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54 **Innerboot particularly for sports shoes.**

57 Innerboot particularly usable for sports shoes including at least two elements (3,4), one (4) of which is made of a more rigid material and affects at least the inner lateral region of the foot. This arrangement provides for an innerboot that allows to achieve both optimum fit and optimum transfer of efforts to the ski or to the supporting frame for the skate wheels.

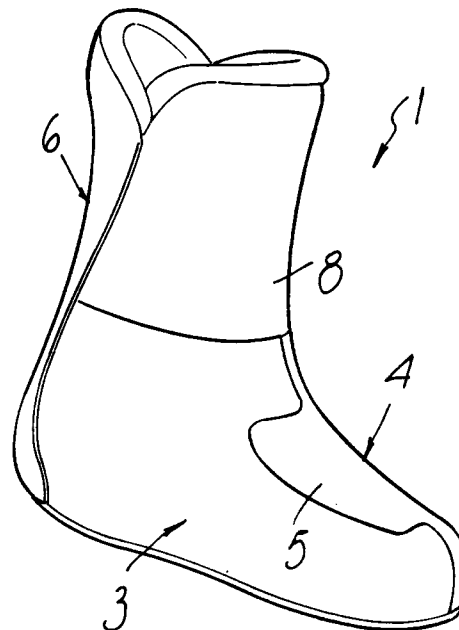


Fig. 1

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The present invention relates to an innerboot particularly usable for sports shoes.

It is known to manufacture sports shoes, such as for example roller skates, ice skates or ski boots, comprising a shell and one or more quarters articulated to the shell.

These components are usually made of rigid material, so that it is necessary to use an innerboot made of soft material to improve the fit of the foot.

Innerboots obtained by conventional processes or by foaming and used particularly in ski boots can roughly be divided into complete innerboots for front-entry boots and into partial innerboots for rear-entry boots.

More specifically, the complete innerboot, in order to allow the insertion of the foot, has a longitudinal opening located in its front part and covered by a tongue which is fixed at the toe of the innerboot.

The partial innerboot is constituted by an innerboot that surrounds only the front part of the foot and of the leg, leaving exposed the ankle and heel regions as well as the rear part of the leg.

The regions left exposed by the innerboot are protected and contained by paddings applied on the rear quarter constituting the boot.

All these known solutions have the drawback that they do not allow an optimum transfer of efforts to the ski or to the wheel supporting frame, since the innerboot is made of soft material to improve the user's comfort.

U.S. patent No. 4,523,392 shows a partial solution to this drawback; it discloses an innerboot for sports shoes having a partially removable element, at its heel region, for the insertion of an insert made of plastics which is suitable to surround the ankle region.

However, this solution has some drawbacks: first of all, the rigid element can decrease the comfort of the foot, because it affects several parts thereof, including part of the rear region of the leg above the heel.

Furthermore, the insert is an independent element that has to be inserted subsequently in the innerboot with a necessarily manual operation: this increases manufacturing costs and also forces to store as many inserts of different dimensions as there are innerboot sizes in use.

The possible use of the insert as an accessory also requires it to be stored within bags or containers which are in turn placed within bags or containers placed inside the boxes with which the boots are marketed: this usually leads to loss of the part, thus making it impossible for the user to subsequently use it if necessary.

The aim of the present invention is to solve the described technical problems, eliminating the drawbacks of the known art, by providing an inner-

boot for sports shoes, such as roller skates, ice skates or ski boots, which at the same time has optimum fit characteristics for the user and allows said user to transfer in an optimum manner efforts from the foot to the ski or to the supporting frame for the skate wheels.

Within the scope of this aim, an important object is to provide an innerboot that ensures optimum fit of the foot, especially at the regions subjected to highest pressure during sports practice.

Another important object is to provide an innerboot that is structurally simple, is easy and rapid to manufacture, and has low manufacturing costs.

This aim, these objects and others which will become apparent hereinafter are achieved by an innerboot for sports shoes, characterized in that it comprises at least two elements, a first element made of a more yielding material and at least partially surrounding the outer region of the foot, a second element made of a less yielding material and at least partially surrounding the inner region of the foot.

Further characteristics and advantages of the invention will become apparent from the following detailed description of a particular embodiment, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a general lateral perspective view of the innerboot;

figure 2 is an exploded view of the portion of the innerboot surrounding the foot;

figure 3 is an exploded view of the portion of the innerboot surrounding the leg;

figure 4 is a view, similar to figure 1, of an innerboot that can be used in sports shoes of the front-entry type;

figures 5 and 6 are exploded views of the components of the innerboot of figure 4;

figure 7 is a view of a component of the innerboot in the embodiment usable for rear-entry shoes;

figure 8 is a perspective view of a component of the innerboot usable in front-entry shoes;

figure 9 is a lateral perspective view of an innerboot for rear-entry shoes;

figure 10 is a view, similar to the preceding one, of an innerboot for front-entry shoes;

figure 11 is a view of a component of the innerboot shown in figure 9;

figures 12 and 13 are lateral perspective views of an innerboot respectively for rear-entry and front-entry shoes having a stiffening element that affects the inner lateral region of the foot;

figure 14 is a schematic view of the placement of the stiffening element according to the preceding figures;

figures 15 and 16 are opposite side views of an innerboot according to a further aspect of the

invention;

figure 17 is a front view of the innerboot of figures 15, 16;

figure 18 is a perspective view of the innerboot of figures 15,16;

figure 19 is a perspective left view of an innerboot according to a further aspect of the invention;

figure 20 is a perspective left view of the rigid portion of the innerboot of figure 19;

figure 21 is a perspective right view of the innerboot of figure 19;

figure 22 is a perspective right view of the rigid portion of the innerboot of figure 19.

With reference to the above figures, the reference numeral 1 generally designates an innerboot usable for sports shoes, such as for example ice skates, roller skates or ski boots.

The particular embodiment illustrated in figures 1, 2 and 3 shows an innerboot for sports shoes of the rear-entry type which is constituted by a plurality of mutually assembled elements, for example stitched together, comprising a sole 2 associated with a first element 3. The first element is made of soft material and surrounds the outer lateral region of the foot.

A second element 4 is also associated with the sole 2 and is made of a more rigid material, surrounds the inner lateral region of the foot, and preferably has a tab 5 that partially affects the metatarsal region.

A third element 6 is also associated with the sole 2, is preferably made of soft material, and surrounds the rear region of the leg.

A fourth element 8 is associated at the upper perimetric edges 7a and 7b of the first element 3 and of the second element 4. The fourth element is also made of soft material and surrounds the front region of the user's leg.

The innerboot 1 has soft parts for surrounding the foot and containing it in a comfortable condition, constituted by the first element 3, by the third element 6 and by the fourth element 8 made of soft material, and a rigid part, constituted by the second element 4, the purpose whereof is to allow optimum maneuvering for example of the ski or optimum transfer of efforts to the frame of the skate.

It has thus been observed that the invention has achieved the intended aim and objects, an innerboot for sports shoes having been obtained which has optimum characteristics of comfort and allows to transfer the efforts of the foot in an optimum manner to the sports implement.

The innerboot according to the invention is naturally susceptible to numerous modifications and variations, all of which are within the scope of the same inventive concept.

Thus, for example, figure 4 illustrates an innerboot 101 for front-entry sports shoes which is constituted by a sole 102, with which a first element 103 made of soft material and surrounding the outer lateral region of the foot is associated, and by a second element 104, which is made of a more rigid material and surrounds the inner lateral region of the foot.

Preferably, the second element 104 has a tab 105 that partially affects the metatarsal region.

A third element 106, such as a cuff that surrounds the rear region of the leg, is associated at the upper perimetric edges 107a and 107b of the first and second elements.

The end of a fourth element 108 is associated at the region adjacent to the toe of the first and second elements. The fourth element is constituted by a flap affecting the entire metatarsal region and part of the tibial region, and concealing an opening 109 formed frontally with respect to the innerboot 101.

Accordingly, this solution equally allows to ensure optimum comfort and transfer of efforts from the foot to the sports implement.

Figure 7 illustrates a further embodiment for an innerboot, wherein the second element 204 has, in addition to the tab 205 partially affecting the metatarsal region, a collar 210 that protrudes at the upper perimetric edge 207b and surrounds the front tibial region.

Figure 8 illustrates another embodiment, wherein the second element 304 has a collar 310 that surrounds the calf region.

Figure 9 illustrates an innerboot 401 for a rear-entry sports shoe, wherein the second element 404 again has a tab 405, which partially affects the metatarsal region, and a collar 410 which only partially affects the front region of the tibia.

Figure 10 illustrates an innerboot 501 for front-entry shoes wherein the collar 510 affects the front region of the tibia and partially closes the opening 509 of said innerboot.

Figure 11 illustrates another embodiment for the second element 604, wherein the collar 610 partially and laterally surrounds the inner region of the leg and partially surrounds the front region of the tibia.

Figures 12, 13 and 14 illustrate the use of a second element 704 which is used both for front-entry and rear-entry shoes, is associated at the sole 702, and protrudes from the perimetric edge thereof in the inner lateral region of the foot.

The shape of the second element 704 is such that it is inclined, starting from the perimetric edge of the sole 702 in the region adjacent to the heel 711, toward the toe 712, it arranges itself in the inner lateral region of the foot, and then partially surrounds the metatarsal region.

The dimensions of the second element, as well as those of the tab and collar, if provided, may naturally be the most pertinent according to the specific requirements.

Figures 15-18 show an innerboot 801 adapted to be inserted in a rear-entry type of boot.

The innerboot comprises a first element 803 and a second element 804 associated with an upper element 808.

The first element 803 is made of a relatively soft material while the second element 804, which surrounds the inner part of the foot, is made of a relatively rigid material.

The different stiffness of the first and second elements may be obtained by either using different materials or by using the same material with different thickness.

Figures 19-22 show an innerboot 901 adapted to be inserted in a front-entry type of boot. The innerboot comprises a relatively softer element 903 and a relatively rigid element 904.

The rigid element 904 partially surrounds the inner side of the foot.

The materials employed may also naturally be the most suitable according to the 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 scope of each element identified by way of example by such reference signs.

Claims

1. Innerboot for sports shoes, characterized in that it comprises at least two elements (3,4,103,104,203,204,304,404,604,704,803,804,903,904), a first element (3,103,203,803,903) made of a more yielding material and at least partially surrounding the outer region of the foot, a second element (4,104,204,304,404,510,604,704,804,904) made of a less yielding material and at least partially surrounding the inner region of the foot.
2. Innerboot according to claim 1, characterized in that it comprises a sole (2), associated with said first (3) and said second (4) element, said first element being made of soft material and at least partially surrounding the outer lateral region of the foot, said second element being made of a more rigid material and at least partially surrounding the inner lateral region of the foot.

3. Innerboot according to claim 2, characterized in that said second element has at least one tab (5) partially affecting the metatarsal and/or instep region.
4. Innerboot according to one or more of the preceding claims, characterized in that said second element affects the inner lateral region of the user's ankle, a collar (210,310,410,510,610) being associated at the upper perimetric edge of said second element.
5. Innerboot according to claim 4, characterized in that said collar (210) affects the front region of the tibia.
6. Innerboot according to claim 4, characterized in that said collar (310) affects the lateral regions of the leg and the rear region of the calf.
7. Innerboot according to claim 4, characterized in that said collar (410) partially affects the inner lateral region of the leg and partially affects the front region of the tibia.
8. Innerboot according to claim 4, characterized in that said collar (510) affects the inner lateral region of the leg and surrounds the front region of the tibia.
9. Innerboot according to one or more of the preceding claims, characterized in that a second element (704) is associated at the perimetric edge of a sole (702) in the inner lateral region of the foot, said second element extending toward the toe, partially surrounding its inner lateral region and subsequently at least partially surrounding the metatarsal region.
10. Innerboot according to claim 1, characterized in that said second element is made of a different more rigid material than said first element.
11. Innerboot according to claim 1, characterized in that said second element is made of a thicker material than said first element, said second element being more rigid than said first element.

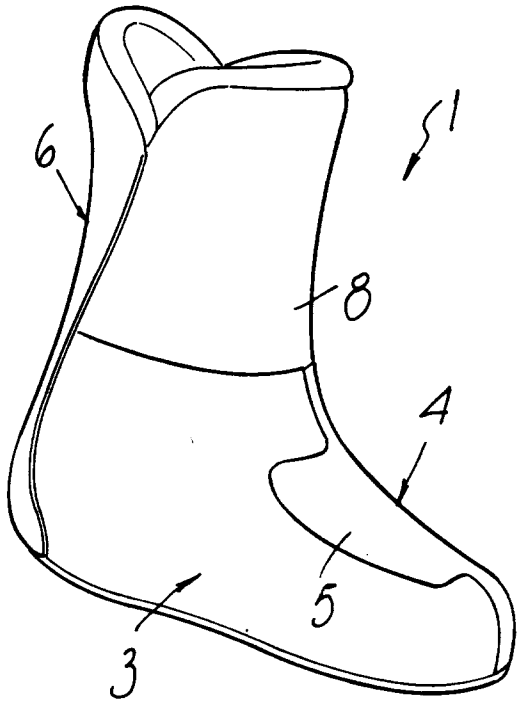


FIG. 1

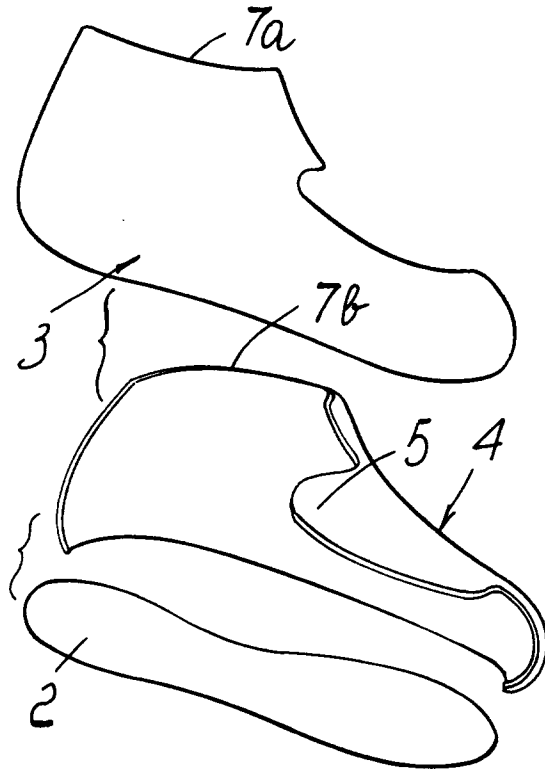


FIG. 2

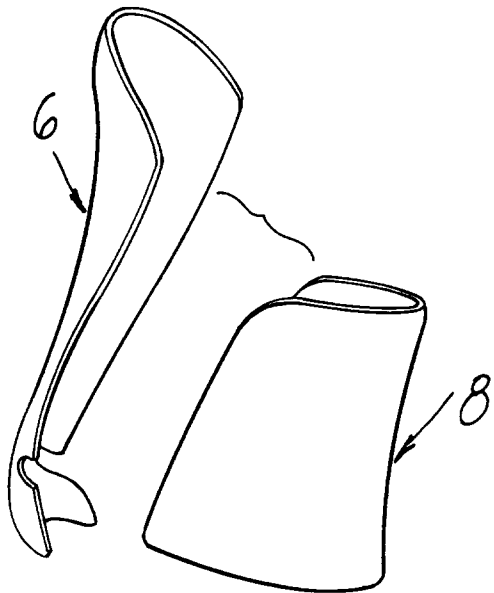


FIG. 3

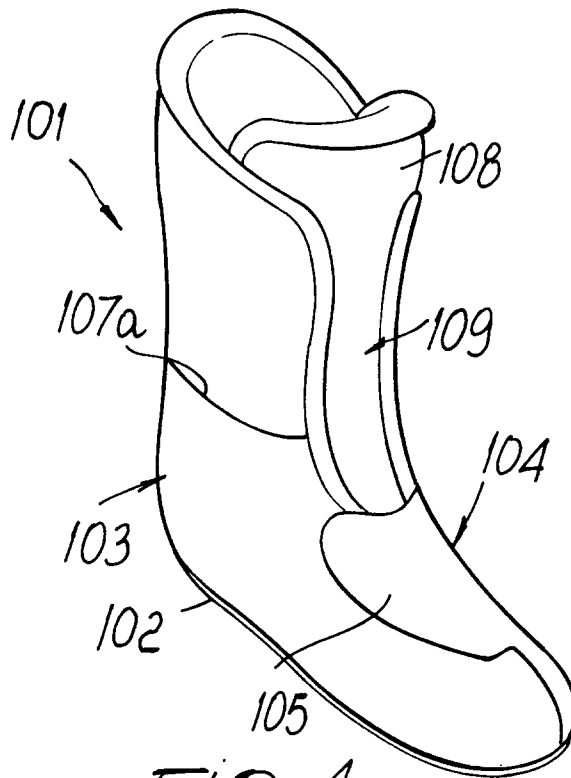


FIG. 4

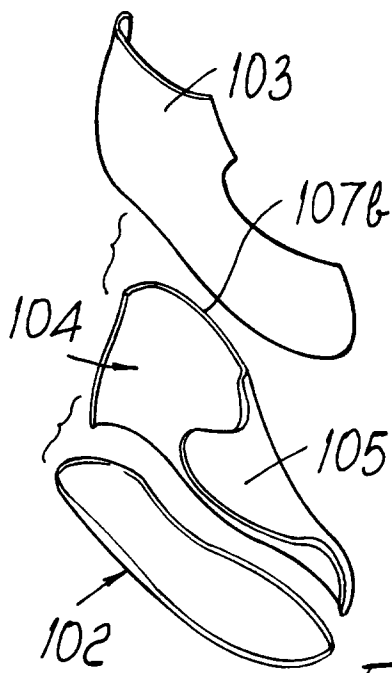


FIG. 5

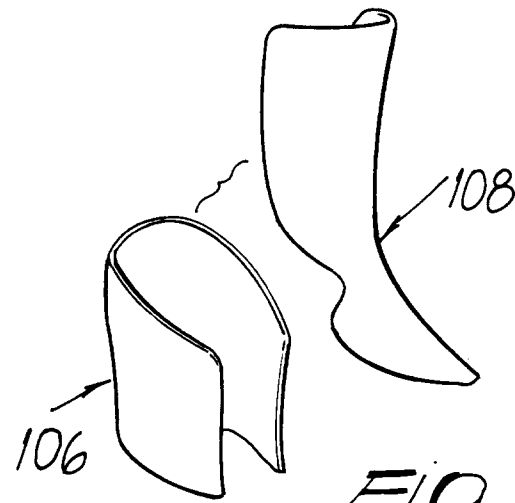


FIG. 6

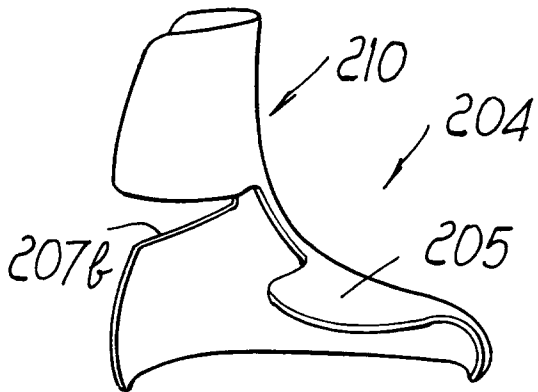


FIG. 7

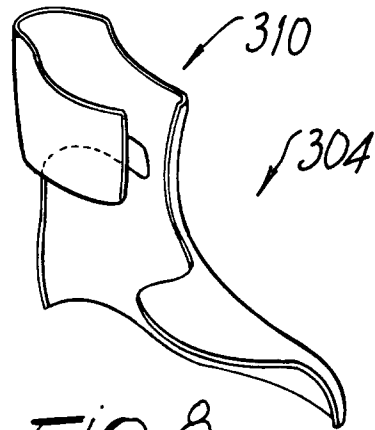


FIG. 8

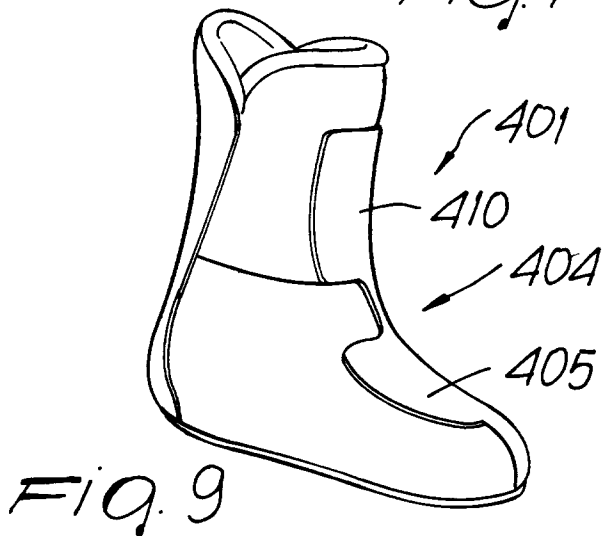


FIG. 9

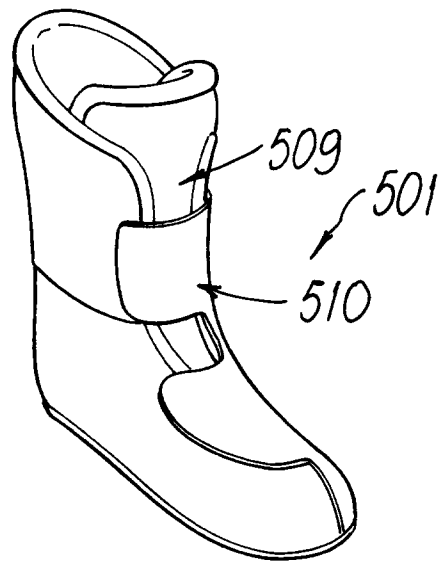


FIG. 10

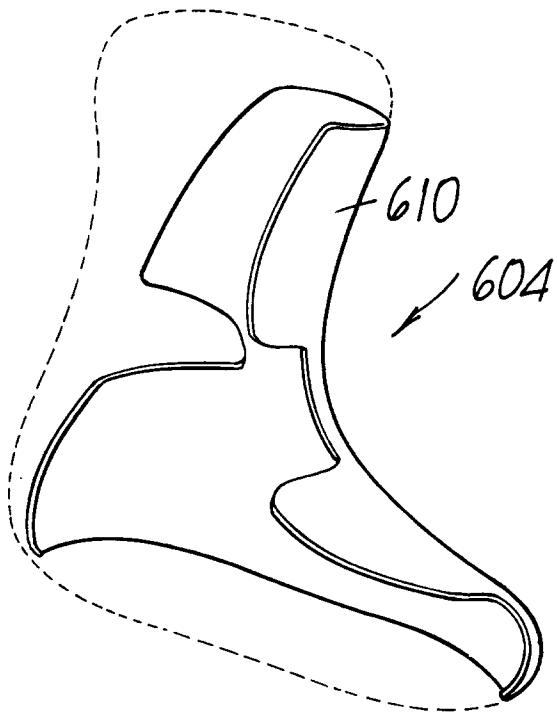


FIG. 11

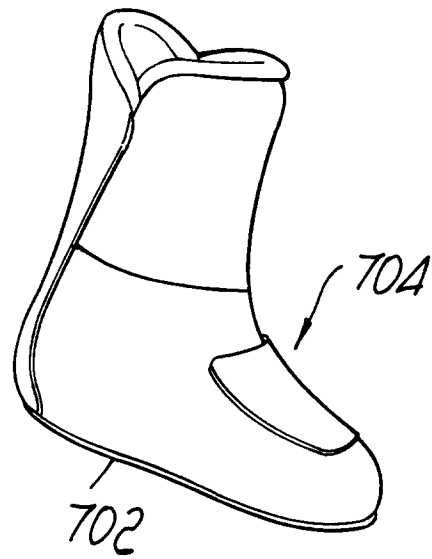


FIG. 12

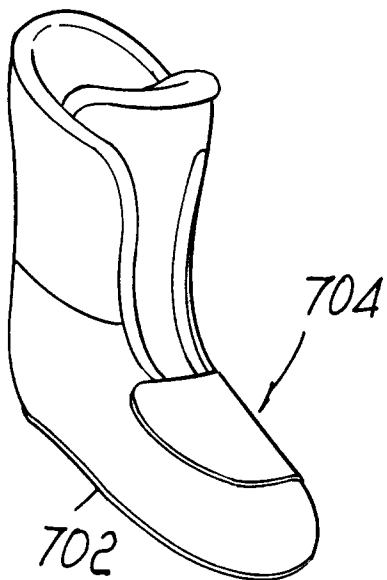


FIG. 13

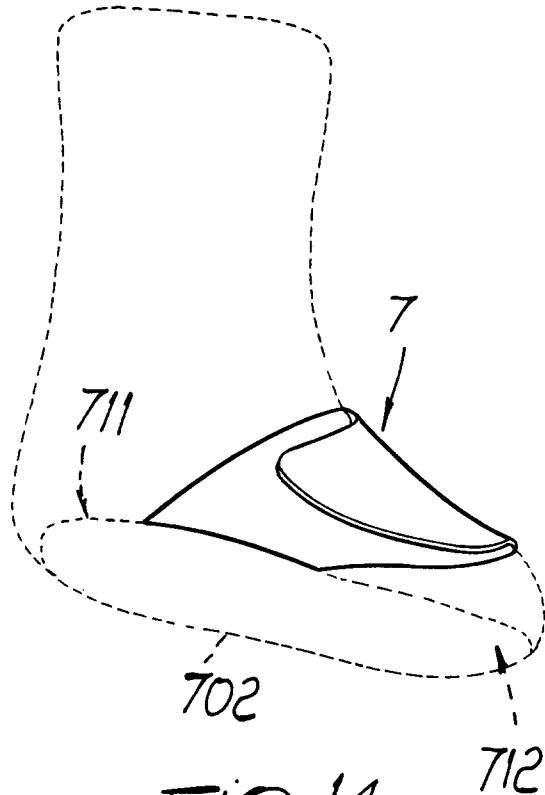
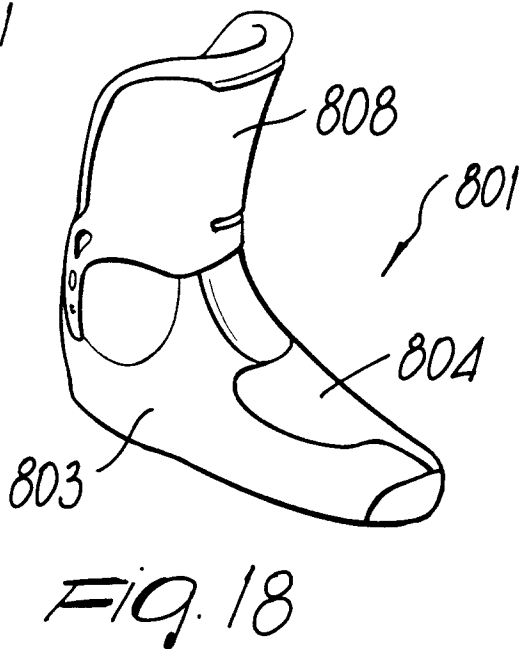
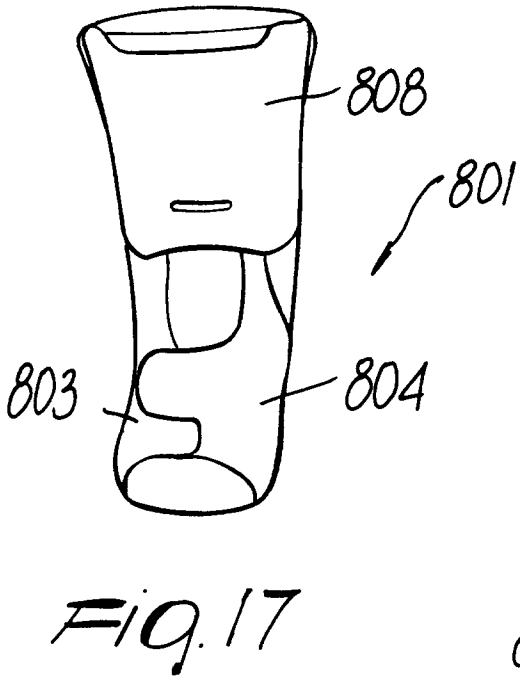
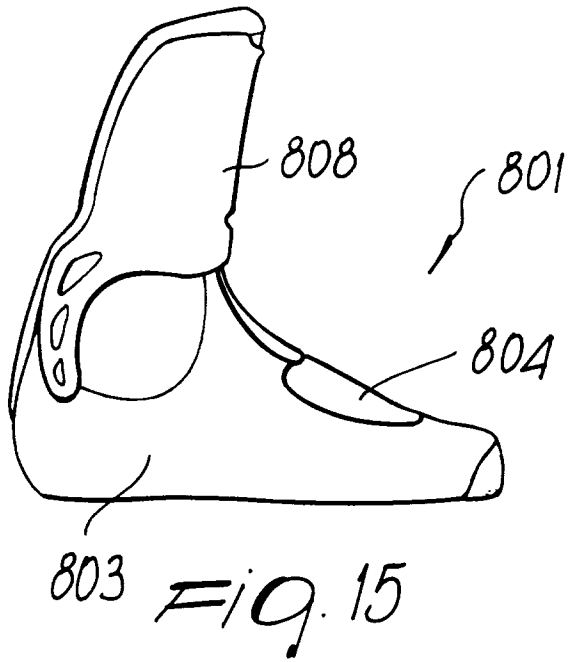


FIG. 14



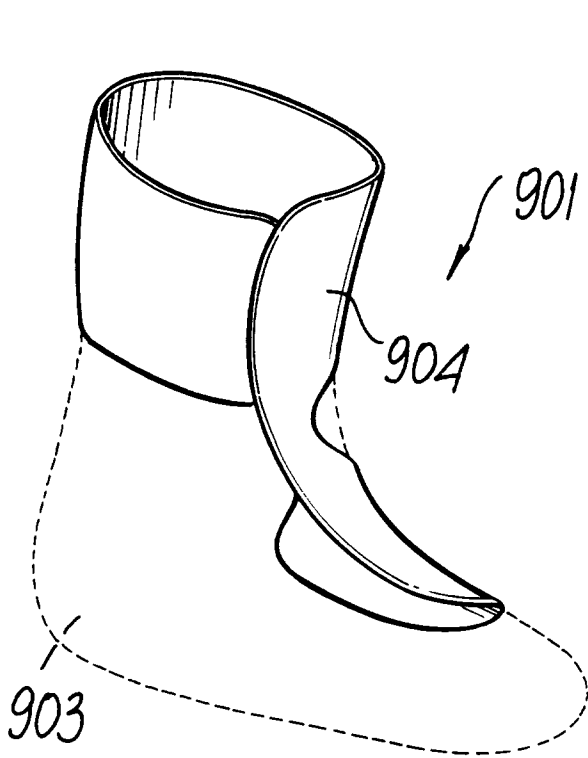


FIG. 20



FIG. 19

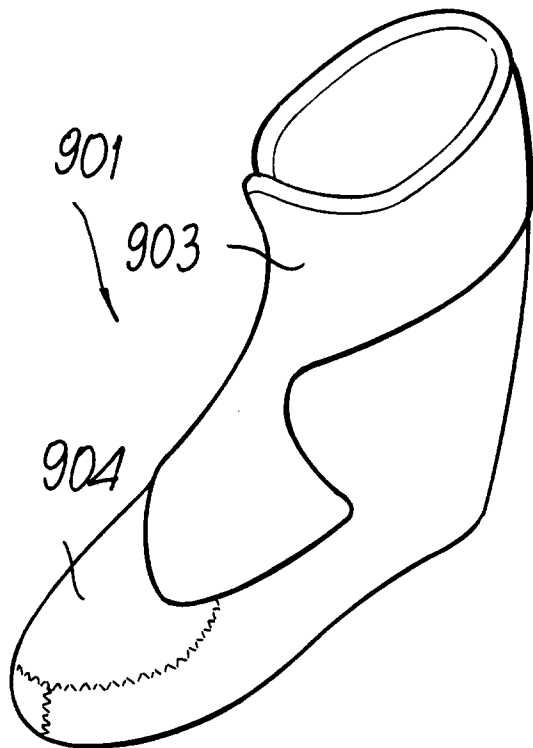


FIG. 21

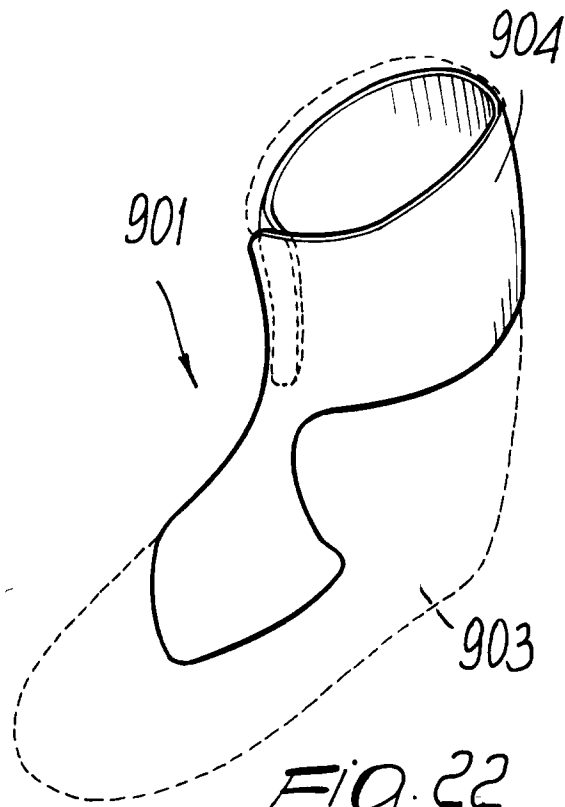


FIG. 22



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EUROPEAN SEARCH REPORT

Application Number
EP 94 10 5881

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	DE-A-41 29 270 (LOWA SCHUHFABRIK LORENZ WAGNER GMBH & CO KG) * column 1, line 45 - line 50 * * column 5, line 9 - line 22; figures * ---	1,2,4-8, 10,11	A43B19/00 A43B5/04
D,X	EP-A-0 086 909 (LANGE INTERNATIONAL SA) * page 5, line 20 - line 37; figures 3,4 * ---	1,2,10, 11	
A	EP-A-0 107 841 (NORDICA) * page 3, line 23 - page 4, line 11; figures * ---	1-11	
A	DE-U-81 03 473 (WEINMANN GMBH & CO KG) * page 3, line 15 - line 23; figure 1 * -----	1-11	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			A43B
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
THE HAGUE		4 July 1994	Scholvinck, T
CATEGORY OF CITED DOCUMENTS			
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