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(54) **KITE BOARDING HARNESS CLOSURE MECHANISM**

(57) Kite boarding harness closure mechanism (1) comprising a coupler (2) and a spreader bar (3) which has a receiving end (4) for a part of the coupler (2), which coupler (2) comprises a webbing attachment (5), and which coupler (2) is at least partly insertable in the receiving end (4) of the spreader bar (3), wherein both the coupler (2) and the receiving end (4) of the spreader bar (3) are provided with through holes (7, 8) that are outlined with respect to each other when said part of the coupler (2) is inserted in the receiving end (4) of the spreader bar (3), and wherein a swivel arm (9) provided with a locking pin (10) is attached to the spreader bar (3), such that when the swivel arm (9) is swiveled down on the spreader bar (3) and said part of the coupler (2) is inserted in the receiving end (4) of the spreader bar (3), the locking pin (10) is inserted through the outlined through holes (7, 8) of the coupler (2) and spreader bar (3), wherein the coupler (2) is provided with a cam lever mechanism (11), of which the cam (12) is pivotably connected to said part of the coupler (2) that is insertable or inserted in the receiving end (4) of the spreader bar (3), and which cam (12) clampingly fits over the swivel arm (9) of the spreader bar (3) so as to keep the swivel arm (9) in place.

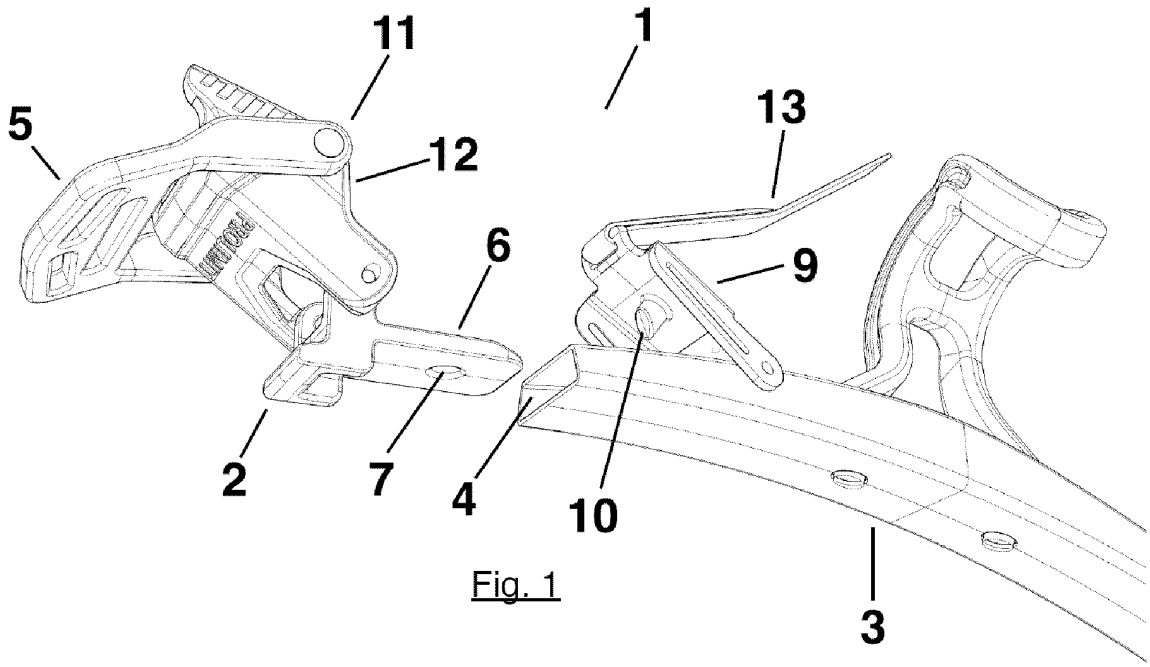

Fig. 1

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Description

[0001] The invention relates to a kite boarding harness closure mechanism comprising a coupler and a spreader bar which has a receiving end for at least a part of the coupler, which coupler comprises a webbing attachment, and which coupler is at least partly insertable in the receiving end of the spreader bar, wherein both the coupler and the receiving end of the spreader bar are provided with through holes that are outlined with respect to each other when said part of the coupler is inserted in the receiving end of the spreader bar, and wherein a swivel arm provided with a locking pin is attached to the spreader bar, such that when the swivel arm is swiveled down on the spreader bar and said part of the coupler is inserted in the receiving end of the spreader bar, the locking pin is inserted through the outlined through holes of the coupler and spreader bar.

[0002] NL 1012484 discloses such a kite boarding harness closure mechanism. In this known mechanism the swivel arm is kept in place by an elastic element that fits around the spreader bar and the swivel arm. A strap is connected to the elastic element to enable lifting of the elastic element so that the swivel arm may be lifted from the spreader bar thus releasing the coupler from the spreader bar.

[0003] A disadvantage of the known kite boarding harness closure mechanism is that it requires quite some manual effort to make the harness fit snugly around a user's waist.

[0004] It is an object of the invention to provide a kite boarding harness closure mechanism which ensures a close and tight fit of the webbing and spreader bar around the user's waist, and also to enable that releasing the harness can be done easily and reliably.

[0005] According to the invention a kite boarding harness closure mechanism is provided with the features of one or more of the appended claims.

[0006] In a first aspect of the invention the coupler is provided with a cam lever mechanism, of which the cam is pivotably connected to the part of the coupler that is insertable or inserted in the receiving end of the spreader bar, and which cam clampingly fits over the swivel arm of the spreader bar so as to keep the swivel arm in place. This provides a secure closure of the kite boarding harness closure mechanism, wherein the motion of the cam to fit over the swivel arm tightens the web which is attached to the coupler, which ensures that the harness will fit tightly around the user's waist after moving the cam downwards to fit over the swivel arm.

[0007] Releasing the harness can easily be done by embodying the harness such that the swivel arm is provided with a strap for lifting the swivel arm from the spreader bar and remove the locking pin from the outlined through holes of the coupler and spreader bar so as to release the closure mechanism.

[0008] The accompanying drawing, which is incorporated into and forms a part of the specification, illustrates an embodiment of the present invention and, together with the description, serves to explain the principles of the invention. The drawing is only for the purpose of illustrating the said embodiment of the invention and is not to be construed as limiting the invention.

[0009] In the drawing:

- figure 1 and figure 2 each provide a perspective view at the kite boarding harness closure mechanism of the invention;
- figures 3-6 show different use situations of the kite boarding harness closure mechanism of the invention, to note respectively the harness being open (figure 3), parts of the harness being attached (figure 4), levering the opening strap (figure 5), and release of the harness from closure (figure 6).

[0010] Whenever in the figures the same reference numerals are applied, these numerals refer to the same parts.

[0011] With reference to figure 1 and figure 2, a perspective view is offered on the kite boarding harness closure mechanism 1 of the invention, which comprises a coupler 2 and a spreader bar 3 which has a receiving end 4 for the coupler 2.

[0012] The coupler 2 comprises a webbing attachment 5 for attaching a web that together with the spreader bar 3 goes around a user's waist.

[0013] The coupler 2 has a tongue 6 which is insertable in the receiving end 4 of the spreader bar 3. The coupler 2 is provided with a through hole 7 in the tongue 6, and the receiving end 4 of the spreader bar 3 is provided with a through hole 8. Both through holes 7, 8 are outlined with respect to each other when the tongue 6 of the coupler 2 is inserted in the receiving end 4 of the spreader bar 3.

[0014] The figures 1, 2 further show that a swivel arm 9 which is mounted on the spreader bar 3, is provided with a locking pin 10, such that when the swivel arm 9 is swiveled down on the spreader bar 3 and the tongue 6 of the coupler 2 is inserted in the receiving end 4 of the spreader bar 3, the locking pin 10 is inserted through the outlined through holes 7, 8 of the coupler 2 and spreader bar 3. This situation is reached in figure 4, which shows the swivel arm 9 resting on the spreader bar 3 after the coupler 2 has been moved from the open harness situation depicted in figure 3 into the receiving end 4 of the spreader bar 3.

[0015] It shows most clearly in figure 1 and figure 2 that the coupler 2 is provided with a cam lever mechanism 11, of which the cam 12 is pivotably connected to a part of the coupler 2, to note the tongue 6, that is insertable or inserted in the receiving end 4 of the spreader bar 3, and which cam 12 clampingly fits over the swivel arm 9 of the spreader bar 3 so as to keep the swivel arm 9 in place. This is the situation reached in figure 5, which also shows a strap 13 which is connected to the swivel arm 9 for lifting both the cam 12 and the swivel arm 9 from the spreader bar 3 so as to remove the locking pin 10 from the outlined

through holes 7, 8 of the coupler 2 and spreader bar 3 and thus release the closure mechanism.

[0016] Embodiments of the present invention can include every combination of features that are disclosed herein independently from each other. Although the invention has been discussed in the foregoing with reference to an exemplary embodiment of the invention, the invention is not restricted to this particular embodiment which can be varied in many ways without departing from the invention. The discussed exemplary embodiment shall therefore not be used to construe the append-ed claims strictly in accordance therewith. On the contrary the embodiment is merely intended to explain the wording of the appended claims without intent to limit the claims to this exemplary embodiment. The scope of protection of the invention shall therefore be construed in accordance with the appended claims only, wherein a possible ambiguity in the wording of the claims shall be resolved using this exemplary embodiment.

[0017] Variations and modifications of the present invention will be obvious to those skilled in the art and it is intended to cover in the appended claims all such modifications and equivalents. The entire disclosures of all references, applications, patents, and publications cited above are hereby incorporated by reference. Unless specifically stated as being "essential" above, none of the various components or the interrelationship thereof are essential to the operation of the invention. Rather, desirable results can be achieved by substituting various components and/or reconfiguration of their relationships with one another.

Claims

1. Kite boarding harness closure mechanism (1) comprising a coupler (2) and a spreader bar (3) which has a receiving end (4) for a part of the coupler (2), which coupler (2) comprises a webbing attachment (5), and which coupler (2) is at least partly insertable in the receiving end (4) of the spreader bar (3), wherein both the coupler (2) and the receiving end (4) of the spreader bar (3) are provided with through holes (7, 8) that are outlined with respect to each other when said part of the coupler (2) is inserted in the receiving end (4) of the spreader bar (3), and wherein a swivel arm (9) provided with a locking pin (10) is attached to the spreader bar (3), such that when the swivel arm (9) is swiveled down on the spreader bar (3) and said part of the coupler (2) is inserted in the receiving end (4) of the spreader bar (3), the locking pin (10) is inserted through the outlined through holes (7, 8) of the coupler (2) and spreader bar (3), **characterized in that** the coupler (2) is provided with a cam lever mechanism (11), of which the cam (12) is pivotably connected to said part of the coupler (2) that is insertable or inserted in the receiving end (4) of the spreader bar (3), and which cam (12) clampingly fits over the swivel arm (9) of the spreader bar (3) so as to keep the swivel arm (9) in place.

2. Kite boarding harness according to claim 1, **characterized in that** the swivel arm (9) is provided with a strap (13) for lifting the swivel arm (9) from the spreader bar (3) and remove the locking pin (10) from the outlined through holes (7, 8) of the coupler (2) and spreader bar (3) so as to release the closure mechanism.

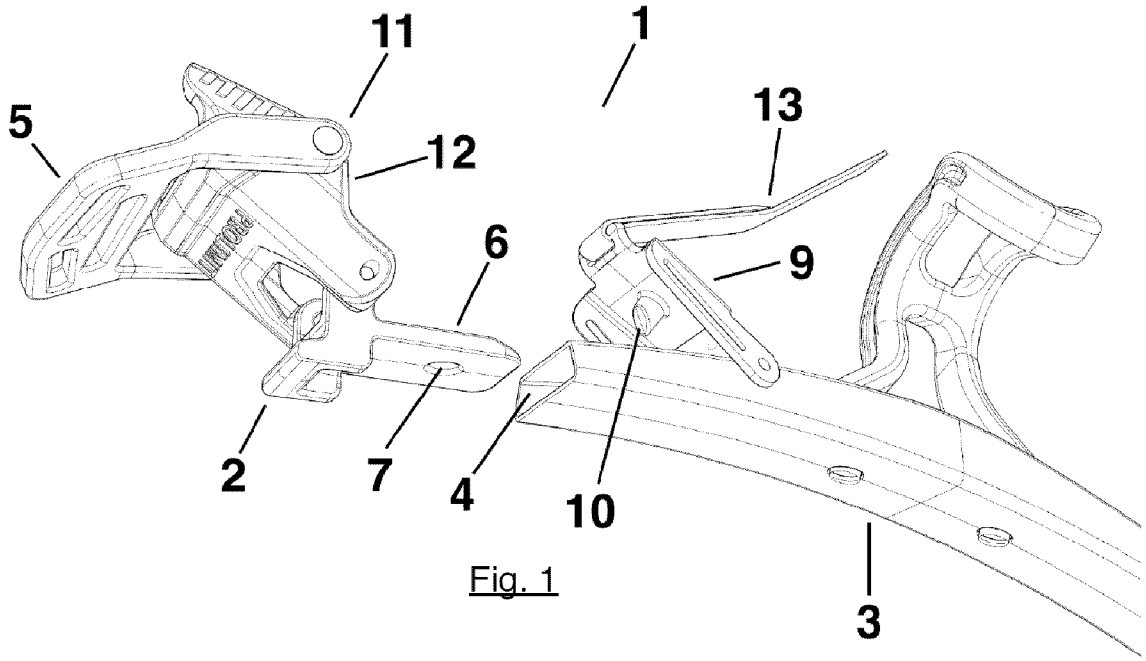


Fig. 1

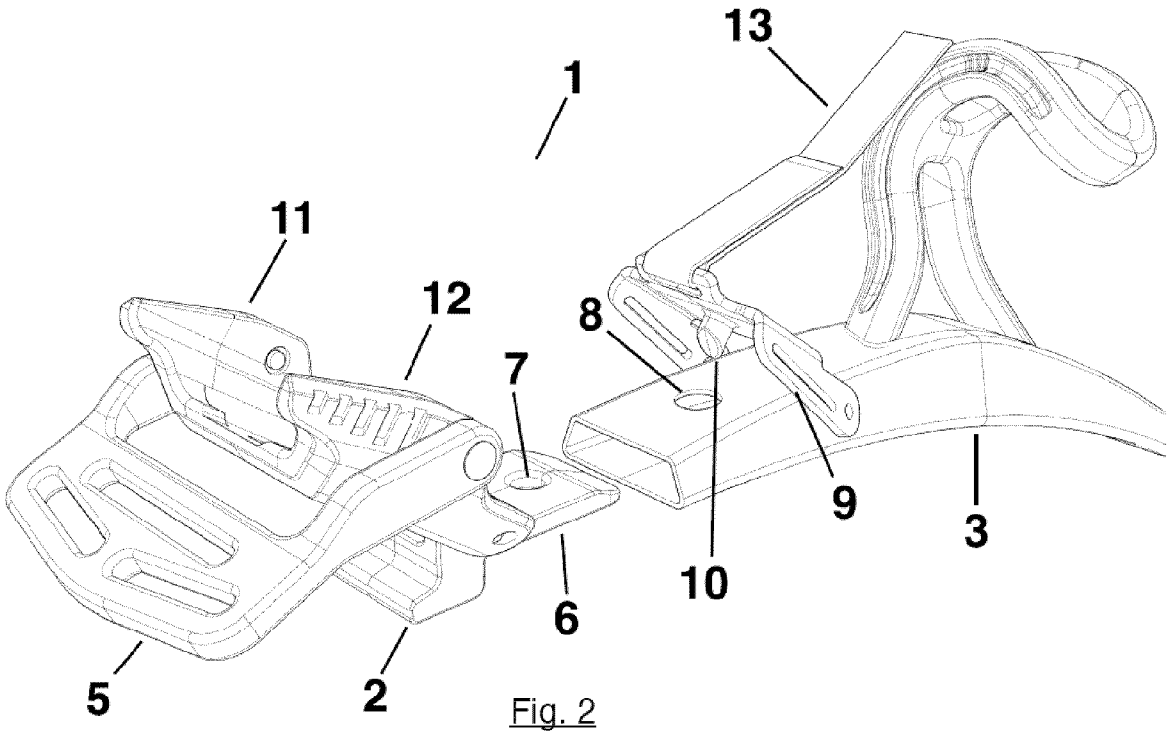
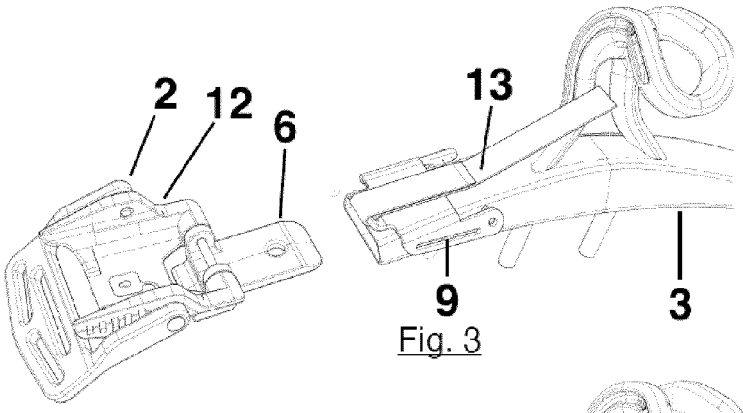
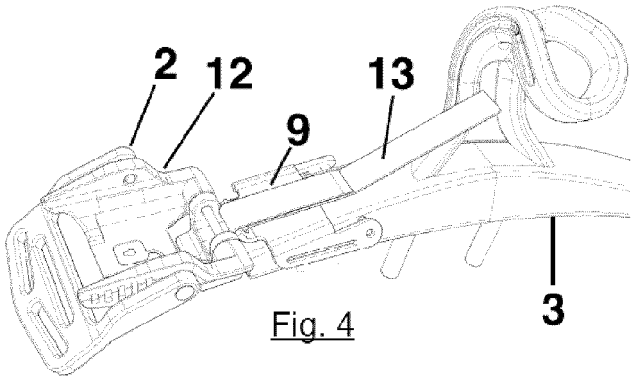


Fig. 2



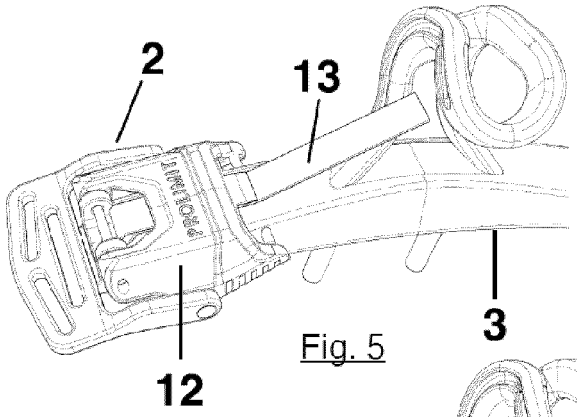
STEP 1 - OPEN

Fig. 3



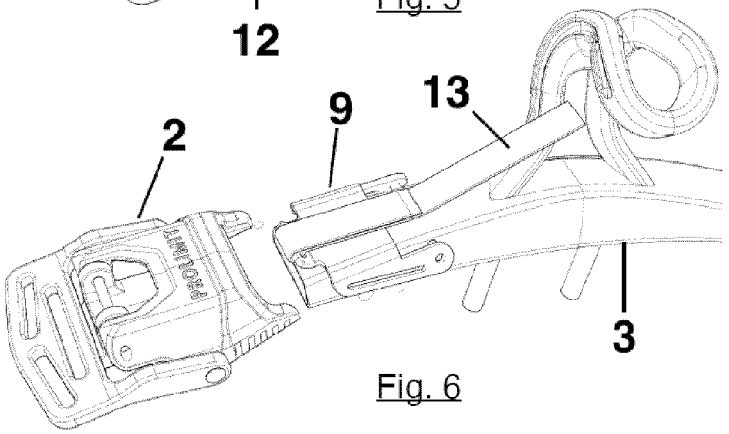
STEP 2 - ATTACH

Fig. 4



STEP 3 - LEVER

Fig. 5



STEP 4 - RELEASE

Fig. 6

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EUROPEAN SEARCH REPORT

Application Number
EP 24 21 7700

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y,D	DE 100 31 623 B4 (HANDELSONDERNEMING KUBUS B V [NL]) 16 December 2010 (2010-12-16) * claim 1; figures *	1,2	INV. B63H8/58
Y	EP 2 835 309 A2 (BOARDS & MORE GMBH [AT]) 11 February 2015 (2015-02-11) * figures 4-7 *	1,2	
A	DE 20 2004 004254 U1 (BITTEROLF ULRICH [DE]) 24 June 2004 (2004-06-24) * figures *	1,2	
			TECHNICAL FIELDS SEARCHED (IPC) B63H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	28 April 2025	Schmitter, Thierry

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 24 21 7700

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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28-04-2025

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		NL 1012484 C2	10-01-2001
EP 2835309 A2	11-02-2015	DE 102014109198 A1	12-02-2015
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		ES 2716375 T3	12-06-2019
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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- NL 1012484 **[0002]**