[0008] It is still another object to provide a garment having a band with the desired cushioning and aesthetic characteristics.

[0009] These and other objects and advantages of the present invention are provided by a circular knit garment having a main section, a band, and an area of terry loops.

The band is integrally knit to the main section. The terry loops are integrally knitted into the area of the band.

[0010] These and other objects and advantages are also provided by a circular knit garment having a main section integrally knit with an elastic band to define a first side and a second opposite side. The elastic band has a plurality of cushion loops are integrally knit therein and extending from the first side. In some embodiments, the cushion loops are knitted with a loop density sufficient to mitigate a propensity of the elastic band to flip and/or to spread outward.

[0011] A circular knit garment having a main section and an elastic band is also provided. The main section is integrally knit with the elastic band to define a first side and a second opposite side. The elastic band has a plurality of terry loops integrally knitted therein with a selected knitted stitch pattern.

[0012] The above-described and other features and advantages of the present invention will be appreciated and understood by those skilled in the art from the following detailed description, drawings, and appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1 is a perspective view of an exemplary embodiment of a garment according to the present invention;

[0014] FIG. 2 is a sectional view taken along lines 2-2 of FIG. 1;

[0015] FIG. 3 is a perspective view of an exemplary embodiment of a blank according to the present invention used in the manufacture of the garment of FIG. 1;

[0016] FIG. 4 is an exemplary embodiment of a knitted stitch pattern of the band of the garment of FIG. 1;

[0017] FIG. 5 is a perspective view of an alternate exemplary embodiment of a garment according to the present invention;

[0018] FIG. 6 is a sectional view taken along lines 6-6 of FIG. 5; and

[0019] FIG. 7 is a perspective view of an exemplary embodiment of a blank according to the present invention used in the manufacture of the garment of FIG. 5.

DETAILED DESCRIPTION OF THE INVENTION

[0020] Referring now to the drawings and in particular to FIGS. 1 and 2, an exemplary embodiment of a garment according to the present invention is generally represented by reference numeral 10. For purposes of clarity, garment 10 is illustrated as a brassiere. Of course, garment 10 can be many other types of garments such as, but not limited to, a pair of pantyhose, a stocking, a blouse, a leotard, a swimsuit, a pair of underwear, a pair of panties, and other apparel items.

[0021] Garment 10 has a main section 12 and a band 14. Garment 10 is a seamless garment having main section 12 integrally knitted to band 14 in a seamless manner. Band 14 is preferably formed as a turned welt or an anchoring chest band at a lower periphery of main section 12. However, it is also contemplated by the present invention for band 14 to be defined at other locations in main section 12, such as an upper periphery.

[0022] Main section 12 can include breast cups 16 and one or more straps 18 integrally knit into garment 10 in a known manner. Of course, it is contemplated by the present invention for breast cups 16 to be molded into garment 10, straps 18 to be attached to main section 12 by way of a seam, and any combination thereof.

[0023] Garment 10 has a first side 20 and a second side 22 opposite the first side. Garment 10 is worn such that first side 20 contacts the body of a wearer, while second side 22 faces outward.

[0024] First side 20 includes one or more cushion areas 24 integrally knit therein. In the illustrated embodiment, band 14 and breast cups 16 each have cushion area 24 integrally knit therein. Preferably, band 14 has area 24 defined proximate to breast cups 16 and along about one-half of the circumference of garment 10.

[0025] It should be recognized that garment 10 is described by way of example having area 24 in both band 14 and cups 16. Of course, it is also contemplated by the present invention for garment 10 to have area 10 only in

band 14, only in cups 16, in one or more other areas of garment 10, and combinations of the foregoing.

[0026] Area 24 has a number or plurality of cushion loops 26 extending from first side 20. Loops 26 can be formed with a true terry loop stitch, a float terry loop stitch, a mock terry loop stitch, and any combination thereof.

[0027] Loops 26 contact the body of the wearer to enhance comfort and moisture wickability properties of first side 20. For example, loop 26 can be formed of a hydrophilic yarn such as, but not limited to, cotton, textured microdenier nylon, or a synthetic continuous multifilament textured nylon having substantial wickable moisture properties.

[0028] Garment 10 has a single fabric layer 28 formed from a circular knitted blank 30 as illustrated in FIG. 3. Blank 30 is a generally cylindrical tube that can be trimmed along a cut-line 32 to form garment 10.

[0029] Blank 30 can be knitted with a conventional circular knitting machine such as a circular knit machine Model No. SM8-8 or SM8-TOP as manufactured by SANTONI of Brescia, Italy.

[0030] Band 14 has a knitted stitch pattern 34 defining a number of courses 36 and wales 38. Pattern 34 is illustrated in FIG. 4 as viewed from first side 20. For purposes of clarity, pattern 34 is shown having sixteen stitches 40 arranged in a four-by four pattern. Namely,

pattern 34 is shown having four courses 36 and four wales 38.

[0031] Accordingly, pattern 34 includes courses 36-1 through 36-4 and wales 38-1 through 38-4. Course 36-1 is, preferably, knit with an elastic yarn having a one-by-one or knit-miss knit stitch. Course 36-3 is, preferably, a jersey knit. Courses 36-2 and 36-4 are, preferably, knit to define loops 26.

[0032] Loops 26 can be true terry loops 42 that traverse one wale 38. Alternately, loops 26 can be floated loops 44 that traverse more than one wale 38. Floated loops 44 preferably traverse no more than four wales 38. Further, loops 26 can be mock loops (not shown).

[0033] In the illustrated embodiment, pattern 34 includes four true terry loops 42 and two floated loops 44, which each traverse two wales 38. Thus, pattern 34 defines a total of six loops 26.

[0034] Pattern 34 defines area 24 in band 14 with a selected loop density. As used herein, the loop density of area 24 is defined as the number of loops 26 divided by the number of stitches 40. It has been determined that the loop density of area 24 is an important aspect of providing garment 10 with the desired cushioning and aesthetic characteristics.

[0035] It has been found that too many loops 26 in area 24 (i.e., a high loop density) can create one or more deleterious aesthetic characteristics in band 14. For

example, it has been found that too many loops 26 increases the propensity of band 14 to flip or roll outward. Further, it has been found that too many loops 26 can also increase the propensity of band 14 to spread outward, namely to increase the inner diameter of garment 10 at band 14. Conversely, it has been found that not enough loops 26 in area 24 (i.e., a low loop density) results in band 14 not having the desired cushioning effect.

[0036] Advantageously, area 24 has a selected loop density that mitigates the aforementioned deleterious aesthetic effects in band 14, while still providing the desired enhanced comfort effects.

[0037] The exemplary embodiment of area 24 illustrated in FIG. 4 has a loop density of 0.375. Here, six of the sixteen stitches 40 are knitted into loops 26, where four of the loops are true terry loops 42 and two of the loops are floated loops 44.

[0038] Of course, it is contemplated by the present invention for pattern 34 to provide area 24 with a higher or lower loop density. For example, it is contemplated by the present invention that area 24 have a loop density between about 0.125 and about 0.75, more preferably between about 0.25 and about 0.625, with about 0.375 being most preferred.

[0039] The loop density in area 24 of band 14 is, preferably, uniform throughout the band. Alternately, it is contemplated by the present invention for the loop density of area 24 in band 14 to vary across the band's

width, length, and combinations thereof. It is also contemplated by the present invention for area 24 in band 14 to have the same loop density or a different loop density as area 24 in breast cups 16.

[0040] It should be recognized that band 14 is illustrated having one area 24 by way of example. Of course, it is contemplated by the present invention for band 14 to have a number of areas 24 integrally knit therein.

[0041] Accordingly, garment 10 as set forth herein is provided with a selected loop density in area 24 that provides band 14 with both the desired cushioning qualities and the desired aesthetic qualities previously unavailable.

[0042] An alternate exemplary embodiment of a garment 110 according the present invention is illustrated in FIGS. 5 and 6. Here, component parts performing similar and/or analogous functions are labeled in multiples of one hundred. Garment 110 is also illustrated as a brassiere for purposes of clarity.

[0043] Garment 110 has a main section 112 integrally knitted to a band 114. Main section 112 can include breast cups 116 and one or more straps 118 integrally knit into garment 110 in a known manner.

[0044] Garment 110 has a first side 120 and a second side 122 opposite the first side. Garment 110 is worn such that first side 120 contacts the body of a wearer, while second side 122 faces outward.

[0045] First side 120 includes cushion areas 124 integrally knit therein. In this embodiment, area 124 is integrally knit along the entire circumference of band 114. In addition, area 124 is integrally knit in breast cups 116 and in straps 118. Area 124 can also be integrally knit in a portion of main section 112 between breast cups 116 and straps 118. Moreover, area 124 can be integrally knit in a portion of main section 112 between breast cups 116 and band 114.

[0046] Garment 110 is a two-layer garment having an inner layer 146 and an outer layer 148 that are formed from a circular knitted blank 130, which is illustrated in FIG. 7.

[0047] Blank 130 is a generally cylindrical tube that can be folded along a fold line 150 to form layers 146, 148. Blank 130 is folded about line 150 so that first layer 146 forms first side 120 and second layer 148 forms second side 122. Thus, area 124 is defined in first layer 146 so that once blank 130 is folded the area faces first side 120.

[0048] After folding layers 146, 148 about fold line 150, the layers can be joined to one another in any known manner. In addition, blank 130 can be trimmed along a cut-line 132 by known methods to form garment 110.

[0049] Again, area 124 has a selected loop density that provides the desired cushioning and aesthetic qualities to band 114 and/or main section 112 of garment 110. For example, it is contemplated by the present invention for

area 124 in band 114 to have a loop density between about 0.125 and about 0.75, more preferably between about 0.25 and about 0.625 with, about 0.375 being most preferred.

[0050] It should also be noted that the terms "first", "second", "third", "upper", "lower", and the like may be used herein to modify various elements. These modifiers do not imply a spatial, sequential, or hierarchical order to the modified elements unless specifically stated.

[0051] While the present invention has been described with reference to one or more exemplary embodiments, it will be understood that various changes may be made and equivalents may be substituted for elements thereof without departing from the scope of the present invention. In addition, many modifications may be made to adapt a particular situation or material to the teachings of the disclosure without departing from the scope thereof. Therefore, it is intended that the present invention not be limited to the particular embodiment(s) disclosed as the best mode contemplated for carrying out this invention, but that the invention will include all embodiments falling within the scope of the appended claims.

What is claimed is:

1. A circular knit garment comprising:

a main section;

a band integrally knit to said main section; and

a plurality of terry loops integrally knitted into an area of said band.

2. The garment as in claim 1, wherein said plurality of terry loops comprise a loop density in a range between about 0.125 and about 0.75

3. The garment as in claim 2, wherein said loop density is in a range between about 0.25 and about 0.625.

4. The garment as in claim 2, wherein said loop density is about 0.375.

5. The garment as in claim 1, wherein said plurality of terry loops comprise a stitch construction selected from the group consisting of a true terry loop, a float terry loop, a mock terry loop, and combinations of any of the foregoing.

6. The garment as in claim 1, wherein the garment is selected from the group consisting of a brassiere, a pair of pantyhose, a stocking, a blouse, a leotard, a swimsuit, a pair of underwear, and a pair of panties.

7. The garment as in claim 1, wherein the garment is a brassiere.

8. The garment as in claim 7, wherein said brassiere comprises a brassiere component selected from the group consisting of a breast cup and a strap.

9. The garment as in claim 8, wherein said brassiere component further comprises said plurality of terry loops integrally knitted therein.

10. A circular knit garment comprising:

a main section integrally knit with an elastic band to define a first side and a second opposite side; and

a plurality of cushion loops integrally knit in said elastic band and extending from said first side.

11. The garment as in claim 10, wherein said plurality of cushion loops are knitted with a loop density sufficient to mitigate a propensity of said elastic band to flip and/or to spread outward.

12. The garment as in claim 11, wherein said loop density is in a range between about 0.125 and about 0.75.

13. The garment as in claim 11, wherein said loop density is in a range between about 0.25 and about 0.625.

14. The garment as in claim 11, wherein said loop density is about 0.375.

15. The garment as in claim 10, further comprising said plurality of cushion loops integrally knit in main section.

16. The garment as in claim 10, wherein said plurality of cushion loops comprise a stitch construction selected from the group consisting of a true terry loop, a float terry loop, a mock terry loop, and combinations of any of the foregoing.

17. The garment as in claim 10, wherein the garment is selected from the group consisting of a brassiere, a pair of pantyhose, a stocking, a blouse, a leotard, a swimsuit, a pair of underwear, and a pair of panties.

18. A circular knit garment comprising:

a main section integrally knit with an elastic band to define a first side and a second opposite side; and

a plurality of terry loops integrally knitted into an area of said elastic band with a selected knitted stitch pattern.

19. The garment as in claim 18, wherein said selected knitted stitch pattern comprises a first course, a second course, a third course, and a fourth course.

20. The garment as in claim 19, wherein said first course is knit with an elastic yarn having a one-by-one stitch or a knit-miss knit stitch.

21. The garment as in claim 20, wherein said third course is knit with a jersey stitch.

22. The garment as in claim 19, wherein said second and fourth courses are knit with a stitch selected from the group consisting of a true terry loop stitch, a float terry loop stitch, a mock terry loop stitch, and combinations of any of the foregoing.

23. The garment as in claim 22, wherein said float terry loop stitch traverses at least one wale.

24. The garment as in claim 22, wherein said float terry loop stitch traverses two wales.

25. The garment as in claim 18, wherein said selected knit pattern comprises a loop density sufficient to mitigate a propensity of said elastic band to flip and/or to spread outward.

26. The garment as in claim 25, wherein said loop density is in a range between about 0.125 and about 0.75.

27. The garment as in claim 25, wherein said loop density is in a range between about 0.25 and about 0.625.

28. The garment as in claim 25, wherein said loop density is about 0.375.

29. The garment as in claim 18, further comprising said plurality of terry loops integrally knitted into an area of main section.

30. The garment as in claim 18, wherein the garment is selected from the group consisting of a brassiere, a pair of pantyhose, a stocking, a blouse, a leotard, a swimsuit, a pair of underwear, and a pair of panties.

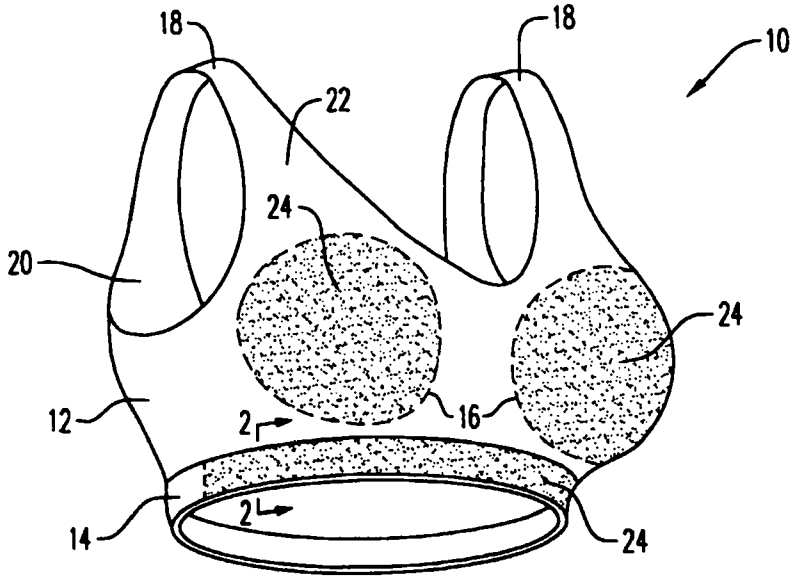


FIG. 1

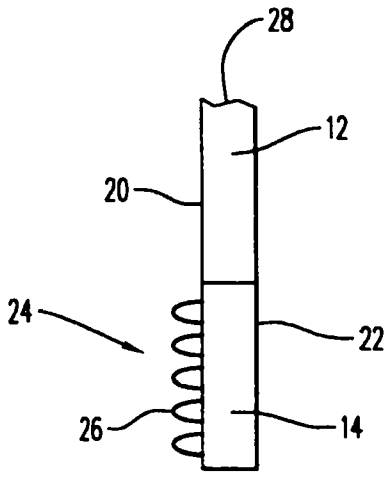


FIG. 2

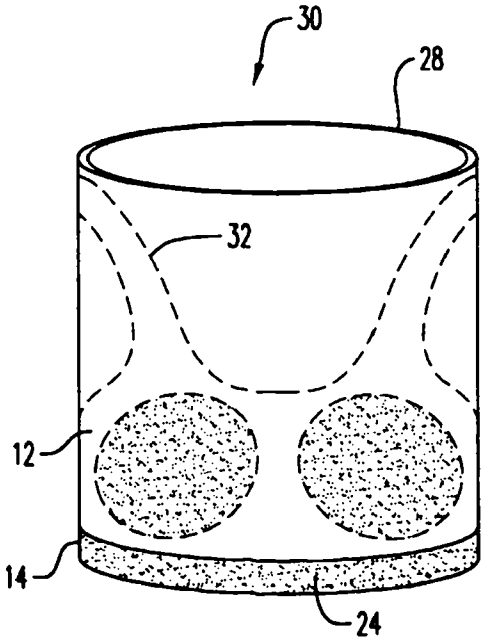
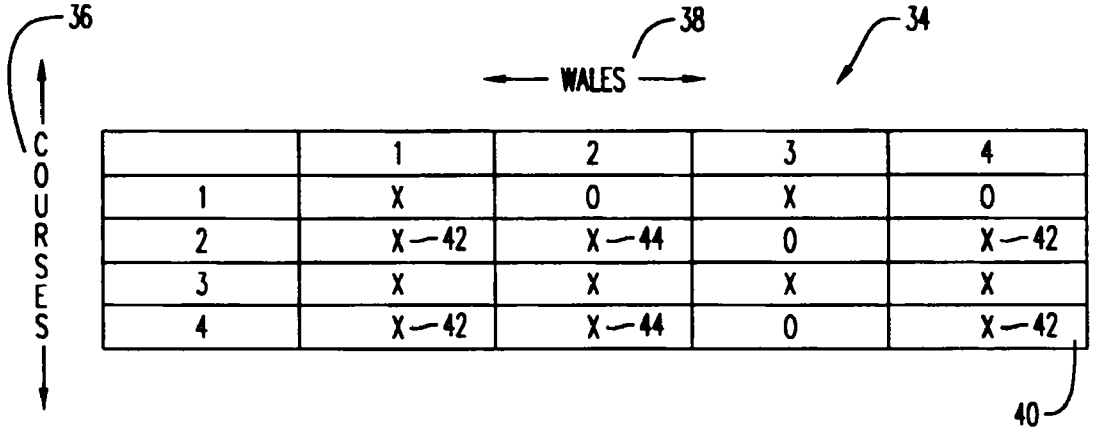


FIG. 3



	1	2	3	4
1	X	0	X	0
2	X—42	X—44	0	X—42
3	X	X	X	X
4	X—42	X—44	0	X—42

FIG. 4

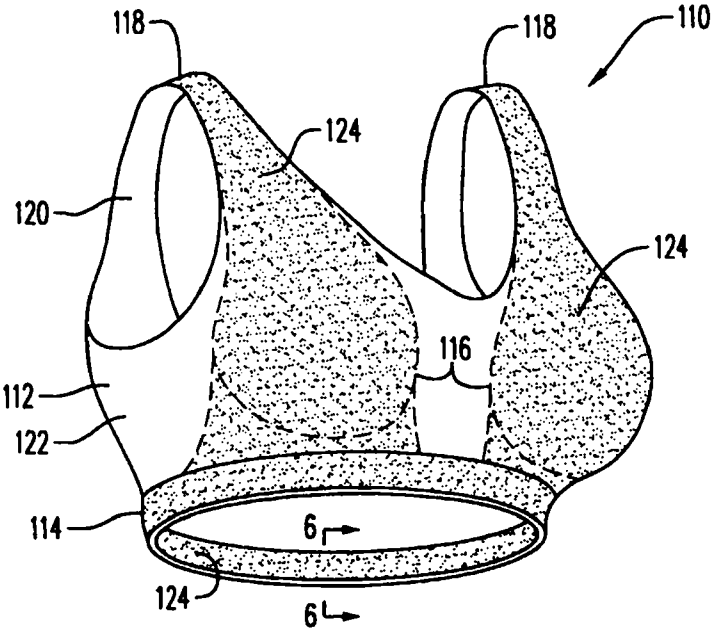


FIG. 5

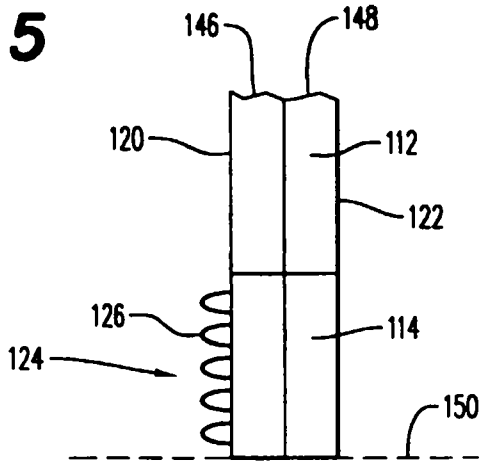


FIG. 6

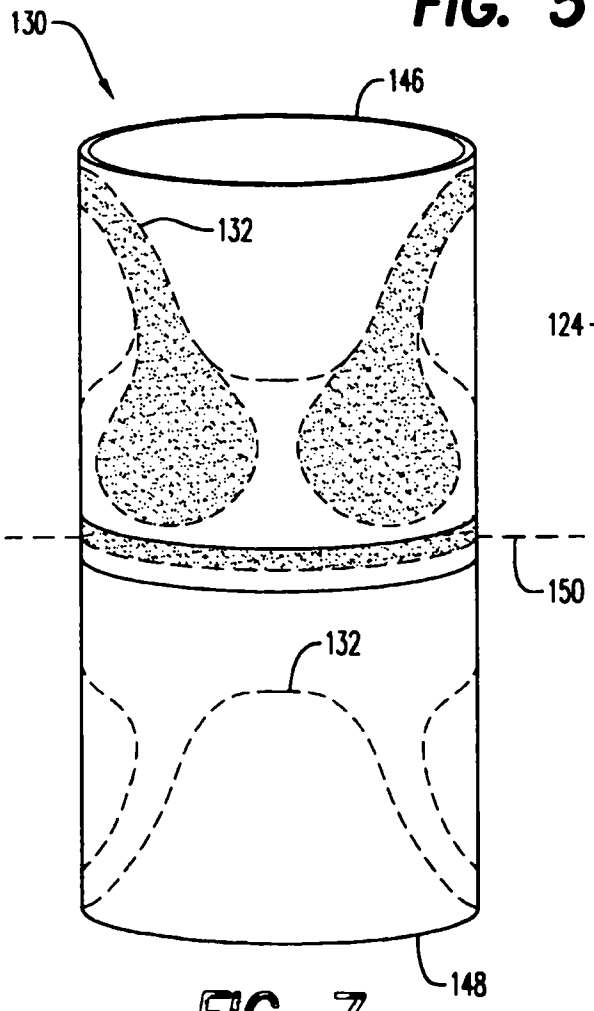


FIG. 7