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(54) **SKI RACK SYSTEM**

(57) A ski rack system (1) comprising a frame (4), a first shoulder strap (5) and a second shoulder strap (6) connected to the frame (4), a lower ski rack support (15), an upper ski rack support (16), positioned at the upper end (11) of the second shoulder strap (6); wherein 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), 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).

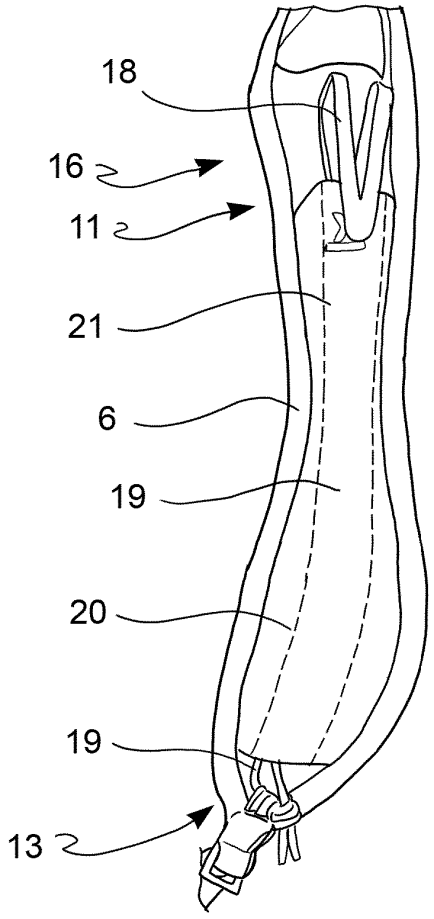

FIG. 4A

EP 3 838 063 A1

Description

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

[0002] The present invention relates to a ski rack system, 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 Rucksacke: 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 ski rack system 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 ski rack system 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 ski rack system, 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 ski rack system 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 ski rack system 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 ski rack system in the worn condition;
- Figure 2 shows a perspective view of the ski rack system in the worn condition of Figure 1;
- Figure 3 shows a view of a component of the ski rack system of Figure 1;
- Figure 4A shows a detail view of the ski rack system of Figure 1, in the assembled configuration;
- Figure 4B shows a detail view of the ski rack system of Figure 1, in the partially disassembled configuration;
- Figure 5 shows a further view of a component of the ski rack system of Figure 1;
- Figure 6A shows a top view of a further component of the ski rack system 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 ski rack system of Figure 1, in a first operating configuration;
- Figure 8 shows the ski rack system 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 ski rack system 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 ski rack system 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 ski rack system 1 further comprises a lower ski rack support 15, positioned at the first lower portion 10 of the frame 4.

[0032] The ski rack system 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 ski rack system 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 ski rack system 1.

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

[0039] According to an embodiment, 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 this embodiment, 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 ski rack system 1 thus configured ensures an easy, comfortable and less physically challenging support and fixing of a pair of skis 3 to the ski rack system 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 ski rack system 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 ski rack system 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 ski rack system 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 fixing 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:

[0077] - providing 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 ski rack system 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.

[0078] According to an alternative embodiment, a method for fixing 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 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 ski rack system 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.

[0079] According to a further aspect of the invention, a method for fixing 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 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.

[0080] According to an alternative embodiment, a method for fixing 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 ski rack system 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.

[0081] Naturally, those skilled in the art will be able to make modifications or adaptations to the present invention, without however departing from the scope of the claims below.

Claims

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

characterized in that 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),
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).

2. A ski rack system (1) according to the preceding claim, wherein the lower ski rack 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 ski rack system (1) according to claim 2, wherein 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.

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

5. A ski rack system (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 ski rack system (1) according to claim 5, wherein 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).

7. A ski rack system (1) according to any one of the preceding claims, wherein 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).

8. A ski rack system (1) according to claim 7, 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).

9. A ski rack system (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.

10. A ski rack system (1) according to any one of the preceding claims, wherein the lower ski rack support (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.

11. A ski rack system (1) according to any one of the claims from 1 to 9, wherein the lower ski rack 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).

12. A ski rack system (1) according to claim 11, wherein 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.

13. A ski rack system (1) according to claim 10 or 11, wherein the closing element (32) consists of a spring element (38).

14. A ski rack system (1) according to claim 13, 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).

15. A ski rack system (1) according to claim 14, wherein 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).

16. A backpack (17), comprising the ski rack system (1) according to any one of the claims from 1 to 15.

17. 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.

18. A method for fixing 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 rack system (1) fitted with a frame (4), a first shoulder strap (5), a second

shoulder strap (6), a lower ski rack support (15) according to claim 11 and an upper ski rack support (16);
- wearing the ski rack system (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).

19. A method for fixing 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 rack system (1) fitted with a frame (4), a first shoulder strap (5), a second shoulder strap (6), a lower ski rack support (15) according to claim 10 and an upper ski rack support (16);
- wearing the ski rack system (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).

20. A method for fixing 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) according to claim 11 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).

21. A method for fixing 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) according to claim 10 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 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).

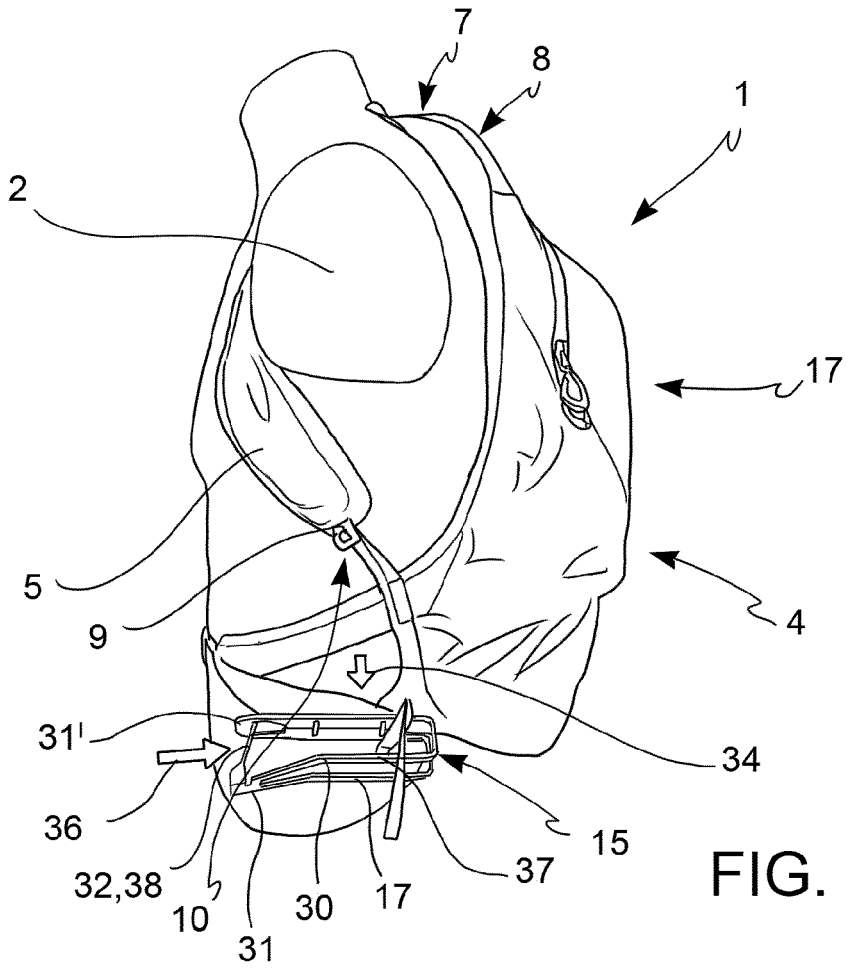
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FIG. 1

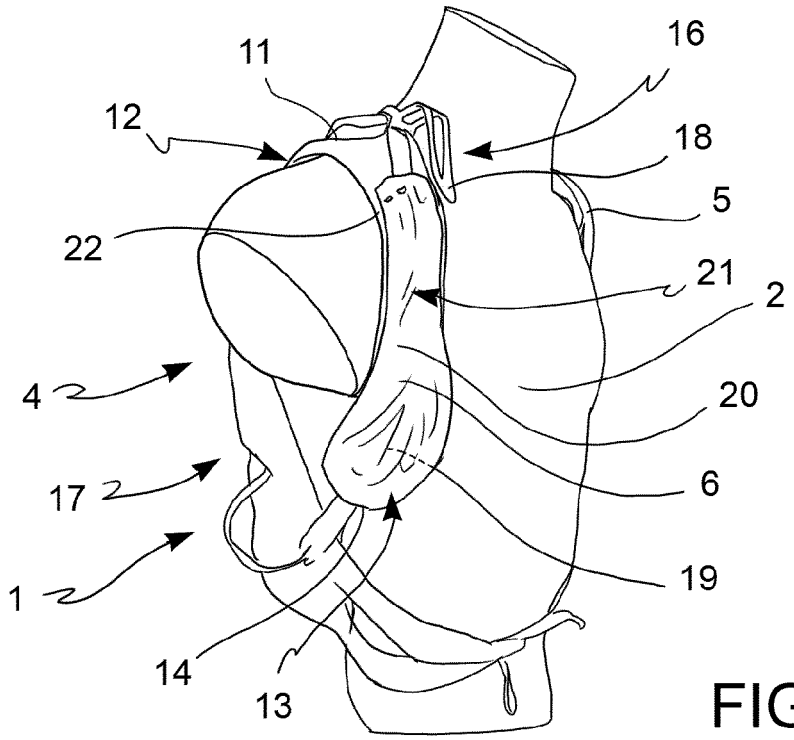
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FIG. 2

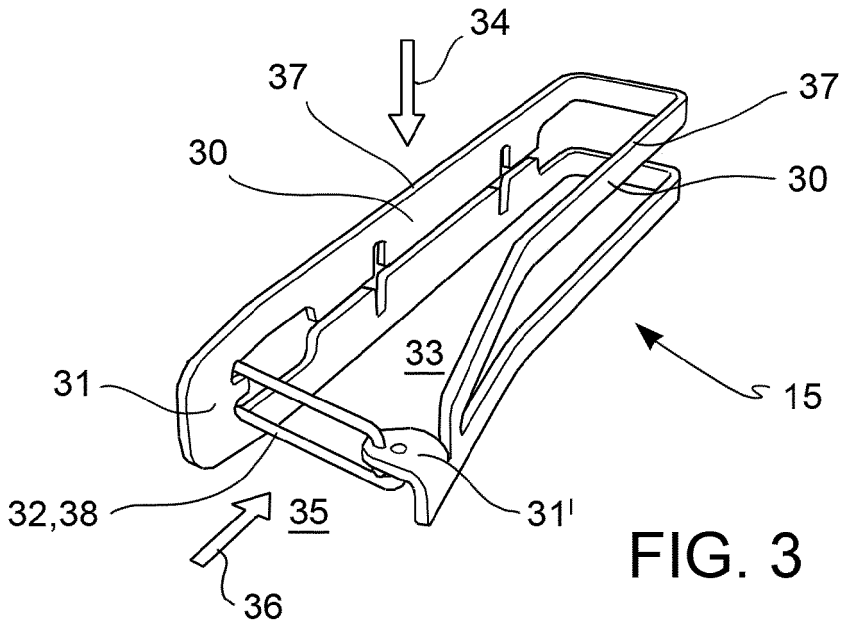

FIG. 3

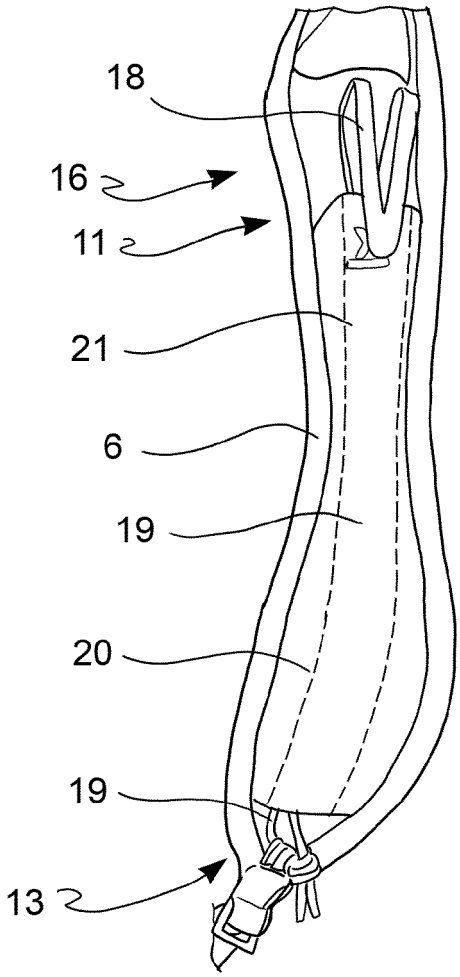

FIG. 4A

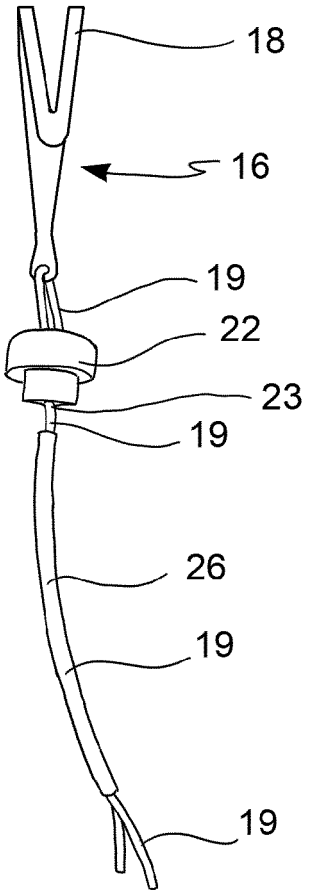

FIG. 4B

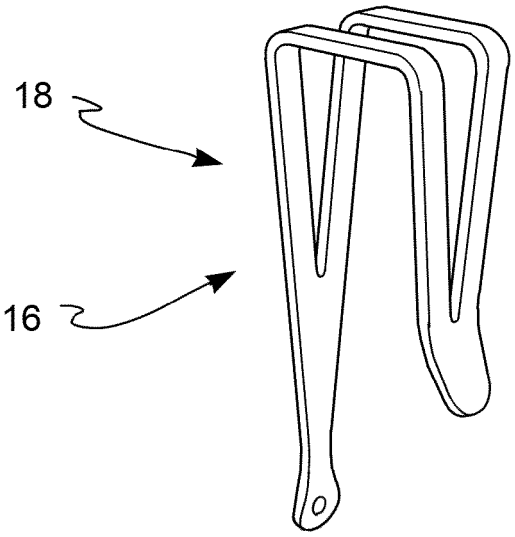

FIG. 5

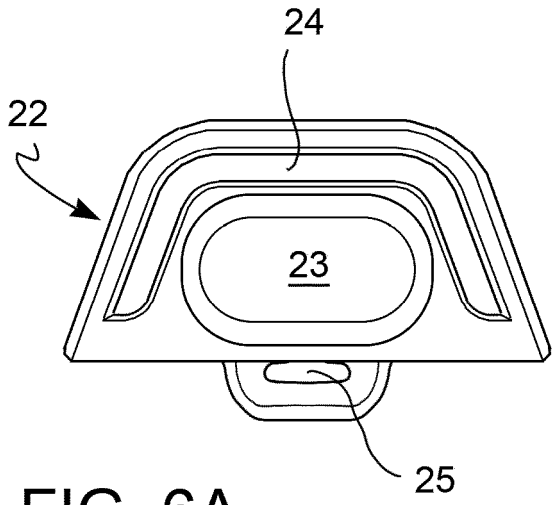

FIG. 6A

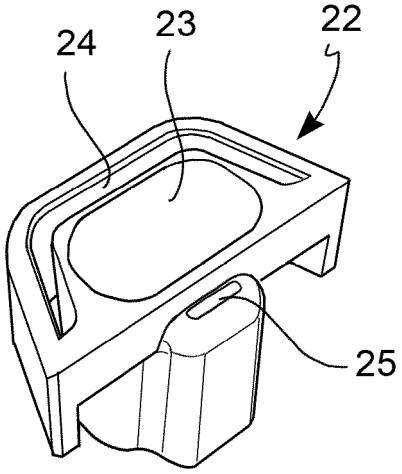

FIG. 6B

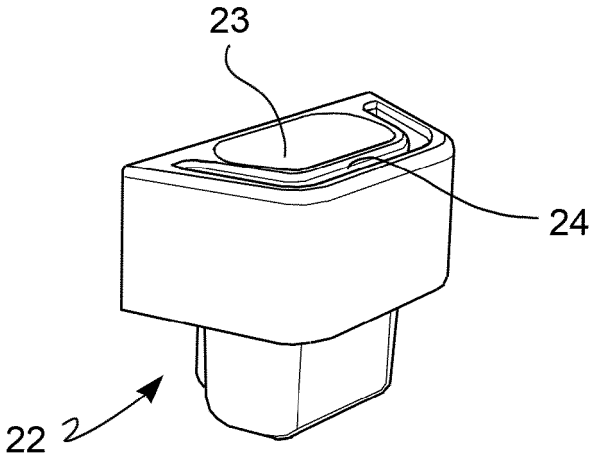

FIG. 6C

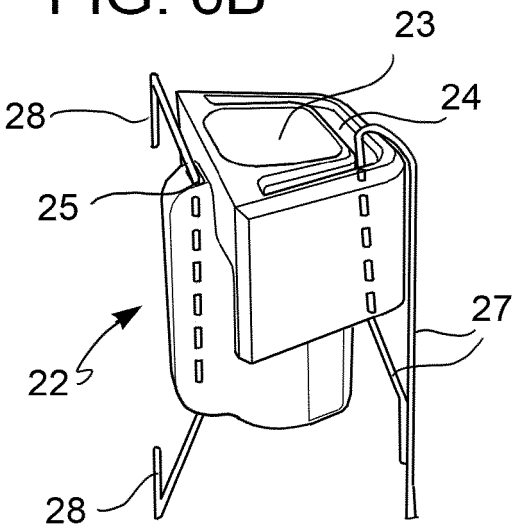

FIG. 6D

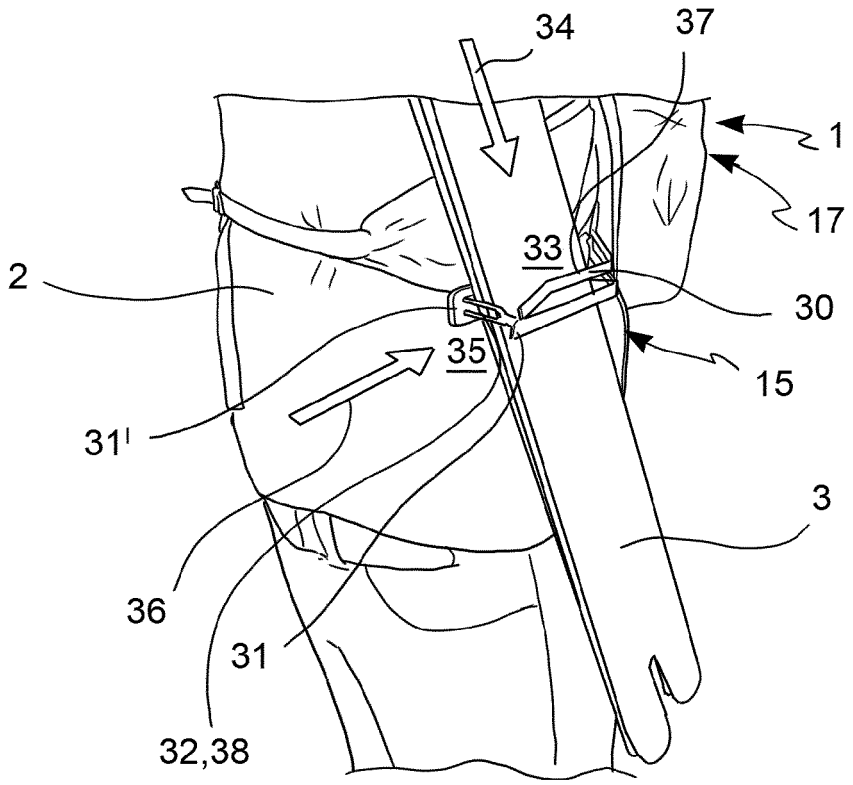

FIG. 7

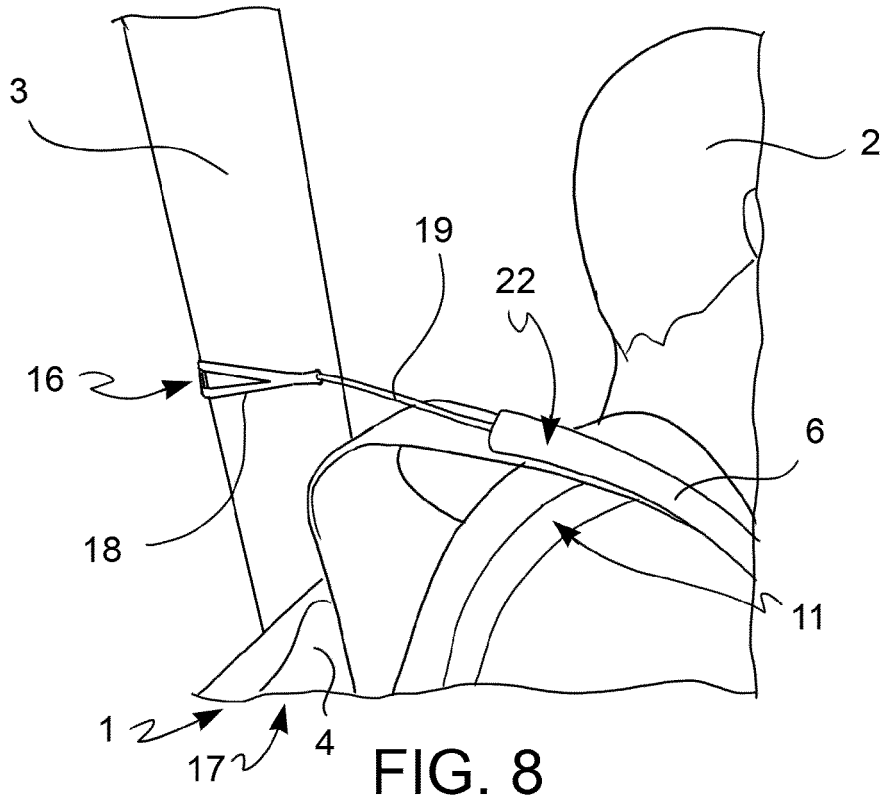

FIG. 8

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EUROPEAN SEARCH REPORT

Application Number
EP 20 21 5343

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A	* video of about 2:30 minutes. stills from the movie are commented as support.; figures 1,2 *	2-8, 11-15, 18,20	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	6 May 2021	Murer, Michael

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