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(54) **Title:** A SAFETY HARNESS FOR ROCK FISHING

(57) **Abstract:** A safety apparatus for rock fishing comprising: a life-jacket including a harness, the harness having three fixing points; a tether for restraining a user, in use, and an anchor for securing the tether to land.

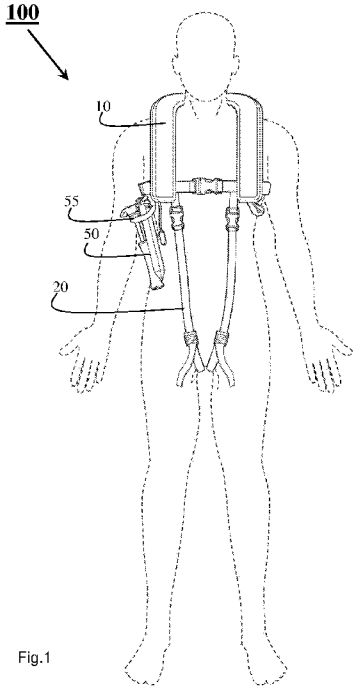


Fig.1

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# A SAFETY HARNESS FOR ROCK FISHING

## Field of the Invention

[1] The present invention relates to a safety harness, and in particular to a safety harness for rock fishing.

[2] The invention has been developed primarily for use in rock fishing and will be described hereinafter with reference to this application. However, it will be appreciated that the invention is not limited to this particular field of use.

## Background of the Invention

[3] Rock fishing is a popular pastime in a number of countries throughout the world. Rock fishing involves fishing on rocky outcrops or near a rock edge near the sea. However, it can be considered a dangerous past time and a significant number of deaths occur by drowning each year. As the rocks are wet by ocean water a fisherman is prone to slipping and falling or tripping over rocks and falling. The rocks also have smooth surfaces due to weathering by waves crashing on and washing over the rocks which make it difficult for a user to have a firm grip during fishing.

[4] A fisherman typically uses a conventional fishing rod, reel and line when rock fishing. For example, when the hook engages with a fish, the fisherman leans back to reel in the fish, they can slip over backwards and fall.

[5] In another example, when a fisherman is fishing and the waves crash with significant force on rocks, they can sweep away the fisherman into the ocean or cause them to fall over backwards and be pulled into the ocean. Slipping and falling can also cause the fisherman to hit their head on the rock rendering them unconscious and eventually drown in the ocean.

[6] Hence, it is imperative that the fisherman takes safety measures during rock fishing to prevent death.

[7] The present invention seeks to provide a safety apparatus, which will help prevent death from occurring during rock fishing accidents.

**Summary of the Invention**

[8] In an aspect of the present invention, there is provided, a safety apparatus for rock fishing comprising:

a life-jacket including a harness, the harness having three fixing points;

a tether for restraining a user, in use, and

an anchor for securing the tether to land.

[9] The safety apparatus may comprise a connector attached to the harness, the connector being locatable at the back of the apparatus between shoulder blades of a user, when the harness is worn.

[10] The safety apparatus may further comprise a first holder located adjacent the connector when worn in use, the first holder adapted to securely hold the tether to the life jacket, in use.

[11] The connector may be a D-ring connector.

[12] The tether may extend from a first end to a second end and comprises an adjustment portion.

[13] The adjustment portion may comprise a clip adapted to engage with the first holder, the clip being located at a predetermined length from the second end.

[14] The predetermined length may be under 10 m.

[15] The predetermined length may be under 5 m.

[16] The apparatus may further comprise a second holder locatable adjacent a waist of user when the life jacket is worn in use. The second holder may be adapted to securely hold a stake and/or a hammer.

[17] The harness may be adjustable to closely fit a body of the user.

[18] The anchor may comprise a stake attached to the first end of the tether.

[19] The safety apparatus of claim may further comprise a hammer connected to the first end of the tether for driving in the stake between rocks, in use.

[20] This invention may also be said broadly to consist in the parts, elements and features referred to or indicated in the specification of the application, individually or collectively, and any or all combinations of any two or more of said parts, elements or features, and where specific integers are mentioned herein which have known equivalents in the art to which this invention relates, such known equivalents are deemed to be incorporated herein as if individually set forth.

[21] To those skilled in the art to which the invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the scope of the invention as defined in the appended claims. The disclosures and the descriptions herein are purely illustrative and are not intended to be in any sense limiting.

[22] Other aspects of the invention are also disclosed.

**Brief Description of the Drawings**

[23] Notwithstanding any other forms which may fall within the scope of the present invention, embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

[24] **Figure 1** shows a front view of an embodiment of the safety apparatus;

[25] **Figure 2** shows a rear view of the safety apparatus of Figure 1;

[26] **Figure 3** shows a close-up rear view of the safety apparatus of Figure 1;

[27] **Figure 4** shows a tether in accordance with the embodiment shown in Figure 1;

[28] **Figure 5** shows a front view of the safety apparatus when worn by a user;

[29] **Figure 6** shows a back view of the safety apparatus when worn by a user, and

[30] **Figure 7** shows a view of the tether in accordance with another embodiment of the safety apparatus.

**Description of Embodiments**

[31] A safety apparatus according to an aspect of the invention is generally indicated by the numeral 100. The safety apparatus will be described in relation to rock fishing but it is envisaged that this apparatus could be used to provide safety for a user during other activities that are undertaken on land e.g. a rocky outcrop, close to the ocean or other large bodies of water.

[32] Figures 1 and 2 illustrate the safety apparatus 100 as worn by a subject. The safety apparatus comprises a life jacket 10 including a harness 20. The life jacket 10 includes a connector 30 for releasably connecting the life jacket 10 to a tether 40. The safety apparatus 100 further includes a tether 40 adapted to releasably attach to the connector 30. The safety apparatus also includes an anchor 50 for securing one end of the tether 40 to or between adjacent rocks in use.

[33] The life jacket 10 comprises a floatation device 11. The life jacket 10 may extend around the neck, shoulders and along the torso of the user, in use. In figure 1, the life jacket 10 extends around the neck of the user to a position adjacent the ribs of a user.

[34] The flotation device 11 can include a buoyant material e.g. a suitable foam. The life jacket can also be manually inflatable. For example, the life jacket 10 can include one or more inflatable pockets attached to a mouthpiece. A user can add air to inflate the one or more pockets through the mouthpiece. The air can be retained within the pockets via a one-way valve.

[35] The harness 20 is a 3-point harness. In the illustrated embodiment, the harness 20 comprises a first strap 22 which is adapted to extend under the arms and around the torso of the user. The first strap 11 has two portions which can be fastened together for example, at a chest area of the user via a buckle.

[36] In other embodiments the strap 22 can be located lower or higher on the torso adjacent the ribs.

[37] The life jacket 11 is attached to the first 22, the second 25 and the third straps 28. the third strap and can be secured around the user by fastening the buckle.

[38] The harness 20 also comprises a vertically extending second strap 25 attached between the life jacket 11 and the first strap 22.

[39] The harness further comprises a third strap 28 connected between the life jacket 11 and the first strap 22 at the back of the first strap 22 (when worn). The third strap 28 has a first end and a second end. The third strap 28 extends below the back of the user, between the legs and upwardly towards the torso of the user. The first and second ends are connected to respective connection portions 29 via buckles. The connection portions 29 comprise short straps attached to the first strap 22 and located on either side of the buckle of the first strap when the harness 20 is worn by the user as shown in Figure 1.

[40] As the harness 20 provides 3 fixing points, a 3 point harness is provided to prevent the life jacket 10 slipping off the user, in use.

[41] Each of the first 22 and second straps 25 are adjustable to ensure a comfortable and secure fit of the harness around the user. The first 22 and second straps 25 can be adjusted via strap adjusting buckles such as ladderlock buckles.

[42] The shape of the floatation device 11 defines a space for the head of the user. To secure the harness 10 around the user, the user can place the floatation device 11 around their shoulders and connect respective portions of the buckle of the first strap 11 together. The first strap 22 can then be adjusted to tighten the first strap 22 around the torso of the user. The first and second ends of third strap 28 can be brought from behind the user and between the legs of the user towards the respective connection portions. The first and second ends of the third strap 28 can be connected to the respective connection portions by engaging the respective buckle portions as shown in Figures 1 and 3.

[43] Figure 3 shows a user wearing the life jacket and harness.

[44] As can be seen in Figure 4, the connector 30 is attached to the second strap. When the life-jacket is worn, the connector 30 is located at the back of the user and is

easily reachable by the user. In this embodiment, the connector 30 comprises a D-ring. However, it is envisaged that in other embodiments, the connector 30 can be another type of holder that is adapted to engage with a clip attached to the tether 40.

[45] When the harness 20 is worn by the user, as shown in figure 2, the D-ring connector is located at the back of the apparatus between shoulder blades of a user when the harness is worn. In this embodiment, the D-ring connector is attached to the harness via a loop woven nylon fabric. The harness comprises a patch of nylon fabric which is sewn into the back of the life jacket in the abovementioned location. A loop of nylon fabric is then attached to the patch via stitching with a nylon thread. The stitching comprises a cross-stitch extending across a width of the loop. In other embodiments, the fabric could be made of other suitable fabric that is sufficiently tough to withstand loading, in use.

[46] The tether 40 is shown in Figure 6. The tether 40 has a first end and a second end.

[47] The tether 40 can comprise a cable or other rope suitable to restrain a user, in use. The cable is sufficiently tough to be able to withstand repeated loading by the user and environmental forces on the user. In an embodiment the cable can be covered with a waterproof coating to prevent damage to the cable during long-term use. The cable or rope can be a 316 Marine Grade Stainless Steel wire rope with a UV protected coating.

[48] In an embodiment, the tether can be less than 15m or greater than 15 m in length. For example, the tether can be less than or greater than 20 m in length or less than or greater than 25 m in length.

[49] The first end of the tether 40 is attached to a clip. In the illustrated embodiment, the clip is a carabiner. It is envisaged that in other embodiments, the clip can be another suitable clip that is sufficiently strong to securely connect the tether to the harness for an extended period of time. The first end of the tether comprises a loop of cable that is secured to the rest of the cable with a swage crimp in 316 Stainless steel. The loop includes a curved reinforcement thimble made of 316 Marine Grade Stainless Steel. A portion of cable adjacent the loop is covered with UV protected heat shrink to

protect the crimp from damage due to exposure to UV, in use. The loop loops through an attachment portion of the clip.

[50] The second end of the tether is fixed to the anchor 50. In an embodiment, the second end of the tether comprises a loop of the cable that is secured to the rest of the cable with a swage crimp in 316 Stainless steel. The second end of the cable also comprises a portion of cable extending from the loop that is covered with UV protected heat shrink to protect the crimp from negative effects of UV radiation. The loop is looped through a swivel made of 316 Marine Grade Stainless steel. The loop includes a curved reinforcement thimble made of 316 Marine Grade Stainless Steel. The anchor 50 is connected to the swivel via a stainless steel shackle comprising 316 Marine Grade Stainless Steel.

[51] Components which connect the ends of the tether to the anchor and/or a clip can be made of stainless steel such as 316 Grade stainless steel for durability and for safety when using the apparatus.

[52] The safety apparatus 100 comprises a first holder 35 located adjacent the connector when worn in use. The first holder 35 is adapted to securely hold the tether 40 to the life jacket 10. The first holder 35 comprises two parts as shown in figure 5 which can be fastened to each other with a fastener to form a loop. In this embodiment the fastener comprises Velcro. In an embodiment, the fastener comprises heavy-duty Velcro to securely hold the tether to the back of the life-jacket 10, in use.

[53] As shown in figure 2, the cable 40 is coiled and the first holder 35 extends around a thickness of the coil to hold the coil in place. The first holder 35 is located just under the connector 30.

[54] The anchor 50 comprises a stake attached to the first end of the tether. The stake can be driven into land such as into a suitable crevice in a rocky outcrop or between adjacent rocks, in use. With the second end 46 of the tether 40 attached to the user, the user can move along the rocks to a chosen fishing spot, while being connected to the anchored stake.

[55] The apparatus 10 further comprises a hammer 60. In this embodiment, the hammer 60 is connected to the first end of the tether 42 and can be used to drive in the stake into the suitable crevice or beyond rocks to secure the anchor to the ground.

[56] In this embodiment, the hammer 60 is attached to the tether between the stake and the second end of the tether. The hammer 60 is attached to the stake 50 to prevent the hammer 60 being lost during fishing. The hammer 60 is at a relatively short distance to the stake 50 so that it is convenient for the user to reach and use the hammer 60 to drive in the stake 50.

[57] The apparatus 100 comprises a second holder 70 locatable adjacent a waist of user when the life jacket 10 is worn in use, the second holder 70 is adapted to securely hold the stake 50 and a hammer 60. The second holder 70 can include two parts which can be secured together using a fastener. The fastener may comprise Velcro. The Velcro may be heavy duty Velcro and waterproof to prevent the fastener being loosened during use.

[58] The Velcro fastener is also adjustable so that the fastener can closely surround and securely hold the stake and the hammer close to the user when they are not being used.

[59] In the embodiment illustrated in Figure 7, the tether 40 comprises an adjustment portion 45 including a an attachment provision 48 for attachment to the connector or the carabiner/clip at the second end of the cable 46. The attachment provision is a loop of cable located at a predetermined distance from the second end.

[60] The loop includes a curved reinforcement thimble made of 316 Marine Grade Stainless Steel. A portion of cable adjacent the loop is covered with UV protected heat shrink..

[61] The predetermined length can be less than 10 m. In some embodiments, the predetermined length can be less than 5 m. In some other embodiments, the predetermined length can be greater than 10 m.

[62] The loop of the adjustment portion 48 can be securely attach to the connector via a clip connected to the loop (not shown) or the clip/carabiner at the second end of the cable 46.

[63] After the stake 50 is secured to the rocks or ground, the user can move along the rocks to a fishing position that is at a distance equivalent to the length of the tether 40. While the user moves, the tether 40 gradually extends out of the coil. When the user has reached the maximum distance, they can adjust the distance to their position by threading the clip 46 and adjustment portion of the tether through the connector 30 and clipping the clip 46 to the loop 48. In other embodiments the loop 48 is attached to a clip (not shown) which can be clipped onto the connector 30.

[64] In other embodiments, the tether 40 can comprise more than one adjustment portion 45 including clips attached at different predetermined lengths from the second end of the tether to allow the user to change their position to a desired distance from the anchor.

[65] In this way the user can adjust their location to be in a desired position for rock fishing. The tether 40 restrains the user and prevents them from slipping into the ocean if they slip and fall, for example.

[66] A user can also use the adjustment portion(s) to move over the rocks in a controlled manner while under external environmental forces e.g. forces of the ocean on the fishing line and rock surface conditions.

[67] If user has a fall, is rendered unconscious and swept away into the ocean, the relative location of the life jacket on the user will cause the user to turn upright with their head above the water and to float. This will prevent the user from drowning.

[68] An advantage of the apparatus is that as the user can advance over the land or rocky outcrop without having to hold on to any part of the apparatus 100. This allows the user to use their hands for other purposes e.g. to handle a fishing rod or to use their hands for balance.

[69] It is envisaged that in other embodiments, the apparatus 100 can include another holder to hold additional items e.g. a fishing rod.

*Embodiments:*

[70] Reference throughout this specification to "one embodiment" or "an embodiment" means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrases "in one embodiment" or "in an embodiment" in various places throughout this specification are not necessarily all referring to the same embodiment, but may. Furthermore, the particular features, structures or characteristics may be combined in any suitable manner, as would be apparent to one of ordinary skill in the art from this disclosure, in one or more embodiments.

[71] Similarly it should be appreciated that in the above description of example embodiments of the invention, various features of the invention are sometimes grouped together in a single embodiment, figure, or description thereof for the purpose of streamlining the disclosure and aiding in the understanding of one or more of the various inventive aspects. This method of disclosure, however, is not to be interpreted as reflecting an intention that the claimed invention requires more features than are expressly recited in each claim. Rather, as the following claims reflect, inventive aspects lie in less than all features of a single foregoing disclosed embodiment. Thus, the claims following the Detailed Description of Embodiments are hereby expressly incorporated into this Detailed Description of Embodiments, with each claim standing on its own as a separate embodiment of this invention.

[72] Furthermore, while some embodiments described herein include some but not other features included in other embodiments, combinations of features of different embodiments are meant to be within the scope of the invention, and form different embodiments, as would be understood by those in the art. For example, in the following claims, any of the claimed embodiments can be used in any combination.

*Comprising and Including*

[73] In the claims which follow and in the preceding description of the invention, except where the context requires otherwise due to express language or necessary implication, the word "comprise" or variations such as "comprises" or "comprising" are used in an inclusive sense, i.e. to specify the presence of the stated features but not

to preclude the presence or addition of further features in various embodiments of the invention.

[74] Any one of the terms: including or which includes or that includes as used herein is also an open term that also means including at least the elements/features that follow the term, but not excluding others. Thus, including is synonymous with and means comprising.

[75] Although the invention has been described with reference to specific examples, it will be appreciated by those skilled in the art that the invention may be embodied in many other forms.

*Industrial Applicability*

[76] It is apparent from the above, that the arrangements described are applicable to the user safety and fishing industries.

## Claims

The claims defining the invention are as follows:

1. A safety apparatus for rock fishing comprising:

   a life-jacket including a harness, the harness having three fixing points;

   a tether attachable to the harness for restraining a user, in use, and

   a stake attached to an end of the tether, and

   a driver for driving the stake into land to secure the tether to land.

2. The safety apparatus of claim 1, further comprising a connector for attaching to an end of the tether, the connector attached to and located at the back of the harness between shoulder blades of a user, when the harness is worn.

3. The safety apparatus of claim 2, wherein the connector is a D-ring connector.

4. The safety apparatus of claim 2 or claim 3, further comprising a first holder located adjacent the connector when worn in use, the first holder adapted to securely hold at least part of the tether to the life jacket, in use.

5. The safety apparatus of claim 4 wherein the first holder comprises two strips comprising Velcro which are attachable to each other via the Velcro.

6. The safety apparatus of claim 1, wherein the tether comprises a Marine Grade Stainless Steel wire rope with a UV protected coating cord which extends from a first end to a second end.

7. The safety apparatus of claim 6, wherein the tether includes a clip at the second end.

8. The safety apparatus of claim 7, wherein the clip at the second end of the tether is a carabiner.

9. The safety apparatus of claim 6, wherein the tether further comprises an adjustment portion, the adjustment portion comprising:

a predetermined length of tether, and

an attachment loop, the attachment loop being located at a predetermined distance from the second end of the tether.

10. The safety apparatus of claim 9, wherein the predetermined length of tether is between 5m and 15m.

11. The safety apparatus of claim 4, the apparatus further comprises a second holder locatable adjacent a waist of user when the life jacket is worn in use, the second holder adapted to securely hold the stake and/or the driver.

12. The safety apparatus of claim 1, wherein the driver is attached to the tether at a position spaced from the stake and between the harness and the stake.

13. The safety apparatus of claim 1, wherein the driver is a hammer.

14. The safety apparatus of claim 1, wherein the harness is adjustable to closely fit a body of the user.

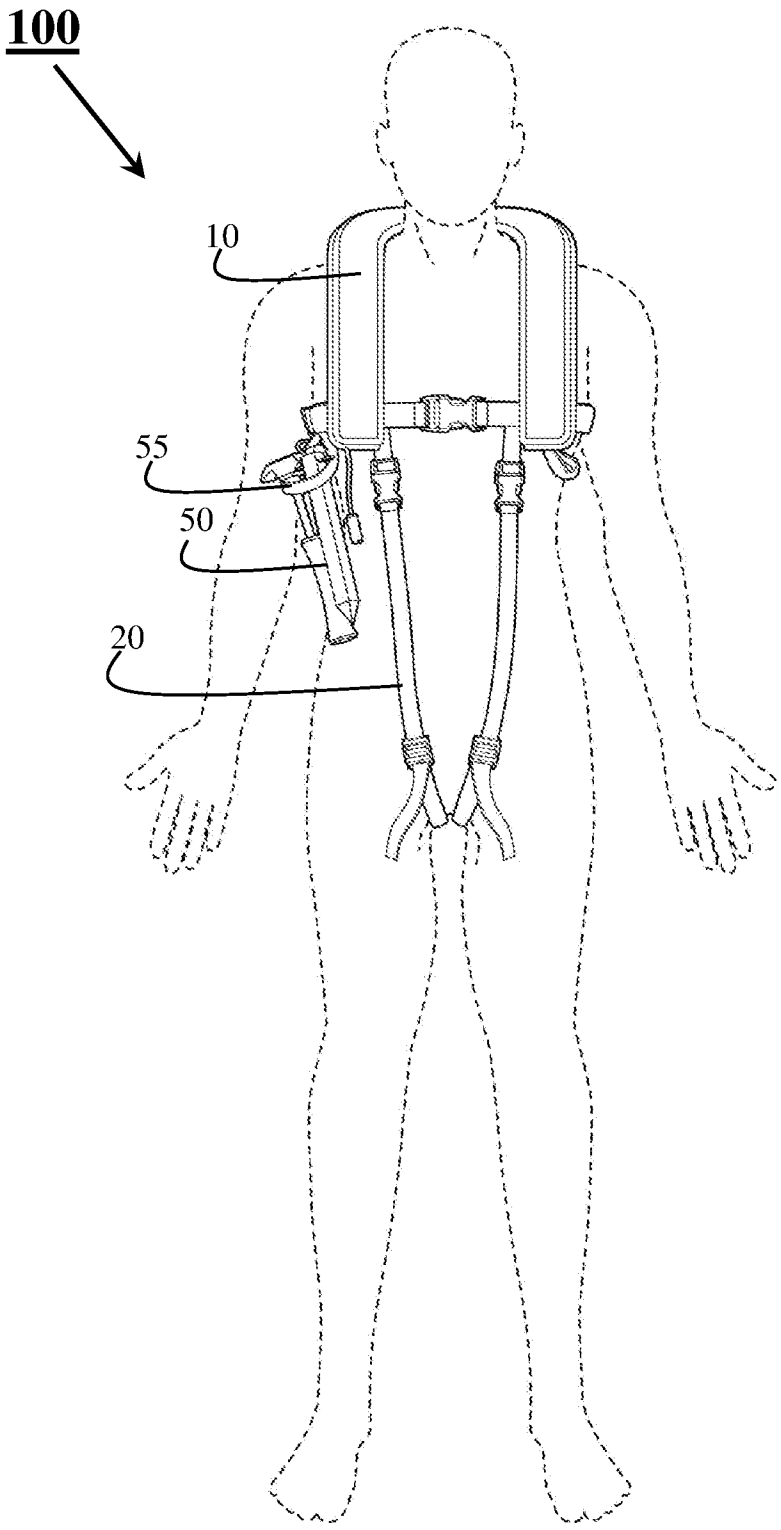


Fig.1

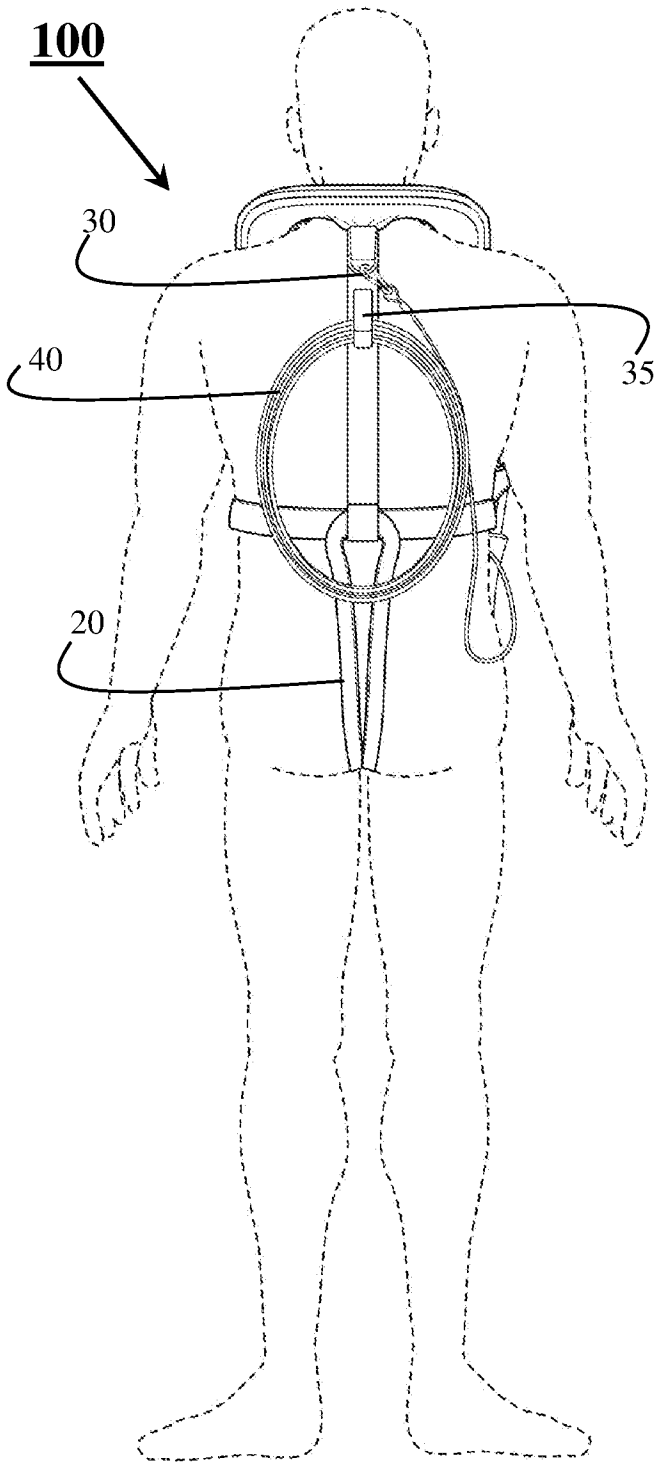


Fig.2

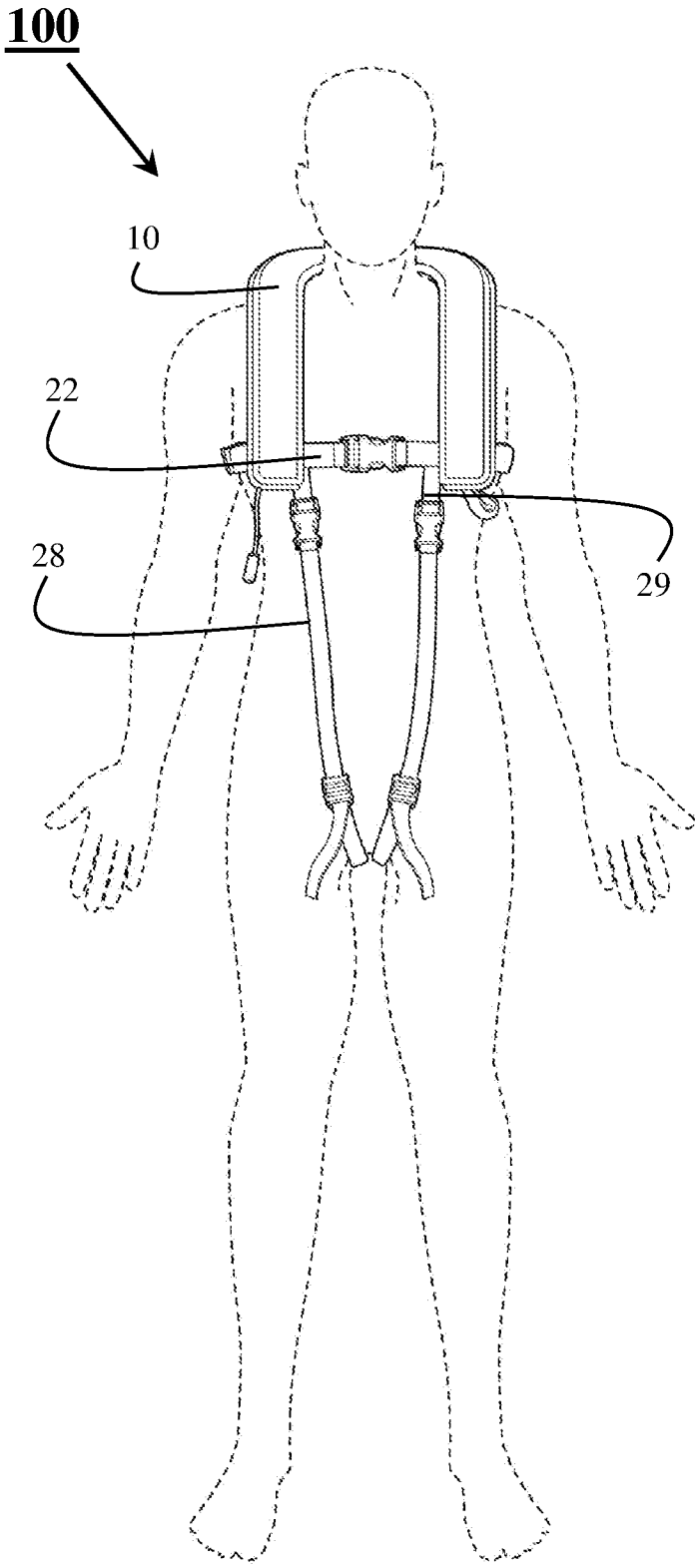


Fig.3

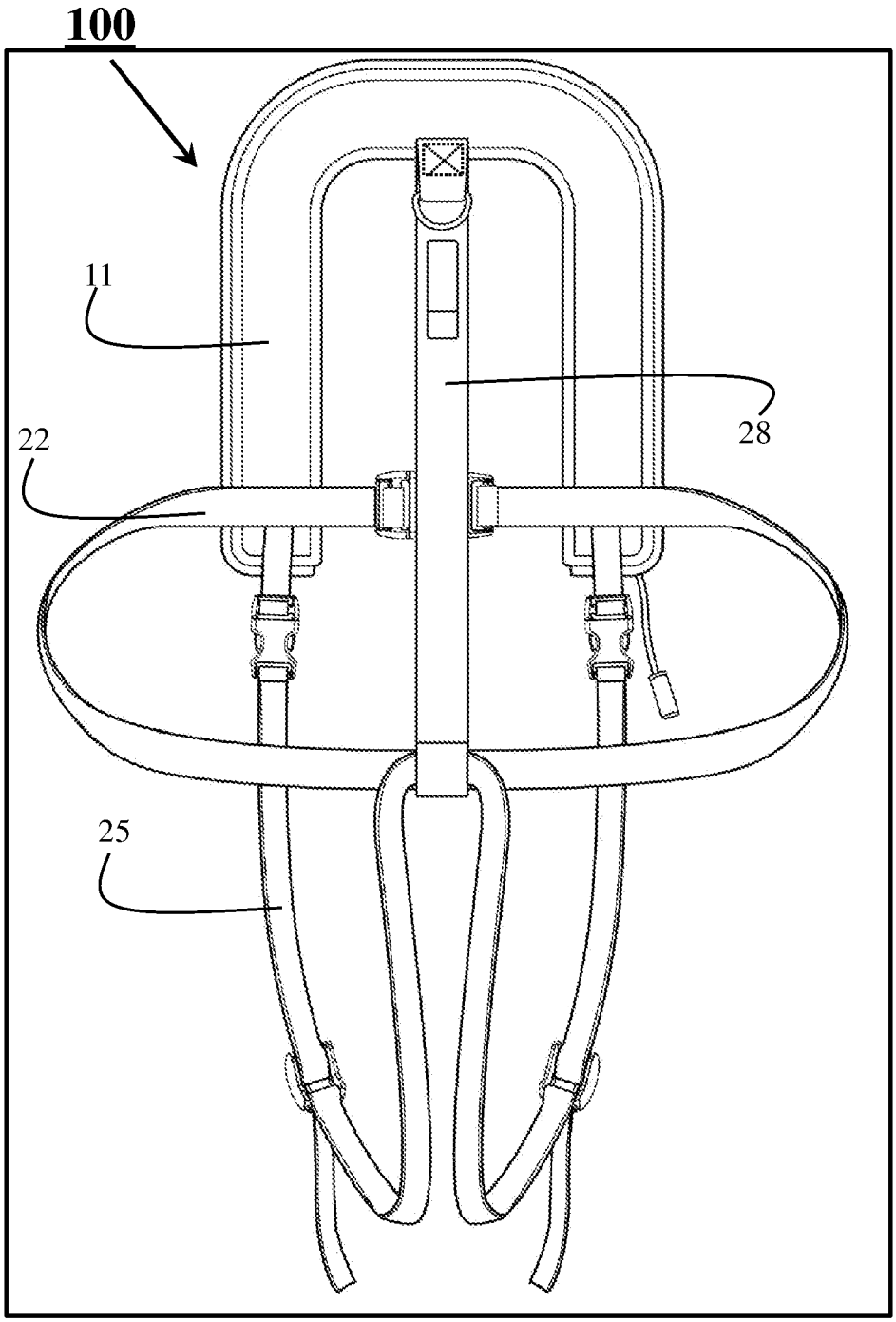


Fig.4

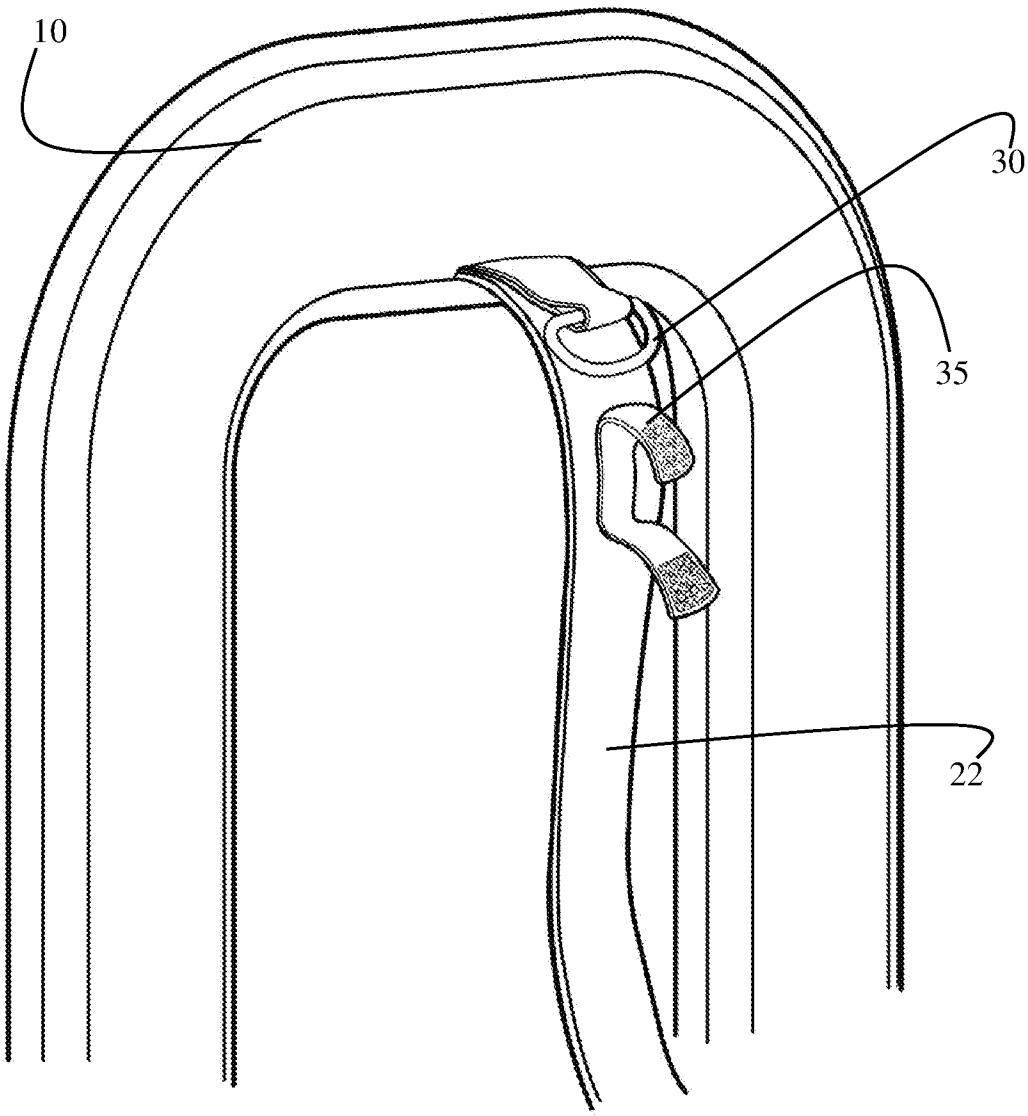


Fig.5

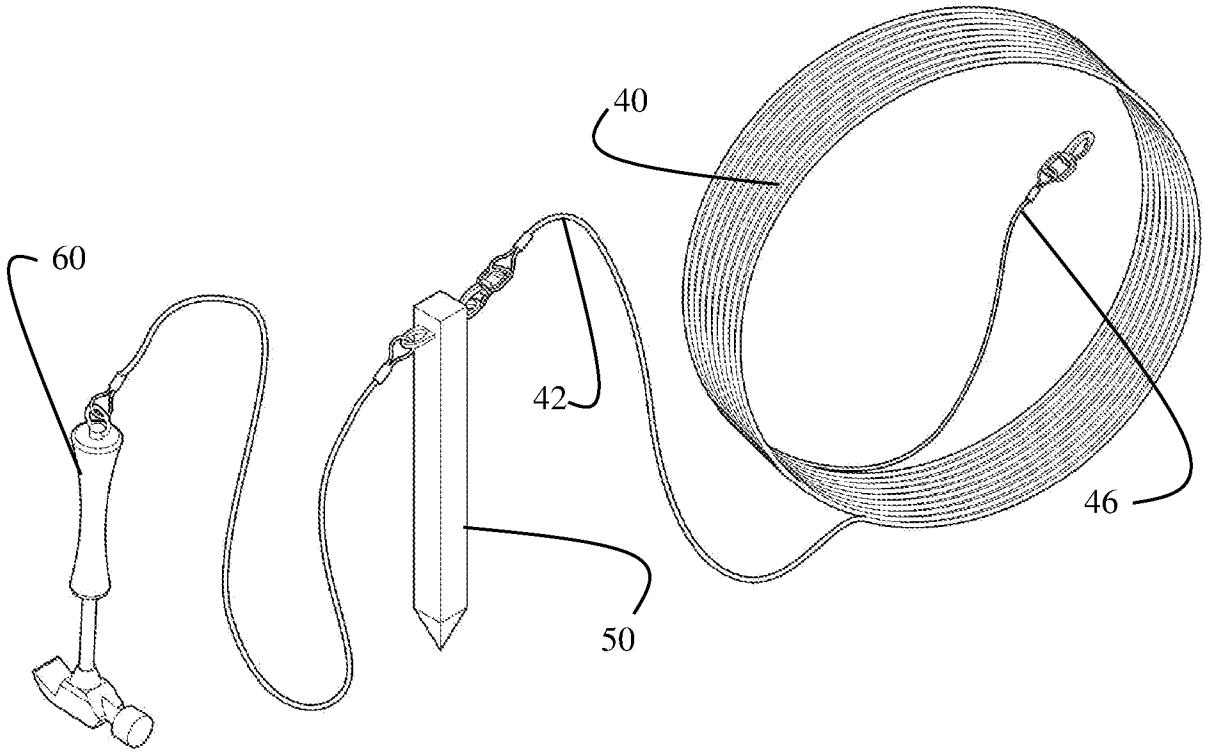


Fig.6

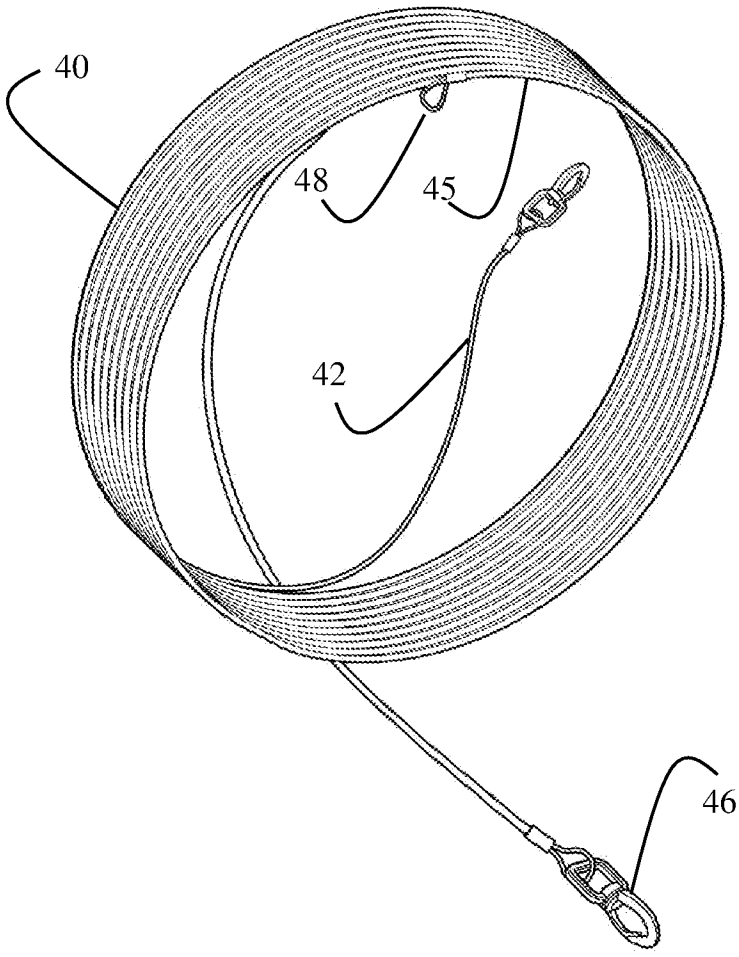


Fig.7

**INTERNATIONAL SEARCH REPORT**

International application No.
**PCT/AU2022/050782**

A. CLASSIFICATION OF SUBJECT MATTER

***B63C 9/26 (2006.01) A62B 35/00 (2006.01) B63C 9/11 (2006.01)***

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Applicant(s)/Inventor(s) name searched in internal databases provided by IP Australia, Espacenet, AusPat and Google. Search query: "ATKINSON, Michael Bruce" as the applicant as the inventor(s). EPOQUE INTERNAL Databases: PATENW: EPODOC, WPIAP, TXPEA, TXPEB, TXPEC, TXPEE, TXPEF, TXPEH, TXPEI, TXPEP, TXPES, TXPEPEA, TXPUSE0A, TXPUSE1A, TXPUSEA, TXPUSEB, TXPWOEA: IPC, CPC: B63C9/11/LOW, B63C9/26/LOW, A62B35/0006/LOW, A62B35/0043/LOW and Keywords: life jacket, harness, hammer, driver, stake, anchor, tether, D-Ring, carabiner, Velcro, holder and like terms. Google Patent Search: Keywords: safety, rock fishing, life-jacket, harness, three fixing points, tether, restraining, user, stake, attached, driver, hammer, secure, land, connector, back, D-ring, holder, two, strips, Velcro, wire rope, marine grade, stainless steel, UV protected coating, cord, clip, carabiner, adjustment, length, attachment. loop, second holder, waist, and like terms.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
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| INTERNATIONAL SEARCH REPORT<br>C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT | | International application No.<br>**PCT/AU2022/050782** |
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| Y | GB 2273645 B (COSALT INTERNATIONAL LIMITED) 08 February 1995<br>Figs. 1-6 and description pages 1-6 | 1-3, 6, 14 |
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| Y | US 2012/0168472 A1 (MATHEWS) 05 July 2012<br>Figs. 1A, 1B, 12A-12C and paragraphs [0070]-[0073] | 1-14 |
| A | ES 1014224 U (PLASTICEL S.A.) 01 March 1991, English Abstract and Description retrieved from Espacenet<br>Figs. 1-4, English Abstract and Description retrieved from Espacenet | 1-14 |

| INTERNATIONAL SEARCH REPORT<br>Information on patent family members | International application No.<br>**PCT/AU2022/050782** |
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This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

| Patent Document/s Cited in Search Report | | Patent Family Member/s | |
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| KR 101848462 B1 | 12 April 2018 | KR 101848462 B1 | 12 Apr 2018 |
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**End of Annex**

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.