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(54) **SUPPORT FOR A HIP BELT FOR A RUCKSACK**

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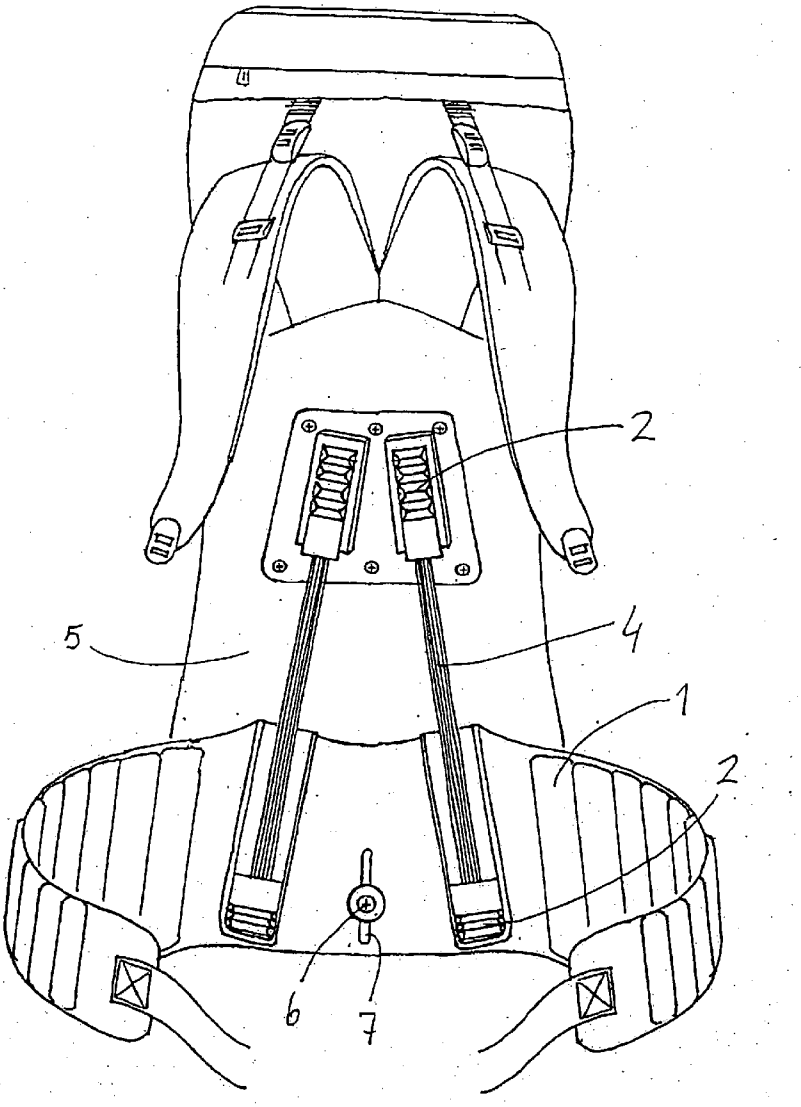
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(57) **ABSTRACT**

Support for transferring the weight of a rucksack with contents to the hip belt (**1**) of the rucksack comprising shock absorbing supports (**2**) secured to the sack (**5**) and to the hip belt (**1**) and where the supports (**2**) are connected with laths (**4**) for transferring of the load, said the hip belt (**1**) being supported vertically displaceable and rotary in relation to the sack (**5**) by means of a rotation link (**3**) being secured to the sack (**5**) and sliding in a slot (**7**) in the hip belt (**1**), whereas the shock absorbing supports (**2**) provide shock absorbing (resilient) resistance against vertical displacement as well as rotation in the rotation link (**3**).



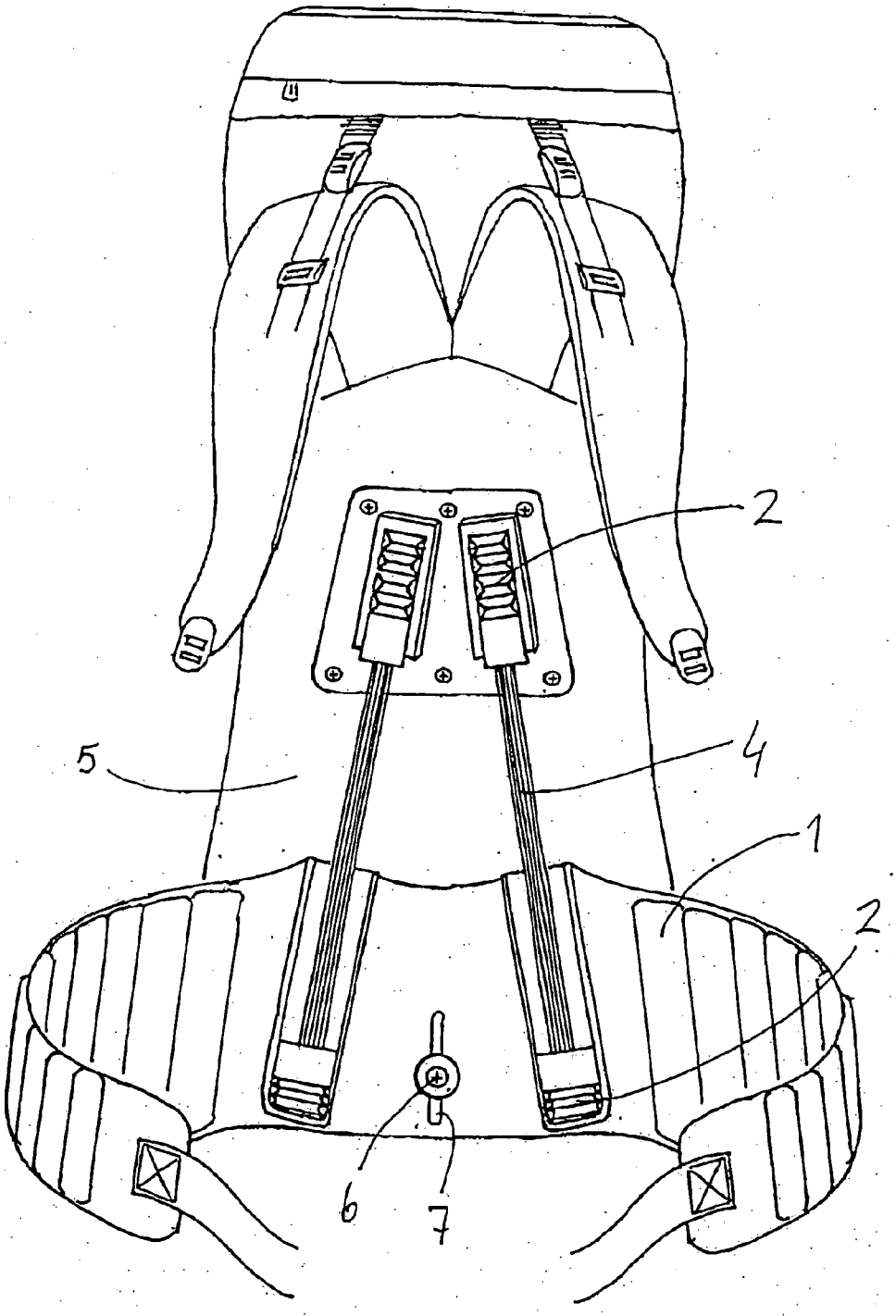


Fig. 1

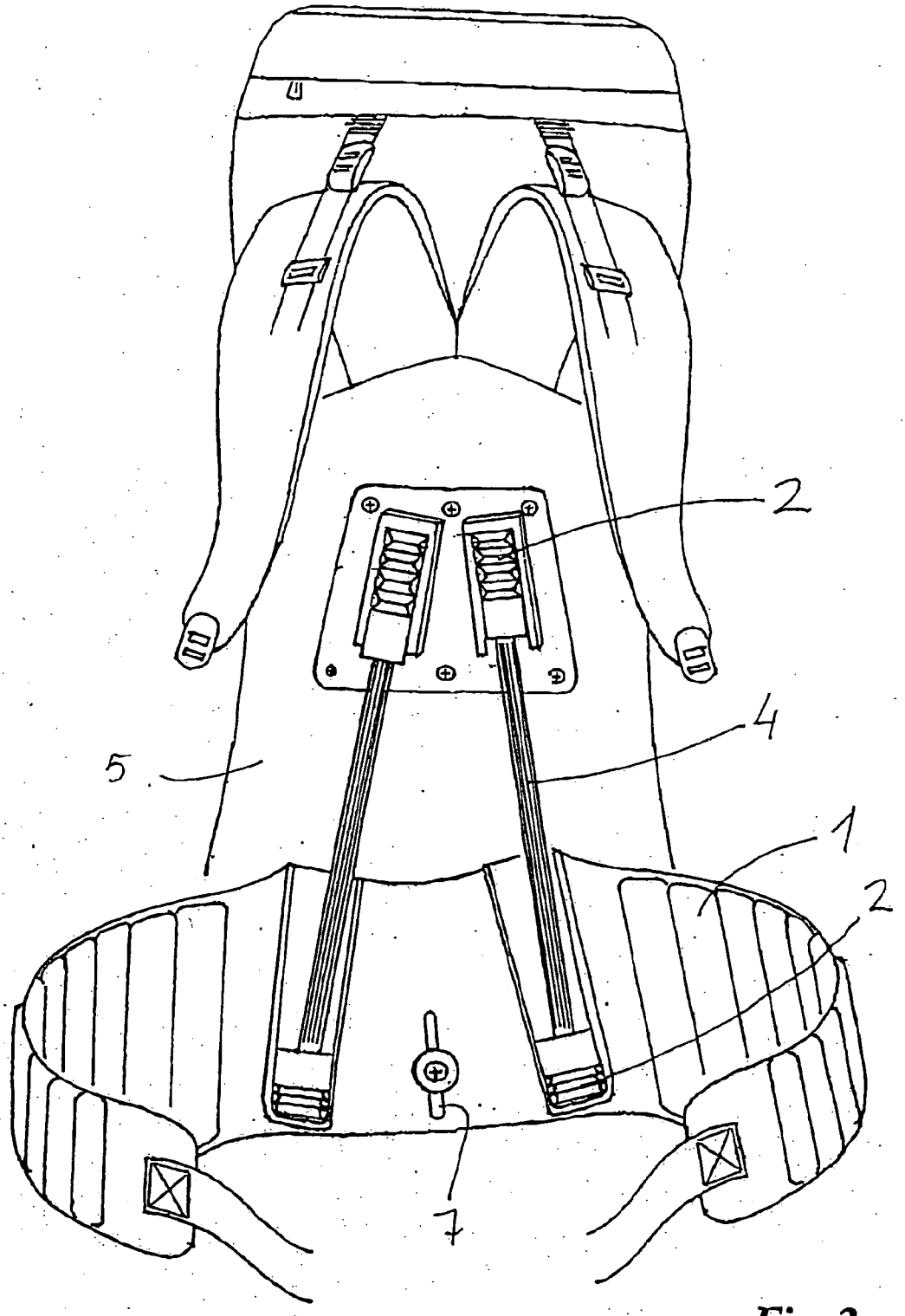


Fig. 2

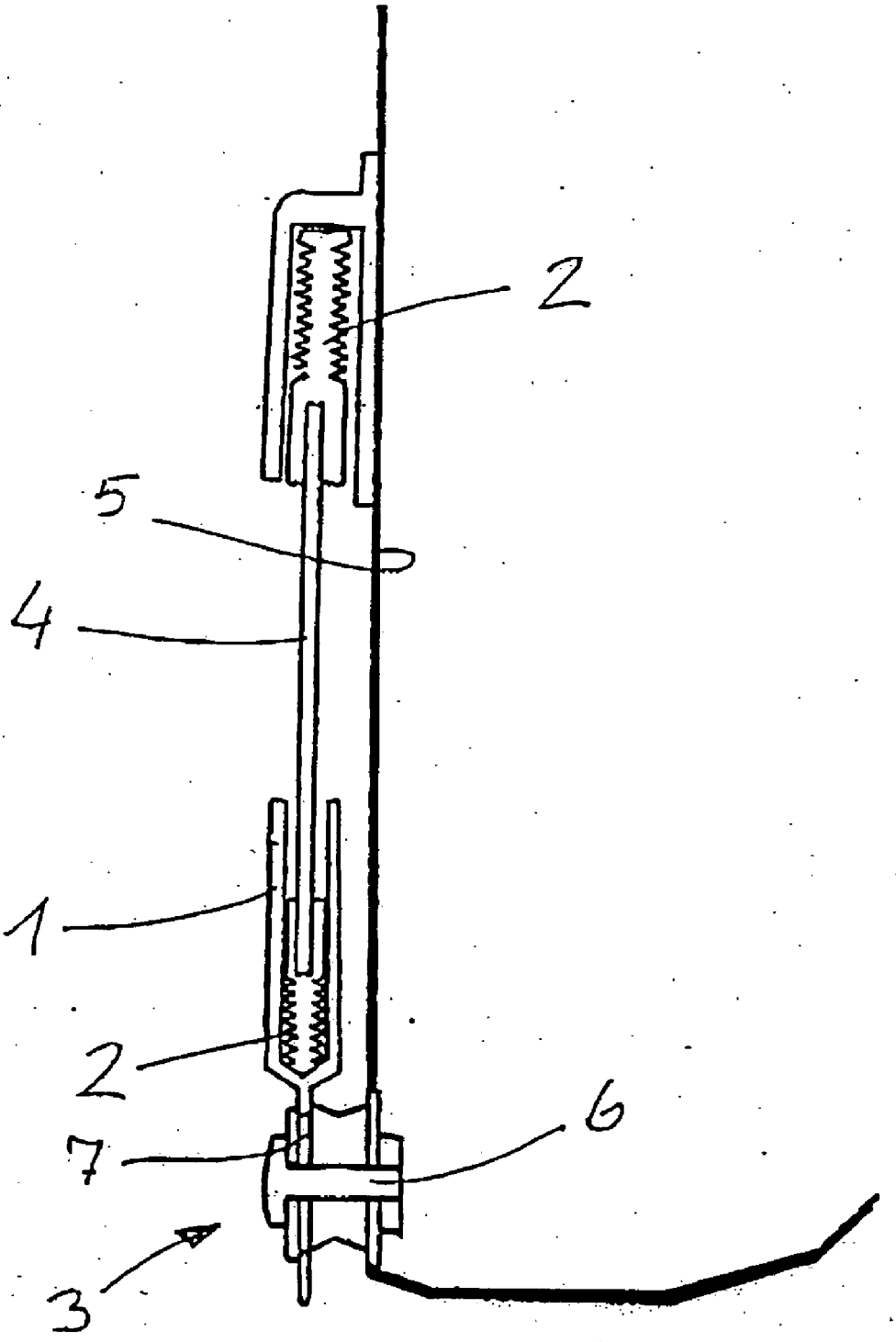


Fig. 3

SUPPORT FOR A HIP BELT FOR A RUCKSACK

[0001] The present invention is related to a means for shock absorbed attachment of the hip belt of a rucksack to the sack of the rucksack, especially for the use on larger rucksacks.

[0002] Many rucksacks have hip belts for relieving the load to the hips. These are today greatly statically arranged. It is well known that it is desirable to have a certain mobility in the hip belt to follow the movements of the body. In existing hip belts made moveable, there are no means for substantial shock absorbing and dampening of the load from the rucksack.

[0003] Known means for movement of the hip belt first of all allow rotation in the vertical plane without a desirable dampening of the rotation and shock absorbing of impacts against the hip belt. The result is that a user very quickly gets tired of the repeated impacts from the weight of the rucksack against the hip and that possible rotational mechanism in the hip belt does not provide a desired stability when carrying heavy packs. Embodiments of rucksacks of the above mentioned type is described among others in Norwegian patent NO 305 192 and in Norwegian patent application 2000 4124.

[0004] The purpose of the present invention is to provide a controlled, dampened rotation and shock absorbing of the load transfer from the rucksack to the user via the hip belt in such a way that a free movement of the hip area in relation to the rucksack, whereas the stability of the rucksack none the less is secured. The movement of the hip belt should be dampened by undesired large rotations by means of a spring suspension means. This is achieved with the means for shock absorbing attachment of a hip belt of a rucksack, to the sack of the rucksack by a combination of a hip belt, one or more shock absorbing links and a rotational link such as defined with the features stated in the claims.

[0005] The drawing discloses in **FIG. 1** schematically a front view of a rucksack with a hip belt, **FIG. 2** discloses the hip belt on **FIG. 1** in an inclined position and **FIG. 2** discloses the hip belt in a vertical section.

[0006] Below the invention is described on the basis of the drawing where **FIG. 1** discloses schematically a rucksack comprising a hip belt **1**, a shock absorbing mechanism **2**, a rotational link **3** and force transferring laths **4**, according to the invention. By uniform load the shock absorbing mechanisms **2**, i.e. only the vertical load, the sack **5** is moved vertically in relation to the hip belt **1** and provide vertical cushioning. **FIG. 2** discloses the hip belt **1** and the rotation link **3** when the hip belt is rotated in the vertical plane, i.e. in case the two laths **4** are influenced differently, whereas the girdle **1** then will rotate around the rotation link **3**. The shock absorbing mechanisms **2** with compressible and shock absorbing parts at both ends of the laths provide a dampening effect on the rotation.

[0007] **FIG. 3** discloses the hip belt **1**, the shock absorbing mechanism **2** and the rotation link **3** in a vertical section as seen from the side, secured to the sack. The rotation link **3** comprises a rivet or screw **6** being secured to the sack and extending through a slot **7** in the hip belt. Thereby the hip belt **1** can rotate around the rivet **6** and then adjust to the hip movements of the user and simultaneously the hip belt **1** can be moved vertically as the rivet **6** with the sack **5** is displaced in the slot **7**. Additionally the hip belt **1** may be displaced vertically in relation to the sack **5** as the rotation link **3** can be moved vertically in the slot **7**.

[0008] With the hip belt according to the present invention a controlled rotation and moveability in the vertical plane is achieved, of the hip belt in relation to the sack of the rucksack, adjusted to the walk of the user. **FIG. 1** discloses in a perspective, the hip belt **1** with the spring means **2** as well as the rotation link **3** secured to the sack.

What is claimed is:

1. Support for transferring the weight of a rucksack with contents to the hip belt (**1**) of the rucksack, comprising shock absorbing supports (**2**) secured to the sack (**5**) and to the hip belt (**1**) and where the supports (**2**) are connected with laths (**4**) for transferring of the load, wherein the hip belt (**1**) is supported vertically displaceable and rotary in relation to the sack (**5**) by means of a rotation link (**3**) being secured to the sack (**5**) and sliding in a slot (**7**) in the hip belt (**1**), whereas the shock absorbing supports (**2**) provide shock absorbing resistance against vertical displacement as well as rotation in the rotation link (**3**).

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