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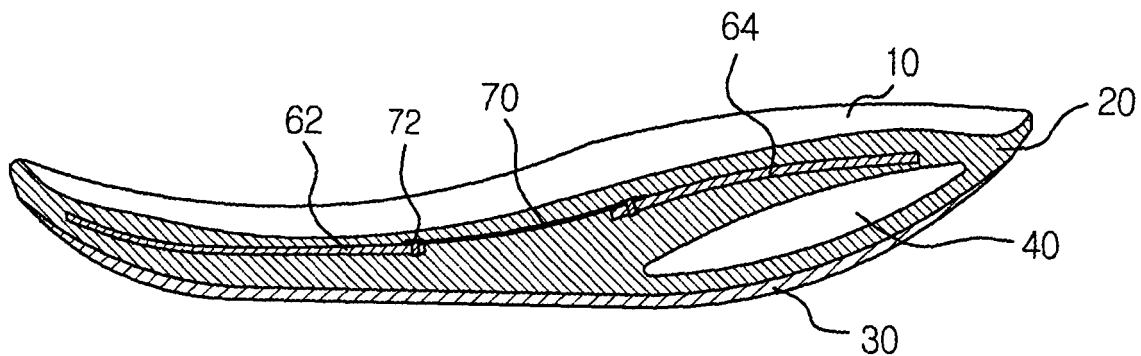
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(54) **A midsole for masai walking specialized shoes**

(57) The invention relates to a midsole structure having an airbag (40) in the rear portion or from the rear portion to the front portion for Masai walking specialized shoes, wherein a connecting panel shank (60) comprising a front shank (62) and rear shank (64) coupled with

a connecting panel (70) is built such that rolling movement of three steps occurs actively during walking three steps of landing, center moving and leaving step and an arch styled finger pressure effect occurs because the front and rear shank are compressed.

Fig 1



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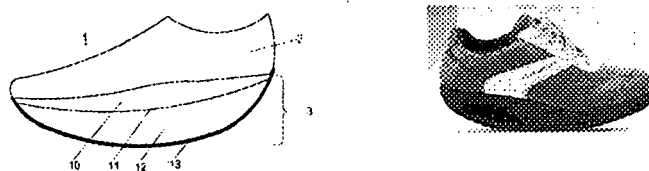
## Description

### [Technical Field]

**[0001]** This invention relates to an airbag midsole structure having a connecting panel shank for Masai walking specialized shoes, more particularly an airbag midsole structure wherein an airbag is built in the rear portion or built from the rear portion to front portion, and a connecting panel shank comprising the front shank and rear shank coupled with a connecting panel is built such that rolling movement of three steps occurs actively during walking three steps of landing, center moving and leaving step and an arch styled finger pressure effect occurs because the front and rear shank are compressed.

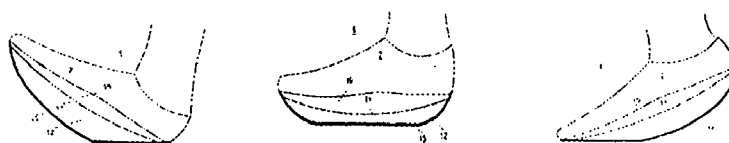
### [Background Art]

**[0002]** The invention refers to a bottom piece used in Masai walking specialized shoes for playing Masai walking, improved the invention (Utility model KR20-0402587, Health shoes improved the heeltap) and another invention (Patent KR10-0584527, Midsole and producing method thereof for rolling health shoes having tunnels)



**[0003]** In above Figs of Korean Patent 10-377822, the numbers '1, 2, 3, 10, 12 and 13' indicate shoes, leather, bottom piece, insole, midsole and outsole respectively.

**[0004]** Referring to the description of the Korean Patent 10-377822, the term 'Masai walking specialized rolling walk shoes' indicates shoes having an effect of Masai tribal walking where the bottom piece's surface has a curved shape and there is no heel, and 'Masai walking' is illustrated in Fig.2 to 4, as followings:



**[0005]** Korea Walking Association, World Walking Association, shoes companies and common consumers name the shoes having an effect of Masai walking without the heeltap and having a curve shaped bottom piece "Masai Bearfoot Technology Shoes", and it is also called "Masai walking specialized Shoes" or "Masai tribal walking specialized shoes" in general books, newspapers, magazines, as well as internet.

**[0006]** In general, the foot's motion on the ground carries out repeatedly typical 3 steps, namely, landing step by the heel, center moving step from the heel to the toe, and leaving step from the ground.

### [Disclosure]

### [Technical Problem]

**[0007]** Since conventional shoes has a heel at right angle to the ground and conventional shoes have a sharp edge on the heel, the edge touches firstly with the ground during landing step, the impact during landing step is large because of the narrow liner shape of the heel's landing surface, and as the next center moving step is carried out at a stroke, a sudden impact is transferred to each joint of the body and legs, resulting in bad landing sensitivity and unnatural walking.

**[0008]** In conventional midsoles for Masai walking rolling shoes such as prior inventions KR10-2007-114634, KR10-2007-124094 and KR10-2007-120842, high elastic shank is built in the rear upper portion of the midsole, the front

portion of the midsole is forked with several slits opened into the free end from a given position, and beed shaped ribs for enforcement are formed in the middle portion. Since the shank built in the conventional Masai walking rolling shoes moves forward and rearward, there are problems that the midsole is not changed soft during walking three steps and walking is unnatural due to the bounding feeling.

#### [Technical Solution]

**[0009]** The object of the invention is to provide a midsole for Masai walking specialized rolling shoes, which is improved for solving above conventional problems, wherein a connecting panel shank comprising the front shank and rear shank coupled with a connecting panel is built such that rolling movement of three steps occurs actively during walking three steps of landing, center moving and leaving step and an arch styled finger pressure effect occurs because the front and rear shank are compressed.

**[0010]** According to the invention, there is provided an airbag in the rear portion or from the rear portion to the front portion of the midsole for Masai walking specialized shoes, and a connecting panel shank comprising the front shank and rear shank coupled with a connecting panel is built in the midsole.

#### [Advantageous Effects]

**[0011]** According to the invention, a connecting panel shank is built in the upper of the midsole, rolling movement occurs against the ground because the heel's surface of the bottom piece is formed in the curved shape along the motion trace of the heel against ankle joint during walking, and as during walking three steps of landing, center moving and leaving step three steps of rolling movement occur smoothly by the elastic force of the connecting panel and the front shank and rear shank are compressed, arch styled finger pressure effect occurs. Therefore Masai walking specialized shoes can be produced and the invention is very useful in the shoes industry.

#### [Brief Description of the drawings]

**[0012]** The above and other objection features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

Fig.1 is a cross-sectional view of a bottom piece according to the invention,  
 Fig.2 is an exploded cross-sectional view according to Fig.1,  
 Fig.3 is a perspective view of a connecting panel shank according to the invention,  
 Fig.4 is a cross-sectional view according to Fig.3,  
 Fig.5 is a perspective view of the Masai walking specialized shoes according to the invention,  
 Fig.6 is a cross-sectional view of another bottom piece according to the invention,  
 Fig.7 is an exploded cross-sectional view according to Fig.6, and  
 Fig.8 is a perspective view of the Masai walking specialized shoes according to another invention.

#### [Mode for Invention]

**[0013]** According to the present invention, a Masai walking specialized rolling shoes is provided which comprise a leather, bottom piece, insole, midsole and convex shaped outsole, wherein the midsole is made of polyester or polyurethane having hardness 40~60, has a convex shaped arch form from the front portion to rear portion and the inclination angle of 25-45 degrees at the heeltap, an airbag (40) is formed in the rear portion of the midsole (20) or an airbag (140) is formed from the rear portion to front portion of the midsole (20), and a connecting panel shank (60) having the front shank (62) and rear shank (64) coupled with a connecting panel (70), is built in the midsole (20).

**[0014]** According to the midsole structure of the invention, the connecting panel (70) features that the material is selected from a flexible thin panel or a thin synthetic resin panel. Furthermore, the connecting panel shank features that plural slits (62a) are formed opened into the free end from a given position of the front portion, and the front shank (62) and rear shank (64) are coupled with a fixture (72).

**[0015]** The Masai walking specialized shoes having the connecting panel shank, according to the invention, is a typical shoes comprising a leather, bottom piece and slipsole, wherein the bottom piece comprises an insole (10), midsole (20) and outsole (30), and the surface of the bottom piece has a curved arch shape without the heel, therefore the shoes having the same effect as Masia walking has names such as Masai Bearfoot Technology Shoes, Masai Walking Specialized Shoes, Masai Walking Shoes, Masai Walking Dedicated Shoes, Patented Technological Shoes on Masai Walking, and Masai Walking Patented Shoes.

**[0016]** In the Masai walking specialized shoes according to the invention, the midsole (20) is shaped in the panel form

which is made after the pattern of the profile and curved shape of the bottom piece, and a connecting panel shank (60) is built in the midsole (20), resulting in rolling movement against the ground by forming the surface of the heel of the bottom piece into a curved shape after the pattern of the shape of the heel and the motion trace of the heel against ankle joint during walking.

**[0017]** In the connecting panel shank (60) built in the midsole (20) according to the invention, the front shank (62) and rear shank (64) are coupled integrally with the connecting panel (70) or the front shank (62) and rear shank (64) are coupled with a separate connecting panel (70) by a fixture (72). The connecting panel shank (60) is preferably made of polyvinylchloride (PVC) and the connecting panel (70) is preferably made of material having hardness less than the front and rear shanks. Since the connecting panel (70) is made of a flexible thin metal panel or thin synthetic resin, the front shank (62) and rear shank (64) are capable of bending up and down centering on the connecting panel (70).

**[0018]** Because the front shank (62) and rear shank (64) are capable of bending up and down centering on the connecting panel (70), a rolling effect occurs naturally during walking three steps of landing, center moving and leaving step by the elastic action of the connecting panel (70).

**[0019]** As shown in Figs.1 to 5, in the connecting panel shank (60) built in the midsole (20) having an airbag in the rear portion or from the rear portion to front portion, the front shank (62) and rear shank (64) are coupled with the connecting panel (70) such that a rolling effect occurs naturally during walking three steps of landing, center moving and leaving step by the elastic action of the connecting panel (70). Further, since the front shank (62) and rear shank (64) of the midsole are compressed during walking three steps of landing, center moving and leaving step, the rolling movement of three steps occurs smoothly by the elastic action of the connecting panel. Furthermore, during walking three steps of landing, center moving and leaving step, arch formed finger pressure is generated because rolling movement of three steps occurs actively and the front shank (62) and rear shank (64) are compressed.

**[0020]** In the bottom piece structure for the Masai walking specialized shoes having an airbag in the rear portion or from the rear portion to the front according to the invention, preferably the connecting panel shank (60) and the connecting panel (70) are made of polyvinylchloride (PVC), polyurethane or polyester resin. Further, in the bottom piece structure having the connecting panel shank, the connecting panel shank (60) comprises preferably the front shank (62) having plural slits (62a) opened into the free end from a given position; the rear shank (64) coupled with the front shank (62); and the connecting panel (70) coupled with the front shank (62) and rear shank (64).

**[0021]** The rolling shoes having the midsole, wherein an airbag is formed in the rear portion or from the rear portion to the front portion, can be viewed by three steps of landing, center moving and leaving step. When the heel of the rolling shoes according to the invention touches on the ground during landing step, the impact amount of landing decreases relatively because the landing surface of the bottom piece is broad, and an arch formed finger pressure effect occurs because rolling movement of three steps occurs actively as well as the front shank (62) and rear shank (64) are compressed, resulting in high buffering effect and smooth landing.

**[0022]** In contrast with the shoes not having the connecting panel shank (60), the rolling shoes of the invention reduces the hardness as much as the half with increasing buffering effect. In the rolling shoes of the invention, the bottom surface of the heel of the shoe having a curved shape plays rolling movement along the ground and absorbs the impact dispersively when the walking step passes into the center moving step. Furthermore, according to the rolling shoes of the invention, since the center of the shoes moves gradually along the curved shape, there is not occurred the rapid impact in the ankle joints, legs and any joints of the body, resulting in smooth walking.

**[0023]** The connecting panel shank (60) built in the midsole of the invention, preferably, has plural slits (62a) which are opened into the free end from a given position, forked into plural portion, and has beed shaped ribs for enforcing the middle portion. In the rolling shoes of the invention, the connecting panel shank (60) is designed such that the initial forms of the bottom piece and shoes remain, and the bottom piece frequently bent and stretched is positively restored as well as the light walking is possible by adding repulsive force during leaving step and the walking stability is improved. Although the connecting panel shank (60) can be made with any forms and materials, preferably it is formed in the panel shape after the pattern of the profile and curved shape of the midsole (20) using polyvinylchloride (PVC), the front portion of the connecting panel shank (60) having a large bending angle has plural slits (62a) opened into the free end from a given position in the fork shape in order that the bending action achieves easy, and preferably beed shaped ribs are formed in both directions of the forward and rearward for enforcing the middle portion of the shank, and plural through holes (62c) are formed in order that the mold fluid flows actively during the midsole (20) producing.

**[0024]** The heel of the outsole (30) is formed in the arch shape such that the inclination angle of the heel of the shoe against the ground has 25-45 degrees. In case of less than 25 degree, the rolling action does not occur, and the posture becomes unstable during putting on the shoes or standing in case of more than 45 degree.

**[0025]** The midsole (20) of the rolling shoes according to the invention is made of polyester or polyurethane with hardness 40-60. In case of less than 40, the midsole cannot play the role of a support due to the exceed softness, and cannot play the role of an elastic member in case of more than 60.

**[0026]** According to the invention, an airbag (40) is formed in the rear portion or from the rear portion to the front portion of the midsole (20). Therefore the midsole producing term and cost reduces, the soft bearfoot is prevented from

breakage due to hydrolysis reaction and the repulsive force by cushion action can be generated much.

**[0027]** According to the shank inserted into the midsole (20) of the invention, the bottom piece and shoes's original shape remain well, the bottom piece frequently bent and stretched during walking restores actively, and light walking is achieved because the toe portion is pushed forward by the added repulsive force through restoration force during leaving step as well as the walking stability is high because the bottom piece is elastic and remains continuously.

**[0028]** According to the invention, an insole (10) is provided on the upper of the midsole (20), is made of non-woven fabric with hardness 25~30, and light walking is achieved because the repulsive force is added by the restoration force during leaving step as well as high walking stability, resulting in high walking efficiency. In case of less than hardness 25, the insole is incapable of playing the role of a support due to the exceed softness, and incapable of playing the role of an elastic member due to the exceed hardness in case of more than 30.

**[0029]** According to the invention, the outsole (30) is provided in the under of the midsole (20), is made of polyester or polyurethane with hardness 70~80, has a convex arch shape from the front portion to the rear portion, and the inclination angle of the heeltap is 25-45 degrees. In case of less than hardness 70, the outsole is incapable of playing the role of a support due to the exceed softness, and incapable of playing the role of an elastic member in case of more than 80.

## Claims

1. A midsole for Masai walking specialized shoes, capable of playing Masai walking, comprised of a leather, slipsole, insole, midsole and convex shaped outsole, wherein the midsole is made of polyester or polyurethane with hardness 40~60, has a convex arch shape from the front portion to rear portion, the inclination angle of the heeltap is 25-45 degrees, an airbag (40) is formed in the rear portion of the midsole (20) or an airbag (140) is formed from the rear portion to the front portion of the midsole; and a connecting panel shank (60) is built in the midsole (20) in which the front shank (62) and rear shank (64) are coupled with a connecting panel (70).
2. A midsole for Masai walking specialized shoes according to claim 1, the connecting panel (70) is made of a flexible thin metal panel or a flexible thin synthetic resin panel.
3. A midsole for Masai walking specialized shoes according to claim 1, the connecting panel shank comprises a front shank (62) having plural slits (62a) opened into the free end from a given position; a rear shank (64) being coupled the front shank (62); and a connecting panel being coupled the front shank (62) and the rear shank (64) by a fixture (72).

Fig 1

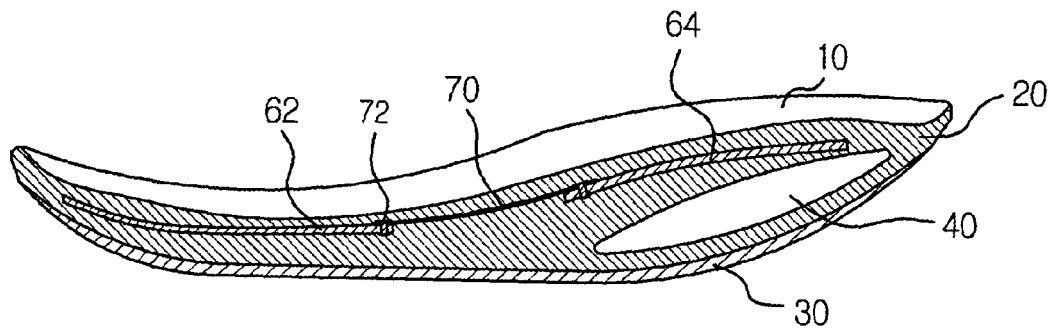


Fig 2

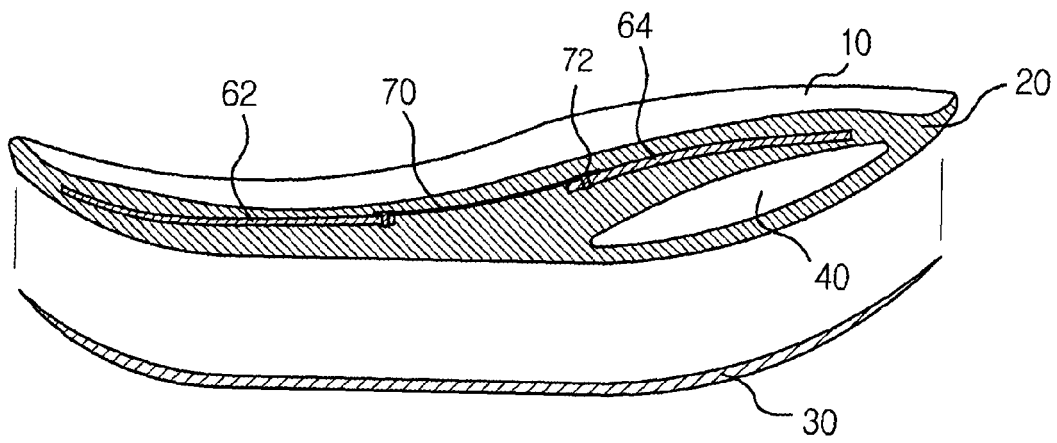


Fig 3

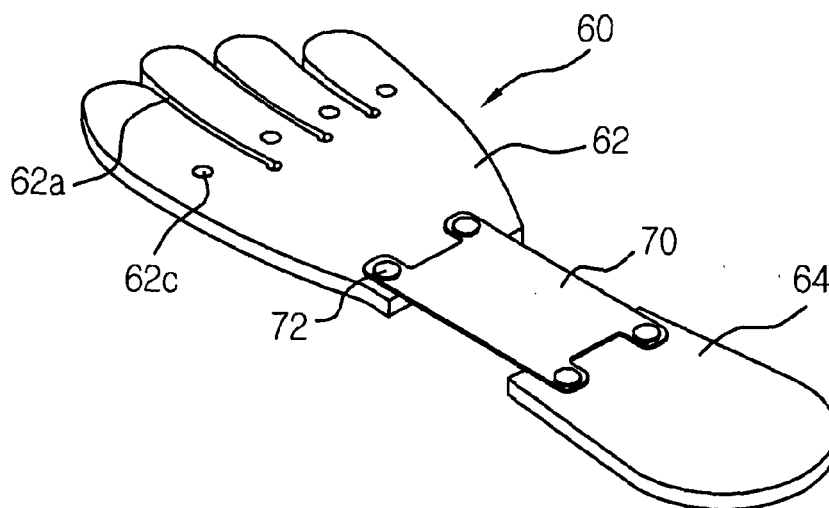


Fig 4

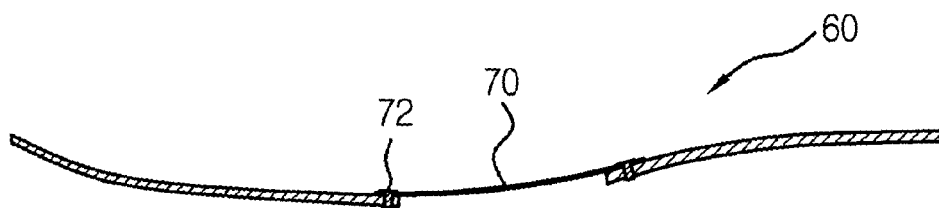


Fig 5

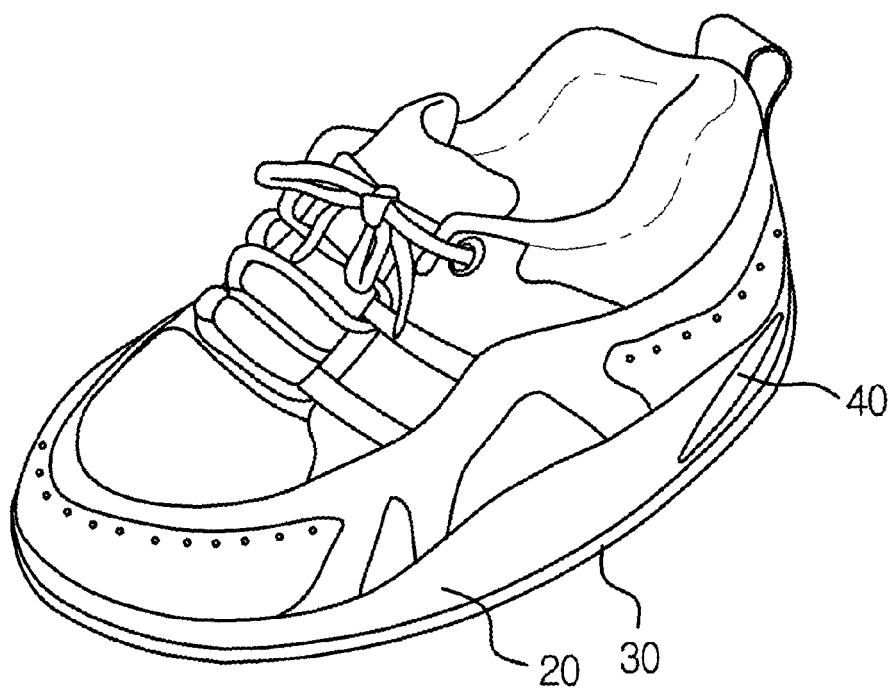


Fig 6

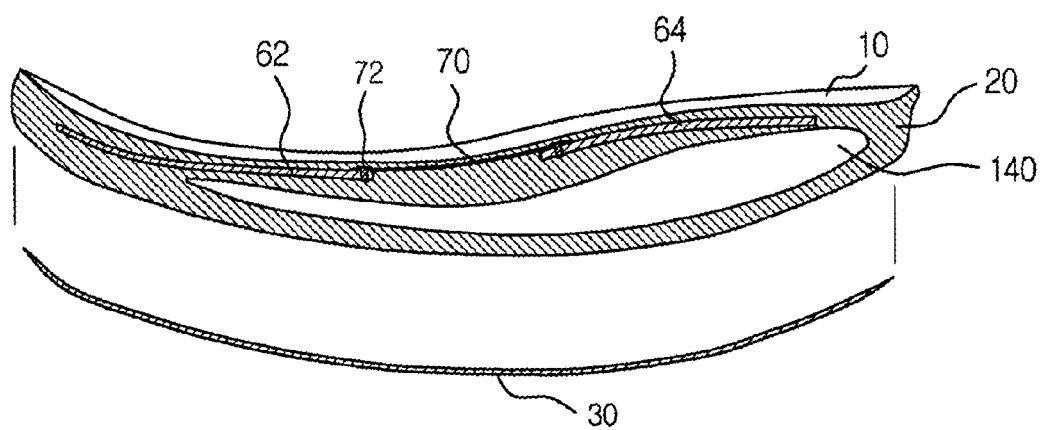


Fig 7

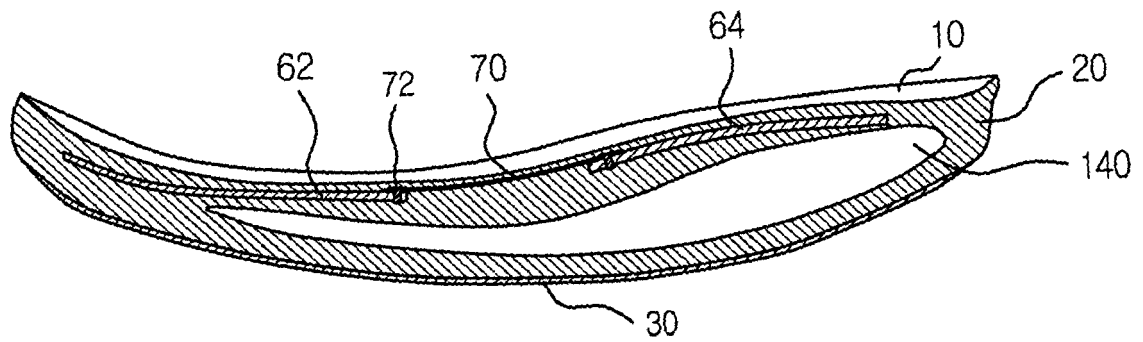
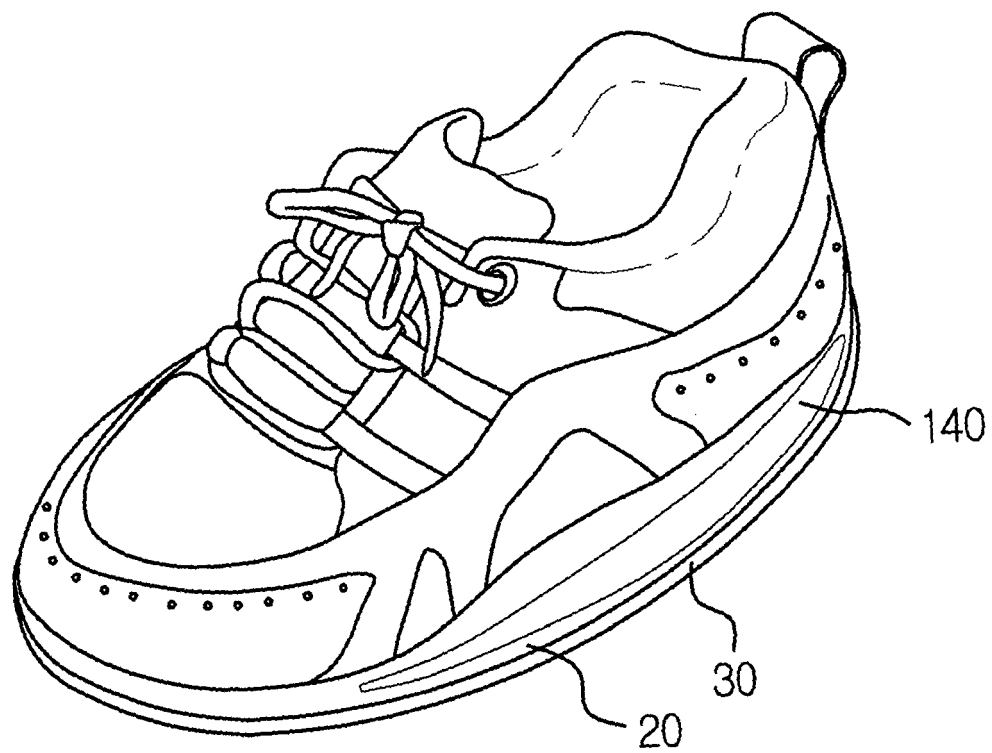


Fig 8





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Application Number  
EP 08 01 0737

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                      |                                                       |                                                                       |
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| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Citation of document with indication, where appropriate, of relevant passages                                                                        | Relevant to claim                                     | CLASSIFICATION OF THE APPLICATION (IPC)                               |
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| The present search report has been drawn up for all claims                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                      |                                                       |                                                                       |
| Place of search<br><b>Munich</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                      | Date of completion of the search<br><b>7 May 2009</b> | Examiner<br><b>Herry, Manuel</b>                                      |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone<br/>Y : particularly relevant if combined with another document of the same category<br/>A : technological background<br/>O : non-written disclosure<br/>P : intermediate document</p> <p>T : theory or principle underlying the invention<br/>E : earlier patent document, but published on, or after the filing date<br/>D : document cited in the application<br/>L : document cited for other reasons<br/>.....<br/>&amp; : member of the same patent family, corresponding document</p> |                                                                                                                                                      |                                                       |                                                                       |

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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