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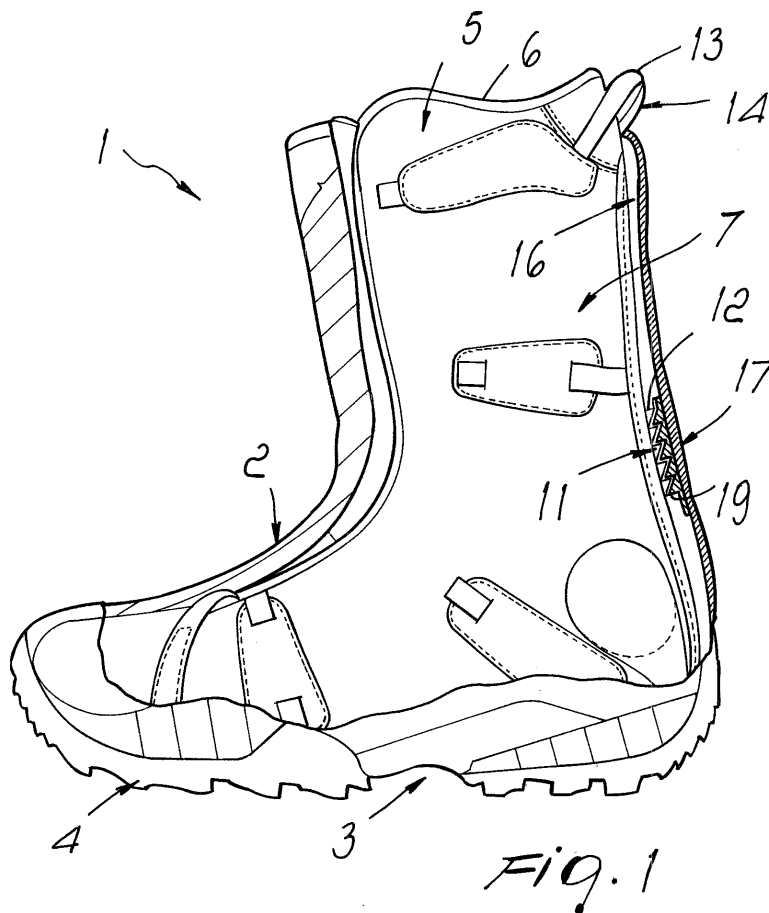
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(54) **Sports shoe particularly for practicing snowboarding**

(57) A sports shoe (1), particularly for practicing snowboarding, comprising an external upper (2) in which it is possible to insert detachably a soft innerboot (5). The

innerboot is provided externally with engagement means (10), which interact slidingly with temporary grip means (15) associated internally with respect to the external upper (2).



EP 1 679 014 A1

Description

[0001] The present invention relates to a sports shoe particularly for practicing snowboarding.

[0002] Currently, sports shoes are used, particularly for practicing snowboarding, which are constituted by an external rigid or semirigid upper, which reaches the tibia of the user in order to provide adequate support for the foot and ankle of said user during the practice of this sports activity.

[0003] A sole is associated with the upper in a lower region and is provided with means for fixing to suitable bindings associated with a snowboard deck.

[0004] A soft innerboot, adapted to improve the fitting comfort of the user, can be associated inside the upper; the innerboot surrounds the foot and ankle of the user and reaches the region of the tibia thereof, generally protruding partially from the top end of the upper.

[0005] Sports shoes for practicing snowboarding are known in which the innerboot can be coupled detachably to the internal surface of the upper by way of a coupling provided by means of the material known by the trademark Velcro.

[0006] In these known types of sports shoe, a first strip made of material known by the trademark Velcro is fixed longitudinally on the outer surface of the innerboot, approximately in its rear region which lies above the heel of the user, and is matched by a second strip of the same material, which is fixed inside the upper so as to match up with the first strip.

[0007] When the first and second strips make contact, they couple to each other and any mutual movement thereof with respect to their surface of contact is prevented; separation of the two strips is possible only by moving them mutually apart at right angles to said contact surface.

[0008] The main drawback of these known types of sports shoe is that during the insertion of the innerboot in the upper, the two strips can make contact before the innerboot reaches the position that it should assume during use of the shoe; in this case, the first and second strips mutually engage and fix the innerboot to the upper in a less than optimum position, which can be uncomfortable for the user and which, in some cases, can compromise the transmission of forces from the foot to the snowboard deck.

[0009] Another drawback of known types relates to the fact that the low temperatures to which said shoes are typically subjected during use tend to stiffen said first and second strips, reducing the effectiveness of their mutual fixing and therefore not ensuring optimum locking of the innerboot to the upper during use.

[0010] Moreover, during the insertion of the innerboot in the upper, the outer surface of said innerboot can make contact with the surface of the second strip made of Velcro, which is fixed to the upper; friction between said surfaces can wear out the outer surface of the innerboot, since it is typically made of a soft material which is not

highly resistant to friction; this has a negative effect on the durability of the innerboot.

[0011] The aim of the present invention is to solve the above-mentioned problems, eliminating the drawbacks of the cited background art, by providing a sports shoe which allows to obtain an optimum detachable coupling between the upper of a shoe, particularly for practicing snowboarding, and a soft innerboot which can be inserted in said upper.

[0012] Within this aim, an object is to provide a sports shoe which allows easy and quick positioning and mating of the innerboot within the upper.

[0013] Another object is to provide a sports shoe in which the fixing between the innerboot and the upper is not affected by the temperature of the environment in which the shoe is used.

[0014] Another object is to provide a sports shoe which allows to achieve the correct mutual positioning of the upper and the innerboot rapidly and simply.

[0015] Another object is to provide a sports shoe which protects the innerboot against possible wear.

[0016] Another object is to provide a sports shoe which is structurally simple and has low manufacturing costs.

[0017] This aim and these and other objects, which will become better apparent hereinafter, are achieved by a sports shoe, particularly for practicing snowboarding, which comprises an external upper in which it is possible to insert detachably a soft innerboot, characterized in that said soft innerboot is provided externally with engagement means which interact slidingly with temporary grip means which are associated internally with respect to said external upper.

[0018] Further characteristics and advantages of the invention will become better apparent from the following detailed description of a particular but not exclusive embodiment thereof, illustrated by way of non-limiting example in the accompanying drawings, wherein:

Figure 1 is a partially sectional side view of a shoe according to the invention;

Figure 2 is a partially sectional side view of the upper;

Figure 3 is a side view of the innerboot;

Figure 4 is a rear view of the innerboot of Figure 3;

Figure 5 is an enlarged-scale view of a detail of Figure 4;

Figure 6 is a front view of a detail of the temporary grip means associated with the upper.

[0019] In the exemplary embodiments that follow, individual characteristics, given in relation to specific embodiments, may actually be interchanged with other different characteristics that exist in other exemplary embodiments.

[0020] Moreover, it is noted that anything found to be already known during the patenting process is understood not to be claimed and to be the subject of a disclaimer.

[0021] With reference to the figures, the reference nu-

meral 1 designates a sports shoe, particularly for practicing snowboarding, which comprises an external upper 2, which is rigid or semirigid and covers completely the foot of the user and reaches the tibia region of said user.

[0022] The upper 2 is open at its top end and, preferably but not necessarily, at the front, in order to allow access to its interior, and can be closed for example by way of known fastening means, which are not shown in the cited figures.

[0023] A sole 4 is associated externally with respect to the upper 2, at the bottom 3 thereof, and is provided with known means, not shown in the accompanying figures, for connection to appropriately provided bindings provided on a snowboarding deck, which is also not shown in the figures.

[0024] An innerboot 5 can be inserted detachably in the upper 2 and is made of a flexible material, which comprises for example a soft fabric suitable to improve user comfort.

[0025] The innerboot 5 is shaped approximately complementarily with respect to the upper 2 inside which it can be accommodated, and covers completely the user's foot, to the point of affecting the region of the tibia thereof.

[0026] Advantageously but not necessarily, the innerboot 5 protrudes externally from the upper end of the upper 2 with an open end 6, by means of which the user's foot can access the interior of the innerboot 5.

[0027] In the embodiment shown in the accompanying figures, the innerboot 5 has, on its outer surface 7, known means for facilitating its extraction from the upper 2, which are constituted for example by a strip 8, which is fixed at its ends at the open end 6 of the innerboot 5 so as to form a loop 9, which can be gripped easily by the user.

[0028] The innerboot 5 has, on its outer surface 7, preferably at least at the rear part in the region above the heel of the user, engagement means which interact slidably with temporary grip means provided within the upper 2.

[0029] Such engagement means are constituted advantageously by a first base 10, which is associated with the outer surface 7 by way of known fixing means, constituted for example by a perimetric stitched seam or by adhesive bonding.

[0030] The first base 10 has a perimetric shape which is advantageously but not necessarily trapezoidal, in which the shorter parallel side is directed toward the open end 6 of the innerboot 5.

[0031] A plurality of first teeth 11 protrude from the first base 10 approximately transversely thereto, and are approximately sawtooth-shaped.

[0032] Each one of the first teeth is constituted by a first flat surface 12, which protrudes approximately at right angles from the first base 10, and is followed by a first inclined surface 13, which blends with the first base on the opposite side with respect to the open end 6 of the innerboot 5.

[0033] Advantageously, the length of the first teeth 11

increases as they move away from the open end 6 of the innerboot 5.

[0034] Advantageously, a reinforcement layer 14 is fixed on the outer surface 7 of the innerboot 5, in the rear part in the region above the heel of the user, is preferably made of wear-resistant fabric, and is provided with a through hole whose dimensions are approximately equal to those of the first base 10.

[0035] The temporary grip means are constituted advantageously by a second base 15, which is associated, by way of known fixing means, such as for example by means of stitching or adhesive bonding, with the internal surface 16 of the upper 2 in a region which, during optimum use of the shoe, faces the first base 10.

[0036] The second base 15 has a perimetric shape which is advantageously but not necessarily approximately rectangular.

[0037] A plurality of second teeth 17 protrude from the second base 15 approximately transversely thereto and are approximately sawtooth-shaped.

[0038] Each one of the second teeth is constituted by a second flat surface 18, which protrudes approximately at right angles from the second base 15 and is followed by a second inclined surface 19, which is blended with the second base in the direction of the open end 6 of the innerboot 5.

[0039] The use of the sports shoe according to the invention is therefore as follows: with reference to Figure 1, the innerboot 5 is inserted initially in the upper through the open top end of the upper 2.

[0040] When the first teeth 11 of the innerboot 5 make contact with the second teeth 17 of the upper 2, the first inclined surfaces 13 thereof enter and engage slidably the second inclined surfaces 19 of the second teeth 17.

[0041] Due to the opposite inclination of said first and second inclined surfaces 13 and 19, as the innerboot 5 advances toward the bottom 3 of the upper 2 the portion of the outer surface 7 to which the first base 10 is fixed flexes or undergoes a deformation sufficient to allow a sliding ratchet-like engagement between the first teeth 11 and the second teeth 17.

[0042] When the user inserts the foot in the innerboot 5, and consequently in the upper 2, the foot pushes further downward the innerboot, moving it, if this has not yet occurred, so that it rests on the bottom 3 of the upper.

[0043] This is allowed by the sliding engagement of the first and second teeth in the direction in which the innerboot is inserted.

[0044] An optimum position of the innerboot 5 for correct use of this shoe 1 is thus achieved.

[0045] Further, during the condition in which the shoe is used, the shape of the first and second teeth is such as to prevent a mutual sliding which causes the innerboot to lift in the opposite direction with respect to the sole of the upper.

[0046] Once sports practice has ended, the user removes his foot from the innerboot 5, and said innerboot can then be extracted from the upper 2 by way of the

deformation which can be imparted to said innerboot so as to mutually disengage the first and second teeth.

[0047] It has thus been found that the invention has achieved the intended aim and objects, a sports shoe particularly for practicing snowboarding having been obtained which provides safe and optimum positioning of the innerboot with respect to the upper for its condition for use, allowing at the same time to remove easily the innerboot, for example to clean it or replace it, once it has been removed from the foot.

[0048] Further, the innerboot, by way of the possibility of ratchet-like engagement between the first and second teeth of the upper and of the innerboot respectively, can be arranged in the correct position easily and rapidly.

[0049] Moreover, the presence of the reinforcement layer protects the innerboot from the wear caused by the sliding of the first teeth provided on the upper, increasing the durability of the innerboot.

[0050] The production costs of the shoe according to the invention are modest, since it is constituted by structurally simple components which are easily available and easy to assemble.

[0051] The invention is of course susceptible of numerous modifications and variations, all of which are within the scope of the appended claims.

[0052] The materials used, as well as the dimensions which constitute the individual components of the invention, may of course be more pertinent according to the specific requirements.

[0053] The various means for performing certain different functions need not certainly coexist only in the illustrated embodiment but can be present per se in many embodiments, including ones that are not illustrated.

[0054] The characteristics described as advantageous, convenient or the like may also be omitted or be replaced with equivalents.

[0055] The disclosures in Italian Patent Application No. TV2005A000005 from which this application claims priority are incorporated herein by reference.

[0056] 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 sports shoe, particularly for practicing snowboarding, comprising an external upper in which a soft innerboot is detachably insertable, **characterized in that** said soft innerboot is provided externally with engagement means which interact slidingly with temporary grip means which are associated internally with respect to said external upper.

2. The shoe according to claim 1, **characterized in that** said upper is an external rigid or semirigid upper, below which a sole is associated at the bottom of said shoe, said innerboot being made of flexible material, and **in that** said engagement means are arranged on the outer surface of said innerboot, preferably at least at the rear part in the region that lies above the user's heel.

3. The shoe according to claims 1 and 2, **characterized in that** said engagement means are constituted by at least one first base, which is associated with said outer surface by way of fixing means.

4. The shoe according to claims 1 and 3, **characterized in that** said first base has a perimetric shape which is trapezoidal, with the shorter parallel side directed away from said sole of said upper.

5. The shoe according to claims 1 and 3, **characterized in that** a plurality of first teeth protrude approximately transversely from said first base with respect to it and are approximately sawtooth-shaped.

6. The shoe according to claims 1 and 5, **characterized in that** each one of said first teeth is constituted by a first flat surface, which protrudes approximately at right angles from said first base, and is followed by a first inclined surface, which is blended with said first base in the direction of said sole of said upper.

7. The shoe according to claims 1 and 6, **characterized in that** the length of said first teeth increases as said teeth approach said sole of said upper.

8. The shoe according to claims 1 and 3, **characterized in that** at least one reinforcement layer is associated on said outer surface of said innerboot, in the rear part, at the region that lies above the heel of the user, is made of wear-resistant fabric, and is provided with a through hole whose dimensions are approximately equal to the dimensions of said first base.

9. The shoe according to one or more of the preceding claims, **characterized in that** said temporary grip means are constituted by a second base, which is associated, by way of fixing means, with the internal surface of said upper in a region which faces said first base in the condition for optimum use of said shoe.

10. The shoe according to claims 1 and 9, **characterized in that** said second base has a perimetric shape which is approximately rectangular.

11. The shoe according to claims 1 and 9, **characterized in that** a plurality of second teeth protrude from

said second base approximately transversely there-
to and are approximately sawtooth-shaped.

- 12.** The shoe according to claims 1 and 10, **character-
ized in that** each one of said second teeth is con-
stituted by a second flat surface, which protrudes
approximately at right angles from said second base
and is followed by a second inclined surface, which
blends with said second base in the opposite direc-
tion with respect to said sole of said upper.

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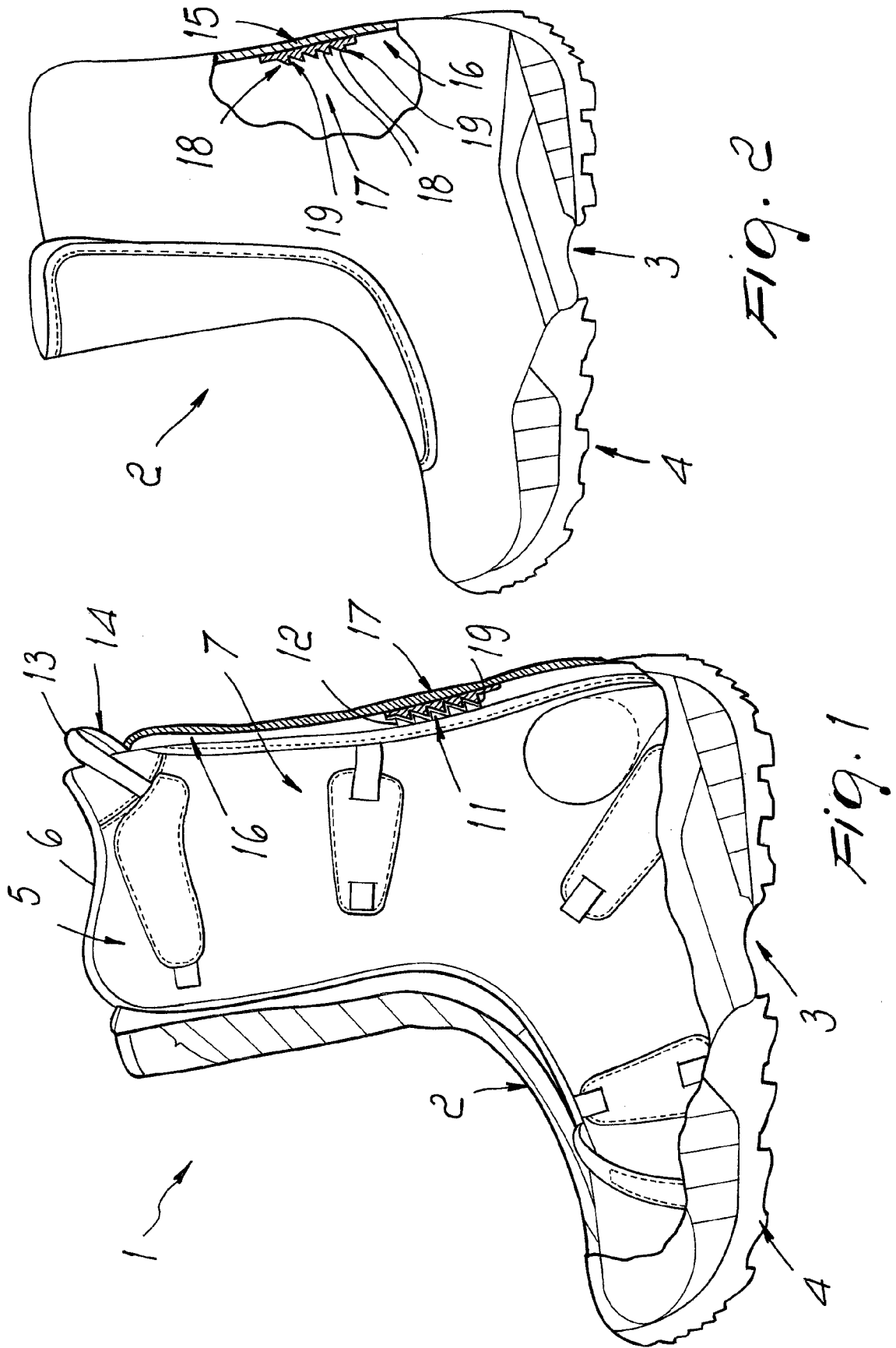
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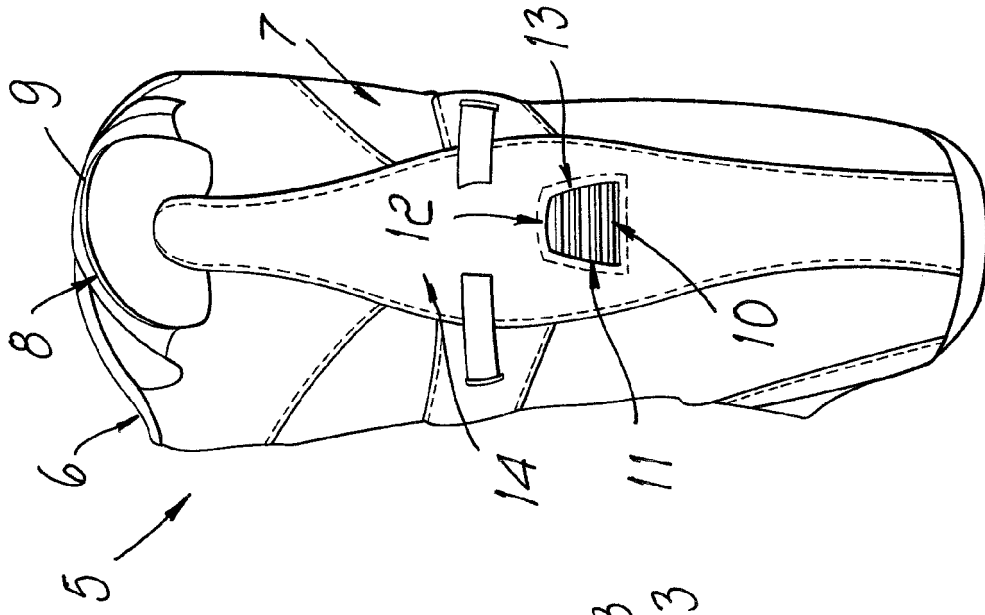


Fig. 4

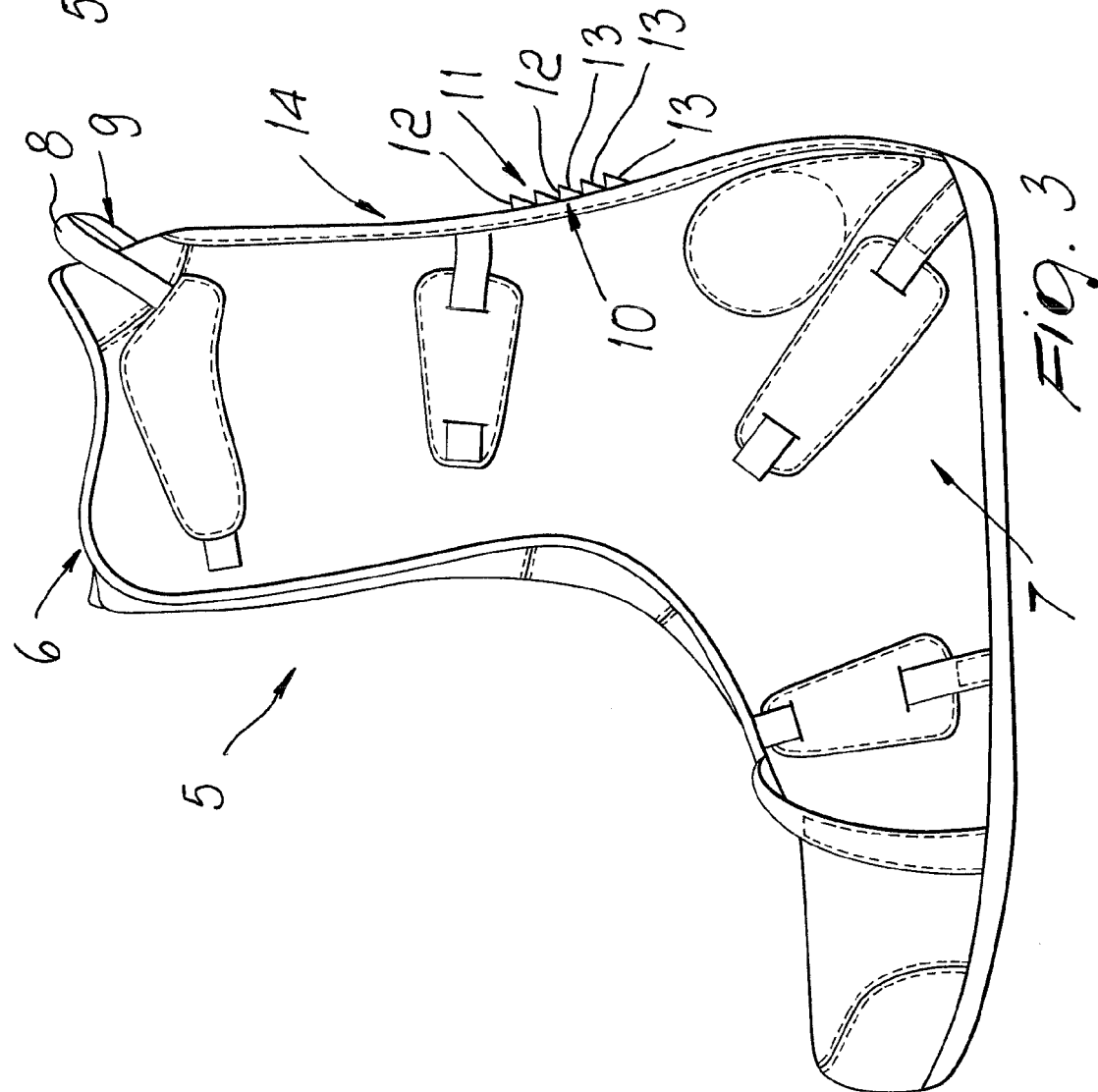


Fig. 3

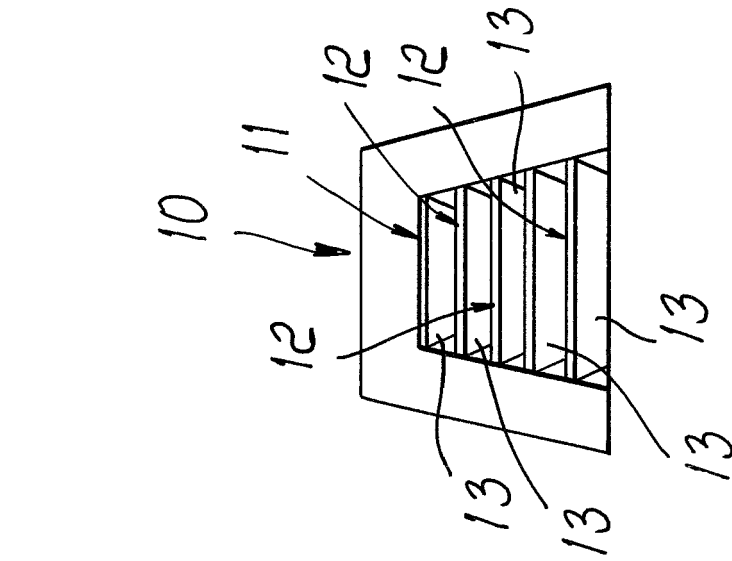


Fig. 5

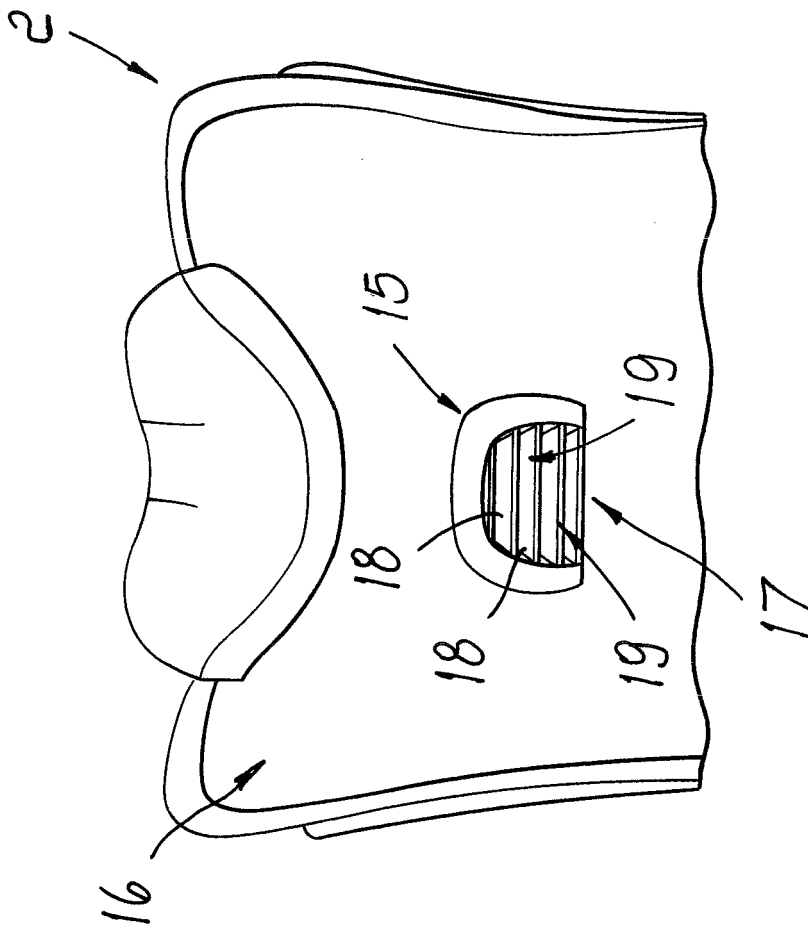


Fig. 6



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EUROPEAN SEARCH REPORT

Application Number
EP 05 11 2337

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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 10 April 2006	Examiner Vesin, S
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			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 05 11 2337

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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