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(54) BOOT, PARTICULARLY FOR SKI-MOUNTAINEERING OR TELEMARK SKIING

(57) A boot (1), particularly for ski-mountaineering or telemark skiing, which comprises a shell (2) and a quarter that are mutually articulated about a rotation axis (100), the boot (1) comprising at least one fastening device (10) adapted to cause the mutual approach between two parts of the boot (1), the fastening device (10) comprising at least one tension element (10a) that is connected to an engagement body (12) arranged at a first part (1a) of the boot (1), at the second part (1b) of the boot (1) there being a tension lever system (13) that acts on the tension element (10a) in order to move the boot (1) between a first, open position, in which the two parts (1a, 1b) are mutually spaced apart, and a closed position, in which the two parts (1a, 1b) are mutually close together; the tension lever system (13) comprises a main lever (14) that can rotate on command with respect to a supporting base (15) which is integral with the second part (1b) about a first pivoting axis (201), and a second lever (15) that is supported so that it can rotate by the main lever (13) about a second pivoting axis (202), the second lever (15) being associated with the tension element (10a) and being arrangeable with respect to the main lever (13) in an angular position, about the second pivoting axis (202), which is adapted to cause a relative positioning between the two parts (1a, 1b) of the boot (1) in an intermediate position between the open position and the closed position.

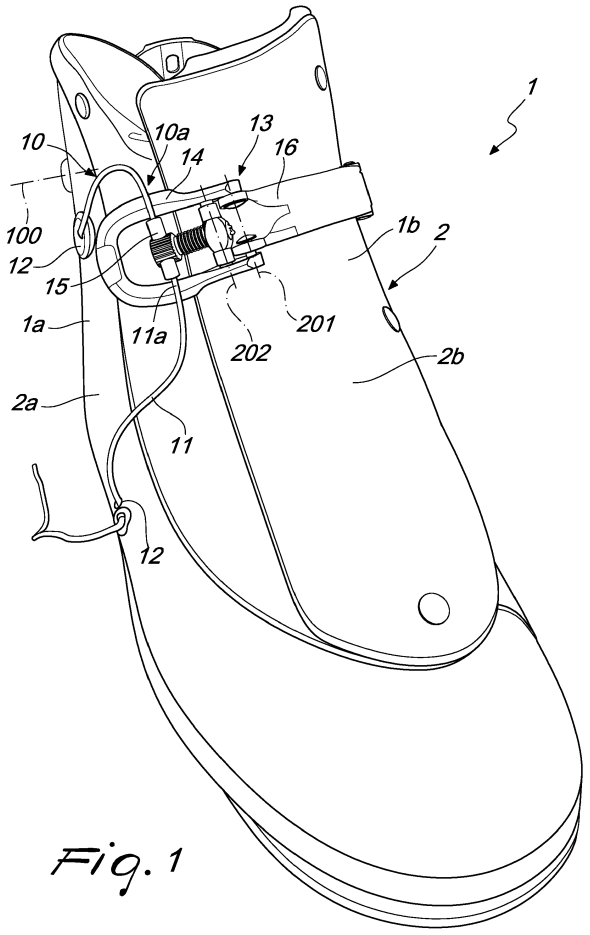

Fig. 1

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Description

[0001] The present invention relates to a boot, particularly for ski-mountaineering or telemark skiing.

[0002] As is known, ski boots for ski-mountaineering have a different structure to regular ski boots in that the activity of ski-mountaineering involves executing both downhill and uphill segments and routes over apparently flat terrain.

[0003] It is evident that on the downhill segments it is necessary that the configuration of the boot be substantially similar to that of a classic ski boot (and thus with fastenings to the ski both in the toe zone and at the heel) while on the uphill segments (in which generally the ski mountaineer progresses with climbing skins) or on apparently flat terrain it is essential that the boot be fastened to the ski only at the toe zone in order to allow the lifting of the heel when pushing (similarly to what occurs in cross-country skiing).

[0004] Moreover, in order to optimize control of the ski during descent, it is advisable that the shell of the boot, which is associated in a downward region with the sole, be rigidly coupled to the quarter that envelops the lower portion of the calf, whereas, when the ski mountaineer progresses uphill or over apparently flat ground, it is more convenient to ensure the mobility of the ankle and, for this reason, the quarter must be able to freely oscillate with respect to the shell about a pivoting axis that substantially passes through the rotation axis of the ankle.

[0005] For this reason, ski boots for ski-mountaineering are provided with a locking device, which acts between the shell and the quarter and which is adapted to pass, on command, between an active position, which is used when going downhill and wherein it locks the relative rotation of the quarter with respect to the shell about the pivoting axis, and an inactive position in which the rotation is allowed of the quarter with respect to the shell about the pivoting axis.

[0006] With regard to the devices for opening and closing the boot, on the other hand, the solutions most commonly used involve closing levers that act between two parts of the shell and/or of the quarter, and which are adapted to pass between an open position, in order to move the boot between a first, open position in which the two parts are mutually spaced apart, and a closed position, in which the two parts are mutually close together.

[0007] The aim of the present invention is to provide a boot, particularly for ski-mountaineering or telemark skiing, which is capable of improving the known art in one or more of the above mentioned aspects.

[0008] Within this aim, an object of the invention is to provide a boot, particularly for ski-mountaineering or telemark skiing, that is highly reliable, easy to implement and low cost.

[0009] This aim and this and other objects which will become better apparent hereinafter are achieved by a boot, particularly for ski-mountaineering or telemark skiing, according to claim 1, optionally provided with one or more of the characteristics of the dependent claims.

[0010] Further characteristics and advantages of the invention will become better apparent from the description of preferred, but not exclusive, embodiments of the boot, particularly for ski-mountaineering or telemark skiing according to the invention, which are illustrated for the purposes of non-limiting example in the accompanying drawings wherein:

Figure 1 shows a boot, and in particular the shell, according to the invention, in the open position;
Figure 2 is a view similar to the previous figure of the boot, and in particular of the shell, in the intermediate position;
Figure 3 is a view similar to the previous figures of the boot, and in particular of the shell, in the closed position.

[0011] With reference to the figures, the boot, particularly for ski-mountaineering or telemark skiing according to the invention, generally designated by the reference numeral 1, comprises a shell 2 and a quarter 3 which are mutually articulated about a rotation axis 100.

[0012] The boot 1 comprises at least one fastening device 10, which is adapted to cause the mutual approach between two parts 1a, 1b of the boot 1.

[0013] In particular, the fastening device 10 comprises at least one tension element 10a that is connected to at least one engagement body 12 arranged at a first part 1 a of the boot 1.

[0014] At the second part 1b of the boot 1 a tension lever system 13 is provided that acts on the tension element 10a in order to move the boot 1 between a first, open position, in which the two parts 1a, 1b are mutually spaced apart, and a closed position, in which the two parts 1a, 1b are mutually close together.

[0015] According to the present invention, the tension lever system 13 comprises a main lever 14 that can rotate on command with respect to a supporting base 1, which is integral with the second part 1b, about a first pivoting axis 201.

[0016] The tension lever system 13 further comprises a second lever 15, which is supported so that it can rotate by the main lever 13 about a second pivoting axis 202.

[0017] In particular, the second lever 15 is associated with the tension element 10a.

[0018] The second lever 15 is further arrangeable with respect to the main lever 13 in an angular position, about the second axis 202, which is adapted to cause a relative positioning between the two parts 1a, 1b of the boot 1 in an intermediate position between the open position and the closed position.

[0019] In essence, having provided a tension lever system 13 that has a main lever 14 and a second lever 15 makes it possible for the user to obtain, with great simplicity and reliability, a solution that makes it possible to keep the parts 1a and 1b of the boot 1 mutually arranged in an intermediate position between the open position

and the closed position.

[0020] In essence, the open position will be used during the operations to don the boot and to extract the foot from the boot, the closed position when the quarter is locked with respect to the shell 2, and the intermediate position when the user is making an ascent and therefore when the quarter can rotate with respect to the shell 2.

[0021] With reference to the practical embodiment shown in the figures, the tension element 10a comprises a flexible elongated element 11, typically a cable, that defines a tension portion 11a that extends between two engagement bodies 12 that are arranged at a first part 1a of the boot 1.

[0022] At the second part 1b of the boot 1, the tension lever system 13 is provided, which, in this case, acts along the tension portion 11a of the flexible elongated element 11 in order to move the boot 1.

[0023] Conveniently, the first part and the second part 1a, 1b of the boot comprise respectively a first part 2a and a second part 2b of the shell 2.

[0024] Advantageously, the main lever 14 and the second lever 15 are adapted to pass, on command, respectively between an open position and a closed position.

[0025] In particular, when the main lever 14 and the second lever 15 are both in the open position (Figure 1), the boot 1, and specifically the shell 2, is kept in the open position.

[0026] When the main lever 14 is in the open position and the second lever 15 in the closed position (Figure 2), the boot 1, and specifically the shell 2, is kept in the intermediate position.

[0027] Finally, when the main lever 14 and the second lever 15 are both in the closed position (Figure 3), the boot 1, and specifically the shell 2, is kept in the closed position.

[0028] Preferably, the second pivoting axis 202 is substantially parallel to the first pivoting axis 201.

[0029] Advantageously, the boot 1 has a device 4 for locking the relative rotation of the quarter 3 with respect to the shell 2 about the rotation axis 100.

[0030] The locking device 4 is, in particular, adapted to pass between an inactive position, in which the quarter 3 can rotate with respect to the shell 2 about the rotation axis 100, and an active position, in which the position of the quarter 3 with respect to the shell 2 is locked angularly about the rotation axis 100, as a consequence of the transition of at least one actuation body 5 between an open position and a closed position.

[0031] Similarly, there can be means of adjusting the relative distance between the first pivoting axis 201 and the second pivoting axis 202.

[0032] Use of the boot 1, according to the invention, is evident from the foregoing description.

[0033] In practice it has been found that the invention fully achieves the intended aim and objects.

[0034] The invention, thus conceived, is susceptible of numerous modifications and variations, all of which are within the scope of the appended claims. Moreover, all the details may be substituted by other, technically equivalent elements.

[0035] In practice the materials employed, provided they are compatible with the specific use, and the contingent dimensions and shapes, may be any according to requirements and to the state of the art.

[0036] The disclosures in Italian Patent Application No. 102016000107759 (UA2016A007681) from which this application claims priority are incorporated herein by reference.

[0037] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A boot (1), particularly for ski-mountaineering or telemark skiing, which comprises a shell (2) and a quarter that are mutually articulated about a rotation axis (100), said boot (1) comprising at least one fastening device (10) adapted to cause the mutual approach between two parts of said boot (1), said fastening device (10) comprising at least one tension element (10a) that is connected to an engagement body (12) arranged at a first part (1a) of said boot (1), at the second part (1b) of said boot (1) there being a tension lever system (13) that acts on said tension element (10a) in order to move said boot (1) between a first, open position, in which the two parts (1a, 1b) are mutually spaced apart, and a closed position, in which the two parts (1a, 1b) are mutually close together, **characterized in that** said tension lever system (13) comprises a main lever (14) that can rotate on command with respect to a supporting base (15) which is integral with said second part (1b) about a first pivoting axis (201), said tension lever system (13) comprising a second lever (15) that is supported so that it can rotate by said main lever (13) about a second pivoting axis (202), said second lever (15) being associated with said tension element (10a) and being arrangeable with respect to the main lever (13) in an angular position, about the second pivoting axis (202), which is adapted to cause a relative positioning between the two parts (1a, 1b) of said boot (1) in an intermediate position between said open position and said closed position.

2. The boot (1) according to claim 1, **characterized in that** said tension element (10a) comprises a flexible elongated element (11) that defines a tension portion (11a) that extends between two engagement bodies (12) that are arranged at a first part (1a) of said boot (1), at the second part (1a) of said boot (1) there

being said tension lever system (13) which acts along said tension portion (11a) of said flexible elongated element (11).

3. The boot (1) according to one or more of the preceding claims, **characterized in that** said first part and said second part (1a, 1b) comprise respectively a first part (2a) and a second part (2b) of said shell (2).

4. The boot (1) according to one or more of the preceding claims, **characterized in that** said main lever (13) and said second lever (15) are adapted to pass, on command, respectively between an open position and a closed position.

5. The boot (1) according to one or more of the preceding claims, **characterized in that** with said main lever (13) in the open position and with said second lever (15) in the open position said shell (2) is kept in said open position.

6. The boot (1) according to one or more of the preceding claims, **characterized in that** with said main lever (13) in the closed position and with said second lever (15) in the closed position said shell (2) is kept in said closed position.

7. The boot (1) according to one or more of the preceding claims, **characterized in that** with said main lever (13) in the open position and with said second lever (15) in the closed position said shell (2) is kept in said intermediate position.

8. The boot (1) according to one or more of the preceding claims, **characterized in that** said second pivoting axis (202) is substantially parallel to said first pivoting axis (201).

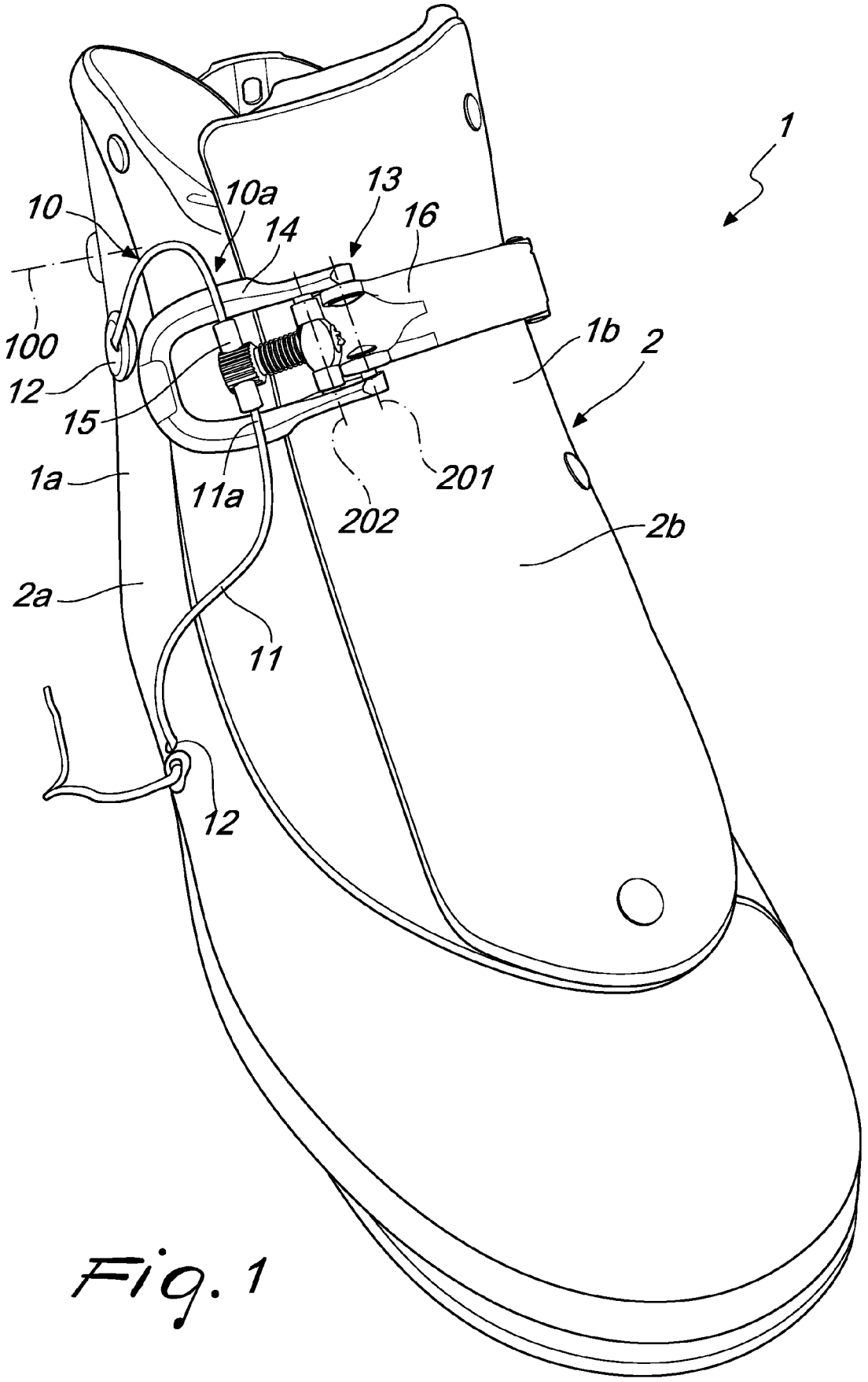

Fig. 1

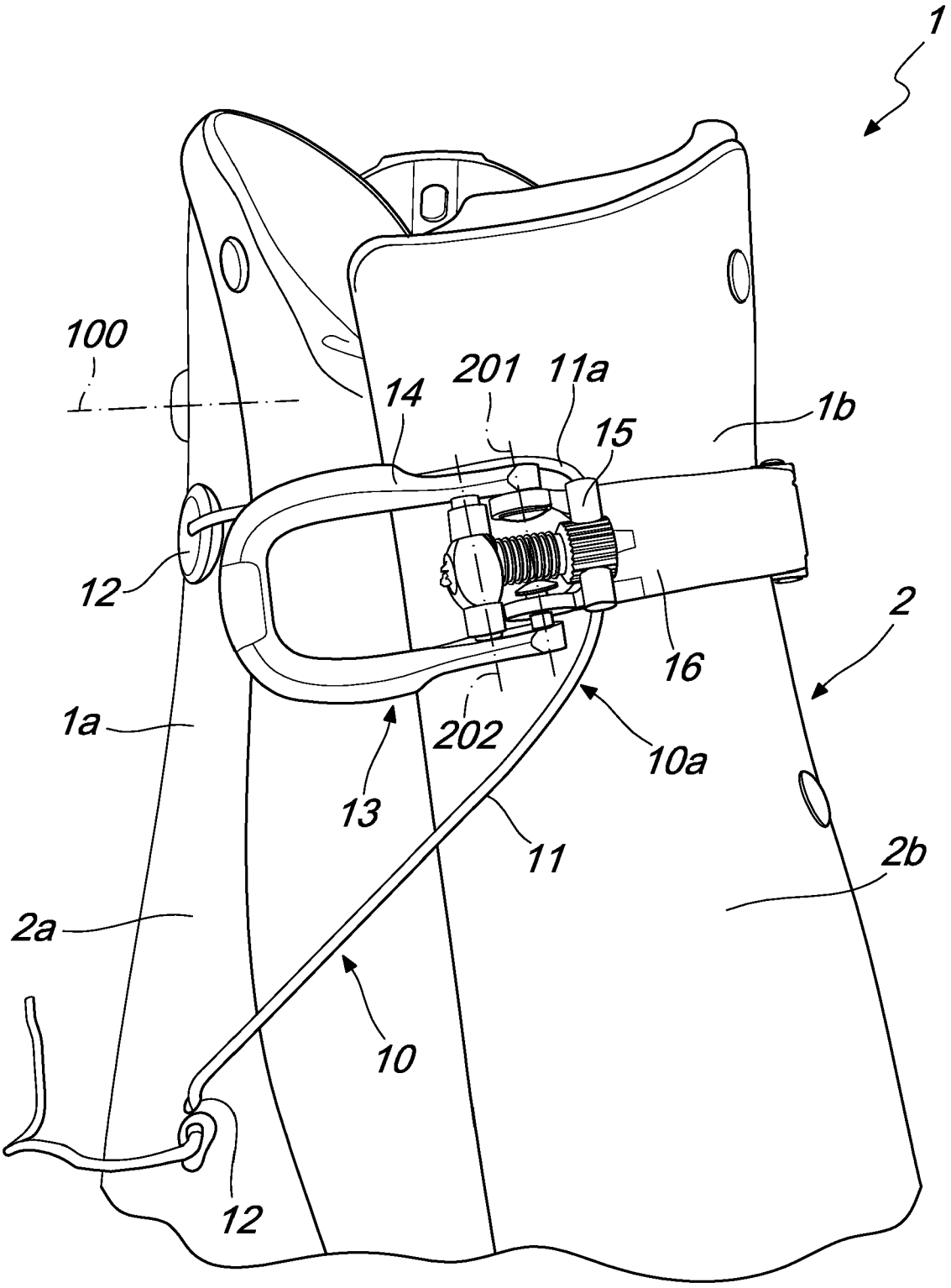

Fig. 2

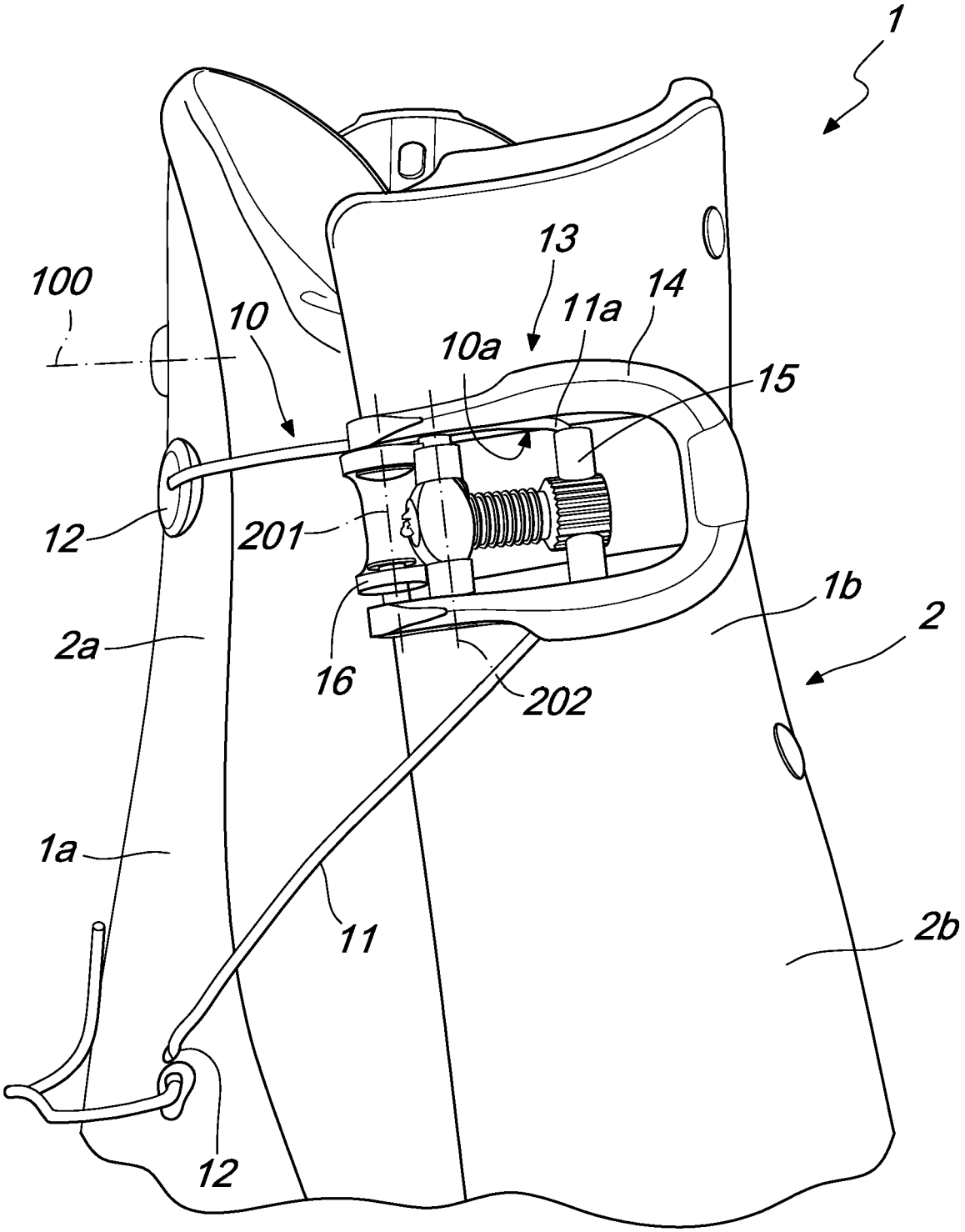

Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 17 19 7968

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 2 591 696 A1 (DAL BELLO SPORT SRL [IT]) 15 May 2013 (2013-05-15) * sentences 1-3, paragraph 24 * * paragraphs [0026] - [0030]; figures 1-5 *	1-8	INV. A43C11/14 A43C11/16
A	US 3 545 106 A (MARTIN HANS) 8 December 1970 (1970-12-08) * figures 1-5 *	1-8	
A	US 5 526 555 A (BATTISTELLA MIRCO [IT] ET AL) 18 June 1996 (1996-06-18) * figures 10-19 *	1-8	
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TECHNICAL FIELDS SEARCHED (IPC)

A43C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	22 February 2018	Ciubotariu, Adrian

CATEGORY OF CITED DOCUMENTS

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- IT UA2016007681 A **[0036]**