



US 20120060394A1

(19) **United States**(12) **Patent Application Publication**
Kwon(10) **Pub. No.: US 2012/0060394 A1**(43) **Pub. Date: Mar. 15, 2012**(54) **HUMAN BODY-BALANCING FOOTWEAR
CAPABLE OF PREVENTING KNOCK-KNEES
AND PROVIDING CUSHIONING SUITABLE
FOR THE WEIGHT OF WEARER****Publication Classification**(51) **Int. Cl.**
A43B 7/14 (2006.01)(52) **U.S. Cl.** **36/92**(76) **Inventor:** **Hyuk Soo Kwon, Seoul (KR)**(21) **Appl. No.:** **13/320,557**(22) **PCT Filed:** **May 20, 2010**(86) **PCT No.:** **PCT/KR2010/003210**§ 371 (c)(1),
(2), (4) **Date:** **Nov. 15, 2011**(30) **Foreign Application Priority Data**

May 21, 2009 (KR) 10-2009-0044310

(57) **ABSTRACT**

Disclosed is a footwear (including shoes, sneakers, and like, and hereinafter, referred to as "footwear") which is produced on the basis of ergonomics, and which includes a heel part provided at a rear portion of a sole part, and an impact absorbing cap detachably coupled with the heel part. The footwear absorbs external impacts generated during walking as much as possible in three stages. The heel of the footwear is divided into a left section and a right section, and is replaceable at any time. The footwear prevents deformation in the ankle joint and knock-knees or bandy-legs caused by a difference in wear between the two heels of shoes.

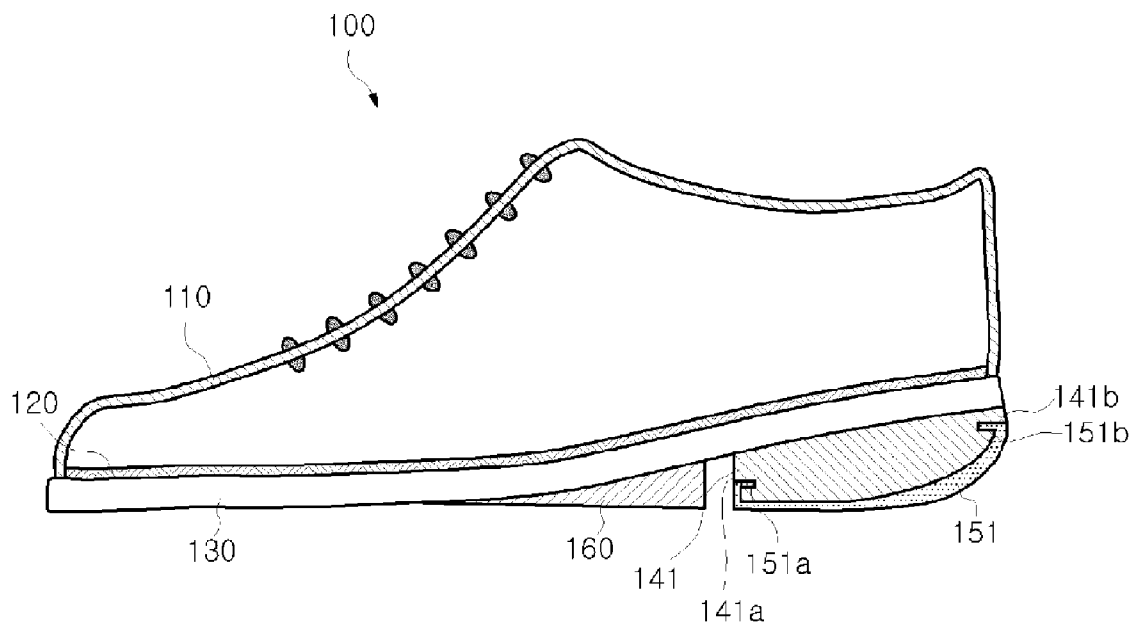


Fig.1

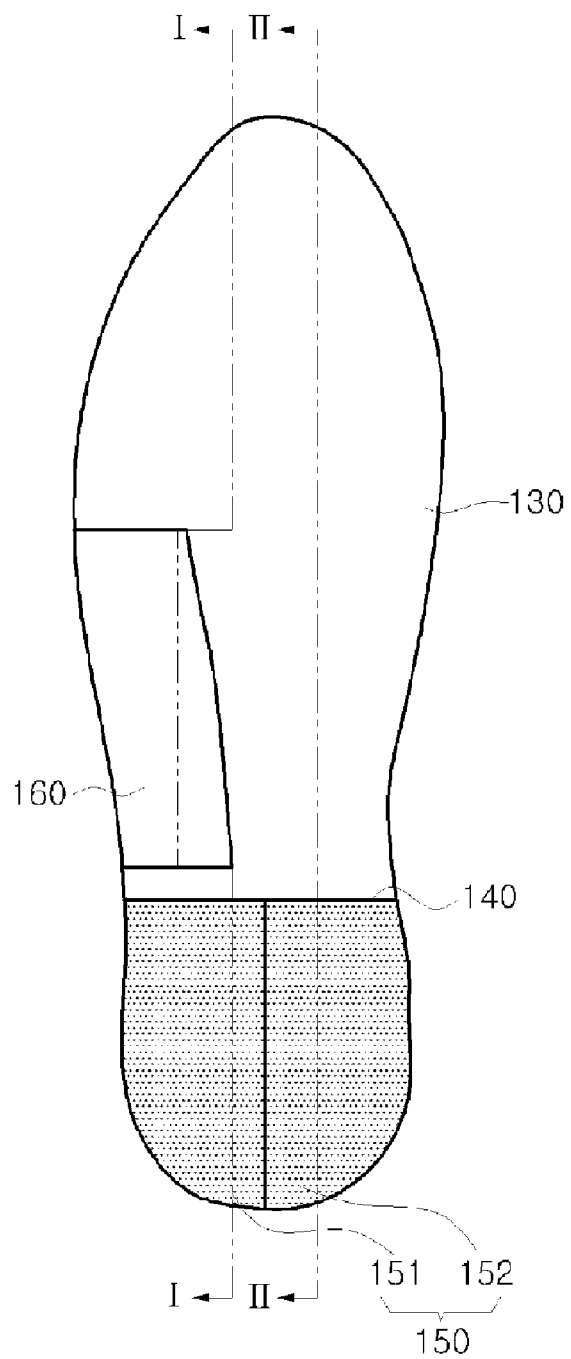


Fig.2

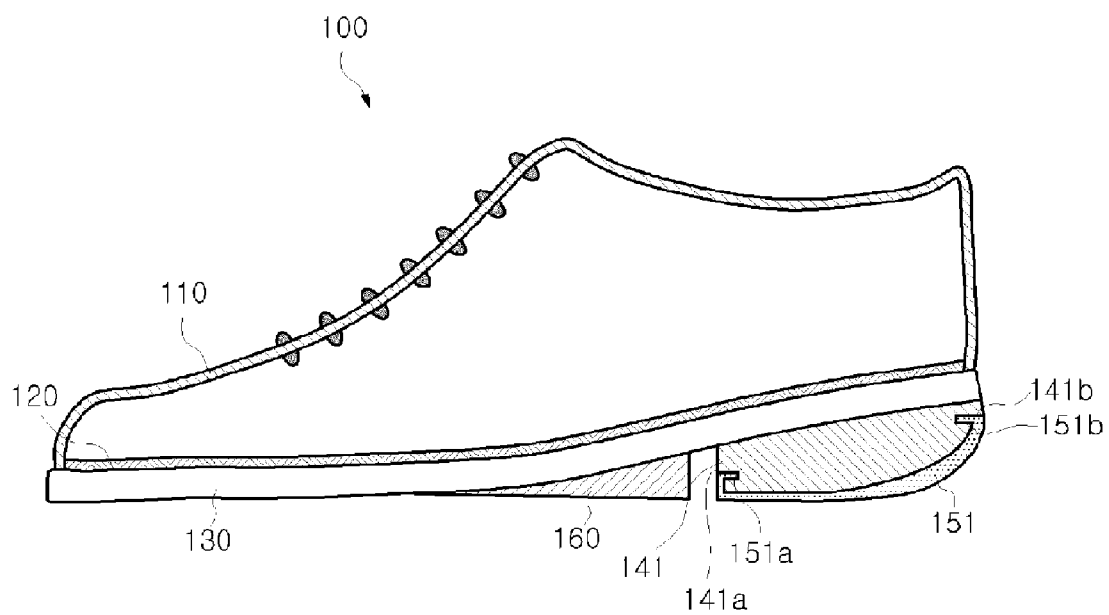


Fig.3

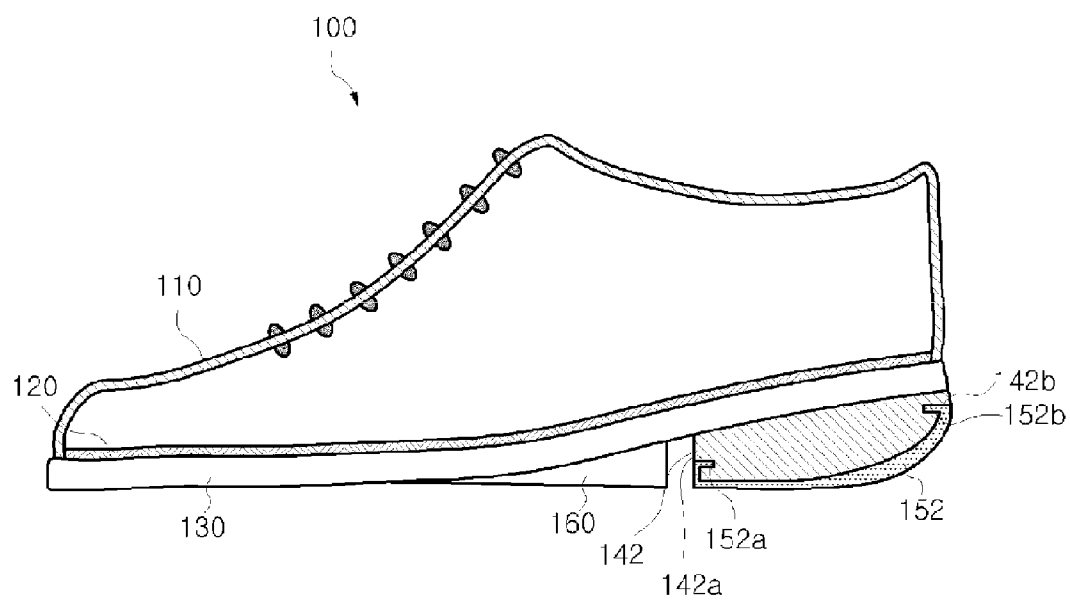


Fig.4

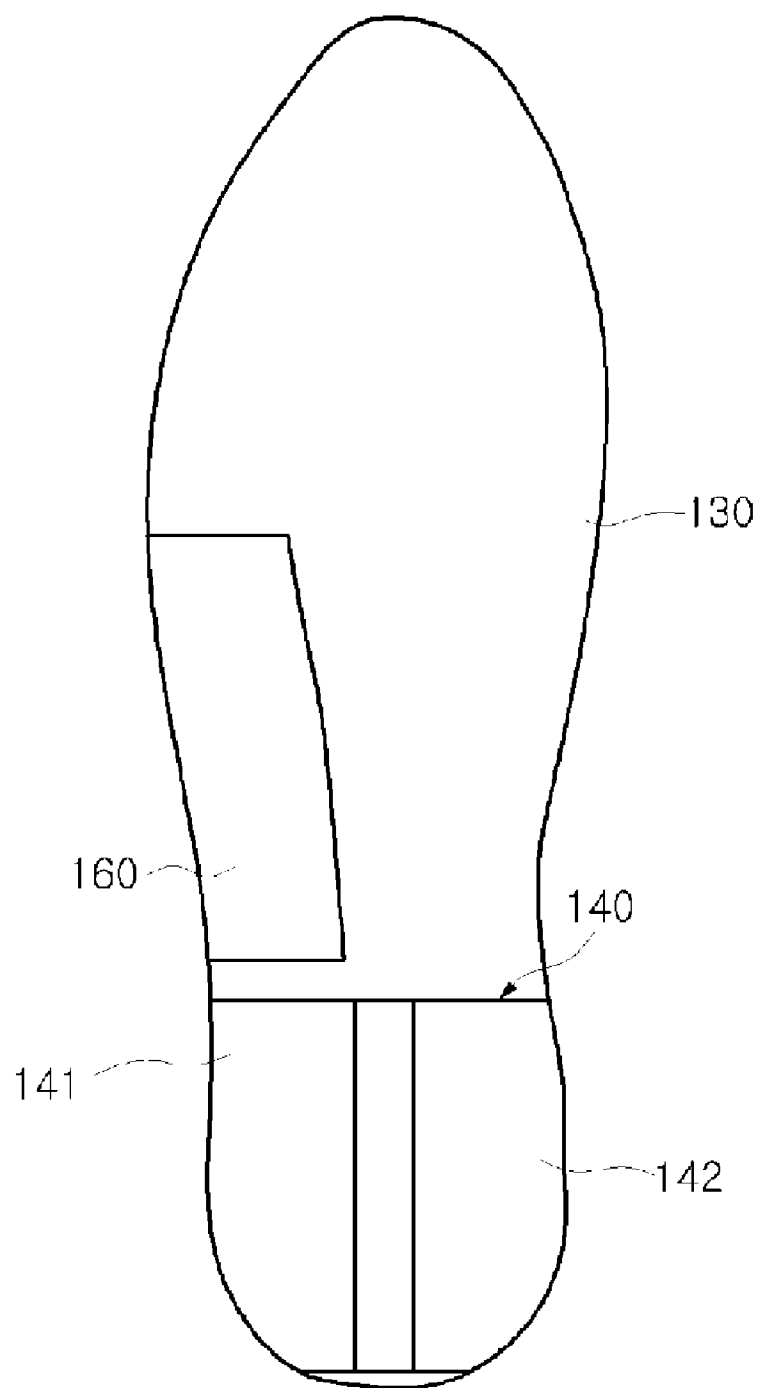


Fig.5

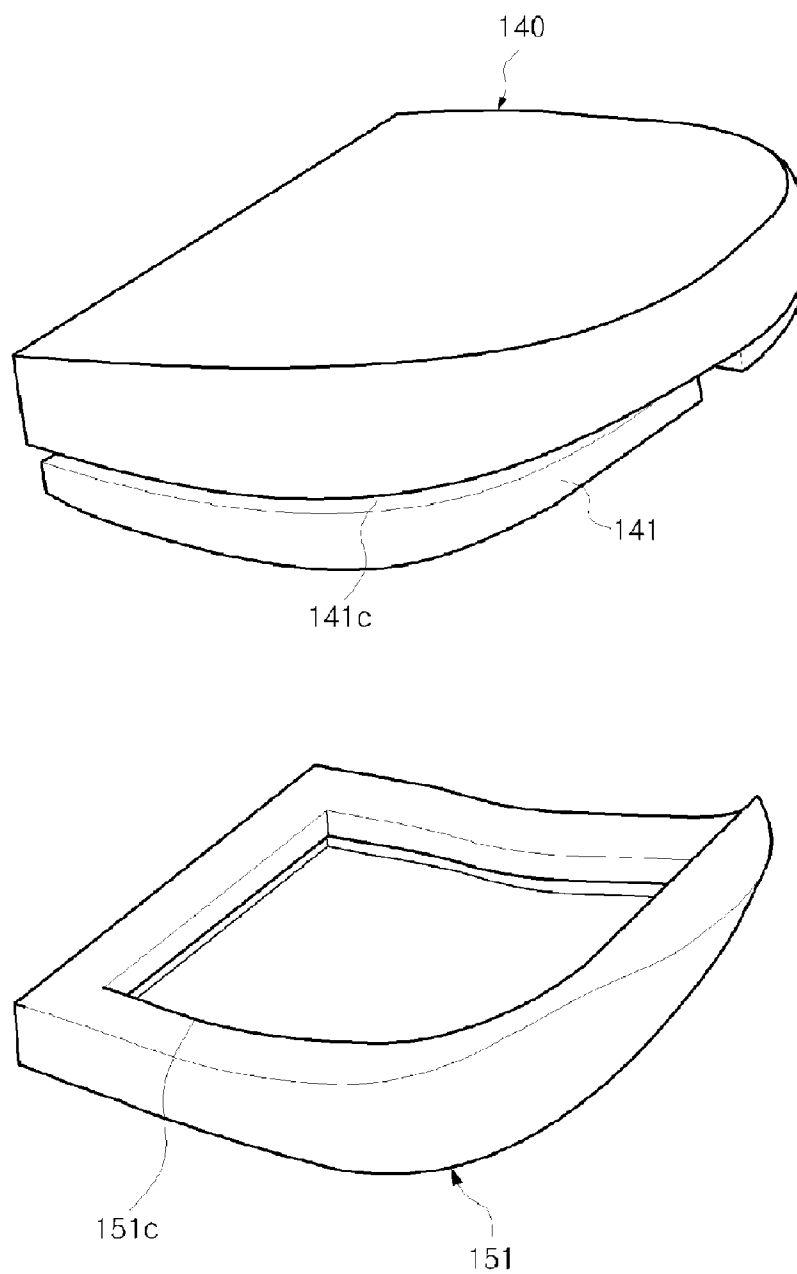


Fig.6

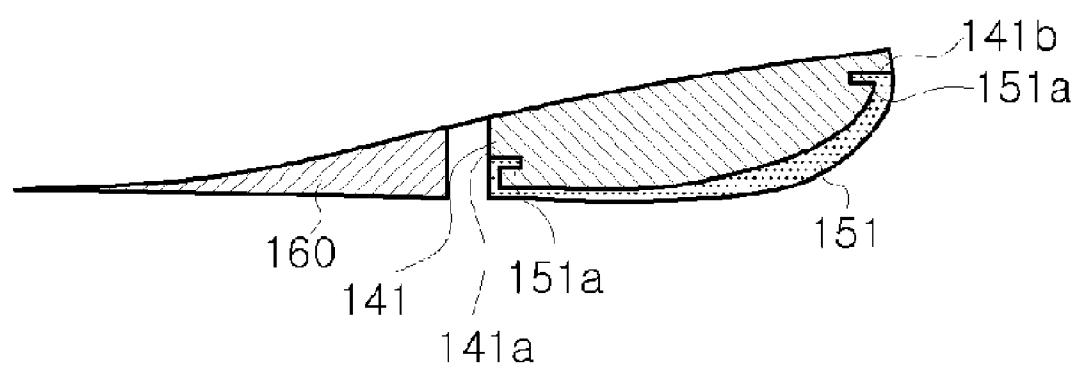


Fig.7

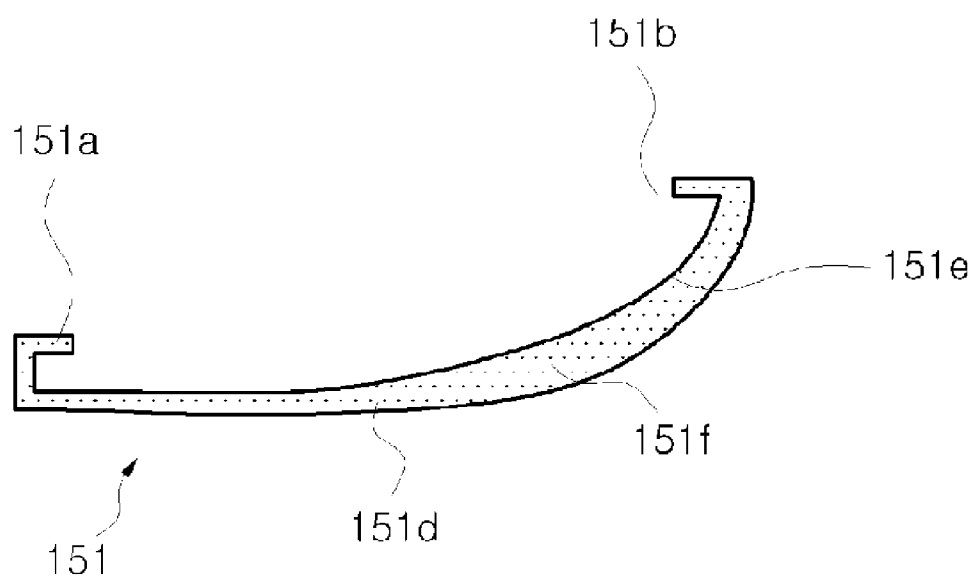


Fig.8

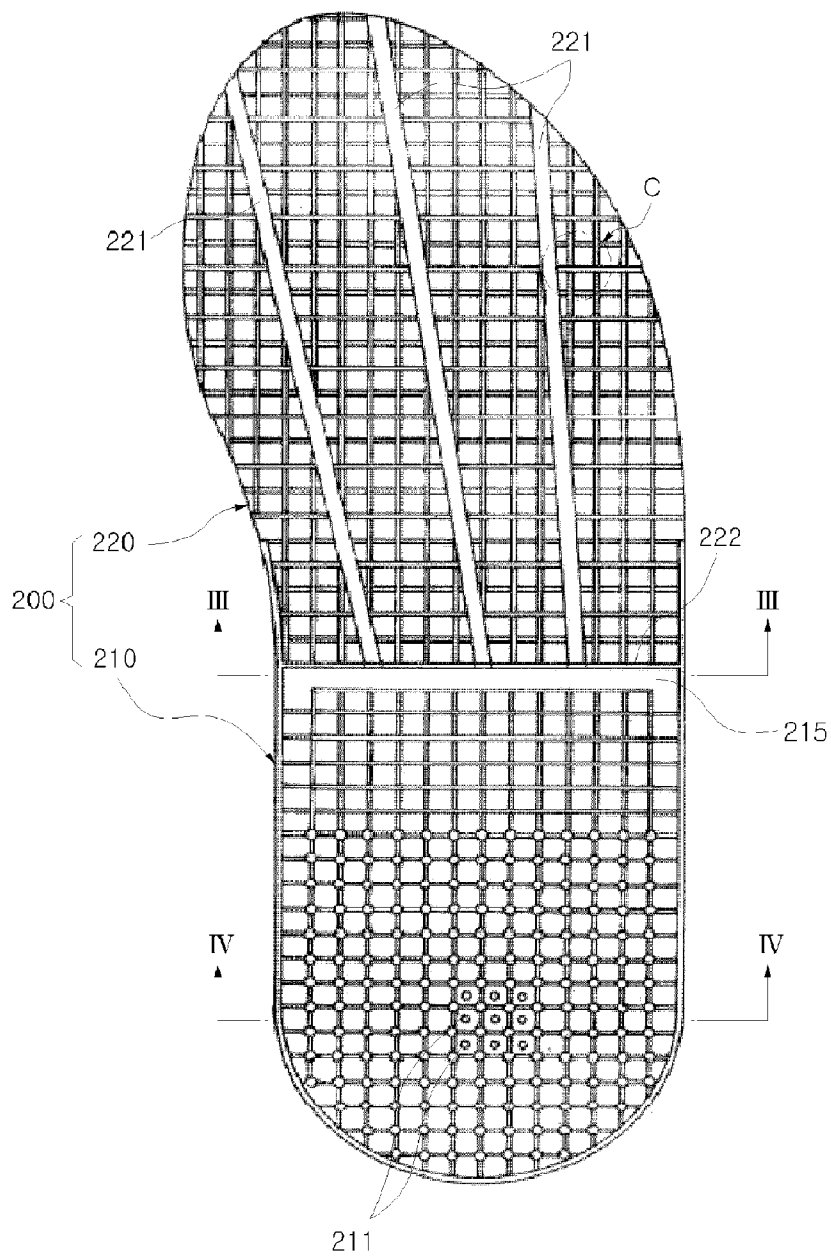


Fig.9

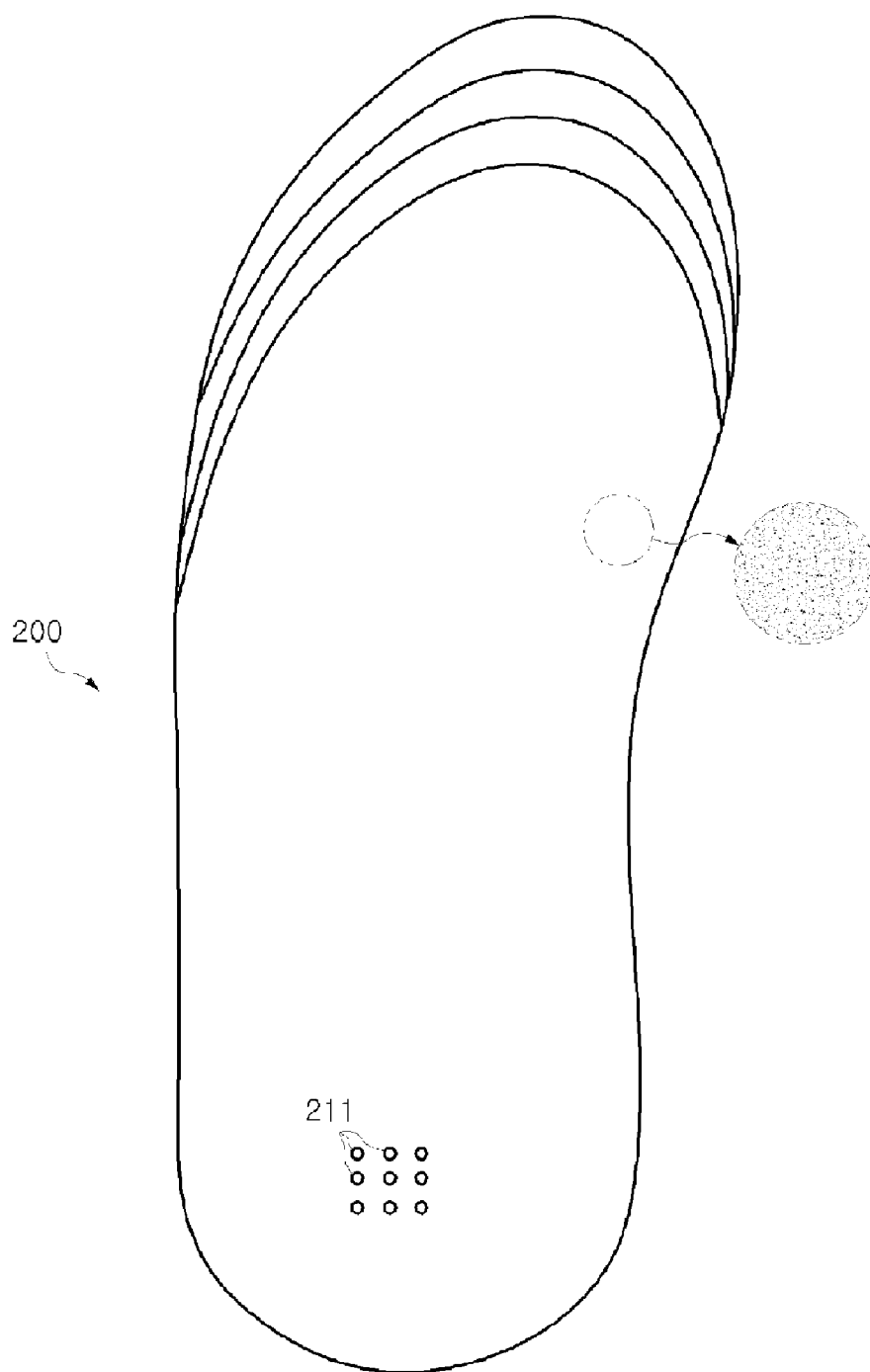


Fig.10

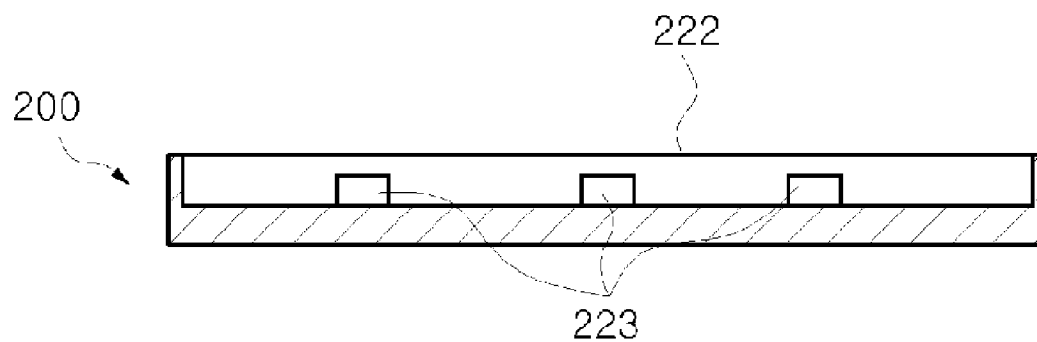


Fig.11

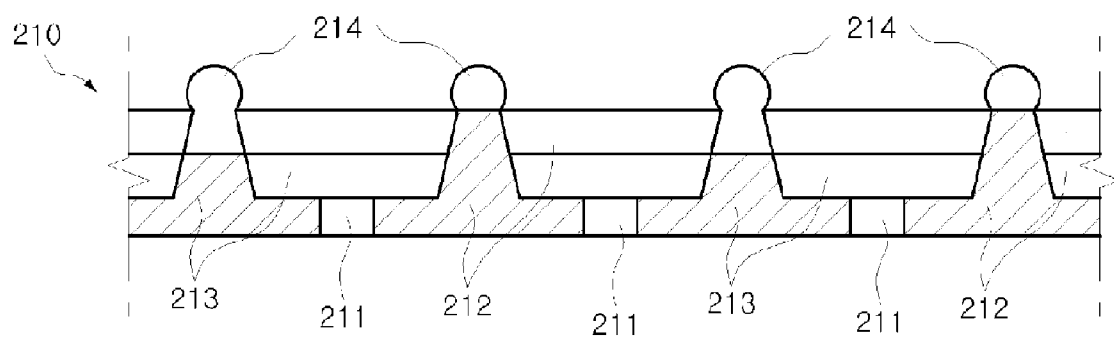
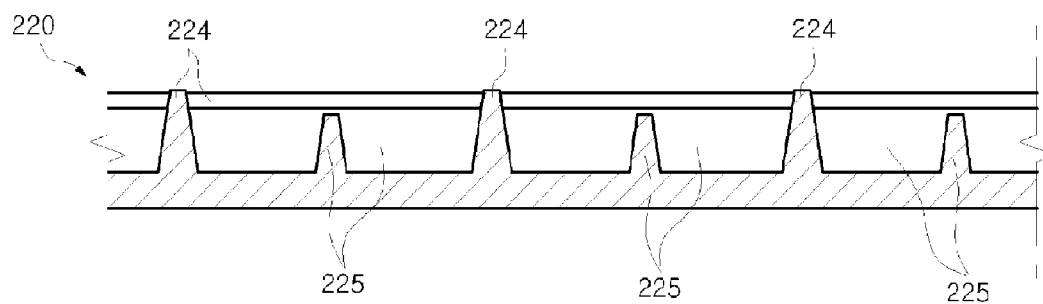


Fig.12



HUMAN BODY-BALANCING FOOTWEAR CAPABLE OF PREVENTING KNOCK-KNEES AND PROVIDING CUSHIONING SUITABLE FOR THE WEIGHT OF WEARER

TECHNICAL FIELD

[0001] The present invention relates to a footwear based on ergonomics. More particularly, the present invention relates to an ergonomic footwear capable of absorbing external impact generated when a person walks in three stages, preventing the legs of adolescents under the growth period from being knock-kneed or bandy-legged as the ankle-joint of the adolescent, which is gradually twisted due to the difference in the worn of the heel part of the footwear, exerts a bad influence on the leg joint of the adolescent, maintaining the body balance of all persons, and allowing the person to feel the most comfortable by providing a cushion function suitable for the weight of the person.

BACKGROUND ART

[0002] In most soles of typical footwears, a heel part is completely separated from a foresole part regardless of the types of the footwear such as athletic shoes and dress shoes. Accordingly, the weight shift of a user is not natural in walking, so that the user may walk with difficulty. In addition, the end portion of the heel part protrudes at a right angle, so that the protruding end portion may uselessly apply impact to a user foot in many cases.

[0003] In addition, in the case of a footwear having a completely-flat sole to naturally shift the weight of the user, even if a small object is pinned under the sole of the footwear, the footwear may be pressurized over all. A footwear with a sole having a convex pattern at the central portion thereof is designed without taking into account the movement of the ankle joint. Accordingly, if a user does not significantly practice walking in the footwear, the user may not walk comfortably. In addition, when the user keeps standing for a long time or mainly uses mass transportations, the user may not keep the balance of the body. In this case, the user must significantly make effort to keep the balance of the body.

[0004] In addition, the cushions of all footwears are made of the same spring or the same cushion material regardless of the weight of the user. Therefore, if a lighter user uses the footwear, the cushion feels hard, and if a heavier user uses the footwear, the cushion function is not smoothly performed, so that the footwear may act only as a foot cover.

[0005] The cushion of the typical footwear is advantageous to average-weighted persons in terms of impact absorbing. However, since the weight of the user is not naturally moved, and one side of the heel part of the footwear is not prevented from being worn early, an ankle joint of the user may be deformed. In particular, the adolescents under the growth period are subject to the deformation in the ankle joint, so that the legs of the adolescents may be knock-kneed or bandy-legged.

[0006] Further, the balance of the whole body of the user may be collapsed, so that the health of the user may be destroyed. Nevertheless, the above problems have not been solved yet.

DISCLOSURE

Technical Problem

[0007] Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art,

and an object of the present invention is to provide a footwear, in which a heel part of the footwear is formed in the same shape as that of the heel of a user foot in the state the an impact absorbing cap is seated on the footwear. The outside of the heel part of the footwear is aligned in line with a foresole part of the footwear, so that the weight shift of a user can be obtained smoothly from the heel part to the foresole part along the arch shape of the user foot. A weight-adjustable cushion is provided so that the user can feel comfortable regardless the weight of the user. Since the shape of the sole part of the footwear is similar to the shape of the sole of the foot of a healthy person, even if a user walks in the footwear, the user can feel comfortable as if the user walks in bare feet on a cushiony place. The footwear has the outer portion, the height of which is properly increased based on ergonomics, to align the ankle of the user in line with leg bones of the user even if the user keeps standing or even if the user walks with the user feet apart, thereby contributing to the health of the whole body of modern people as well as the feet and ankles of the modern people. In particular, the footwear can prevent a situation in which the ankle joint of adolescents under the growth period is affected by the deformation in the heel of conventional footwear so that the legs of the adolescents may be knock-kneed or be bandy-legged.

Technical Solution

[0008] In order to accomplish the objects, according to one aspect of the present invention, there is provided a human body-balancing footwear for preventing knock-knees and bandy-legs. The human body-balancing footwear includes a heel part provided at a rear portion of a sole part, and an impact absorbing cap detachably coupled with the heel part.

[0009] The impact absorbing cap includes a first cap coupled with an outer side portion of the heel part corresponding to an outer portion of a foot of a user and a second cap coupled with an inner side portion of the heel part corresponding to an inner portion of the foot of the user. The first and second caps are replaceable.

[0010] In addition, the impact absorbing cap includes a first cushion part coupled with a bottom surface of the heel part, a second cushion part coupled with a rear surface of the heel part, and a third cushion part linking the first cushion part with the second cushion part in a round form.

[0011] In this case, the human body-balancing footwear further includes a linking member linking the heel part with a front portion of the sole part along an edge of the heel part corresponding to an outer portion of a foot of a user, so that the user safely walks by allowing a tibia of the user to maintain balance of the user when the user walks, and the foot of the user is prevented from being flattened by allowing the tibia of the user to support a weight of the user when the user stands.

[0012] A plurality of impact absorbing caps having different impact absorbing degrees are provided, and one of the impact absorbing caps is selectively coupled with the heel according to a weight of a user.

[0013] In addition, the human body-balancing footwear further includes an impact absorbing unit provided at an upper portion of the sole part. The impact absorbing unit includes first cushion patterns prepared in a rectangular shape ("□") and arranged on a surface of a heel section, first support ribs prepared in a cross shape ("+") and installed at a boundary part between the first cushion patterns, second cushion patterns prepared in the rectangular shape ("□") and arranged on a surface of a sole section, second support ribs prepared in

the cross shape (“+”) and installed at a boundary part between the second cushion patterns, cushion balls installed at an intersection between the first cushion pattern and the first support rib which makes contact with a heel of a user foot, a plurality of air holes formed on a bottom surface between the first cushion part and the first support rib, a distribution passage provided in a transverse direction at a boundary part with the sole section by making a wall at an outer peripheral surface of the heel section, a supply passage wall installed at a boundary part between the distribution passage and the sole section and having a plurality of supply passages, and an air passage formed in the sole section and connected to the supply passage wall.

[0014] In addition, the weight shift can naturally occur outside the front portion of the heel part of the footwear. The linking member is provided to align the heel part in line with the front portion of the sole part so that the balance of a human body can be excellently maintained through the function of the tibia (tarsal joint or fifth rough surface of the arch bone of the foot). Accordingly, when a wearer walks, the tibia maintains the balance of the human body so that the wearer can walk safely. When the wearer stands, the tibia supports the weight of the wearer, so that the feet of the wearer can be prevented from being flattened.

Advantageous Effects

[0015] As described above, a human-body balancing footwear providing a cushion suitable for the weight of a user while preventing the user from being knock-kneed or bandy-legged according to the present invention has the following effects.

[0016] First, a person can the most naturally walk as if the person walks in bare feet due to the heel part of the footwear having the shape similar to that of the heel of a human body. The heel part, which protrudes at a right angle according to the related art, is rounded similarly to the shape of the heel of the human body, so that the external impact can be primarily reduced. In addition, the elasticity of the impact absorbing cap secondarily absorbs the impact when the heel part makes contact with the ground. Accordingly, the soles and the ankles of person feet are protected, and the fatigue caused by accumulated impacts can be reduced, so that the user has a comfortable daily life.

[0017] Second, the impact absorbing cap is divided into left and right sections, so that the impact absorbing cap can be frequently replaced with new one. Accordingly, when one of the left or the right sections is worn early due the bad walking posture of a user, the worn section can be immediately replaced with new one, so that the balance can be maintained in the left and right sections. Accordingly, the legs of an adolescent under the growth period can be preliminarily prevented from being knock-kneed or bandy-legged as the ankle joint of the adolescent, which is twisted due to the deformed heel part of the footwear, exerts a bad influence on the legs of the adolescent. In addition, the human-body balancing footwear according to the present invention can prevent problems resulting from the deformation in the backbone of the adolescent, so that the balance of the human body can be very effectively maintained.

[0018] Third, since the human-body balancing footwear according to the present invention is equipped with a weight-adjustable cushion, persons having different weights can select and use a cushion allowing he/she to feel the most

comfortable. Accordingly, the soles or the joints of the persons can be very effectively protected.

[0019] Fourth, since the sole part of the human-body balancing footwear according to the present invention has a shape similar to that of the sole of a human being which is the most comfortably developed through the evolutionary process, the human-body balancing footwear according to the present invention is an ergonomic footwear allowing a person to feel the most comfortable as if the person walks in bare feet on the cushiony place.

[0020] Fifth, only when a heel part of typical dress shoes, a portion of which is worn early, is frequently replaced with new one, the ankle joint of a person may be prevented from being deformed. In the case of the conventional footwear, the heel part cannot be replaced with new one or must be replaced with new one in a heel bar by paying too much money, so that time and money may be wasted. In contrast, the footwear equipped with the impact absorbing cap according to the present invention can be simply replaced with new one at home or in an office, so that time and money may not be wasted.

[0021] Therefore, since the human-body balancing footwear capable of preventing knock-knee and bandy-leg according to the present invention is the most ergonomically made, the human-body balancing footwear can provide a user with a comfortable feeling that has never been provided in a footwear according to the related art. In particular, since the backbone of a person as well as the sole and the joint of the person can be protected, the human-body balancing footwear has the value in the use for adults as well as adolescents under the growth period.

DESCRIPTION OF DRAWINGS

[0022] FIG. 1 is a bottom view showing a human-body balancing footwear according to the present invention;

[0023] FIG. 2 is a sectional view taken along line I-I of the human-body balancing footwear according to the present invention;

[0024] FIG. 3 is a sectional view taken along line II-II of the human-body balancing footwear according to the present invention;

[0025] FIG. 4 is a bottom view showing the human-body balancing footwear according to the present invention without an impact absorbing cap;

[0026] FIG. 5 is a perspective view showing an impact absorbing cap of the human-body balancing footwear according to another embodiment of the present invention;

[0027] FIG. 6 is an enlarged sectional view showing the heel of the human-body balancing footwear according to the present invention;

[0028] FIG. 7 is an enlarged sectional view showing the impact absorbing cap of the human-body balancing footwear according to the present invention;

[0029] FIG. 8 is a bottom view showing an impact absorbing unit according to the present invention;

[0030] FIG. 9 is a plan view showing an impact absorbing unit according to the present invention;

[0031] FIG. 10 is a sectional view taken along line III-III of FIG. 8;

[0032] FIG. 11 is a sectional view taken along line IV-IV of FIG. 8; and

[0033] FIG. 12 is a sectional view of a part C of FIG. 8.

BEST MODE

Mode for Invention

[0034] The present invention will be described in detail with reference to accompanying drawings.

[0035] As shown in FIGS. 1 to 3, a human-body balancing footwear 100 according to the present invention includes an upper leather 110 covering a foot of a user, and a shoe liner part (not shown), an insole part 120, and a sole part 130, which are sequentially stacked downwardly from the upper leather 110, and may further include a heel part 140 provided at a rear portion of the sole part 130 and an impact absorbing cap 150 coupled with the heel part 140.

[0036] The impact absorbing cap 150 provides a cushion function for the heel part 140 to absorb an impact applied to the heel part 140 and is replaceable if necessary. Preferably, the impact absorbing cap 150 includes a material representing elasticity greater than that of the heel part 140.

[0037] Referring to FIG. 4, the impact absorbing cap 150 may include a first cap 151 and a second cap 152. The first cap 151 may be coupled with an outer side portion 141 of the heel part 140 corresponding to the outside of the foot of a user, and the second cap 152 may be coupled with an inner side portion 142 of the heel part 140 corresponding to the inside of the foot of the user.

[0038] The impact absorbing cap 150 may be detachably coupled with the heel part 140. To this end, the first cap 151 of the impact absorbing cap 150 includes first and second coupling protrusions 151a and 151b, and the outer side portion 141 of the heel part 140 may include first and second coupling grooves 141a and 141b into which the first and second coupling protrusions 151a and 151b are fitted, respectively.

[0039] Preferably, the first coupling groove 141a is formed in a front sidewall of the heel part 140, and the second coupling groove 141b is formed in a rear sidewall of the heel part 140. The first and second coupling protrusions 151a and 151b may preferably have curved front ends to improve the coupling strength.

[0040] In addition, the second cap 152 of the impact absorbing cap 150 includes third and fourth coupling protrusions 152a and 152b, and the inner side portion 142 of the heel part 140 may include third and fourth coupling grooves 142a and 142b into which the third and fourth coupling protrusions 152a and 152b of the second cap 152 are fitted.

[0041] Preferably, the third coupling groove 142a is formed in the front sidewall of the heel part 140, and the fourth coupling groove 142b is formed in the rear sidewall of the heel part 140. The third and fourth coupling protrusions 152a and 152b preferably have curved front ends to improve the coupling strength.

[0042] According to another embodiment, the impact absorbing cap 150 may have coupling grooves, and the heel part 140 may have coupling protrusions.

[0043] As shown in FIG. 5, according to the embodiment, the first cap 151 includes a fitting protrusion 151c extending along the edges thereof, and the outer side portion 141 of the heel part 140 is provided therein with a fitting groove 141c extending along the sidewall of the heel part 140, in more detail, the sidewall of the outer side portion 141, so that the fitting protrusion 151c may be fitted into the fitting groove 141c. Accordingly, the first cap 151 is mounted on the entire portion of the heel part 140 and coupled with the heel part 140. Since the second cap 152 has the same shape as that of the first cap 151, the detail thereof will be omitted.

[0044] Since the impact absorbing cap 150 is detachably coupled with the heel part 140, the impact absorbing degree of the impact absorbing cap 150 can be adjusted according to the weights of users.

[0045] In other words, a plurality of impact absorbing caps 150 having various impact absorbing degrees are manufactured so that impact can be the most perfectly absorbed according to the weight of a user, and the impact absorbing cap 150 selected according to the weight of the user is nested on the heel part 140, thereby allowing the user to feel comfortable in cushioning regardless of the weight of the user.

[0046] In this case, since the impact absorbing cap 150 is divided into the first and second caps 151 and 152, at least one of the first and second caps 151 and 152 can be selectively replaced with new one.

[0047] Referring to FIGS. 6 and 7, the first cap 151 of the impact absorbing cap 150 according to the present invention includes a first cushion part 151d coupled with the bottom surface of the heel part 140, a second cushion part 151e coupled with the rear surface of the heel part 140, and a third cushion part 151f linking the first cushion part 151d with the second cushion part 151e in the form of a round, thereby surrounding the bottom surface and the rear surface of the heel part 140. In this case, since the second cap 152 of the impact absorbing cap 150 may have a shape corresponding to the shape of the first cap 151, the details of the second cap 152 will be omitted.

[0048] The human-body balancing footwear 100 according to the present invention may further include a linking member 160. The linking member 160 links the heel part 140 with the front portion of the sole part 130 along the edge of the heel part 140 corresponding to the outer portion of the foot of the user. Accordingly, when a wearer walks, the linking member 160 allows the tibia of the wearer to maintain the balance of the body so that the wearer can walk safely. In addition, the linking member 160 allows the tibia of the wearer to support the weight of the user, thereby preventing the foot of the wearer from being flattened.

[0049] In this case, preferably, the linking member 160 is spaced apart from the heel part 140 by a predetermined distance. Accordingly, the space sufficient to couple the first coupling protrusion 151a with the first coupling groove 141a is ensured.

[0050] Meanwhile, the human-body balancing footwear 100 according to the present invention may further include an impact absorbing unit 200 provided on the sole part 130. The impact absorbing unit 200 may be used as the insole part 120 or the shoe liner part.

[0051] Referring to FIGS. 8 to 10, the impact absorbing unit 200 according to the present invention includes a heel section 210 and a sole section 220, and includes a supply passage wall 222 equipped with a supply passage 223, which is installed at the boundary part between the heel section 210 and the sole section 220. The impact absorbing unit 220 is molded by using a material such as silicon, rubber, and urethane.

[0052] The heel section 210 has a shape of the heel of the foot. As shown in FIG. 11, the heel section 210 is provided on the surface thereof with a first cushion pattern 212 prepared in a rectangular shape ("□"). A first support rib 213 having the cross shape ("+") is installed at every boundary part between first cushion patterns 212. A cushion ball 214 is installed at every intersection between the first cushion pattern 212 and the support rib 213.

[0053] A plurality of air holes 211 are formed in the bottom surface between the first cushion pattern 212 and the first support ribs 213.

[0054] The cushion ball 214, the first cushion pattern 212, and the first support rib 213 have a narrow upper portion and a wide lower portion. The cushion ball 214, the first cushion pattern 212, and the first support rib 213 have the height of about 7 mm, the height of about 6 mm, and the height of about 5 mm, respectively.

[0055] Accordingly, the heel section 210 making contact with the heel of the foot of the user has a multi-stage cushion function by the first cushion pattern 212, the first support ribs 213, and the cushion balls 214.

[0056] In addition, the heel section 210 is provided at an outer peripheral surface thereof with a wall and has a distribution passage 215 provided in a transverse direction at the boundary with the sole section 220.

[0057] The sole section 220 has the shape of the foot excluding the heel of the foot. As shown in FIG. 12, the sole section 220 is provided on the surface thereof with second cushion patterns 224 prepared in a rectangular shape ("□"). A second support rib 225 prepared in a cross shape ("+") is installed at every boundary part between second cushion patterns 224. Accordingly, the second support rib 225 has different heights in transverse and longitudinal directions. The sole section 220 has at least three air passages 221 extending with a long length toward the front of the foot.

[0058] In addition, as shown in FIG. 10, a supply passage wall 222 is installed with a supply passage 223 at the boundary parts between the distribution passage 214 and the sole section 220.

[0059] A plurality of lines are formed on the upper surface (shoe liner part or the contact surface with the sole of the user) of the impact absorbing unit 200 so that the impact absorbing unit 200 can be cut and used according to the foot size of the user. In addition, the surface of the impact absorbing unit 200 is treated as a rough surface, so that the foot of the user can be prevented from being slipped in the human-body balancing footwear 100.

[0060] The impact absorbing unit 200 having the above structure according to the present invention can be manufactured through the injection-molding. The first cushion pattern 212 and the first support rib 213 are alternately mounted on the surface of the heel section 210, and the second cushion pattern 224 and the second support rib 225 are alternately mounted on the surface of the sole section 220. In addition, in the sole section 220, the second support rib 225 has different heights in the transverse and longitudinal directions, and the second cushion pattern 224 is formed higher than the second support rib 225. In addition, the cushion balls 214 are mounted on the first cushion pattern 212 and the first support rib 213 of the heel section 210, so that the cushion balls 214 are formed higher than the first cushion pattern 212, and the first support rib 213 is formed lower than the first cushion pattern 212.

[0061] The first and second cushion patterns 212 and 224, the first and second support ribs 213 and 225, and the cushion balls 214 have narrow upper portions and wide lower portions, and the height of the multi-stage cushion is reduced toward the sole section 220 from the heel section 210, so that a gentle slope is formed. Accordingly, air is introduced through the air holes 211 when the heel of the foot of the user is lifted, and the air holes 211 are closed by the weight of the user when the heel of the foot makes contact with the ground,

so that the introduced air is supplied toward the front of the human-body balancing footwear 100. In this case, the air is supplied between toes of the user through the air holes 211, the heel section 210, the distribution passage 215, the supply passage 213 of the supply passage wall 222, and an air passage 221 of the sole section 220.

[0062] Accordingly, wind forcibly blows inside the human-body balancing footwear 100, and the internal air of the human-body balancing footwear 100 is exchanged. Simultaneously, the multi-stage cushion function caused by different internal heights of the human-body balancing footwear 100 is performed. In the impact absorbing unit 200 according to the present invention, since the warm air around the sole of the foot of the user is discharged out of the human-body balancing footwear 100 by pushing the warm air to the top of the foot, the internal temperature of the human-body balancing footwear 100 can be maintained at a uniform lower temperature and a user can feel fresher at the sole of the foot. In addition, a great amount of moisture is exhausted to the outside together with the warm air, thereby preventing fungus, eczema, and the like. In addition, foot odor can be significantly reduced, and benefits can be provided to a diabetic, a salesman walking for a long time, and other persons having serious foot odor through the discharge of a great amount of sweat.

[0063] In addition, the multi-stage cushion function is performed by the first cushion pattern 212, the first support rib 213, and the cushion ball 214 of the heel section 210. Due to the multi-stage cushion function, the foot of the user is kept comfortably as if the user walks on the soft grass, so that the fatigue caused by the impact can be reduced, and the dead skin cell of the heel can be reduced due to the effect of comfortable acupressure-type massage.

[0064] A plurality of impact absorbing units 200 according to the present invention can be provided with different strengths, so that impact can be the most perfectly absorbed according to the weights of the user. The impact absorbing units 200 are selectively mounted on the human-body balancing footwear 100 according to the weight of a user, so that a user can feel comfortable in cushioning regardless of the weight of the user.

[0065] Hereinafter, the function and the operation of the human-body balancing footwear 100 according to the present invention will be described.

[0066] The first and second coupling protrusions 151a and 151b of the first cap 151 of the impact absorbing cap 150 are fitted into the first and second coupling grooves 141a and 141b of the outer side portion 141 of the heel part 140, and the third and fourth coupling protrusions 152a and 152b of the second cap 152 are fitted into the third and fourth coupling grooves 142a and 142b of the inner side portion 142 of the heel part 140. Accordingly, the impact absorbing cap 150 can be easily coupled with the heel part 140 without an additional adhesive. In addition, even if one of the first and second caps 151 and 152 is worn early, only the worn cap can be replaced with new one.

[0067] In addition, the outside of the heel part 140 is aligned in line with a front portion of the sole part 130 through the linking member 160 interposed between the heel part 140 and the front portion of the sole part 130, so that the weight of the user can be continuously shifted and the function of the tibia can be activated.

[0068] When the user walks, the ankle of one leg is directed forwardly in the state that the ankle of the leg is slightly

spread, and the leg directed forwardly makes contact with the ground. In this case, the end portion of the heel protruding at a right angle applies useless impact to the user. Accordingly, the useless impact can be reduced by rounding the heel to the rounding extent of the heel of the user foot.

[0069] After one foot makes contact with the ground, the whole body of the user is inclined forwardly, so that the weight shift of the user occurs, and an ankle joint forms an acute angle beyond a right angle so that the ground is pushed by the front portion of the foot to form the propulsion. This procedure is alternately repeated by left and right legs, thereby forming a walking step. Recently, most footwears have the heel and the sole completely separated from each other to make a step difference, so that the weight shift of the user does not continuously occur. Accordingly, a user may walk with difficulty, or the whole bottom surface of the footwear is flattened, so that the foot of the user may become a cavus-footed state, or a flat footed.

[0070] However, in the human-body balancing footwear 100 according to the present invention, impact is primarily reduced by rounding the heel part 140 similarly to the foot heel of the user, secondarily reduced by the elasticity of the impact absorbing cap 150 which is divided in left and right sections to cover the heel part 140, and tertiarily reduced by the impact absorbing unit 200 acting as the insole part 120 or the shoe liner part. Therefore, the impact is almost perfectly absorbed, so that the sole and the ankle of the user can be protected. In particular, since the impact absorbing cap 150 divided into left and right sections is covered on the heel part 140, one of the left and right sections, which is worn early, can be simply replaced with new one, so that the balance of the footwear can be maintained. Accordingly, the human-body balancing footwear 100 according to the present invention can prevent the deformation in the ankle joint caused by the difference in wear of the heel part 140. The legs of adolescents under growth periods can be prevented from being knock-kneed or bandy-legged as the deformation in the ankle joint influences the leg joint. The human-body balancing footwear 100 according to the present invention allows the adults to uniformly maintain the balance of the body, so that the footwear is of benefit to the health. Further, the human-body balancing footwear 100 according to the present invention provides cushion suitable for the weight of the user, so that the user can feel comfortable as if the user walks on the grass.

[0071] Although the exemplary embodiments of the present invention have been described, it is understood that the present invention should not be limited to these exemplary embodiments but various changes and modifications can be made by one ordinary skilled in the art within the spirit and scope of the present invention as hereinafter claimed.

1. A human body-balancing footwear for preventing knock-knees and bandy-legs, the human body-balancing footwear comprising:

- a heel part provided at a rear portion of a sole part; and
- an impact absorbing cap detachably coupled with the heel part.

2. The human body-balancing footwear of claim 1, wherein the impact absorbing cap includes a first cap coupled with an inner side portion of the heel part corresponding to an inner portion of a foot of a user and a second cap coupled with an outer side portion of the heel part corresponding to an outer portion of the foot of the user, wherein the first and second caps are replaceable.

3. The human body-balancing footwear of claim 1, wherein the impact absorbing cap includes a first cushion part coupled with a bottom surface of the heel part, a second cushion part coupled with a rear surface of the heel part, and a third cushion part linking the first cushion part with the second cushion part in a round form.

4. The human body-balancing footwear of claim 1, further comprising a linking member linking the heel part with a front portion of the sole part along an edge of the heel part corresponding to an outer portion of a foot of a user, so that the user safely walks by allowing a tibia of the user to maintain balance of the user when the user walks, and the foot of the user is prevented from being flattened by allowing the tibia of the user to support a weight of the user when the user stands.

5. The human body-balancing footwear of claim 1, wherein a plurality of impact absorbing caps having different impact absorbing degrees are provided, and one of the impact absorbing caps is selectively coupled with the heel according to a weight of a user.

6. The human body-balancing footwear of claim 1, further comprising an impact absorbing unit provided at an upper portion of the sole part, wherein the impact absorbing unit includes:

- first cushion patterns prepared in a rectangular shape ("□") and arranged on a surface of a heel section;
- first support ribs prepared in a cross shape ("+") and installed at a boundary part between the first cushion patterns;
- second cushion patterns prepared in the rectangular shape ("□") and arranged on a surface of a sole section;
- second support ribs prepared in the cross shape ("+") and installed at a boundary part between the second cushion patterns;
- cushion balls installed at an intersection between the first cushion pattern and the first support rib which makes contact with a heel of a user foot;
- a plurality of air holes formed on a bottom surface between the first cushion part and the first support rib;
- a distribution passage provided in a transverse direction at a boundary part with the sole section by making a wall at an outer peripheral surface of the heel section;
- a supply passage wall installed at a boundary part between the distribution passage and the sole section and having a plurality of supply passages; and
- an air passage formed in the sole section and connected to the supply passage wall.

* * * * *