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(54) **SKI RACK SYSTEM**
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Description

[0001] The present application claims the priority right of the Italian patent application 102019000024466 of 12/18/2020, on which it is based.

[0002] The present invention relates to a system for carrying skis, in particular, for fixing and transporting skis on the back of an athlete.

[0003] Ski mountaineering is a sporting activity, even competitive, consisting of climbing snowy slopes, with skis on or over the shoulders.

[0004] This involves the need, for an athlete practicing such activity, to take off and transport the skis during the journeys on foot, and to reattach them when desired.

[0005] For this purpose it is known for athletes to have ski rack systems adapted to support the skis when not in use.

[0006] Such ski rack systems generally comprise a frame, a pair of shoulder straps, and means for supporting and fixing the skis, in particular, at the back of the athlete.

[0007] Known skis supporting and fixing means comprise a lower ski rack support, configured as a semi-rigid annular cord, inside which a lower portion of the pair of skis is inserted and supported.

[0008] Such means further comprise an upper ski rack support, configured as a hook adapted to couple an upper portion of the pair of skis.

[0009] Thereby, the pair of skis is supported and fixed on the ski rack by means of the lower and upper ski rack supports, so that the athlete may carry the skis on the back when not in use.

[0010] Such known ski rack systems, even though they are suitable for supporting and fixing a pair of skis, have drawbacks.

[0011] One of these drawbacks is given by the fact that the upper ski rack, when not in use or when not coupled to the pair of skis, dangles with the risk of getting caught between the belts of the ski rack system.

[0012] Furthermore, always when the upper ski rack is not coupled to the pair of skis, the upper ski rack may not be immediately handled by the athlete, who, especially in a competitive environment, loses precious seconds to look for it and then handle it. Even more time is wasted when the upper ski rack is caught in the ski rack system, since it is necessary, first of all, to untangle it from the ski rack system to then be able to handle it.

[0013] The prior art document "Entdecke jetzt 8 schlaue und einzigartige Features unserer Rucksäcke: DYNAFIT" (YouTube) describes a skis transport system which may be worn on the shoulders and which includes a hook at the upper portion of one of the shoulder straps connected by means of an elastic return element extending inside a guide duct formed by a covering and the shoulder strap itself.

[0014] The prior art document DE 20 2009 001165 U1 describes a ski rack system comprising a lower ring portion, through which to insert the end of the skis.

[0015] The prior art document US 2011/006090 A1 describes a backpack system for transporting rackets which comprises a first ring at the upper portion of a first shoulder strap and a second ring at the lower portion of a second shoulder strap.

[0016] It is therefore the object of the present invention to provide a system for carrying skis having such features as to avoid at least some of the drawbacks of the prior art.

[0017] It is a particular object of the present invention to provide a system for carrying skis which does not get caught in the ski rack system worn by the athlete.

[0018] It is a further particular object of the present invention to provide a system for carrying skis, allowing a pair of skis to be supported by and fastened to the ski rack system, which is fast, easy and comfortable.

[0019] It is a further particular object of the present invention to provide a system for carrying skis which allows a more rapid support and fastening of a pair of skis to the ski rack system.

[0020] These and other objects are achieved by means of a system for carrying skis according to claim 1.

[0021] Dependent claims relate to preferred and advantageous embodiments.

[0022] The features and advantages of the present invention will become more apparent from the description of some preferred embodiments thereof, given below by way of non-limiting example with reference to the accompanying drawings, in which:

- Figure 1 shows a side view of the system for carrying skis in the worn condition;
- Figure 2 shows a perspective view of the system for carrying skis in the worn condition of Figure 1;
- Figure 3 shows a view of a component of the system for carrying skis of Figure 1;
- Figure 4A shows a detail view of the system for carrying skis of Figure 1, in the assembled configuration;
- Figure 4B shows a detail view of the system for carrying skis of Figure 1, in the partially disassembled configuration;
- Figure 5 shows a further view of a component of the system for carrying skis of Figure 1;
- Figure 6A shows a top view of a further component of the system for carrying skis of Figure 1;
- Figure 6B shows a perspective view of the component of Figure 6A;
- Figure 6C shows a further perspective view of the component of Figure 6A;
- Figure 6D shows a further perspective view of the component of Figure 6A, in the partially assembled configuration;
- Figure 7 shows the system for carrying skis of Figure 1, in a first operating configuration;
- Figure 8 shows the system for carrying skis of Figure 1, in a second operating configuration.

[0023] With reference to the figures, a ski rack system is generally indicated with reference numeral 1.

[0024] The system for carrying skis 1 is adapted to be worn over the shoulders by a user, or an athlete 2, and is further configured for the transport of a pair of skis 3 over the shoulders.

[0025] The system for carrying skis 1 comprises a frame 4, a first shoulder strap 5 and a second shoulder strap 6.

[0026] The first shoulder strap 5 and the second shoulder strap 6 are connected to the frame 4.

[0027] An upper end 7 of the first shoulder strap 5 is connected to a first upper portion 8 of the frame 4.

[0028] A lower end 9 of the first shoulder strap 5 is connected to a first lower portion 10 of the frame 4.

[0029] An upper end 11 of the second shoulder strap 6 is connected to a second upper portion 12 of the frame 4.

[0030] A lower end 13 of the second shoulder strap 6 is connected to a second lower portion 14 of the frame 4.

[0031] The system for carrying skis 1 further comprises a lower ski rack support 15, positioned at the first lower portion 10 of the frame 4.

[0032] The system for carrying skis 1 further comprises an upper ski rack support 16, positioned at the second shoulder strap 6.

[0033] According to an aspect of the invention, the upper ski rack support 16 comprises a hook 18 elastically connected to the second shoulder strap 6 by means of an elastic return element 19.

[0034] Furthermore, a covering 20 is connected to the second shoulder strap 6, so that the covering 20 and the second shoulder strap 6 delimit a guide duct 21 extending from the upper end 11 to the lower end 13 of the second shoulder strap 6, i.e., in the direction of the length of the second shoulder strap 6.

[0035] Furthermore, the elastic return element 19 extends through the guide duct 21 formed by the covering 20 and the second shoulder strap 6.

[0036] Advantageously, thereby, the elastic return element 19 and the hook 18 connected thereto are constrained to the second shoulder strap 6 and the elastic return element 19, connected to the hook 18, is therefore prevented from getting caught on the system for carrying skis 1 worn by the athlete 2.

[0037] With a further advantage, such configuration reduces the time required to couple the pair of skis 3 to the system for carrying skis

[0038] According to a preferred embodiment, the elastic return element 19 is configured as a cord, in particular a spiral cord.

[0039] According to the invention, a contrast element 22 is integrally connected to the covering 20 and to the second shoulder strap 6, at the upper end 11 of the second shoulder strap 6.

[0040] The contrast element 22 forms a central through hole 23, through which the elastic return element 19 connected to the hook 18 extends.

[0041] In accordance with the invention, the contrast element 22 and the central through hole 23 are sized so

that the elastic element 19 may slide inside the central through hole 23, and the hook 18 may partially be inserted into the central through hole 23 but cannot cross the central through hole 23.

[0042] Advantageously, thereby, the hook 18, when it is not in use or when it is not fixed to the pair of skis 3, is elastically constrained so as to partially extend outside the guide duct 21, and therefore be readily available for the athlete 2 who intended to grab and handle it.

[0043] With a further advantage, when the hook 18 is released from the connection to the pair of skis 3, the elastic return element 19 returns the hook 18 towards the contrast element 22, so that the elastic hook 18 is partially inserted into the central through hole 23 and partially protrudes from the guide duct 21.

[0044] Therefore, the elastic return element 19 independently repositions the hook 18, when released from the connection to the pair of skis 3.

[0045] This considerably increases the speed and the convenience of handling and using the ski rack system 1.

[0046] According to an embodiment, the contrast element 22 forms a first slot 24, for the passage of first connection means 27 for a connection between the contrast element 22 and the covering 20, and a second slot 25 for the passage of second connection means 28 for a connection between the contrast element 22 and the second shoulder strap 6.

[0047] Advantageously, the first slot 24 and the second slot 25 ensure a firm and simple connection between the contrast element 22 and the covering 20 and the second shoulder strap 6.

[0048] According to an embodiment, the elastic return element 19 slides inside a tubular covering made of a polymeric material 26.

[0049] Advantageously, the polymeric material 26 protects the elastic return element 19 from any damage and/or tearing.

[0050] As for the lower ski rack support 15, according to an embodiment of the invention, this comprises a rigid annular element.

[0051] The rigid annular element forms an annular opening which defines a threading direction, for threading a lower portion of the pair of skis 3 inside the rigid annular element.

[0052] The rigid annular element is further configured to vertically support the pair of skis 3, and, in particular, to support the attachments of the pair of skis 3.

[0053] Advantageously, the rigid annular element allows to insert a lower portion of the pair of skis 3 inside the rigid annular element along a threading direction parallel to the length direction of the pair of skis 3.

[0054] According to an alternative embodiment, the lower ski rack support 15 comprises a support element 30 in the shape of an open channel and having two ends 31, 31'.

[0055] The support element 30 forms a first opening 33 defining a first insertion direction 34.

[0056] The two ends 31, 31' of the support element 30

form a second opening 35 defining a second insertion direction 36 transversal to the first insertion direction 34.

[0057] The lower ski rack support 15 further comprises a closing element 32.

[0058] The closing element 32 extends between the two ends 31, 31' of the support element 30.

[0059] The closing element 32 may be moved between a closing position, in which the second opening 35 closes, and an opening position, in which the second opening 35 opens.

[0060] Advantageously, a system for carrying skis 1 thus configured ensures an easy, comfortable and less physically challenging support and fixing of a pair of skis 3 to the system for carrying skis 1, and, in particular, with reference to the insertion, support and fixing of a lower portion of the pair of skis 3.

[0061] In fact, the possibility of introducing the pair of skis 3, and, in particular, the lower portion of the pair of skis 3, through the second opening 35 along the second insertion direction 36, avoids having to lift the pair of skis 3 to a height from the ground higher than that at which the lower ski rack support 15 is located.

[0062] Furthermore, with particular reference to competitive practice, such configuration of the system for carrying skis 1 considerably reduces the time required to fix the pair of skis 3 to the ski rack system 1.

[0063] The second insertion direction 36 is advantageously horizontal, therefore it allows to insert the pair of skis 3, which extend in length along a length direction, inside the lower ski rack support 15 along a direction transversal to the direction of the extension in length of the pair of skis 3, thus reducing the complexity, the effort and the time required to insert the pair of skis 3 inside the lower ski rack support 15.

[0064] The first insertion direction 34 is vertical, therefore it is still possible to insert the pair of skis 3 into the lower ski rack support 15 also from top downwards.

[0065] The support element 30 of the lower ski rack support 15 forms a vertical support wall 37 configured to support the pair of skis 3 vertically, and, in particular, to support the attachments of the pair of skis 3.

[0066] According to an embodiment, the closing element 32 consists of a spring element 38.

[0067] The spring element 38 is hinged to one of the two ends 31, 31' of the support element 30, and is elastically biased against the other of the two ends 31, 31' of the support element 30, to a closing position, so as to close the second opening 35.

[0068] The spring element 38 is rotatable towards the interior of the lower ski rack support 15, towards the opening position, so as to open the second opening 35.

[0069] Advantageously, by rotating towards the inside of the second opening 35, the manual movement of the spring element 38 is avoided to open the second opening 35, which is instead opened exclusively by contact with the pair of skis 3. Furthermore, after inserting the pair of skis 3 inside the lower ski rack support 15, the spring element 38 automatically closes, locking the pair of skis

3 inside the lower ski rack support 15.

[0070] According to an alternative embodiment, the spring element 38 is configured to rotate towards the outside of the lower ski rack support 15.

[0071] According to an embodiment, when the system for carrying skis 1 is worn by an athlete 2, the first shoulder strap 5 corresponds to a right shoulder strap and the second shoulder strap 6 corresponds to a left shoulder strap.

[0072] According to an alternative embodiment, the first shoulder strap 5 corresponds to the left shoulder strap and the second shoulder strap 6 corresponds to the right shoulder strap.

[0073] According to a further aspect of the invention, a ski backpack 17 comprises the system for carrying skis 1 described above.

[0074] The ski backpack 17 has two shoulder straps which correspond, respectively, to the first shoulder strap 5 and to the second shoulder strap 6.

[0075] According to an embodiment, the ski backpack 17 may comprise one or more housings or systems for containing and/or transporting one or more further ski mountaineering tools, such as, for example, a helmet, an ice ax, crampons, and other material useful to the sportsman or athlete.

[0076] According to a further aspect of the invention, a method for securing and supporting a pair of skis 3, extending along a length direction, and having attachments, on the back of an athlete 2, comprises the following steps:

- providing a system for carrying skis 1 fitted with a frame 4, a first shoulder strap 5, a second shoulder strap 6, a lower ski rack support 15 and an upper ski rack support 16;
- wearing the system for carrying skis 1 over the shoulders;
- inserting a lower portion of the pair of skis 3 into the lower ski rack support 15, wherein the insertion direction of the pair of skis 3 into the lower ski rack support 15 is transversal to the length direction of the pair of skis 3;
- coupling the attachments of the pair of skis 3 to the lower ski rack support 15, for vertically supporting the pair of skis 3;
- coupling an upper portion of the pair of skis 3 to the upper ski rack support 16.

[0077] According to an alternative embodiment, a method for securing and supporting a pair of skis 3, extending along a length direction and having attachments, on the back of an athlete 2, comprises the following steps:

- providing a system for carrying skis 1 fitted with a frame 4, a first shoulder strap 5, a second shoulder strap 6, a lower ski rack support 15 and an upper ski rack support 16;
- wearing the system for carrying skis 1 over the shoulders;

ders;

- inserting a lower portion of the pair of skis 3 into the lower ski rack support 15, wherein the insertion direction of the pair of skis 3 into the lower ski rack support 15 is parallel to the length direction of the pair of skis 3;
- coupling the attachments of the pair of skis 3 to the lower ski rack support 15, for vertically supporting the pair of skis 3;
- coupling an upper portion of the pair of skis 3 to the upper ski rack support 16.

[0078] According to a further aspect of the invention, a method for securing and supporting a pair of skis 3, extending along a length direction, and having attachments, on the back of an athlete 2, comprises the following steps:

- providing a ski backpack 17 equipped with a system for carrying skis 1 fitted with a frame 4, a first shoulder strap 5, a second shoulder strap 6, a lower ski rack support 15 and an upper ski rack support 16;
- wearing the ski backpack 17 over the shoulders;
- inserting a lower portion of the pair of skis 3 into the lower ski rack support 15, wherein the insertion direction of the pair of skis 3 into the lower ski rack support 15 is transversal to the length direction of the pair of skis 3;
- coupling the attachments of the pair of skis 3 to the lower ski rack support 15, for vertically supporting the pair of skis 3;
- coupling an upper portion of the pair of skis 3 to the upper ski rack support 16.

[0079] According to an alternative embodiment, a method for securing and supporting a pair of skis 3, extending along a length direction and having attachments, on the back of an athlete 2, comprises the following steps:

- providing a ski backpack 17 equipped with a ski rack system 1 fitted with a frame 4, a first shoulder strap 5, a second shoulder strap 6, a lower ski rack support 15 and an upper ski rack support 16;
- wearing the system for carrying skis 1 over the shoulders;
- inserting a lower portion of the pair of skis 3 into the lower ski rack support 15, wherein the insertion direction of the pair of skis 3 into the lower ski rack support 15 is parallel to the length direction of the pair of skis 3;
- coupling the attachments of the pair of skis 3 to the lower ski rack support 15, for vertically supporting the pair of skis 3;
- coupling an upper portion of the pair of skis 3 to the upper ski rack support 16.

[0080] Naturally, those skilled in the art will be able to make modifications or adaptations to the present inven-

tion, without however departing from the scope of the claims below.

5 Claims

1. A system for carrying skis (1), adapted to be worn over the shoulder by an athlete (2), and configured to transport, over the shoulder, a pair of skis (3), said system for carrying skis (1) comprising:

- a frame (4);
- a first shoulder strap (5) and a second shoulder strap (6), connected to the frame (4); wherein an upper end (7) of the first shoulder strap (5) is connected to a first upper portion (8) of the frame (4), and a lower end (9) of the first shoulder strap (5) is connected to a first lower portion (10) of the frame (4); wherein an upper end (11) of the second shoulder strap (6) is connected to a second upper portion (12) of the frame (4), and a lower end (13) of the second shoulder strap (6) is connected to a second lower portion (14) of the frame (4) ;

- a lower ski support (15), positioned at the first lower portion (10) of the frame (4);
- an upper ski support (16), positioned at the second shoulder strap (6);

wherein the upper ski support (16) comprises a hook (18) elastically connected to the second shoulder strap (6) by means of an elastic return element (19),

and wherein a covering (20) is connected to the second shoulder strap (6), so that the covering (20) and the second shoulder strap (6) delimit a guide duct (21) extending from the upper end (11) to the lower end (13) of the second shoulder strap (6),

and wherein the elastic return element (19) extends through the guide duct (21) formed by the covering (20) and the second shoulder strap (6), and **characterised in that**,

a contrast element (22) is integrally connected to the covering (20) and to the second shoulder strap (6), at the upper end (11) of the second shoulder strap (6), wherein the contrast element (22) forms a central through hole (23),

wherein the elastic return element (19), connected to the hook (18), extends through the central through hole (23),

and wherein the contrast element (22) and the central through hole (23) are sized so that the elastic element (19) can slide inside the central through hole (23), and the hook (18) can partially be inserted into the central through hole (23) but cannot cross the central through hole (23).

2. A system for carrying skis (1) according to the claim 1, wherein the lower ski support (15) comprises:

- a support element (30) in the shape of an open channel, and having two ends (31, 31');
 - a closing element (32);
 wherein the support element (30) forms a first opening (33) defining a first insertion direction (34),
 wherein the two ends (31, 31') of the support element (30) form a second opening (35) defining a second insertion direction (36) transversal to the first insertion direction (34);
 wherein the closing element (32) extends between the two ends (31, 31') of the support element (30), said closing element (32) being movable between a closing position, in which it closes the second opening (35), and an opening position, in which it opens the second opening (35).

3. A system for carrying skis (1) according to claim 2, wherein the support element (30) of the lower ski support (15) forms a vertical support wall (37) configured to support the pair of skis (3) vertically.

4. A system for carrying skis (1) according to claim 2 or 3, wherein the closing element (32) consists of a spring element (38).

5. A system for carrying skis (1) according to claim 4, wherein the spring element (38) is hinged to one of the two ends (31, 31') of the support element (30) and elastically biased against the other of the two ends (31, 31') of the support element (30) to a closing position, so as to close the second opening (35).

6. A system for carrying skis (1) according to claim 5, wherein the spring element (38) is rotatable towards the interior of the lower ski support (15), towards the opening position, so as to open the second opening (35).

7. A system for carrying skis (1) according to claim 6, wherein the contrast element (22) forms a first slot (24) for the passage of first connection means (27) for a connection between the contrast element (22) and the covering (20), and a second slot (25) for the passage of second connection means (28) for a connection between the contrast element (22) and the second shoulder strap (6).

8. A system for carrying skis (1) according to any one of the preceding claims, wherein the elastic return element (19) slides inside a tubular covering (26) made of a polymeric material.

9. A system for carrying skis (1) according to any one of the preceding claims, wherein the lower ski sup-

port (15) comprises a rigid annular element forming an annular opening which defines a threading direction, for threading a lower portion of the pair of skis (3) into the rigid annular element.

10. A system for carrying skis according to any one of the claims from 1 to 8, wherein the lower ski support (15) comprises:

- a support element (30) in the shape of an open channel, and having two ends (31, 31');
 - a closing element (32);
 wherein the support element (30) forms a first opening (33) defining a first insertion direction (34),
 wherein the two ends (31, 31') of the support element (30) form a second opening (35) defining a second insertion direction (36) transversal to the first insertion direction (34);
 wherein the closing element (32) extends between the two ends (31, 31') of the support element (30), said closing element (32) being movable between a closing position, in which it closes the second opening (35), and an opening position, in which it opens the second opening (35).

11. A system for carrying skis (1) according to claim 10, wherein the support element (30) of the lower ski support (15) forms a vertical support wall (37) configured to support the pair of skis (3) vertically.

12. A system for carrying skis (1) according to claim 10 or 11, wherein the closing element (32) consists of a spring element (38).

13. A system for carrying skis (1) according to claim 12, wherein the spring element (38) is hinged to one of the two ends (31, 31') of the support element (30) and elastically biased against the other of the two ends (31, 31') of the support element (30) to a closing position, so as to close the second opening (35).

14. A system for carrying skis (1) according to claim 13, wherein the spring element (38) is rotatable towards the interior of the lower ski support (15), towards the opening position, so as to open the second opening (35).

15. A backpack (17), comprising the system for carrying skis (1) according to any one of the claims from 1 to 14.

16. A backpack (17) according to the preceding claim, comprising one or more housings or systems for containing and/or transporting one or more further tools of ski mountaineering.

17. A method for securing and supporting a pair of skis

(3) extending along a length direction and having attachments, on the back of an athlete (2), comprises the following steps:

- providing a system for carrying skis (1) fitted with a frame (4), a first shoulder strap (5), a second shoulder strap (6), a lower ski support (15) and an upper ski support (16) according to claims 1 and 10; 5
- wearing the system for carrying skis (1) over the shoulders; 10
- inserting a lower portion of the pair of skis (3) into the lower ski support (15), wherein the insertion direction of the pair of skis (3) into the lower ski support (15) is transversal to the length direction of the pair of skis (3); 15
- coupling the attachments of the pair of skis (3) to the lower ski support (15), for vertically supporting the pair of skis (3);
- coupling an upper portion of the pair of skis (3) to the upper ski support (16). 20

18. A method for securing and supporting a pair of skis (3) extending along a length direction and having attachments, on the back of an athlete (2), comprises the following steps: 25

- providing a system for carrying skis (1) fitted with a frame (4), a first shoulder strap (5), a second shoulder strap (6), a lower ski support (15) and an upper ski support (16) according to claims 1 and 9; 30
- wearing the system for carrying skis (1) over the shoulders;
- inserting a lower portion of the pair of skis (3) into the lower ski support (15), wherein the insertion direction of the pair of skis (3) into the lower ski support (15) is parallel to the length direction of the pair of skis (3); 35
- coupling the attachments of the pair of skis (3) to the lower ski support (15), for vertically supporting the pair of skis (3); 40
- coupling an upper portion of the pair of skis (3) to the upper ski support (16). 45

19. A method for securing and supporting a pair of skis (3), extending along a length direction and having attachments, on the back of an athlete (2), comprises the following steps: 50

- providing a ski backpack (17) equipped with a system for carrying skis (1) fitted with a frame (4), a first shoulder strap (5), a second shoulder strap (6), a lower ski support (15) and an upper ski support (16) according to claims 1, 10 and 15; 55
- wearing the ski backpack (17) over the shoulders;
- inserting a lower portion of the pair of skis (3)

into the lower ski support (15), wherein the insertion direction of the pair of skis (3) into the lower ski support (15) is transversal to the length direction of the pair of skis (3);

- coupling the attachments of the pair of skis (3) to the lower ski support (15), for vertically supporting the pair of skis (3);
- coupling an upper portion of the pair of skis (3) to the upper ski support (16).

20. A method for securing and supporting a pair of skis (3), extending along a length direction and having attachments, on the back of an athlete (2), comprises the following steps:

- providing a ski backpack (17) equipped with a system for carrying skis (1) fitted with a frame (4), a first shoulder strap (5), a second shoulder strap (6), a lower ski support (15) and an upper ski support (16) according to claims 1, 9 and 15;
- wearing the ski backpack (17) over the shoulders;
- inserting a lower portion of the pair of skis (3) into the lower ski support (15), wherein the insertion direction of the pair of skis (3) into the lower ski support (15) is parallel to the length direction of the pair of skis (3);
- coupling the attachments of the pair of skis (3) to the lower ski support (15), for vertically supporting the pair of skis (3);
- coupling an upper portion of the pair of skis (3) to the upper ski support (16).

Patentansprüche

1. System zum Tragen von Skiern (1), welches dazu eingerichtet ist, über der Schulter von einem Athleten (2) getragen zu sein, und dazu konfiguriert ist, über der Schulter ein Paar von Skiern (3) zu transportieren, wobei das System zum Tragen von Skiern (1) umfasst:

- einen Rahmen (4);
- einen ersten Schultergurt (5) und einen zweiten Schultergurt (6), welche mit dem Rahmen (4) verbunden sind;
- wobei ein oberes Ende (7) des ersten Schultergurts (5) mit einem ersten oberen Abschnitt (8) des Rahmens (4) verbunden ist, und ein unteres Ende (9) des ersten Schultergurts (5) mit einem ersten unteren Abschnitt (10) des Rahmens (4) verbunden ist;
- wobei ein oberes Ende (11) des zweiten Schultergurts (6) mit einem zweiten oberen Abschnitt (12) des Rahmens (4) verbunden ist, und ein unteres Ende (13) des zweiten Schultergurts (6) mit einem zweiten unteren Abschnitt (14) des

Rahmens (4) verbunden ist;

- eine untere Skihalterung (15), welche an dem ersten unteren Abschnitt (10) des Rahmens (4) positioniert ist;
- eine obere Skihalterung (16), welche an dem zweiten Schultergurt (6) positioniert ist;

wobei die obere Skihalterung (16) einen Haken (18) umfasst, welcher mit dem zweiten Schultergurt (6) mit Hilfe eines elastischen Rückstellelements (19) elastisch verbunden ist, und wobei eine Abdeckung (20) mit dem zweiten Schultergurt (6) verbunden ist, sodass die Abdeckung (20) und der zweite Schultergurt (6) ein Führungsstück (21) begrenzen, welches sich von dem oberen Ende (11) zu dem unteren Ende (13) des zweiten Schultergurts (6) erstreckt, und wobei das elastische Rückstellelement (19) sich durch das Führungsstück (21) erstreckt, welches durch die Abdeckung (20) und den zweiten Schultergurt (6) gebildet ist, und **dadurch gekennzeichnet, dass** ein Kontrastelement (22) mit der Abdeckung (20) und dem zweiten Schultergurt (6) integral an dem oberen Ende (11) des zweiten Schultergurts (6) verbunden ist, wobei das Kontrastelement (22) ein zentrales Durchgangsloch (23) bildet, wobei das elastische Rückstellelement (19), welches mit dem Haken (18) verbunden ist, sich durch das zentrale Durchgangsloch (23) erstreckt, und wobei das Kontrastelement (22) und das zentrale Durchgangsloch (23) ausgelegt sind, sodass das elastische Element (19) innerhalb des zentralen Durchgangslochs (23) gleiten kann, und der Haken (18) teilweise in dem zentralen Durchgangsloch (23) eingeführt werden kann, jedoch das zentrale Durchgangsloch (23) nicht durchqueren kann.

2. System zum Tragen von Skiern (1) nach Anspruch 1, wobei die untere Skihalterung (15) umfasst:

- ein Halterungselement (30), in der Form eines offenen Kanals, und welches zwei Enden (31, 31') aufweist;
 - ein Schließungselement (32);
- wobei das Halterungselement (30) eine erste Öffnung (33) bildet, welche eine erste Einführrichtung (34) definiert, wobei die zwei Enden (31, 31') des Halterungselements (30) eine zweite Öffnung (35) bilden, welche eine zweite Einführrichtung (36) transversal zu der ersten Einführrichtung (34) definiert;
- wobei sich das Schließungselement (32) zwischen den zwei Enden (31, 31') des Halterungs-

elements (30) erstreckt, wobei das Schließungselement (32) zwischen einer Schließungsposition, in welcher es die zweite Öffnung (35) verschließt, und einer Öffnungsposition, in welcher es die zweite Öffnung (35) öffnet, bewegbar ist.

3. System zum Tragen von Skiern (1) nach Anspruch 2, wobei das Halterungselement (30) der unteren Skihalterung (15) eine vertikale Halterungswand (37) bildet, welche dazu konfiguriert ist, das Paar von Skiern (3) vertikal zu halten.
4. System zum Tragen von Skiern (1) nach Anspruch 2 oder 3, wobei das Schließungselement (32) aus einem Federelement (38) besteht.
5. System zum Tragen von Skiern (1) nach Anspruch 4, wobei das Federelement (38) an einem der zwei Enden (31, 31') des Halterungselements (30) angelenkt ist und gegen das andere der zwei Enden (31, 31') des Halterungselements (30) zu einer Schließungsposition elastisch vorgespannt ist, um so die zweite Öffnung (35) zu schließen.
6. System zum Tragen von Skiern (1) nach Anspruch 5, wobei das Federelement (38) zu dem inneren der unteren Skihalterung (15) rotierbar ist, zu der Öffnungsposition, um so die zweite Öffnung (35) zu öffnen.
7. System zum Tragen von Skiern (1) nach Anspruch 6, wobei das Kontrastelement (22) einen ersten Spalt (24) für den Durchgang von ersten Verbindungsmitteln (27) für eine Verbindung zwischen dem Kontrastelement (22) und der Abdeckung (20) und einen zweiten Spalt (25) für den Durchgang von zweiten Verbindungsmitteln (28) für eine Verbindung zwischen dem Kontrastelement (22) und dem zweiten Schultergurt (6) bildet.
8. System zum Tragen von Skiern (1) nach einem der vorhergehenden Ansprüche, wobei das elastische Rückstellelement (19) innerhalb einer schlauchförmigen Abdeckung (26) gleitet, welche aus einem polymeren Material hergestellt ist.
9. System zum Tragen von Skiern (1) nach einem der vorhergehenden Ansprüche, wobei die untere Skihalterung (15) ein rigides ringförmiges Element umfasst, welches eine ringförmige Öffnung bildet, welche eine Einfädelrichtung für ein Einfädeln eines unteren Abschnitts des Paares von Skiern (3) in das rigide ringförmige Element definiert.
10. System zum Tragen von Skiern (1) nach einem der Ansprüche 1 bis 8, wobei die untere Skihalterung (15) umfasst:

- ein Halterungselement (30), in der Form eines offenen Kanals, und welches zwei Enden (31, 31') aufweist;
- ein Schließungselement (32);
- wobei das Halterungselement (30) eine erste Öffnung (33) bildet, welche eine erste Einführrichtung (34) definiert,
- wobei die zwei Enden (31, 31') des Halterungselements (30) eine zweite Öffnung (35) bilden, welche eine zweite Einführrichtung (36) transversal zu der ersten Einführrichtung (34) definiert;
- wobei sich das Schließungselement (32) zwischen den zwei Enden (31, 31') des Halterungselements (30) erstreckt, wobei das Schließungselement (32) zwischen einer Schließungsposition, in welcher es die zweite Öffnung (35) verschließt, und einer Öffnungsposition, in welcher es die zweite Öffnung (35) öffnet, bewegbar ist.
11. System zum Tragen von Skiern (1) nach Anspruch 10, wobei das Halterungselement (30) der unteren Skihalterung (15) eine vertikale Halterungswand (37) bildet, welche dazu konfiguriert ist, das Paar von Skiern (3) vertikal zu halten.
12. System zum Tragen von Skiern (1) nach Anspruch 10 oder 11, wobei das Schließungselement (32) aus einem Federelement (38) besteht.
13. System zum Tragen von Skiern (1) nach Anspruch 12, wobei das Federelement (38) an einem der zwei Enden (31, 31') des Halterungselements (30) angelenkt ist und gegen das andere der zwei Enden (31, 31') des Halterungselements (30) zu einer Schließungsposition elastisch vorgespannt ist, um so die zweite Öffnung (35) zu schließen.
14. System zum Tragen von Skiern (1) nach Anspruch 13, wobei das Federelement (38) zu dem inneren der unteren Skihalterung (15) rotierbar ist, zu der Öffnungsposition, um so die zweite Öffnung (35) zu öffnen.
15. Rucksack (17), welcher das System zum Tragen von Skiern (1) nach einem der Ansprüche 1 bis 14 umfasst.
16. Rucksack (17) nach dem vorhergehenden Anspruch, welcher eines oder mehrere Gehäuse oder Systeme für ein Enthalten und/oder Transportieren von einem oder mehreren weiteren Werkzeugen des Skibergsteigens umfasst.
17. Verfahren zum Sichern und Haltern eines Paares von Skiern (3), welche sich entlang einer Längsrichtung erstrecken und Zusätze an dem Rücken eines Athleten (2) aufweisen, umfassend die folgenden Schritte:
- Bereitstellen eines Systems zum Tragen von Skiern (1), welches mit einem Rahmen (4), einem ersten Schultergurt (5), einem zweiten Schultergurt (6), einer unteren Skihalterung (15) und einer oberen Skihalterung (16) ausgestattet ist, nach den Ansprüchen 1 und 10;
- Tragen des Systems zum Tragen von Skiern (1) über den Schultern;
- Einführen eines unteren Abschnitts des Paares von Skiern (3) in die untere Skihalterung (15), wobei die Einführrichtung des Paares von Skiern (3) in die untere Skihalterung (15) transversal zu der Längsrichtung des Paares von Skiern (3) ist;
- Koppeln der Zusätze des Paares von Skiern (3) mit der unteren Skihalterung (15), um das Paar von Skiern (3) vertikal zu halten;
- Koppeln eines oberen Abschnitts des Paares von Skiern (3) mit der oberen Skihalterung (16).
18. Verfahren zum Sichern und Haltern eines Paares von Skiern (3), welche sich entlang einer Längsrichtung erstrecken und Zusätze an dem Rücken eines Athleten (2) aufweisen, umfassend die folgenden Schritte:
- Bereitstellen eines Systems zum Tragen von Skiern (1), welches mit einem Rahmen (4), einem ersten Schultergurt (5), einem zweiten Schultergurt (6), einer unteren Skihalterung (15) und einer oberen Skihalterung (16) ausgestattet ist, nach den Ansprüchen 1 und 9;
- Tragen des Systems zum Tragen von Skiern (1) über den Schultern;
- Einführen eines unteren Abschnitts des Paares von Skiern (3) in die untere Skihalterung (15), wobei die Einführrichtung des Paares von Skiern (3) in die untere Skihalterung (15) parallel zu der Längsrichtung des Paares von Skiern (3) ist;
- Koppeln der Zusätze des Paares von Skiern (3) mit der unteren Skihalterung (15), um das Paar von Skiern (3) vertikal zu halten;
- Koppeln eines oberen Abschnitts des Paares von Skiern (3) mit der oberen Skihalterung (16).
19. Verfahren zum Sichern und Haltern eines Paares von Skiern (3), welche sich entlang einer Längsrichtung erstrecken und Zusätze an dem Rücken eines Athleten (2) aufweisen, umfassend die folgenden Schritte:
- Bereitstellen eines Skirucksacks (17), welcher mit einem System zum Tragen von Skiern (1) ausgerüstet ist, welches mit einem Rahmen (4), einem ersten Schultergurt (5), einem zweiten

Schultergurt (6), einer unteren Skihalterung (15) und einer oberen Skihalterung (16) ausgestattet ist, nach den Ansprüchen 1, 10 und 15;

- Tragen des Skirucksacks (17) über den Schultern;

- Einführen eines unteren Abschnitts des Paares von Skiern (3) in die untere Skihalterung (15), wobei die Einführrichtung des Paares von Skiern (3) in die untere Skihalterung (15) transversal zu der Längsrichtung des Paares von Skiern (3) ist;

- Koppeln der Zusätze des Paares von Skiern (3) mit der unteren Skihalterung (15), um das Paar von Skiern (3) vertikal zu halten;

- Koppeln eines oberen Abschnitts des Paares von Skiern (3) mit der oberen Skihalterung (16).

20. Verfahren zum Sichern und Halten eines Paares von Skiern (3), welche sich entlang einer Längsrichtung erstrecken und Zusätze an dem Rücken eines Athleten (2) aufweisen, umfassend die folgenden Schritte:

- Bereitstellen eines Skirucksacks (17), welcher mit einem System zum Tragen von Skiern (1) ausgerüstet ist, welches mit einem Rahmen (4), einem ersten Schultergurt (5), einem zweiten Schultergurt (6), einer unteren Skihalterung (15) und einer oberen Skihalterung (16) ausgestattet ist, nach den Ansprüchen 1, 9 und 15;

- Tragen des Skirucksacks (17) über den Schultern;

- Einführen eines unteren Abschnitts des Paares von Skiern (3) in die untere Skihalterung (15), wobei die Einführrichtung des Paares von Skiern (3) in die untere Skihalterung (15) parallel zu der Längsrichtung des Paares von Skiern (3) ist;

- Koppeln der Zusätze des Paares von Skiern (3) mit der unteren Skihalterung (15), um das Paar von Skiern (3) vertikal zu halten;

- Koppeln eines oberen Abschnitts des Paares von Skiern (3) mit der oberen Skihalterung (16).

Revendications

1. Système pour le portage de skis (1), adapté pour être porté sur l'épaule par un athlète (2), et configuré pour transporter, sur l'épaule, une paire de skis (3), ledit système pour le portage de skis (1) comprenant :

- une armature (4) ;

- une première bandoulière (5) et une seconde bandoulière (6), reliées à l'armature (4) ;

dans lequel une extrémité supérieure (7) de la première bandoulière (5) est reliée à une première partie supérieure (8) de l'armature (4), et

une extrémité inférieure (9) de la première bandoulière (5) est reliée à une première partie inférieure (10) de l'armature (4) ;

dans lequel une extrémité supérieure (11) de la seconde bandoulière (6) est reliée à une seconde partie supérieure (12) de l'armature (4), et une extrémité inférieure (13) de la seconde bandoulière (6) est reliée à une seconde partie inférieure (14) de l'armature (4) ;

- un porte-skis inférieur (15), positionné à la première partie inférieure (10) de l'armature (4) ;

- un porte-skis supérieur (16), positionné à la seconde bandoulière (6) ;

dans lequel le porte-skis supérieur (16) comprend un crochet (18) relié de manière élastique à la seconde bandoulière (6) au moyen d'un élément de rappel élastique (19),

et dans lequel un habillage (20) est relié à la seconde bandoulière (6), de sorte que l'habillage (20) et la seconde bandoulière (6) délimitent un passage de guidage (21) s'étendant de l'extrémité supérieure (11) à l'extrémité inférieure (13) de la seconde bandoulière (6),

et dans lequel l'élément de rappel élastique (19) s'étend à travers le passage de guidage (21) formé par l'habillage (20) et la seconde bandoulière (6),

et caractérisé en ce

qu'un élément de contraste (22) est relié de manière solidaire à l'habillage (20) et à la seconde bandoulière (6), à l'extrémité supérieure (11) de la seconde bandoulière (6),

dans lequel l'élément de contraste (22) forme un trou traversant central (23),

dans lequel l'élément de rappel élastique (19), relié au crochet (18), s'étend à travers le trou traversant central (23),

et dans lequel l'élément de contraste (22) et le trou traversant central (23) sont dimensionnés de sorte que l'élément élastique (19) puisse coulisser à l'intérieur du trou traversant central (23), et que le crochet (18) puisse partiellement être inséré dans le trou traversant central (23) mais ne puisse pas traverser le trou traversant central (23).

2. Système pour le portage de skis (1) selon la revendication 1, dans lequel le porte-skis inférieur (15) comprend :

- un élément de support (30) sous la forme d'un canal ouvert, et ayant deux extrémités (31, 31') ;

- un élément de fermeture (32) ;

dans lequel l'élément de support (30) forme une première ouverture (33) définissant une première

- re direction d'insertion (34), dans lequel les deux extrémités (31, 31') de l'élément de support (30) forment une seconde ouverture (35) définissant une seconde direction d'insertion (36) transversale à la première direction d'insertion (34) ; dans lequel l'élément de fermeture (32) s'étend entre les deux extrémités (31, 31') de l'élément de support (30), ledit élément de fermeture (32) étant mobile entre une position de fermeture, dans laquelle il ferme la seconde ouverture (35), et une position d'ouverture, dans laquelle il ouvre la seconde ouverture (35).
3. Système pour le portage de skis (1) selon la revendication 2, dans lequel l'élément de support (30) du porte-skis inférieur (15) forme une paroi de support verticale (37) configurée pour porter la paire de skis (3) verticalement.
 4. Système pour le portage de skis (1) selon la revendication 2 ou 3, dans lequel l'élément de fermeture (32) est constitué d'un élément à ressort (38).
 5. Système pour le portage de skis (1) selon la revendication 4, dans lequel l'élément à ressort (38) est articulé avec l'une des deux extrémités (31, 31') de l'élément de support (30) et sollicité de manière élastique contre l'autre des deux extrémités (31, 31') de l'élément de support (30) vers une position de fermeture, de façon à fermer la seconde ouverture (35).
 6. Système pour le portage de skis (1) selon la revendication 5, dans lequel l'élément à ressort (38) est rotatif vers l'intérieur du porte-skis inférieur (15), vers la position d'ouverture, de façon à ouvrir la seconde ouverture (35).
 7. Système pour le portage de skis (1) selon la revendication 6, dans lequel l'élément de contraste (22) forme une première fente (24) pour le passage de premiers moyens de liaison (27) pour une liaison entre l'élément de contraste (22) et l'habillage (20), et une seconde fente (25) pour le passage de seconds moyens de liaison (28) pour une liaison entre l'élément de contraste (22) et la seconde bandoulière (6).
 8. Système pour le portage de skis (1) selon l'une quelconque des revendications précédentes, dans lequel l'élément de rappel élastique (19) coulisse à l'intérieur d'un habillage tubulaire (26) constitué d'un matériau polymère.
 9. Système pour le portage de skis (1) selon l'une quelconque des revendications précédentes, dans lequel le porte-skis inférieur (15) comprend un élément annulaire rigide formant une ouverture annulaire qui définit une direction d'enfilage, pour l'enfilage d'une
- partie inférieure de la paire de skis (3) dans l'élément annulaire rigide.
10. Système pour le portage de skis selon l'une quelconque des revendications 1 à 8, dans lequel le porte-skis inférieur (15) comprend :
 - un élément de support (30) sous la forme d'un canal ouvert, et ayant deux extrémités (31, 31') ;
 - un élément de fermeture (32) ;
 dans lequel l'élément de support (30) forme une première ouverture (33) définissant une première direction d'insertion (34), dans lequel les deux extrémités (31, 31') de l'élément de support (30) forment une seconde ouverture (35) définissant une seconde direction d'insertion (36) transversale à la première direction d'insertion (34) ; dans lequel l'élément de fermeture (32) s'étend entre les deux extrémités (31, 31') de l'élément de support (30), ledit élément de fermeture (32) étant mobile entre une position de fermeture dans laquelle il ferme la seconde ouverture (35), et une position d'ouverture dans laquelle il ouvre la seconde ouverture (35).
 11. Système pour le portage de skis (1) selon la revendication 10, dans lequel l'élément de support (30) du porte-skis inférieur (15) forme une paroi de support verticale (37) configurée pour porter la paire de skis (3) verticalement.
 12. Système pour le portage de skis (1) selon la revendication 10 ou 11, dans lequel l'élément de fermeture (32) est constitué d'un élément à ressort (38).
 13. Système pour le portage de skis (1) selon la revendication 12, dans lequel l'élément à ressort (38) est articulé avec l'une des deux extrémités (31, 31') de l'élément de support (30) et sollicité de manière élastique contre l'autre des deux extrémités (31, 31') de l'élément de support (30) vers une position de fermeture, de façon à fermer la seconde ouverture (35).
 14. Système pour le portage de skis (1) selon la revendication 13, dans lequel l'élément à ressort (38) est rotatif vers l'intérieur du porte-skis inférieur (15), vers la position d'ouverture, de façon à ouvrir la seconde ouverture (35).
 15. Sac à dos (17), comprenant le système pour le portage de skis (1) selon l'une quelconque des revendications 1 à 14.
 16. Sac à dos (17) selon la revendication précédente, comprenant un ou plusieurs logements ou systèmes destinés à contenir et/ou transporter un ou plusieurs équipements supplémentaires d'alpinisme à ski.

17. Procédé pour le maintien et le support d'une paire de skis (3) s'étendant le long d'une direction de longueur et ayant des fixations, sur le dos d'un athlète (2), qui comprend les étapes suivantes :

- la fourniture d'un système pour le portage de skis (1) doté d'une armature (4), d'une première bandoulière (5), d'une seconde bandoulière (6), d'un porte-skis inférieur (15) et d'un porte-skis supérieur (16) selon les revendications 1 et 10 ;
- le fait de revêtir le système pour le portage de skis (1) sur les épaules ;
- l'insertion d'une partie inférieure de la paire de skis (3) dans le porte-skis inférieur (15), dans lequel la direction d'insertion de la paire de skis (3) dans le porte-skis inférieur (15) est transversale à la direction de longueur de la paire de skis (3) ;
- le couplage des fixations de la paire de skis (3) au porte-skis inférieur (15), pour supporter verticalement la paire de skis (3) ;
- le couplage d'une partie supérieure de la paire de skis (3) au porte-skis supérieur (16).

18. Procédé pour le maintien et le support d'une paire de skis (3) s'étendant le long d'une direction de longueur et ayant des fixations, sur le dos d'un athlète (2), qui comprend les étapes suivantes :

- la fourniture d'un système pour le portage de skis (1) doté d'une armature (4), d'une première bandoulière (5), d'une seconde bandoulière (6), d'un porte-skis inférieur (15) et d'un porte-skis supérieur (16) selon les revendications 1 et 9 ;
- le fait de revêtir le système pour le portage de skis (1) sur les épaules ;
- l'insertion d'une partie inférieure de la paire de skis (3) dans le porte-skis inférieur (15), dans lequel la direction d'insertion de la paire de skis (3) dans le porte-skis inférieur (15) est parallèle à la direction de longueur de la paire de skis (3) ;
- le couplage des fixations de la paire de skis (3) au porte-skis inférieur (15), pour supporter verticalement la paire de skis (3) ;
- le couplage d'une partie supérieure de la paire de skis (3) au porte-skis supérieur (16).

19. Procédé pour le maintien et le support d'une paire de skis (3) s'étendant le long d'une direction de longueur et ayant des fixations, sur le dos d'un athlète (2), qui comprend les étapes suivantes :

- la fourniture d'un sac à dos pour skis (17) équipé d'un système pour le portage de skis (1) doté d'une armature (4), d'une première bandoulière (5), d'une seconde bandoulière (6), d'un porte-skis inférieur (15) et d'un porte-skis supérieur (16) selon les revendications 1, 10 et 15 ;

- le fait de revêtir le sac à dos pour skis (17) sur les épaules ;

- l'insertion d'une partie inférieure de la paire de skis (3) dans le porte-skis inférieur (15), dans lequel la direction d'insertion de la paire de skis (3) dans le porte-skis inférieur (15) est transversale à la direction de longueur de la paire de skis (3) ;

- le couplage des fixations de la paire de skis (3) au porte-skis inférieur (15), pour supporter verticalement la paire de skis (3) ;

- le couplage d'une partie supérieure de la paire de skis (3) au porte-skis supérieur (16).

20. Procédé pour le maintien et le support d'une paire de skis (3) s'étendant le long d'une direction de longueur et ayant des fixations, sur le dos d'un athlète (2), qui comprend les étapes suivantes :

- la fourniture d'un sac à dos pour skis (17) équipé d'un système pour le portage de skis (1) doté d'une armature (4), d'une première bandoulière (5), d'une seconde bandoulière (6), d'un porte-skis inférieur (15) et d'un porte-skis supérieur (16) selon les revendications 1, 9 et 15 ;

- le fait de revêtir le sac à dos pour skis (17) sur les épaules ;

- l'insertion d'une partie inférieure de la paire de skis (3) dans le porte-skis inférieur (15), dans lequel la direction d'insertion de la paire de skis (3) dans le porte-skis inférieur (15) est parallèle à la direction de longueur de la paire de skis (3) ;

- le couplage des fixations de la paire de skis (3) au porte-skis inférieur (15), pour supporter verticalement la paire de skis (3) ;

- le couplage d'une partie supérieure de la paire de skis (3) au porte-skis supérieur (16).

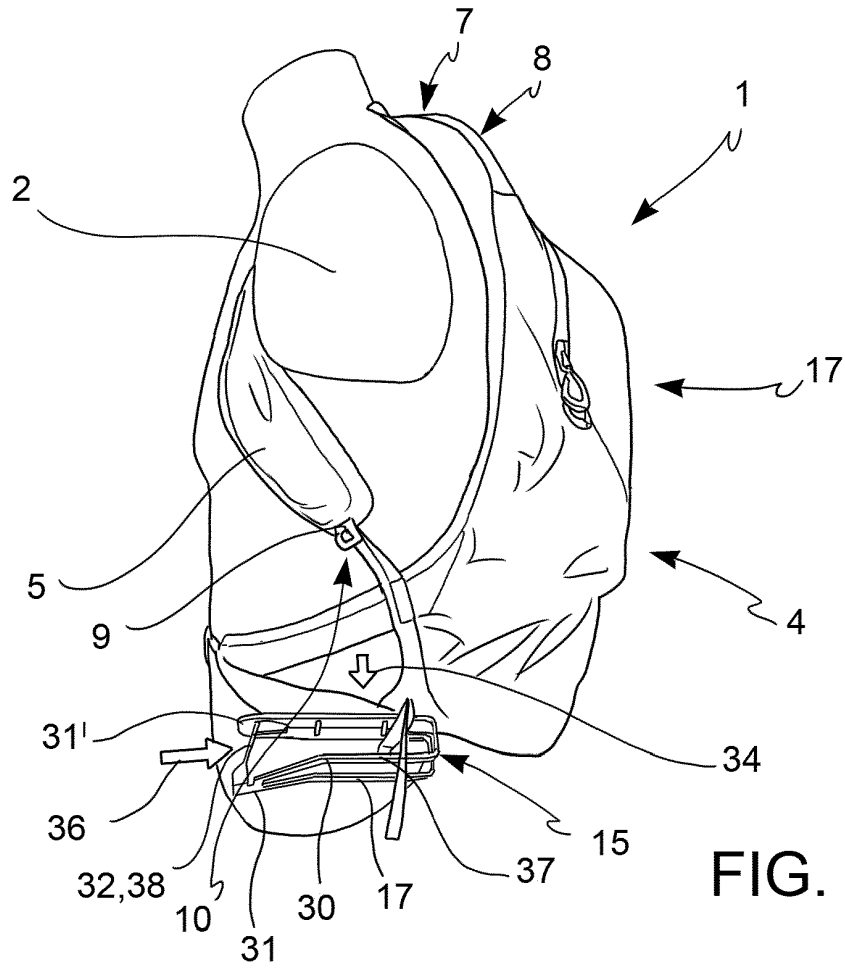


FIG. 1

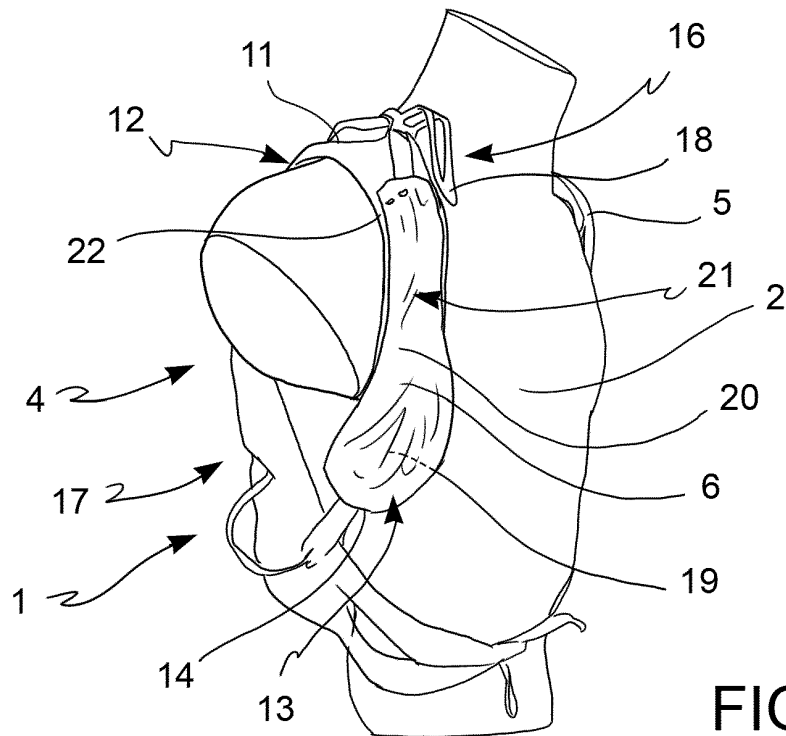


FIG. 2

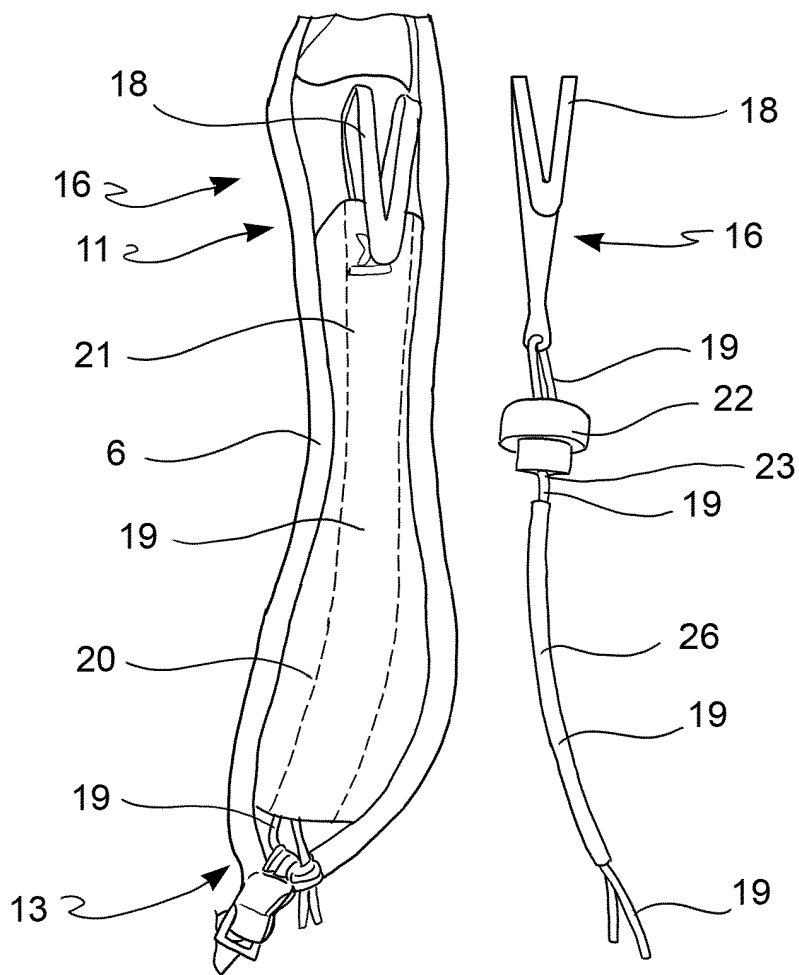
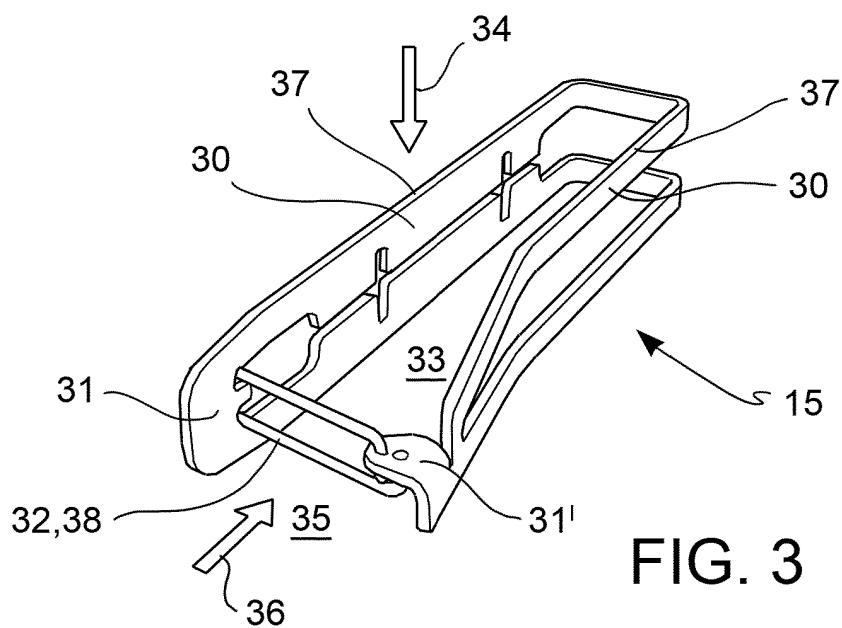


FIG. 4A

FIG. 4B

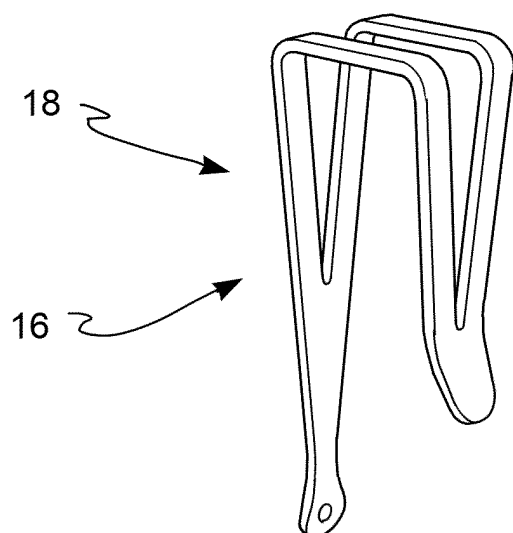


FIG. 5

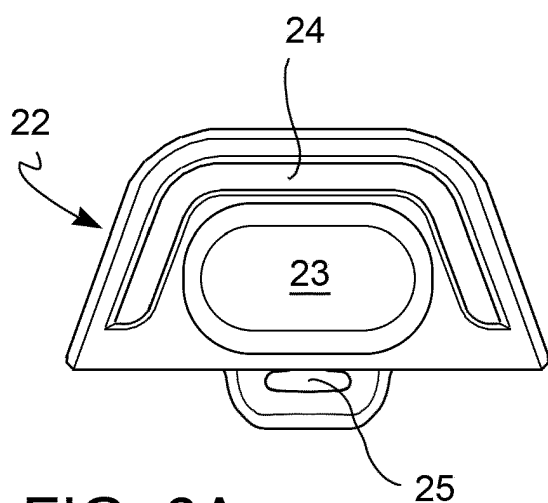


FIG. 6A

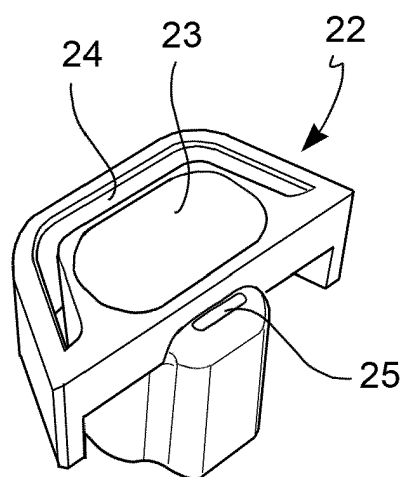


FIG. 6B

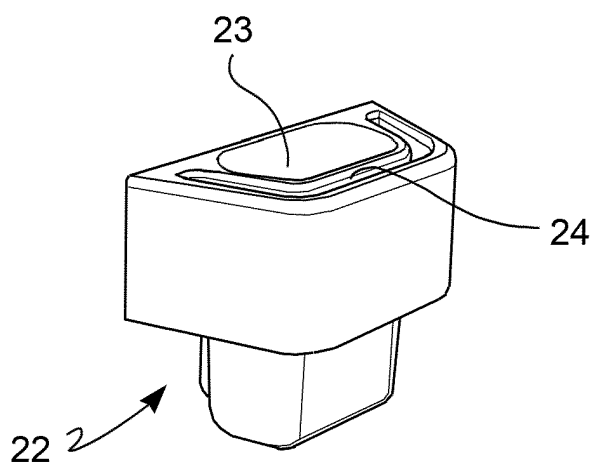


FIG. 6C

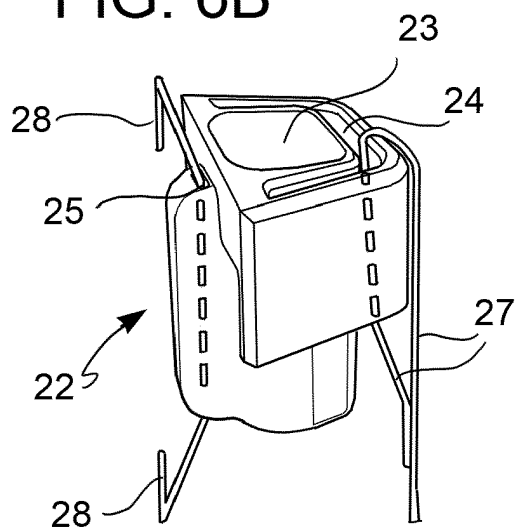


FIG. 6D

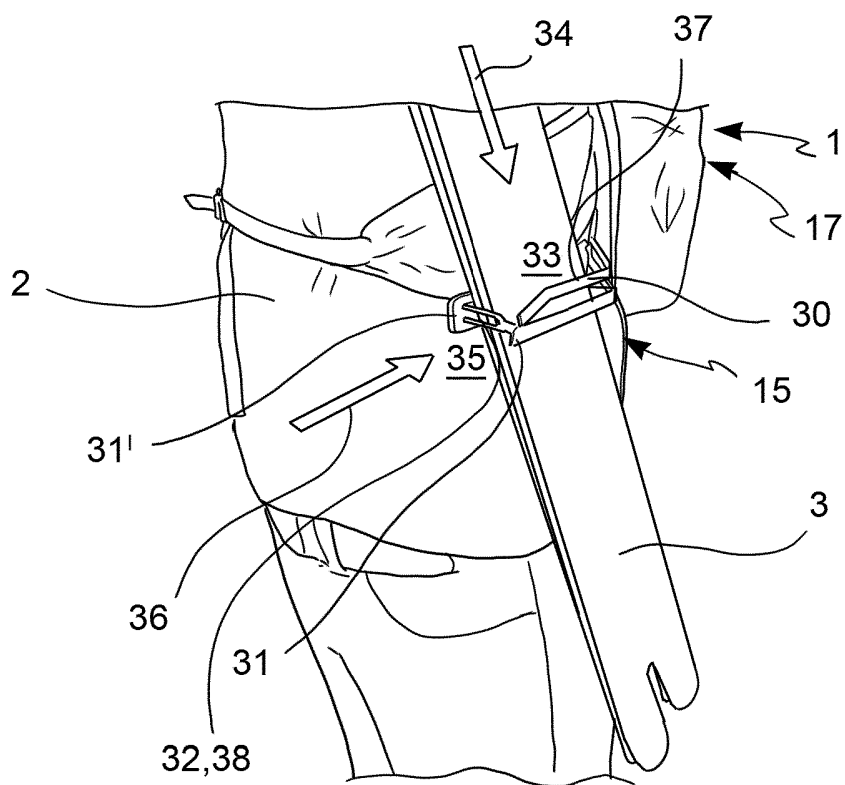


FIG. 7

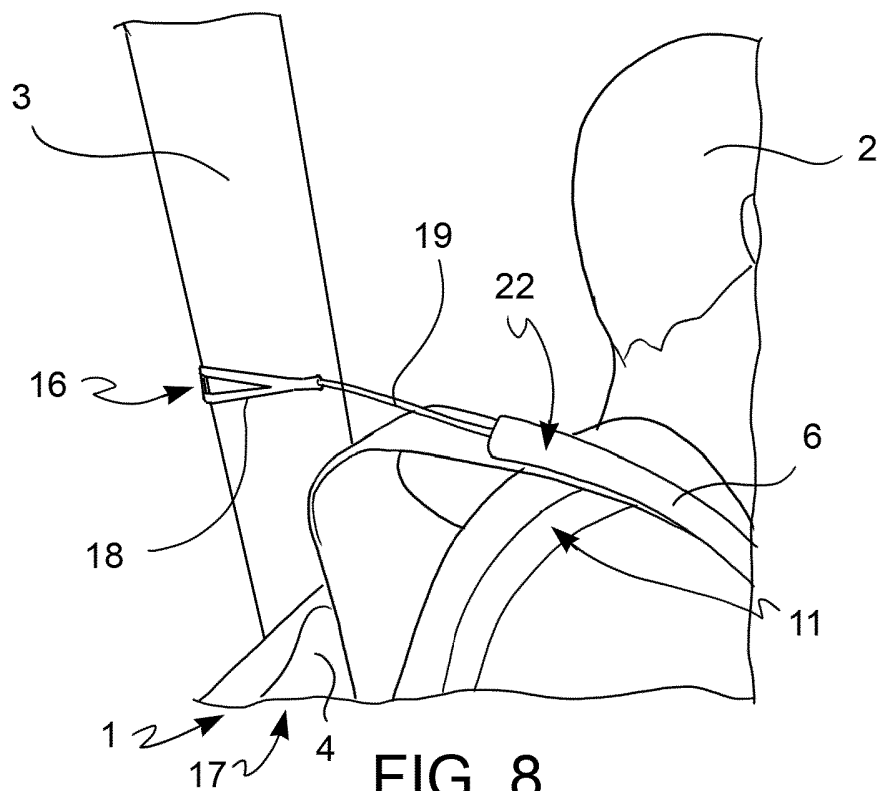


FIG. 8

REFERENCES CITED IN THE DESCRIPTION

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