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(54) SPORT FOOTWEAR STRUCTURE OR A COMPONENT OF SPORT FOOTWEAR, IN PARTICULAR FOR SKI BOOTS

(57) The present invention refers to a sports footwear structure or a sports footwear component, in particular a shell designed to enclose the foot of a user, comprising an outsole (9) and an insole (4) which includes a foot support surface. At the opposite edges of the insole (4) are removably associated a first sidewall (2) and a second sidewall (3) to form a sub-assembly. An outer hull (8), which includes the outsole (9) and is suitable to hold the sub-assembly, is removably connected to the lower surface of the insole (4) opposite the foot support surface.

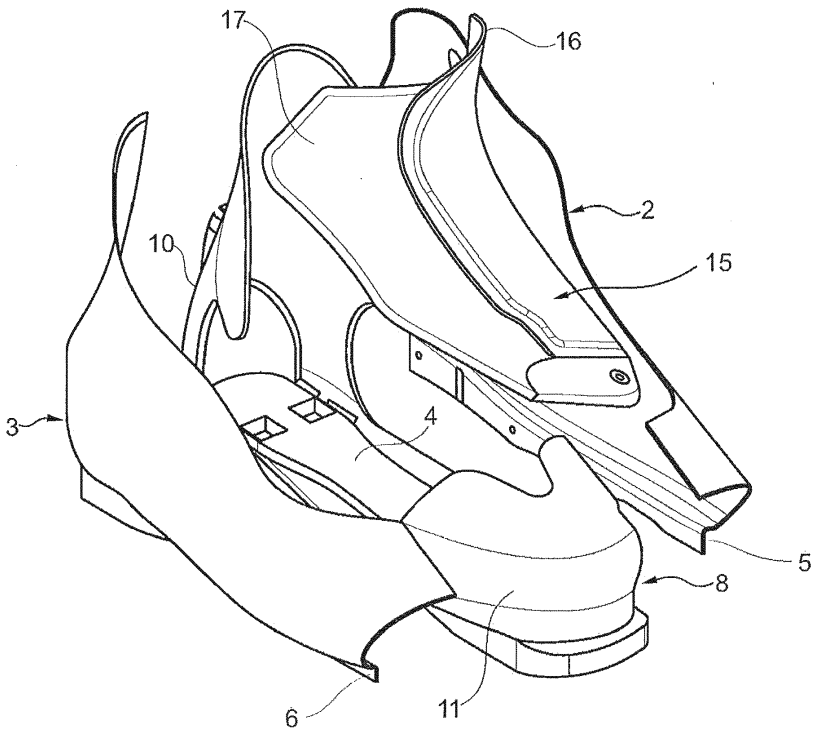

Fig. 1

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Description

TECHNICAL FIELD OF INVENTION

[0001] . The present invention refers to a sports footwear structure or a sports footwear component, such as a shell, in particular for a ski boot. Naturally, the invention is also applicable to sports footwear comprising components of plastic material assimilable to a ski boot, such as boots for snowboarding or alpine skiing, boots for cross-country skiing, mountaineering or rock-climbing boots, ice-skating or roller-skating boots, cycling shoes and other types of sport shoes with components made of plastic materials.

PRIOR ART

[0002] . As is well known, sports footwear that require a structure providing a certain rigidity for use in sport disciplines such as skiing, snowboarding, skating and such sports generally comprise at least a shell or structure made of plastic material suitable to enclose the foot, or comprising rigid or semi-rigid materials that provide characteristics of rigidity to the footwear. Such characteristics are necessary when the footwear is used in sport disciplines that require the transmission of the movements from the foot to a sport article, such as a ski, for its management or control, or when high precision and a sensitive touch is required in supporting the foot, such as for example in rock-climbing boots.

[0003] . In addition, it would be particularly advantageous to be able to easily assemble, and if necessary disassemble, the footwear so as to adapt it to different sport disciplines or to the particular shape of the user's foot, or to allow the easy replacement of worn-out components.

[0004] . US 4,998,358 and EP 0 676 925 B1 patents disclose a sports boot, in particular a ski boot or an in-line skate boot, made up of elements joined to each other in a removable manner and adjustable in length and width to be adapted to the size and shape of the foot. The rigid shell, made up of pieces joined to each other and to the outsole, contains within it a soft insulating shoe liner.

[0005] . The structure of the boot of the two above patents, and in particular the shell holding the foot, is particularly complex, as it is made up of numerous components assembled together. This characteristic makes the assembly and the disassembling of the boot particularly complicated, in addition to lowering the general rigidity of the boot due to the slack that is created between the interconnected parts and that inevitably increases as the same parts wear out.

[0006] . Patent application WO 2010/083010 A2 refers to a composite sports footwear structure in which the shell is made of two half shells to which is applied the outsole. The two half shells are permanently fastened to each other, thus making it possible to replace only the outsole without also requiring the removal of the half shells. The permanent fastening of the two half shells to each other is necessary due to the fact that these are the only elements that create a rigid structure for the boot.

SUMMARY OF THE INVENTION

[0007] . The main objective of the present invention is thus to devise a structure for sport footwear or a component of the same, in particular a shell of a ski boot, that is capable of overcoming the drawbacks of the prior art.

[0008] . In the scope of the above objective, one purpose of the present invention is to devise a sports footwear structure, or a component of the same, that is easily assemblable in a removable manner so that it can be adapted to different sport disciplines or to the shape of the user's foot or that it allows the easy replacement of components subject to wear.

[0009] . Another purpose of the present invention is to devise a sports footwear structure that is constructively simplified.

[0010] . A further purpose is to devise a sports footwear structure that is capable of guaranteeing through time the maintenance of the characteristics of stability, rigidity, heat insulation and water- or moisture-tightness required for sport use.

[0011] . One not negligible purpose is to devise a sport footwear structure that achieves the above objective and purposes at competitive costs and that can be obtained with the usual well-known machinery, plants and equipment.

[0012] . The above objective and purposes, and others that will become more evident in the following description are achieved by a sport footwear structure, in particular a ski boot, as defined in claim 1.

BRIEF DESCRIPTION OF THE FIGURES

[0013] . Further characteristics and the advantages of the present invention will become more evident from the following description of a particular, but not exclusive, embodiment illustrated purely by way of example without limitation with reference to the accompanying figures, wherein:

- figure 1 is a front perspective exploded view of a sports footwear, or of a component of the same such as a shell, according to the present invention;
- figure 2 is a rear perspective exploded view of the footwear of figure 1;
- figure 3 illustrates a first footwear assembling step;
- figure 4 is a second footwear assembling step;
- figure 5 illustrates a front view of the assembly of figure 4;
- figure 6 is a third footwear assembling phase;
- figure 7 illustrates the footwear in the final assembling phase;
- figure 8 illustrates, in a cross-section view along the median longitudinal axis of the footwear, a further

characteristic of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0014] . In the ensuing description may be used terms such as "above", "below", "upper", "lower", "high", "low" or similar ones; the expert skilled in the field will have no problem understanding that such terms refer to the orientation of the footwear in its normal state, that is, in actual use, as shown in the enclosed figures.

[0015] . With reference to the previously mentioned figures, with numeral 1 is indicated a sports footwear or a component of the same, such as the shell of a ski boot suitable to hold and enclose the foot of a user.

[0016] . The shell comprises, according to the prior art, a hull to hold the foot enclosed at the instep, through a pair of overlapping flaps or through a pad or tongue that can be lifted to allow the insertion of the foot, an outsole and an insole for supporting the foot.

[0017] . The innovation according to the present invention consists of making the parts that form the shell as separate elements and to join them together in a removable manner.

[0018] . In particular, the shell comprises a first sidewall 2 and a second sidewall 3 made separately and suitable to be arranged respectively at the medial side and at the lateral side of the foot, extending from a region near the toe to a region close to the heel, involving the side regions of the foot substantially up to around the malleoli.

[0019] . The two sidewalls 2 and 3 can be removably coupled, by means of known removable fastening elements such as screws, to an insole 4, as exemplified in figures 3 and 4. For this purpose, the lower portions 5, 6 of the two sidewalls 2 and 3 are countershaped with respect to the side profile of the insole 4, as exemplified in figure 5, to allow the removable coupling and fastening through suitable removable fastening means 7 arranged transversally to the longitudinal extension of the insole 4.

[0020] . The joining of the medial and lateral sidewalls 2 ad 3 to the insole 4 to the insole 4 forms a first subassembly that comprises an inner hull suitable to hold at least the sides of the foot, and advantageously the rear part of the heel, as shown in figures 3, 4 and 5.

[0021] . Outside said first sub-assembly is associated an outer hull 8, which thus contains the first sub-assembly, as exemplified in figure 6.

[0022] . The outer hull 8 is formed essentially by an outsole 9, possibly having a shape suitable to be interfaced with sport equipment such as a ski binding for connecting to a ski, from which at least two portions 10 and 11 extend upwardly, each being respectively adapted to enclose at least the rear portion of the foot and the ankle and the toe region.

[0023] . The rear portion 10 of the hull 8 may have extensions 12 that extend frontward to cover the regions of the malleoli and provide a support vamp pivotably associated with the hull 8.

[0024] . The hull 8 can be removably associated with the first sub-assembly at the lower surface of the insole 4 opposite the foot support surface through suitable removable fastening means 13, such as screws, inserted in prearranged through holes 14 preferably arranged in heel and toe support regions.

[0025] . Thus is obtained in this manner a second subassembly, comprising the sidewalls 2 and 3, removably associated with the lateral edges of the insole 4, and the outer hull 8 removably associated with the lower surface of the insole 4, which holds the two sidewalls 2 and 3 joined to each other and encloses the front regions of the toe and the rear region of the heel and the ankle.

[0026] . An instep covering element, removably associated with at least the hull 8, is provided to form the sports footwear according to the present invention.

[0027] . The covering element may consist of a covering element 15 to form an instep closing tongue or, as shown in figures 1, 2 and 7, it comprises a pair of flaps 16, 17 overlapping each other and fastened by means of suitable prior art closing means (not shown).

[0028] . If a tongue is to be provided, it is sufficient for the covering element 15 to be joined to the toe portion 11 of the hull 8, so as to allow it to be lifted for inserting the foot, while if the flaps 16, 17 are to be provided, in addition to being joined at the toe 11, the covering element 15 must also be joined laterally to the sidewalls 2 and 3.

[0029] . In this manner, a structure of a sports footwear suitable to hold the foot of a user is provided, or a component of the same such as a shell of a ski boot to which can be pivotably associated a vamp suitable to enclose the lower part of the leg.

[0030] . The sidewalls 2 and 3 can be made by thermoforming or by injection of a rigid material, such as a plastic or composite material, of limited thickness. To them can be associated a layer of additional soft and/or insulating material and/or a material than adapts to the particular shape of the user's foot and arranged toward the foot, as shown in figure 8, so as to provide characteristics of comfort, thermal insulation or adaptability, for example through thermoforming or milling.

[0031] . The outer hull 8 is also made of rigid material, preferably injected thermoplastic material, and the outsole 9 can be configured for different uses, such as clipping to a downhill ski binding, cross-country skis, alpine skiing or snowboarding, or provided with a grooved tread for use in trekking or mountaineering, or for other types of uses or sport disciplines.

[0032] . Finally, the covering element 15 that forms the tongue or the flaps 16, 17 can be made of soft plastic material to make it easier to insert the foot into the boot.

[0033] . Naturally, the areas joining the various parts can be suitably sealed with appropriate gaskets to prevent the entrance of water, snow or moisture.

[0034] . From the above, it is evident how the present invention achieves the purposes and advantages initially aimed at: in fact a sport footwear structure or a component of the same has been devised, in particular, a shell

of a ski boot, capable of overcoming the drawbacks of the prior art.

[0035] . In fact, the footwear or the shell described above can be easily and removably assembled so as to adapt the footwear to different sport disciplines or to the particular shape of the user's foot, or to allow the easy replacement of components subject to wear, while guaranteeing the characteristics of stability, rigidity, thermal insulation, and waterproofness or moistureproofness required for sport applications.

[0036] . The footwear structure thus obtained is also simplified in construction, and its production does not present particular design or construction problems.

[0037] . Also of note is how it is possible to provide a single external shell 8 that covers two or more contiguous sizes, so as to allow considerable savings in terms of cost by reducing the number of moulds necessary to cover the whole range of sizes.

[0038] . Naturally, the present invention is susceptible of improvement through many applications, modifications or variants, without departing from the scope of patent protection as defined in independent claims 1 and 10.

[0039] . Furthermore, the materials and equipment used to implement the present invention, as well as the shapes and dimensions of the individual components, may be the most suitable according to the specific requirements.

Claims

1. Structure of a sports footwear or a component of a sports footwear, particularly a shell adapted to hold a foot of a user, comprising an outsole (9) and an insole (4) arranged inside said footwear, said insole (4) comprising a supporting surface adapted to support said foot, **characterized in that** a first sidewall (2) and a second sidewall (3) are removably associable at the opposite edges of said insole (4) so as to form a sub-assembly, an outer hull (8) comprising said outsole (9) and adapted to contain said sub-assembly being removably associable to the lower surface of said insole (4) opposite said supporting surface.

2. Structure of a sports footwear as in claim 1, wherein said first sidewall (2) and said second sidewall (3) are made separately.

3. Structure of a sports footwear as in clam 1, wherein said first sidewall (2) and said second sidewall (3) are respectively arranged at the medial side and at the lateral side of said foot and extend from a region adjacent the toe up to a region adjacent the heel affecting the side regions of the foot substantially up to the malleoli regions.

4. Structure of a sports footwear as in clam 1, wherein said sub-assembly formed by joining said first sidewall (2) and said second sidewall (3) to said insole (4) forms an inner hull adapted to hold at least the sides of said foot.

5. Structure of a sports footwear as in clam 1, wherein at least two portions (10, 11) extend upwardly from said outsole (9) of said outer hull (8), said at least two portions (10, 11) being adapted to enclose, respectively, at least the rear portion of said foot and at least the toe portion of said foot.

6. Structure of a sports footwear as in clam 5, wherein said outer hull (8) holds together said first sidewall (2) and said second sidewall (3) and encloses the forward region of the toe and the rearward regions of the heel and the ankle of said foot.

7. Structure of a sports footwear as in clam 1, further comprising a covering member (15) of the instep of said foot, said covering member (15) being removably associable at least to said outer hull (8) at the portion (1) of said two portion (10, 11) enclosing the toe portion of said foot, said covering member (15) being adapted to cover said instep.

8. Structure of a sports footwear as in clam 7, wherein said covering member (15) comprises a flap adapted to form a tongue for covering said instep.

9. Structure of a sports footwear as in clam 7, wherein said covering member (15) comprises a pair of flaps (16, 17) adapted to be mutually overlapped and fastened by suitable closure means.

10. Method for making a sports footwear, or a component of a sports footwear, **characterized in that** it comprises the steps of:

    - separately forming a first sidewall (2), a second sidewall (3) and an insole (4) comprising a supporting surface for supporting a user's foot;
    - coupling by means of removable fastening means the lower portions (5, 6) of said first sidewall (2) and said second sidewall (3) to the sides of said insole (4);
    - forming an outer hull (8) essentially comprising an outsole (9) and at least two portions (10, 11) extending upwardly from said outsole (9) and adapted to enclose, in use, at least the rear portion and the toe portion of said foot;
    - coupling by means of removable fastening means said outsole (9) of said outer hull (8) to said insole (4) at a side opposite said supporting surface, such that said first sidewall (2), said second sidewall (3) and said insole (4) are contained inside said outer hull (8).

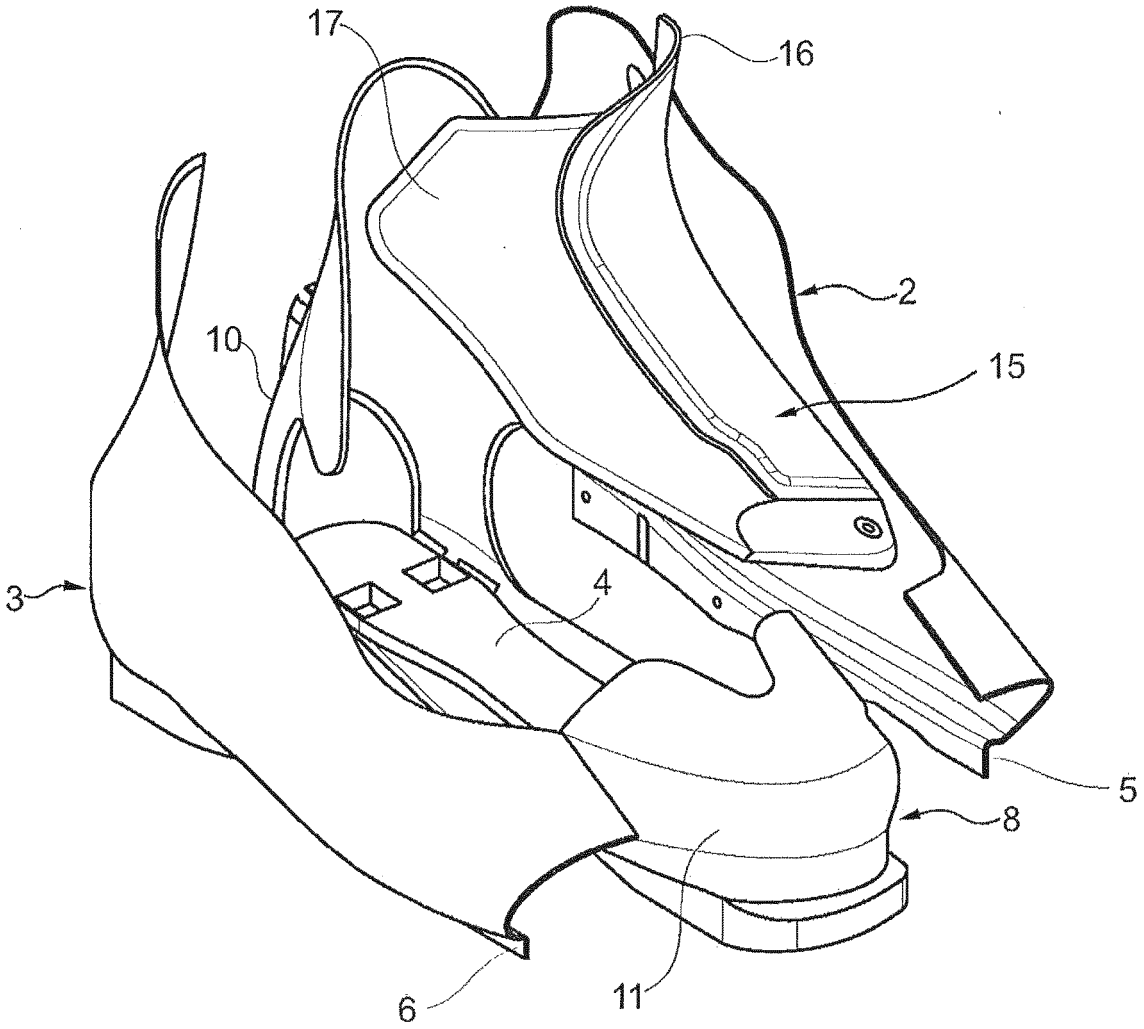

Fig. 1

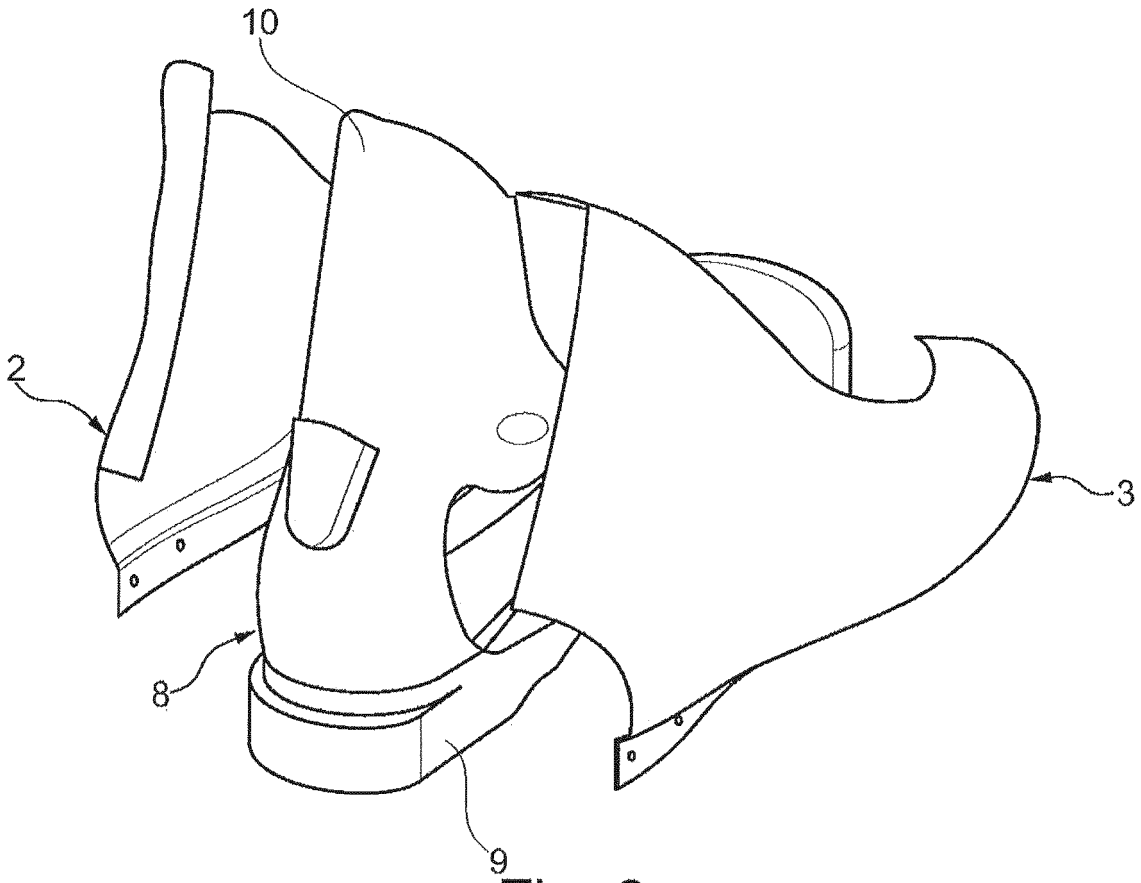

Fig. 2

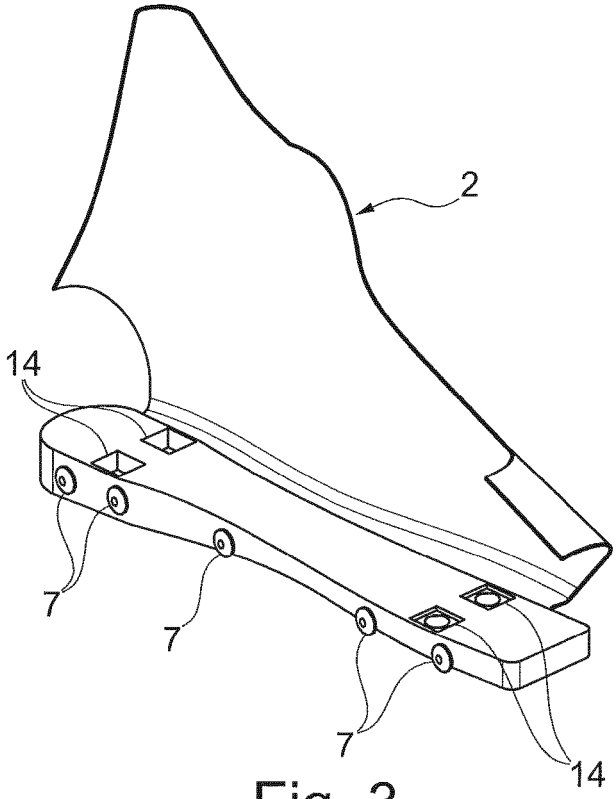

Fig. 3

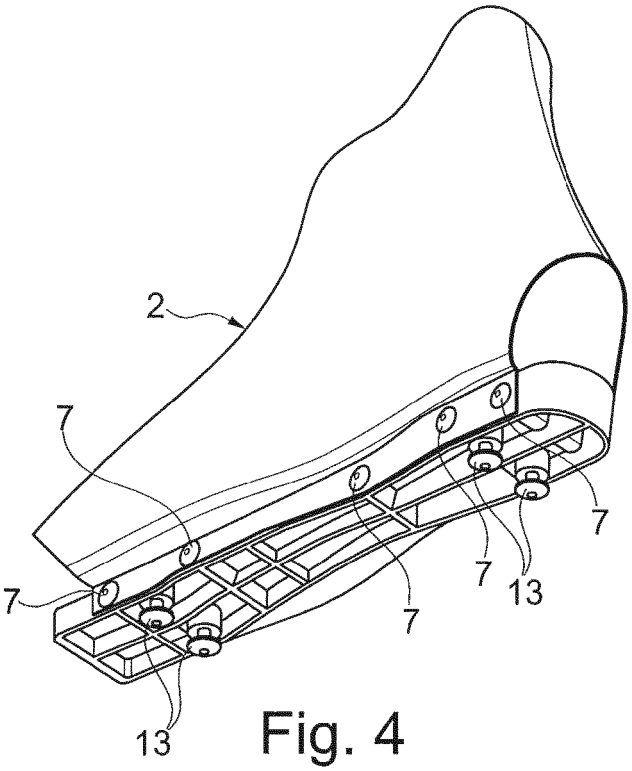

Fig. 4

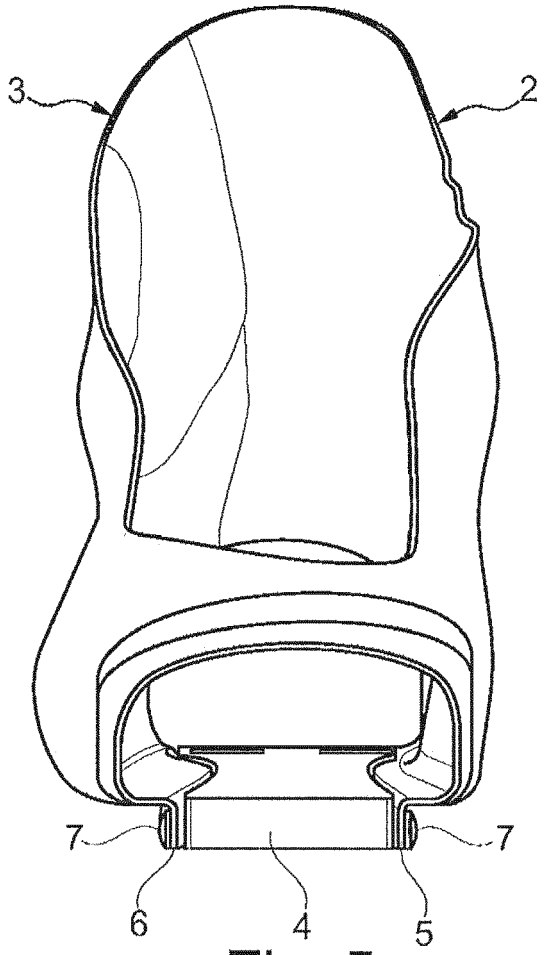

Fig. 5

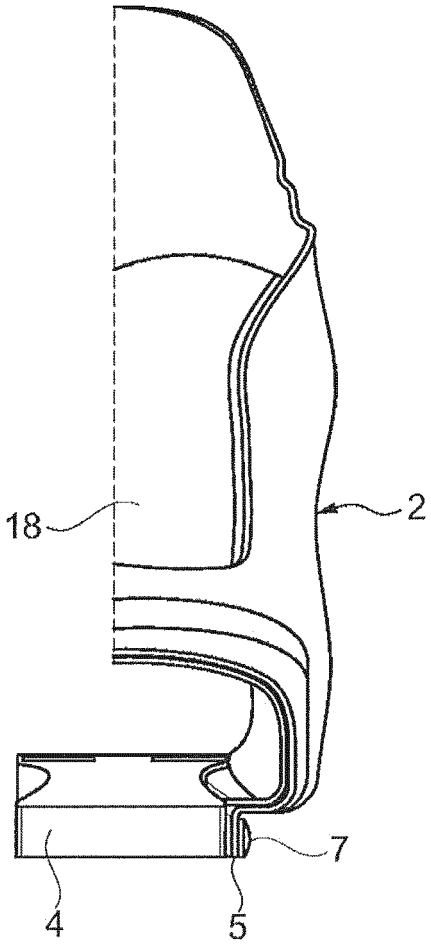

Fig. 8

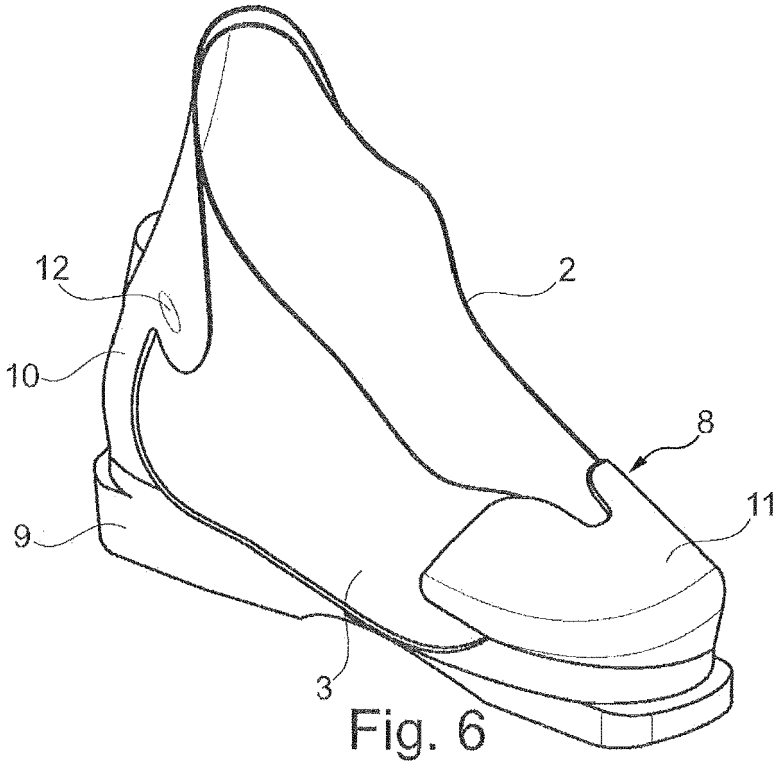

Fig. 6

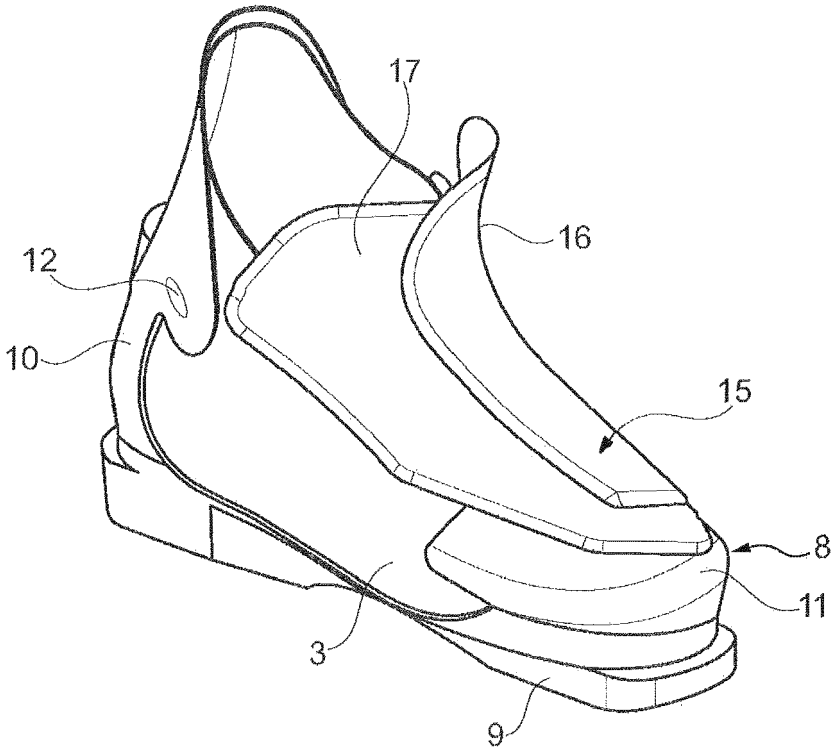

Fig. 7

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EUROPEAN SEARCH REPORT

Application Number
EP 16 18 1802

DOCUMENTS CONSIDERED TO BE RELEVANT

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			TECHNICAL FIELDS SEARCHED (IPC) A43B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	25 November 2016	Cianci, Sabino

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

REFERENCES CITED IN THE DESCRIPTION

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