(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 524 570 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **92112336.0**

(51) Int. Cl.5: **A43C 11/14**

(22) Date of filing: **20.07.92**

(30) Priority: **24.07.91 IT VE910033 U**

(43) Date of publication of application:
27.01.93 Bulletin 93/04

(84) Designated Contracting States:
AT CH DE FR IT LI

(71) Applicant: **NORDICA S.p.A**
Via Piave, 33
I-31044 Montebelluna (Treviso)(IT)

(72) Inventor: **Faganello, Giovanni Pietro**
Borgo Campardi 24
I-31020 San Fior (Treviso)(IT)

(74) Representative: **Modiano, Guido et al**
c/o Modiano & Associati S.r.l. Via Meravigli, 16
I-20123 Milano(IT)

(54) Lever closure device particularly for ski boots.

(57) A lever device for ski boots includes a traction lever (5) pivoted to a support (2) associated with a first member of the boot. A second lever (8) is pivoted to traction lever (5) and has a rod member (11). Rod member (11) is threaded and engages a threaded hole provided longitudinally on a block (14). Block (14) is associated with a ring (17) adapted to engage a second member of the boot. The second lever (8) and the block (14) are made of plastics.

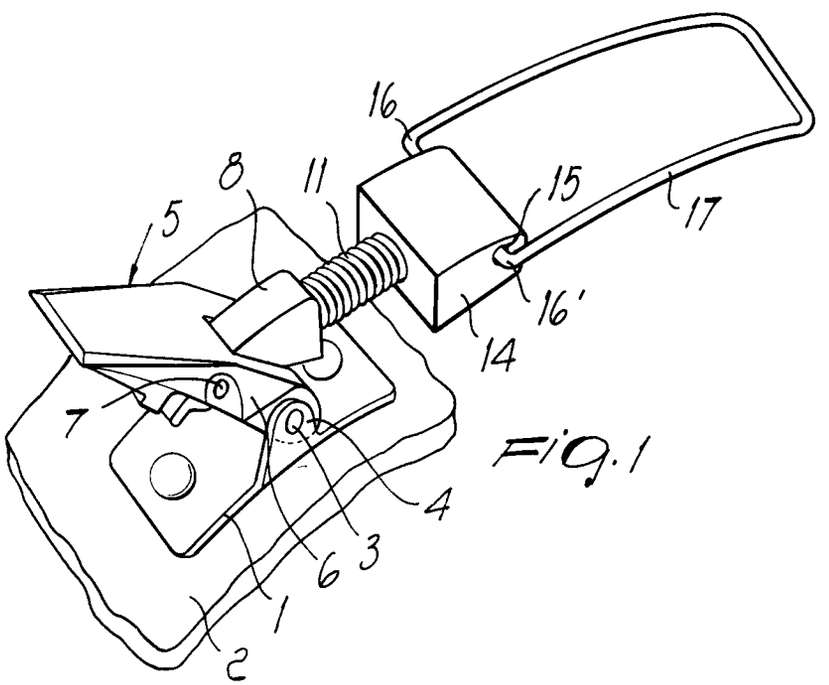

Fig. 1

EP 0 524 570 A1

The present invention relates to a lever closure device particularly for ski boots.

Lever closure devices for ski boots are known. They generally comprise a support associated with a flap of the upper and having a traction lever articulated at a transverse pivot. A metallic block is articulated at the central portion of the lever. The block is covered by a sheath, made of of plastics and is provided with a threaded hole in which the threaded end of a flexible cable engages. The other end of the cable is coupled by calking to a metallic block. The block is painted and is associated with the curved ends of a ring. The ring engages between the teeth of a rack which is associated with the other flap of the upper.

Such known devices have some inconveniences, namely:

-- laborious manufacture, due both to the operations for painting the parts and to their mutual locking;

-- the possibility of the disengagement of the curved ends of the ring from the block as a consequence of the stresses to which said region is subjected during the traction of the lever.

According to the invention, these problems are eliminated with a lever closure device, particularly for ski boots characterized in that it comprises a first traction lever articulated to a support, a second internally threaded lever body being articulated to said first lever, a threaded rod member engaging in said second lever body, said rod member being one end of a cable, other end of said cable being associated with a block, said block being provided with a traction ring, said second lever body and said block being made of plastics.

The present invention is further explained hereafter with reference to the accompanying drawings, wherein:

figure 1 is a perspective view of a closure device according to the invention;

figure 2 is a longitudinal sectional view thereof; and

figure 3 is an enlarged side section view thereof.

As can be seen from the figures, the lever closure device according to the invention substantially comprises a curved support 1 which can be coupled, in a conventional manner, to a flap 2 of the upper. A traction lever 5 is articulated to the support 1 by means of pivots 3 applied to the wings 4 of the support 1.

The lever 5 is fork-shaped, and a shaped block 8, made of plastics, is articulated at a transverse pivot 7 between its tines 6.

The block 8 is provided with a hole 9 which can be threaded and in which the threaded, or non-threaded, rod member 11 engages. The rod member constitutes the end of a flexible cable. A snap ring 10 is applied to said end so as to prevent the disengagement of the cable 11 from the seat.

The other end of the cable is provided with a longitudinal notch 12 which passes through its diametrical plane and is inserted in a corresponding cylindrical hole 13 defined on a block 14 which is made of plastics.

Two transverse holes 15 are connected to the inner ends of said hole 13, and the free ends 16, 16' of a slotted ring 17 are inserted therein. In particular, one of said ends, designated by numeral 16, is arranged in contact with the flat surface of the notch 12 so as to prevent mutual rotation between the flexible cable 11 and the block 14.

From what has been described, it is evident that the lever-operated closure device according to the invention has numerous advantages, among which:

-- a reduced cost, because of the lower number of components required and because of the elimination of certain machining operations (painting, calking);

-- the possibility of replacing the ring, in case of breakage or deformation, without requiring the intervention of specialized personnel;

-- the possibility of replacing the block with other blocks of different colors.

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 scope of each element identified by way of example by such reference signs.

Claims

1. Lever closure device, particularly for ski boots, characterized in that it comprises a first traction lever (5) articulated to a support (1), a second internally threaded lever body (8) being articulated to said first lever, a threaded rod member (11) engaging in said second lever body, said rod member being one end of a cable, other end of said cable being associated with a block (14), said block being provided with a traction ring (17), said second lever body (8) and said block (14) being made of plastics.

2. Device according to claim 1, characterized in that said block (14) is provided with two holes (15), ends (16, 16') of said ring (17) engage in said holes, said holes being arranged transversely to a hole (13), said rod member (11) being inserted in said hole (13).

3. Device according to claim 2, characterized in

that said rod member (11) inserted in said block (14) is provided with a region which is suitable to lock the traction ring, preventing the rotation of said rod member.

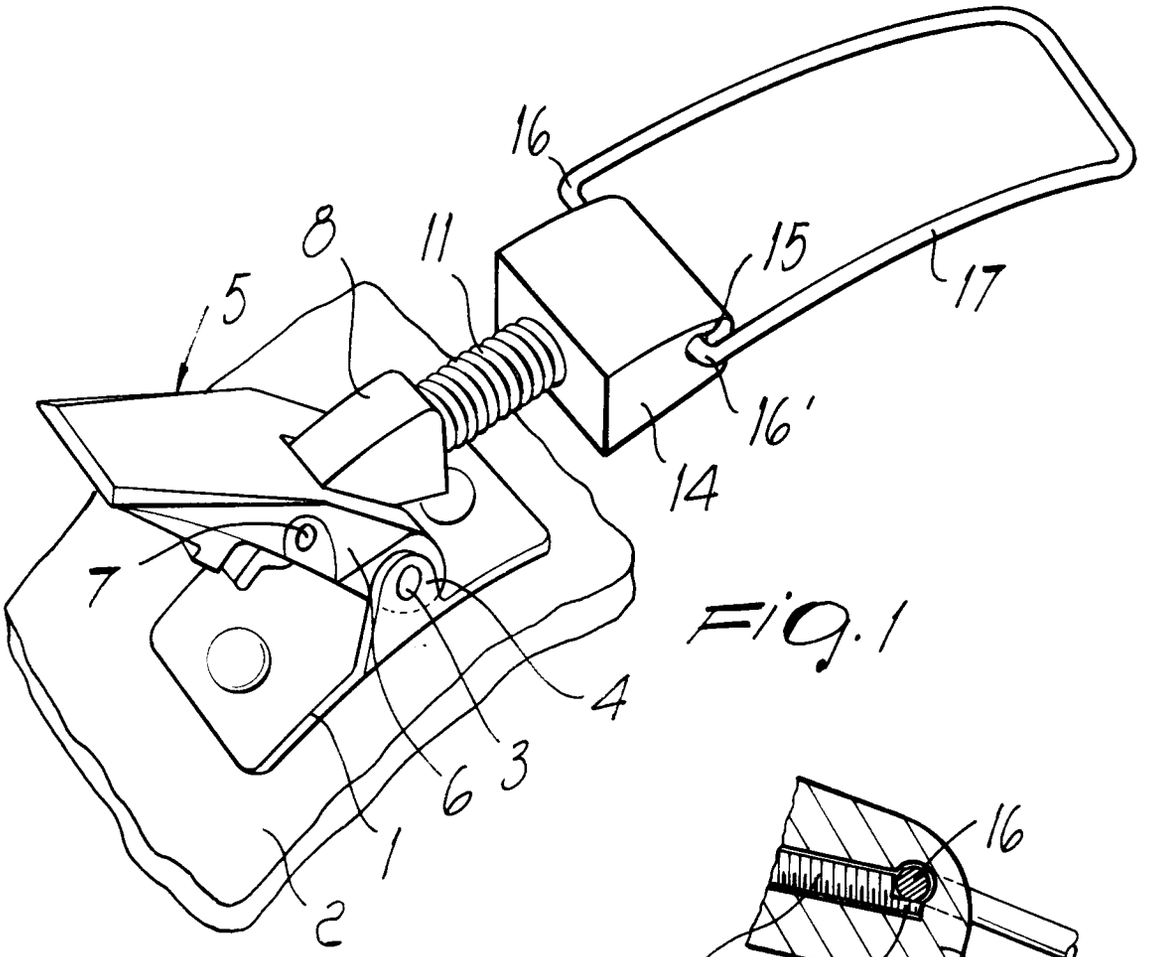

FIG. 1

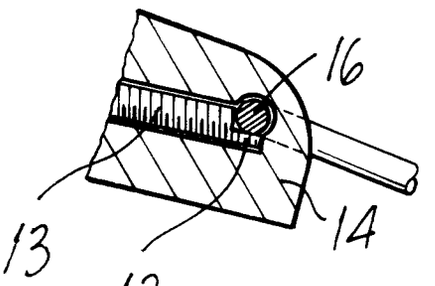

FIG. 3

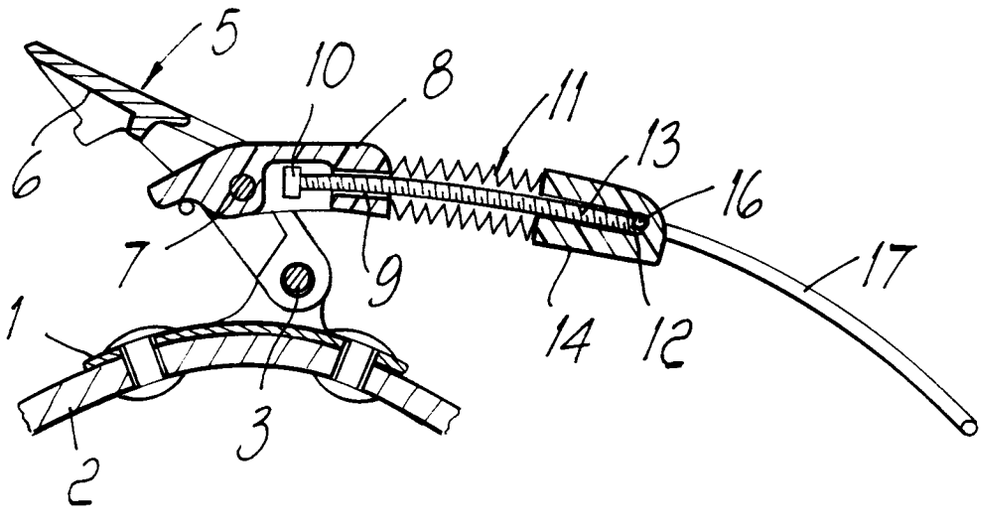

FIG. 2

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 11 2336

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	FR-A-2 573 632 (COMPAGNIE FRANÇAISE D' ARTICLES DE SPORT) * the whole document *	1,2	A43C11/14
Y	* idem *	3	
Y	FR-A-2 536 968 (ICARO OLIVIERI & C. SPA) * the whole document *	3	
X	US-A-4 051 611 (CHALMERS) * the whole document *	1,2	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

A43C
A43B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	18 NOVEMBER 1992	MATHEY X.C.M.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P0401)