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(71) Applicant: **NORDICA S.p.A.**
31040 Trevignano (Treviso) (IT)

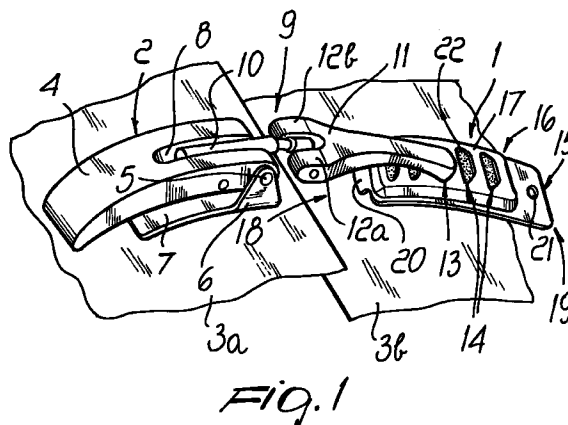
(72) Inventors:

- **Gorza, Roberto**
32032 Feltre (Prov. of Belluno) (IT)
- **Battistella, Mirco**
31027 Spresiano (Prov. of Treviso) (IT)

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

(54) Fastener, particularly for sports shoes

(57) A fastener for sports shoes includes a lever (11) associated with a first member (3a) of a shoe, and selectively interacting with a rack (1), which is in turn associated with the second member of the shoe, the rack including a flexible element (22) arranged between the rack (1) and the second member (3b) to prevent snow or ice from clogging the rack openings (14).



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Description

The present invention relates to a fastener, particularly for sports shoes.

Italian patent No. 182322 in the name of this same Applicant, discloses a closure device, or fastener, for sports shoes, particularly for ski boots.

The fastener disclosed in the above-mentioned patent is constituted by a lever element pivoted, at one end, at one of the flaps of the shoe to be fastened. The lever element has a median portion articulated to the end of a traction element having, at the other end, a hook element which can be coupled in appropriate engagement seats provided at the other flap of the shoe to be fastened.

The traction element also has means for adjusting its useful length finely and/or coarsely, and a flexible portion which can easily adapt to any shape and deformation of the boot.

The seats for the hook element are formed at a rack composed of a perforated plate provided with a plurality of rectangular openings arranged transversely to the plate.

This conventional rack has a drawback: during sports practice snow may deposit in the seats that are not occupied by the hook element associated with the traction element, preventing correct and easy insertion of the hook element in a desired and different seat if the user decides to change the tightening degree of the boot.

In order to perform this operation, the user must in fact clear the engagement seats of the rack from the snow and/or ice which may have formed in the meantime.

This operation is long and difficult and requires an adapted pointed tool such as for example a screwdriver, because of the particular configuration of the rack.

Another drawback of this conventional rack is that ice may form between the traction element and the engagement seats, preventing correct engagement of the hook element on the rack. This interposition of ice is dangerous, because it may allow the lever to disengage at any time during sports practice, jeopardizing the skier's safety.

A principal aim of the present invention is therefore to solve the described technical problems, eliminating the drawbacks of the cited prior art and providing a fastener having a rack which allows to vary the fastening degree of the boot, especially during sports practice, quickly and easily without forcing the skier to act in order to free the rack seats from ice.

Within the scope of this aim, an important object is to provide a fastener which allows to engage the traction element on the rack rapidly, precisely, and safely whenever the user decides to vary the fastening of the boot.

Another object is to provide a fastener that allows the user to avoid carrying, during sports practice, any specific external means adapted to free the engagement seats affected by the snow or ice that has formed

therein.

Another object is to provide a fastener that has low costs and can be manufactured with conventional machines and equipment.

This aim, these objects, and others which will become apparent hereinafter are achieved by a fastener, particularly for sports shoes, comprising a lever means associated with a first member of a shoe and adapted to engage a rack, associated with a second member of said shoe, characterized in that said rack comprises at least one flexible element arranged between said rack and said second flap.

Further characteristics and advantages of the invention will become apparent from the following detailed description of a particular but not exclusive embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a perspective view of the fastener associated with the flaps of a shoe;

figure 2 is a top view of the rack;

figure 3 is a sectional view, taken along the plane III-III of figure 2;

figure 4 is a sectional view, taken along the plane IV-IV of figure 3;

figure 5 is a sectional view, taken along the plane V-V of figure 3;

figure 6 is a view, similar to figure 3, of the end part of the traction element, which is selectively connected to the rack.

With reference to the above figures, the reference numeral 1 designates a rack for a closure device or fastener 2 for sports shoes.

The fastener 2 is composed of a lever arm 4 pivoted at one end, by means of a pivot 5, to the shoulders 6 of a base 7 which is rigidly coupled to a first member 3a of the shoe.

In the region where it is pivoted to the shoulders 6, the lever arm 4 has a central recess 8 accommodating a traction element, generally designated by the reference numeral 9, pivoted to the lever arm 4 at a median portion proximate to shoulders 6.

The traction element 9 is constituted by a bar 10 pivoted to the lever arm 4 and by a substantially Y-shaped engagement element 11; the other end of the bar 10 is accommodated and pivoted between the pair of first wings 12a and 12b of said engagement element.

The engagement element 11 has, at its free end, a hook 13 which can be selectively engaged in one of a plurality of openings 14 formed transversely to the rack 1 constituted by a plate 15 which is associable with the second member 3b of the shoe and has a curved profile.

The plate 15 has a raised portion 16 whereat the equally spaced openings 14 are formed; flaps 17 are advantageously interposed between the openings 14, have an essentially L-shaped cross-section, and are adapted to facilitate the entry of the hook 13 in the cho-

sen opening 14 and to hinder the deposition of snow during sports practice.

The flaps 17 have a first portion, arranged on the plane of the raised portion 16, and a second portion, protruding downwards at the underlying second member 3b and partially occupying the adjacent opening 14.

A tab 20 protrudes from the first end 18 of the plate 15 directed towards the first member 3a and adapted to improve the connection to the second member 3b of the shoe; a bush 21 protrudes in a downward region proximate to the second end 19 of the plate 15 and accommodates an adapted conventional screw or rivet.

The rack 1 also has at least one flexible element 22, which can be interposed between the raised portion 16 of the plate 15 and the second member 3b of the shoe.

The flexible element 22 has, at the openings 14, a preferably saw-toothed profile located adjacent to the second flaps 17 in a downward region.

As shown in figure 6, during the engagement step, the hook 13 of the traction element 9 engages a chosen opening 14 of the rack 1 and simultaneously the flexible element 22 is deformed at the region where the end of the hook 13 applies a pressure, also allowing correct engagement between the traction element 9 and the rack 1. The remaining openings not engaged by the hook 13 are partially closed by the element 22 and therefore protected against the penetration of snow.

Use of the rack 1 is simple: after connecting the flexible element 22 to the plate 15 and after connecting the plate to the second member 3a of the shoe, it is possible to close the shoe through the selective connection of the hook 13 to a chosen and appropriate opening 14.

It is thus evident that the invention has achieved the intended aim and objects, a fastener having been provided which allows the user to easily and quickly vary the fastening degree of the boot. The flexible element of the rack in fact allows to prevent snow from entering the openings, thus preventing the formation of ice. The user therefore does not have to intervene with external means on the rack to free the openings from ice and most of all is not affected by false engagements between the traction element and the rack, making their connection safer.

Advantageously, the fastener 2 can include further conventional means adapted for the coarse and fine adjustment of the traction element 9 with respect to the base 6, in order to obtain optimum adjustment of the shoe closure.

The materials and the dimensions constituting the individual components of the rack and the closure device may of course be the most adapted according to specific requirements.

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 fastener, particularly for sports shoes, comprising a lever means (4, 5, 9, 13) associated with a first member (3a) of a shoe and adapted to engage a rack (1), associated with a second member (3b) of said shoe, characterized in that said rack comprises at least one flexible element (22) arranged between said rack and said second flap.
2. The fastener according to claim 1, wherein said rack comprises a plate (15) provided with a raised portion (16) whereat a plurality of openings (14) are formed transversely, characterized in that said at least one flexible element (22) is interposed between said raised portion and said second flap.
3. The fastener according to claim 2, characterized in that said at least one flexible element (22) has, at said openings (14), a saw-toothed profile adjacent to said raised portion (16) of said plate (15) in a downward region.
4. The fastener according to claim 3, characterized in that during the engagement step, the free end (13) of said lever means, by engaging a chosen opening (14) of said plate, simultaneously deforms said at least one flexible element (22) at the region where said hook applies pressure, allowing correct engagement between said lever means and said rack.
5. The fastening according to claim 4, characterized in that the remaining openings (22) not engaged by said free end (13) are partially closed, and therefore protected against the penetration of snow, by said flexible element (22).

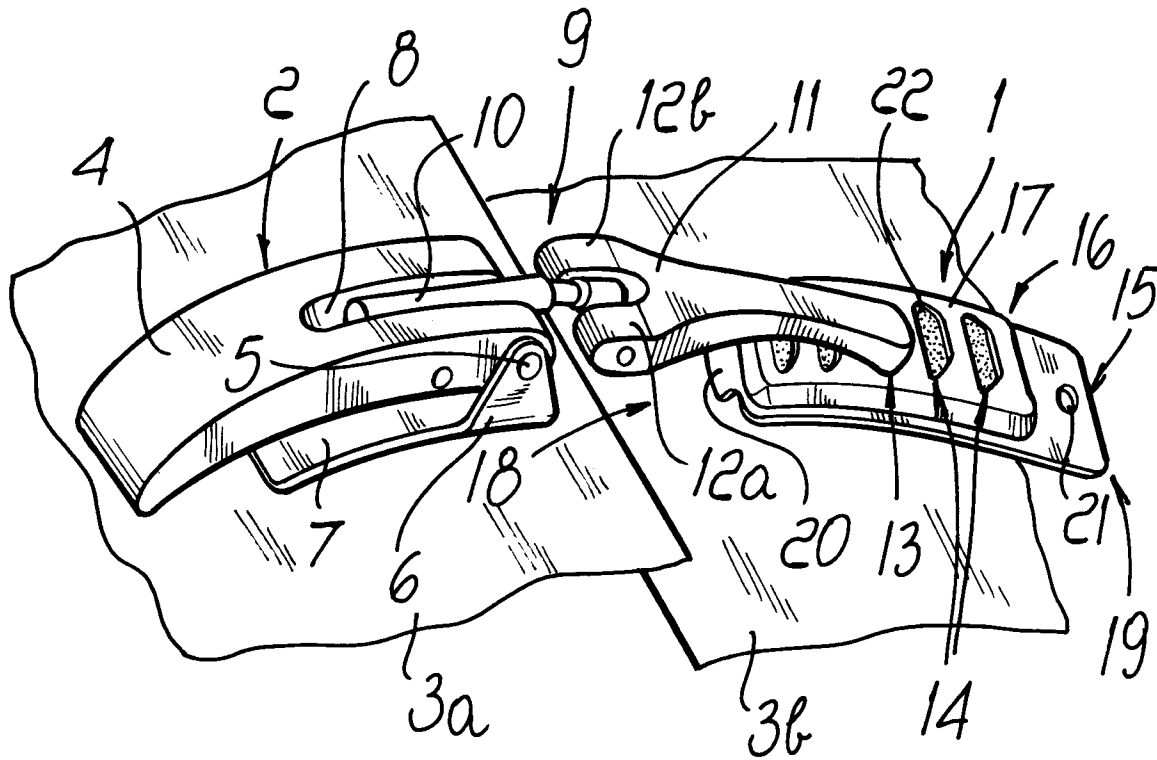


Fig. 1

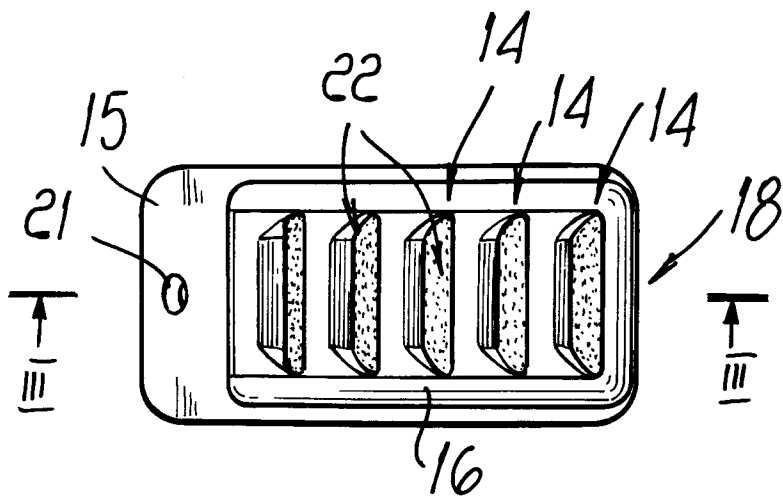


Fig. 2

