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(54) **BACKPACK HAVING A TUBE-TYPE SHOULDER BELT**

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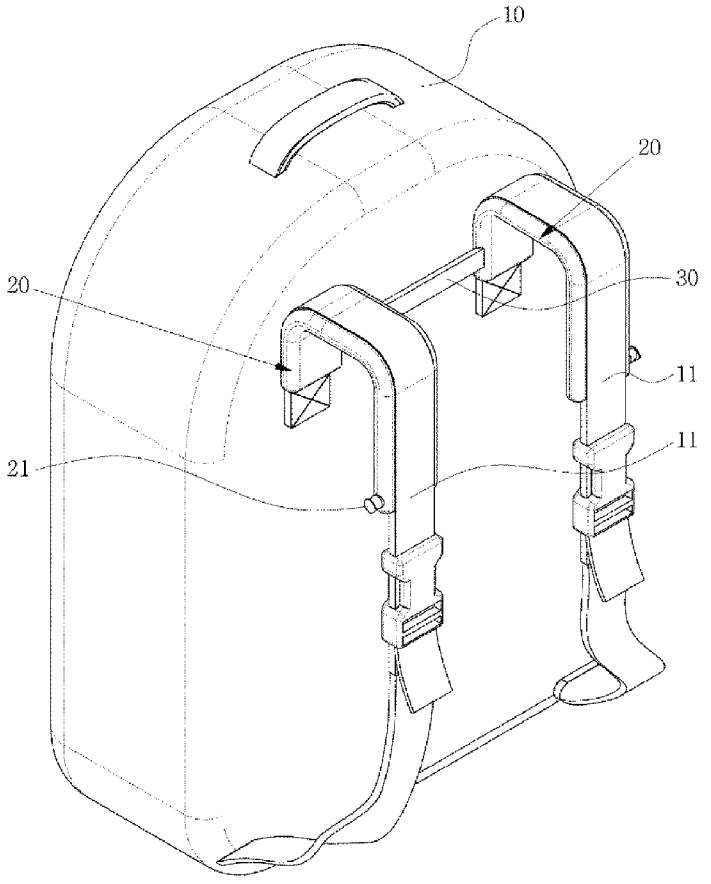
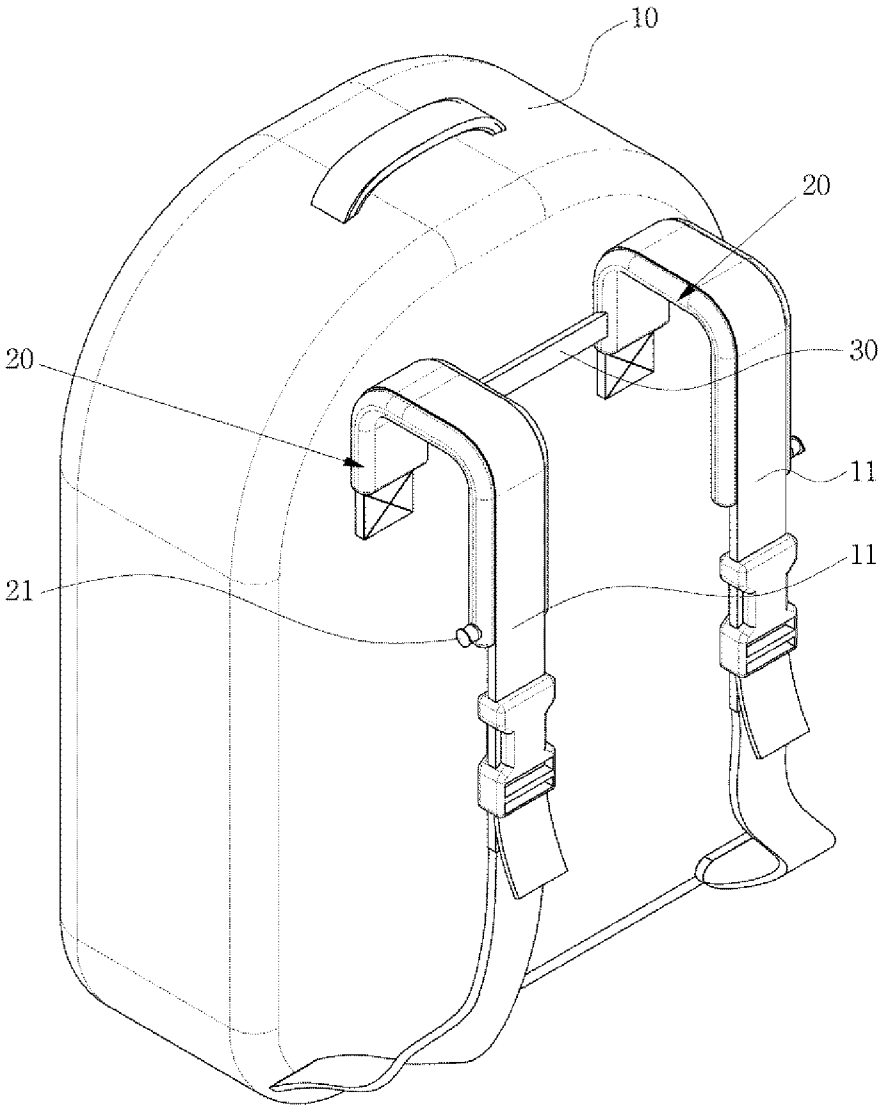
(57) **ABSTRACT**

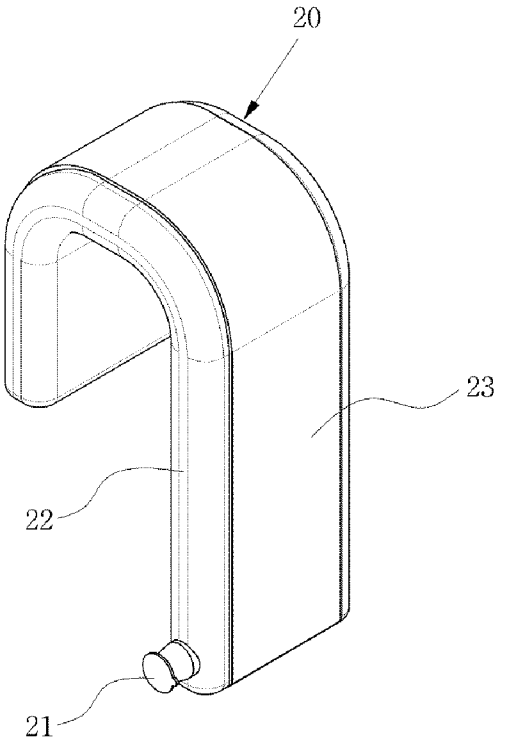
The present invention relates to a backpack comprising a shoulder belt having two ring-shaped tubes provided with respective air-injection portions so as to enable a user to inject air into the tubes to inflate the shoulder belt and to thus enable the backpack to tightly contact a shoulder of a wearer. Thus, the backpack is prevented from slipping down from the shoulder of the wearer or from moving sideways, thereby protecting the waist of the wearer from being burdened to thus prevent spondylopathy and fatigue, and rendering user activity convenient. The shoulder belt of the backpack of the present invention has the ring-shaped tubes provided with respective air injection portions. In addition, two tubes of the shoulder belt are interconnected via a pipe, the length of each tube is extended toward the body of the backpack such that the length of each tube is the same as that of the body of the backpack, and the tubes are coupled to a back of the backpack. Preferably, the shoulder belt may be wrapped in fabric or the like so as to be protected and connected to the body of the backpack, or the shoulder belt may be made of fabric or the like, and the upper portions thereof may have spaces for accommodating said tubes, respectively.



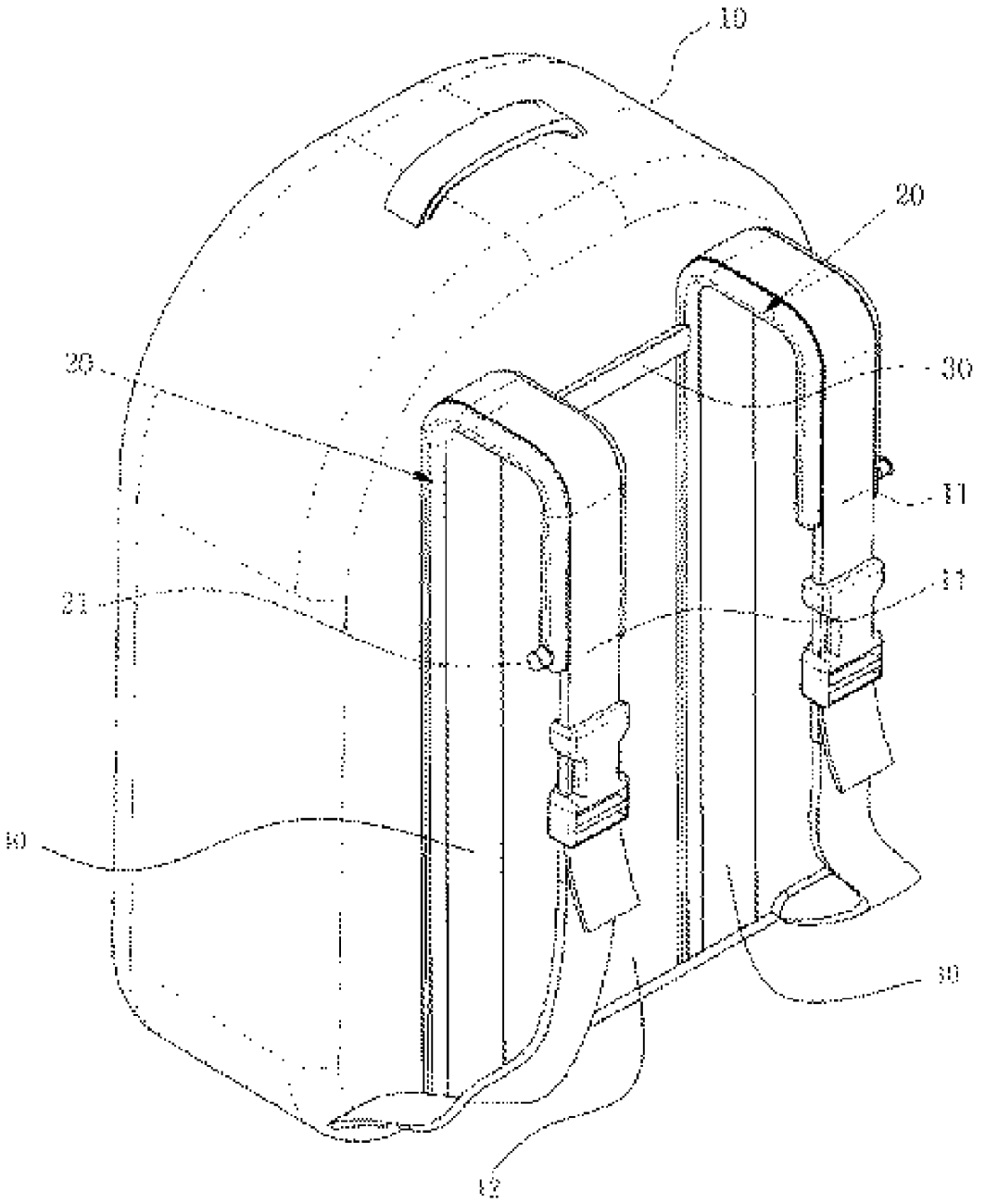
[Fig. 1]



[Fig. 2]



[Fig. 3]



BACKPACK HAVING A TUBE-TYPE SHOULDER BELT

TECHNICAL FIELD

[0001] The present invention relates to a backpack including shoulder belts respectively having hook-shaped (∩-shaped) tubes. More particularly, the present invention relates to a backpack which enables a wearer to inject air into the tubes to inflate the tubes into the ∩-shaped form and to thus enable the backpack to tightly contact the wearer's shoulders despite of weight of the backpack, so that the backpack is prevented from slipping from the wearer's shoulders or from moving sideways and the wearer can feel less pressure of the backpack to the wearer's shoulders.

BACKGROUND ART

[0002] In general, because a backpack that a student mainly uses instead of a school bag or uses for traveling or hiking contains heavy things such as books or articles therein, the weight of the heavy backpack is transferred to the a wearer's body as it is, so that the wearer feels too much pressure.

[0003] Particularly, because the heavy backpack imposes a heavy burden on the wearer's waist and shoulders, it has a bad effect on the wearer's spine and increases fatigue, and especially, threatens teenage students' health.

[0004] Moreover, because the wearer who carries the bag on the wearer's shoulders cannot walk in a correct posture due to a severe pressure and pain on the shoulders and walks in an awkward posture, and hence, in the case of teenagers who carry the bags on their shoulders every day, they have several problems in that their spines are crooked or distorted in the process of their growth and in that they may feel pains on the waist, shoulders, or neck.

[0005] Accordingly, it is encouraged to arrange things neatly in order inside the backpack to thereby balance weight of the backpack and to adjust the length of the shoulder belts according to the wearer's body conditions to thereby reduce a strain on the wearer's waist, prevent the shoulder pain and make the wearer take a balanced posture. However, such a method is just a temporary expedient and, actually, it is not easy to relieve the strain or pressure on the waist and shoulders, and hence, some of the backpacks respectively have a strap for tightening the wearer's chest part to fix the backpack to the shoulders. Alternatively, some of the wearers pull the shoulder belts tightly with both hands so that the rear part of the backpack gets in close contact with the wearer's back.

[0006] In the meantime, in consideration of the above-mentioned problems, shoulder pads are respectively attached to rear faces of the shoulder belts being in contact with the wearer's shoulders so as to relieve the pain applied to the wearer's shoulders. However, because the shoulder pads are in a simple structure that wrapping paper is covered and sewed on an urethane foam or a sponge, which is fit on the shoulder belts, the shoulder pads can just relieve pain or impact on the shoulders but cannot disperse the weight applied to the waist and shoulders when the wearer carries the backpack on the shoulders, and hence, the conventional methods cannot solve the above-mentioned problems.

[0007] Korean Patent No. 10-0462464 discloses a shoulder band protector for bag. In the prior art, the shoulder band protector for bag includes: a hard cover, which wraps a tube having an injection hole for injecting and discharging air to thereby widely wrap around the wearer's shoulder; retaining jaws respectively fixed at both sides of an upper portion of the cover in such a fashion that a shoulder band is located between the retaining jaws to thereby prevent the shoulder band from being separated sideways; and male and female detachable buckles respectively joined to the shoulder bands respectively fixed to both sides of the retaining jaws.

[0008] As another example, Korean Utility Model Publication No. 20-1992-0005175 discloses an air-injectable type suspender for bags. The air-injectable type suspender for bags includes: a tube pouch formed in the middle of a connection strap to which a hook and a buckle are connected, the tube pouch having a tube insertion hole, to which a slide fastener is attached, and a protruding injection hole; and an air tube inserted into the tube pouch, the air tube having an air injection hole and a partition wall.

[0009] Such prior arts have the shoulder protector of the tube type, to which air is injected, to thereby relieve pressure of the backpack applied to the wearer's shoulders. However, the prior arts cannot reduce a burden applied to the wearer's waist because the backpack is not fixed to the wearer's shoulders, and hence, have a problem in that the backpacks may cause spondylopathy or fatigue because the backpack slips down from the wearer's shoulders due to the weight of the backpack or moves sideways.

[0010] Therefore, the backpacks according to the prior arts can relieve only the pain applied to the top of the shoulder of the wearer where the shoulder protector touches but cannot reduce the burden on the wearer's waist, and hence, cannot solve the problem caused by pressure applied to the wearer's spine or clavicle.

DISCLOSURE

Technical Problem

[0011] Accordingly, the present invention has been made in an effort to solve the above-mentioned problems that a wearer's waist is bent backward or forward because the backpack is not fixed to the wearer's shoulders and slips down and that the backpack imposes a burden on the wearer's waist because the backpack moves sideways. Accordingly, it is an object of the present invention to provide a backpack having a tube-type shoulder belt having hook-shaped tubes respectively formed at upper portions of shoulder belts so as to enable a wearer to inject air into the tubes to inflate the shoulder belt into a hook shape and to thus enable the hook-shaped shoulder belts to tightly get in contact with and be fixed to the wearer's shoulders without slipping down from the wearer's shoulders and moving sideways, thereby reducing the weight of the backpack applied to the wearer's waist and relieving heaviness of the backpack applied to the wearer's shoulders owing to air pressure of the shoulder belts.

Technical Solution

[0012] To achieve the above objects, the present invention provides a backpack having a tube-type shoulder belt including: a backpack body for accommodating books or articles therein; and shoulder belts respectively having tubes, each of the tubes having an air injection portion formed at one side thereof.

[0013] The two tubes of the upper portions of the shoulder belts may be interconnected via a pipe.

[0014] The tubes of the upper portions of the shoulder belts of the backpack body may be wrapped by a covering formed

by sewing work, may be detachably attached to the shoulder belts by female Velcro tape disposed on the upper portion of the shoulder belt of the backpack body and male Velcro tape disposed on the tube, or may be respectively inserted into spaces, which are respectively formed in the upper portions of the shoulder belts made of fabric or the like for accommodating the tubes.

[0015] Furthermore, the shoulder belt may have an air injector for injecting air into the air injection portion of the tube.

Advantageous Effects

[0016] The backpack having the tube-type shoulder belt according to the present invention has hooks formed by air injected into the tubes located on the upper portions of the shoulder straps for suspending the backpack on the wearer's shoulders so as to prevent the backpack not from slipping down from the wearer's shoulders and moving sideways by fixing and supporting the backpack on the wearer's shoulders, whereby the backpack can prevent spondylopathy by reducing a burden applied to the wearer's waist and relieve heaviness of the backpack applied to the wearer's shoulders owing to air pressure of the tubes to thereby prevent spondylopathy and fatigue even though the wearer carries the backpack on the shoulders for a long time because the backpack corrects the wearer's posture.

DESCRIPTION OF DRAWINGS

[0017] FIG. **1** is a perspective view of a backpack having a tube-type shoulder belt according to a preferred embodiment of the present invention.

[0018] FIG. **2** is a perspective view of tube of the backpack according to the present invention.

[0019] FIG. **3** is a perspective view of a backpack having a tube-type shoulder belt according to another preferred embodiment of the present invention.

[0020] **10**: backpack body **11**: shoulder strap **12**: back plate

[0021] **20**: shoulder belt **21**: air injection portion

[0022] **22**: tube **23**: covering

[0023] **30**: pipe **40**: tube extension portion

MODE FOR INVENTION

[0024] Reference will be now made in detail to the preferred embodiment of the present invention with reference to the attached drawings. It will be understood that words or terms used in the specification and claims should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art and the technical idea of the invention, based on the principle that an inventor may properly define the meaning of the words or terms to best explain the invention.

[0025] As shown in the drawings, a backpack having a tube-type shoulder belt includes: a backpack body **10** for accommodating books or articles therein; two shoulder belts **20** respectively arranged on upper portions of two shoulder straps **11** of the backpack body **10**, the shoulder belts **20** respectively having tubes **22**, each of the tubes **22** having an air injection portion **21** perforatingly formed at one side thereof so as to enable a wearer to inject air into the tube so that the shoulder belt is inflated in a hook shape to tightly get in contact with the wearer's shoulder.

[0026] The backpack body **10** is applicable to all types of bags, which students carry on their shoulders after putting books or other articles therein, such as school bags, bags for climbers, traveling backpacks, and others, and may be also applied to backpacks having only one shoulder belt according to the shapes of the backpack body.

[0027] Because the shoulder belt **20** has the same hook shape as the upper portion of the wearer's shoulder, the backpack can tightly get in contact with the entire upper portion of the shoulder of the wearer in such a way as to be fixed on the wearer's shoulder to prevent the backpack from slipping down or moving sideways, so that the backpack makes the wearer take a correct posture by evenly dispersing the load of the backpack and prevents spondylopathy and fatigue by reducing a burden applied to the wearer's waist.

[0028] Particularly, because the shoulder belts **20** respectively have the tubes **22**, when the wearer injects air into the tubes **22** using the air injection portions **21** respectively formed on the tubes **22**, pressure applied to the wearer's shoulder is relieved due to a damped pressure by the injected air.

[0029] As shown in FIG. **1**, a pipe **30** is interposed between the tubes **22** of the two shoulder belts **20** for connecting the tubes **22** with each other.

[0030] Accordingly, even though the air injection portion is formed on only one tube, when the wearer inject air through the air injection portion **21**, the injected air is transferred to the tube **22** of the other shoulder belt **20** connected to the pipe **30**, so that air can be injected into all of the tubes **22** of the shoulder belts **20** to thereby enhance usability.

[0031] Particularly, the shoulder belts **20** which are located at the wearer's shoulders and chest part are supported by the wearer's shoulders and chest while the wearer carries the backpack **10** on the shoulders, and hence, it enhances contactability and supportability of the backpack **10**. In this instance, because air is injected into the tubes **22**, the shoulder belts **20** provide a natural cushioning function so as not to pressurize the wearer's shoulders and chest.

[0032] Moreover, in another preferred embodiment of the present invention, the tube **22** which is joined to the backpack body **10** is extended to the length of the backpack body and is joined to a back plate of the backpack, and then, the backpack can reduce pressure applied to the user's back due to a buffering action of the tubes.

[0033] In the meantime, it is preferable that each of the shoulder belts has a covering **23** made of fabric or the like for wrapping and protecting the tube **22** and connecting the tube **22** to the backpack body **10** and the shoulder strap **11**. The tube **22** and the covering **23** of the shoulder belt **20** may be bonded through generally used bonding work, such as high-frequency deposition, and the shoulder belts **20** respectively having the tubes **22** and the coverings **23** can be respectively connected to the backpack body **10** and the shoulder straps **11** through sewing work or the like.

[0034] Furthermore, the backpack body **10** further includes a female Velcro tape **10***a* disposed on the rear face of the shoulder strap **11** and the shoulder belt **20** has a male Velcro tape **20***a*, so that the shoulder belt **20** is detachably attached to the shoulder strap **11** via the female and male Velcro tapes **10***a* and **20***a*. Alternatively, the shoulder belt **20** may be formed in such a fashion that a space for accommodating the tube is formed in the upper portion of the shoulder strap, which is made of fabric or the like, and the tube **22** is inserted into the space.

[0035] In the case that the tube **22** is extended to the length of the backpack body and is joined to the back plate of the

backpack, an extension portion of the tube **22** may be mounted inside the back plate of the backpack.

[0036] Therefore, because the shoulder belts **20** can be detachably attached to the shoulder straps **11**, as occasion demands, the wearer can attach the shoulder belts **20** onto the shoulder straps **11** or detach the shoulder belts **20** from the shoulder straps **11** in order to use only the shoulder straps **11**, and hence, it enhances usability and convenience.

[0037] The shoulder belt **20** may further include an air injector for injecting air into the air injection portion **21** of the tube **22**. So, the wearer can conveniently increase and decrease air pressure of the inside of the tube **22** of the shoulder belt **20** using the air injector so as to reinforce the hook shape of the shoulder belt or to relieve the pressure of the backpack applied to the wearer's shoulder or chest.

[0038] Additionally, if necessary, the wearer can easily discharge the inside air of the tube **22** through the air injection portion **21**, and the tube **22** may further include an air outlet.

[0039] The preferred embodiments of the present invention are capable of being modified and changed in various ways, but it should be understood that there is no intent to limit the present invention to said embodiments, and it should be also understood by those of ordinary skill in the art that various changes of the embodiments in combination with the prior arts may be made therein within the scope of the invention as defined by the appended claims.

1. A backpack comprising:

a backpack body (**10**) for accommodating articles therein; and

shoulder belts (**20**) respectively formed on shoulder straps (**11**) of the backpack body (**10**) and respectively having tubes (**22**) of a hook shape, each of the tubes (**22**) having an air injection portion (**21**).

2. The backpack according to claim **1**, wherein the tubes (**22**) of the shoulder belts (**20**) are interconnected via a pipe (**30**).

3. The backpack according to claim **1**, wherein an upper portion of the tube (**22**) is extended to the length of the backpack body (**10**) and joined to a back plate (**12**) of the backpack.

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