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Remarks:
- A decision on the validity of the priority claim is still pending.
- This application was filed on 08-07-2010 as a divisional application to the application mentioned under INID code 62.

(54) **Elastic tags**

(57) The invention relates to a method of making elastic tags.

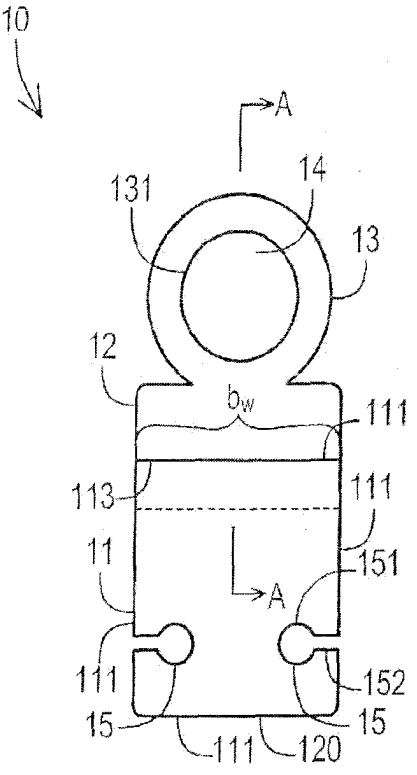

FIG. 1A

EP 2 290 639 A1

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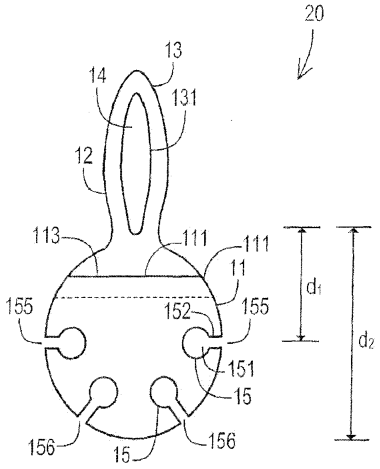

FIG. 1B

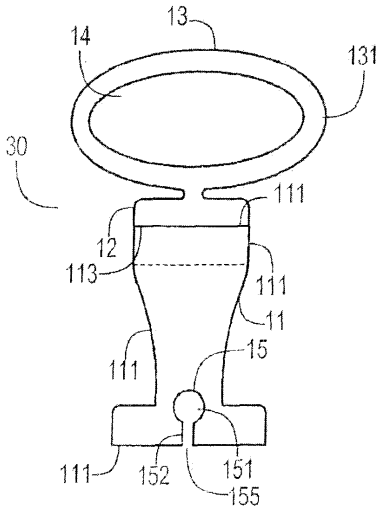

FIG. 1C

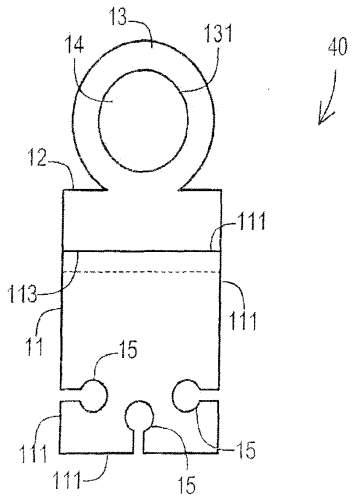

FIG. 1D

Description

Technical Field

[0001] The present invention relates to elastic tags and methods of making and using the same.

Background of the Invention

[0002] There is a need in the art for elastic tags that art (i) suitable for a variety of uses including, but not limited to, binding one or more articles to one or more other articles or to itself, and identifying merchandise, (ii) easy to use, and (iii) relatively inexpensive to manufacture.

Summary of the Invention

[0003] The present invention is directed to elastic tags, method of making elastic tags, and methods of using elastic tags. The elastic tags of the present invention may be used in a variety of applications, and are particularly useful in the medical industry for controlling the position of a drape relative to, for example, a, piece of equipment (e.g., a microscope).

[0004] In one exemplary embodiment, the elastic tag of the present invention comprises a first tag portion having an outer periphery extending along an outer edge of the first tag portion; and a second tag portion integrally attached to the first tag portion and extending beyond a first edge portion of the outer edge of the first tag portion, the second tag portion comprising a first closed loop having a loop inner periphery, at least a portion of the loop inner periphery being positioned a distance from the first tag portion and comprising an elastomeric material, wherein the first tag portion further comprises (a) at least one slotted opening positioned along and in communication with the outer periphery, (b) a second closed loop of material, or (c) both (a) and (b).

[0005] The present invention is further directed to methods of making and using the disclosed elastic tags. In one exemplary method of making an elastic tag, the method comprises integrally attaching a second tag portions to a first tag portion so that the second tag portion extends beyond a first edge portion of an outer edge of the first tag portion, the second tag portion comprising a first closed loop having a loop inner periphery, at least a portion of the loop inner periphery being positioned a distance from the first tag portion and comprising an elastomeric material; and at least one step selected from the steps of: (1) forming at least one slotted opening within the first tag portion so as to be in communication with an outer periphery of the first tag portion, and (2) providing a second closed loop of elastic material along the outer periphery of the first tag portion.

[0006] In one exemplary method of using an elastic tag, the method comprises surrounding at least a portion of an article with an elastic tag comprising a first tag portion having a first closed loop integrally attached thereto; and connecting the first closed loop of the elastic tag with (i) one or more slotted opening within the first tag portion or (ii) a second closed loop of elastic material along an outer periphery of the first tag portion. In one exemplary embodiment, the article comprises a drape, and the method is used to secure at least a portion of the drape to a piece of medical equipment such as a microscope.

[0007] These and other features and advantages of the present invention will become apparent after a review of the following detailed description of the disclosed embodiments and the appended claims.

[0008] The invention provides:

1. An elastic tag comprising: a first tag portion having an outer periphery extending along an outer edge of the first tag portion; and a second tag portion integrally attached to said first tag portion and extending beyond a first edge portion of the outer edge of the first tag portion, said second tag portion comprising a first closed loop having a loop inner periphery, at least a portion of said loop inner periphery being positioned a distance from said first tag portion and comprising an elastomeric material, wherein said first tag portion further comprises (a) at least one slotted opening positioned along and in communication with said outer periphery, (b) a second closed loop of elastic material, or (c) both (a) and (b).

2. The elastic tag of claim 1, wherein a substantial portion of said second tag portion comprises an elastomeric material.

3. The elastic tag of claim 1, wherein at least 90 wt-% of said second tag portion comprises an elastomeric material.

4. The elastic tag of claim 1, wherein said first tag portion comprises at least two slotted openings positioned along and in communication with said outer periphery.

5. The elastic tag of claim 4, wherein said at least two slotted openings comprise one or more pairs of slotted openings, wherein each slotted opening within a given pair of slotted openings is positioned a substantially equal distance from said first closed loop.

6. The elastic tag of claim 5, wherein said at least two slotted openings comprise two pairs of slotted openings, wherein (i) each slotted opening within a first pair of slotted openings is positioned a first distance from said first closed loop, (ii) each slotted opening within a second pair of slotted openings is positioned a second distance from said first closed loop, and (iii) said first distance is greater than said second distance.

7. The elastic tag of claim 4, wherein said outer periphery of said first tag portion comprises (i) a second edge portion opposite said first edge portion, (ii) opposite side edges connecting said second edge portion to said first edge portion, and (iii) at least one slotted opening positioned along each of said opposite side edges.

8. The elastic tag of claim 4, wherein said outer periphery of said first tag portion comprises (i) a second edge portion opposite said first edge portion, (ii) opposite side edges connecting said second edge portion to said first edge portion, (iii) at least one slotted opening positioned along said second edge portion, and (iv) at least one slotted opening positioned along one or both of said opposite side edges.

9. The elastic tag of claim 1, wherein said first tag portion comprises a second closed loop of elastic material.

10. The elastic tag of claim 9, wherein said elastic tag comprises a third tag portion integrally attached to said first tag portion and extending beyond a third edge portion of the outer edge of the first tag portion, said third tag portion comprising the second closed loop, said second closed loop having a second closed loop inner periphery, at least a portion of said second closed loop inner periphery being positioned a distance from said first tag portion and comprising an elastomeric material.

11. The elastic tag of claim 10, wherein said second and third tag portions are positioned along opposite edges of said outer periphery.

12. The elastic tag of claim 11, wherein said first tag portion has a substantially rectangular shape having a first tag portion length that is greater than a first tag portion width, and said first and second closed loops are positioned along opposite edges of the first tag portion separated from one another by a substantial portion of the first tag portion length.

13. The elastic tag of claim 12, wherein said outer periphery of said first tag portion comprises (i) opposite side edges extending between said first and second closed loops, and (ii) at least one slotted opening positioned along each of said opposite side edges.

14. The elastic tag of claim 9, further comprising a connecting member operatively adapted to connect said first closed loop to said second closed loop.

15. The elastic tag of claim 14, wherein said connecting member is attached to said first closed loop and is operatively adapted to connect to said second closed loop.

16. The elastic tag of claim 1, wherein said first tag portion comprises a sheet of inelastic material.

17. The elastic tag of claim 16, wherein said inelastic material comprises paper, a polymeric film material, a polymeric foam material, an electrically conductive material, a ceramic material, a glass material, and any combinations thereof.

18. The elastic tag of claim 1, wherein said first tag portion comprises a sheet of material having opposite outer major surfaces, at least one of said opposite outer major surfaces being capable of accepting and displaying indicia thereon.

19. The elastic tag of claim 18, wherein at least one of said opposite outer major surfaces has indicia thereon.

20. A method of making the elastic tag of any one of claims 1 to 19, said method comprising: providing a first tag portion having an outer periphery extending along an outer edge of the first tag portion; integrally attaching a second tag portion to the first tag portion so that the second tag portion extends beyond a first edge portion of the outer edge of the first tag portion; and at least one step selected from the steps of:

(1) forming at least one slotted opening within the first tag portion so as to be in communication with the outer periphery, and
(2) providing a second closed loop of elastic material along the outer periphery of the first tag portion.

21. A method of making an elastic tag, said method comprising: integrally attaching a second tag portion to a first tag portion so that the second tag portion extends beyond a first edge portion of an outer edge of the first tag portion, the second tag portion comprising a first closed loop having a loop inner periphery, at least a portion of the loop inner periphery being positioned a distance from the first tag portion and comprising an elastomeric material; and at least one step selected from the steps of:

(1) forming at least one slotted opening within the first tag portion so as to be in communication with an outer periphery of the first tag portion, and
(2) providing a second closed loop of elastic material along the outer periphery of the first tag portion.

22. The method of claim 21, wherein said integrally attaching step comprises adhesively bonding the

second tag portion to the first tag portion.

23. The method of claim 21, further comprising: forming the first closed loop within the second tag portion.

24. The method of claim 21, wherein the step of forming the first closed loop within the second tag portion occurs after said integrally attaching step.

25. The method of claim 21, wherein said method comprises the step of forming at least one slotted opening within the first tag portion.

26. The method of claim 25, wherein said step of forming at least one slotted opening within the first tag portion comprises: cutting one or more slotted opening within the first tag portion.

27. The method of claim 25, wherein said step of forming at least one slotted opening within the first tag portion occurs simultaneously with a step of forming the first tag portion.

28. The method of claim 21, said method comprises the step of providing a second closed loop of elastic material along the outer periphery of the first tag portion.

28. The method of claim 21, wherein said step of providing a second closed loop of elastic material comprises: integrally attaching a third tag portion to the first tag portion, the third tag portion comprising the second closed loop.

29. The method of claim 28, wherein the second closed loop of elastic material has a second closed loop inner periphery, at least a portion of the second closed loop inner periphery being positioned a distance from the first tag portion and comprising an elastomeric material.

30. A drape in combination with the elastic tag of any one of claims 1 to 19.

31. A method of using an elastic tag, said method comprising: surrounding at least a portion of an article with the elastic tag; and connecting the first closed loop with (i) one or more slotted opening within the first tag portion or (ii) a second closed loop of elastic material along the outer periphery of the first tag portion.

32. The method of claim 31, further comprising: attaching the elastic tag to at least a portion of a piece of medical equipment.

33. The method of claim 32, wherein the piece of medical equipment comprises a C- arm apparatus, a microscope, a surgical knife system, endoscopy equipment, an operating room table, a patient, a light, or a lamp.

34. The method of any one of claims 31 to 33, wherein said connecting step comprises connecting the first closed loop with one or more slotted opening within the first tag portion.

35. The method of any one of claims 31 to 33, wherein said connecting step comprises connecting the first closed loop with a second closed loop of elastic material along the outer periphery of the first tag portion.

36. The method of any one of claims 31 to 35, wherein the article comprises a drape.

Brief Description of the Drawings

[0009] The present invention is further described with reference to the appended figures, wherein:

FIGS. 1A-1D depict frontal views of exemplary elastic tags of the present invention;
FIGS. 2A-2D depict exemplary cross-sectional views of the exemplary elastic tag shown in FIG. 1A as viewed along line A-A as shown in FIG. 1A.
FIGS. 3A-3C depict frontal and side views of the exemplary elastic tags of FIGS. 1A and 1C when a closed loop portion of a given exemplary elastic tag is connected to at least one slotted opening of the given exemplary elastic tag;
FIGS. 4A-4B depict frontal views of other exemplary elastic tags of the present invention; and
FIG. 5 depicts a side view of the exemplary elastic tag of FIG. 4A when a first closed loop portion of the exemplary elastic tag is connected to a second closed loop portion of the exemplary elastic tag via a connection member.

Detailed Description of Exemplary Embodiments

[0010] Although the present invention is herein described in terms of specific embodiments, it will be readily apparent to those skilled in this art that various modifications, rearrangements, and substitutions can be made without departing from the spirit of the invention. The scope of the present invention is thus only limited by the claims appended hereto.

[0011] The present invention is directed to clastic tags. The elastic tags of the present invention comprise a first tag portion having an outer periphery extending along an outer edge of the first tag portion, and a second tag portion integrally attached to the first tag portion and extending beyond a first edge portion of the outer edge of the first tag portion. The second tag portion comprises a first closed loop having a loop inner periphery. At least a por-

tion of the loop inner periphery is positioned a distance from the first tag portion and comprising an elastomeric material The first tag portion further comprises (a) at least one slotted opening positioned along and in communication with the outer periphery, (b) a second loot of clastic material, or (c) both (a) and (b).

[0012] Exemplary elastic tags of the present invention are shown in FIGS. **1A-ID.** As shown in FIG. **1A,** exemplary elastic tag **10** comprises a first tag portion **11** having an outer periphery **111** extending along most of an outer edge **112** of first tag portion **11.** Exemplary elastic tag **10** further comprises a second tag portion **12** integrally attached to first tag portion **11.** As shown in FIG. **1A,** second tag portion **12** extends beyond a first edge portion **113** of the outer edge **112** of first tag portion **11,** and comprises a first closed loop **13** having a loop inner periphery **131** that surrounds a first closed loop opening **14.**

[0013] Exemplary elastic tag **10** further comprises at least one slotted opening **15** positioned along and in communication with outer periphery **111.** As used herein, the phrase "in communication with" refers to periphery **111** and a given slotted opening **15** sharing a common edge, namely, outer edge **112** of first tag portion **11** (i.e., the portion of outer edge **112** of first tag portion **11** that extends into and forms an inner edge of a given slotted opening **15**). Each slotted opening **15** comprises a loop containment reservoir **151** and a channel **152** that connects loop containment reservoir **151** with outer periphery **111.**

[0014] As used herein, outer periphery **111** is used to describe an outer perimeter extending along first tag portion **11** and includes (i) portions of outer edge **112** and (ii) any gaps within outer edge **112** due to the presence of one or more channels **152** along outer periphery **111.** In contrast, as discussed above, outer edge **112** is used to describe a continuous outer edge of first tag portion **11** that includes (i) portions of outer edge **112** extending along outer periphery **111** and (ii) inner edge portions of any slotted openings **15** (i.e., inner edge portions of one or more channels **152** and inner edge portions of one or more loop containment reservoirs **151** positioned within, outer periphery **111.**

[0015] Another exemplary elastic tag **20** is shown in FIG. **1B.** Exemplary elastic tag **20** comprises a first tag portion **11** having an outer periphery **111** extending along an outer edge (not shown) of first tag portion **11.** Exemplary elastic tag **20** further comprises a second tag portion **12** integrally attached to first tag portion **11.** As shown in FIG. **1B,** second tag portion **12** extends beyond a first edge portion **113** of the outer edge **112** of first tag portion **11,** and comprises a first closed loop **13** having a loop inner periphery **131** that surrounds first closed loop opening **14.** In addition, exemplary elastic tag **20** comprises a pair of slotted openings **15** positioned along and in communication with outer periphery **111.** As shown in FIG. **1B,** a first pair 155 of slotted openings **15** is positioned a substantially equal first distance $\mathbf{d}_1$ from first closed loop **13,** and a second pair **156** of slotted openings **15** is positioned a substantially equal second distance $\mathbf{d}_2$ from first closed loop **13.**

[0016] A further exemplary elastic tag **30** is shown in FIG. **1C.** Exemplary elastic tag **30** comprises a first tag portion **11** having an outer periphery **111** extending along an outer edge (not shown) of first tag portion **11.** Exemplary elastic tag **30** further comprises a second tag portion **12** integrally attached to first tag portion **11,** As shown in FIG. **1C,** second tag portion **12** extends beyond a first edge portion **113** of the outer edge **112** of first tag portion **11,** and comprises a first closed loop **13** having a loop inner periphery **131** that surrounds first closed loop opening **14**. In this embodiment, exemplary elastic tag **30** comprises a single slotted opening **15** positioned along and in communication with outer periphery **111.**

[0017] Yet another exemplary elastic tag **40** is shown in FIG. **1D.** Exemplary elastic tag **40** comprises a first tag portion **11** having an outer periphery **111** extending along an outer edge (not shown) of first tag portion **11.** Exemplary elastic tag 40 further comprises a second tag portion **12** integrally attached to first tag portion **11**. As shown in FIG. **1D**, second tag portion **12** extends beyond a first edge portion **113** of the outer edge **112** of first tag portion **11**, and comprises a first, closed loop **13** having a loop inner periphery **131** that surrounds first closed loop opening **14**. In this embodiment, exemplary elastic tag **40** comprises three slotted openings **15** positioned along and in communication with outer periphery **111**.

[0018] As shown in FIGS. **1A-1D,** elastic tags of the present invention may have one or more slotted openings **15** positioned along and in communication with outer periphery **111**. In one exemplary embodiment, outer periphery **111** of first tag portion **11** comprises (i) a second edge portion (e.g., second edge portion **120** shown in FIG. **1A**) opposite a first edge portion first edge portion **113**), (ii) opposite side edges connecting the second edge portion to the first edge portion, and (iii) at least one slotted opening **15** positioned along each of the opposite side edges. In another exemplary embodiment, outer periphery **111** of first tag portion **11** comprises (i) a second edge portion (e.g., second edge portion **120** shown in FIG. **1A**) opposite a first edge portion (e.g., first edge portion **113**), (ii) opposite side edges connecting the second edge portion to the first edge portion, (iii) at least one slotted opening positioned along the second edge portion, and (iv) at least one slotted opening positioned along one or both of the opposite side edges.

[0019] In each of the exemplary elastic tags shown in FIGS. **1A-1D** (and in FIG. **4B** described below), it should be understood that each slotted opening **15** may independently have any desired shape, size and configuration as long as the slotted opening **15** is positioned within first tag portion **11** and in communication with outer periphery **111**. For example, although each loop containment reservoir **151** is shown as having a circular shape, each loop containment reservoir **151** may independently have any desired shape including, but not limited to, a triangular shape, a square shape, a rectangular shape,

a diamond shape, a polygonal shape, a hexagonal shape, a trapezoidal shape, an oval shape, an oblong shape, an irregular shape (e.g., a "figure 8" shape), or any other desired shape. Further, each loop containment reservoir **151** may independently have any desired size. Typically, each loop containment reservoir **151** has a largest dimension (e.g., diameter, length, width, etc.) that is less than an overall width W of first tag portion **11**, more typically, less than half of an overall width of first tag portion **11** (i.e.,½ W). In one exemplary embodiment, each loop containment reservoir **151** has a largest dimension (e.g., diameter, length, width, etc.) that is less than about 25.4 millimeters (mm) (1.0 inches (in.)), typically, less than about 12.7 mm (0.5 in.), and more typically, between about 0.64 mm (0.25 in.) to about 12.7 mm (0.5 in.).

[0020] In addition, each channel **152** may independently have any desired shape, size and configuration. For example, although each channel **152** is shewn as having a rectangular shape with a channel width and a channel length greater than the channel width, each channel **152** may independently have any desired shape including, but not limited to, a square shape, a diamond shape, a polygonal shape, a trapezoidal shape, an irregular shape (e.g., an "S" shape), or any other desired shape. Further, each channel **152** may independently have any desired dimensions. Typically, each channel **152** has a channel length greater than a channel width. Further, typically, the channel width remains substantially constant along the channel length. In one exemplary embodiment, each channel **152** has a channel width that is less than about 12.7 mm (0.5 in.), typically, less than about 0.64 mm (0.25 in.), and more typically, between about 0.01 mm (0.4 mils) to about 0.64 mm (0.25 in.); and a channel length that is less than about 25.4 mm (1.0 in.), typically, less than about 12.7 mm (0.5 in.), and more typically, between about 0.64 mm (0.25 in.) to about 12.7 mm (0.5 in.).

[0021] In each of the exemplary elastic tags shown in FIGS. **1A**-**1D** (and in FIG. **4B** described below), first tag portion **11** may be integrally attached to second tag portion **12** using a variety of bond configurations such as the exemplary bond configurations shown in FIGS. **2A-2D**. FIGS. **2A-2D** depict exemplary cross-sectional views of the exemplary elastic tag shown in FIG. **1A** as viewed along line **A-A** as shown in FIG. **1A**. As shown in FIG. **2A,** first tag portion **11** is integrally attached to second tag portion **12** via an exemplary bond configuration wherein a portion of first tag portion **11** is embedded within, second tag portion **12**. In this exemplary embodiment, first tag portion **11** has an upper surface **114** and a lower surface **115**. A portion **116** of lower surface **115** and outer edge **112**, in particular, first edge portion **113**, is in contact with and integrally attached to second tag portion **12** along a bond length b_L and a bond height $\mathbf{b_h}$ as shown in FIG. **2A**, and a bond width $\mathbf{b_w}$ (see, for example, bond width $\mathbf{b_w}$ shown in FIG. **1A**). Bond width $\mathbf{b_w}$, bond length $\mathbf{b_L}$ and bond height $\mathbf{b_h}$ may have dimensions that vary depending on a number of factors including, but not limited to, the desired degree of bond strength between first tag portion **11** and second tag portion **12**, the materials used to form first tag portion **11** and second tag portion **12**, and the overall dimensions of the elastic tag.

[0022] FIG. **2B** provides another exemplary bond configuration. In this exemplary embodiment, first tag portion **11** is integrally attached to second tag portion **12** via an exemplary bond configuration wherein portion **116** of lower surface **115** is in contact with and integrally attached to an upper surface **121** of second tag portion **12** along a bond length $\mathbf{b_L}$ and a bond width $\mathbf{b_w}$. As discussed above, bond width $\mathbf{b_w}$ and bond length b_L may have dimensions that vary depending on a number of factors.

[0023] FIG. **2C** provides yet another exemplary bond configuration. As shown in FIG. **2C**, first tag portion **11** is integrally attached to second tag portion **12** via an exemplary bond configuration wherein a portion of first tag portion **11** is completely embedded within second tag portion **12**. A portion **116** of lower surface **115**, first edge portion **113**, and a portion **117** of upper surface **114** of first tag portion **11** is in contact with and integrally attached to second tag portion **12** along two bond length $\mathbf{b_L}$ (i.e., extending along portions **116** and **117**) and a bond height $\mathbf{b_h}$ (i.e., extending along first edge portion **113**) as shown in FIG. 2C, and two bond width $\mathbf{b_w}$ (i.e., extending along portions **116** and **117**). As discussed above, bond widths $\mathbf{b_w}$, bond lengths $\mathbf{b_L}$ and bond height $\mathbf{b_h}$ may have dimensions that vary depending on a number of factors.

[0024] In another exemplary bond configuration shown in FIG. **2D**, first tag portion **11** is integrally attached to second tag portion **12** via an exemplary bond configuration wherein a portion of second tag portion **12** is completely embedded within first rag portion **11**. In this exemplary embodiment, second tag portion **12** has an upper surface **121** and a lower surface **122**. A portion **123** of lower surface **122**, an edge portion **125**, and a portion **124** of upper surface **121** of second tag portion **12** is in contact with and integrally attached to first tag portion **11** along two bond length $\mathbf{b_L}$ (i.e., extending along portions **123** and **124**) and a bond height $\mathbf{b_h}$ (i.e., extending along edge portion **125**) as shown in FIG. **2D**, and two bond width $\mathbf{b_w}$ (i.e., extending along portions **123** and **124**). As discussed above, bond widths $\mathbf{b_w}$, bond lengths $\mathbf{b_L}$ and bond height $\mathbf{b_h}$ may have dimensions that vary depending on a number of factors.

[0025] As discussed above, some elastic tags of the present invention may comprise a first tag portion that further comprises a second closed loop of elastic material. Exemplary elastic tags of the present invention comprising a second closed loop of elastic material are shown in FIGS. **4A-4C**.

[0026] As shown in FIG. **4A**, exemplary elastic tag **50** comprises a first tag portion **11** having an outer periphery **111** extending along an outer edge (not shown) of first tag portion **11**. Exemplary elastic tag **50** further comprises a second tag portion **12** integrally attached to first tag portion **11**. As shown in FIG. **4A**, second tag portion **12**

extends beyond first edge portion **113** of first tag portion **11**, and comprises first closed loop **13** having loop inner periphery **131** that surrounds first closed loop opening **14.** Exemplary elastic tag **50** further comprises a second closed loop **16** having a loop inner periphery **161** that surrounds a second closed loop opening **17**. In this exemplary embodiment, second closed loop **16** is an integral component of first tag portion **11**. In other words, second closed loop **16** and first tag portion **11** are formed from the same piece of material (e.g., an elastic film sheet).

[0027] Another exemplary elastic tag **60** is shown in FIG. **4B**. Exemplary elastic tag **60** comprises first tag portion **11** and second tag portion **12** integrally attached to first tag portion **11**. As shown in FIG. **4B**, second tag portion **12** extends beyond first edge portion **113** of first, tag portion **11**, and comprises first closed loop **13** having loop inner periphery **131** that surrounds first closed loop opening **14**. In this exemplary embodiment, exemplary elastic tag **60** further comprises a third tag portion **18** integrally attached to first tag portion **11**. As shown in FIG. **4B**, third tag portion **18** extends beyond another edge portion **118** of the outer edge of first tag portion **11**, and comprises second closed loop **16** having a loop inner periphery **161** that surround a second closed loop opening **17.** At least a portion of loop inner periphery **161** is positioned a distance from first tag portion **11**, and as shown in FIG. **4B**, all of loop inner periphery **161** may be positioned a distance from first tag portion **11**. Desirably, at least a portion (and possibly all) of loop inner periphery **161** comprises an elastomeric material.

[0028] Yet another exemplary elastic tag **70** is shown in FIG. **4C**. Exemplary elastic tag **70** comprises first tag portion **11,** second tag portion **12** integrally attached to first tag portion. **11**, and third tag portion **18** integrally attached to first tag portion **11**. In this exemplary embodiment, exemplary elastic tag **70** further comprises a pair of slotted openings **15** positioned along and in communication with outer periphery **111** of first tag portion **11**. As shown in FIG. **4C**, a first pair **157** of slotted openings **15** is positioned a substantially equal first distance $\mathbf{d_1}$ from first closed loop **13**, and a second pair **158** of slotted openings **15** is positioned a substantially equal second distance $\mathbf{d_2}$ from first closed loop **13.**

[0029] In the exemplary embodiments shown, in FIGS. **4A-4C,** first tag portion **11** may be integrally bonded to second tag portion **12** and third tag portion **18** using any of the above-described bond configurations. As discussed above, the degree of bonding between (i) first tag portion **11** and (ii) second tag portion **12** and/or third tag portion **18** may be varied as desired, for example, by adjusting bond width(s) $\mathbf{b_w}$, bond length(s) $\mathbf{b_L}$ and bond height $\mathbf{b_h}$. In some embodiments, it may be desirable for the bond strength between first tag portion **11** and second tag portion **12** to be greater than the bond strength between first tag portion **11** and third tag portion **18.** In other embodiments, it may be desirable for the bond strength between first tag portion **11** and second tag portion **12** to be less than the bond strength between first tag portion **11** and third tag portion **18.** In yet other embodiments, it may be desirable for the bond strength between first tag portion **11** and second tag portion **12** to be substantially equal to the bond strength between first tag portion **11** and third tag portion **18.**

[0030] The elastic tags of the present invention may be formed from a variety of materials. For example, first tag portion **11**, second tag portion **12** and third tag portion **18** may each independently comprise an elastomeric material. Suitable elastomneric materials include, but are not limited to, styrene-containing block copolymers (e.g., styrenebutadiene-styrene copolymers, styrene-isoprene styrene copolymers, and styrene-ethylenebutylene-styrene copolymers), ethylene-propylene copolymers, natural rubbers, etc

[0031] In some exemplary embodiments, first tag portion **11** comprises a sheet of inelastic material while second tag portion **12** and third tag portion **18** (when present) comprise any of the above-mentioned elastomeric materials. Typically, a substantial portion (i.e., greater than 50 wt-%) of second tag portion **12** and third tag portion **18** (when present) comprises an elastomeric material. More typically, at least 90 wt-% (or at least 95 wt-%, or at least 98 wt-%) of second tag portion **12** and third tag portion **18** (when present) comprises an elastomeric material.

[0032] Suitable inelastic materials may include, but are not limited to, paper, a polymeric film material, a fiber-reinforced polymeric film material, a polymeric foam material, an electrically conductive material, a ceramic material, a glass material, and any combinations thereof. When multiple inelastic materials are used in combination, first tag portion **11** may comprise a single layer of inelastic materials or multiple layers or inelastic materials. For example, first tag portion **11** may comprise a single sheet of paper or polymeric film, a single sheet of fiber-reinforced polymeric film material, or a multilayered structure comprising a paper layer and one or more outer polymeric film layers on one or more major outer surfaces of the paper layer.

[0033] In one desired embodiment, first tag portion **11** comprises a sheet of material (i.e., a single layer or multilayer sheet of material) having opposite outer major surfaces (e.g., upper surface **114** and lower surface **115),** wherein at least one of the opposite outer major surfaces (e.g., upper surface **114** and lower surface **115)** is capable of accepting and displaying indicia thereon. For example, in some embodiments, it may be advantageous to be able to print indicia on an outer surface of first tag portion **11,** for example, using a laser or inkjet printer. In some embodiments, it may be advantageous to be able to write indicia on an outer surface of first tag portion **11**, for example, using a pen, pencil or marker.

[0034] Various additives may be included in the materials used to form first tag portion **11,** second tag portion **12** and/or third tag portion **18** of the plastic tags of the present invention. These additives may be, for example,

added to a polymeric blend melt or added to the formed material after casting/molding (e.g., during a coating step). Such additives include, but are not limited to, ultraviolet radiation absorbers, antioxidants, organic or inorganic colorants (e.g., dyes or pigments), stabilizers, fragrances, plasticizers, anti-microbial agents, flame retardants, antifouling compounds, and combinations thereof. The amount of each optional additive is generally no more than about 15 wt-% of the material used to form a given elastic tag component, often no more than 5 wt-% of the material used to form a given elastic tag component.

[0035] The elastic tags of the present invention may have overall dimensions that vary depending on the intended use. Typically, the overall thickness of an elastic tag, the thickness of first tag portion **11**, the thickness of second tag portion **12** and the thickness of third tag portion **18** (when present) may each vary independently from one another based on a number of factors including, but not limited to, the materials used, and a particular application or use. Typically, each of (i) the overall thickness of an elastic tag, (ii) the thickness of first tag portion **11,** (iii) the thickness of second tag portion **12** and (iv) the thickness of third tag potion **18** (when present) is less than about 0.64 mm (0.25 in.), more typically, less than about 0.32 mm (0.12 in.), and more typically, between about 0.01 mm (0.4 mils) to about 0.32 mm (0.12 in.).

[0036] As shown in FIGS. **1A-1D** and **4A-4C,** elastic tags of the present invention may have a variety of overall shapes. It should be understood that the elastic tags of the present invention may have any desired shape. Further, elastic loops (e.g., first closed loop **13** and second closed loop **16**) of the clastic tags may have any dimensions, sizes and shapes. In some embodiments, the elastic loop component (e.g., first closed loop **13** and second closed loop **16**) has an overall width that is equal to or less than an overall width of first tag portion **11.** In other embodiments, one or more of the elastic loop components (e.g., first closed loop **13** and second closed loop **16**) may have an overall width that is greater than an overall width of first tag portion **11.**

[0037] Although the elastic tags of the present invention may have any desired dimensions, typically, elastic tags of the present invention have an overall length of less than about 61 centimeters (cm) (24 in.), more typically, less than about 30.5 cm (12 in.), and more typically, between about 7.6 mm (3.0 in.) to about 30.5 cm (12 in.). Typically, elastic tags of the present invention have an overall width of less than about 15.2 cm (6.0 in.), more typically, less than about 7.6 cm (3.0 in.), and more typically, between about 12.7 mm (0.5 in.) to about 7.6 cm (3.0 in.).

[0038] The present invention is further directed to methods of making the disclosed elastic tags. In one exemplary method of making an elastic tag, the method comprises integrally attaching a second tag portion to a first tag portion so that the second tag portion extends beyond a first edge portion of an outer edge of the first tag portion, the second tag portion comprising a first closed loop having a loop inner periphery, at least a portion of the loop inner periphery being positioned a distance from the first tag portion, and comprising an elastomeric material; and at least one step selected from the steps of: (1) forming at least one slotted opening within the first tag portion so as to be in communication with an outer periphery of the first tag portion, and (2) providing a second closed loop of clastic material along the outer periphery of the first tag portion.

[0039] First tag portion **11** may be formed from any of the above-described materials using any conventional method. Suitable methods include, but are not limited to, a sheet or film forming step (e.g., a papermaking step or a film extrusion step); a molding step such as an injection molding step; a coating step (e.g., to provide a writable or printable surface on a base substrate); a lamination step (e.g., to bond two or more layers to one another); a cutting step (e.g., stamping) so as to form outer periphery **111,** any slotted openings **15,** and second closed loop **16** (when present); or any combination of the above steps.

[0040] Second tag portion **12** and third tag portion **18** (when present as a separate component from first tag portion **11**) may be formed using any of the above-described method steps for first tag portion **11.** Second tag portion **12** and third tag portion **18** (when present as a separate component from first tag portion **11**) may be integrally attached to first tag portion 11 by any known method. Suitable attachment methods include, but are not limited to, an adhesive bonding step using a separate adhesive component; an adhesive bonding step wherein one or materials used to form first tag portion **11**, second tag portion **12** and/or third tag portion **18** (when present as a separate component from first tag portion **11**) act as an adhesive component; a molding step such as an injection molding step (e.g., first tag portion is positioned within a mold and second tag portion material is introduced into the a a lamination step (e.g., to bond one or more layers of first tag portion **11** to one or more layers of second tag portion **12**); or any combination of the above steps.

[0041] In one desired embodiment, second tag portion **12** (and/or third tag portion. **18**) is integrally attached to first tag portion **11** via an adhesive, wherein the adhesive is (i) a component other than the materials used to form first tag portion **11**, second tag portion **12** or third tag portion **18**, (ii) a component used to form first tag portion **11**, second tag portion **12** or third tag portion **18,** or (iii) both (i) and (ii).

[0042] The methods of forming an elastic tag may further comprise one or more of the following method steps:

(1) forming first closed loop **13** within second tag portion **12** prior to or after an integrally attaching step;
(2) forming at least one slotted opening **15** within first tag portion **11**;
(3) cutting one or more slotted opening **15** within first

tag portion **11**;
(4) forming at least one slotted opening **15** within first tag portion **11** simultaneously with a step of forming first tag portion **11**;
(5) providing second closed loop of elastic material along outer periphery **111** of first tag portion **11;**
(6) integrally attaching third tag portion **18** to first tag portion **11,** wherein third tag portion **18** comprises second closed loop **16,** wherein second closed loop **16** comprises an elastic material and has a second closed loop inner periphery **161,** and at least a portion of second closed loop inner periphery **161** is positioned a distance from first tag portion **11;**
(7) applying indicia onto first tag portion **11;** and
(8) packaging one or more elastic tags.

[0043] The present invention is even further directed to methods of using the disclosed elastic tags. In one exemplary method of using an elastic tag, the method comprises surrounding at least a portion of an article with an elastic tag comprising a first tag portion having a first closed loop integrally attached thereto; and connecting the first closed loop of the elastic tag with (i) one or more slotted opening within the first tag portion or (ii) a second closed loop of elastic material along an outer periphery of the first tag portion. FIGS. **3A-3C** depict frontal and side views of the exemplary elastic tags of FIGS. **1A** and **1C** when a closed loop portion of a given exemplary plastic tag is connected to at least one slotted opening of the given exemplary elastic tag.

[0044] As shown in FIGS. **3A** and **3B** exemplary elastic tag **10** may be used to surround a portion of an article (not shown) so that the article is positioned along upper surface **114** of exemplary elastic tag **10.** In this embodiment, first closed loop **13** of elastic tag **10** is inserted into and through channels **152** on opposite sides of first tag portion **11** so as to rest within loop containment reservoirs **151** located within an interior portion (e.g., away from outer periphery **111**) of first tag portions **11.** It should be noted that although not shown, exemplary elastic tag **10** could be used to surround a portion of an article (not shown) so that the article is positioned along lower surface **115** of exemplary plastic tag **10.** In other words, upper surface **114** could be facing away from the enclosed/surrounded article.

[0045] FIG. **3C** provides another views of the use of an elastic tag of the present invention. In this exemplary embodiment, exemplary elastic tag **30** may be used to surround a portion of an article (not shown) so that the article is positioned along upper surface **114** of exemplary elastic tag **30.** In this embodiment, first closed loop **13** of elastic tag **30** is inserted into and through a single channel **152** on a side of first tag portion **11** positioned away from first closed loop **13** so as to rest within loop containment reservoir **151** located within an interior portion (e.g., away from outer periphery **111**) of first tag portion **11**. In this embodiment, a single slotted opening **15** is used in combination with a ledge portion **119** of first tag portion **11** to temporarily secure first closed loop **13** to first tag portion **11.** As discussed above, it should be noted that although not shown, exemplary elastic tag **30** could be used to surround a portion of an article (not shown) so that the article is positioned along lower surface **115** of exemplary elastic tag **30** (i.e., upper surface **114** could be facing away from the enclosed/surrounded articfe).

[0046] In other embodiments, a separate connecting member may be used to surround a given article. One exemplary embodiment utilizing a separate connecting member is shown in FIG. **5**. As shown in FIG. **5**, exemplary elastic tag **60** of FIG. **4B** is configured so as to surround an article (not shown), wherein a. connecting member **61** is used to join first, closed loop **13** to second closed loop **16.** Connecting member **61** may comprise, for example, a plastic molded component, a metal component, a ceramic component, an elastomeric component, or any other type of component as long as connecting member **61** has enough structural integrity to connect first closed loop **13** to second closed loop **16.**

[0047] The elastic tags of the present invention may be used to surround a variety of articles and attach the article to another object or to itself. In one desired embodiment, the elastic tags of the present invention are used to control the position of a drape along a piece of medical equipment. Suitable pieces of medical equipment include, but are not limited to, a C-arm apparatus, a microscope, a surgical knife system, endoscopy equipment, an operating room table, a patient, a light, or a lamp.

[0048] The method of using the elastic tags of the present invention may further comprise one or more of the following steps:

(1) connecting first closed loop **13** with one or more slotted opening **15** within first tag portion **11;** and
(2) connecting first closed loop **13** with second closed loop **16** of elastic material positioned along outer periphery **111** of first tag portion **11**.

[0049] The present invention is described above in a manner, which is not to be construed in any way as imposing limitations upon the scope of the invention. On the contrary, it is to be clearly understood that resort may be had to various other embodiments, modifications, and equivalents thereof which, after reading the description herein, may suggest themselves to those skilled in the art without departing from the spirit of the present invention and/or the scope of the appended claims.

[0050] While the specification has been described in detail with respect to specific embodiments thereof, it will be appreciated that those skilled in the art, upon attaining an understanding of the foregoing, may readily conceive of alterations to, variations of, and equivalents to these embodiments. Accordingly, the scope of the present invention should be assessed as that of the appended claims and any equivalents thereto.

Claims

1. A method of making the elastic tag the elastic tag comprising: a first tag portion having an outer periphery extending along an outer edge of the first tag portion; and a second tag portion integrally attached to said first tag portion and extending beyond a first edge portion of the outer edge of the first tag portion, said second tag portion comprising a first closed loop having a loop inner periphery, at least a portion of said loop inner periphery being positioned a distance from said first tag portion and comprising an elastomeric material, wherein said first tag portion further comprises (a) at least one slotted opening positioned along and in communication with said outer periphery, (b) a second closed loop of elastic material, or (c) both (a) and (b)., said method comprising:

   providing a first tag portion having an outer periphery extending along an outer edge of the first tag portion;
   integrally attaching a second tag portion to the first tag portion so that the second tag portion extends beyond a first edge portion of the outer edge of the first tag portion; and
   at least one step selected from the steps of:

      (1) forming at least one slotted opening within the first tag portion so as to be in communication with the outer periphery, and
      (2) providing a second closed loop of elastic material along the outer periphery of the first tag portion.

2. A method of making an elastic tag, said method comprising: integrally attaching a second tag portion to a first tag portion so that the second tag portion extends beyond a first edge portion of an outer edge of the first tag portion, the second tag portion comprising a first closed loop having a loop inner periphery, at least a portion of the loop inner periphery being positioned a distance from the first tag portion and comprising an elastomeric material; and at least one step selected from the steps of:

   (1) forming at least one slotted opening within the first tag portion so as to be in communication with an outer periphery of the first tag portion, and
   (2) providing a second closed loop of elastic material along the outer periphery of the first tag portion.

3. The method of claim 2, wherein said integrally attaching step comprises adhesively bonding the second tag portion to the first tag portion.

4. The method of claim 2 , further comprising: forming the first closed loop within the second tag portion.

5. The method of claim 2, wherein the step of forming the first closed loop within the second tag portion occurs after said integrally attaching step.

6. The method of claim 2, wherein said method comprises the step of forming at least one slotted opening within the first tag portion.

7. The method of claim 6, wherein said step of forming at least one slotted opening within the first tag portion comprises: cutting one or more slotted opening within the first tag portion.

8. The method of claim 6, wherein said step of forming at least one slotted opening within the first tag portion occurs simultaneously with a step of forming the first tag portion.

9. The method of claim 2, said method comprises the step of providing a second closed loop of elastic material along the outer periphery of the first tag portion.

10. The method of claim 2, wherein said step of providing a second closed loop of elastic material comprises: integrally attaching a third tag portion to the first tag portion, the third tag portion comprising the second closed loop.

11. The method of claim 10, wherein the second closed loop of elastic material has a second closed loop inner periphery, at least a portion of the second closed loop inner periphery being positioned a distance from the first tag portion and comprising an elastomeric material.

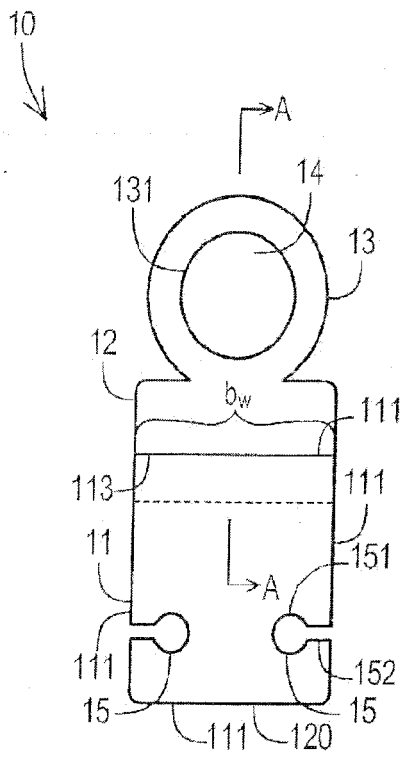

FIG. 1A

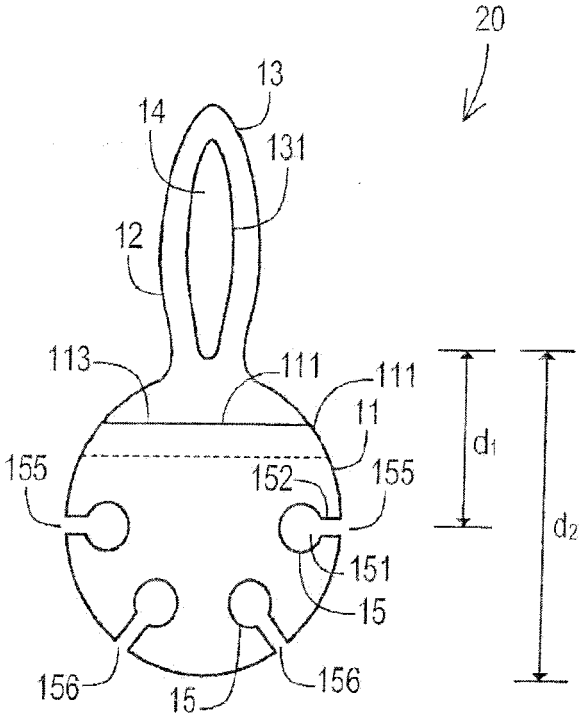

FIG. 1B

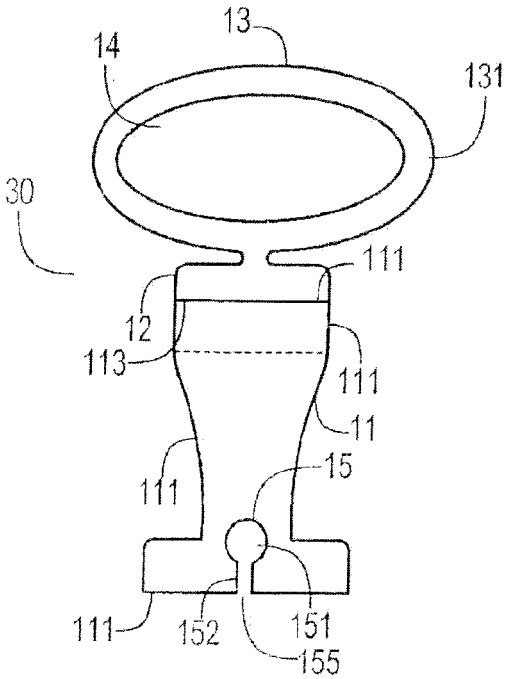

FIG. 1C

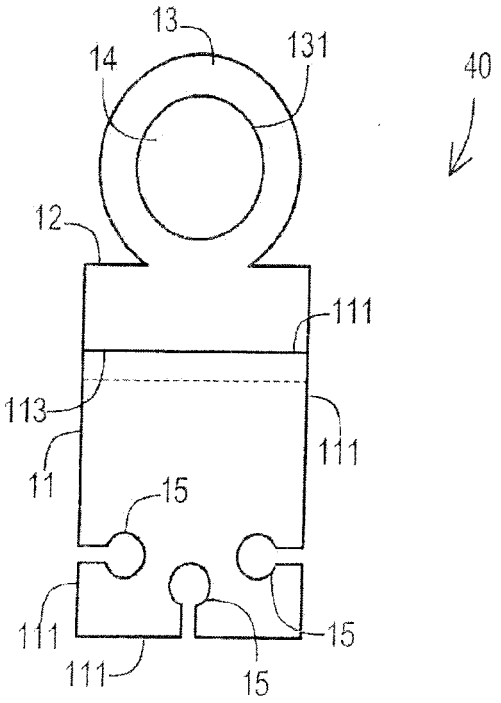

FIG. 1D

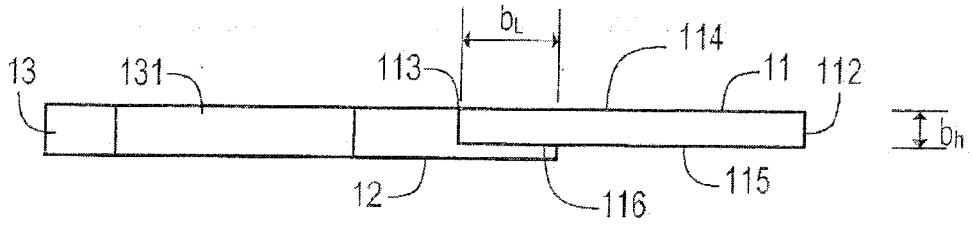

FIG. 2A

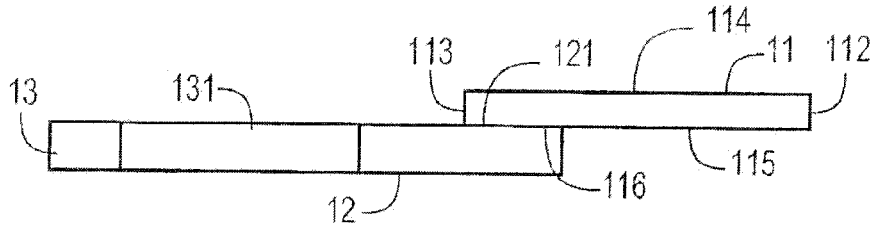

FIG. 2B

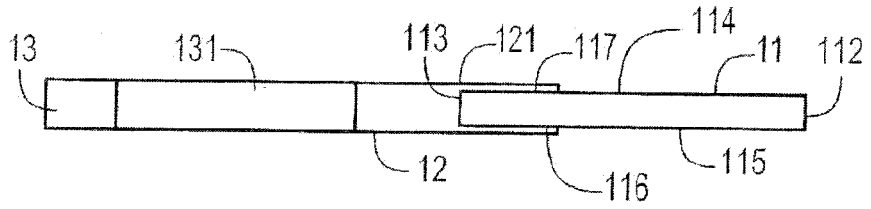

FIG. 2C

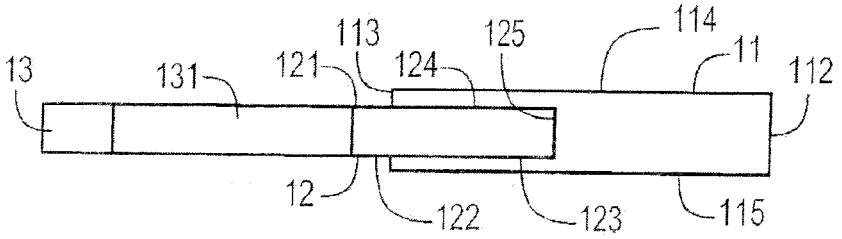

FIG. 2D

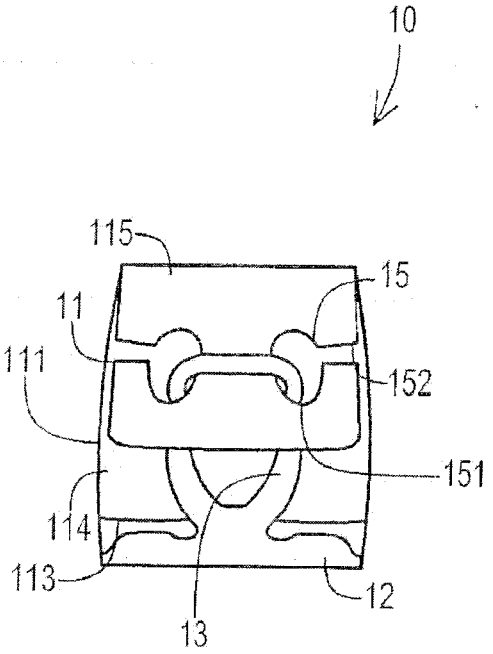

FIG. 3A

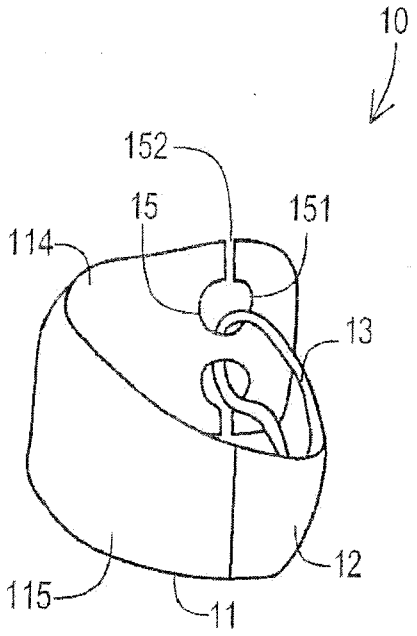

FIG. 3B

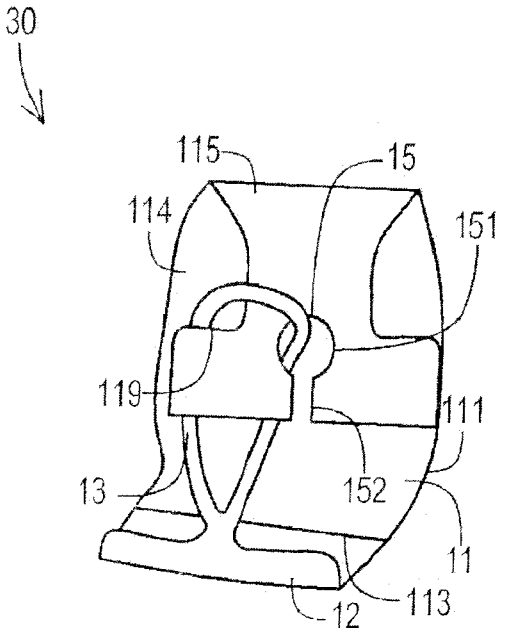

FIG. 3C

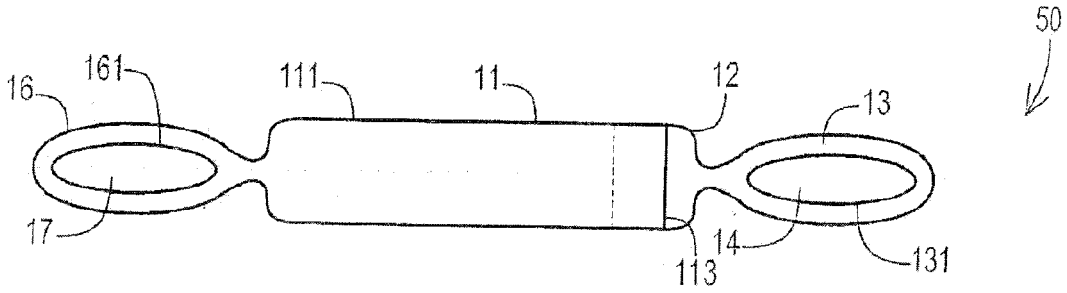

FIG. 4A

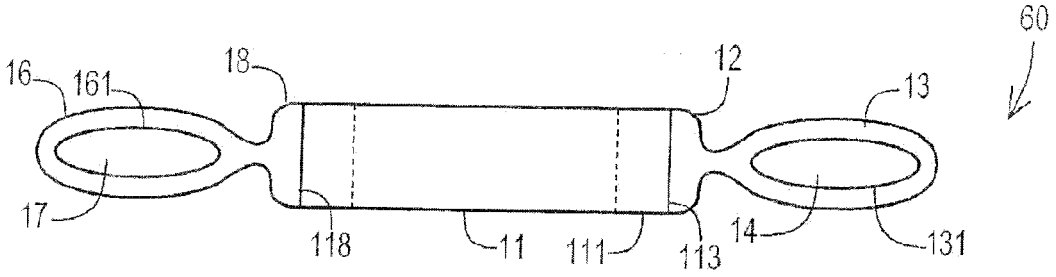

FIG. 4B

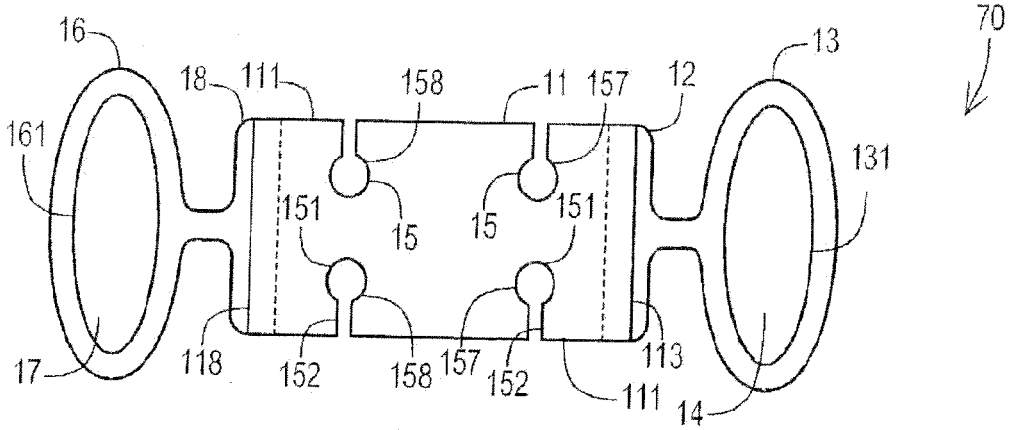

FIG. 4C

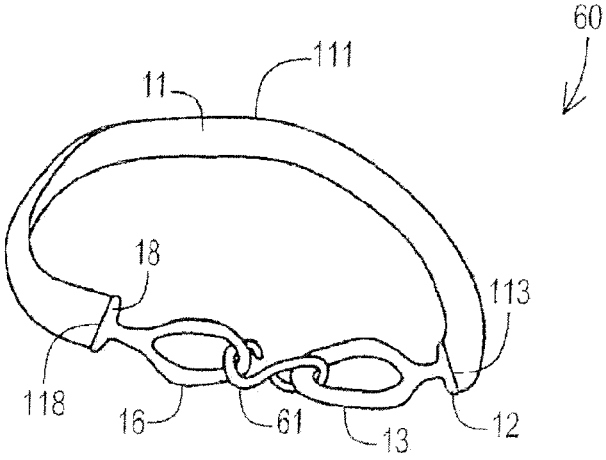

FIG. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 10 16 8943

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	FR 2 793 339 A (LAFUMA SA [FR]) 10 November 2000 (2000-11-10) * page 1, line 5 - line 6 * * page 4, line 21 - line 25 * * page 5, line 1 - line 19 * * page 6, line 18 - line 24 * * figure 7 *	1-11	INV. G09F3/04 G09F3/14
X	WO 2007/084119 A (BEDFORD IND INC [US]; LUDLOW ROBERT B; KING JUSTIN C [US]; MILBRANDT K) 26 July 2007 (2007-07-26) * page 4, line 27 - page 5, line 26 * * page 31, line 16 - page 32, line 7 * * figure 15 *	1,2	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	10 August 2010	Pantoja Conde, Ana

CATEGORY OF CITED DOCUMENTS

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D : document cited in the application
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1

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 16 8943

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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10-08-2010

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82