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(54) Title: ERGONOMIC BACKPACK

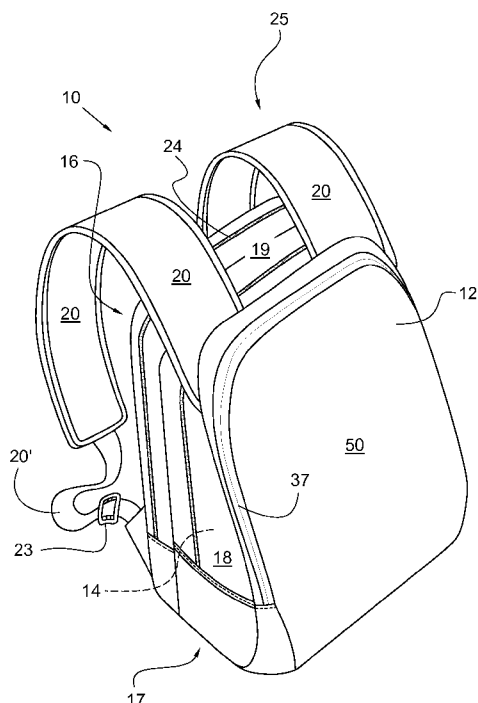


FIG. 1

(57) Abstract: A backpack including a backpack body having an inner cavity therein. The backpack body includes a releasable closure configured to provide access to the inner cavity and a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn. The backpack further includes a shoulder strap assembly coupled to the backpack body and configured to be positioned about a shoulder of the wearer when the backpack is worn. The shoulder strap assembly is coupled to an upper portion of the backpack body only at an attachment location that is located on an opposite side of the releasable closure relative to the back surface.



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ERGONOMIC BACKPACK

[0001] This application claims priority to U.S. Provisional Patent Application Serial No. 61/510,976 filed on July 22, 2011 and U.S. Provisional Patent Application Serial No. 61/638,787, filed on April 26, 2012. The entire contents of both these application are incorporated herein by reference.

BACKGROUND

[0002] Backpacks are widely used by students and other wearers/users to store books, school supplies, travel supplies, etc. Such backpacks may include a pair of straps that extend over a wearer's shoulders when the backpack is worn. However, existing backpack configurations can cause discomfort and/or fatigue, particularly when the backpack is used to store bulky and/or heavy items.

SUMMARY

[0003] In one embodiment, the present invention is a backpack including a backpack body having an inner cavity therein. The backpack body includes a releasable closure configured to provide access to the inner cavity and a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn. The backpack further includes a shoulder strap assembly coupled to the backpack body and configured to be positioned about a shoulder of the wearer when the backpack is worn. The shoulder strap assembly is coupled to an upper portion of the backpack body only at an attachment location that is located on an opposite side of the releasable closure relative to the back surface.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Fig. 1 is a front perspective view of one embodiment of the backpack of the present invention;

[0005] Fig. 2A is a front perspective view of another embodiment of the backpack;

[0006] Fig. 2B is a rear perspective view of the backpack of Fig. 2A;

[0007] Fig. 3 is a right side view of the backpack of Fig. 2A, being worn by a wearer;

[0008] Fig. 4A is a left side view of the backpack of Fig. 2A;

[0009] Fig. 4B shows the backpack of Fig. 4A, with the straps pivoted to the front side;

- [0010] Fig. 5 is a right side view of the backpack of Fig. 2A;
- [0011] Fig. 6 is a front view of another embodiment of the backpack;
- [0012] Fig. 7 is a back view of the backpack of Fig. 6, with the straps pivoted to the front side;
- [0013] Fig. 8A is a left side view another embodiment of the backpack;
- [0014] Fig. 8B is a front view of the backpack of Fig. 8A;
- [0015] Fig. 8C illustrates the backpack of Fig. 8B with the straps pivoted to the front side;
- [0016] Fig. 9 is schematic side view of the backpack of Fig. 1, showing certain dimensions;
- [0017] Figs. 10A-10D illustrate examples of the backpack of Fig. 9, showing various shoulder strap attachment points;
- [0018] Fig. 11A is a front view of another embodiment of the backpack;
- [0019] Fig. 11B is a front view of another embodiment of the backpack;
- [0020] Fig. 12A is a side view of the backpack of Fig. 11A;
- [0021] Fig. 12B is a side view of the backpack of Fig. 11B;
- [0022] Fig. 13A is a bottom perspective view of the backpack of Fig. 11A;
- [0023] Fig. 13B is a bottom perspective view of the backpack of Fig. 11B;
- [0024] Fig. 14A is a bottom view of the backpack of Fig. 11A; and
- [0025] Fig. 14B is a bottom view of the backpack of Fig. 11B.

DETAILED DESCRIPTION

- [0026] The terms "front" and "back," are used herein in relation to a backpack such that the region or face that is nearest the back of the wearer, when the backpack is worn, is referred to as the "back." The region or face of the backpack that faces away from the wearer when the backpack is worn, and that usually faces toward a customer during display of the backpack for sale in a store, and which may carry a logo, is referred to as the "front." The back may be flatter, more planar, and more uniform in appearance than the front, and the front may have or carry zippers, fasteners, openings/slits or other devices for providing access to a main cavity of the backpack.
- [0027] With reference to Fig. 1, the backpack 10 of the present invention may include a body 12 with an inner cavity, or major storage compartment 14, therein. The body 12 includes a back surface or panel 16 configured to lie adjacent to the back of a wearer and a generally parallel front surface or panel 50 opposing the back panel 16 and facing away

from the wearer when the backpack 10 is worn. The backpack 10 may also include a pair of opposed sides 18 positioned generally perpendicular to, and extending between the back 16 and front 50 panel. The backpack 10 may further include a top surface or panel 19 and a bottom surface or panel 17 extending between and generally perpendicular to, the back 16 and front 50 panels, and the sides 18.

[0028] In the illustrated embodiment the backpack 10 is generally shaped as a rectangular prism with six generally well defined sides/surfaces. However, it should be understood that the backpack 10 may not necessarily have well defined surfaces or panels, and could instead have a more undefined, unstructured shape. In this case, however, the backpack can still be considered to have at least a back surface 16, positioned adjacent a wearer's back when the backpack 10 is worn, and a generally opposed front surface 50 not positioned adjacent a wearer's back.

[0029] The backpack 10 may include a shoulder strap assembly 25 including pair of shoulder straps 20 coupled to the body 12. Each shoulder strap 20 can extend from a top portion of the body 12/front panel 50 (e.g., in one case, the upper half of the body 12) to a position at or adjacent to the bottom of the body 12/back panel 16 (e.g. in one case the lower half of the body 12). In this manner each shoulder strap 20 forms a loop which can receive the wearer's arms therethrough. Alternately, if desired, rather than using two shoulder straps 20, the shoulder strap assembly 25 may include only a single shoulder strap 20 to provide a backpack 10 also known as a "sling."

[0030] The lower end 20' of each shoulder strap 20 may be made of a different material or may have a different shape (for instance, a narrower strap, or an unpadded strap) than the rest of shoulder strap 20, although if desired the shoulder strap 20 can have a relatively uniform size, shape and material along its length. Each shoulder strap 20 may include an adjustment mechanism, such as a buckle 23 or the like, such that the length of each strap 20 can be customized to fit different sized wearers, and accommodate different load weights.

[0031] The backpack 10 may include a releasable fastener/closure or a closable access opening 24 extending around the body 12 such that when the releasable closure 24 is opened, access is thereby provided to the major storage compartment 14. The releasable closure 24 can, in one embodiment, extend generally vertically (when the backpack 10 is worn) from one side panel 18, horizontally across the top panel 19, and vertically across the other side panel 18, to provide ease of use and full access to the storage compartment 14. The releasable closure 24 can take any of a variety of forms, including a zipper, a slide

fastener, hook-and-loop fastening material (i.e. VELCRO®), snaps, magnets or the like. Although the backpack 10 may include a variety of storage compartments and releasable closures, in one case the inner cavity 14 has the greatest storage capacity of any pocket/compartments in the backpack 10 by volume, and/or the releasable closure 24 has the greatest length of any releasable closure of the backpack 10. The backpack 10 may include one or more outer pockets, such as a mesh pocket 70 (Fig. 2B) positioned on the outside of the backpack 10.

[0032] The backpack 10 may include a carrying handle 22 (see Fig. 4A) positioned on the top of the body 12/back panel 16 between the shoulder straps 20 to provide a means by which the backpack 10 can be manually carried. The body 12, shoulder straps 20 and handle 22 can be made of a wide variety of materials, including flexible, durable sheet-like material, such as polymers (i.e. polyester, nylon), fabric, combinations of these materials, etc., in woven or various other forms. Each shoulder strap 20 can include cushioning or padding material (such as foam) thereon, and be of an adjustable length, to allow the backpack 10 to be carried on the back of the wearer in a well-known manner. In particular, the backpack 10 may be configured such that when it is worn by a wearer, the shoulder straps 20 are positioned over the shoulder of a wearer, the back panel 16 is positioned generally flat against and parallel with the back of a wearer, and the sides 18 are positioned generally adjacent the sides of a wearer.

[0033] In the embodiment illustrated in Fig. 1 each shoulder strap 20 is connected to the front panel 16 on outward side of the releasable closure 24 (i.e. on an opposite side of the releasable closure 24 relative to the back panel 16). Each shoulder strap 20 may be secured to the body 12 at a position on the outer half, or outer 50%, of the width/thickness of the backpack 10, or on the outer 25% of the width/thickness (wherein the width/thickness direction is perpendicular to the back panel 16, and may be represented, for example, by dimension X0 in Fig. 9). This configuration for the shoulder straps 20 may differ from conventional backpacks where the shoulder straps are connected to the back panel 16.

[0034] The straps 20 may be configured such that they are the only shoulder straps 20 of the backpack 10, and the backpack 10 lacks any other shoulder straps configured to fit around the shoulders of a wearer. The backpack 10 may lack any straps and/or shoulder straps directly coupled to the back panel 16, and lack any straps and/or shoulder straps coupled to the backpack 10 at any position in the inner half of the thickness of the body 12, particularly in the upper half thereof. In addition, the shoulder straps 20 may be configured

to bear the entirety of the weight of the backpack 10 when the backpack 10 is worn (except possibly for frictional forces between a wearer's back and the back panel 16) or being donned or doffed, and configured that the entire shoulder strap 20 load is applied to the front panel 50 or front portions of the backpack 10, and none of the shoulder strap 20 load is directly applied to the back panel 16 or back portions of the backpack 10. In one case each shoulder strap 20 is coupled to the upper portion of the body 12 at no more one attachment location.

[0035] The positioning of the upper portion of the strap 20 as disclosed herein helps to ensure that pulling/tension loads, during wearing of the backpack 10, are largely or entirely applied to the front surface/front panel 50 of the backpack 10. This arrangement pulls the full weight of the backpack 10 up against the wearer's back, moving the weight closer to the wearer's center of gravity where it is more easily borne and less likely to cause imbalance. In addition, this arrangement distributes the load more evenly across the wearer's back. In particular, the shoulder strap arrangement disclosed herein enables the backpack's load to be automatically pressed or constrained more evenly against the entirety of the wearer's back. In contrast, if the upper portions of the straps 20 were to be attached to the back panel 16, or in the back portion of the backpack, such backpacks tend to adopt a curved or "C" like shape in side view, moving away from the middle of the wearer's back and causing most of the weight to be carried on the hips or lower back of the wearer. Moreover, in many cases in such conventional backpacks the load becomes cantilevered away from the wearer's back causing additional stress and discomfort to the wearer.

[0036] Each strap 20 can be made of a relatively flexible/pliable material, and coupled to the body 12 at only a single location, such that the straps 20 are pivotally attached at the upper attachment locations 20A and can be freely pivoted about the side panels 18 and generally be positioned on the front side of the backpack 10, as can be seen in Figs. 4B, 7 and 8c. When in this configuration the straps 20 do not cross over or prevent access to the releasable fasteners 24, or at least the upper-most portions of the releasable fastener 24 or those portions of the releasable fastener 24 on the top surface 19, thereby providing full and free access to the inner cavity 14. The backpack 10 may lack any clips, brackets, support members etc. through which the straps 20 pass that may restrain the straps 20 and prevent them from pivoting to the front of the backpack 10, including any clips, brackets, support members etc. that directly or indirectly couple the straps 20 to the upper half of the body 12.

[0037] As shown in the embodiment of Fig. 2A, in one case the forward/upper ends of the shoulder straps 20 are coupled together by a yoke 21, which is in turn coupled to the front panel 50/body 12. Yoke 21 is optional, and if used may be considered an extension of the strap or straps 20 and/or part of the shoulder strap assembly 25. When the yoke 21 is used, the straps 20 can still be considered to be attached to the front panel 50.

[0038] As illustrated in Fig. 5, the releasable closure 24 may have an S-shape in side view. The releasable closure 24 as shown has an end location 26 near the bottom of the body 12 (i.e. in the lower half of the body 12) and adjacent to the back panel 16 (i.e. within about 0-3 inches, or within about 50%, or about 25% of the width of the body 12 at that position). From the end location 26, the releasable closure 24 may have a first portion 24a that extends generally upwardly and outwardly (i.e. upwardly away from the back panel 16) to the outward-most position 28. The outward-most position 28 of the releasable closure 24 may be located in the outer half of the body 12 (i.e. in the half of the body 12 furthest away from the back panel 16) and/or at least about 3 inches, or at least about 4 inches, away from the back panel 16.

[0039] From the position 28, the releasable closure 24 has a second portion 24b that extends generally upwardly and inwardly towards the back panel 16 to an intermediate position 30 generally adjacent to the back panel 16 and/or one of the shoulder straps 20. The releasable closure 24 has a third portion 24c that extends upwardly and over the top of the body 12 at a distance generally uniformly spaced from the back panel 16 to the opposite side 18 of the body 12. The releasable closure 24 then may continue on the opposite side 18 in the same pattern, or in a symmetrical or mirror image pattern, to that shown in Fig. 1.

[0040] In this manner, the releasable closure 24 has a generally "S"-shape (or "reverse S" shape) in end view on both sides 18 of the body 12. Alternately, one or both sides of the releasable closure 24 may have a different shape than that shown in Fig. 5, such as a linear shape and accordingly, may have ends positioned in different locations along the sides 18 of the backpack 10.

[0041] The serpentine shape of the releasable closure 24 allows for easy side access to the major storage compartment 14. In particular, when the releasable closure 24 is unfastened from the end location 26 to the intermediate position 30, a generally triangular side flap 32 is defined in the body 12. The side flap 32 can be pulled away from the rest of the body 12 to provide a side access opening. In this manner, access is provided to the major storage compartment 14 by only partially releasing/opening the releasable closure 24. Moreover,

the "S"-shape of the releasable closure 24 provides the side flap 32 which can be pivoted/folded away from the body 12 to define an opening. This can be contrasted with a simple "slit" opening provided by a linear releasable closure which does not provide the side flap or associated access and visibility.

[0042] When full access is desired to the major storage compartment 14, the releasable closure 24 can be completely opened, thereby allowing access to the major storage 14 compartment via the top of the body 12/backpack 10. Thus, the releasable closure 24 provides the option of side access to the major storage compartment 14 on either side 18 of the body 12/backpack 10, and also provides the option of full/top-access to the major storage compartment 14.

[0043] The releasable closure 24 in the embodiment of Fig. 5 has first portion 24a and second portion 24b that form an angle therebetween of about 80 degrees, or less than about 100 degrees. Similarly, various portions of the releasable closure 24, or tangents thereof, in the embodiment of Fig. 5 may form an angle of less than about 100 degrees to form a relatively well-defined side flap 32. Each side flap 32 may be foldable or pivotable about a root or base that is defined by end points of the releasable closure 24/58, or by sufficient changes in direction of the releasable closure 24/58.

[0044] The releasable closure 24 on the side panel 18 may form a substantially, but not entirely, closed loop to prevent the side flap 32 from being completely separated from the backpack 10. Although only a single side flap 32 is visible in Fig. 5, it should be understood that both side panels 18 may include a side flap 32 so that side access to the major storage compartment 14 can be provided regardless of the orientation of the body 12/backpack 10. If desired, a top access releasable closure (for example, closure 38 in Fig. 6) may be provided in the front panel 50 or the yoke 21 of the backpack 10 as shown to provide top/front access to the major storage compartment 14.

[0045] As shown in Fig. 6, various additional releasable fasteners/closures 36, 37, 38 may extend across the front face of the body 12/backpack 10. In one embodiment, each releasable closure 36, 37, 38 may provide access to the major storage compartment 14. Alternately, the releasable closures 36, 37, 38 may provide access to auxiliary storage compartments that are positioned adjacent to the major storage compartment 14 which may be smaller than the major storage compartment 14.

[0046] Figs. 8A and 8B illustrate an alternate embodiment in which the backpack 10' includes a front panel 50, back panel 16, opposed side panels 18, and bottom panel 56.

Compression straps 68 having a variable length may be provided on one or both sides of the backpack 10' to help adjust the size of the backpack 10' depending upon the size/bulk of its contents.

[0047] Fig. 9 is a side schematic view of a backpack 10, indicating certain dimensions. The top panel 19 has a depth X_0 , the front panel 50 has a height Y_0 , and the back panel 16 has a height Z_0 . The shoulder straps 20 are attached to the body 12 at an upper attachment point 20A which, in the embodiment of Fig. 9, is at the junction of the top panel 19 and front panel 50. The shoulder straps 20 may also have a lower attachment point 20B which, in the illustrated embodiment, is at the junction of the back panel 16 and bottom panel 17.

[0048] The upper 20A and lower 20B attachment points can be varied as desired. For example, Figs. 10A-10D illustrate various alternate locations for the shoulder strap attachment points 20A, 20B, although other locations are also possible besides those shown herein. As shown in Fig. 10A, the upper attachment points 20A may be located on the upper part of the front panel 50. In one particular embodiment the upper attachment points 20A may be located a distance Y_1 from the top of the front panel 50 (or the highest position of the body 12), where the ratio of Y_1/Y_0 may be less than about 0.5, or less than about 0.25, or less than about 0.10, such that the weight transfer characteristics outlined above are still maintained. In one embodiment the upper attachment points 20A are not positioned on the back panel 16.

[0049] Instead of being located exactly at the junction of the back panel 16 and bottom panel 17 as shown in Fig. 9, in Fig. 10A the lower attachment points 20B are located on the lower part of the back panel 16, about a distance Z_1 from the bottom of the back panel 16 (or from the lower position of the body 12). In one case the ratio Z_1/Z_0 may be less than about 0.5, or less than about 0.25, or less than about 0.1.

[0050] As shown in Fig. 10B, the upper attachment points 20A may be located on the front part of the top panel 19, located a distance X_1 from the front panel 50 or forward-most position of the body 12, where the ratio of X_1/X_0 may be less than about 0.5, or less than about 0.25, or less than about 0.1. The lower attachment points 20B may be located on the lower part of the back panel 16, about a distance Z_1 from the bottom of the back panel 16/lower-most portion of the body 12, where the ratio Z_1/Z_0 may be between about 0.25 and about 0.50.

[0051] As shown in Fig. 10C, instead of being attached to the back panel 16, the lower attachment points 20B may be positioned on the side panel 18, with the same height ranges

as outlined above when the attachment points 20B are on the back panel 16. Similarly, as shown in Fig. 10D, the upper attachment points 20A may be positioned on the side panel 18, with the same height ranges as outlined above. In the case shown in Fig. 10D the upper attachment points 20A are spaced a distance $X1$ away from the front panel 50/front of the body 12, and spaced a distance $Y1$ away from the top panel 19/top of the body 12. The ratio of $X1/X0$ and/or $Y1/Y0$ can fall within the ranges outlined above. The various locations of the upper 20A and lower 20B attachment points may be used in various combination with one another, including using differing upper 20A and/or lower 20B attachment points for the differing straps 20 on the same backpack 10.

[0052] In one embodiment the lower attachment points 20B are positioned in the rear half of the width of the XO of the backpack 10, and entirely spaced away from the front panel 50. This connection location helps to provide symmetry and stability to the backpack 10, particularly when the upper attachment point 20A is positioned in the front half of the width of the backpack 10. In addition, in one embodiment each shoulder strap 20 is attached to the backpack 10, at the bottom half thereof, at only a single attachment point 20B, and the backpack 10 lacks any other straps or strap portions that extend between the shoulder strap 20 and the bottom half of body 12 of the backpack. In addition in one embodiment the backpack 10 lacks any straps that are coupled to lower half of the front panel 50 and/or that extend along or over the bottom panel(s) 17.

[0053] As outlined above, the shoulder strap attachment points 20A, 20B having the configuration/arrangement outlined above can be configured to pull the backpack load closer to the wearer's back, automatically compensating for different sized wearers and/or load weights. Each shoulder strap 20 may include an adjustment mechanism, such as a buckle 23 or the like, so that the length of each strap 20 can be customized to fit different sized wearers, and accommodate different load weights. The use of an adjustable length strap 20 can help to ensure that the weight-distribution benefits outlined above are fully realized, as an ill-fitting backpack 10 may not be able to fully provide such benefits to all wearers.

[0054] Figs. 11-14 illustrate additional backpacks which may include the ergonomic shoulder strap construction, in which the bottom structures may differ from the examples provided above. In particular, Fig. 11A is a front view of a backpack 10 utilizing a single bottom panel 17 that is somewhat rounded/curved. Fig. 11B is a front view of a backpack utilizing a two-part bottom made of panels 17A and 17B. In this embodiment the bottom

panel 17A is somewhat flattened. Although Fig. 11B illustrates a bottom made of two panels, more than two panels could be used for the bottom. The number, size, and shape of the bottom panels may be chosen according to manufacturing preference. In some instances the use of multiple bottom panels may simplify construction, reduce costs, or provide other benefits. However in other cases the use of fewer or one panel may be preferred. The bottom panel 17 and/or panels 17A/17B may have the same or less stiffness/rigidity as the side panels 18, back panel 16, front panel 50 and/or top panel 19 to lend flexibility and comfort to the backpack 10.

[0055] Fig. 12A is a right side view of the backpack 10 of Fig. 11A, and Fig. 12B is a right side view of the backpack 10 of Fig. 11B. As can be seen, the backpack in Fig. 12A has a somewhat rounded bottom (as denoted at B1) while the backpack in Fig 12B has a somewhat flattened bottom (as denoted at B2). Fig. 13A is a lower perspective view of the backpack 10 of Fig. 11A, and Fig. 13B is a lower perspective view of the backpack of Fig. 11B, and these figures further illustrate the bottom details including a single bottom panel 17 and two bottom panels 17A, 17B, respectively. Finally, Fig. 14A is a bottom view of the backpack 10 of Fig. 11A, and Fig. 14B is a bottom view of the backpack of Fig. 11B.

[0056] Having described the invention in detail and by reference to the various embodiments, it will be apparent that modifications and variations thereof are possible without departing from the scope of the invention.

[0057] What is claimed is:

1. A backpack comprising:

a backpack body having an inner cavity therein, said backpack body including a releasable closure configured to provide access to the inner cavity and a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn; and

a shoulder strap assembly coupled to said backpack body and configured to be positioned about a shoulder of the wearer when the backpack is worn, wherein the shoulder strap assembly is coupled to an upper portion of the backpack body only at an attachment location that is located on an opposite side of the releasable closure relative to the back surface.

2. The backpack of claim 1 wherein the inner cavity is a main cavity and has the largest volume of any inner cavity of the backpack.

3. The backpack of claim 1 wherein the backpack body has an upper surface which is the upper surface of the backpack body when the backpack is worn by a wearer, and wherein the releasable closure extends across said upper surface.

4. The backpack of claim 1 wherein the shoulder strap assembly is pivotally coupled to said backpack body such that said shoulder strap assembly is movable between a first position wherein said shoulder strap assembly is generally positioned on first side of said releasable closure and a second position in which said shoulder strap assembly is generally positioned on a second, opposite side of said releasable closure.

5. The backpack of claim 1 wherein the shoulder strap assembly is pivotally coupled to said backpack body such that said shoulder strap assembly is movable between a first position wherein said shoulder strap assembly is generally positioned on a front side of said backpack body and a second position in which said shoulder strap assembly is generally positioned on a back side of said backpack body.

6. A backpack comprising:

a backpack body having an inner cavity therein; and

a shoulder strap assembly coupled to said backpack body and configured to be positioned about a shoulder of a wearer when the backpack is worn, wherein the shoulder strap assembly is coupled to an upper portion of the backpack body only at an attachment location that is in an outer half of the thickness of the backpack body, wherein the shoulder strap assembly is pivotally coupled to said backpack body such that said shoulder strap assembly is movable between a first position wherein said shoulder strap assembly is generally positioned on a back side of said backpack body and a second position in which said shoulder strap assembly is generally positioned on a front side of said backpack body.

7. The backpack of claim 6 wherein the backpack body includes a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn, the back surface defining the back side, and wherein the front side is positioned on a generally opposite side of the back side relative to a thickness of the backpack body.

8. The backpack of claim 6 wherein the backpack body includes a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn, and wherein the thickness of the backpack body extends in a direction generally perpendicular to the back surface, and wherein the outer half of the thickness of the backpack body is the half positioned away from the back surface.

9. The backpack of claim 6 wherein said backpack body includes a releasable closure configured to provide access to the inner cavity and a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn, and wherein the shoulder strap assembly is coupled to an upper portion of the backpack body only at an attachment location that is located on an opposite side of the releasable closure relative to the back surface.

10. The backpack of claim 6 wherein the upper portion of the backpack body is the upper half of the backpack body when worn by a wearer.

11. The backpack of claim 6 wherein said backpack body includes a releasable closure configured to provide access to the inner cavity, and wherein the backpack body includes a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn, a front surface generally parallel to said back surface and positioned on a generally opposite side of said backpack body relative to said back surface, a pair of side surfaces extending between said back and front surfaces, and a top surface extending between the front and back surfaces and extending between the pair of side surface, and wherein the releasable closure is positioned on both side surfaces and said top surface.

12. The backpack of claim 6 wherein the backpack lacks any straps coupled to the upper portion of the backpack body at a position that is in the inner half of the thickness of the backpack body.

13. The backpack of claim 6 wherein the backpack body includes a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn, and wherein the backpack body lacks any straps coupled to an upper portion of the back surface.

14. The backpack of claim 6 wherein the shoulder strap assembly includes a pair of shoulder straps, each shoulder strap being coupled to an upper portion of the backpack body at its own attachment location.

15. The backpack of claim 6 wherein the shoulder strap assembly includes a pair of shoulder straps, each shoulder strap being coupled to a yoke which is in turn coupled to an upper portion of the backpack body.

16. The backpack of claim 6 wherein the shoulder strap assembly includes a single shoulder strap that is coupled to an upper portion of the backpack body at said attachment location.

17. The backpack of claim 6 wherein the backpack body includes a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn and a front surface generally parallel to said back surface and position on a generally opposite

side of said backpack body relative to said back surface, wherein said attachment location is on said front surface.

18. The backpack of claim 6 wherein the backpack body includes a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn and a front surface generally parallel to said back surface and positioned on a generally opposite side of said backpack body relative to said back surface, the backpack body includes a pair of side surfaces extending between said back and front surfaces, and wherein said attachment location is on one or both of said side surfaces.

19. The backpack of claim 6 wherein the shoulder strap assembly is coupled to a lower portion of the backpack body at a lower attachment location.

20. The backpack of claim 19 wherein the lower attachment location is in an inner half of the thickness of the backpack body.

21. The backpack of claim 19 wherein the backpack body includes a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn and a front surface generally parallel to said back surface and positioned on a generally opposite side of said backpack body relative to said back surface, the backpack body including a pair of side surfaces extending between said back and front surfaces, and wherein said lower attachment location is on one or both of said back surface or said side surfaces.

22. The backpack of claim 19 wherein shoulder strap assembly is coupled to the lower portion of the backpack body at no more than two spaced-apart lower attachment locations.

23. The backpack of claim 19 wherein the backpack body includes a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn and a front surface generally parallel to said back surface and positioned on a generally opposite side of said backpack body relative to said back surface, and wherein the lower attachment locations are entirely spaced apart from the front surface.

24. A backpack comprising:

a backpack body having an inner cavity therein, the backpack body including a back surface configured to be positioned adjacent a back of a wearer when the backpack is worn, a front surface generally parallel to said back surface and positioned on a generally opposite side of said backpack body relative to said back surface, a pair of side surfaces extending between said back and front surfaces, and a top surface extending between the front and back surfaces and extending between the pair of side surface;

a shoulder strap assembly coupled to said backpack body and configured to be positioned about a shoulder of a wearer when the backpack is worn, wherein the shoulder strap assembly is coupled to an upper portion of the backpack body only at an attachment location that is in an outer half of the thickness of the backpack body; and

a releasable closure configured to provide access to the inner cavity, and wherein the releasable closure is positioned on both side surfaces and said top surface.

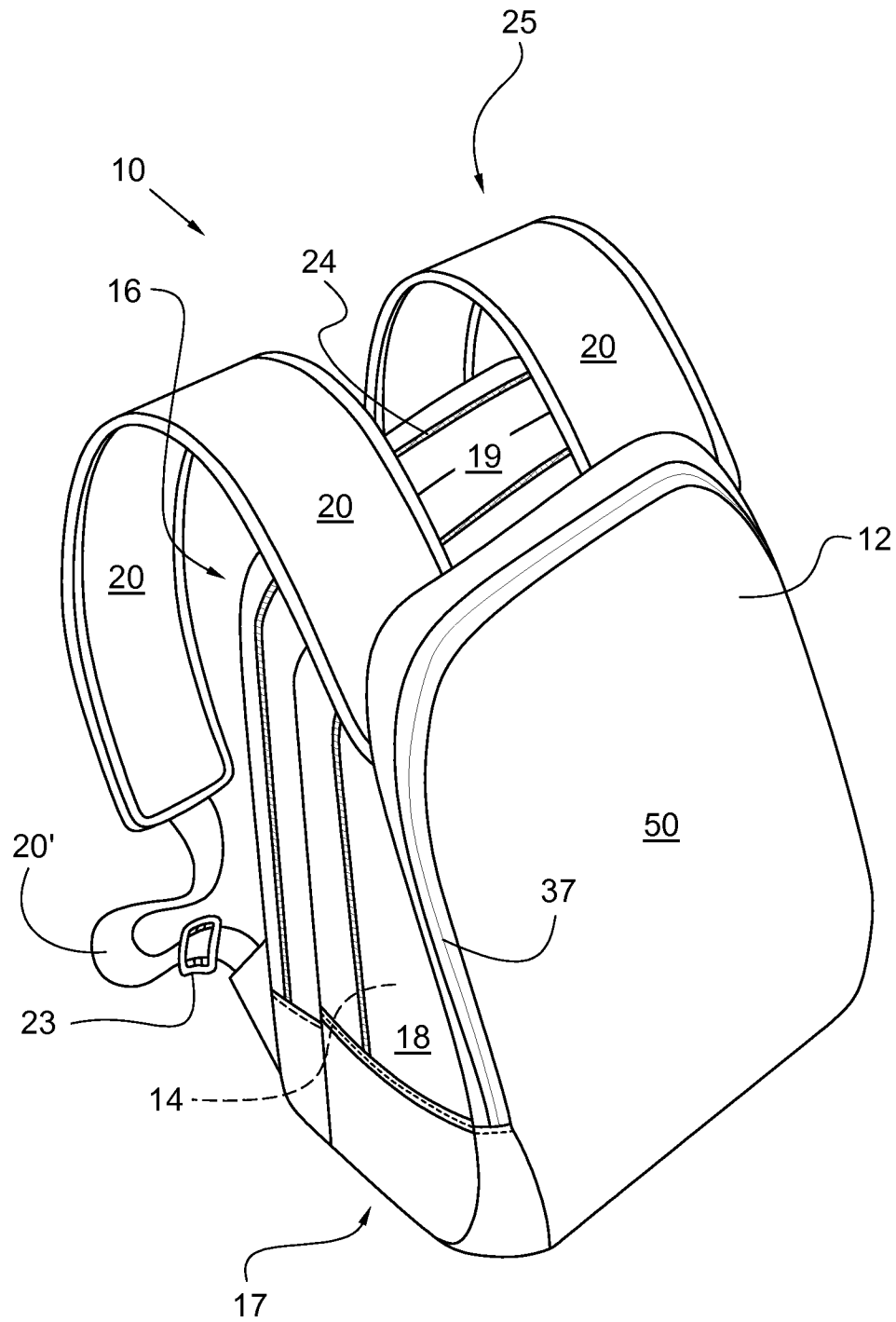


FIG. 1

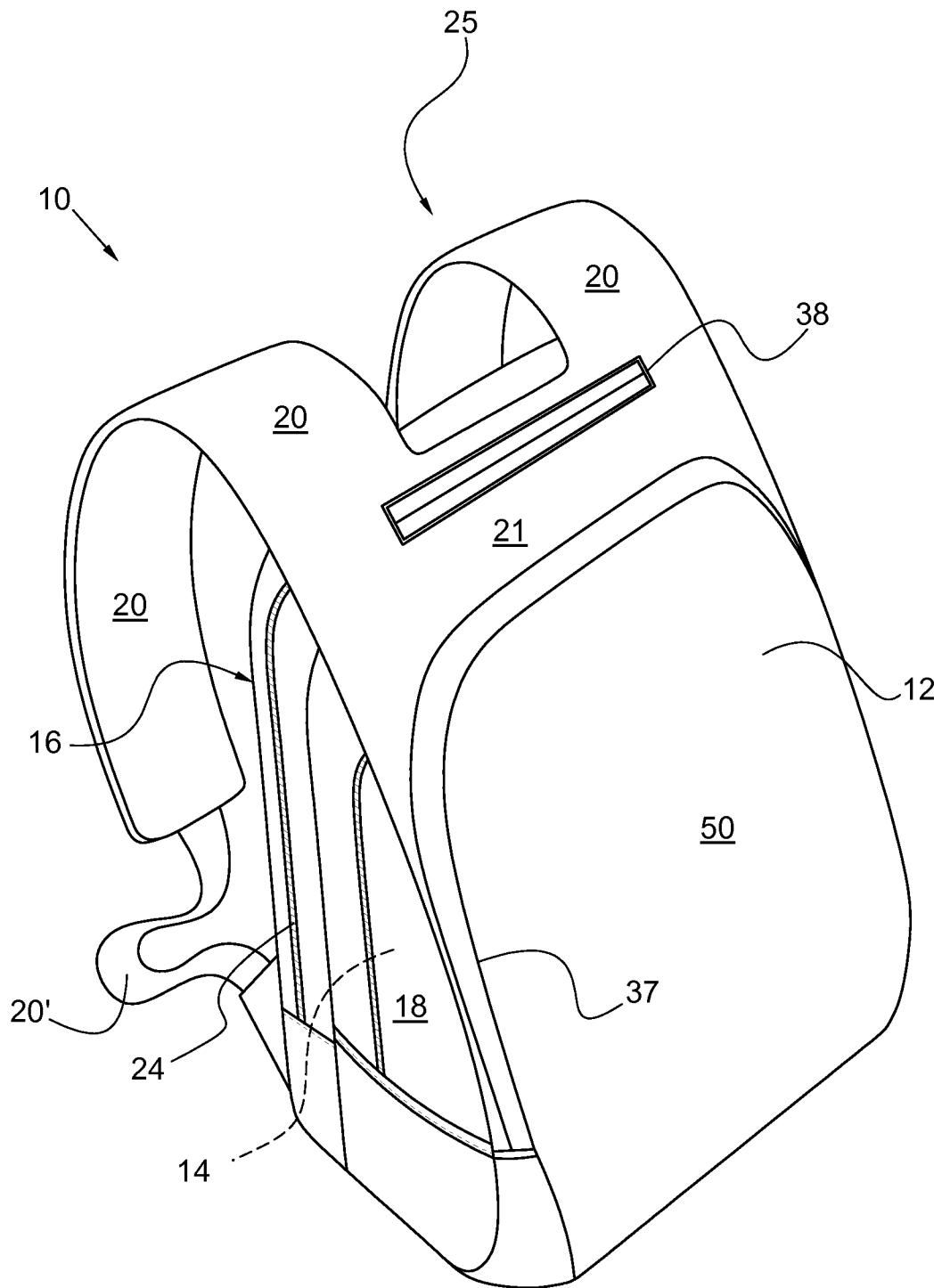


FIG. 2A

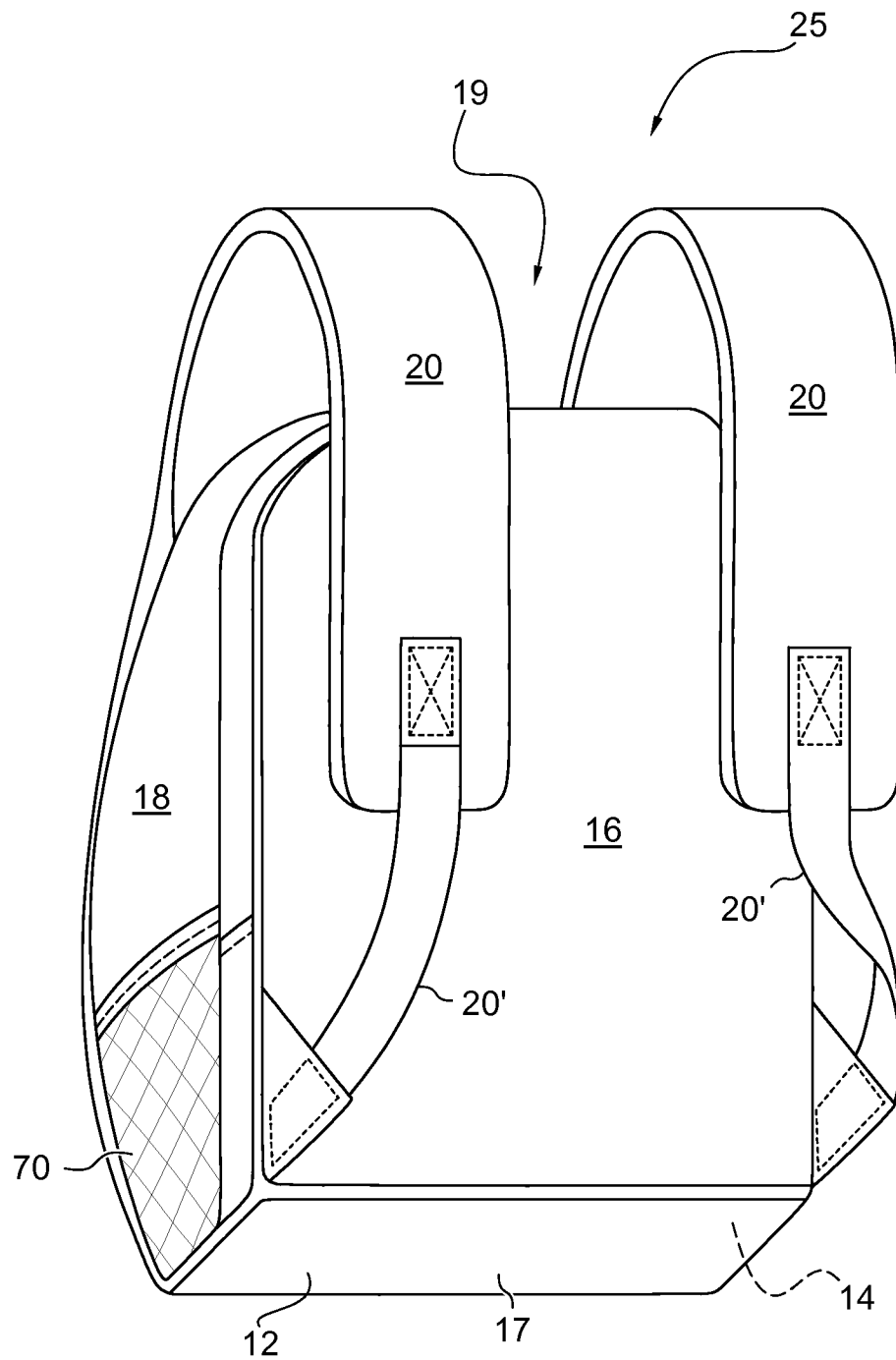


FIG. 2B

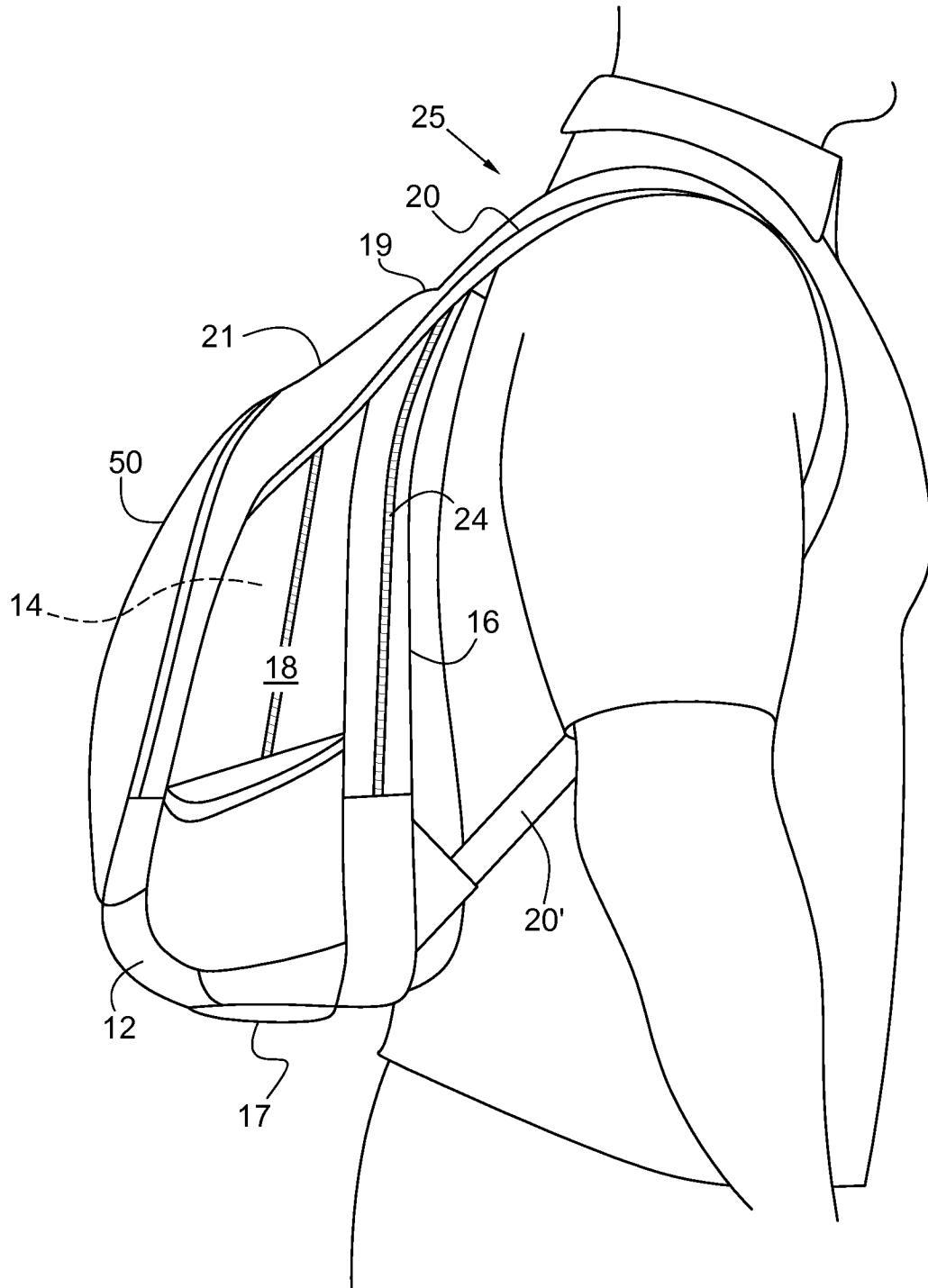


FIG. 3

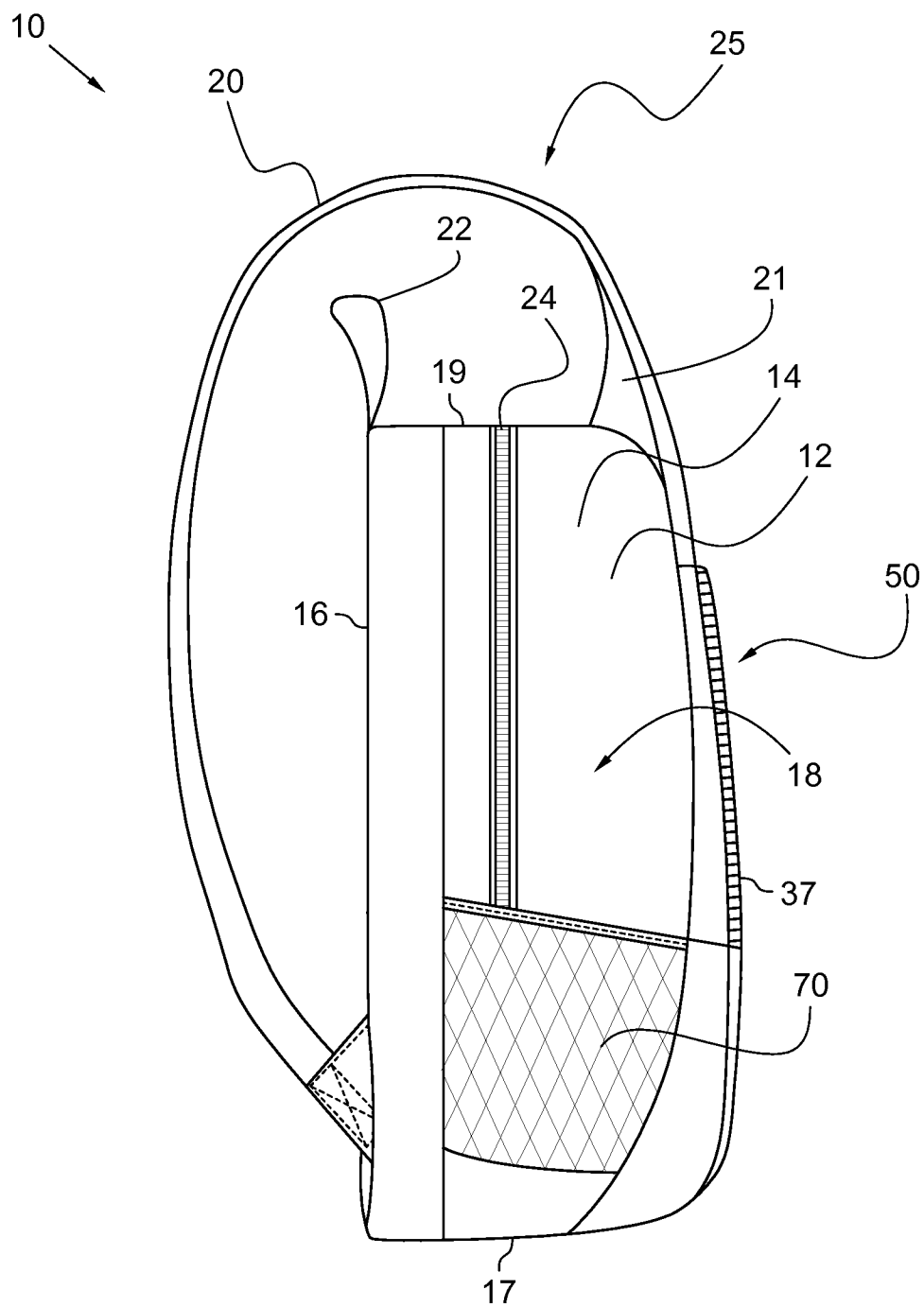


FIG. 4A

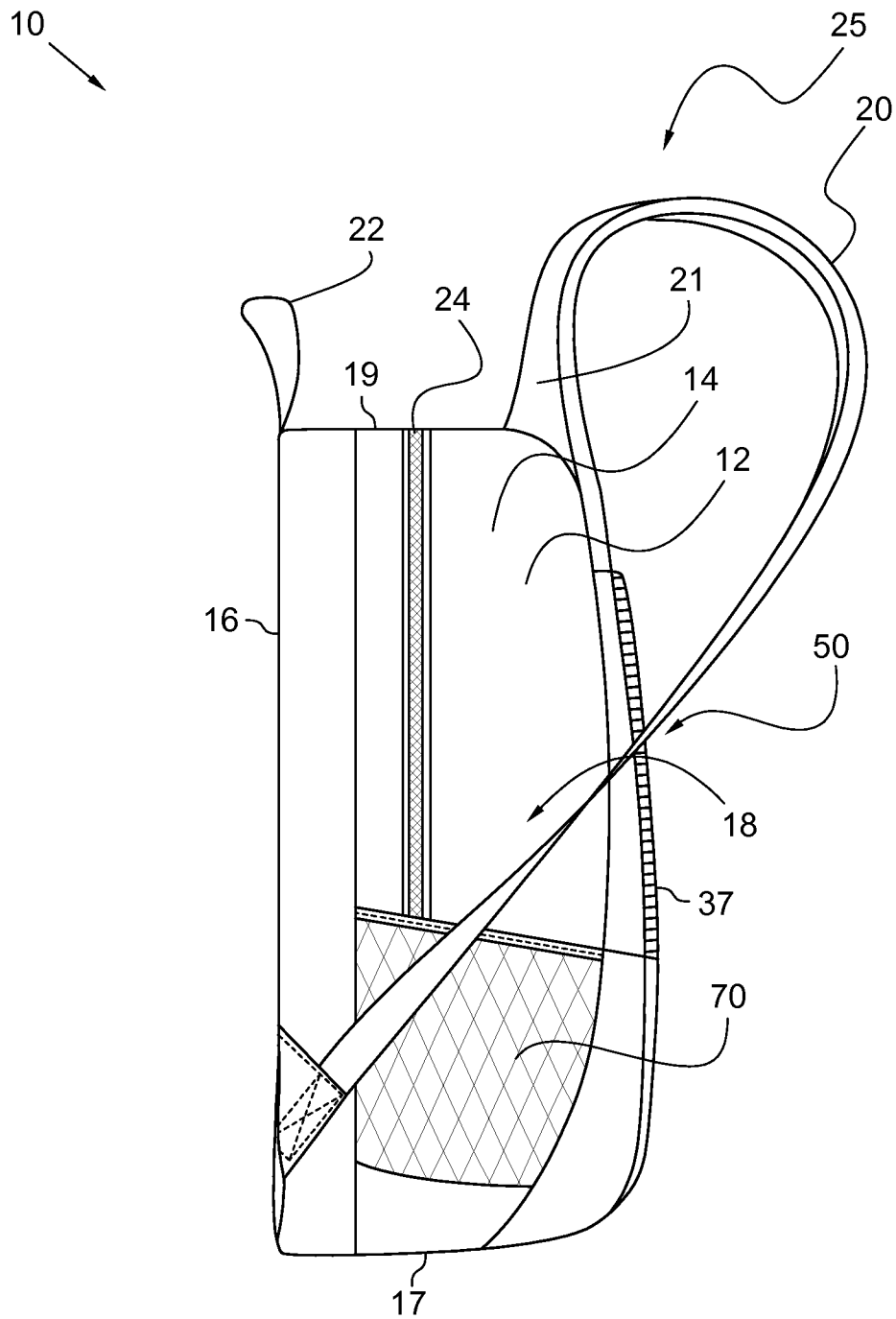


FIG. 4B

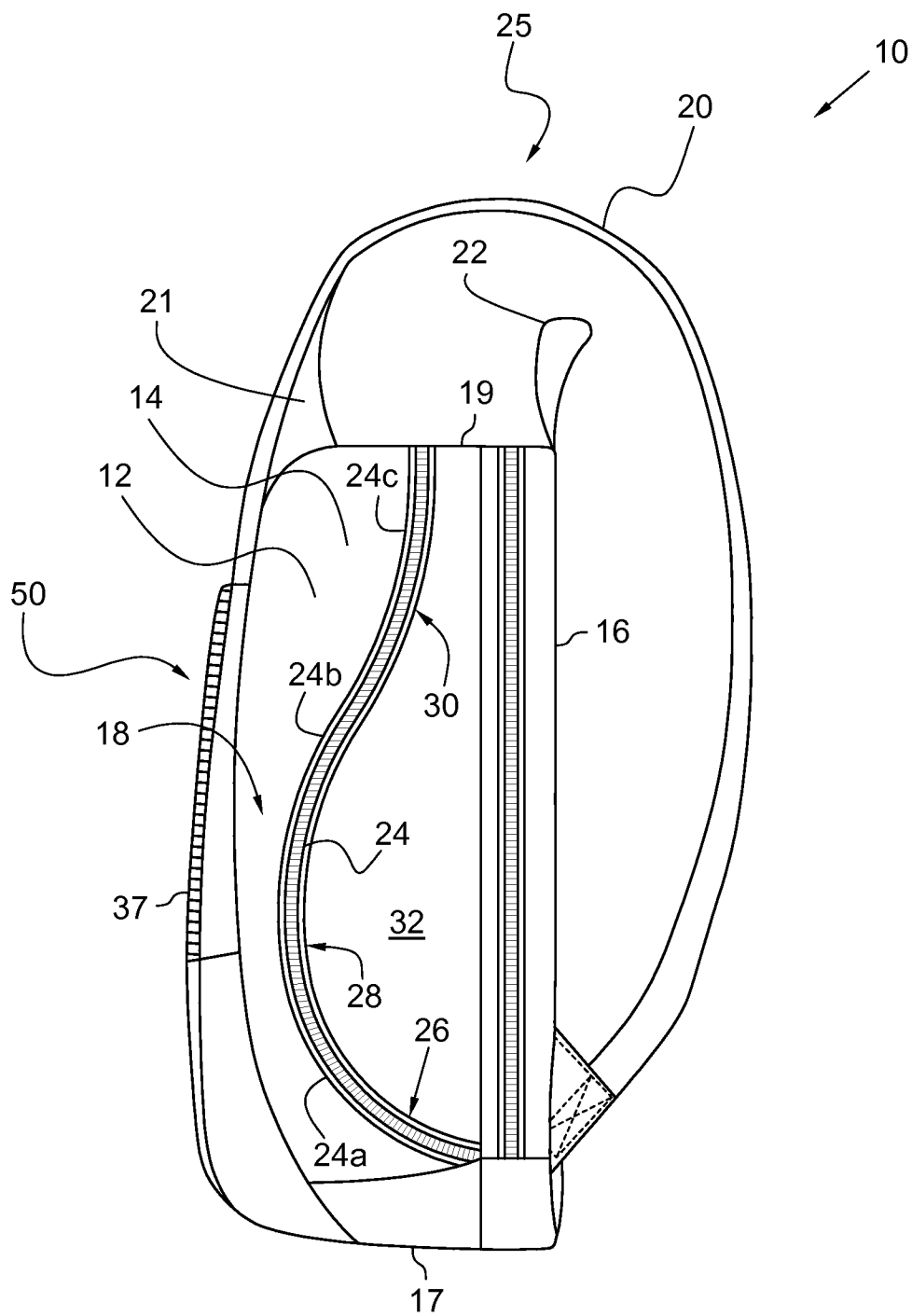


FIG. 5

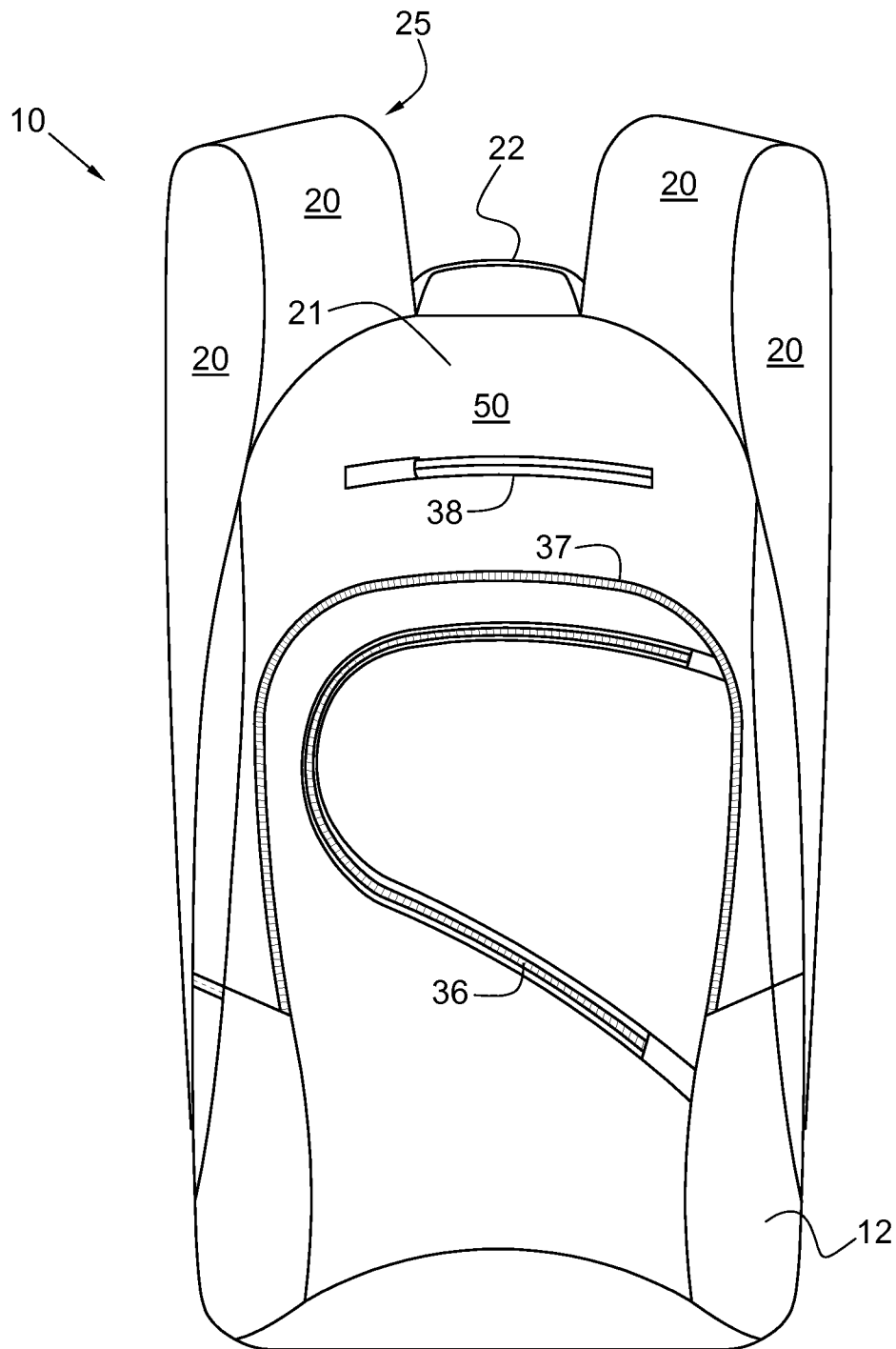


FIG. 6

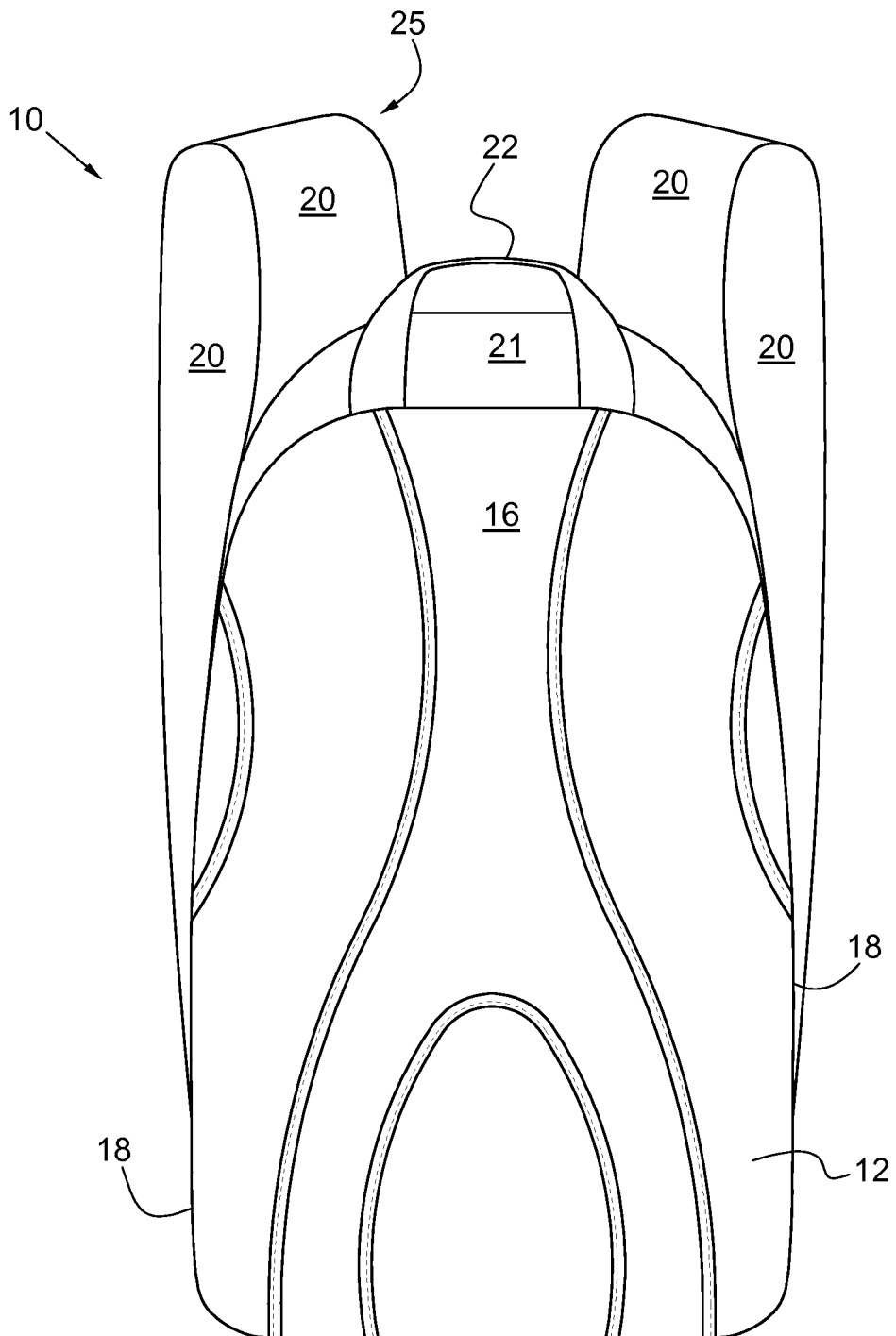


FIG. 7

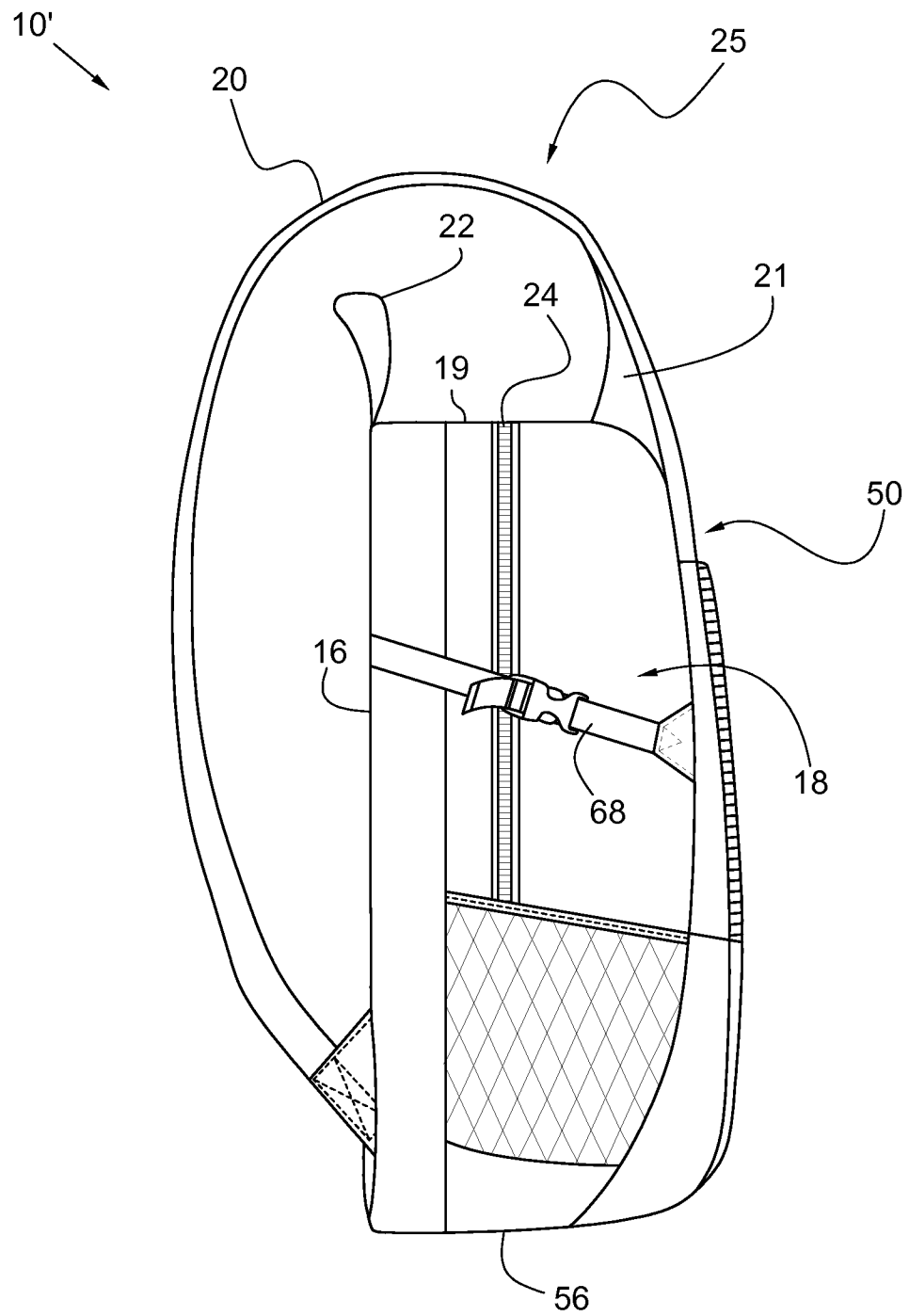


FIG. 8A

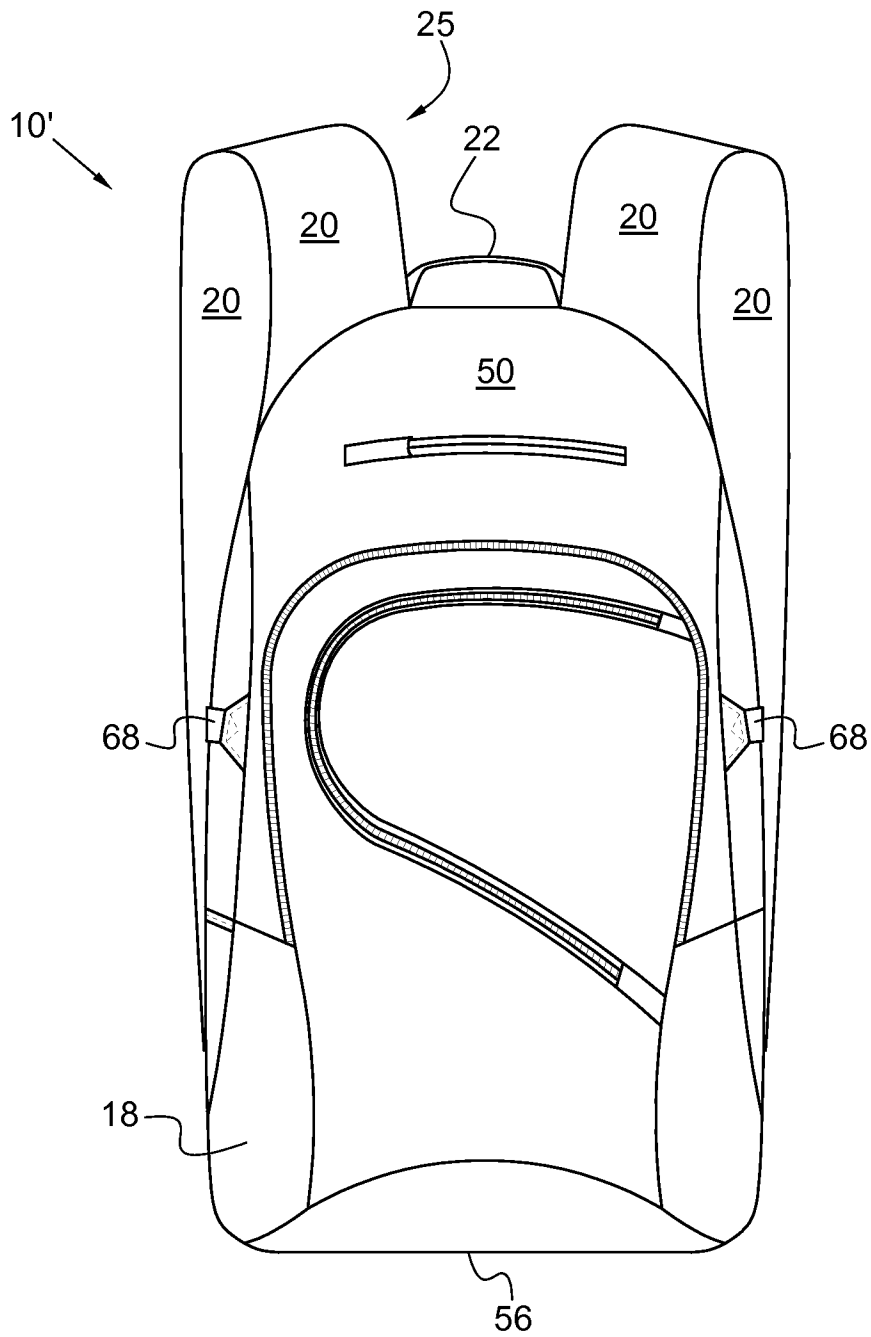


FIG. 8B

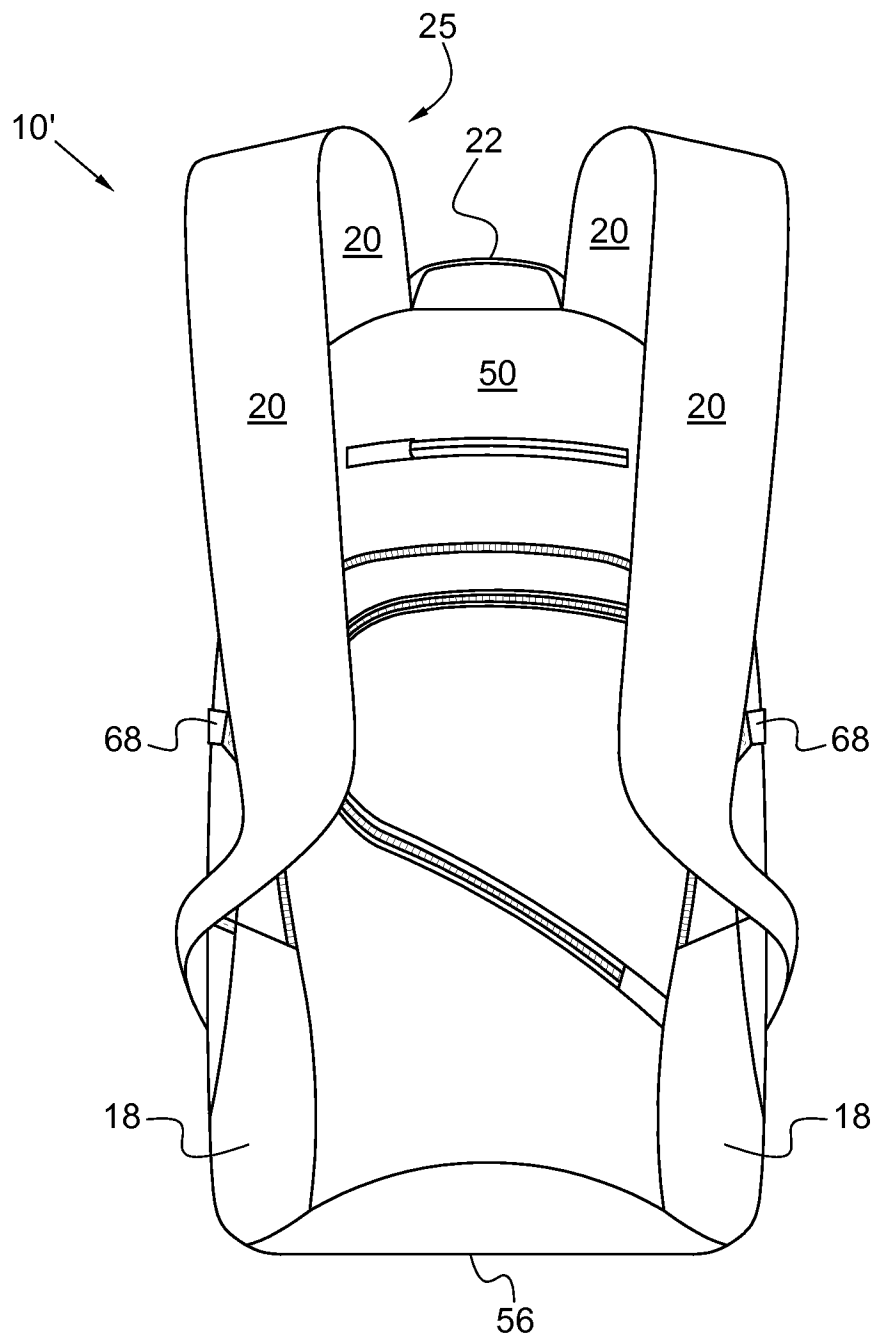


FIG. 8C

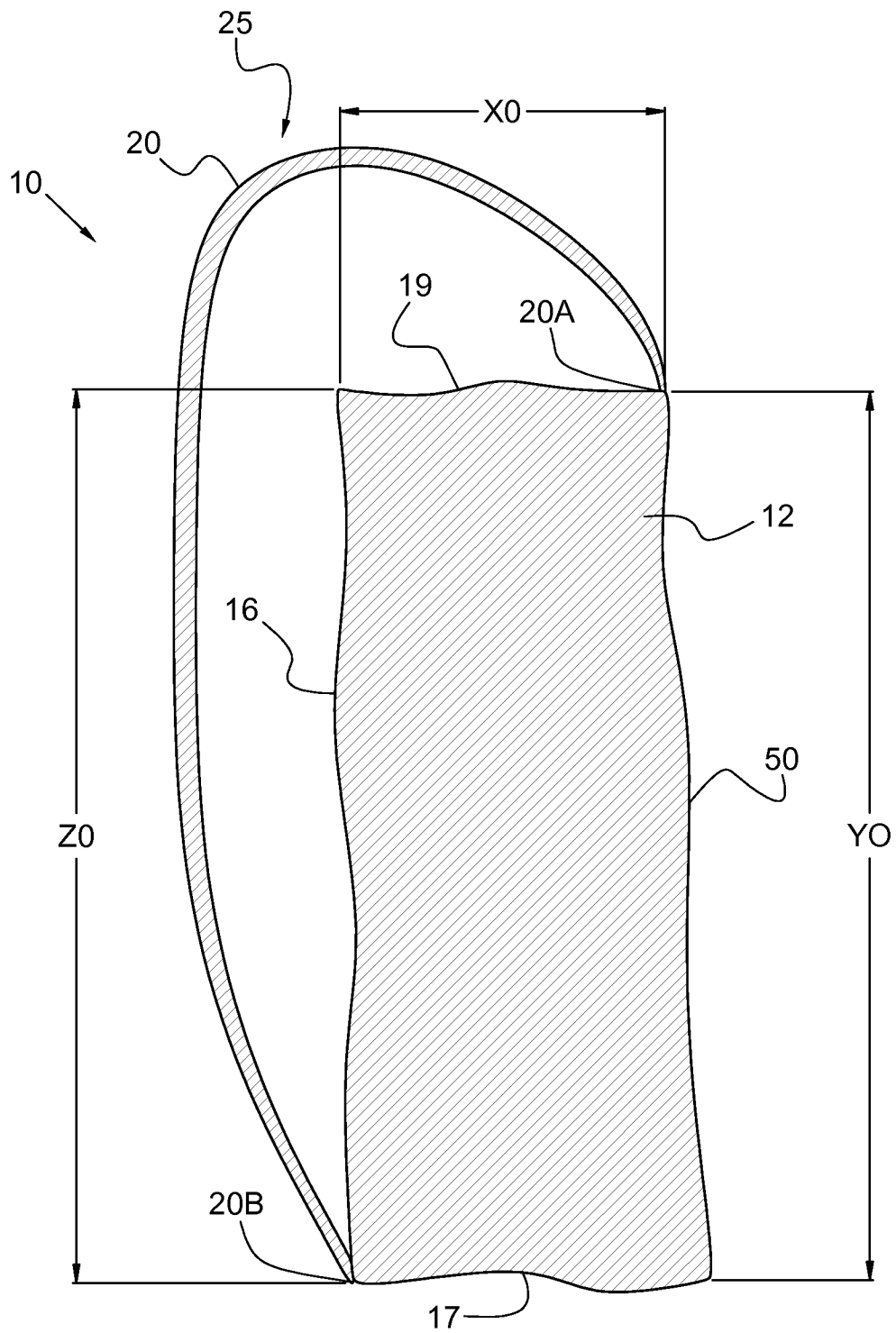


FIG. 9

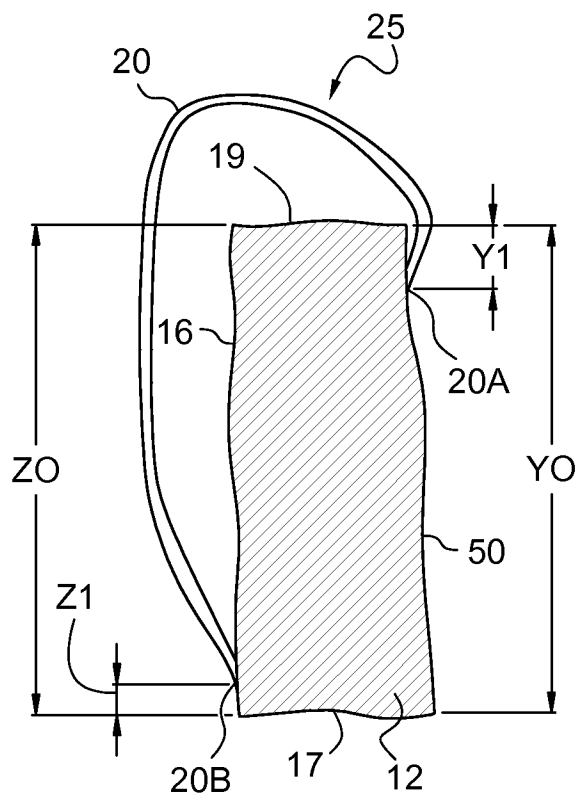


FIG. 10A

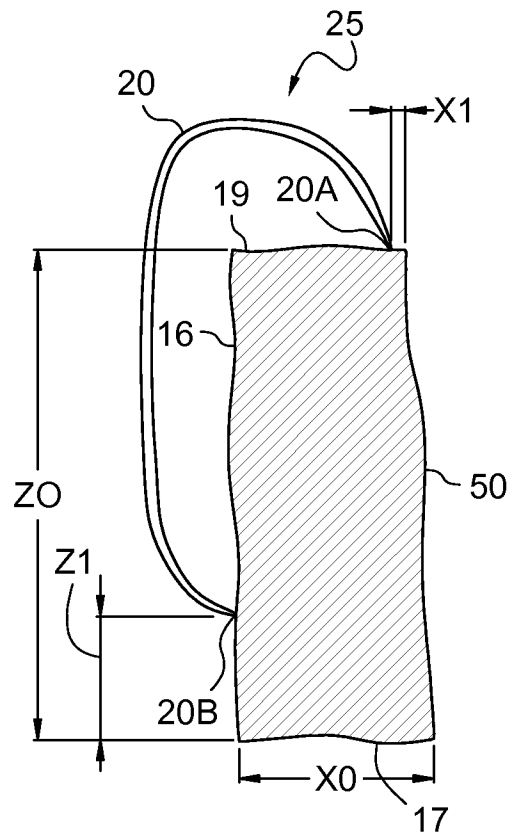


FIG. 10B

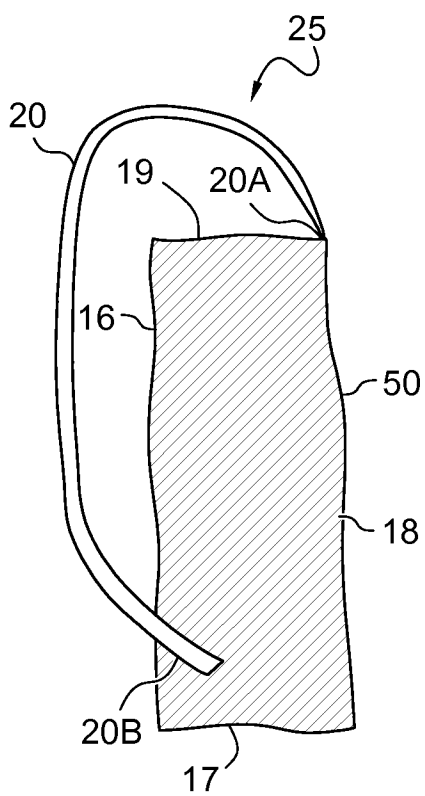


FIG. 10C

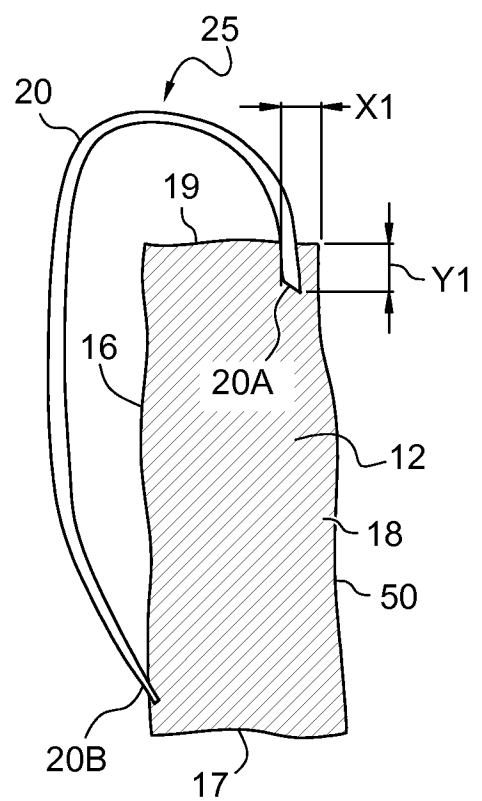


FIG. 10D

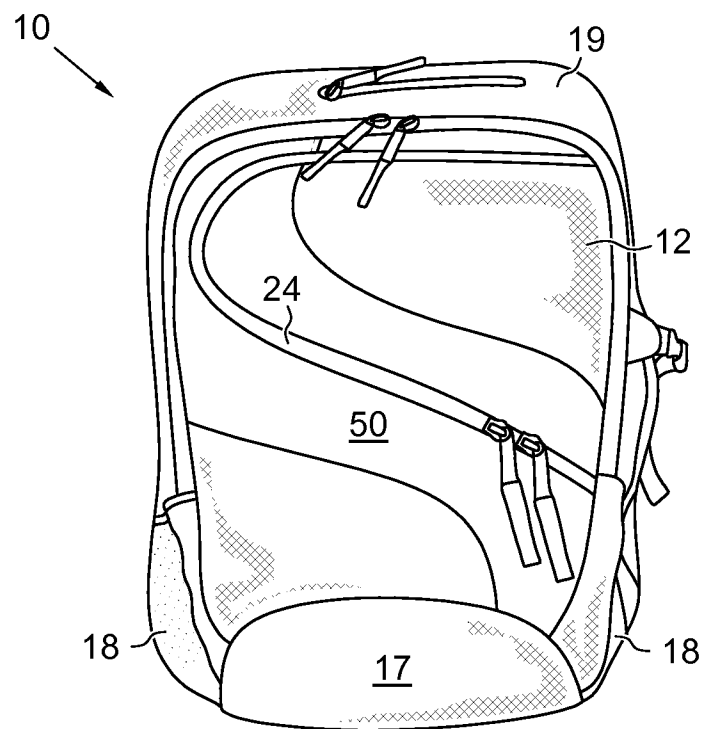


FIG. 11A

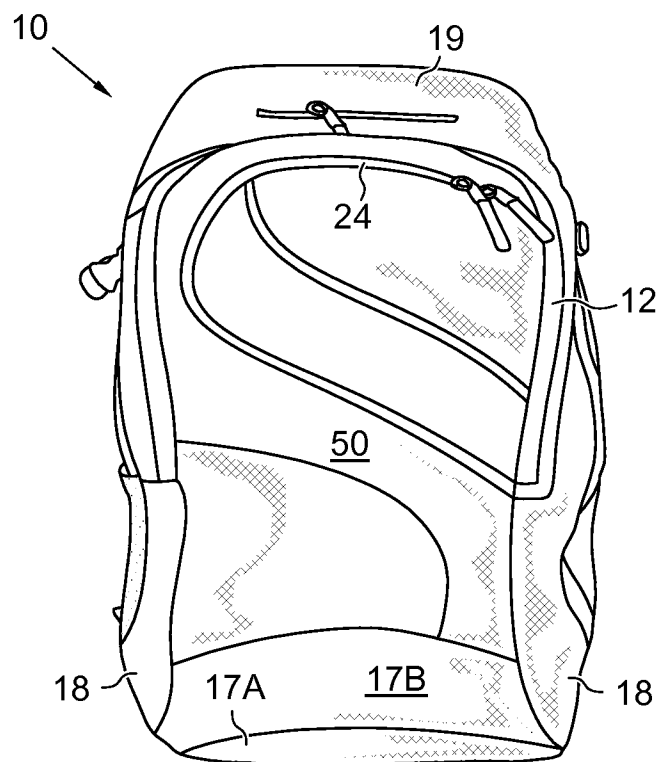


FIG. 11B

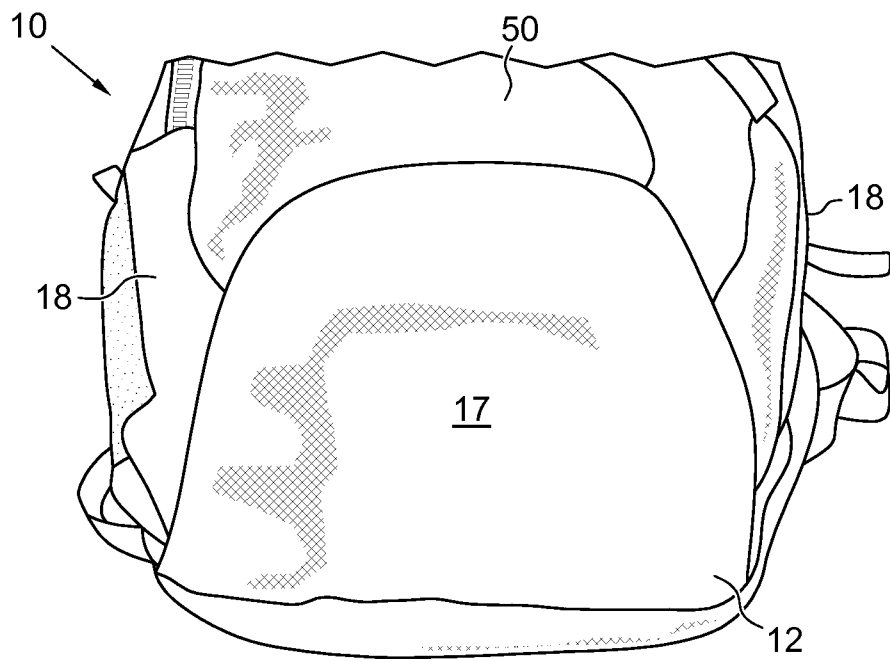


FIG. 13A

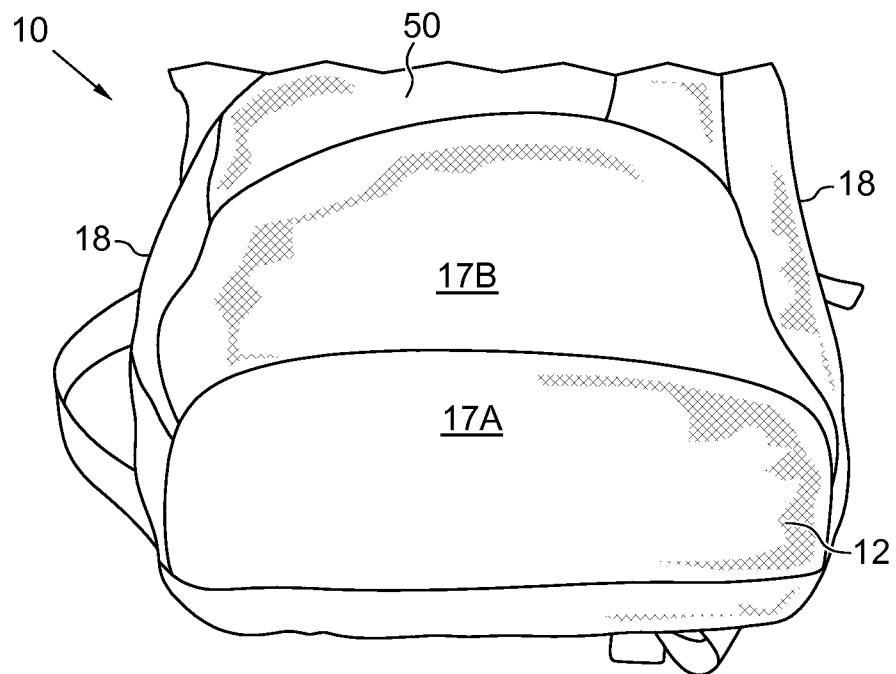


FIG. 13B

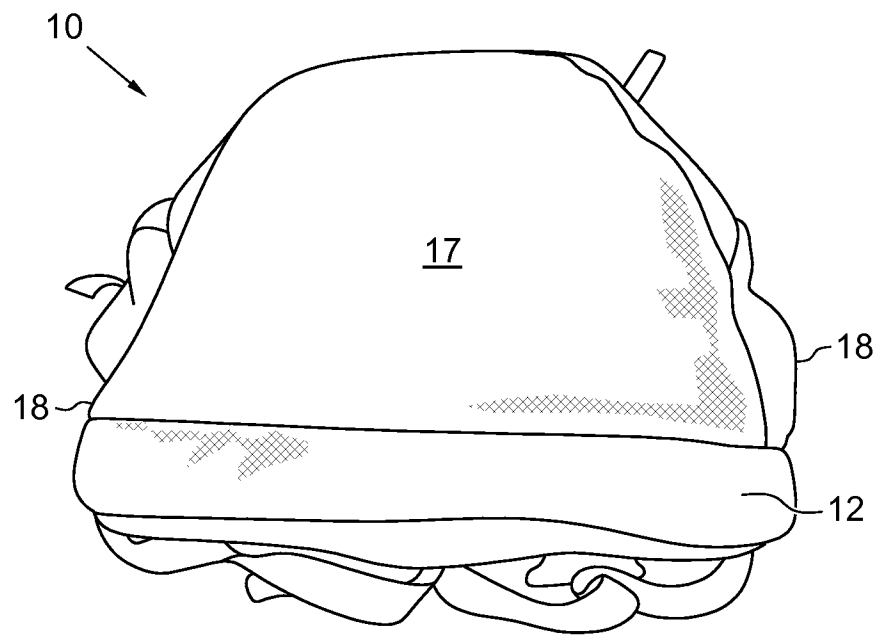


FIG. 14A

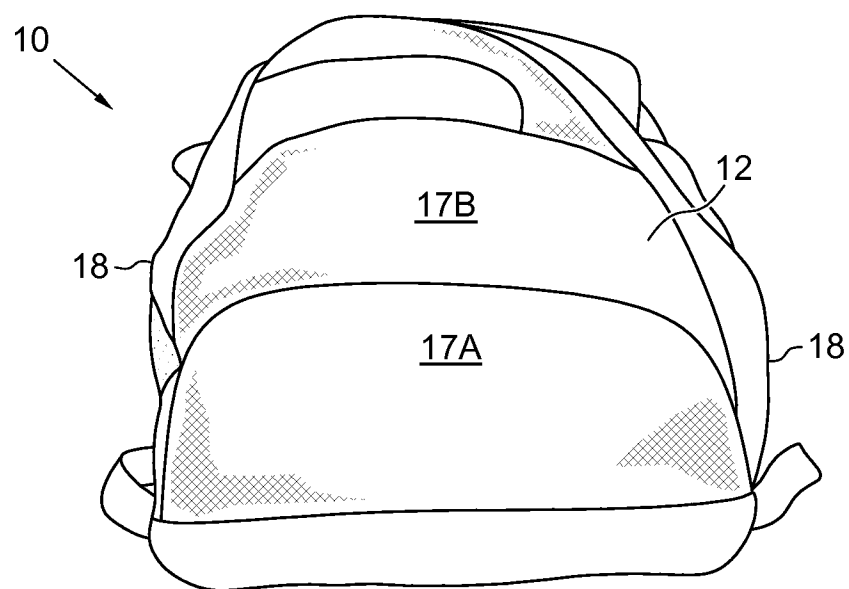


FIG. 14B