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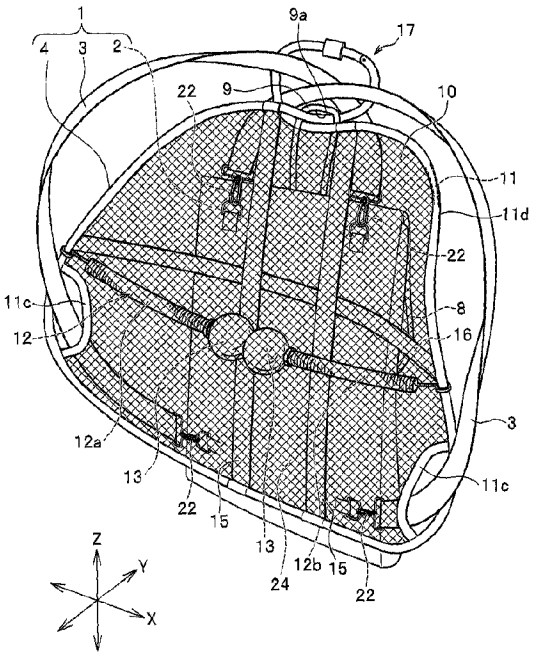

(57) Abrégé/Abstract:
A backpack ensuring a ventilation and improving a health-promoting effect is provided. The backpack (1) includes; a storage part (2); a pair of shoulder belts (3) attached to the storage part (2); and a supporter (4) worn on a back of a wearer with supporting the storage part (2). The supporter (4) includes: a mesh net (10) having ventilation characteristic; an annular frame (11) provided along the storage part (2) in up-down and right-left directions; and a ball member (13) provided between the mesh net (10) and the storage part (2) and attached to the frame (11) via a spring (12). The ball member (13) is arranged to bias in a direction where the mesh net (10) is pushed by the spring (12) when the backpack (1) is worn on the back of the wearer with the shoulder belts (3).

ABSTRACT

A backpack ensuring a ventilation and improving a health-promoting effect is provided. The backpack (1) includes; a storage part (2); a pair of shoulder belts (3) attached to the storage part (2); and a supporter (4) worn on a back of a wearer with supporting the storage part (2). The supporter (4) includes: a mesh net (10) having ventilation characteristic; an annular frame (11) provided along the storage part (2) in up-down and right-left directions; and a ball member (13) provided between the mesh net (10) and the storage part (2) and attached to the frame (11) via a spring (12). The ball member (13) is arranged to bias in a direction where the mesh net (10) is pushed by the spring (12) when the backpack (1) is worn on the back of the wearer with the shoulder belts (3).

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DESCRIPTION

TITLE OF INVENTION: BACKPACK

TECHNICAL FIELD

[0001] The present invention relates to a backpack (rucksack).

BACKGROUND ART

[0002] A conventional backpack includes ventilation means by which a back plate, which is a back-side surface constituting a storage part, does not contact directly with the back of a wearer. The conventional ventilation means includes a ventilation plate of a mesh-net material which is disposed opposite to the back plate (for example, see Patent Documents 1 and 2).

[0003] The ventilation plate is spaced apart from the back plate such that a constant space interval between the ventilation plate and the back plate is maintained under an elastic force by the lower fixing panel flexed in an arc shape. Such a backpack prevents a wearer from sweating on his back when being worn for a long time and is useable with comfort.

PRIOR ART REFERENCE

PATENT DOCUMENT

[0004] Patent Document 1: Japanese patent application publication No. 2007-313321
Patent Document 2: Japanese utility model registration No.3088204

SUMMARY OF THE INVENTION

PROBLEM TO BE SOLVED

[0005] The conventional backpack prevents the back of a wearer from sweating, however, it does not improve a ventilation. The conventional backpack also does not care at all about accumulating fatigue when being worn for a long time. The problem to be solved by the present invention provides a backpack ensuring a ventilation and improves a health-promoting effect.

MEANS TO SOLVE PROBLEM

[0006] The backpack in the present invention includes: a storage part; a pair of shoulder belts attached to the storage part; and a supporter supporting the storage part and worn on a back of a wearer, wherein the supporter includes: an annular frame provided along the

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storage part in an up-down and a right-left directions; a mesh net provided on the frame apart from the storage part; and a massaging member provided between the mesh net and the storage part and attached to the frame via an elastic member, wherein the massaging member is arranged to bias in a direction where the mesh net is pushed by the elastic member.

[0006A] According to an embodiment, there is provided a backpack comprising: a storage part; a pair of shoulder belts attached to the storage part; and a supporter supporting the storage part and worn on a back of a wearer, wherein the supporter includes: an annular frame provided along the storage part in up-down and right-left directions; a mesh net provided on the frame apart from the storage part; a massaging member provided between the mesh net and the storage part and attached to the frame via an elastic member, wherein the massaging member is arranged to bias in a direction where the mesh net is pushed by the elastic member, and the massaging member has a plurality of balls formed to be sphere, wherein the balls are arranged between an eighth thoracic spine and a tenth thoracic spine, and the balls are provided rotatably to the frame via the elastic member.

ADVANTAGEOUS EFFECTS OF THE INVENTION

[0007] The present invention provides the backpack ensuring a ventilation and improving a health-promoting effect.

BRIEF DESCRIPTION OF DRAWING

[0008]

FIG. 1 is a perspective view showing an entire construction of a backpack according to an embodiment of the present invention as viewed diagonally from front.

FIG. 2 is a side view of the backpack worn on a back of a user according to the embodiment of the present invention.

FIG. 3 is a side view on which the backpack according to the embodiment of the present invention as viewed from the storage part.

FIG. 4 is a side view showing a configuration of a frame body of the backpack according to the embodiment of the present invention.

FIG. 5 is a schematic view showing relation between a massaging member of the backpack and a massaging point on a user according to the embodiment of the present invention.

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FIG. 6 is a perspective view of a backpack of a modification example which has a storage part provided integrally with a frame as viewed diagonally from front.

EMBODIMENTS OF THE INVENTION

[0009] One of embodiments of the present invention will be appropriately described below with rcfcrences to the drawings. The same elements will be given the same numerals, and duplicate descriptions will be omitted. Directions, if there are no specific descriptions, are described as viewed from a mesh net direction.

[0010] A backpack 1, as shown in FIGS. 1 through 3, includes: a storage part 2; a pair of shoulder belts 3, 3 attached to the storage part 2; and a supporter 4 worn on a back PB of a wearer P to support the storage part 2. The supporter 4 includes a frame 11, the mesh net 10, a spring (elastic member) 12 and a ball member (massaging member) 13 made of wood.

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[0011] The storage part 2 includes a back plate 24 opposite to the back PB of the wearer P and an upper opening 2e allowing objects to be into and out of on an upper side 2a, which has a bag shape and is made of the other member. An upper opening 2e is provided with a top cover 8 to cover the upper opening 2e. Upper ends and lower ends of vertical belts 15, 15 are sewn up and fixed with stretch to a reinforcing cover 11d and the mesh net 10 to prevent the frame 11 from expansion in a top-bottom direction. The reinforcing cover 11d, which will be described later, is arranged around an upper frame 11g and a lower frame 11e of the frame 11. Shoulder belts 3, 3 have a widened belt shape and detachably attached at four points in a top and a bottom of a back-side surface BP.

[0012] The supporter 4 includes: the frame 11 made of a metal and arranged along the top, bottom, right and left of the storage part 2; the mesh net 10 attached to the frame 11, having a ventilation characteristic and arranged apart from the storage part 2; a pair of ball members 13, 13 arranged in a right-left direction between the mesh net 10 and the storage part 2, which are being attached to the frame 11 via a spring (an elastic member) 12; and the reinforcing cover 11d having an elongated bag shape (see FIG. 2). An inside edge of the reinforcing cover 11d is sewn up along the circumference of the frame 11 to contain the frame 11 inside thereof.

[0013] As shown in FIG. 1 and FIG. 4, the frame 11, for example, is formed annularly with a tube body made of steel as a spring member. The frame 11 is composed of some parts including; the upper flame 11g arranged on the top of the frame 11; the lower frame 11e arranged on the bottom of the frame 11; a right frame member 11f arranged on the right side of the upper frame 11g and the lower frame 11e; and a left frame member 11f arranged on the left side of the upper frame 11g and the lower frame 11e. Upper ends 11h and 11i being provided on the upper frame 11g are connected annularly and integrally to form a curved shape having approximate hyperbola and parabola. The outer periphery of the mesh net 10 is sewn up to the inside of the reinforcing cover 11d. The mesh net 10 is fixed with stretch by the frame 11 to form a three-dimensional saddle-like shape which allows the mesh net 10 to fit on the back PB of the wearer P.

[0014] The right and left frame members 11f, 11f of the frame 11, as shown in FIG. 3 and FIG. 4, are arranged in front of the right side 2d and left side 2c of the storage part 2 respectively in a right-left direction X. The right and left frame members 11f, 11f are curved with convex in A1 and A2 directions being apart from the storage part 2 (a direction toward in behind of the wearer P). The frame 11, as shown in FIG. 2 and FIG. 4, are arranged in front of the upper side 2a and the lower side 2b of the storage part 2 respectively in a top-bottom direction Z. The upper side 2a and the lower side 2b are

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curved in B1 and B2 directions being close to the storage part 2 (a direction toward in front of the wearer P). This allows the frame 11 to be a shape fitted on the back PB of the wearer P. In particular, the left frame member 11f and the right frame member 11f are fitted on the back PB of the wearer P and it is advantageous that the frame 11 does not interfere with a swing of arms during walking.

[0015] An outline of the frame 11 formed to be annular, as shown in FIG. 5, is larger than that of the storage part 2. The mesh net 10 is attached to the frame 11 and arranged with stretch inside the annular frame 11. The mesh net 10 is in a mesh, is made of a polyester fiber for example, has a quick-drying feature, and has flexibility. The polyester fiber allows the mesh net 10 to fit a body of the wearer P and to disperse a load of the backpack 1. The mesh net 10, for example, arranged inside the annular frame 11 via the reinforcing cover 11d and stretched with curvature along the back PB of the wearer P.

[0016] The ball members 13. 13 are attached to the frame 11 via the spring 12. The spring 12 in this embodiment includes a first spring (a first elastic member)12a and a second spring (a second elastic member) 12b which are coil springs having the same length. One ends of the first spring 12a and second spring 12b are fixed to parts of the frame members 11f, 11f, the parts are convex in a direction apart from the storage part 2.

[0017] The other ends of the first spring 12a and second spring 12b are attached to a pair of the ball members 13, 13 which are arranged in a right-left direction in a row and are connected to prevent an interval of ball members 13, 13 from widening. The ball members 13, 13 of the present embodiment are also formed to be sphere and are supported to be rotatable in a front-rear direction with a supporting axis of the spring 12 being a rotational center. The ball member 13 may be preferably smaller than a tennis ball and larger than a table tennis ball, further may be preferably a sphere made of wood in about the size of a golf ball.

[0018] The ball members 13, 13, as shown in FIG. 2, are arranged between the mesh net 10 and the storage part 2 when the supporter 4 and the storage part 2 are assembled. The first spring (the first elastic member) 12a and the second spring (the second elastic member) 12b bias the ball members 13, 13 in a direction to press the mesh net 10. That is, the ball members 13, 13 press the back PB of the wearer P via the mesh net 10 with a tension of the spring 12.

[0019] The back plate 24 of the storage part 2, as shown in FIG. 4, is provided with a lateral belt 16 in a right-left direction X. The lateral belt 16, as shown in FIG. 1, is inserted to be movable between the vertical belts 15, 15 and the back plate 24 of the storage part 2. The lateral belt 16, as shown in FIG. 5, also allow the storage part 2 to

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move in a swing direction U and restricts the storage part 2 to move behind the wearer P (in a B2 direction) as shown in FIG. 2.

[0020] The frame 11, as shown in FIG. 5, locks and releases a locknut 11a arranged between a pair of the upper ends 11h, 11i to and from a screw part 11b arranged opposite to the locknut 11a. A hanging ribbon 9 is attached to a center of the upper side 2a of the storage part 2. The hanging ribbon 9 is also hanged on a neck part of a belt insertion part 17 to hang the storage part 2 on a center of a right-left direction X of the frame 11. A width of the belt insertion part 17 is formed to be larger than that of a ribbon ring 9a of the hanging ribbon 9 being hanged.

[0021] The shoulder belts 3, 3. as shown in FIG. 1, is inserted being crossed in a X shape into the belt insertion part 17 of the frame 11. The lower parts of the shoulder belts 3, 3 are inserted into annular ring parts 11c, 11c respectively which are formed at right and left ends of lower parts of the frame 11. The upper ends and the lower ends of the shoulder belts 3, 3 are provided with carabiners 22, 22, respectively. Front parts of an upper part and a lower part of the storage part 2, as shown in FIG. 2, are provided with locking parts 20, 20 having locking rings. Both the upper and lower carabiners 22, 22 are detachably locked with the locking rings of the locking parts 20, 20, respectively.

[0022] Changing the length of the shoulder belts 3, 3 adjusts a position of the storage part 2 in a top-bottom direction Z according to a body shape of the wearer P. When changing the length of the shoulder belts 3, 3, the right and left frame members 11f, 11f of the frame 11 keeps the mesh net 10 in close contact with right and left of body sides PW of the wearer P to hold body sides PW. Thus, a position of the ball members 13, 13 does not shift from a point in backbones F of the wearer P in top-bottom and right-left directions, which has a better massaging effect, and the ball members 13, 13 contact with a proper position to apply an appropriate stimulation.

[0023] Next, functions and effects of the backpack 1 of the present embodiment will be described. The backpack 1 of the present embodiment has a pair of the first spring 12a and the second spring 12b arranged in a right-left direction and disposed between right and left frames 11f, 11f formed to be curved. When the wearer P wears the backpack 1 of the present embodiment on the back PB, the first spring 12a and the second spring 12b arrange the ball members 13, 13 to a point where the ball members 13, 13 contact with on a desired point of the center of the back PB. The ball members 13, 13 press around the backbones F in a condition where the mesh net 10 intervenes as a cushion.

[0024] The ball members 13, 13, as shown in FIG. 5, are arranged between an eighth thoracic spine F8 and a tenth thoracic spine F10 of the wearer P to press the backbones F accurately from right and left, for example, like pressing with a pad of a thumb. The

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ball members 13, 13 press a desired part of the wearer P almost equally from right and left to stimulate the desired point, thus the wearer P expects a health-promoting effect. When pressing the backbones F, the ball members 13, 13 contact with the back PB in a condition where the mesh net 10 intervenes as a cushion to reduce an impact relative to contacting with the backbones F directly.

[0025] When the ball members 13, 13 receive a separating force, the first spring 12a and the second spring 12b expand and absorb the force to prevent the ball members 13, 13 from separating each other. This reduces a position shift of the ball members 13, 13 in a right-left direction X, and the ball members 13, 13 contact accurately with the point having a better massaging effect.

[0026] With adjusting a force of sliding and contacting between the ball members 13, 13 and the mesh net 10, the ball members 13, 13 contact with the mesh net 10 along the backbones F having a roughness in a top-bottom direction Z (see FIG. 5). This rotates the ball members 13, 13 in a vertical direction and gives a better stimulation to nerves between the eighth thoracic spine F8 and the tenth thoracic spine F10.

[0027] The right and left frame members 11f, 11f of the frame 11, as shown in FIG. 4, are curved apart from the storage part 2 and curves around in front directions of A1 and A2 of the wearer P. The supporter 4 keeps the mesh net 10 to contact firmly with a large area of body which are from the back PB to the right and left body sides PW of the wearer P. The frame 11 is formed with a spring member having elasticity. This makes the frame members 11f, 11f to be curved around in A1 and A2 directions toward in front of the wearer P, also makes an upper side and a lower side of the frame 11 to be curved in B1 and B2 directions being close to the storage part 2 toward behind the wearer P. As a result, when the mesh net 10 contacts with the body, the supporter 4 fits various body shapes to bring a better holding property. In particular, the ribbon 9 hanged on the belt insertion part 17 brings a weight of the backpack 1 to the frame 11 formed by a spring member, and the upper frame 11g and the lower frame 11e curves in B1 and B2 directions toward behind the wearer P, respectively. Thus, the frame members 11f, 11f further come closer to the right and left body sides PW (see FIG. 5) and are curved around in directions of A1 and A2 toward in front of the wearer P to improve sense of fit.

[0028] As shown in FIG. 5, the supporter 4 is curved in B1 and B2 directions being close to the storage part 2 at the upper side 2a and the lower side 2b of the storage part 2. The supporter 4 also makes the mesh net 10 to contact firmly and widely with the back PB of the wearer P being curved with convex in a side view. In particular, around a lumber of the wearer P, a part having a wide shape and widened in a right-left direction of the mesh net 10 is contacted with an upper lumber, and the mesh net 10 curves around

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and contacts with the upper lumber to disperse a load come from the storage part 2. This prevents the supporter 4 from being uneven load and reduces a physical burden of the wearer P. An outline of the annular frame 11 is larger than that of the storage part 2. This allows an area of the mesh net 10 contacted firmly with the body of the wearer P to expand regardless of a size of the storage part 2, thereby dispersing a weight of the backpack 1 to wear.

[0029] As shown in FIG. 2, a distance is formed between the ball members 13, 13 of the backpack 1 and storage part 2 to have a three-layer structure. This structure allows the back-side surface BP of the back plate 24 of the storage part 2 not to contact with the back PB directly, thereby passing air through mesh net 10 and dissipating heat. When the back plate 24 of the storage part 2 facing to the wearer P (see FIG. 2) is close to the mesh net 10, the ball members 13, 13 placed between the back plate 24 and the mesh net 10 contacts with the back-side surface BP, thus the distance is maintained, and a ventilation improves. The back plate 24 is apart from the curving back PB and even if the back PB bends, the storage part 2 is hard to be deformed. The storage part 2, therefore, efficiently receives electric devices such as a tablet or a laptop computer, which might be damaged.

[0030] Receiving objects having appropriate weight of 1 to 5 kilograms, preferably 2.5 kilograms in the storage part 2 appropriately adjusts a force where the ball members 13, 13 press a part between the eighth thoracic spine F8 and the tenth thoracic spine F10 of the wearer P. The storage part 2, as shown in FIG. 2, pulls shoulders PS of the wearer P in a behind direction of B1 with a position of the ball members 13, 13 as a fulcrum to be better for a round back.

[0031] The supporter 4 having a better holding property is hard to be shifted. As shown in Fig. 5, this allows the storage part 2 to move relatively in a swing direction of U where swing center is the ribbon ring 9a hanged on the belt insertion part 17 while the ball members 13, 13 still contact with a desired point. A movement of the storage part 2 in a swing direction of U whose swing center is the hanging ribbon 9 may be measured with a measuring instrument such as an angle sensor and a measured data may be transferred to the wearer P's smart phone.

[0032] The backpack 1 of the present embodiment easily and removably attaches the storage part 2 to the supporter 4. It is easy to determine a position between the storage part 2 and the supporter 4. When the storage part 2 is attached to the supporter 4 after the storage part 2 is removed from the supporter 4, the ball members 13, 13 is arranged at the same position. A knapsack or a backpack having a different shape from the storage part 2 can be attached to the supporter 4 according to a purpose of use. When the wearer P wears the backpack 1 again after putting it off, the ball members 13, 13 are

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arranged at the same position and the wearer P obtains the same massaging effect.

[0033] The locknut 11a and the screw part 11b, as shown in FIG. 4, are fastened together after a pair of the upper ends 11h, 11h is inserted into the hanging ribbon 9 attached to an upper part of the storage part 2. The belt insertion part 17 is larger than the ribbon ring 9a. This allows the hanging ribbon 9 to be hard to come off from the belt insertion part 17 and further to support the storage part 2 stably.

<Example of Modification>

[0034] A backpack 101 as a modification example will be described with reference to FIG. 6. Note that the same parts or equivalent parts as the backpack 1 in the present embodiment will be described with the same numerals. The backpack 101, as shown in FIG. 6, includes: a storage part 102; a pair of shoulder belts 3, 3 attached to the storage part 2; and a supporter 104. The supporter 104 is attached to a back PB of a wearer P to support the storage part 102. In the backpack 101 as a modification example, the storage part 102 and the supporter 104 are connected integrally.

[0035] A cylindrical upper frame insertion part 111 is fixed on an upper side 102a of the storage part 102 of the backpack 101. Right and left upper frames 11g, 11g are inserted into the upper frame insertion part 111 from right and left openings. The upper ends 11h, 11i of the upper frames 11g, 11g respectively protrude from an upper surface of the upper frame insertion part 111.

[0036] A cylindrical lower frame insertion part 112 is fixed on a lower side 102b of the storage part 102. The lower frame insertion part 112 is fixed on the back plate 24. The lower frame 11e where longitudinal direction is arranged in a right-left direction of X is inserted into the lower frame insertion part 112.

[0037] Next, functions and effects of the backpack 101 as the modification example will be described. In the backpack 101 as a modification example, which is described above, the storage part 102 is connected integrally with the supporter 104 and is hard to move, in addition to having the same functions and effects of the backpack 1 in the above-described embodiment. The other configuration, functions and effects are the same or equivalent as the backpack 1 in the embodiment and descriptions are omitted.

[0038] The present invention is not limited to the embodiments described above and allows various modifications. The embodiments described above are the examples for explaining the invention in an easy-to-understand manner and are not limited to embodiments which include all configurations described above. It is possible to replace a part of the configurations of the embodiments into another configuration of embodiment and to add a configuration of an embodiment to the configurations of the embodiments. It is also possible to remove a part of the embodiments and to add to or replace into

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another embodiment. Possible modifications based on the above-described embodiments will be described below.

[0039] The embodiments have been described to show that the backpack 1 includes the storage part 2 having a bag shape and the upper opening 2e, arranged on the upper side 2a, which is able to be opened and closed by the top cover 8 which allows objects to be taken in and out. Not limited to this, the invention may use any kind of shapes, a number and materials to form a backpack as long as they are supported by the supporter 4 such as a knapsack, a backpack having a different shape from the storage part 2.

[0040] The embodiments have been described to show that the storage part 2 and the supporter 4 of the backpack 1 are separatable with the removable shoulder belts 3, 3. However, not limited to this, the storage part 2 and the supporter 4 may be separatable with the shoulder belts 3, 3 having another separatable point, for example, such that the shoulder belts 3, 3 separates in a middle of the strap. The backpack 101 as the modification example has been further described to show that the storage part 102 and the supporter 104 are combined with the upper and lower frame insertion parts 111, 112. However, not limited to this, for example, the storage part 102 and supporter 104 may be combined with another connecting point.

[0041] The mesh net 10 may have any mesh size as long as the mesh net 10 has a ventilation characteristic and may combine some kinds of meshes having different mesh sizes. The mesh net 10 may have stretchiness and any kinds of materials may be used as long as the mesh net 10 fit a body shape of the wearer P. Note that a range of attaching the mesh net 10 is not limited to an entire area inside the frame 11, for example, the range may be between a pair of right and left vertical belts 15, 15, or a part of inside the frame 11. A shape of the mesh net 10 and a place to which the mesh net 10 is attached are not limited to as long as the mesh net 10 is attached to the frame 11 so that the storage part 2 having a bag shape such as a knapsack does not contact directly with the ball members 13, 13 or the mesh net 10 through between the vertical belt 15.

[0042] The embodiments have been further described to show that the frame 11 is configured to connect annularly frame members 11f made of a metal each other, but not limited to this. The frame member, for example, may connect each other to form rectangular, ellipse or oval and may be configured to use a carbon fiber material. A number, a shape and a material of the frame 11 are not limited. The frame 11 may be configured with not only a tubular member but also a solid member and may have springiness having elastic modification at from 5 to 10 kilograms.

[0043] The spring 12 as an elastic member is not limited to a shape of the spring 12 of the present embodiments. The spring 12 may form in a cater-corner such as a radial

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fashion. The spring 12 may also use another elastic material such as a rubber. The elastic member may be connected to the upper frame 11g or the lower frame 11e of the frame 11 to support the massaging member. That is, the elastic member, which is connected to the massaging member and the frame 11, is just bias the mesh net 10 towards the back PB of the wearer P, and a shape, a number and a material of the elastic member and its combination is not limited.

[0044] The ball members 13, 13 as the massaging member do not have to be wooden, for example, the ball members 13, 13 may be made from any materials such as a resin, a ceramic, a rubber and a metal. A shape of the ball members 13, 13 is also not limited to sphere, for example, the shape may have any shapes such as hemisphere or polyhedron. A number of the ball members 13, 13 is also not limited to one pair, a number may be one or more than two as long as the ball members 13, 13 are supported not to be separated each other.

[0045] The ball members 13, 13 are arranged between an eighth thoracic spine F8 and a tenth thoracic spine F10 of the wearer P. However, not limited to this, the ball members 13, 13 may contact with any parts of the backbones F including cervical spine, thoracic spine, lumber spine or sacral bone in a range where a position in a top-bottom direction Z of the spring 12 connected to the right and left frame members 11f, 11f is modifiable.

[0046] Note that, in this embodiment, the hanging ribbon 9 is preliminarily attached to the storage part 2 to hang the storage part 2 on the supporter 4. However, not limited to this, for example, the supporter 4 may be attached to the storage part 2 with something like a fastener. Size of the storage part 2 or the shoulder belts 3, 3 is not limited to the backpack 1 of this embodiment. Any shapes, sizes and materials are acceptable for the storage part 2 and the supporter 4 such as the storage part 2 having a bag shape, satchel shape, a pouch or the shoulder belts 3, 3 having a string shape.

LIST OF REFERENCE SIGNS

[0047]

1	Backpack
2	Storage Part
3	Shoulder Belt
4	Supporter
10	Mesh Net
11	Frame
12	Spring (Elastic Member)

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13 Ball Member (Massaging Member)

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CLAIMS:

1. A backpack comprising: a storage part;

a pair of shoulder belts attached to the storage part; and

a supporter supporting the storage part and worn on a back of a wearer, wherein

the supporter includes: an annular frame provided along the storage part in up-down and right-left directions;

a mesh net provided on the frame apart from the storage part;

a massaging member provided between the mesh net and the storage part and attached to the frame via an elastic member, wherein

the massaging member is arranged to bias in a direction where the mesh net is pushed by the elastic member, and the massaging member has a plurality of balls formed to be sphere, wherein

the balls are arranged between an eighth thoracic spine and a tenth thoracic spine, and the balls are provided rotatably to the frame via the elastic member.

2. The backpack according to claim 1, wherein

the frame is formed to be curved in a direction being close to the storage part at upper and lower sides of the storage part and to be curved in a direction being apart from the storage part at right and left side of the storage part, wherein

the elastic member includes a first elastic member attached to the left side of the frame and a second elastic member attached to the right side of the frame, wherein

the massaging member is arranged between the first elastic member and the second elastic member.

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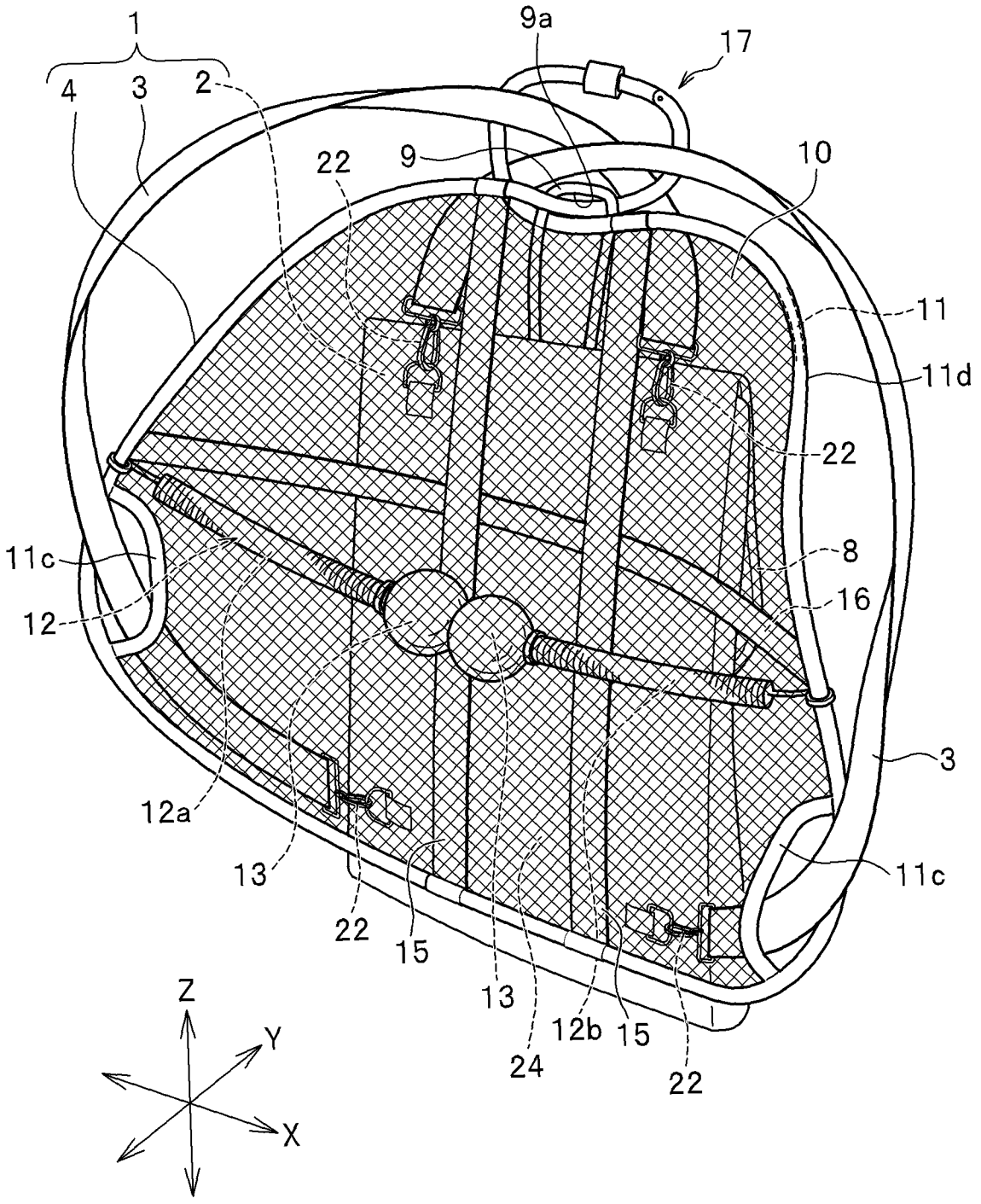
FIG. 1


1
4
3
2
9a
17
22
9
10
11
11d
22
11c
8
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12a
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Z
Y
X

FIG. 2

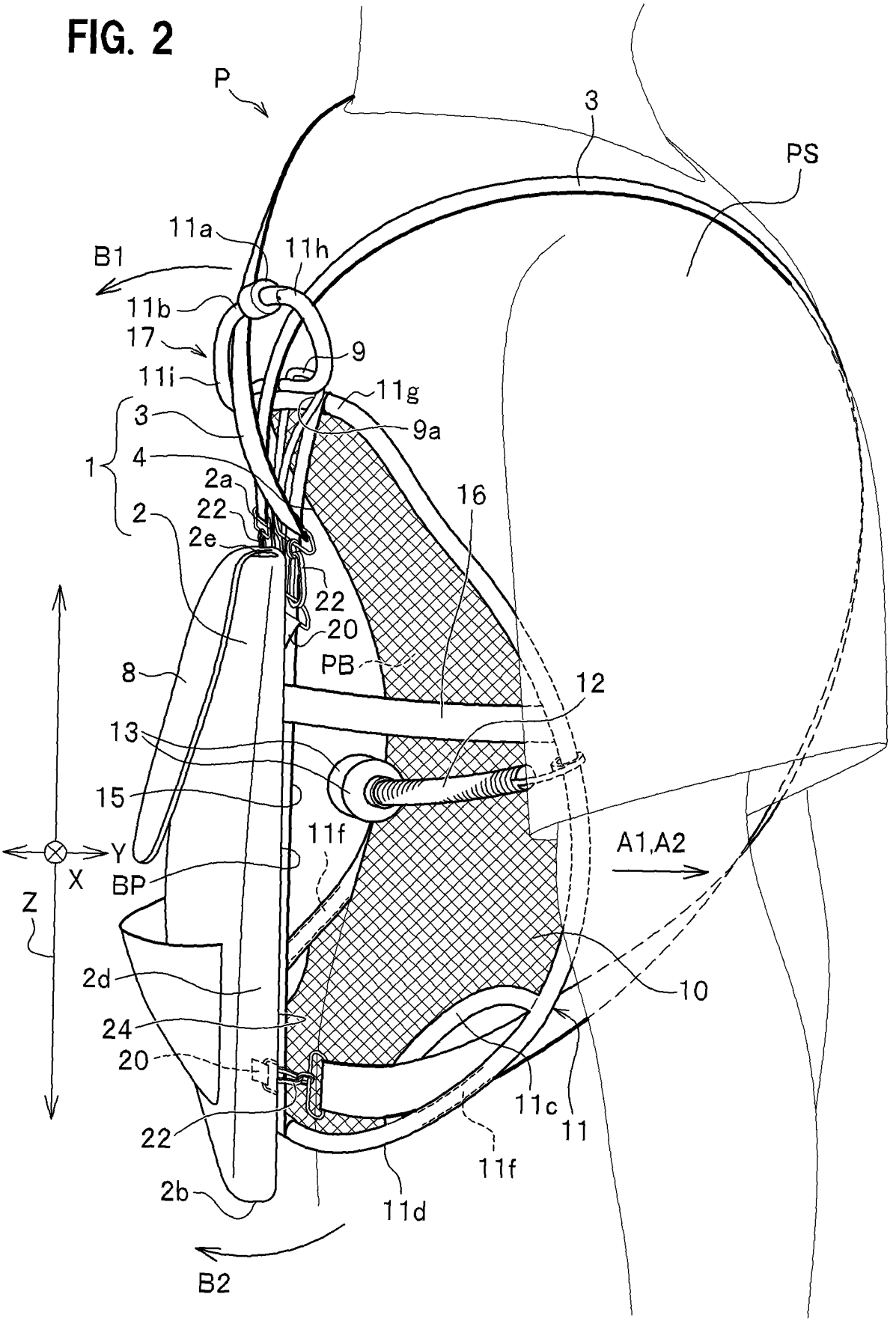

P
3
PS
11a
11h
B1
11b
17
9
11i
11g
3
9a
1
4
2a
16
2
22
2e
22
20
PB
8
12
13
15
11f
A1,A2
Y
X
BP
Z
2d
10
24
20
11c
11
22
11f
2b
11d
B2

FIG. 3

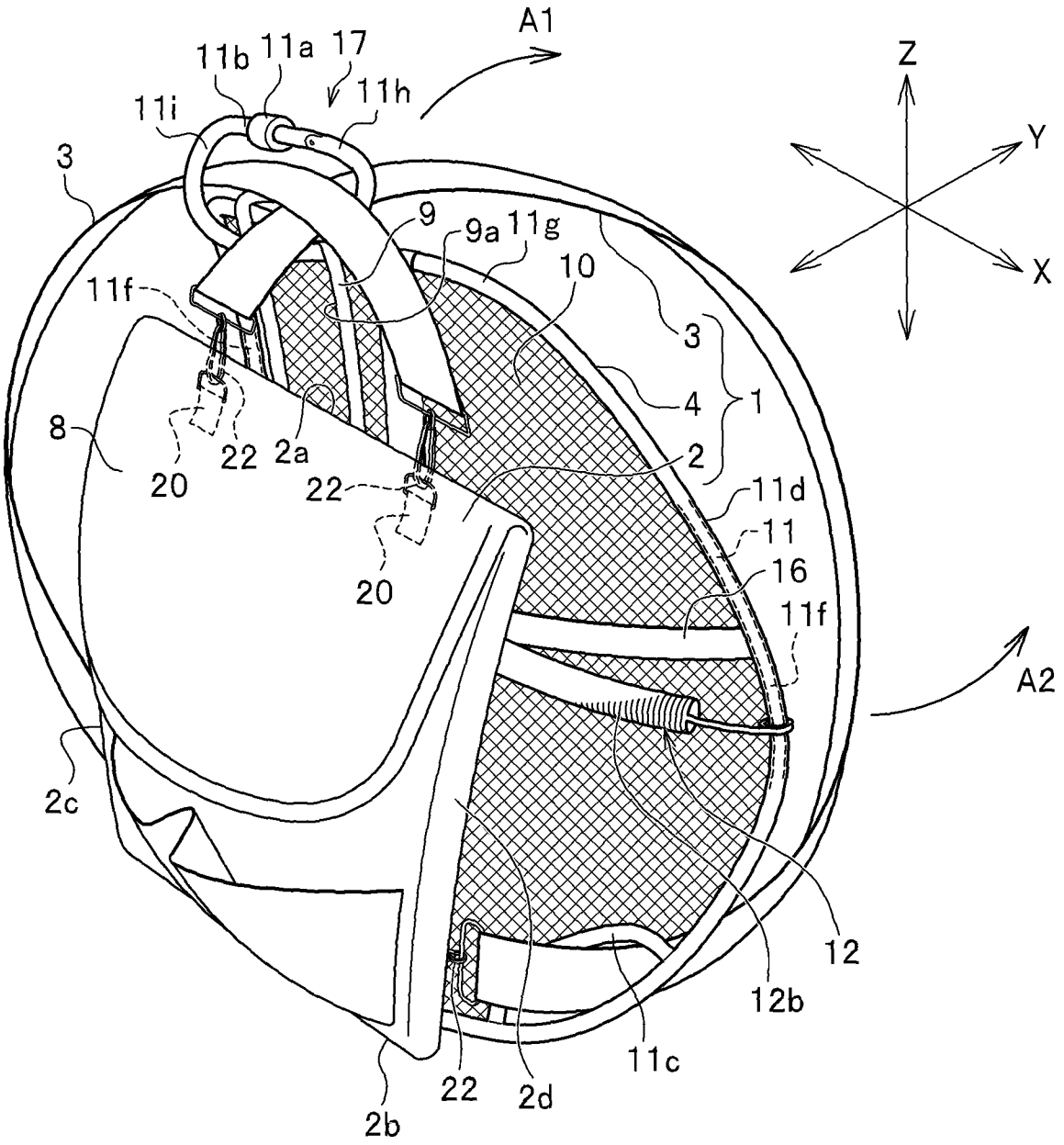

A1
11b
11a
17
11h
11i
3
9
9a
11g
10
11f
3
4
1
8
20
22
2a
22
2
11d
11
16
11f
20
A2
2c
12
12b
11c
22
2d
2b
Z
Y
X

FIG. 4

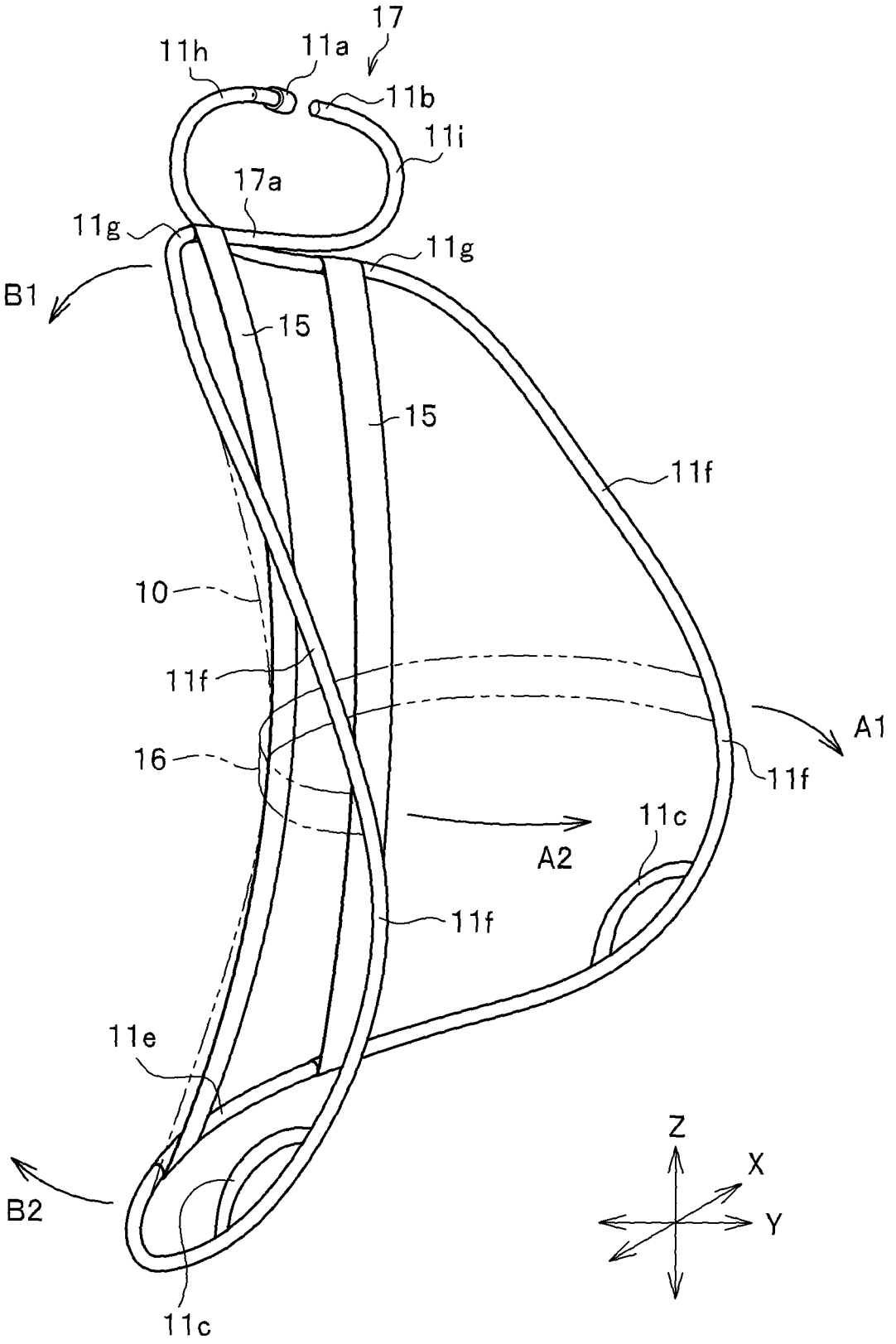

17
11h
11a
11b
11i
17a
11g
11g
B1
15
15
11f
10
11f
A1
16
11f
11c
A2
11f
11e
B2
11c
Z
X
Y

FIG. 5

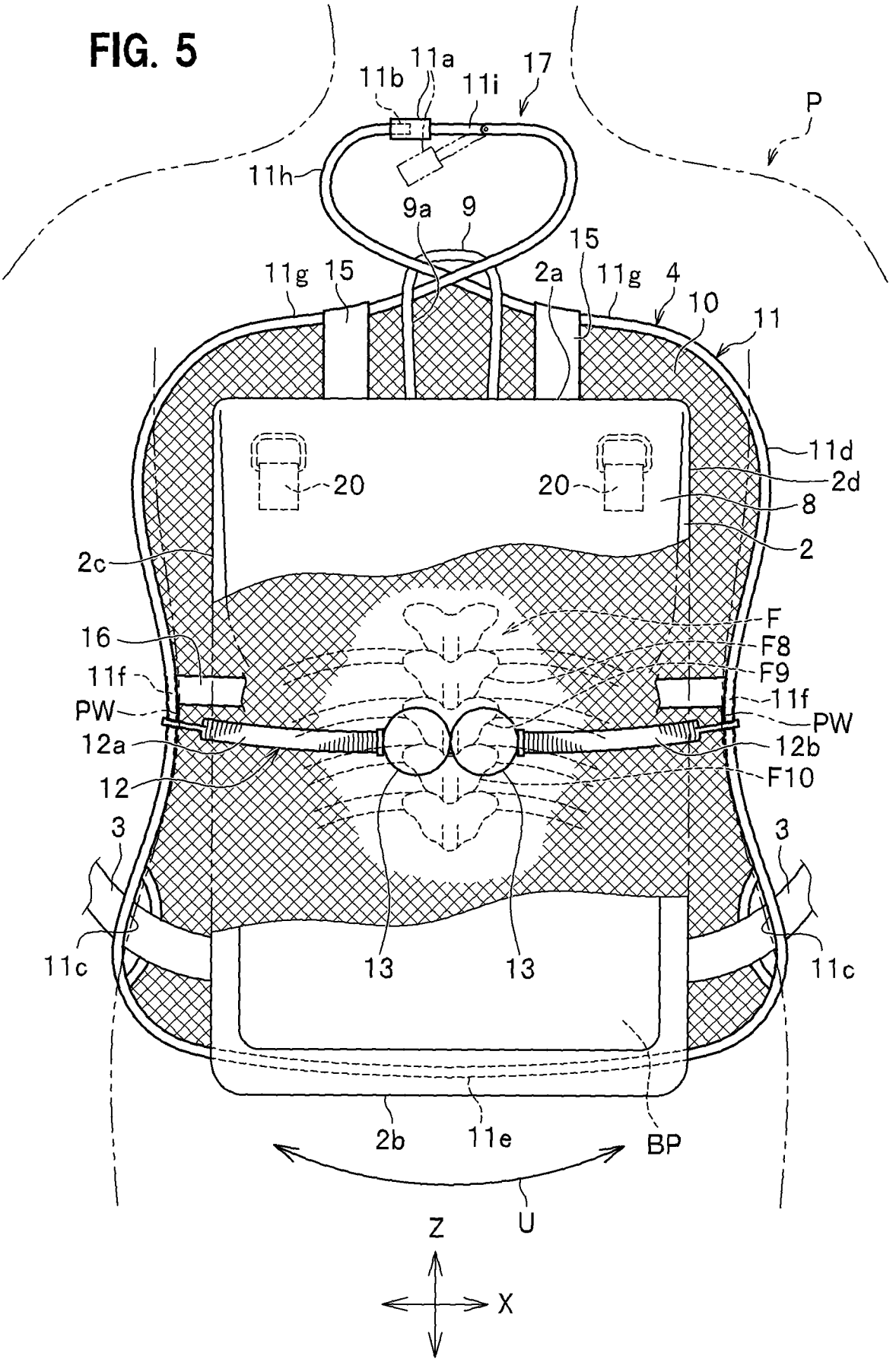
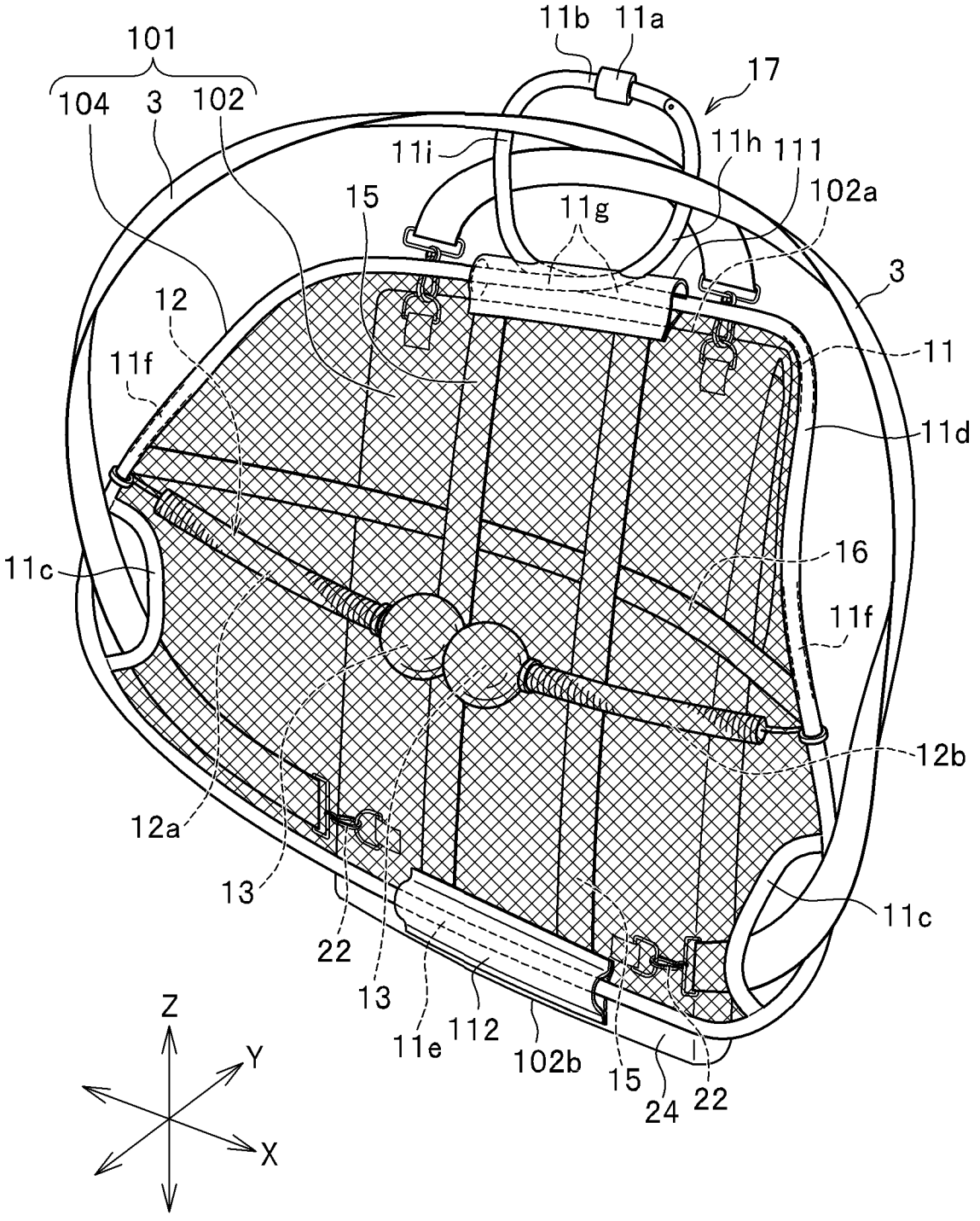
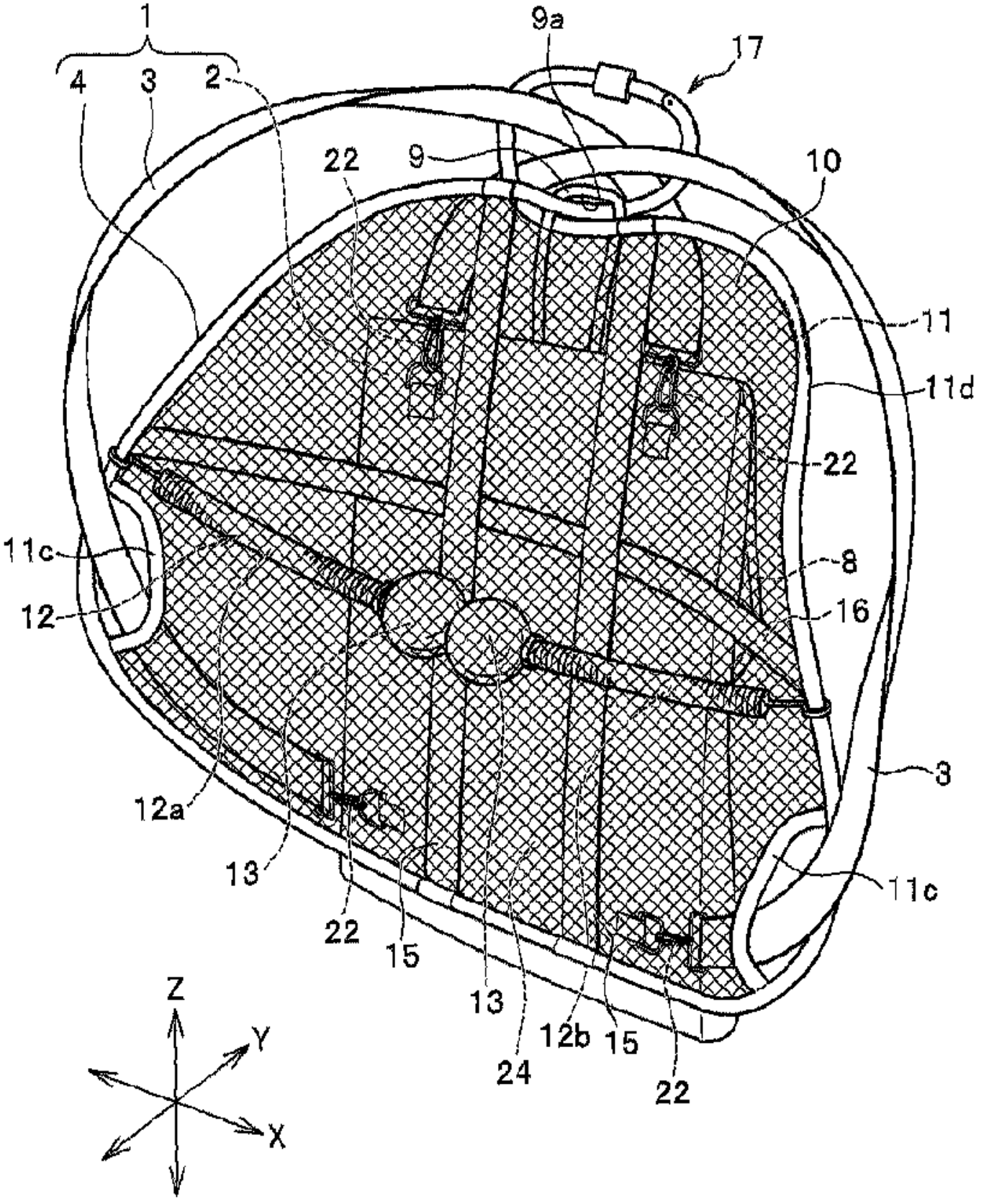

11b
11a
11i
17
P
11h
9a
9
15
11g
15
2a
11g
4
10
11
11d
2d
8
2
20
20
2c
16
11f
PW
12a
12
3
11c
F
F8
F9
11f
PW
12b
F10
3
11c
13
13
2b
11e
BP
U
Z
X

FIG.6


101
104
3
102
11b
11a
17
11i
11h
111
102a
15
11g
3
12
11f
11
11d
11c
16
11f
12b
12a
13
22
13
11e
112
102b
15
24
22
11c
Z
Y
X


1
4
3
2
9a
17
22
9
10
11
11d
22
11c
8
12
16
3
12a
13
11c
22
15
13
12b
15
24
22
Z
Y
X