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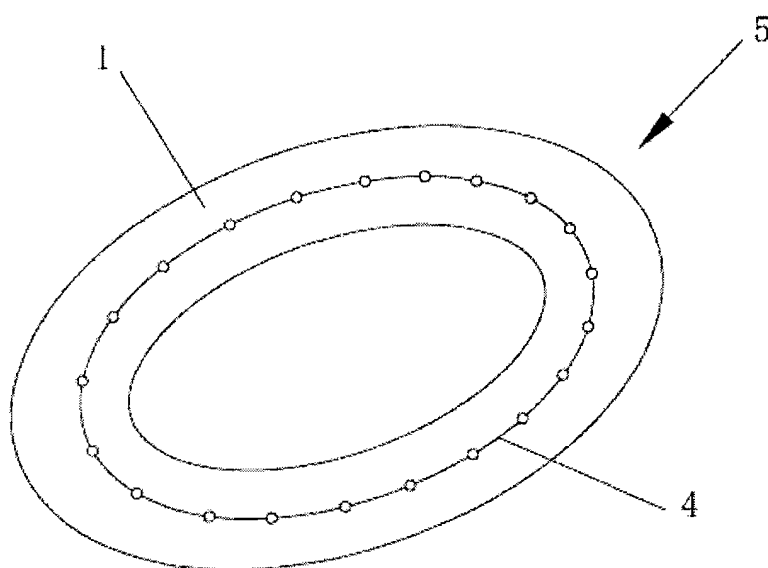
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(54) **ANNULAR SEAMLESS ROCK CLIMBING QUICKDRAW**

(57) A seamless webbing loop of a rock climbing quickdraw is disclosed in the disclosure, the webbing loop includes a winding yarn and a webbing. The winding yarn is an annular yarn formed by a single yarn that winds into circles or formed by a plurality of combined closed annular coils; the winding has an annular shape, and is provided with an opening on its radially inner face, where the opening is configured to receive the annular yarn, so

that the annular yarn can be wrapped by the winding; and the quickdraw is sewn with a stitching thread. The annular yarn formed by winding overcomes the defect of the seam between the abutted ends of a webbing in the prior art, thus making the quickdraw more strong and safe. The disclosure has simple processes and is strong, safe and durable, and is seamless after the webbing loop is sewn.



**FIG. 3**

**Description****Technical Field**

5 [0001] The present disclosure relates to the field of rock climbing equipment and technologies, in particular, to a seamless webbing loop of a rock climbing quickdraw.

**Technical Background**

10 [0002] With social development and popularity of sports, more and more people participate in physical exercise, and more and more sporting equipment emerge accordingly. In the field of rock climbing equipment and technologies, a quickdraw in the prior art generally employs a webbing of high strength, both ends of which are abutted against each other and then sewn together by a sewing machine. Such a webbing loop has a low cost and is easy to produce. However, a seam exists between the abutted and sewn both ends of the webbing, and the sewn portion of the webbing loop is subjected to relatively concentrated stress when the webbing loop is applied by a load and hence may be likely broken, leading to a security risk.

**Summary**

20 [0003] A seamless webbing loop of a rock climbing quickdraw is disclosed. The webbing loop is easy to produce, but is strong, safe and practical, and is seamless after the webbing loop is sewn.

[0004] The present disclosure adopts the following technical solution.

[0005] A seamless webbing loop of a rock climbing quickdraw, including a winding yarn and a webbing; the winding yarn is an annular yarn formed by a single yarn that winds into circles or formed by a plurality of combined closed annular coils; the winding has an annular shape, and is provided with an opening on its radially inner face, where the opening is configured to receive the annular yarn, so that the annular yarn can be wrapped by the winding; the quickdraw is sewn with a stitching thread.

[0006] Wherein, the webbing is a polyester webbing with high strength of a single layer structure.

[0007] Wherein, the annular yarn is a wire formed by a tetoron filament or a nylon filament.

30 [0008] Wherein, a diameter of the wire is greater than or equal to 0.08mm and less than or equal to 5mm.

[0009] Wherein, a perimeter of an outer contour of the webbing is slightly greater than that of the annular yarn.

[0010] Wherein, a diameter of a cross section of the webbing is slightly greater than that of the annular webbing.

[0011] Wherein, the stitching thread is a wire made by a tetoron filament or a nylon filament.

35 [0012] The beneficial effects of the disclosure are as follows. A seamless webbing loop of a rock climbing quickdraw in the disclosure includes a winding yarn and a webbing. The winding yarn is an annular yarn formed by a single yarn that winds into circles or formed by a plurality of combined closed annular coils; the winding has an annular shape, and is provided with an opening on its radially inner face, where the opening is configured to receive the annular yarn, so that the annular yarn can be wrapped by the winding; and the quickdraw is sewn with a stitching thread. The annular yarn formed by winding overcomes the defect of the seam between the abutted ends of a webbing in the prior art, thus making the quickdraw more strong and safe. The disclosure has simple processes and is strong, safe and durable, and is seamless after the webbing loop is sewn.

**Description of Drawings**

45 [0013]

Fig. 1 is a schematic diagram showing the structure of a webbing of a seamless webbing loop of a rock climbing quickdraw according to the disclosure;

50 Fig. 2 is a schematic diagram showing the structure of a winding yarn of the seamless webbing loop of the rock climbing quickdraw according to the disclosure; and

Fig. 3 is a schematic diagram showing the structure of the seamless webbing loop of the rock climbing quickdraw according to the disclosure.

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A list of the reference numerals:

- |                      |                                             |                  |
|----------------------|---------------------------------------------|------------------|
| 1: Webbing;          | 2: Opening;                                 | 3: Winding Yarn; |
| 4: Stitching thread; | 5: Webbing Loop of rock climbing Quickdraw. |                  |

### Detailed description of the Preferred Embodiment

**[0014]** The technical solution of the disclosure will be further described by way of embodiments below in conjunction with the accompanying Figs. 1 to 3.

**[0015]** A seamless webbing loop of a rock climbing quickdraw is disclosed. A quickdraw 5 includes a winding yarn 3 and a webbing 1. The winding yarn 3 is an annular yarn formed by a single yarn that winds into circles or formed by a plurality of combined closed annular coils; the winding 1 has an annular shape, and is provided with an opening 2 on its radially inner face, where the opening 2 is configured to receive the annular yarn, so that the annular yarn can be wrapped by the winding 1; and the quickdraw 5 is sewn with a stitching thread 4. By wrapping the winded annular yarn in the annular webbing with the opening, and then sewing the webbing by a sewing machine, the quickdraw is made safe and practical. The annular yarn formed by winding overcomes the defect of the seam between the abutted ends of a webbing in the prior art, thus making the quickdraw more strong and safe. The webbing loop for a rock climbing quickdraw in the present disclosure may be manufactured by a simple process, but is strong, safe and durable, and is seamless after the webbing loop is sewn.

**[0016]** The webbing 1 is a polyester webbing with high strength of a single layer structure. The high-strength polyester webbing has high tensile strength, is strong and wearable, and is suitable for use in outdoor rock climbing.

**[0017]** The annular yarn is a wire formed by a tetoron filament or a nylon filament, or a wire with other materials.

**[0018]** A diameter of the wire is greater than or equal to 0.08mm and less than or equal to 5mm. A thickness of the wire can be selected based on a load-bearing capability and a thickness of a quickdraw actually used.

**[0019]** A perimeter of an outer contour of the webbing is slightly greater than that of the annular yarn, so that the webbing wraps the annular yarn completely.

**[0020]** A diameter of a cross section of the webbing 1 is slightly greater than that of the annular webbing.

**[0021]** The stitching thread 4 is a wire made by a tetoron filament or a nylon filament, or other wires which are strong and durable and adopted for sewing.

**[0022]** The technical principles of the disclosure have been described in conjunction with the embodiments as above. The description is only intended to explain the principles of the disclosure, but not to limit the disclosure. Based on the explanation herein, other embodiments can be conceived by those skilled in the art without inventive working, thus these embodiments should be included within the protection scope of the disclosure.

### Claims

1. A seamless webbing loop of a rock climbing quickdraw (5), comprising a winding yarn (3) and a webbing (1); the winding yarn (3) is an annular yarn formed by a single yarn that winds into circles or formed by a plurality of combined closed annular coils; the winding (1) has an annular shape, and is provided with an opening (2) on its radially inner face, where the opening (2) is configured to receive the annular yarn, so that the annular yarn can be wrapped by the winding (1); and the quickdraw (5) is sewn with a stitching thread (4).
2. The seamless webbing loop of the rock climbing quickdraw according to claim 1, wherein, the webbing (1) is a polyester webbing with high strength of a single layer structure.
3. The seamless webbing loop of the rock climbing quickdraw according to claim 1, wherein, the annular yarn is a wire formed by a tetoron filament or a nylon filament.
4. The seamless webbing loop of the rock climbing quickdraw according to claim 3, wherein, a diameter of the wire is greater than or equal to 0.08mm and less than or equal to 5mm.
5. The seamless webbing loop of the rock climbing quickdraw according to claim 1, wherein, a perimeter of an outer contour of the webbing (1) is slightly greater than that of the annular yarn.
6. The seamless webbing loop of the rock climbing quickdraw according to claim 1, wherein, a diameter of a cross section of the webbing (1) is slightly greater than that of the annular webbing.

7. The seamless webbing loop of the rock climbing quickdraw according to claim 1, wherein, the stitching thread (4) is a wire made by a tetoron filament or a nylon filament.

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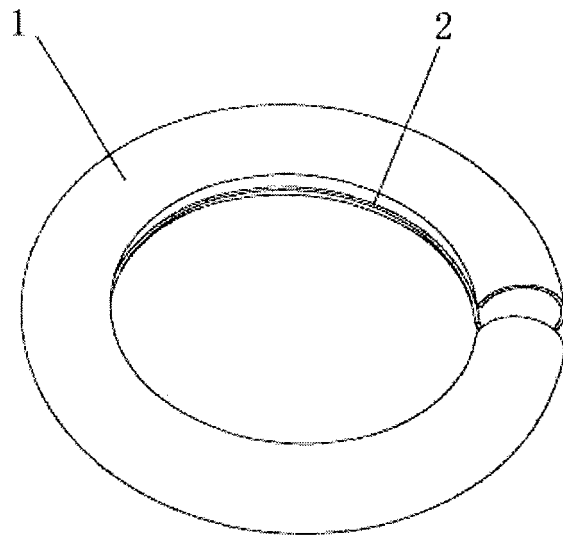
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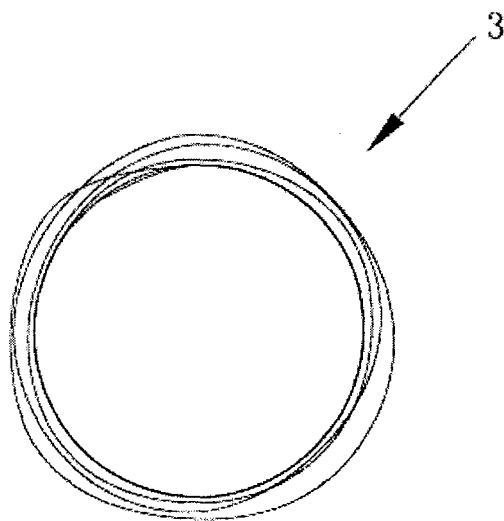
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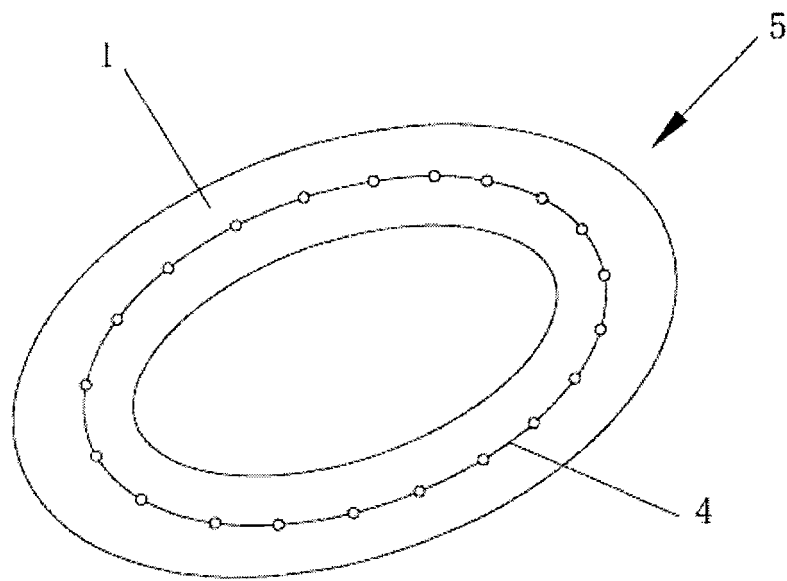
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**FIG. 1**



**FIG. 2**



**FIG. 3**

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CN2013/087085

## A. CLASSIFICATION OF SUBJECT MATTER

A63B 29/02 (2006.01) i

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)

A63B 29/02; A63B 29/00; A63B 69/00

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)

VEN, CNTXT, CNABS: rope, belt, joint, connect, seam

## 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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| X         | CN 2691651 Y (LIANG, Kongtai) 13 April 2005 (13.04.2005) figures 5-10 and description, page 5, line 16 to page 6, line 8 | 1-7                   |
| A         | CN 102995215 A (ZEDEL) 27 March 2013 (27.03.2013) the whole document                                                     | 1-7                   |
| A         | US 2005093317 A1 (HESS R.) 05 May 2005 (05.05.2005) the whole document                                                   | 1-7                   |

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

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|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| * Special categories of cited documents:                                                                                                                                | "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention                                              |
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| "O" document referring to an oral disclosure, use, exhibition or other means                                                                                            |                                                                                                                                                                                                                                                  |
| "P" document published prior to the international filing date but later than the priority date claimed                                                                  | "&" document member of the same patent family                                                                                                                                                                                                    |

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**INTERNATIONAL SEARCH REPORT**  
 Information on patent family members

 International application No.  
 PCT/CN2013/087085

| Patent Documents referred<br>in the Report | Publication Date | Patent Family    | Publication Date  |
|--------------------------------------------|------------------|------------------|-------------------|
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