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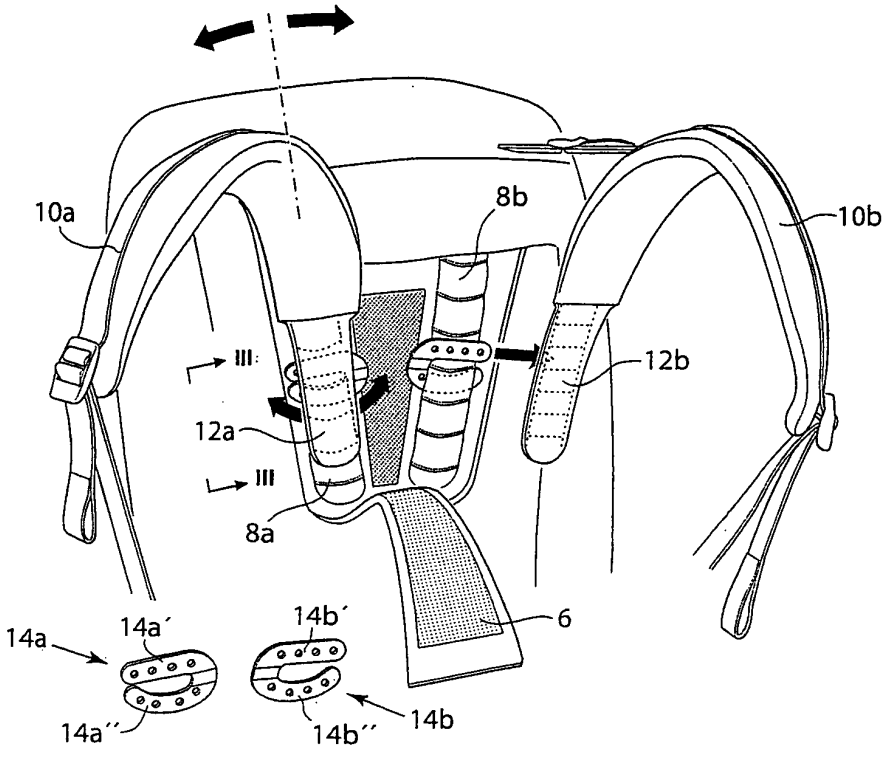
(54) Attachment of backpack shoulder straps

(57) A backpack comprises a backplate (2) which includes a plurality of backplate pockets (8a, 8b) and two shoulder straps (10a, 10b) that are fastened to the backplate at a respective upper and lower end portion. By providing a plurality of shoulder strap pockets (12a, 12b) at the upper end portion of respective shoulder straps together with a respective shoulder-strap fastener element (14a, 14b), of which a first part (14a', 14b') is inserted in one of said plural of shoulder strap pockets and second part (14a", 14b") is inserted in one of said plural of backplate pockets, there is obtained flexible attachment of the shoulder straps to the backplate at the same time as enabling the length of the shoulder straps to be adjusted.

Fig.2



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Description

TECHNICAL FIELD

[0001] The present invention relates generally to backpacks and more specifically to backpacks that include shoulder straps that are flexible with regard to their length and to their point of attachment to the backplate.

BACKGROUND OF THE INVENTION

[0002] Requirement concerning the performance and flexibility of backpacks are constantly increasing. Whilst backpack users were earlier satisfied with standard backpacks they now require the ability to adapt the backpacks to personal preferences with regard, for instance, to the design of the shoulder straps and waist belt. This desideratum is based on the fact that a backpack that can be adapted more to the personal liking of the wearer can be made more ergonomic and therewith more comfortable in use, and therewith enable a heavier load to be carried. This applies not least to the adaptation of the length of the shoulder straps and their point of attachment to the backplate.

[0003] French patent publication FR2670096 teaches a method of adjusting the attachment point of respective shoulder straps wherein the two shoulder straps are fastened to the backplate at their meeting point by means of a cotter pin or its like which is passed through the upper end part of the shoulder straps and also through one of a number of through-penetrating pockets in the plate. Although this solution affords a degree of flexibility with respect to the point at which the shoulder straps are fastened to the backplate, the solution is encumbered with several drawbacks. Firstly, it does not enable the length of the shoulder straps to be adapted. Secondly it does not enable individual attachment of the separate shoulder straps, which can result in poorer comfort. As a result of this latter drawback, it is not possible to vary the relative distance between the shoulder straps.

SUMMARY OF THE INVENTION

[0004] One object of the present invention is to provide a backpack of the above mentioned kind with which the point of attachment of the shoulder straps to the backplate and the length of said straps can be readily varied.

[0005] The invention is based on the realization that the arrangement of individual fastening ladder formations in both the backplate and the shoulder straps can provide a fastening solution with which the length of the shoulder straps and their point of attachment to the backplate can be varied with the aid of one fastener element per strap.

[0006] According to the present invention there is provided a backpack as defined in the accompanying claim 1.

[0007] Thus, the inventive backpack enables the shoulder straps to be fastened in a very simple but very flexible fashion, thereby enabling the backpack to be adapted ergonomically to different users.

[0008] The dependent claims define particularly preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The present invention will now be described in more detail by way of example with reference to the accompanying drawings, in which

Fig. 1 is a perspective illustration of an inventive backpack as seen from one side of the backplate.

Fig. 2 is a detailed illustration of the upper part of the backpack shown in figure 1;

Fig. 3 is a view taken on the line III-III in figure 2 and illustrates the fitting of a fastener in the form of a U-shaped element;

Fig. 4 is a perspective view of a waist belt included in the backpack shown in figure 1;

Fig. 5 is a detailed view of the lower part of the backpack shown in figure 1; and

Fig. 6 is a sectioned view of the waist belt taken in line with a backplate stiffening bar.

DESCRIPTION OF EMBODIMENTS

[0010] There will now be described a preferred embodiment of an inventive backpack, initially with reference to figure 1. In the following description references will be made to directions which relate to the backpack as illustrated in the figures.

[0011] The backpack, which is generally referenced 1, includes a backplate 2 to which a carrier bag is attached. Extending generally vertically in the backplate are two backplate stiffening bars 4a, 4b made of a rigid material, such as aluminium, so as to provide firmness to the construction.

[0012] The backpack also includes two shoulder straps 10a, 10b which are firmly fixed to the backplate at their lower end portions. The shoulder straps are flexibly fixed to the backplate at their opposite upper end portions, as will be described in more detail hereinafter with reference to figures 2 and 3.

[0013] The backpack also includes a waist belt 20 that includes a wadded belt portion 21 whose end parts can be fastened together by the means of a buckle 22a, 22b.

[0014] Fastening of the upper end portion of respective shoulder straps 10a, 10b will now be described in detail with reference to figures 2 and 3. It will be seen from these figures that the side of the upper end portion of the straps facing towards the backplate 2 includes a number of horizontal pockets which together form a shoulder

strap ladder formation 12a, 12b. These pockets can be obtained with the aid of seams that extend parallel to one another across a strip of cloth applied to the shoulder straps. The pockets are straight and are configured to receive a straight upper leg-element 14a', 14b' of a generally U-shaped fastener element 14a, 14b, which is preferably made of metal. The U-shaped fastener may be perforated so as to reduce its weight.

[0015] Ladder formations are also provided on the backplate. The ladder formations 8a, 8b provided on the backplate are similar to the ladder formations on the supportive straps in that the ladders 8a, 8b include pockets that are adapted to receive the other lower leg element 14a", 14b" of a respective U-shaped fastener 14a, 14b. This leg, however, is slightly curved and hence the pockets in the backplate ladder formation have a correspondingly curved shape. The backplate ladders diverge slightly in an upward direction, so that the relative distance between the pockets increases with increasing pocket heights. Located between the backplate ladder formations is an area that can be covered by a covering part 6, with the aid of a touch-and-close fastener.

[0016] Fixation of the U-shaped fasteners 14a, 14b will be evident from figures 2 and 3. The legs of the U-shaped fasteners, which have a mutually mirror-image configuration, are inserted into a chosen pocket in the shoulder strap ladder formations 12a, 12b and thereafter in a chosen pocket in the backplate ladder formations 8a, 8b, or vice versa. There is chosen in the shoulder strap ladder formation a pocket that provides a shoulder strap of desired length and in the backplate ladder formation a pocket that provides a desired point of attachment in the backplate. The fastened U-shaped fastener 14a is shown in figure 3. It will be also seen from figure 3 that the U-shaped fastener includes two bends such that the two legs will lie in mutually different planes, thereby simplifying fitting of the legs. The covering element 6 is then fastened in position, thereby preventing the U-shaped fasteners from moving out of the ladder pockets. The covering element also assists in providing the backplate with a generally smooth surface.

[0017] The described methods of fastening the shoulder straps to the backplate afford many advantages. For instance, only one fastener element 14a, 14b is required for each shoulder strap. With the aid of the single fastener element it is possible to choose both the length of the shoulder strap and its point of attachment to the backplate. The curved lower leg provides a further advantage by virtue of the fact that the shoulder strap is able to rotate or twist relative to the backplate 2, as illustrated by arrows associated with the shoulder strap 10a in figure 2. The divergent backplate ladder formations are effective in causing a higher attachment point to result in a greater mutual distance between the shoulder straps. This often coincides with the wishes of a user, since a tall person that has a long spine and therefore desires a higher point of attachment will often also have broader shoulders than a short person.

[0018] The process in which the waist belt is fastened to the backplate will now be described with reference to figures 4-6. The outwardly facing sides of the wadded belt portion 21 includes two mutually parallel channelling pockets 23a, 23b that are sewn to form a respective groove that extends along a greater part of the belt portion 21. Each of these channelling grooves is intended to accommodate elongate belt stiffening elements 25a, 25b comprised of a rigid but preferably shapeable material, such as aluminium, that is also light in weight. The belt stiffening elements extend in the longitudinal direction of the waist belt along a major part thereof and thus constitute in the waist belt a carcase inlay that can be shaped and adapted to suit the wearer. Located inwardly of the groove-like channelling pockets 23a, 23b and midway of the waist belt are two vertical belt pockets 24a, 24b. These pockets have a size and shape which enable them to accommodate a respective vertical stiffening bars 4a, 4b; cf. figure 1. It will be clearly seen from figure 6 how the stiffening bar 4b is inserted into the vertical belt pocket between the wadded belt portions 21.

[0019] Because the back-plate stiffening bars 4a, 4b are placed inwardly of the belt-stiffening elements or bars 25a, 25b, the belt-stiffening bars will press the back-plate stiffening bars against the bottom of the user's spine, thereby achieving good ergonomics by virtue of the fact that existing forces or loads are distributed more effectively than when the back-plate stiffening bars, and thereby the backplate, are spaced from the user's spine. This taken together with the fact that a carcase inlay can be adapted to an individual user provides a waist belt construction that is very well adapted to take up the large forces that occur when carrying heavily loaded backpacks.

[0020] Although an inventive backpack has been described with reference to a preferred embodiment a person with average skill in this particular technical field will be aware that this embodiment can be varied within the scope of the accompanying claims.

[0021] For example, although U-shaped fasteners of a particular design have been shown, it will be understood that these fasteners can be modified or varied provided that they include a part that can be fastened in one of several pockets in a shoulder strap and that another part can be fastened in one of several pockets on the backplate.

[0022] Although there has been described a waist belt that includes two belt stiffening bars, it will be understood that the number of belt stiffening bars can be varied as desired. Moreover, the belt stiffening bars may be made of a material other than aluminium, such as a plastic material, although the advantage of being able to shape the bars to suit the wearer will then be lost.

[0023] Although the described back pack has extremely good ergonomic properties due to the flexible fastening of the shoulder straps and the adaptability of the waist belt, it will be understood that the described shoulder strap attachment can be used together with a different

type of waist belt or even in the complete absence of a waist belt, and that the described waist belt can be used together with a different type of shoulder strap attachment.

Claims

1. A backpack comprising a backplate (2) that includes a plurality of backplate pockets (8a, 8b) and two shoulder straps (10a, 10b) that are fastened respectively to the backplate at their upper and lower end portions, **characterized by**

   - a plurality of shoulder strap pockets (12a, 12b) disposed at the upper end portion of respective shoulder straps; and by
   - a fastener element (14a, 14b) for respective shoulder straps, wherein a first part (14a', 14b') of the fastener element is inserted into one of a plural of shoulder strap pockets and a second part (14a", 14") is inserted into one of said plural of said backplate pockets.

2. The backpack according to claim 1, in which said plural of backplate pockets (8a, 8b) are disposed horizontally.

3. The backpack according to claim 1 or 2 in which said plural of backplate pockets (8a. 8b) are disposed in ladder-like formations.

4. The backpack according to claim 3 in which the ladder formations (8a, 8b) diverge upwards.

5. The backpack according to any one of claims 1-4 in which the fastener element is a generally U-shaped element (14a, 14b).

6. The backpack according to claim 5 in which the second part of the fastener element (14a", 14b") is a curved leg and in which said plural of backplate pockets (8a, 8b) have a corresponding curved shape.

7. The backpack according to any one of the preceding claims in which the first and the second parts of the fastener element (14a', 14b', 14a", 14b") lie in mutually different planes.

Fig.1

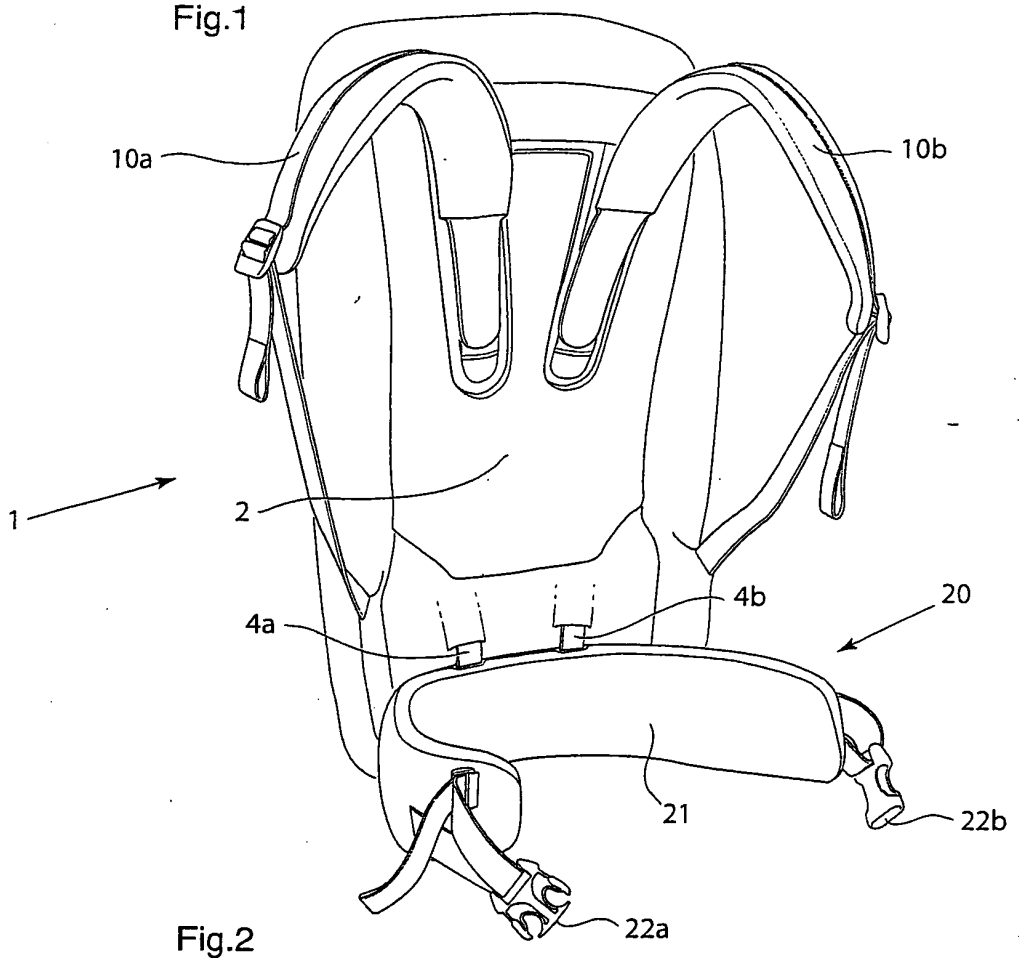

Fig.2

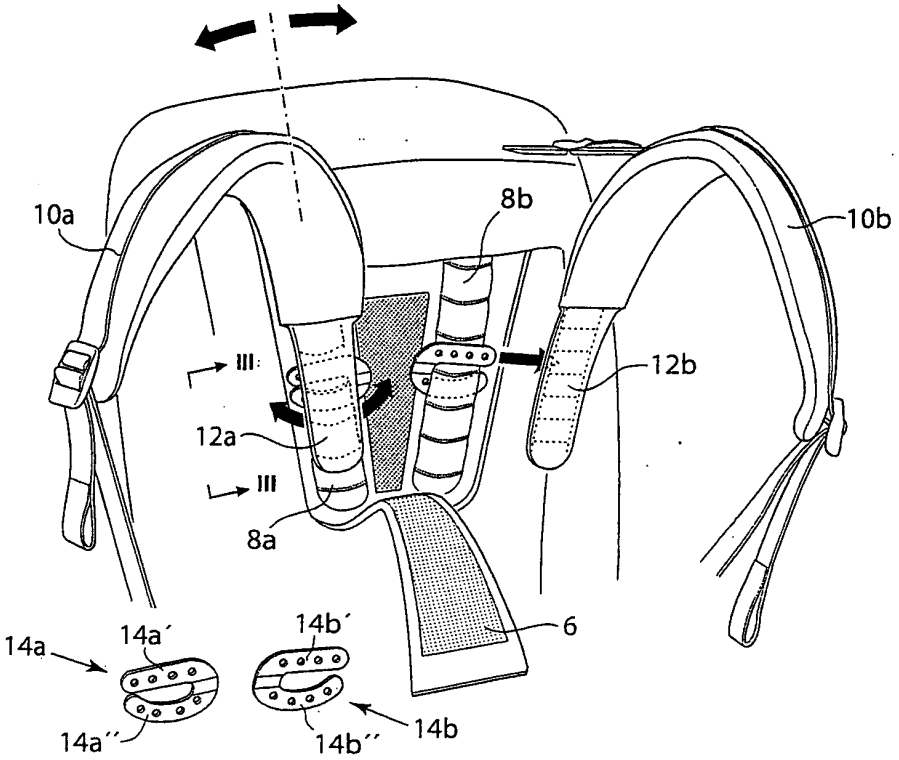

Fig.3

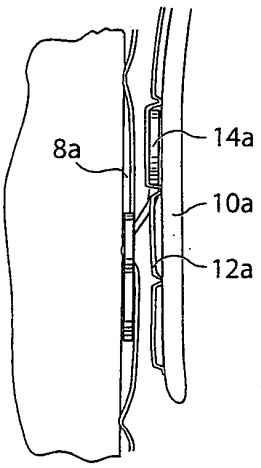

Fig.4

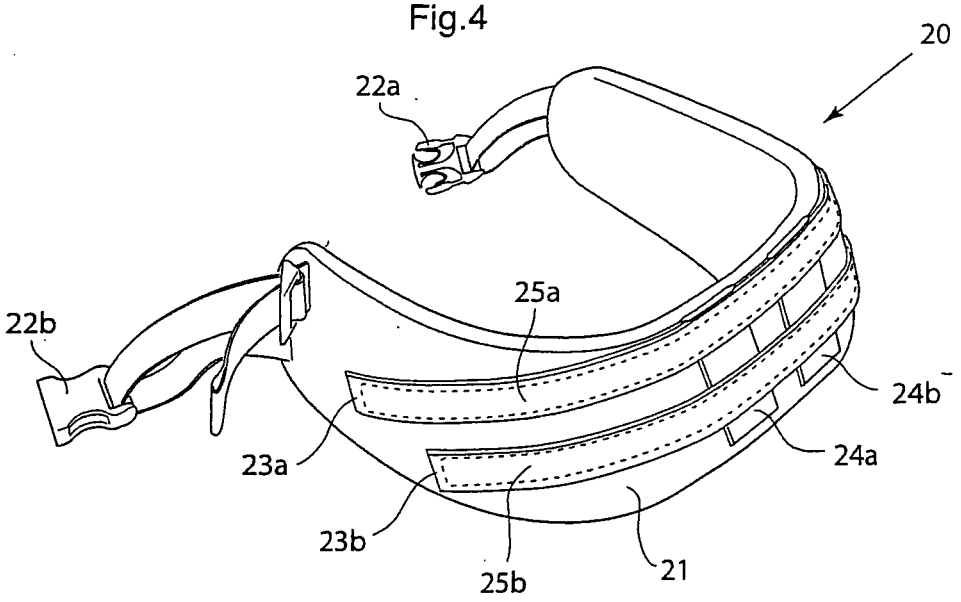

Fig.5

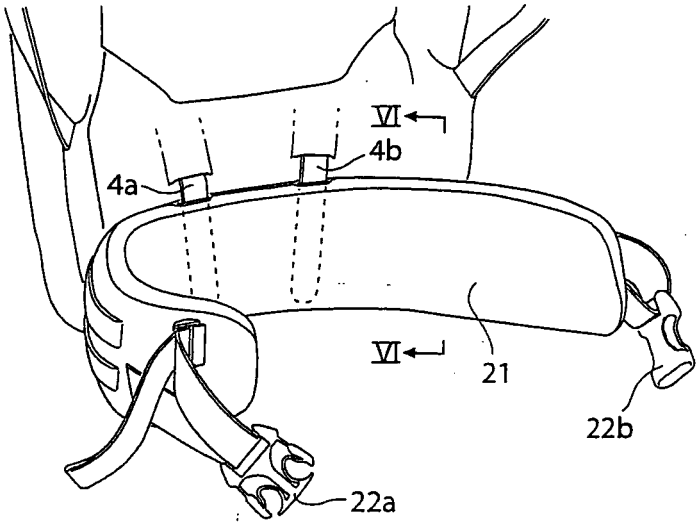

Fig.6