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(54) Sports shoe with improved foot insertion

(57) A sports shoe with improved foot insertion, comprising a semirigid external upper (2) and an internal soft padding (3). At the rear region of the padding affected by the heel during foot insertion an insert (8) is provided which is stably connected to the padding and is made of a material having a lower friction coefficient than the surrounding material of which the padding (3) is made, the insert facilitating foot insertion by assisting the sliding of the heel.

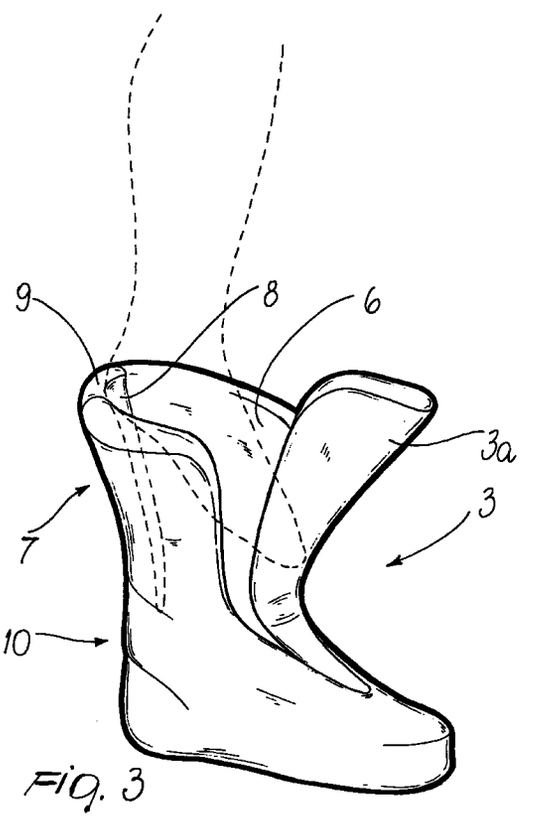

Fig. 3

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Description

The present invention relates to a sports shoe with improved foot insertion.

The increasingly widespread use of sports shoes, adapted to various sports activities as well as to generic leisure use, has produced a continuing improvement in the user's comfort both in terms of adaptability to the specific shape of the foot and in terms of maintaining the ideal conditions inside the shoe as regards perspiration, impermeableness and warmth.

Another field to which considerable attention has been devoted is comfort and ease in using the shoe, particularly regarding putting on the shoe. In some sports shoes, and particularly in shoes comprising an outer shell made of semirigid plastic material, such as ski boots, roller skates and ice skates, some ice boots or climbing boots, this problem is particularly felt, because the deformability of the plastic material to allow foot insertion is inherently limited. The problem is worsened by the fact that the deformability of the plastic material decreases considerably as the temperature drops and that some of the above-mentioned shoes are often used at temperatures around or below 0°C.

A drawback occurring in these conventional shoes consists in particular of the fact that when inserting the foot in the shoe, the heel presses intensely against the lining of the internal padding at the rear part of said shoe. This pressure increases the sliding friction that occurs between the sock usually worn by the user and the inner lining, consequently causing difficulty in inserting the foot. The more rigid the upper of the shoe and the rougher the internal lining, the more this drawback becomes severe; the most unfavorable combination is found in ski boots, wherein the shell is generally made of polyurethane, which is a rather rigid material that allows limited elastic deformation, while the internal lining of the innerboot is made of fabrics such as fine velvet or jersey-cloth, which have a surface that does not facilitate sliding thereon of other fabric surfaces such as the skier's sock.

An aim of the present invention is to solve the above drawbacks by providing a sports shoe with improved foot insertion wherein the foot can be easily inserted.

An important object of the invention is to provide a sports shoe which during foot insertion allows to easily move beyond the point where the heel presses most against the internal lining.

A further important object is to provide a sports shoe wherein foot insertion is facilitated even in the presence of uppers or shells which are particularly rigid and/or in the presence of low operating temperatures.

Another object is to provide a sports shoe with improved foot insertion which is reliable and safe in use and has a low manufacturing cost.

This aim, these objects and others which will become apparent hereinafter are achieved by a sports shoe with improved foot insertion, comprising a semirigid external upper and an internal soft padding, characterized in that at the rear region of said padding, affected by the heel during foot insertion, an insert is provided which is stably connected to said padding and is made of a material having a lower friction coefficient than the surrounding material of said padding.

Further characteristics and advantages of the present 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:

Fig. 1 is a side perspective view of a sports shoe according to the present invention, provided with a removable soft internal padding, such as a ski boot with a removable innerboot, during foot insertion;
Fig. 2 is a perspective view of the removable innerboot of Fig. 1, whereto the insert according to the present invention is applied;
Fig. 3 is a perspective view of the innerboot of Fig. 2 during foot insertion;
Fig. 4 is a side view of a further embodiment of the removable soft innerboot, constituted by a front body and by a separate rear wall, whereto the insert according to the present invention is applied;
Fig. 5 is a front view of the rear wall shown in Fig. 4, wherein the insert is clearly shown;
Fig. 6 is a perspective view of a sports shoe, provided with a fixed internal padding whereto the insert according to the present invention is applied.

With reference to the above figures, the sports shoe with improved foot insertion according to the present invention, generally designated by the reference numeral 1, comprises a semirigid external upper 2 and a soft internal padding 3. The term "soft internal padding" defines both the entire thickness of the padding, including the internal and optionally external protection layers, technically termed "linings", and simply the soft internal surface of the shoe which is in contact with the foot. By way of example, the shoe 1, illustrated in Fig. 1 is a ski boot wherein the semirigid external upper 2 is constituted by a shell 4 optionally comprising a tongue 4a and by at least one cuff, or quarter, 5, both of which are made of plastics, while the soft internal padding 3 is constituted by a conventional removable innerboot, with a front tongue 3a covering the metatarsal and tibial regions. For the sake of clarity, in Fig. 2 the front tongue 3a is not shown. At the internal surface which is in contact with the foot, the innerboot 3 is covered with a lining 6, generally made of fine velvet, jersey-cloth or other materials adapted to provide comfortable foot contact. As already mentioned in the introduction, these materials have a rather high friction coefficient, especially in mutual sliding with respect to other fabrics such as the fabric of the skier's sock, which prevents easy foot insertion owing to the intense pressure applied by the heel against the rear part of the lining 6, as shown in figure 3.

In the rear region 7 affected by the heel during foot insertion, an insert 8 is therefore associated with the lining 6 by means of a stable connection, such as for example a stitched seam, a thermal bonding or other conventional processes, said insert being made of a material which has a lower friction coefficient than the surrounding material of said lining 6. The material of the insert 8 can be for example a fabric with a smoother surface finish than fine velvet, or a soft plastic material such as EVA or PVC.

The insert 8 advantageously affects the entire region 7 whereon the heel presses during foot insertion and therefore from the upper edge 9 of the innerboot 3 to the region 10 lying approximately at the ankle level.

Use of the invention is as follows: when inserting the foot in the shoe, the insert 8 facilitates the sliding of the heel towards the inside of the innerboot especially in the most difficult step, shown in Fig. 3, during which the user applies considerable force to the foot in order to contrast the pressure of the heel against the rear region 7 of the innerboot; by means of the reduced friction produced by the insert, successful completion of this step is considerably facilitated.

From the above description it is thus evident that the present invention achieves the intended aim and objects, and particularly inserting the foot into the shoe is considerably easier. The point where the heel applies the highest pressure against the rear region 7 of the innerboot is in fact easily passed by means of the higher smoothness of said region produced by the insert 8.

A considerable improvement in foot insertion is also noted even for shoes having particularly rigid uppers or shells, or when the shoes are used at low temperatures.

The sports shoe according to the invention is susceptible of applications to different shoes and of numerous modifications and variations, within the scope of the appended claims.

Thus, for example, Figs. 4 and 5 illustrate a different configuration for a soft internal padding 103, constituted by a removable innerboot which is particularly adapted for example for rear-entry or central-entry boots. Said innerboot is per se known in the art and is constituted by a front body 103a, wrapping around the foot, the tibial region and partially around the lateral regions of the leg, and by a rear wall 103b, wrapping around the calf region and the lateral regions of the leg, partially overlapping the front body 103a; the rear wall 103b, generally rigidly coupled to the quarter (not shown), can be separated from, or joined to, the body 103a in a conventional manner.

An insert 108, made of a material which has a lower friction coefficient than the surrounding material of said lining 106, is associated, by means of a stable connection preferably at the internal lining 106, on the region 107 of the rear wall 103b which is affected by the pressure of the heel during foot insertion.

In this case, too, the insert 108 can affect the entire region 107 whereon the heel presses during foot insertion.

Fig. 6 illustrates the application of the present invention to a shoe such as a rock-climbing boot, generally designated by the reference numeral 201, wherein the semirigid external upper 202 is made of leather, hide or synthetic materials. The insert 208, made of a material having a low friction coefficient, is stably applied, for example by stitching, at the internal rear region 207 of the padding 203 affected by the pressure of the heel during foot insertion.

All the details of the invention may of course be replaced with other technically equivalent elements.

The materials employed, as well as the contingent shapes and dimensions of the individual components of the device, may also be the most pertinent 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 sports shoe with improved foot insertion, comprising a semirigid external upper (2, 202) and an internal soft padding (3, 103) characterized in that at the rear region of said padding affected by the heel during foot insertion, an insert (8, 108, 208) is provided which is stably connected to said padding and is made of a material having a lower friction coefficient than the surrounding material of said padding.

2. A sports shoe according to claim 1, characterized in that said semirigid external upper (2) is constituted by a shell (4) and by at least one quarter (5) made of plastics and in that said soft internal padding (3) is constituted by a removable innerboot.

3. A sports shoe according to claim 2, characterized in that said innerboot (3) is covered with a lining (6) at the internal surface which is in contact with the foot.

4. A sports shoe according to claim 3, characterized in that said insert (8) is associated with said lining (6) through a stable connection, such as for example a stitched seam, a thermal bonding or other methods.

5. A sports shoe according to one or more of the preceding claims, characterized in that said insert (8) runs from the upper edge (9) of said innerboot (3) to approximately the ankle region (10).

6. A sports shoe, according to one or more of the preceding claims, characterized in that said innerboot

(103) is constituted by a front body (103a) wrapping around the foot, the tibial region and partially the lateral regions of the leg, and by a rear wall (103b) wrapping around the calf region and the lateral regions of the leg, partially overlapping said front body.

7. A sports shoe according to claim 6, characterized in that said insert (108) is associated with a rear edge at said rear region affected by the heel during foot insertion.

8. A sports shoe according to one or more of the preceding claims, characterized in that said semirigid external upper (202) is made of leather, hide or synthetic materials and in that said insert (208) is stably connected to said upper.

9. A sports shoe, according to claim 1, characterized in that said insert (8, 108, 208) is permanently associated with said padding (3, 103) along its entire edge.

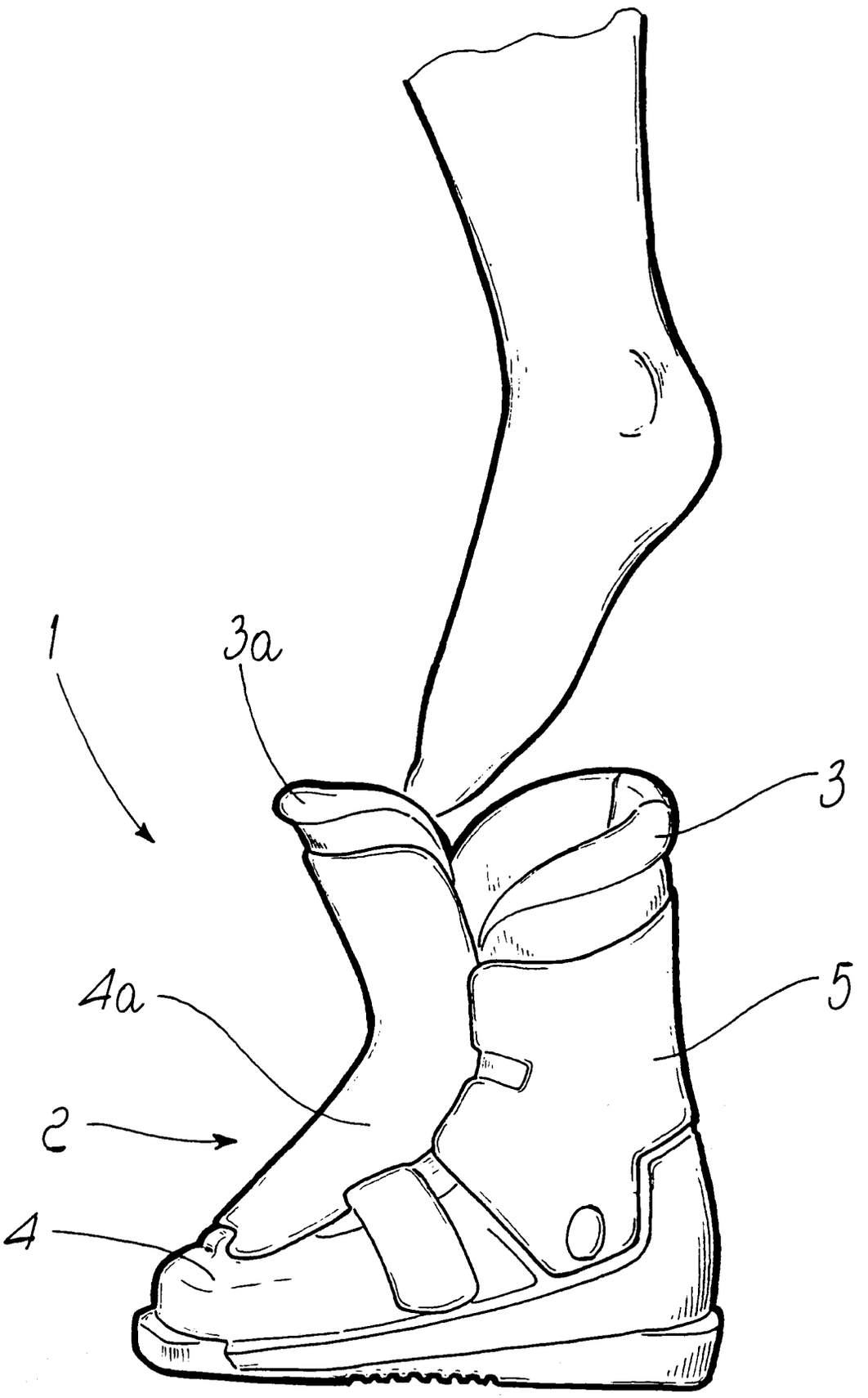

Fig. 1

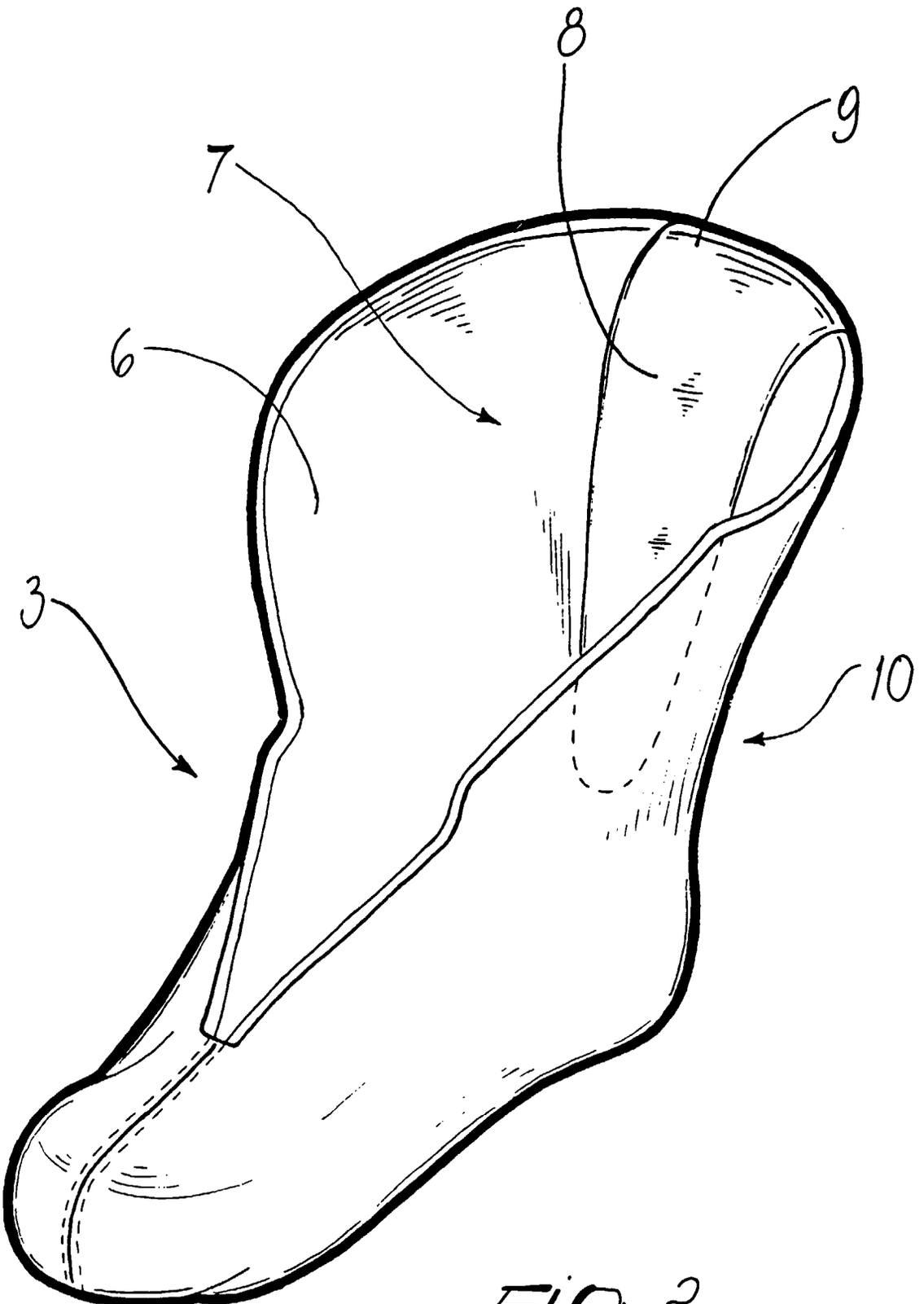

Fig. 2

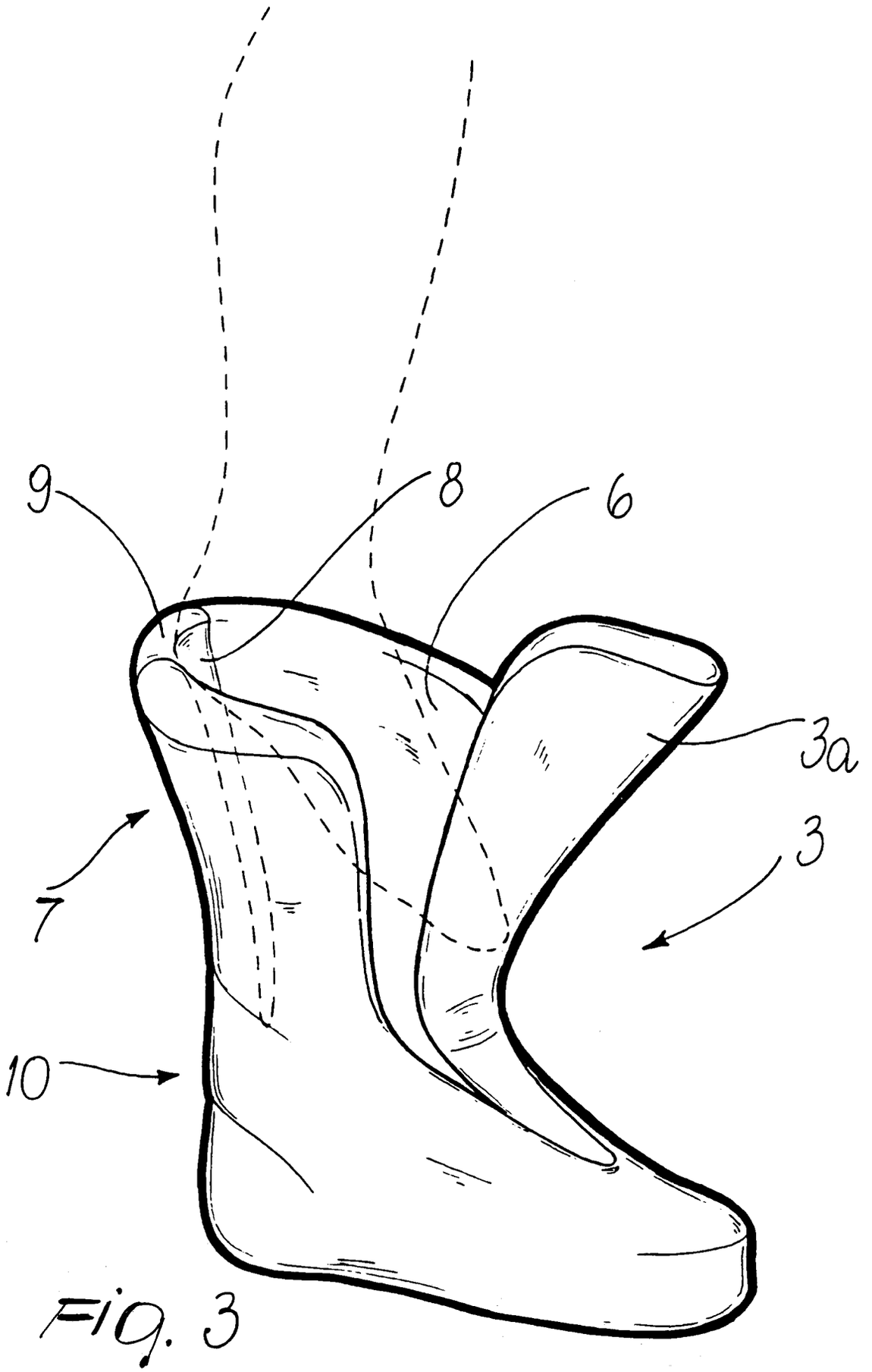

Fig. 3

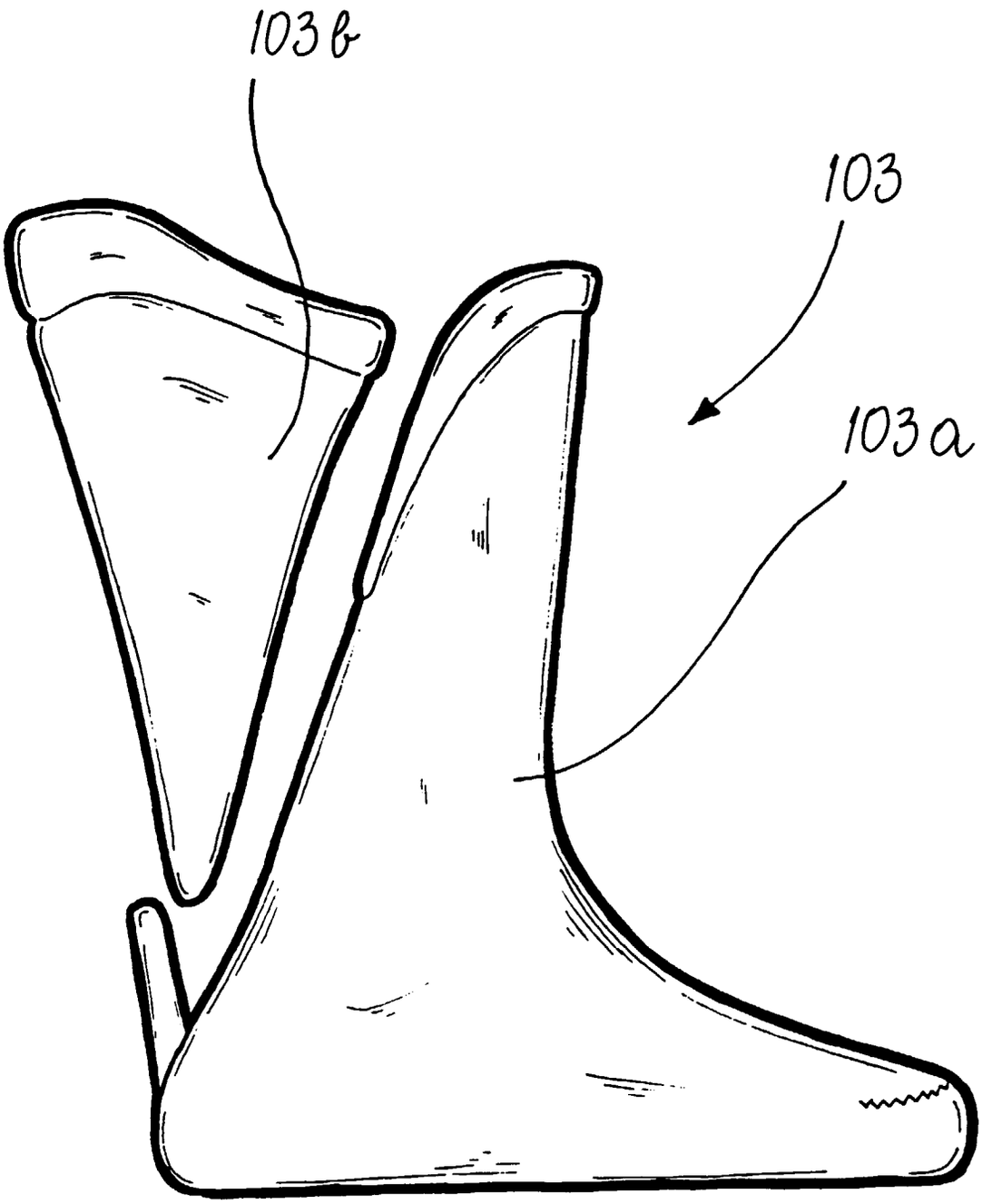

Fig. 4

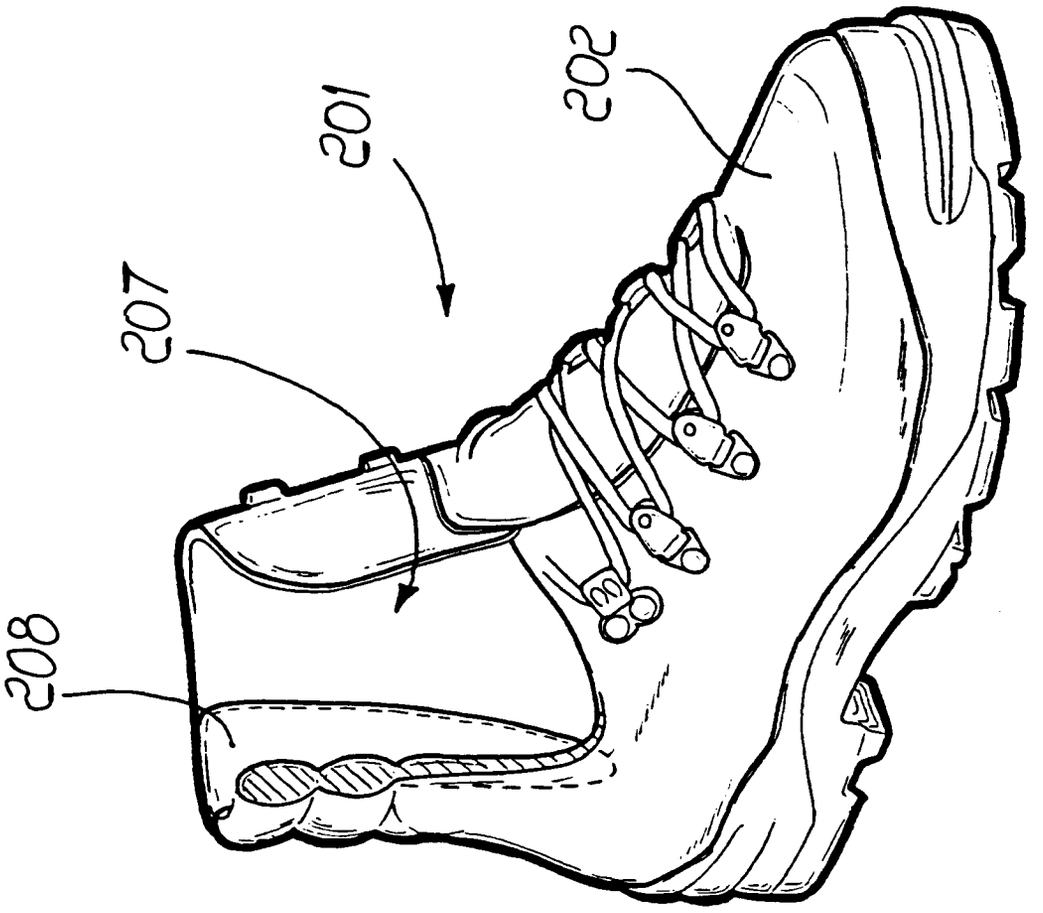

Fig. 6

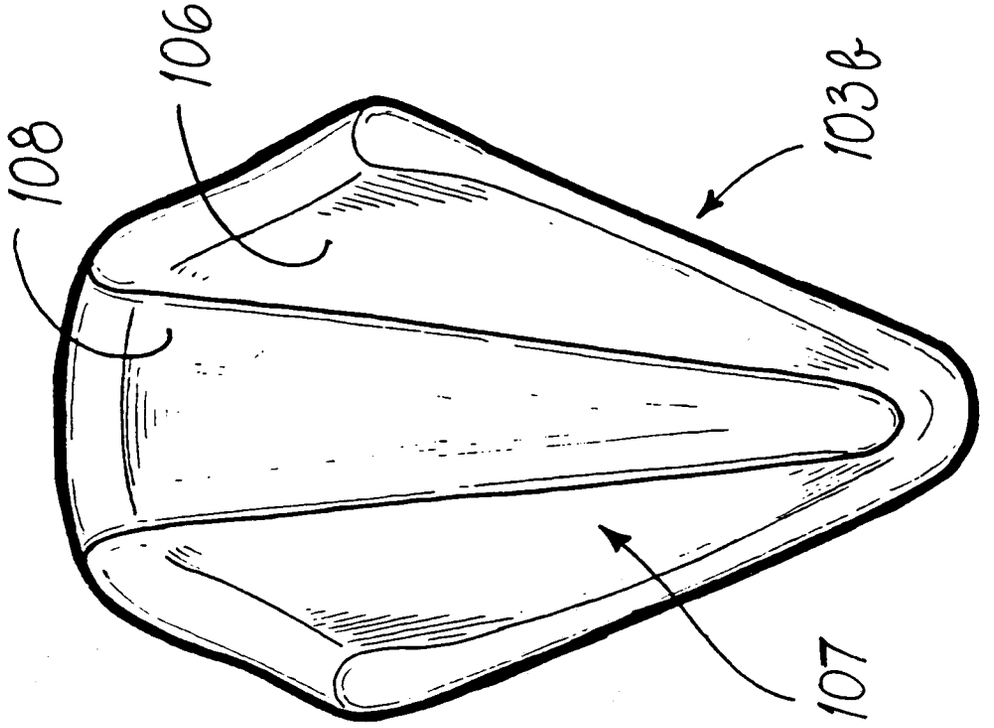

Fig. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 97 11 8472

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.6)
A	DE 813 958 C (R. DASSLER) * the whole document *	1	A43B5/04 A43B11/00
A	GB 245 622 A (A. STRONG) * the whole document *	1	
A	US 2 285 751 A (H. TAMAKI) * the whole document *	1	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

A43B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	2 February 1998	Declerck, J

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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