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(54) BACKPACK WITH EXPANDABLE AREA

(75) Inventors: **Timm John Fenton**, Lebanon, NJ (US); **Paul Victor Scicluna**, Penndel, PA (US)

Correspondence Address:
BAKER & BOTTS L.L.P.
30 ROCKEFELLER PLAZA
44TH FLOOR
NEW YORK, NY 10112-4498 (US)

(73) Assignee: **TUMI, INC.**, South Plainfield, NJ

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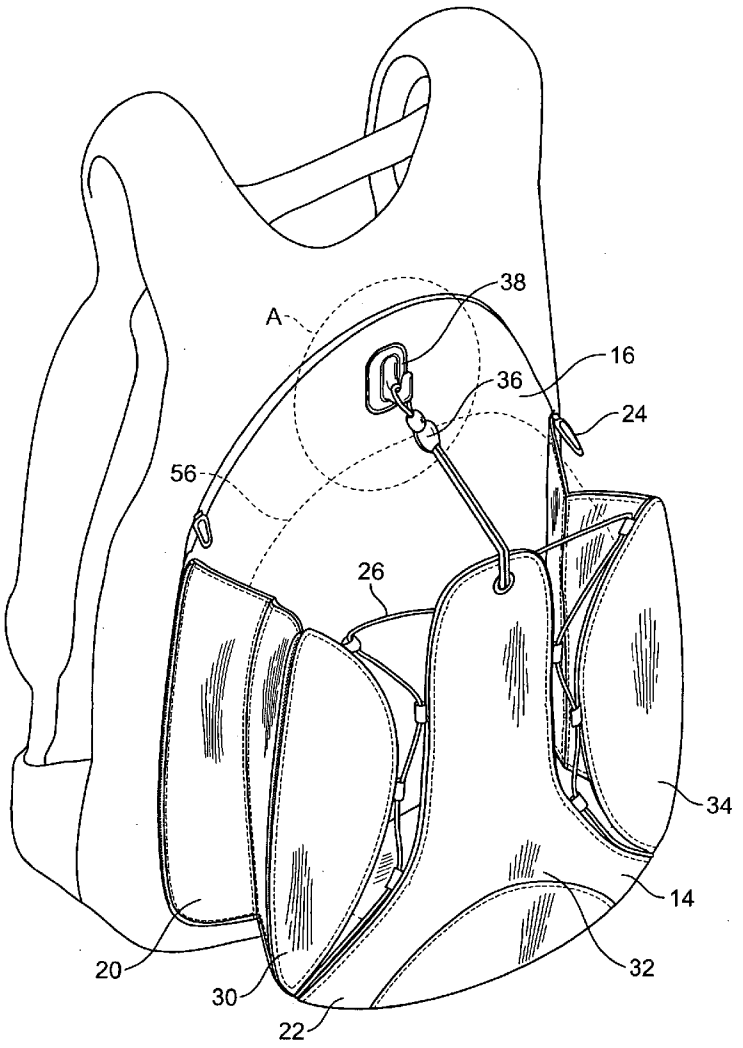
(57) **ABSTRACT**

A backpack includes a backpack body comprising first and second panels cooperating to substantially form a first compartment therebetween; an expandable compartment configured for housing an object, the expandable compartment including first and second areas cooperating with each other; the first area being connected to the backpack body, the first area having two end portions, each end portion comprising a protrusion, and the first area having a fold line approximately along its center, the second area comprising three regions configured to cooperate with each other; and a cord capable of cooperating with the second area for facilitating the cooperation of the three regions. The shape of the protrusions of the end portions prevent the visibility of the first area to a user when the compartment is in an unexpanded configuration. When the compartment is in the unexpanded configuration, approximately half of the first area abuts the second area and approximately half of the material of the first area abuts the first panel.



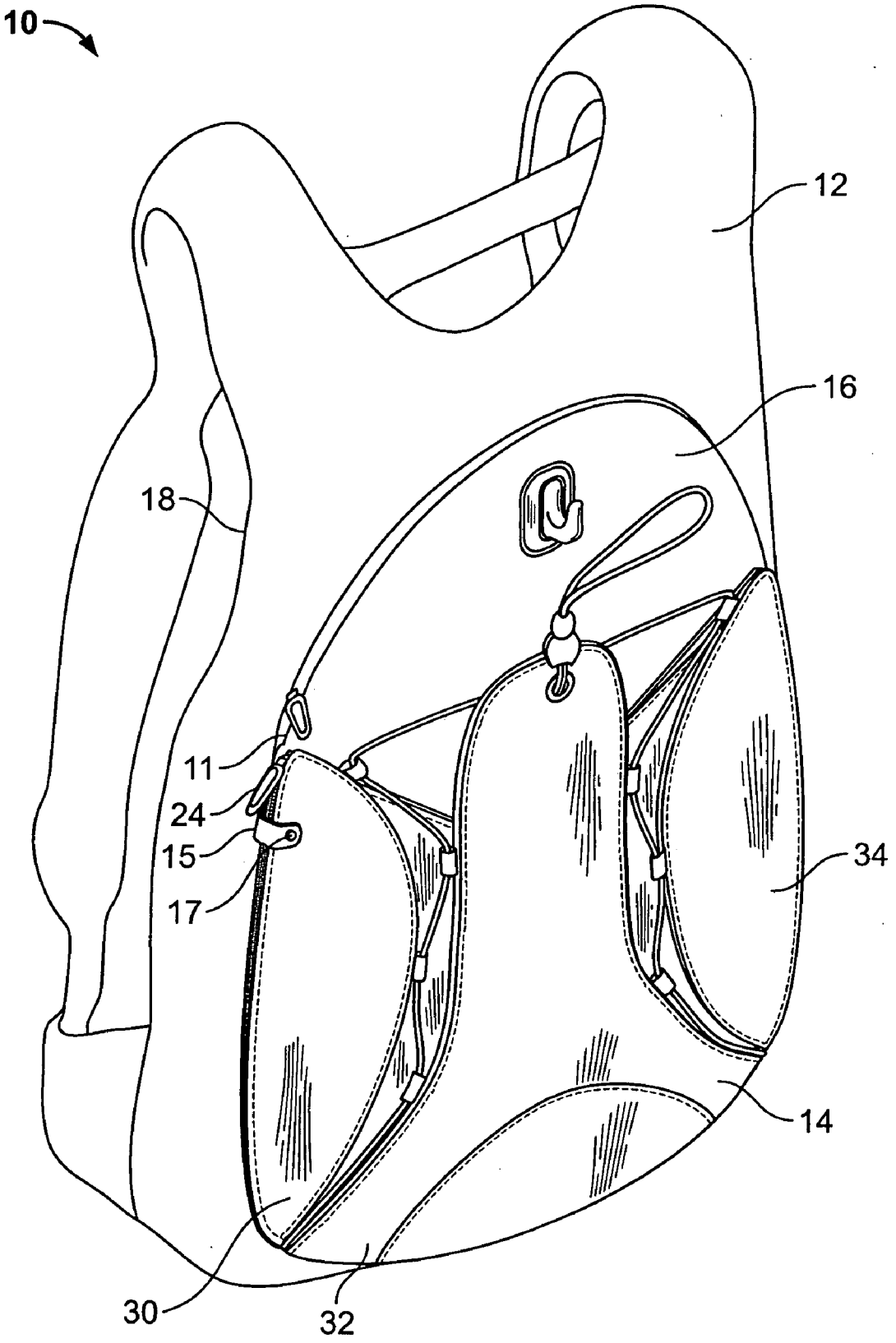


FIG. 1

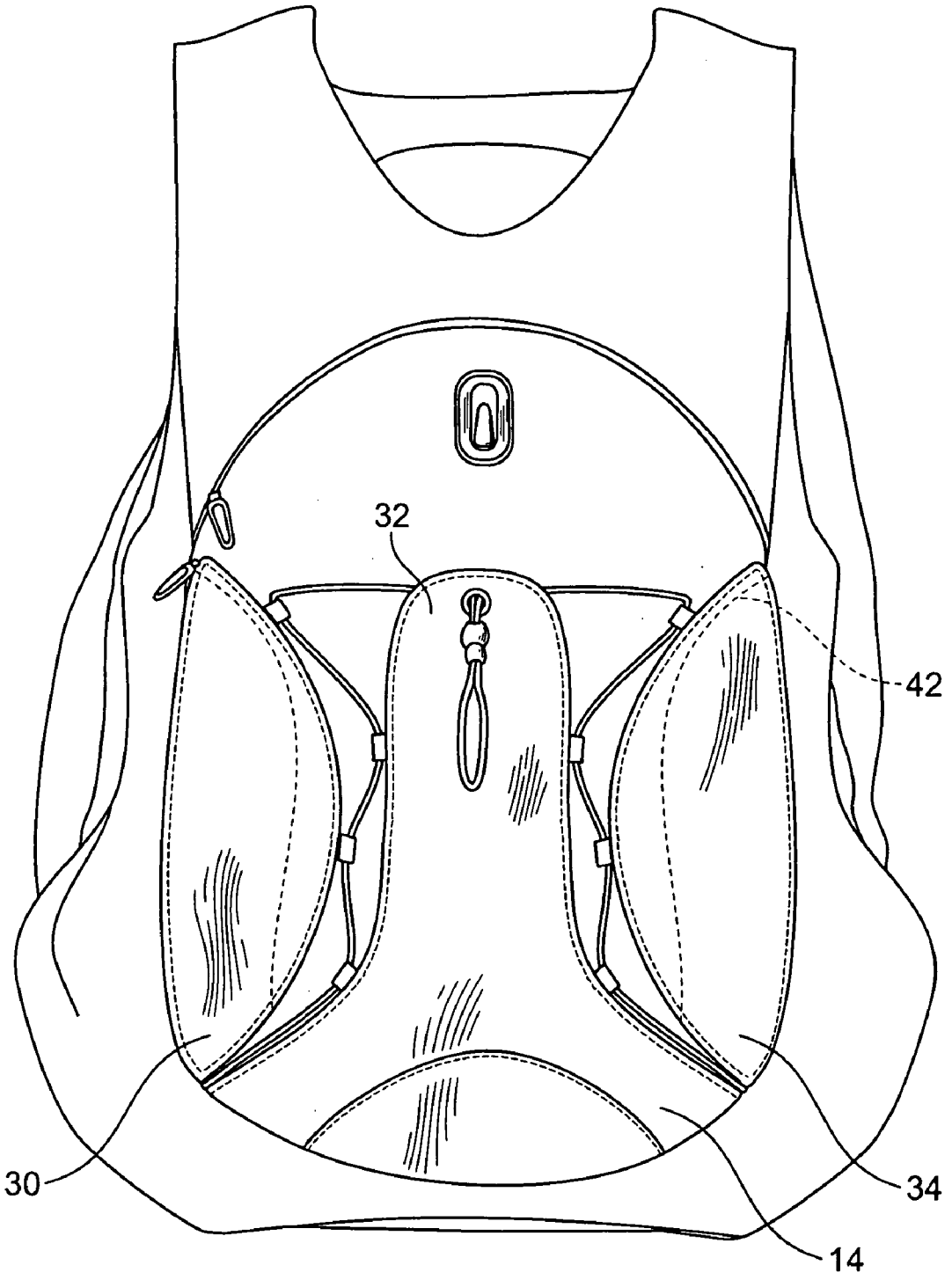


FIG. 2

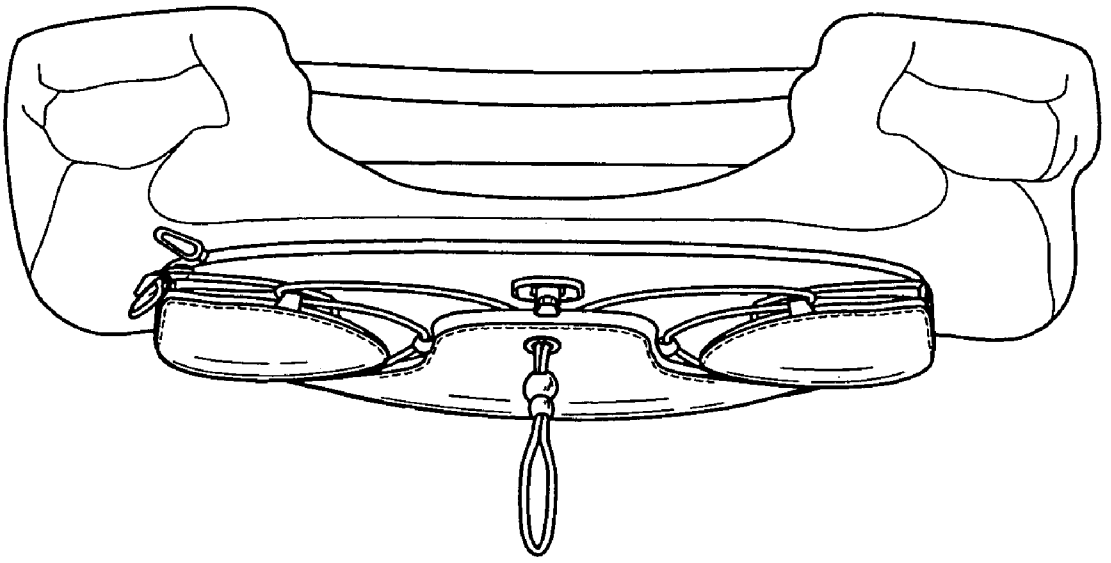


FIG. 3

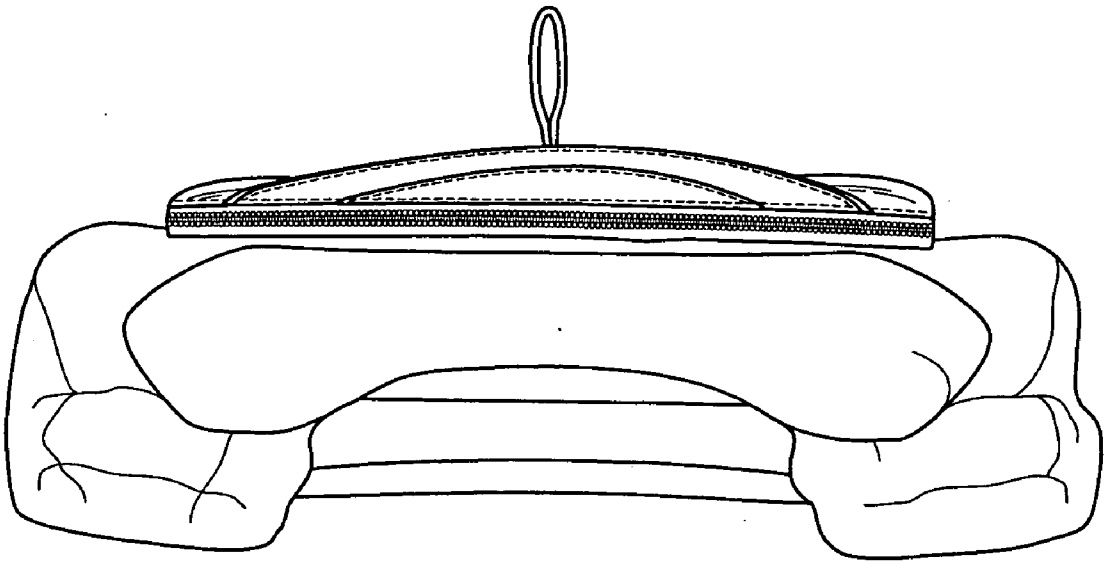


FIG. 4

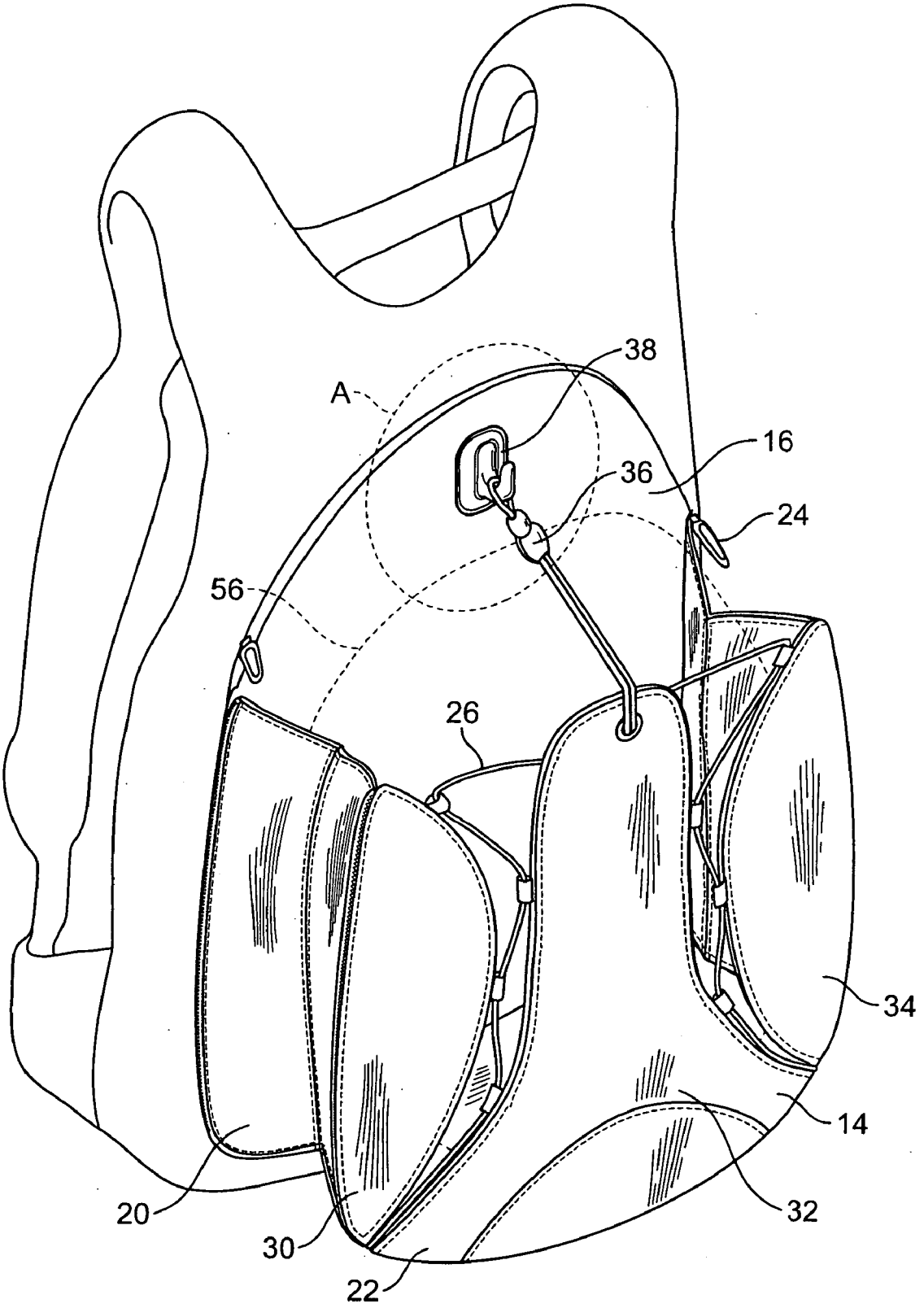


FIG. 5

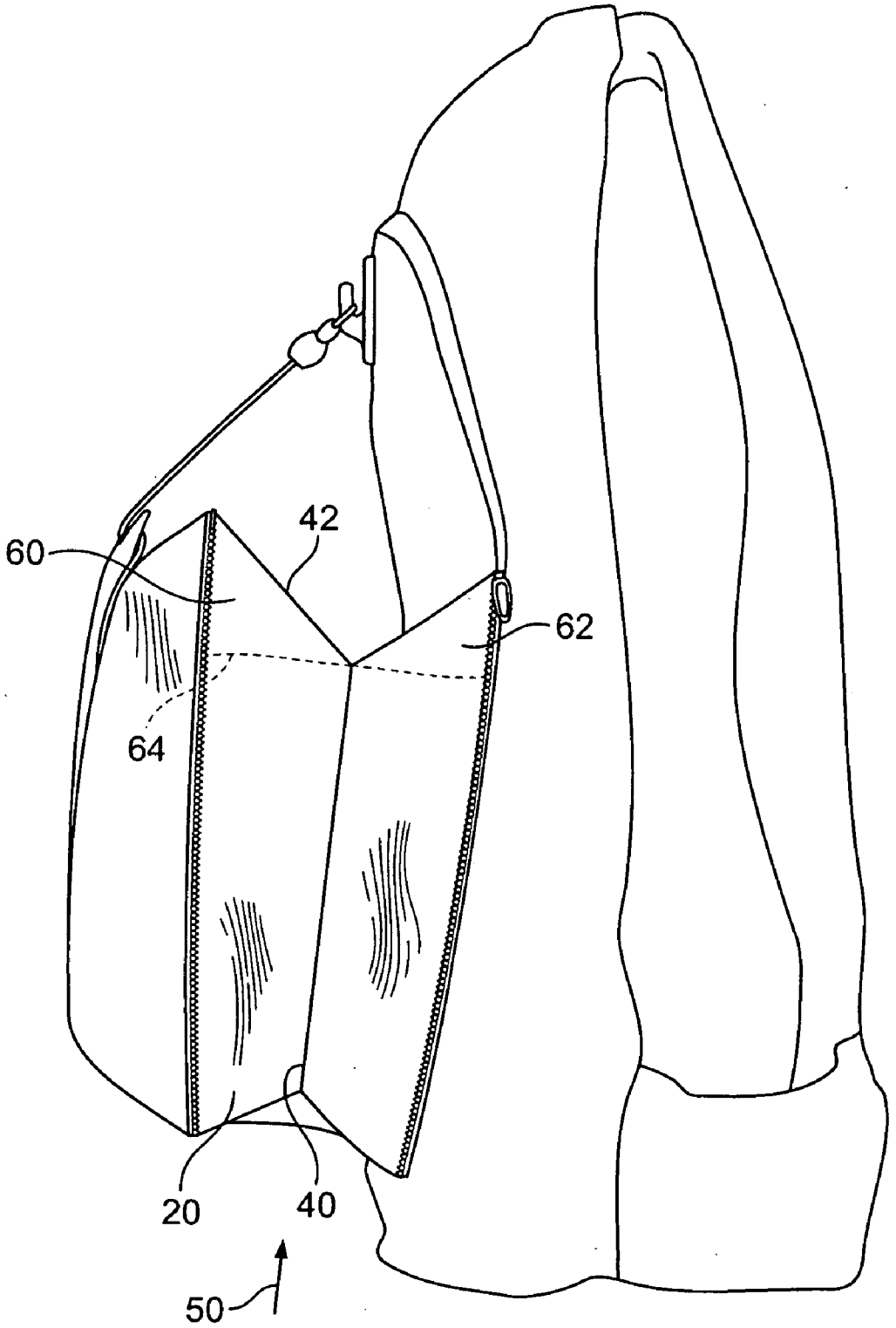


FIG. 6

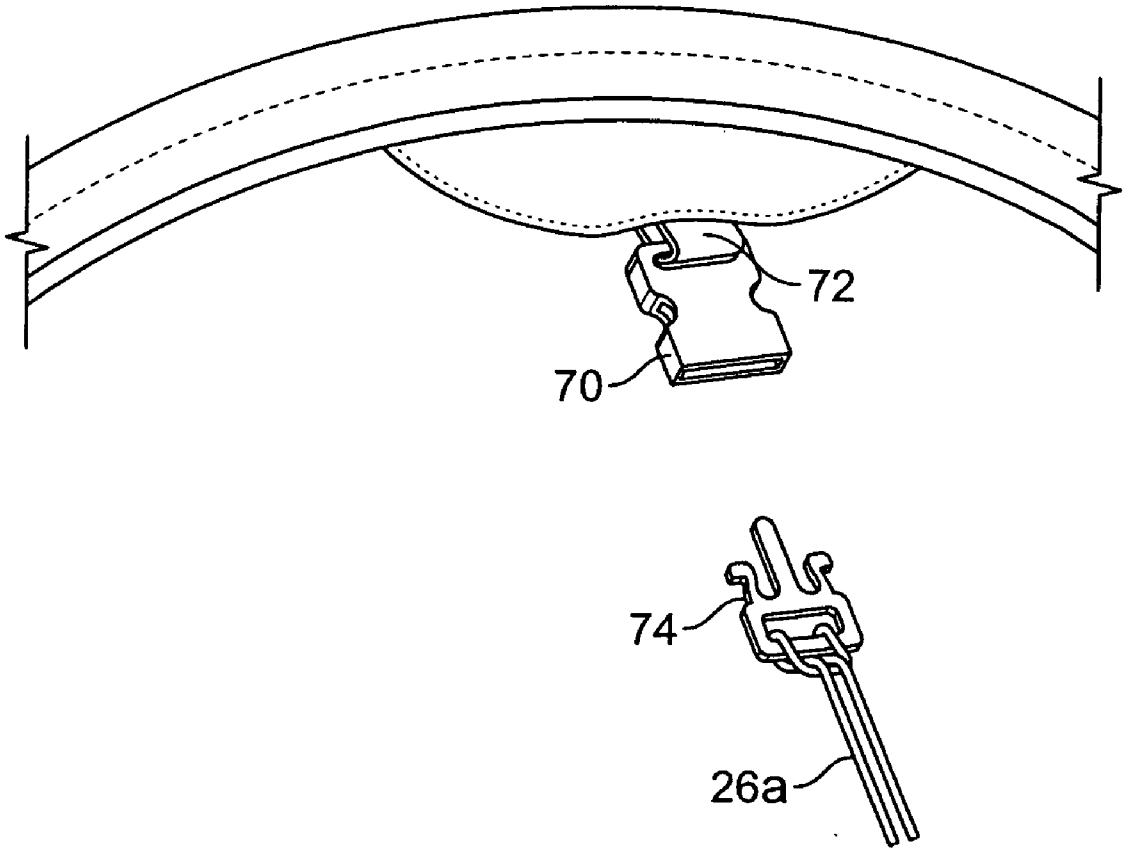


FIG. 7

BACKPACK WITH EXPANDABLE AREA

TECHNICAL FIELD OF THE INVENTION

[0001] The present invention relates generally to backpacks and more particularly to backpacks with expandable compartments.

BACKGROUND INFORMATION

[0002] Backpacks are designed in various sizes and shapes. Some have multiple pockets and are designed to accommodate various articles of various sizes. The helmet design and manufacturing industry strives to provide protective and attractive helmets for cyclists. Since helmets can be awkward to carry when not being worn, some backpacks are designed to accommodate cyclists' helmets.

[0003] One concern in designing backpacks is efficient use of space. Backpacks should be designed such that they are no larger than required yet can store many objects in that space. Expandable compartments are typically used to serve this purpose. When they are not in use, the expandable compartments are typically zipped shut and do not take up that much extra space.

[0004] Conventional expandable compartments suffer from some problems. First, typically the material around the perimeter of the pocket which allows the expansion is such that it does not permit an easy compression of the pocket when the pocket will be zipped close. This sometimes occurs because the material does not fold easily onto itself when the pocket is in the closed position. Second, typical expandable compartments consist of one outer panel attached to a perimeter panel. The one outer panel is typically flat and may not efficiently and aesthetically accommodate items of various sizes and shapes. Moreover, this outer panel typically is attached to the backpack on all of its (the outer panel's) sides, and this contributes to the lack of such various size accommodation.

[0005] Since backpacks can be worn be persons of different sizes, adjustability in the straps attaching the backpack to a user is also a desirable feature.

[0006] There exists a need to provide a backpack which allows transport of objects of varying sizes in an expandable compartment.

SUMMARY OF THE INVENTION

[0007] One of the objects of the present invention is to overcome the aforementioned problems and deficiencies.

[0008] According to a first aspect of the present invention, the backpack includes an expandable compartment. The outer portion of the expandable compartment is divided into three regions. The two outer regions are held to the inner region by use of an expandable cord. They are attached to a perimeter member which is attached to the backpack body. The perimeter member surrounds the compartment approximately three-fourths of the way around. The division of the outer panel into three regions permits expansion and contraction of the pocket without bundling. Thus, this division into three regions permits the expandable compartment to effectively and aesthetically accommodate objects of various sizes and shapes. It is particularly suitable for cyclist helmets.

[0009] According to a second aspect of the present invention, the cord is attached to a hook feature on the backpack body. This attachment allows the harnessing of the object in the expandable compartment from becoming dislodged through the top open portion of the compartment.

[0010] According to a third aspect of the present invention, the perimeter panel includes a cut out region at each end portion thereof. This cutout allows the perimeter panel to remain out of sight when the expandable compartment is in the contracted position. Without the cutout region, the perimeter panel would be visible over the right and left regions of the outer portion of the expandable compartment. In a preferred embodiment, the cut out regions are in the shape of a "V."

[0011] According to a fourth aspect of the present invention, the perimeter panel folds in the shape of a "V" when viewed in cross-section. This permits optimal contraction of the expandable pocket and conserves space.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. **1** shows an isometric view of an exemplary embodiment of a backpack according to the present invention.

[0013] FIG. **2** shows a front view of the backpack of FIG. **1**.

[0014] FIG. **3** shows a top view of the backpack of FIG. **1**.

[0015] FIG. **4** shows a bottom view of the backpack of FIG. **1**.

[0016] FIG. **5** shows an isometric view of an exemplary embodiment of a backpack with a compartment in an expanded position according to the present invention

[0017] FIG. **6** shows a side view of the backpack of FIG. **5**.

[0018] FIG. **7** shows an isometric view of an exemplary embodiment of a backpack according to the present invention.

[0019] Throughout the figures, the same reference numerals and characters, unless otherwise stated, are used to denote like features, elements, components or portions of the illustrated embodiments. Moreover, while the present invention will now be described in detail with reference to the figures, it is done so in connection with the illustrative embodiments.

DETAILED DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0020] FIG. **1** depicts a backpack **10** according to one exemplary embodiment of the present invention. The backpack **10** includes a backpack body **12** and an expandable compartment **14**. The backpack body **12** includes a first panel **16** and a second panel **18** used in forming a first compartment **11**. The panels **16**, **18** may be connected to each other by stitching. The panels **16**, **18** may be fabricated from a material such as nylon and polyester and including but not limited to other woven materials. The material may be soft and stretchable or compliant, a hard material, foamed or padded material, or a combination or composite of these

various materials. The expandable compartment **14** is shown in the contracted position in FIG. **1**.

[**0021**] FIG. **5** depicts a backpack according to one exemplary embodiment of the present invention. FIG. **5** depicts the backpack with a compartment **14** in an expanded position. The expandable compartment **14** includes a first area **20** and a second area **22**. The areas **20**, **22** may be fabricated from a similar material as the panels **16**, **18**. The first area **20** may be connected to the first panel **16** via stitching. The first area **20** may form an approximately semi-circular intersection with the first panel **16**, and thus may form a partial perimeter of the expandable compartment **14**. The second area **22** may include a first **30**, second **32**, and third **34** region.

[**0022**] A zipper **24** may permit expansion of the compartment **14**. The zipper **24** may fasten the second area of the compartment **14** to the first panel **16** of the backpack body **12**. The zipper **24** may surround the expandable compartment **14** around the entire first area **20**. Thus when the zipper **24** is closed, the second area **22** is pulled close to the first panel **16**.

[**0023**] As depicted in FIG. **6**, the first area **20** may fold approximately along a centerline **40**, forming a "V" when viewed in cross-section, in the direction of the arrow **50**. This permits optimal contraction of the compartment **14** for example when it is not being used to store a large item. This type of fold may take on all sides of the first area **20**. The first area **20** may also include a cut-out region **42** (on both ends), which may also be in the shape of a "V" when viewed in the side view as shown in FIG. **6**. This cutout **42** prevents that section of the first area **20** (where the material would be had there been no cutout) from protruding out beyond the first **30** and third **34** regions in the direction of the second region **32** when the compartment **14** is in the contracted position (see FIG. **2**). Stated differently, the cut-out region **42** in essence may result in a pair of triangular protrusions **60**, **62** being formed on one side of line **64**. The protrusions **60**, **62** may be a portion of the first area **20**. Referring back to FIG. **5**, when the zipper **24** is opened, the second area **22** is permitted to expand from the first panel **16**, and the first area **20** in conjunction with the second area **22** and the first panel **16** form the expandable compartment **14**. The first area **20** may act as the bottom and sides of the compartment **14**. The terms "bottom" and "sides" are relative terms here and are descriptive of the backpack when the backpack is in an upright position, as shown in FIG. **5**.

[**0024**] The second area **22** may further include a cord **26** attached thereto. The cord **26** may permit the first **30** and second **32** regions to cooperate with each other, and may permit the second **32** and third **34** regions to cooperate with each other. As larger or smaller objects are placed in the compartment **14**, a user can adjust the tension on the cord **26**. This also adjusts the proximity of the three regions **30**, **32**, **34** to each other. The cord **26** may also function to assist an object **56** (shown only in FIG. **5**) placed in the compartment **14** from falling out, by being attached to a hook **38** on the first panel **16** of the backpack body **10**. In other words, while the first area **20** may act as the bottom and sides of the compartment **14**, the cord **26** may assist to prevent items from becoming dislodged from the compartment toward the top. The term "top" is a relative term and is descriptive of the backpack when the backpack is in an upright position, as shown in FIG. **5**. The amount of tension on the cord **26** may be adjustable by an adjusting member **36**, which can be positioned in various places on the cord **26**. Examples of objects that can be stored in the expandable compartment of the present invention include but are not limited to motorcycle helmets, bicycle helmets, baseball helmets, catcher's masks, basketballs, and soccer balls as well as other relatively large and unwieldy items in need of transport. The expandable compartment **14** may be capable of holding objects larger than the first compartment **11** can hold.

[**0025**] FIG. **7** depicts a magnified view of area "A" of FIG. **5**, with buckle member **70** instead of the hook **38**. The buckle member **70** may be connected to the first panel **16** by a strap **72**, which may be may be stitched to the first panel **16** of the backpack body **10**. A further buckle **74** may be coupled to the cord **26**a. The further buckle **74** thus may cooperate with the buckle member **70** to function to assist the object **56** (shown only in FIG. **5**) placed in the expandable compartment **14** from falling out.

[**0026**] Referring back to FIG. **1**, a strap **15** including a snapping member **17** (both only shown in FIG. **1**) as part of a fastening arrangement may be attached to the backpack body **12** and may be configured to engage a corresponding snapping member (not shown) on the first region **30**. The corresponding snapping member preferably should not go all the way through the lining of the first region **30** in order to prevent it from damaging an object placed in the expandable compartment **14**. The strap **15** may be attached in the seam where the first and second panels **16**, **18** mate. The strap **15** may be used to prevent the zipper **24** from accidentally opening thus keeping the expandable compartment **14** in a closed position.

[**0027**] FIGS. **3** and **4** depict the backpack of FIG. **1** in top and bottom views respectively.

[**0028**] The foregoing merely illustrates the principles of the invention. Various modifications and alterations to the described embodiments will be apparent to those skilled in the art in view of the teachings herein. It will thus be appreciated that those skilled in the art will be able to devise numerous systems and methods which, although not explicitly shown or described herein, embody the principles of the invention and are thus within the spirit and scope of the invention. For example, the second area **22** may include two or four regions instead of three.

What is claimed is:

1. A backpack comprising:

a backpack body,

an expandable compartment configurable for housing an object, the expandable compartment including first and second areas cooperating with each other,

the first area being coupled to the backpack body, the first area having two end portions, each end portion comprising a protrusion,

the second area comprising three regions capable of cooperating with each other, and

a cord capable of cooperating with the second area on the backpack body and facilitating the cooperation of the three regions,

wherein, the shape of the protrusions of the end portions substantially reduce the visibility of the first area to a user when the compartment is in an unexpanded configuration.

2. The backpack of claim 1 wherein the backpack body comprises first and second panels cooperating to substantially form a first compartment therebetween.

3. The backpack of claim 1 wherein one of the protrusions is in the shape of a "V."

4. The backpack of claim 1 wherein one of the protrusions is in the shape of a "C."

5. The backpack of claim 1 further comprising a zipper surrounding a portion of the expandable compartment along the first area wherein operation of the zipper permits expansion of the second area from the first panel of the backpack body.

6. The backpack of claim 5 further comprising a member for fastening the backpack body to the first region.

7. The backpack of claim 1 further comprising a plurality of harnessing features on each of the three regions, each of the plurality of harnessing features being configured to allow the cord to pass therethrough.

8. The backpack of claim 1 further comprising an engaging member thereon capable of communicating with the cord to prevent the object placed in the expandable compartment from becoming dislodged.

9. The backpack of claim 8 wherein the engaging member comprises a hook.

10. The backpack of claim 8 wherein the engaging member comprises a buckle.

11. The backpack of claim 1 wherein the object includes a motorcycle helmet.

12. The backpack of claim 1 wherein the object includes a ball.

13. The backpack of claim 2 wherein the expandable compartment when in an expanded configuration is larger than the first compartment.

14. A backpack comprising:

a backpack body,

an expandable compartment configurable for housing an object, the expandable compartment including first and second areas cooperating with each other,

the first area being coupled to the backpack body, the first area having a fold line approximately along its center,

the second area comprising three regions configured to cooperate with each other, and

a cord capable of cooperating with the second area and an engaging member coupled to the backpack body and facilitating the cooperation of the three regions,

wherein, when the expandable compartment is in an unexpanded configuration, approximately half of the first area abuts the second area and approximately half of the material of the first area abuts the first panel.

15. The backpack of claim 14 wherein the backpack body comprises first and second panels cooperating to substantially form a first compartment therebetween.

16. The backpack of claim 14 further comprising a zipper along a substantial portion of the first area wherein operation of the zipper controls expansion of the second area from the first panel of the backpack body.

17. The backpack of claim 16 further comprising a member for fastening the backpack body to the first region.

18. The backpack of claim 14 further comprising a plurality of harnessing features on each of the three regions, the plurality of harnessing features each having an opening configured to allow the cord to pass therethrough.

19. The backpack of claim 14 further comprising an engaging member configured to communicate with the cord to prevent the object placed in the expandable compartment from becoming dislodged.

20. The backpack of claim 19 wherein the engaging member comprises a hook.

21. The backpack of claim 19 wherein the engaging member comprises a buckle.

22. The backpack of claim 14 wherein the object includes a motorcycle helmet.

23. The backpack of claim 14 wherein the object includes a ball.

24. The backpack of claim 15 wherein the expandable compartment when in an expanded configuration is larger than the first compartment.

25. A backpack comprising:

a backpack body comprising first and second panels cooperating to substantially form a first compartment therebetween,

an expandable compartment configured for housing an object, the expandable compartment including first and second areas cooperating with each other,

the first area being connected to the backpack body, the first area having two end portions, each end portion comprising a protrusion, and the first area having a fold line approximately along its center,

the second area comprising three regions configured to cooperate with each other, and

a cord capable of cooperating with the second area for facilitating the cooperation of the three regions,

wherein, the shape of the protrusions of the end portions prevent the visibility of the first area to a user when the compartment is in an unexpanded configuration,

wherein, when the compartment is in the unexpanded configuration, approximately half of the first area abuts the second area and approximately half of the material of the first area abuts the first panel.

26. The backpack of claim 25 wherein one of the protrusions is in the shape of a "V."

27. The backpack of claim 25 wherein one of the protrusions is in the shape of a "C."

28. The backpack of claim 25 further comprising a zipper surrounding a portion of the expandable compartment along the first area wherein the zipper permits expansion of the second area from the first panel of the backpack body.

29. The backpack of claim 28 further comprising a member for fastening the backpack body to the first region.

30. The backpack of claim 25 further comprising a plurality of harnessing features on each of the three regions, the plurality of harnessing features each having an opening configured to permit the cord to pass therethrough.

31. The backpack of claim 25 further comprising an engaging member thereon capable of communicating with the cord to prevent an object placed in the expandable compartment from becoming dislodged.

32. The backpack of claim 31 wherein the engaging member comprises a hook.

33. The backpack of claim 31 wherein the engaging member comprises a buckle.

34. The backpack of claim 25 wherein the object includes a motorcycle helmet.

35. The backpack of claim 25 wherein the object includes a ball.

36. The backpack of claim 25 wherein the expandable compartment when in an expanded configuration is larger than the first compartment.

* * * * *