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Nakamura et al.

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(54) **SHOE SOLE AND SHOE**

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A43B 7/144 (2022.01)
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CPC ***A43B 13/188*** (2013.01); ***A43B 7/144*** (2013.01); ***A43B 13/127*** (2013.01); *A43B 13/02* (2013.01)

(58) **Field of Classification Search**
CPC A43B 13/12; A43B 13/122; A43B 13/125; A43B 13/127; A43B 13/188; A43B 7/144
See application file for complete search history.

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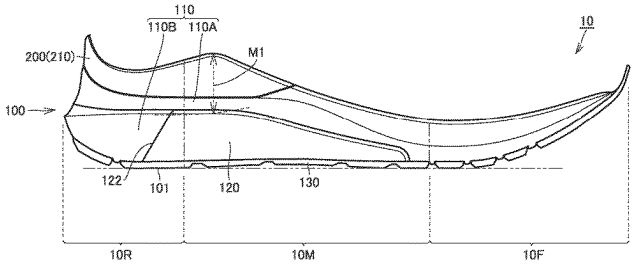
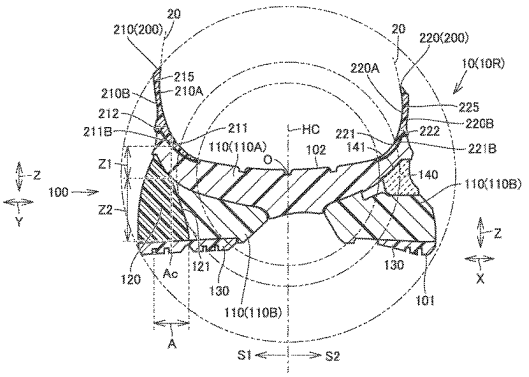
(57) **ABSTRACT**

A shoe sole includes a body portion and a heel holding portion. The heel holding portion is located opposite to a ground contact surface of the body portion and holds a heel portion of a foot at least from a medial foot side. The body portion includes a low hardness portion and a high hardness portion. The high hardness portion is a foam material harder than a foam material of the low hardness portion. The heel holding portion is a resin harder than the foam material of the low hardness portion and the foam material of the high hardness portion. On the medial foot side in a rear foot portion, the low hardness portion is located between the heel holding portion and the high hardness portion in an up-down direction.

20 Claims, 16 Drawing Sheets





(51) **Int. Cl.**
A43B 13/12 (2006.01)
A43B 13/02 (2022.01)

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FIG.1

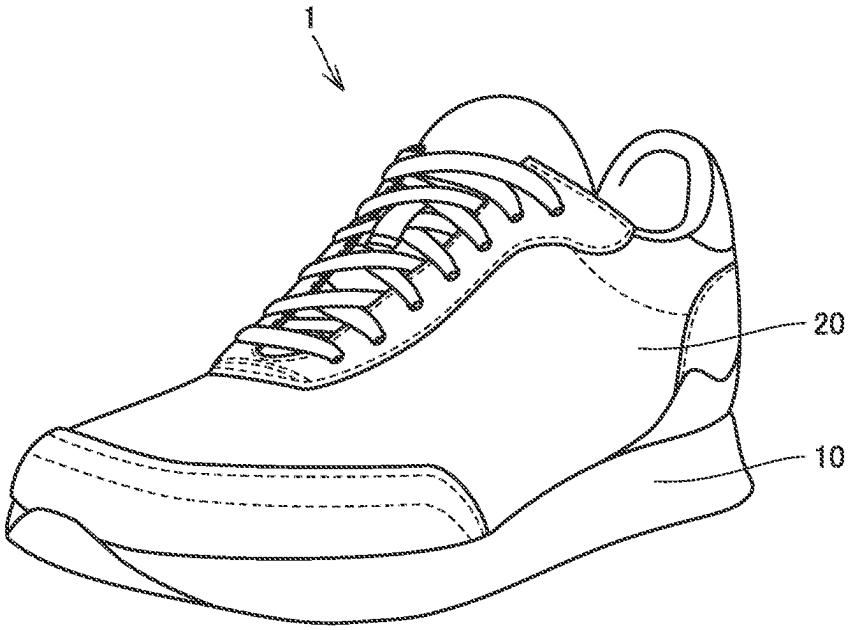
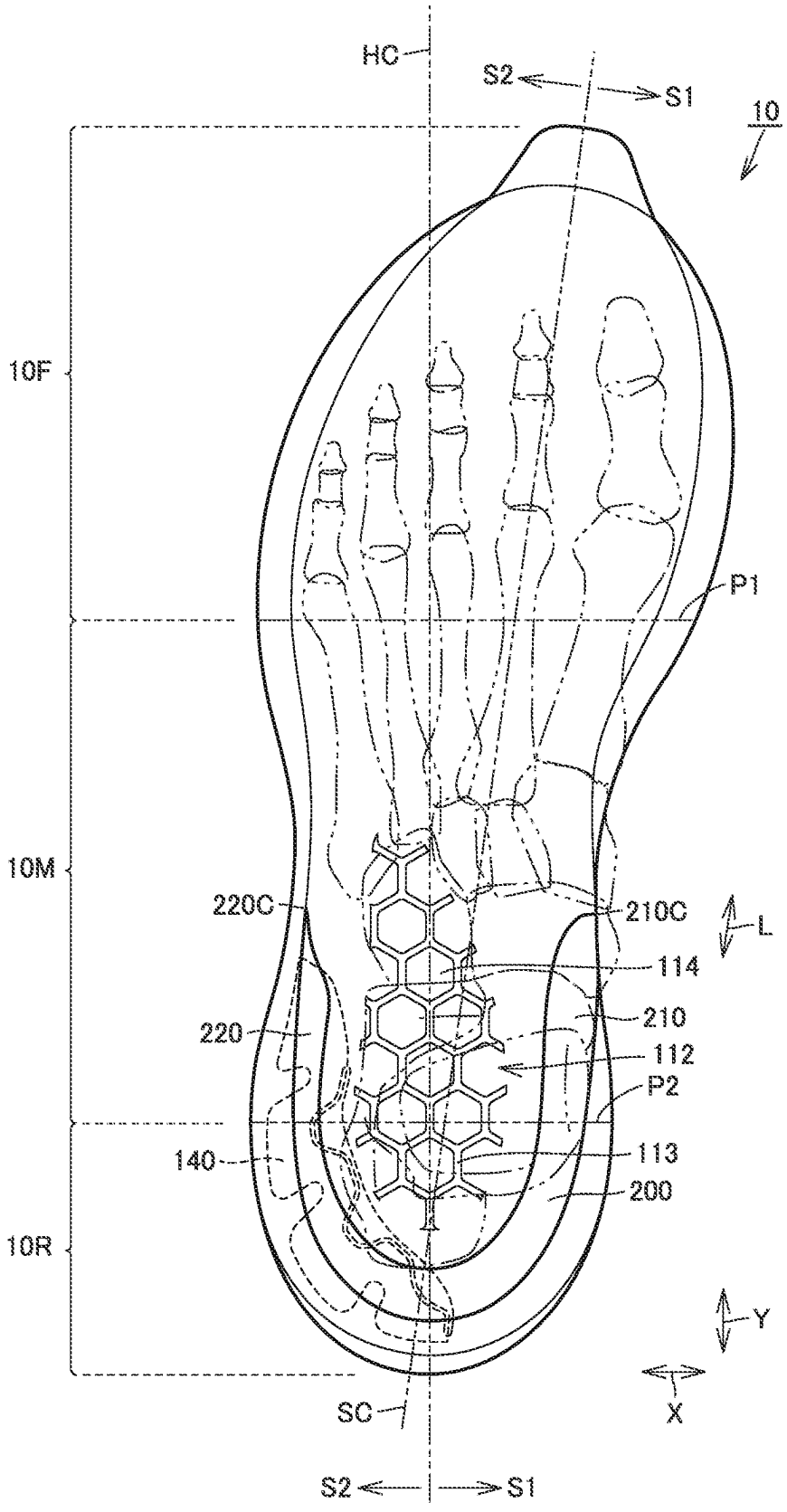


FIG.2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X
SC
S2
S1

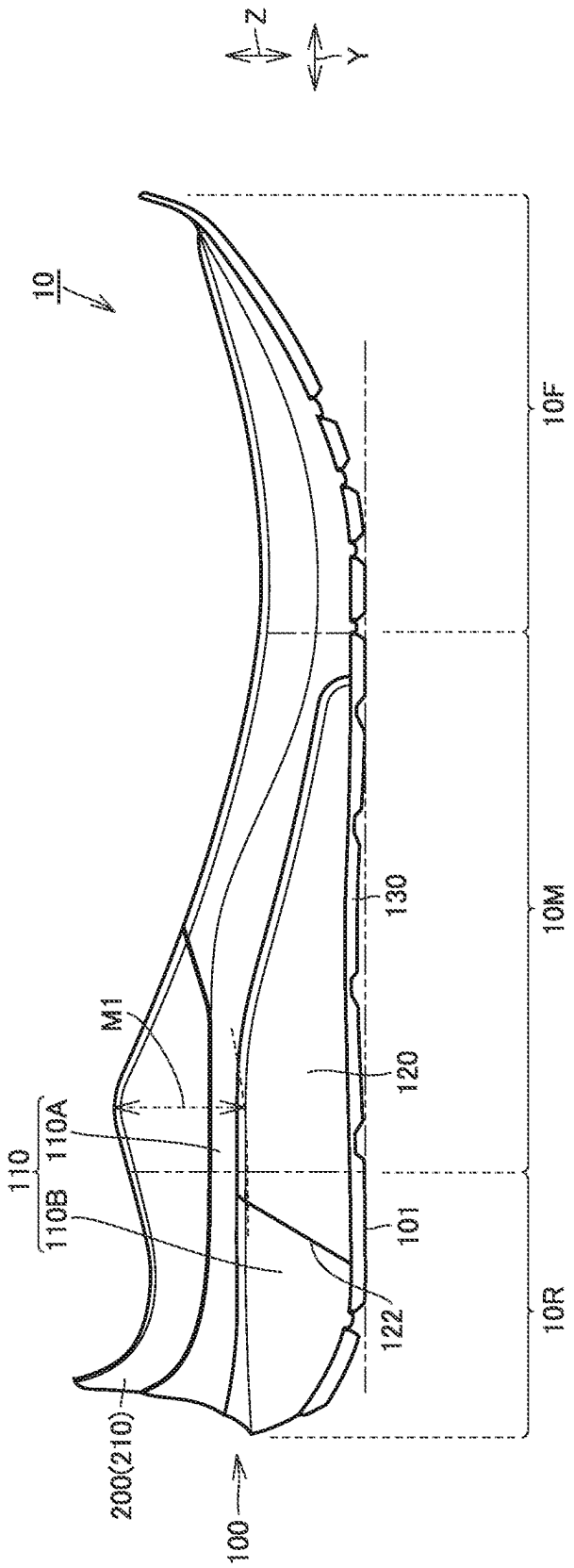
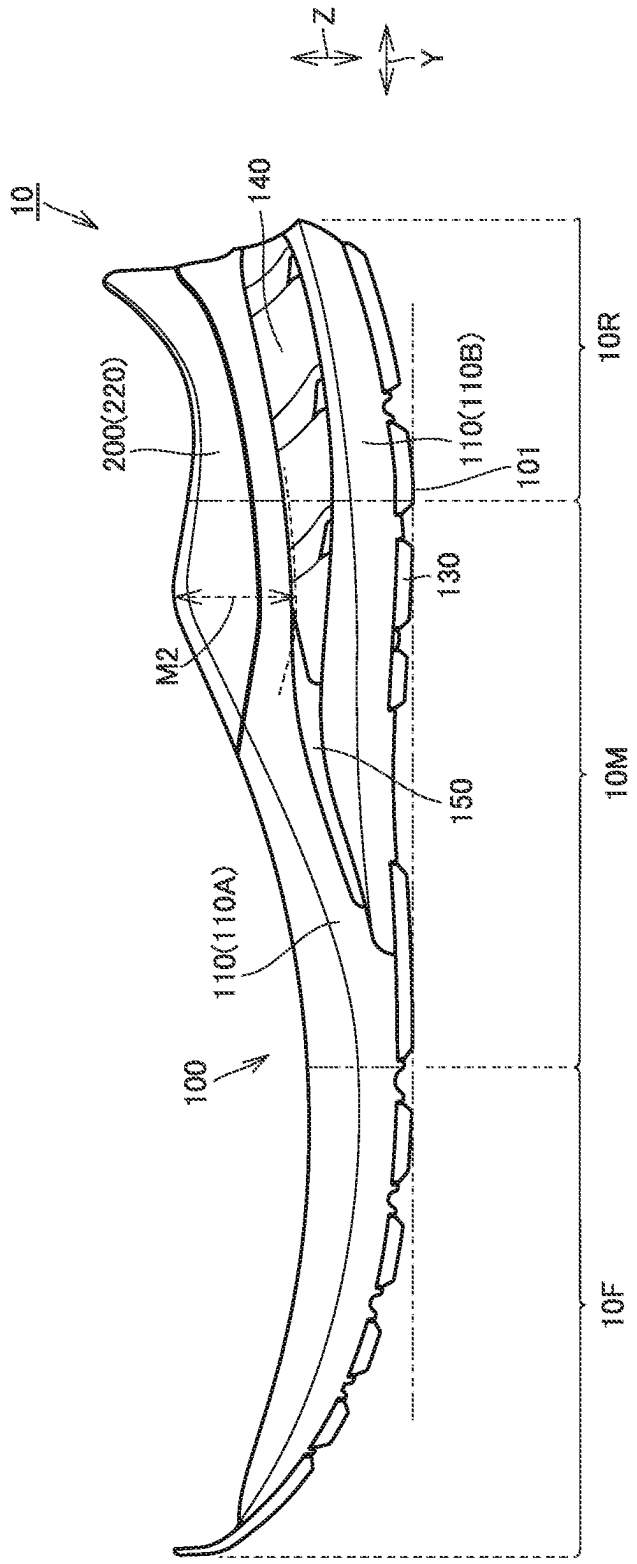


FIG.3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Y
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M2
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110(110A)
100
10F

FIG.4

FIG.5

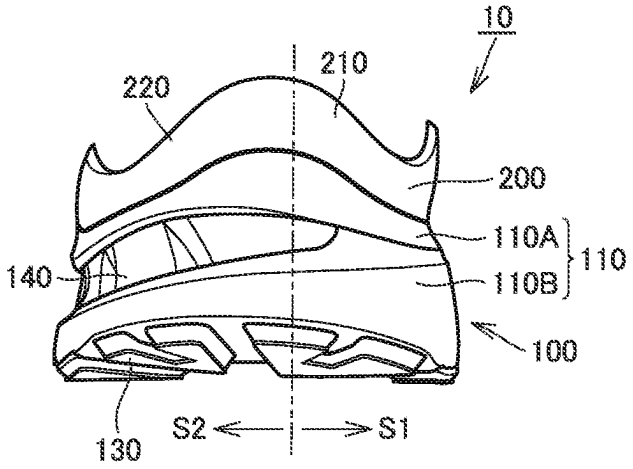
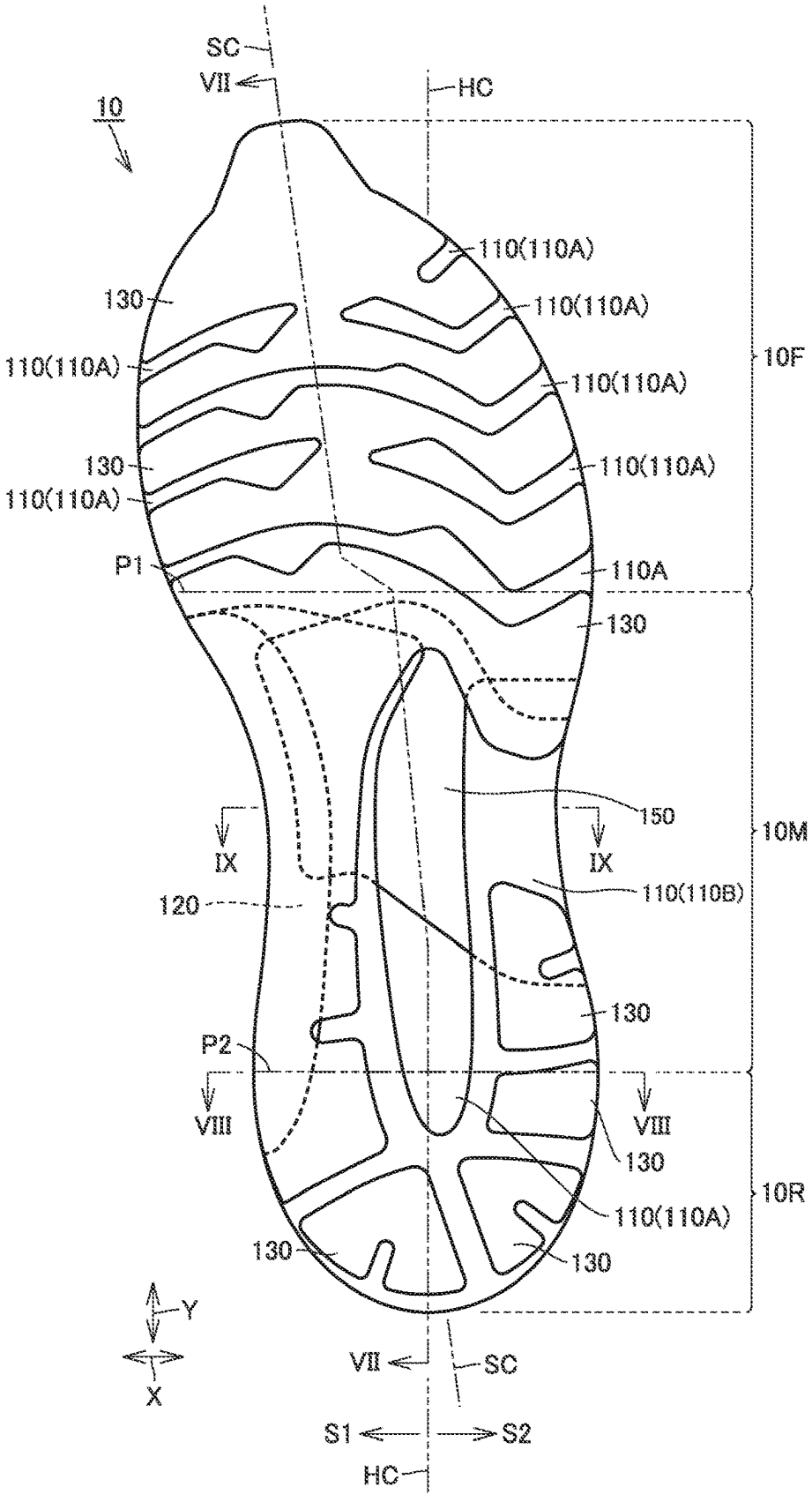


FIG.6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P1
110A
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150
IX
IX
10M
120
110(110B)
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S1
S2
HC

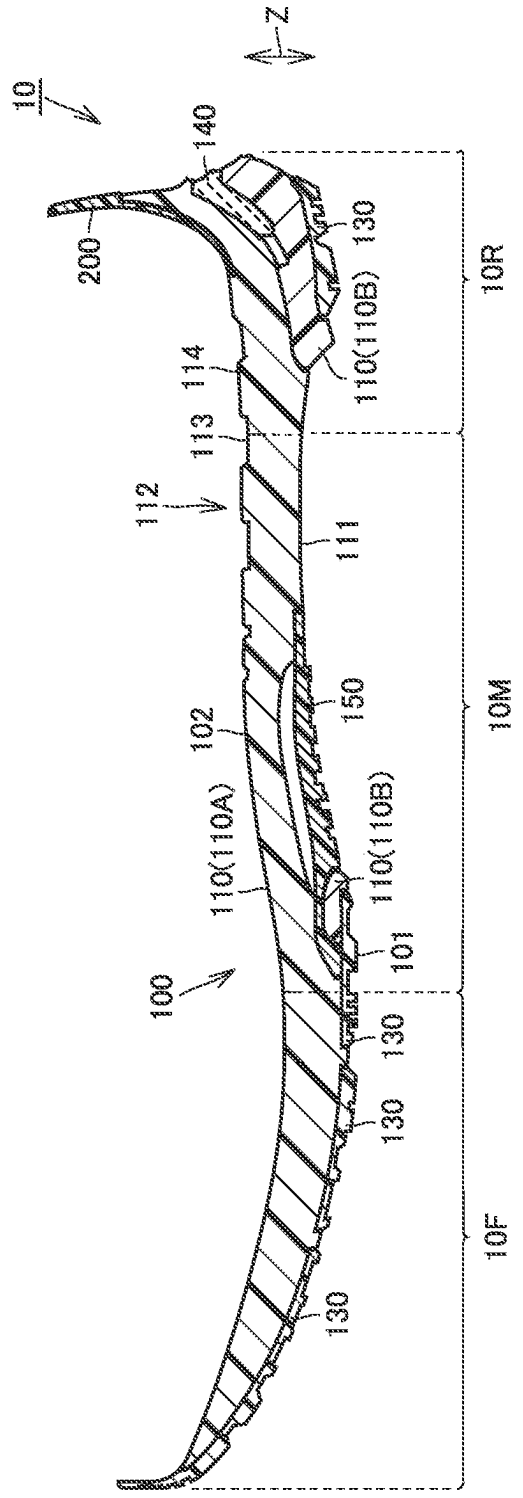
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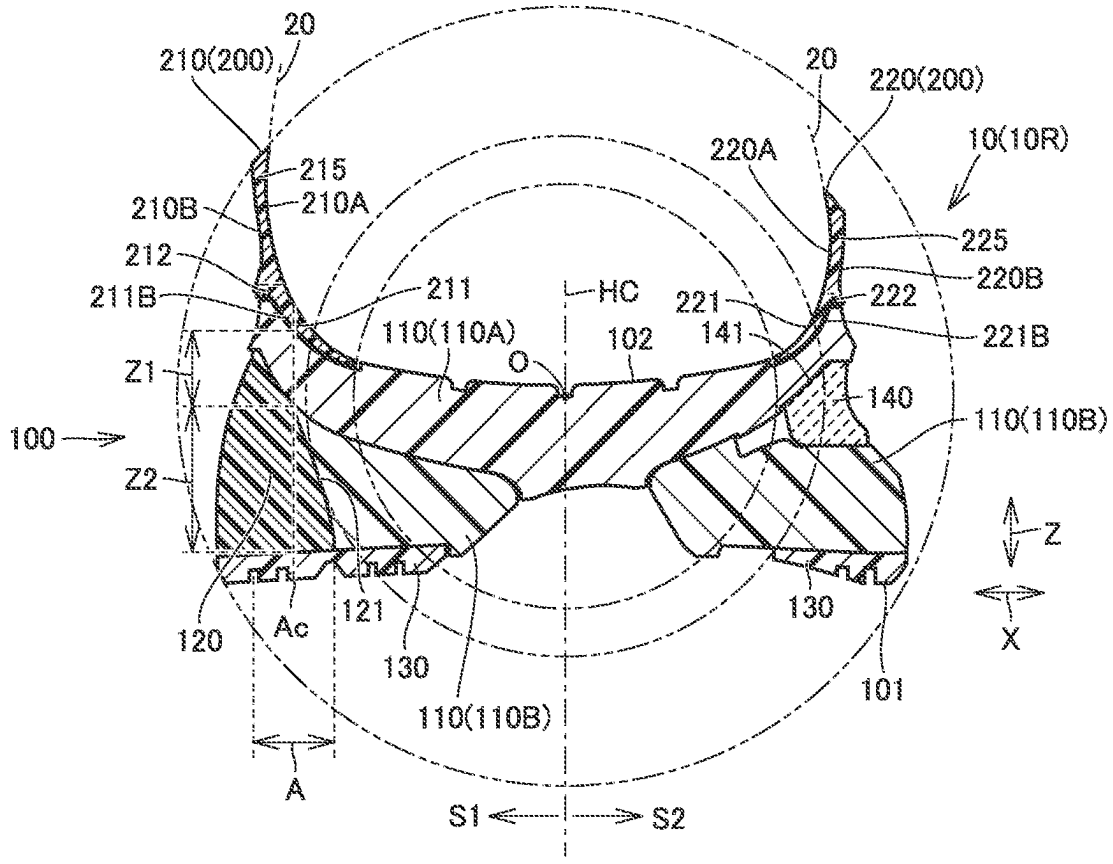
FIG.7

FIG.8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212
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211B
211
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222
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102
141
221B
Z1
O
140
100
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X
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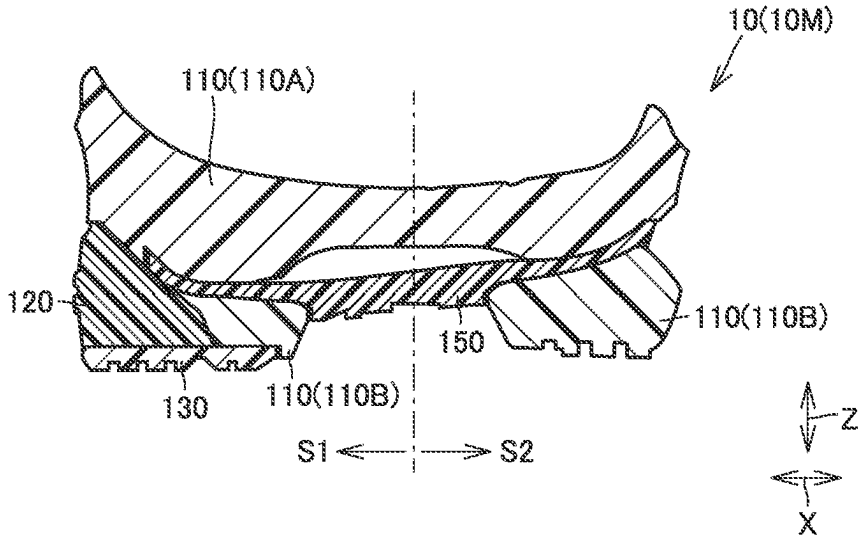
130
110(110B)
101
A
S1
S2

FIG.9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S1
S2
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FIG.10

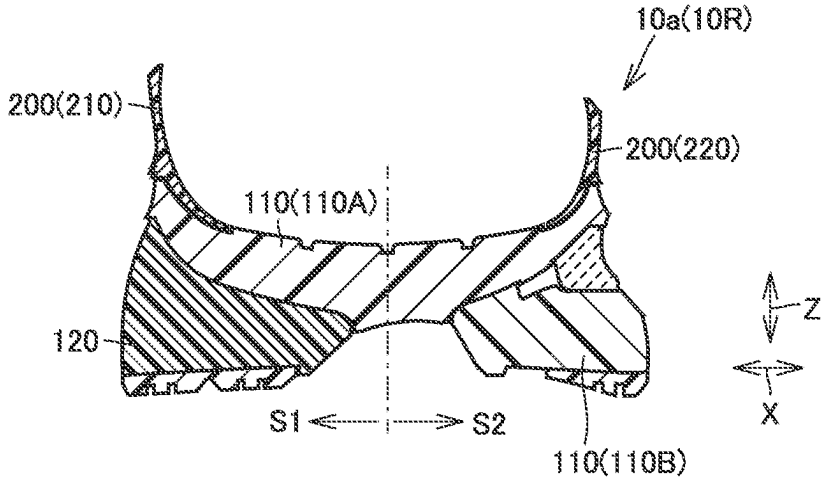


FIG.11

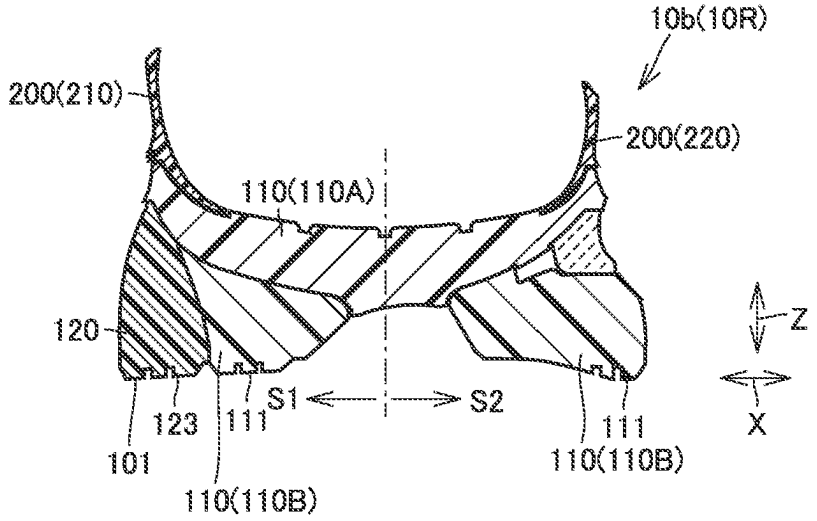
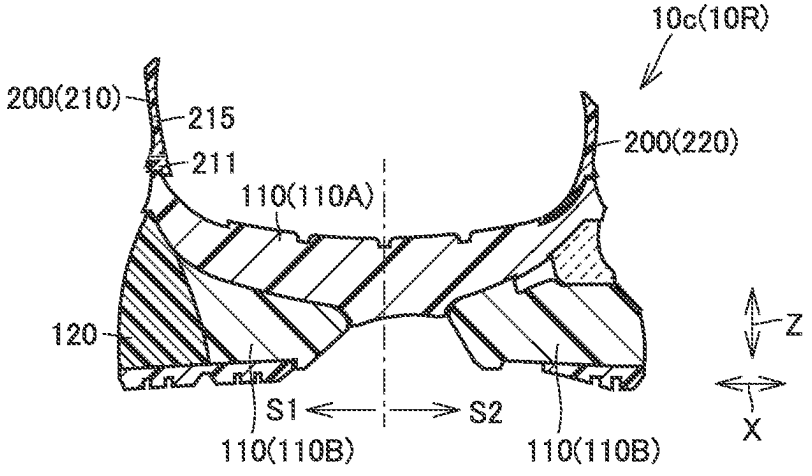


FIG.12



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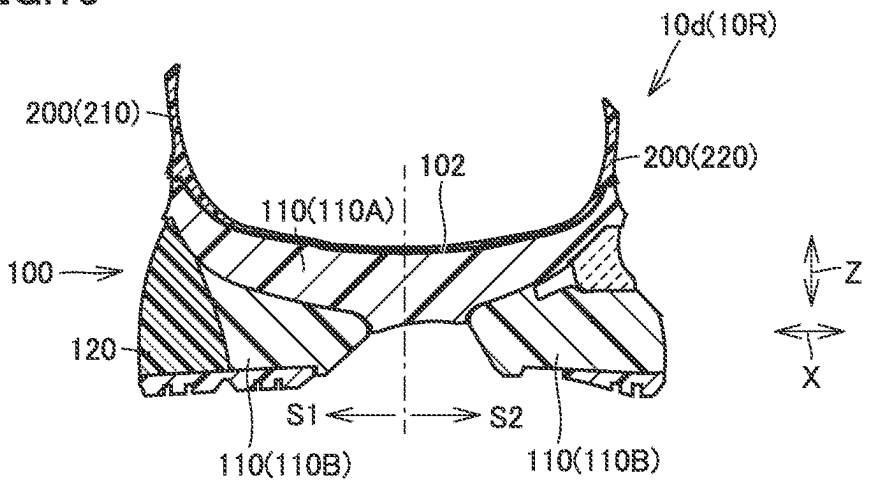

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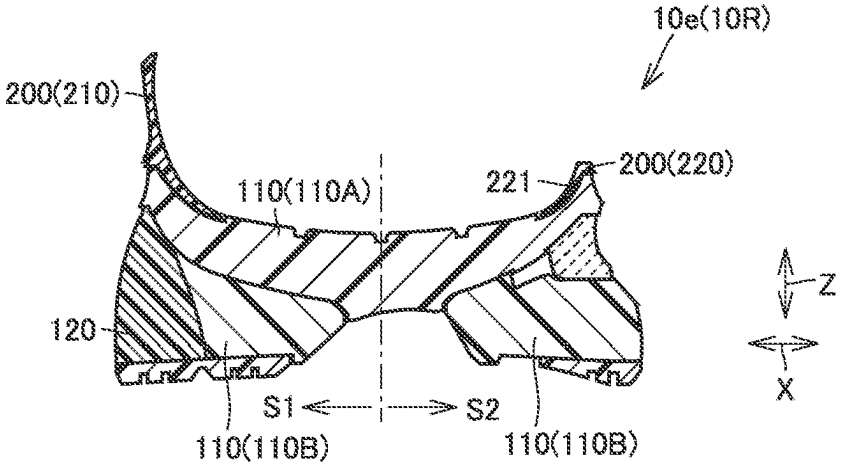


FIG.15

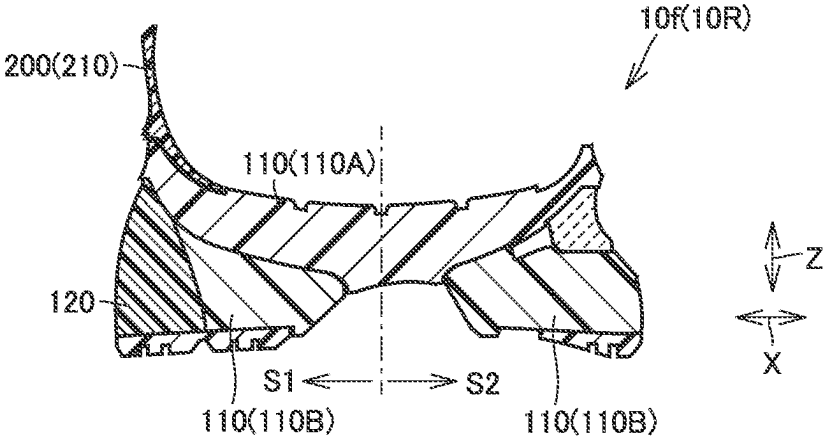


FIG.16

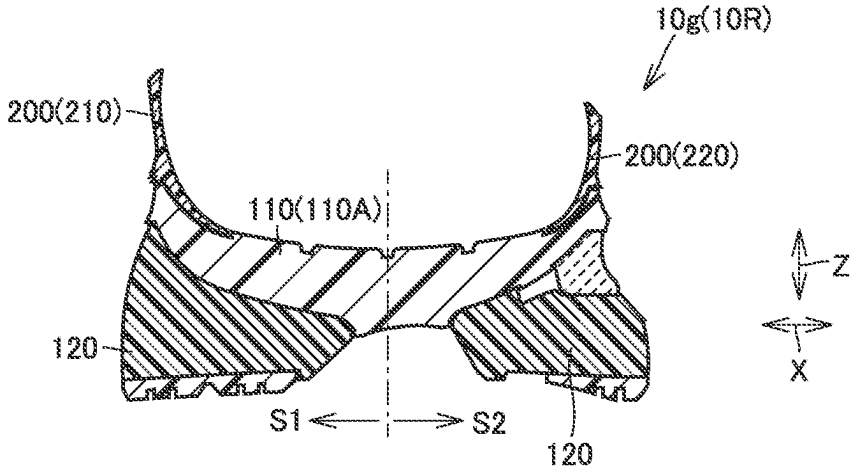
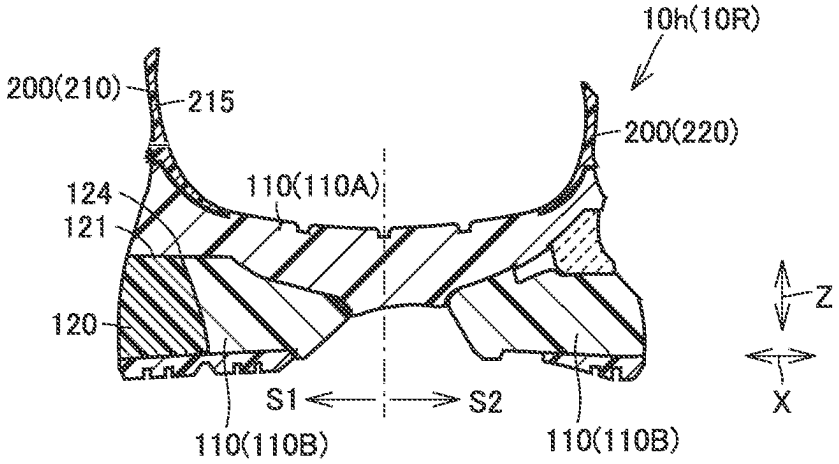


FIG.17



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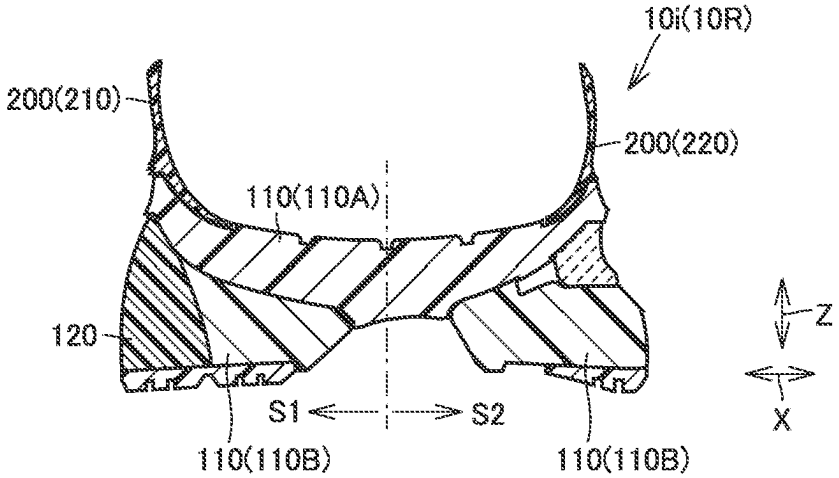


FIG.19

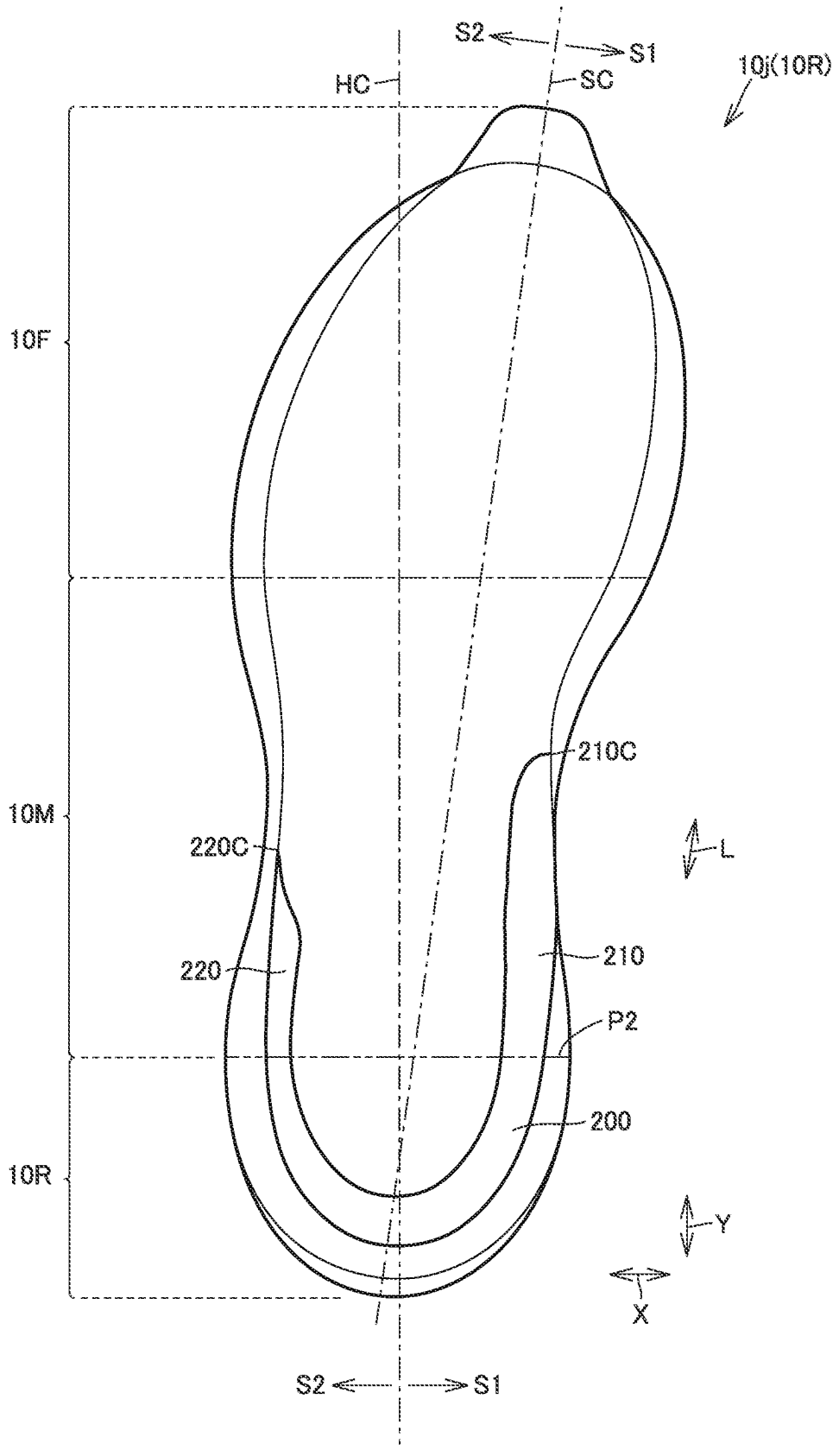


FIG.20

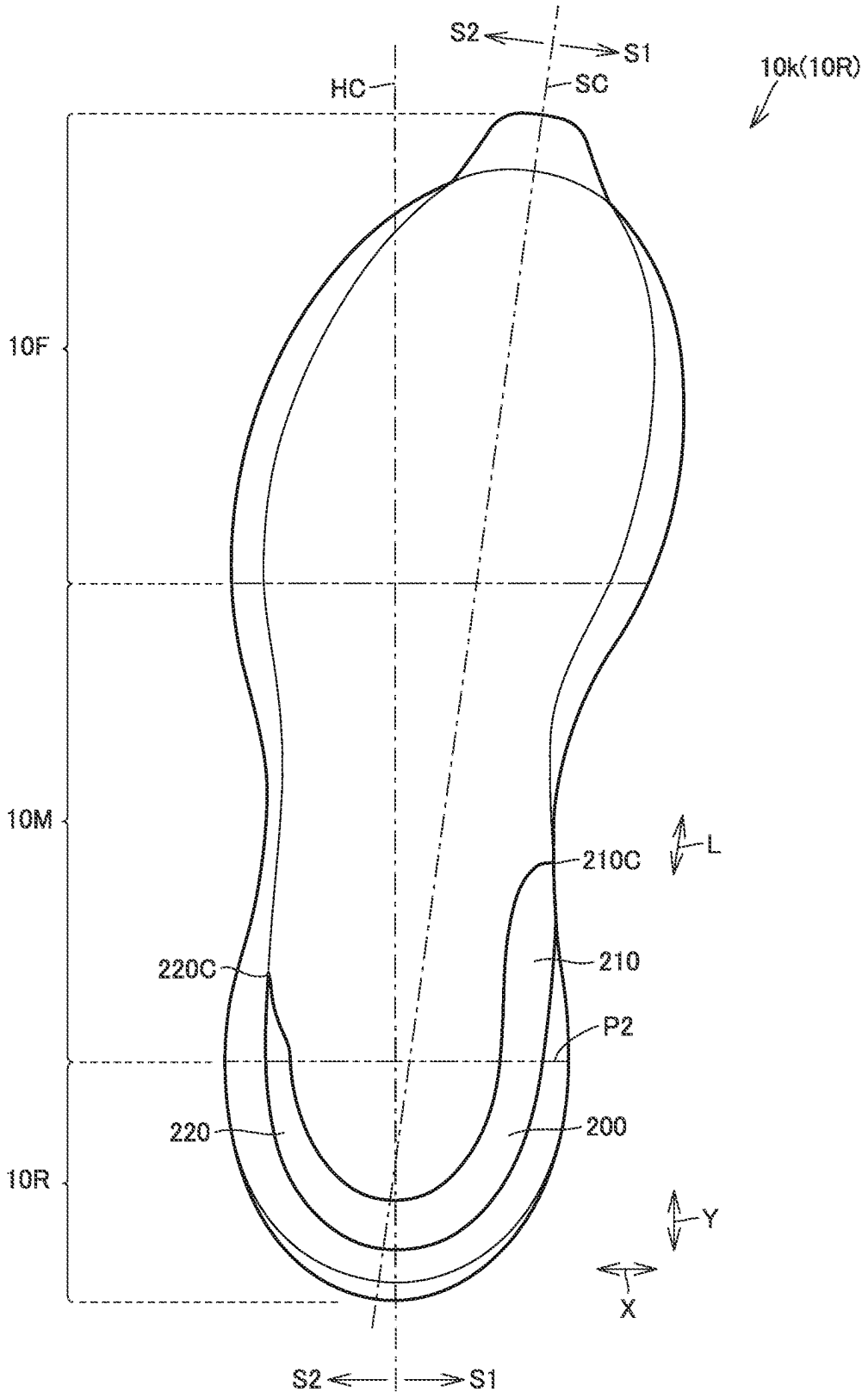
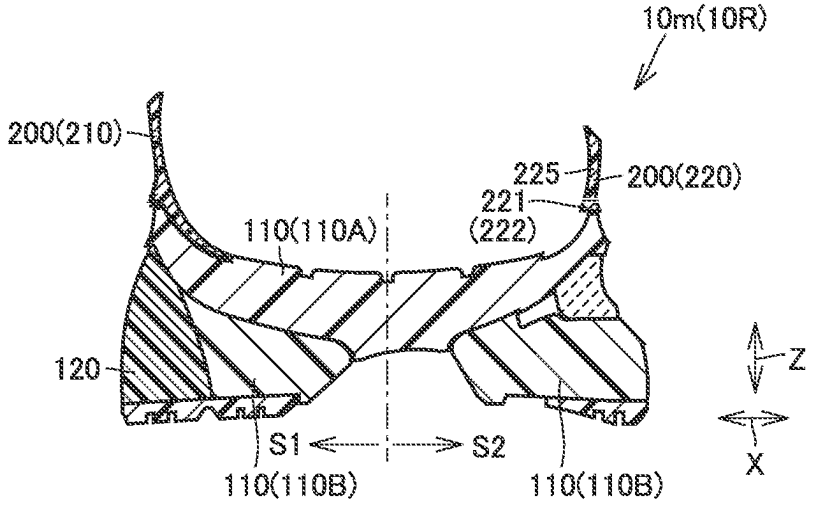


FIG.21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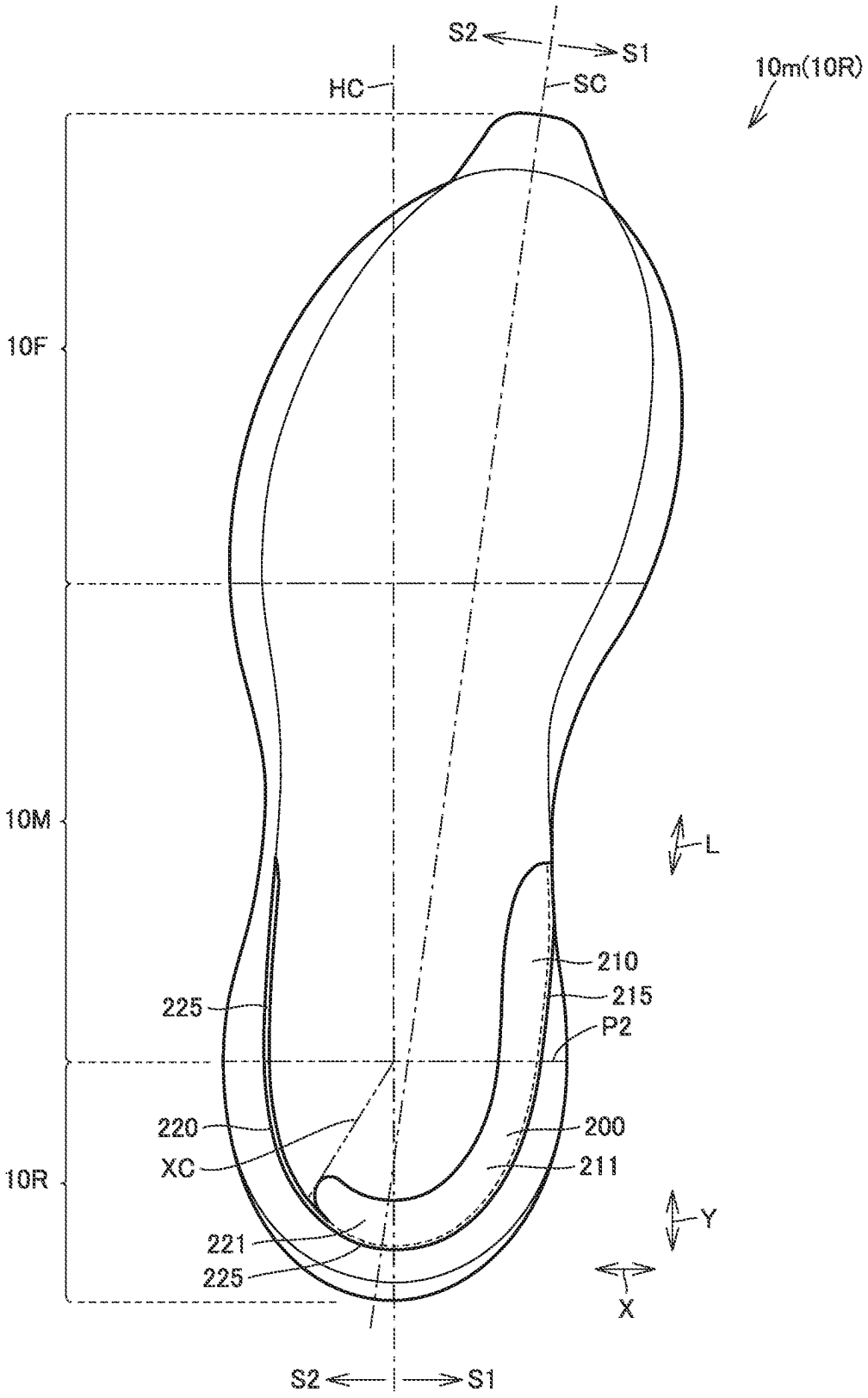
X

FIG.22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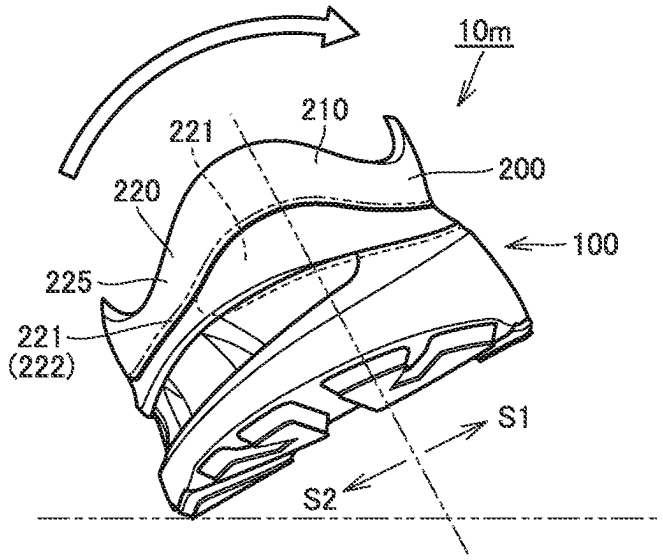
X
S2
S1

FIG.23



SHOE SOLE AND SHOE

CROSS-REFERENCE TO RELATED APPLICATION

This non-provisional application claims priority to Japanese Patent Application No. 2020-120520 filed on Jul. 14, 2020 with the Japan Patent Office, the entire contents of which are hereby incorporated by reference.

BACKGROUND

Field of the Invention

The present invention relates to a shoe sole and a shoe.

Background Information

Documents disclosing a shoe sole and a shoe include Japanese Patent Laying-Open No. 2016-59555, WO2006/120749, WO2007/122722, WO2010/038266, Japanese Patent No. 5875168, and WO2010/049983.

Japanese Patent Laying-Open No. 2016-59555 discloses a shoe sole including a midsole that has a rear end region, an inner region, and an outer region. The rear end region supports an inner rear end and an outer rear end of a foot including the lower end of the heel bone. In a part or the entirety of the rear end region, a lower layer and an upper layer are stacked on top of each other. The upper layer has less compression rigidity than the lower layer.

WO2006/120749 discloses a shoe sole including a midsole, an outer sole, a deformation element, and a coupling member. The deformation element is disposed between the outer sole and the midsole. The deformation element has a bending deformation member that opens from the center of a rear foot portion toward its peripheral edge. The bending deformation member has a lower plate portion and an upper plate portion, between which a rubber-like or sheath-like compressive deformation member is mounted. When the compressive deformation member is compressed, it deforms while storing a bounce back force. The coupling member is interposed between the midsole and the bending deformation member. The coupling member couples the midsole and the bending deformation member to each other. The material of the coupling member is higher in Young's modulus than the material of the midsole and lower in Young's modulus than the material of the bending deformation member.

Conventional shoe soles include a shoe sole that mitigates impact upon the heel portion of a wearer of the shoe when the shoe sole hits the ground. For example, Japanese Patent Laying-Open No. 2016-59555 discloses that a flexible upper layer mitigates impact transmitted to the foot when the shoe sole hits the ground. WO2006/120749 discloses that the impact occurring when the shoe sole hits the ground is dispersed by a bending deformation member and further dispersed by a coupling member. WO2007/122722 discloses that bulging of each blade forms an arch that deforms to thereby improve the shock absorbing function of a rear foot portion. Further, WO2010/038266 discloses that a reinforcing member suppresses lowering of the arch of a foot.

On the other hand, conventional shoe soles also include a shoe sole that improves the stability of the foot of a wearer. Japanese Patent No. 5875168 discloses that the suppression of lateral shaking of a rear foot portion is significantly improved on the inner side and/or the outer side where a skirt is provided. WO2010/049983 discloses that an embedded portion suppresses pronation and an upper portion of the first region in a midsole body supports the sole of the foot, so that the sole of the foot is less likely to feel an upward thrust from below.

SUMMARY

However, when a conventional shoe sole hits the ground, the heel portion receives an impact, like an upward thrust, locally from below, through a member disposed on the shoe sole for improving the stability. In particular, in the case of a shoe sole that is designed to suppress overpronation, the above-mentioned members are relatively hard in order to enhance stability, so that such an impact is significant.

Embodiments of the present invention have been made in view of the above-described problems, and an object of embodiments of the present invention is to provide a shoe sole and a shoe that are capable of mitigating the local impact caused by the shoe sole hitting the ground and being transmitted to the heel portion of a wearer of the shoe through a stability improvement member, while suppressing overpronation to improve the stability of the foot.

A shoe sole according to embodiments of the present invention has: a front foot portion supporting a toe portion and a ball portion of a foot; a middle foot portion supporting an arch portion of the foot; and a rear foot portion supporting a heel portion of the foot, wherein the front foot portion, the middle foot portion, and the rear foot portion are connected in a foot length direction. The shoe sole includes a body portion and a heel holding portion. The body portion has a ground contact surface. The heel holding portion is located opposite to the ground contact surface of the body portion and holds the heel portion of the foot at least from a medial foot side. The body portion includes a low hardness portion and a high hardness portion. The low hardness portion is made of a foam material. The high hardness portion is located opposite to the heel holding portion when viewed from the low hardness portion. The high hardness portion is made of a foam material harder than the foam material of the low hardness portion. The heel holding portion is made of a resin that is harder than each of the foam material of the low hardness portion and the foam material of the high hardness portion. On the medial foot side in the rear foot portion, the low hardness portion is located between the heel holding portion and the high hardness portion in an up-down direction.

A shoe according to an embodiment of the present invention includes: the shoe sole according to the above-described present invention; and an upper located above the shoe sole.

The foregoing and other objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of embodiments of the present invention when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be explained in more detail hereinafter with reference to the drawings.

FIG. **1** is a schematic perspective view of a shoe according to one embodiment of the present invention.

FIG. **2** is a plan view of a shoe sole according to one embodiment of the present invention, when seen from above.

FIG. **3** is a side view of the shoe sole according to one embodiment of the present invention, when seen from a medial foot side.

FIG. **4** is a side view of the shoe sole according to one embodiment of the present invention, when seen from a lateral foot side.

FIG. **5** is a rear view of the shoe sole according to one embodiment of the present invention, when seen from a rear end side.

FIG. **6** is a bottom view of the shoe sole according to one embodiment of the present invention, when seen from below.

FIG. **7** is a cross-sectional view of the shoe sole in FIG. **6**, when seen in a direction indicated by an arrow VII-VII.

FIG. **8** is a cross-sectional view of the shoe sole in FIG. **6**, when seen in a direction indicated by an arrow VIII-VIII.

FIG. **9** is a cross-sectional view of the shoe sole in FIG. **6**, when seen in a direction indicated by an arrow IX-IX.

FIG. **10** is a cross-sectional view of a shoe sole according to a first modification of one embodiment of the present invention, when seen from the front at a second boundary position.

FIG. **11** is a cross-sectional view of a shoe sole according to a second modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **12** is a cross-sectional view of a shoe sole according to a third modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **13** is a cross-sectional view of a shoe sole according to a fourth modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **14** is a cross-sectional view of a shoe sole according to a fifth modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **15** is a cross-sectional view of a shoe sole according to a sixth modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **16** is a cross-sectional view of a shoe sole according to a seventh modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **17** is a cross-sectional view of a shoe sole according to an eighth modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **18** is a cross-sectional view of a shoe sole according to a ninth modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **19** is a plan view of a shoe sole according to a tenth modification of one embodiment of the present invention, when seen from above.

FIG. **20** is a plan view of a shoe sole according to an eleventh modification of one embodiment of the present invention, when seen from above.

FIG. **21** is a cross-sectional view of a shoe sole according to a twelfth modification of one embodiment of the present invention, when seen from the front at the second boundary position.

FIG. **22** is a plan view of a shoe sole according to a twelfth modification of one embodiment of the present invention, when seen from above.

FIG. **23** is a rear view of the shoe sole according to the twelfth modification of one embodiment of the present invention, showing a first stage in which the shoe sole hits the ground when seen from a rear end side.

DETAILED DESCRIPTION

The following describes a shoe sole and a shoe according to one embodiment of the present invention with reference to the accompanying drawings. In the following description of the embodiments, the same or corresponding portions in the accompanying drawings are denoted by the same reference characters, and the description thereof will not be repeated. In the following description of the embodiments, terms such as "front" or "forward", "rear" or "rearward", "above" or "upward", and "below" or "downward" will be used. The terms such as "front" or "forward" and "rear" or "rearward" refer to directions viewed from a wearer who wears shoes placed on a flat surface such as the ground. For example, the term "front" or "forward" refers to a toe side, and the term "rear" or "rearward" refers to a heel side. The term "below" or "downward" refers to a direction toward the ground with respect to a shoe placed on a flat surface such as the ground. The term "above" or "upward" refers to a direction opposite to the ground side.

FIG. **1** is a schematic perspective view of a shoe according to one embodiment of the present invention. As shown in FIG. **1**, a shoe **1** according to one embodiment of the present invention includes a shoe sole **10** and an upper portion **20** located above the shoe sole **10**. The upper portion **20** is connected to shoe sole **10** and forms a space together with the shoe sole **10**, in which a foot is accommodated. The upper portion **20** may or may not have an insole that forms a lower part of the upper portion **20**.

FIG. **2** is a plan view of a shoe sole according to one embodiment of the present invention, when seen from above. In FIG. **2**, a two-dot chain line shows the bones of a foot of a standard wearer who is wearing the shoe **1** having the shoe sole **10**. As shown in FIG. **2**, the shoe sole **10** according to one embodiment of the present invention includes: a front foot portion **10**F for supporting a toe portion and a ball portion of a foot; a middle foot portion **10**M for supporting an arch portion of the foot; and a rear foot portion **10**R for supporting a heel portion of the foot. The front foot portion **10**F, the middle foot portion **10**M, and the rear foot portion **10**R are connected in a foot length direction Y.

The front foot portion **10**F includes a front end of the shoe sole **10**. The rear foot portion **10**R includes a rear end of the shoe sole **10**. In the present embodiment, a first boundary position P**1** as a boundary position between the front foot portion **10**F and the middle foot portion **10**M is a position located at 40% of the dimension of the shoe sole **10** from its front end in the foot length direction Y. A second boundary position P**2** as a boundary position between the middle foot portion **10**M and the rear foot portion **10**R is a position located at 80% of the dimension of the shoe sole **10** from its front end in the foot length direction Y. The first boundary position P**1** and the second boundary position P**2** extend in a foot width direction X.

In the present embodiment, the foot width direction X is perpendicular to the foot length direction Y when the shoe sole **10** is viewed in an up-down direction Z. The foot length direction Y extends along a heel center HC when the shoe sole **10** is viewed in the up-down direction Z. The up-down direction Z is orthogonal to a ground contact surface **101** (described later). The heel center HC extends along a straight line that connects: the center of a heel bone of a standard wearer of the shoe **1** having the shoe sole **10**; and

a point between the third toe and the fourth toe of the wearer, when viewed in the up-down direction Z.

FIG. **3** is a side view of the shoe sole according to one embodiment of the present invention, when seen from a medial foot side. FIG. **4** is a side view of the shoe sole according to one embodiment of the present invention, when seen from a lateral foot side. FIG. **5** is a rear view of the shoe sole according to one embodiment of the present invention, when seen from a rear end side. As used herein, the medial foot side means a medial side of the foot in anatomical position (that is, a side closer to the median), and the lateral foot side means a side opposite to a medial side of the foot in anatomical position (that is, a side farther from the median).

As shown in FIGS. **3** to **5**, the shoe sole **10** includes a body portion **100** and a heel holding portion **200**. The body portion **100** has a ground contact surface **101**. The heel holding portion **200** is located opposite to a ground contact surface **101** of the body portion **100**, and holds a heel portion of a foot at least from a medial foot side **1**. In the present embodiment, the heel holding portion **200** holds the heel portion of the foot also from a lateral foot side S**2**.

FIG. **6** is a bottom view of the shoe sole according to one embodiment of the present invention, when seen from below. FIG. **7** is a cross-sectional view of the shoe sole in FIG. **6**, when seen in the direction indicated by an arrow VII-VII. FIG. **8** is a cross-sectional view of the shoe sole in FIG. **6**, when seen in the direction indicated by an arrow VIII-VIII.

As shown in FIGS. **3** to **8**, in the present embodiment, the body portion **100** includes a low hardness portion **110**, a high hardness portion **120**, an outsole **130**, a shock absorbing member **140**, and a reinforcing member **150**. If desired, the body portion **100** does not necessarily include the shock absorbing member **140** or does not necessarily include the reinforcing member **150**.

As shown in FIGS. **6** and **7**, the low hardness portion **110** is continuously disposed in the front foot portion **10**F, the middle foot portion **10**M, and the rear foot portion **10**R in the foot length direction Y. In the present embodiment, a lower surface **111** of the low hardness portion **110** does not form the ground contact surface **101** of the body portion **100**, but a part of lower surface **111** can form the ground contact surface **101**. The upper surface of the low hardness portion **110** forms an upper surface **102** of the body portion **100**.

The upper surface of the low hardness portion **110** has a shock absorbing region **112**. The shock absorbing region **112** extends from the rear foot portion **10**R to the middle foot portion **10**M. The shock absorbing region **112** is located so as not to overlap with the heel holding portion **200** when viewed in the up-down direction Z.

A mesh-like recessed portion **113** is formed in the shock absorbing region **112**. A plurality of protruding portions **114** surrounded by the mesh-like recessed portion **113** are formed in the shock absorbing region **112**. The plurality of protruding portions **114** can reduce the impact transmitted to the heel portion of a wearer when the shoe sole hits the ground. The upper surface of the low hardness portion **110** does not necessarily have the shock absorbing region **112**.

In the present embodiment, the low hardness portion **110** has an upper portion **110**A and a lower portion **110**B located below the upper portion **110**A. In the present embodiment, the upper portion **110**A and the lower portion **110**B are formed from different materials, but can be the same material.

As shown in FIGS. **6** and **7**, the upper portion **110**A is continuously disposed in the front foot portion **10**F, the middle foot portion **10**M, and the rear foot portion **10**R in the foot length direction Y. The lower portion **110**B has a substantially U-shaped outline so as to extend along the peripheral edge of the shoe sole **10** in the middle foot portion **10**M and the rear foot portion **10**R, when viewed in the up-down direction Z. As shown in FIGS. **6** and **8**, the lower portion **110**B is located at the second boundary position P**2** on the medial foot side S**1** and the lateral foot side S**2** so as to be spaced apart from each other. As shown in FIGS. **3** and **6**, the lower portion **110**B is not exposed to the outside in the middle foot portion **10**M when the shoe sole **10** is viewed from the medial foot side S**1**.

The low hardness portion **110**, i.e., the upper portion **110**A and the lower portion **110**B, each are made of a foam material. The foam material of the lower portion **110**B is preferably harder than the foam material of the upper portion **110**A in terms of stability, but can have the same hardness as that of the foam material of the upper portion **110**A or can be softer than the foam material of the upper portion **110**A.

The foam material of the low hardness portion **110** is formed from a resin or rubber, for example. The foam material formed from a resin can contain: a resin material as a main component; and a foaming agent, a crosslinking agent and the like as sub-components. Examples of the resin material that can be suitably used are a thermoplastic resin such as ethylene-vinyl acetate copolymer (EVA), thermoplastic polyurethane (TPU), or thermoplastic polyamide elastomer (TPA). The foam material formed from rubber can contain a rubber material as a main component; and a plasticizer, a foaming agent, a reinforcing agent, and a crosslinking agent as sub-components. As the rubber material, for example, butadiene rubber can be suitably used.

The hardness of the low hardness portion **110** is preferably 20 degrees or more, and more preferably 40 degrees or more, for example, in Asker C hardness. Further, the hardness of the low hardness portion **110** is preferably 70 degrees or less, and more preferably 60 degrees or less, for example, in Asker C hardness. The low hardness portion **110** having a hardness of 70 degrees or less in Asker C hardness enables a further improved fit to the foot of the wearer of the shoe **1** having the shoe sole **10**.

As shown in FIGS. **6** and **8**, the high hardness portion **120** is located opposite to the heel holding portion **200**, when viewed from the low hardness portion **110**. In the present embodiment, the high hardness portion **120** is in direct contact with the low hardness portion **110**.

As shown in FIGS. **3** and **6**, in the present embodiment, the high hardness portion **120** is located so as to extend in the foot length direction Y from the rear foot portion **10**R to the middle foot portion **10**M of the shoe sole **10**, when viewed in the up-down direction Z. The high hardness portion **120** is exposed to the outside of the shoe sole **10** on the medial foot side S**1**. The high hardness portion **120** has a rear end face **122** that is in contact with the low hardness portion **110** when seen from the medial foot side S**1**. The rear end face **122** is inclined downward in the rearward direction.

As shown in FIG. **8**, the high hardness portion **120** is located below the low hardness portion **110** located on the medial foot side S**1**. In the present embodiment, the high hardness portion **120** is located on the side opposite to the center of the shoe sole **10** in the foot width direction X when viewed from the lower portion **110**B of the low hardness portion **110** that is located on the medial foot side S**1**.

When the second boundary position P**2** is viewed in the foot length direction Y, on a center line Ac of a region A in the foot width direction where the low hardness portion **110**, the high hardness portion **120**, and the heel holding portion

200 are aligned in the up-down direction Z, a dimension Z1 of the low hardness portion 110 in the up-down direction Z is preferably 20% or more, and more preferably 30% or more, of a dimension Z2 of the high hardness portion 120 in the up-down direction Z. Also, on the center line Ac in the foot width direction, the dimension Z1 is preferably 50% or less, and more preferably 45% or less, of the dimension Z2 of the high hardness portion 120 in the up-down direction Z. Further, when the second boundary position P2 is viewed in the foot length direction Y, the high hardness portion 120 is spaced apart at a distance from a point O at which the center of the shoe sole 10 in foot width direction X (that is, heel center HC) intersects with the upper surface 102 of the low hardness portion 110, such that the distance is 60% or more of a radius of an imaginary circle circumscribing the shoe sole 10 centered on the point O.

The high hardness portion 120 is formed from a foam material harder than the foam material of the low hardness portion 110. The foam material of the high hardness portion 120 can be the same as that of the low hardness portion 110.

The hardness of the high hardness portion 120 is preferably 55 degrees or more and 80 degrees or less, for example, in Asker C hardness. The high hardness portion 120 having a hardness of 55 degrees or more in Asker C hardness further improves the stability of the foot of the wearer wearing the shoe 1 having the shoe sole 10. The hardness of high hardness portion 120 is higher preferably by 8 degrees or more, and more preferably 10 degrees or more, in Asker C hardness than the low hardness portion 110. By providing the low hardness portion 110 lower by 8 degrees or more in Asker C hardness than the high hardness portion 120, the wearer of the shoe 1 having the shoe sole 10 is less likely to feel an upward thrust from the high hardness portion 120 at the time when the shoe sole hits the ground.

As shown in FIGS. 6 to 8, in the present embodiment, the lower surface of the outsole 130 forms the ground contact surface 101 of the body portion 100. FIG. 6 does not show a tread pattern formed on the exposed surface of the outsole 130.

The outsole 130 is disposed on the lower surface 111 of the low hardness portion 110. More specifically, in the rear foot portion 10R including the second boundary position P2, the outsole 130 is disposed on the lower surface 111 of the lower portion 110B in the low hardness portion 110. In the front foot portion 10F, the outsole 130 is disposed on the lower surface 111 of the upper portion 110A in the low hardness portion 110.

The outsole 130 is formed from a material that is higher in Young's modulus and higher in hardness than the foam material of the low hardness portion 110 and the high hardness portion 120, and that is softer than the resin forming the heel holding portion 200. The outsole 130 is formed from rubber, for example, and can contain: a rubber material as a main component; and a plasticizer, a reinforcing agent, a crosslinking agent, and the like as sub-components.

As shown in FIGS. 2 and 4, the shock absorbing member 140 is disposed at least in the rear foot portion 10R on the lateral foot side S2. The shock absorbing member 140 is softer than the low hardness portion 110 and the high hardness portion 120. Thereby, when the shoe sole hits the ground, the heel portion of the foot of the wearer wearing the shoe 1 having the shoe sole 10 is less likely to collapse toward the medial foot side S1. Thus, overpronation can be further suppressed, and the impact that occurs when the shoe sole hits the ground can be mitigated.

As shown in FIG. 2, the shock absorbing member 140 extends along the outer peripheral edge of the shoe sole 10 when viewed in the up-down direction Z. When viewed in the up-down direction Z, the shock absorbing member 140 is located across the middle foot portion 10M and the rear foot portion 10R on the lateral foot side S2, and extends to the rear end of shoe sole 10.

As shown in FIGS. 4, 5, 7 and 8, the shock absorbing member 140 is located to be exposed to the outside of the shoe sole 10. The shock absorbing member 140 is located inside the low hardness portion 110 in the up-down direction Z. More specifically, the shock absorbing member 140 is sandwiched between the upper portion 110A and the lower portion 110B in the low hardness portion 110 in the up-down direction Z.

The shock absorbing member 140 contains soft elastomer as a main component. Soft elastomer is a solid and jelly-like viscoelastic material. Soft elastomer is made of a polyurethane-based polymer, a polystyrene-based polymer, a silicone-based resin, or other thermoplastic resins, for example.

FIG. 9 is a cross-sectional view of the shoe sole in FIG. 6, when seen in a direction indicated by an arrow IX-IX. As shown in FIGS. 6 and 9, the reinforcing member 150 is located in the middle foot portion 10M. The reinforcing member 150 is formed from a non-foaming resin harder than each of the foam material of the low hardness portion 110, the foam material of the high hardness portion 120, and the material of the outsole 130. The reinforcing member 150 can suppress sinking of the arch of the foot of the wearer wearing the shoe 1 having the shoe sole 10, when the wearer's foot hits the ground with shoe sole 10.

A part of the reinforcing member 150 is incorporated in the low hardness portion 110. Specifically, the reinforcing member 150 is located to be sandwiched between the upper portion 110A and the lower portion 110B of the low hardness portion 110. The end portion of reinforcing member 150 on the medial foot side S1 in the foot width direction X is located between (upper portion 110A of) the low hardness portion 110 and the high hardness portion 120 in the up-down direction Z.

The resin forming the reinforcing member 150 can be the same as the resin forming the heel holding portion 200.

As shown in FIGS. 2 to 5, the heel holding portion 200 is located in the middle foot portion 10M and the rear foot portion 10R. The heel holding portion 200 extends along the peripheral edge of the shoe sole 10 when viewed in the up-down direction Z. In the present embodiment, the heel holding portion 200 includes a medial foot side holding portion 210 and a lateral foot side holding portion 220. The medial foot side holding portion 210 faces a portion of the peripheral side surface of the heel portion of the foot on the medial foot side S1. The lateral foot side holding portion 220 faces a portion of the peripheral side surface of the heel portion of the foot on the lateral foot side S2. The medial foot side holding portion 210 and the lateral foot side holding portion 220 are connected to each other at the rear end of the shoe sole 10. In the present embodiment, at least at second boundary position P2, the medial foot side holding portion 210 and the lateral foot side holding portion 220 are spaced apart from each other. Further, in the middle foot portion 10M, the medial foot side holding portion 210 and the lateral foot side holding portion 220 are spaced apart from each other.

As shown in FIG. 2, at the second boundary position P2, the medial foot side holding portion 210 is larger in dimension in the foot width direction X than the lateral foot side holding portion 220. In a front-rear direction L, a front end

portion **210**C of the medial foot side holding portion **210** is located forward of a front end portion **220**C of the lateral foot side holding portion **220**. The front-rear direction L extends along a center line SC of the shoe sole **10** when the shoe sole **10** is viewed in the up-down direction Z. The center line SC is a straight line connecting the front end and the rear end of the shoe sole **10** when the shoe sole **10** is viewed in the up-down direction Z. The center line SC can be a line corresponding to a straight line connecting the center of a heel bone of a standard wearer wearing the shoe **1** having the shoe sole **10** to a point between the first toe and the second toe of the wearer. In the present embodiment, the front end portion **210**C of the medial foot side holding portion **210** is located substantially at the same position as front end portion **220**C of the lateral foot side holding portion **220** in the foot length direction Y. The front end portion **210**C of the medial foot side holding portion **210** and the front end portion **220**C of the lateral foot side holding portion **220** are located substantially at the center of the middle foot portion **10**M in the foot length direction Y.

As shown in FIGS. **3** and **4**, in the middle foot portion **10**M, a maximum dimension M**1** of the medial foot side holding portion **210** in the up-down direction Z is larger than a maximum dimension M**2** of the lateral foot side holding portion **220** in the up-down direction Z. Further, in the middle foot portion **10**M, the average dimension of the medial foot side holding portion **210** in the up-down direction Z is preferably larger than the average dimension of the lateral foot side holding portion **220** in the up-down direction Z. When viewed in the foot width direction X, in the middle foot portion **10**M, the upper edge of each of the medial foot side holding portion **210** and the lateral foot side holding portion **220** is curved upward in a protruding shape. When viewed in the foot width direction X, in the rear foot portion **10**R, the upper end face of each of the medial foot side holding portion **210** and the lateral foot side holding portion **220** is curved downward in a protruding shape.

As shown in FIG. **8**, an inner side surface **210**A of the medial foot side holding portion **210** and an inner side surface **220**A of the lateral foot side holding portion **220** are joined to the upper portion **20**. The average thickness of the medial foot side holding portion **210** from the inner side surface **210**A to an outer side surface **210**B is larger than the average thickness of the lateral foot side holding portion **220** from the inner side surface **220**A to an outer side surface **220**B. When viewed in the foot length direction Y, the length in which a medial foot side lower wall portion **211** is joined to the body portion **100** is longer than the length in which a lateral foot side lower wall portion **221** is joined to the body portion **100**.

The medial foot side holding portion **210** has a medial foot side lower wall portion **211** and a medial foot side upper wall portion **215**.

In the present embodiment, the medial foot side lower wall portion **211** extends in the foot width direction X and is joined to a part of the upper surface **102** of the body portion **100** on the medial foot side S**1**. The medial foot side lower wall portion **211** has an outer side surface **211**B that is inclined downward from an outer end portion **212** of the medial foot side lower wall portion **211** in the foot width direction X toward the center of the shoe sole **10** in the foot width direction X.

The medial foot side upper wall portion **215** extends from the outer end portion **212** of the medial foot side lower wall portion **211** in the foot width direction X to be spaced from the body portion **100**.

The lateral foot side holding portion **220** has a lateral foot side lower wall portion **221** and a lateral foot side upper wall portion **225**.

The lateral foot side lower wall portion **221** is joined to a part of upper surface **102** of the body portion **100** on the lateral foot side S**2**. An outer side surface **221**B of the lateral foot side lower wall portion **221** is inclined downward from an outer end portion **222** of the lateral foot side lower wall portion **221** in the foot width direction X toward the center of the shoe sole **10** in the foot width direction X.

The lateral foot side upper wall portion **225** extends from the outer end portion **222** of the lateral foot side lower wall portion **221** in foot width direction X to be spaced from the body portion **100**.

The following describes details of the positional relation between the heel holding portion **200** and each of members constituting the body portion **100**.

As shown in FIG. **8**, on the medial foot side S**1** in the rear foot portion **10**R, the low hardness portion **110** is located between the heel holding portion **200** (medial foot side holding portion **210**) and the high hardness portion **120** in the up-down direction Z. In the present embodiment, the low hardness portion **110** is located between the medial foot side holding portion **210** and the high hardness portion **120** in the up-down direction Z. Further, the upper portion **110**A of the low hardness portion **110** is located between the heel holding portion **200** (lateral foot side holding portion **220**) and the shock absorbing member **140** in the up-down direction Z.

In the present embodiment, in a region of the rear foot portion **10**R on the medial foot side S**1** where the medial foot side holding portion **210** and the high hardness portion **120** are aligned in the up-down direction Z, an upper surface **121** of the high hardness portion **120** is inclined downward toward the center in the foot width direction X. In this region, the upper surface **121** of the high hardness portion **120** is located along the outer side surface **210**B of the medial foot side lower wall portion **211**. At the end of the above-mentioned region that is opposite to the center side of the shoe sole **10** in the foot width direction X, the upper surface **121** of the high hardness portion **120** can be parallel to the foot width direction X.

In a region of the rear foot portion **10**R on the lateral foot side S**2** where the lateral foot side holding portion **220** and the shock absorbing member **140** are aligned in the up-down direction Z, an upper surface **141** of the shock absorbing member **140** is inclined downward toward the center in the foot width direction X. In this region, the upper surface **141** of the shock absorbing member **140** is located along the outer side surface **221**B of the lateral foot side lower wall portion **221**.

Further, in the present embodiment, when the second boundary position P**2** is viewed in the foot length direction Y, the heel holding portion **200** is spaced apart at a distance from point O at which the center of the shoe sole **10** in the foot width direction X intersects with the upper surface **102** of the low hardness portion **110**, such that the distance is 50% or more of the radius of the imaginary circle circumscribing the shoe sole **10** centered on point O

The heel holding portion **200** is made of a non-foaming resin harder than each of the foam material of the low hardness portion **110** and the foam material of the high hardness portion **120**. The resin forming the heel holding portion **200** can contain a resin material as a main component and a crosslinking agent and the like as a sub-component. Examples of the resin material can be a thermoplastic

resin and a thermosetting resin. Examples of the thermoplastic resin suitably used in this case can be thermoplastic polyurethane (TPU).

The hardness of heel holding portion **200** is preferably 55 degrees or more and 70 degrees or less, for example, in Asker D hardness. Further, the hardness of the heel holding portion **200** is more preferably 60 degrees or more in Asker D hardness. The heel holding portion **200** having a hardness of 60 degrees or more in Asker D hardness further improves the stability of the foot of the wearer wearing the shoe **1** having the shoe sole **10**.

The following describes the functions and effects of the shoe sole **10** according to the present embodiment. During walking or running, a phenomenon called pronation occurs in which the heel portion of the foot falls inward. In pronation, when hitting the ground, the heel portion appropriately falls down toward the medial foot side S**1**, thereby mitigating the impact applied to the foot when hitting the ground. However, overpronation can occur, in which the heel portion falls down more than necessary toward the medial foot side S**1**. Overpronation can cause problems with walking or running.

Thus, in the shoe sole **10** according to one embodiment of the present invention, the low hardness portion **110** is formed from a foam material as described above. The high hardness portion **120** is located on the side opposite to the heel holding portion **200** when viewed from the low hardness portion **110**. The high hardness portion **120** is made of a foam material that is harder than the foam material of the low hardness portion **110**. The heel holding portion **200** is formed from a resin harder than each of the foam material of the low hardness portion **110** and the foam material of the high hardness portion **120**. On the medial foot side S**1** in the rear foot portion **10**R, the low hardness portion **110** is located between the heel holding portion **200** and the high hardness portion **120** in the up-down direction Z.

Thus, when the shoe sole **10** hits the ground, the overpronation of the wearer wearing the shoe **1** having the shoe sole **10** can be suppressed by the high hardness portion **120** and the heel holding portion **200** on the medial foot side S**1** of the foot of the wearer, so that stability can be improved. Further, when the shoe sole **10** hits the ground, the low hardness portion **110** is compressed and deformed as appropriate by the high hardness portion **120** and the heel holding portion **200** in the up-down direction Z. Thereby, the low hardness portion **110** can mitigate local impact like an upward thrust applied to the heel portion of the wearer through the high hardness portion **120**.

In the present embodiment, the high hardness portion **120** is in direct contact with the low hardness portion **110**. When the boundary position (second boundary position P**2**) between the middle foot portion **10**M and the rear foot portion **10**R is viewed in the foot length direction Y, on the center line Ac of the region A in the foot width direction where the low hardness portion **110**, the high hardness portion **120**, and the heel holding portion **200** are aligned in the up-down direction Z, the dimension Z**1** of the low hardness portion **110** in the up-down direction Z is 20% or more and 50% or less of dimension Z**2** of the high hardness portion **120** in the up-down direction Z. In this way, the dimension Z**1** is 20% or more of the dimension Z**2** of the high hardness portion **120** in the up-down direction Z, which can appropriately mitigate the impact occurring when the shoe sole **10** hits the ground. Also, the dimension Z**1** is 50% or less of the dimension Z**2** of the high hardness portion **120** in the up-down direction Z, which can prevent the low hardness portion **110** from reducing the effect of suppressing overpronation.

In the present embodiment, the heel holding portion **200** includes a medial foot side holding portion **210** which faces a portion of the peripheral side surface of the heel portion of the foot on the medial foot side S**1**. The medial foot side holding portion **210** includes: a medial foot side lower wall portion **211** joined to a part of the upper surface **102** of the body portion **100** on the medial foot side S**1**; and a medial foot side upper wall portion **215** extending from the outer end portion **212** of the medial foot side lower wall portion **211** in the foot width direction X to be spaced from the body portion **100**. This can suppress collapsing of the heel portion of the foot in the foot width direction X at the time when the shoe sole **10** hits the ground, thereby improving stability.

In the present embodiment, the heel holding portion **200** further includes the lateral foot side holding portion **220** which faces a portion of the peripheral side surface of the heel portion of the foot on the lateral foot side S**2**. The lateral foot side holding portion **220** includes: a lateral foot side lower wall portion **221** joined to a part of upper surface **102** of the body portion **100** on a lateral foot side S**2**; and a lateral foot side upper wall portion **225** extending from an outer end portion **222** of the lateral foot side lower wall portion **221** in the foot width direction X to be spaced from the body portion **100**. This can improve the stationary fit of a foot of a wearer wearing the shoe **1** having the shoe sole **10**.

In the present embodiment, at the boundary position (second boundary position P**2**) between the middle foot portion **10**M and the rear foot portion **10**R, the medial foot side holding portion **210** is larger in dimension in the foot width direction X than the lateral foot side holding portion **220**. This can appropriately improve the stationary fit of a foot of a wearer wearing the shoe **1** having the shoe sole **10**, and also can improve the stability by suppressing the collapse of the heel portion of the foot toward the medial foot side S**1** in the foot width direction X that occurs when the shoe sole **10** hits the ground.

Further, in the present embodiment, the average thickness of the medial foot side holding portion **210** from the inner side surface **210**A to the outer side surface **210**B is larger than the average thickness of the lateral foot side holding portion **220** from the inner side surface **220**A to the outer side surface **220**B. This can appropriately improve the stationary fit of a foot of a wearer wearing the shoe **1** having the shoe sole **10**, and can also improve the stability by suppressing the collapse of the heel portion of the foot toward the medial foot side S**1** that occurs when the shoe sole **10** hits the ground.

In the present embodiment, in the middle foot portion **10**M, the maximum dimension M**1** of the medial foot side holding portion **210** in the up-down direction Z is larger than the maximum dimension M**2** of the lateral foot side holding portion **220** in the up-down direction Z. This can appropriately improve the stationary fit of a foot of a wearer wearing the shoe **1** having the shoe sole **10**, and also can improve the stability by suppressing the collapse of the heel portion of the foot that occurs when the shoe sole **10** hits the ground.

In the present embodiment, the front end portion **210**C of the medial foot side holding portion **210** is located forward of the front end portion **220**C of the lateral foot side holding portion **220** in the front-rear direction L. This can appropriately improve the stationary fit of a foot of a wearer wearing the shoe **1** having the shoe sole **10**, and also can improve the

stability by suppressing the collapse of the heel portion of the foot toward the medial foot side S1 that occurs when the shoe sole **10** hits the ground.

In the present embodiment, when viewed in the foot length direction Y, the length in which the medial foot side lower wall portion **211** is joined to the body portion **100** is longer than the length in which the lateral foot side lower wall portion **221** is joined to the body portion **100**. This can appropriately improve the stationary fit of a foot of a wearer wearing the shoe **1** having the shoe sole **10**, and also can improve the stability by suppressing the collapse of the heel portion of the foot toward the medial foot side S1 that occurs when the shoe sole **10** hits the ground.

In the present embodiment, the outer side surface **211**B of the medial foot side lower wall portion **211** is inclined downward from the outer end portion **212** of the medial foot side lower wall portion **211** in the foot width direction X toward the center of the shoe sole **10** in the foot width direction X. In a region of the rear foot portion **10**R on the medial foot side S1 where the medial foot side holding portion **210** and the high hardness portion **120** are aligned in the up-down direction Z, the upper surface **121** of the high hardness portion **120** is inclined downward toward the center in the foot width direction X. Thereby, the low hardness portion **110** readily mitigates the impact that occurs when the shoe sole **10** hits the ground and is transmitted from the ground contact surface **101** of the shoe sole **10** on the medial foot side S1 upward toward the center of the shoe sole **10** in the foot width direction X through the high hardness portion **120** and the heel holding portion **200**.

Further, in the present embodiment, when the boundary position (second boundary position P2) between the middle foot portion **10**M and the rear foot portion **10**R is viewed in the foot length direction Y, the heel holding portion **200** is spaced apart at a distance from point O at which the center of the shoe sole **10** in the foot width direction X intersects with the upper surface **102** of the low hardness portion **110**, such that the distance is 50% or more of the radius of the imaginary circle circumscribing the shoe sole **10** centering on point O. This can reduce the region in which the heel holding portion **200** overlaps with the wearer's foot when viewed in the up-down direction Z, thereby allowing an improved fit to the bottom portion of the heel portion of the wearer.

In the present embodiment, when the boundary position (second boundary position P2) between the middle foot portion **10**M and the rear foot portion **10**R is viewed in foot length direction Y, the high hardness portion **120** is spaced apart at a distance from point O at which the center of the shoe sole **10** in the foot width direction X intersects with the upper surface **102** of the low hardness portion **110**, such that the distance is 60% or more of the radius of the imaginary circle circumscribing the shoe sole **10** centering on point O. This can reduce the region in which the high hardness portion **120** overlaps with the wearer's foot when viewed in the up-down direction Z, thereby reducing the region that receives an impact transmitted in the up-down direction Z through the high hardness portion **120** when the shoe sole **10** hits the ground. This enables an improved fit on the foot of the wearer.

In the present embodiment, in the region of the rear foot portion **10**R on the medial foot side S1 where the medial foot side holding portion **210** and the high hardness portion **120** are aligned in the up-down direction Z, the upper surface **121** of the high hardness portion **120** is located along the outer side surface **210**B of the medial foot side wall portion **211**. Thereby, the low hardness portion **110** can substantially uniformly mitigate the impact occurring when the shoe sole **10** hits the ground and transmitted from the ground contact surface **101** of the shoe sole **10** on the medial foot side S1 upward toward the center of the shoe sole **10** in the foot width direction X through the high hardness portion **120** and the heel holding portion **200**.

Modifications

The following describes a shoe sole according to modifications of one embodiment of the present invention. In the description of a shoe sole according to each of the modifications, the same configuration as that of the shoe sole **10** according to one embodiment of the present invention will not be described.

FIG. **10** is a cross-sectional view of a shoe sole according to a first modification of one embodiment of the present invention, when seen from the front at the second boundary position. FIG. **10** and FIGS. **11** to **18** (which will be described later) each show a cross-sectional view similar to that of the shoe sole **10** according to one embodiment of the present invention shown in FIG. **8**. As shown in FIG. **10**, in a shoe sole **10***a* according to the first modification of one embodiment of the present invention, the high hardness portion **120** is located below the upper portion **110**A of the low hardness portion **110** entirely on the medial foot side S1 in the foot width direction X, but is not located below the lower portion **110**B. Further, the high hardness portion **120** is located closer to the center of the shoe sole **10***a* in the foot width direction X than the medial foot side holding portion **210**.

FIG. **11** is a cross-sectional view of a shoe sole according to a second modification of one embodiment of the present invention, when seen from the front at the second boundary position. As shown in FIG. **11**, a shoe sole **10***b* according to the second modification of one embodiment of the present invention does not include an outsole. In other words, in the shoe sole **10***b*, a lower surface **111** of the low hardness portion **110** and a lower surface **123** of the high hardness portion **120** constitute the ground contact surface **101** of the body portion **100**.

FIG. **12** is a cross-sectional view of a shoe sole according to a third modification of one embodiment of the present invention, when seen from the front at the second boundary position. As shown in FIG. **12**, in a shoe sole **10***c* according to the third modification of one embodiment of the present invention, the medial foot side lower wall portion **211** of the medial foot side holding portion **210** is located only below the medial foot side upper wall portion **215**, but does not extend in the foot width direction X.

FIG. **13** is a cross-sectional view of a shoe sole according to a fourth modification of one embodiment of the present invention, when seen from the front at the second boundary position. As shown in FIG. **13**, in a shoe sole **10***d* according to the fourth modification of one embodiment of the present invention, the medial foot side holding portion **210** and the lateral foot side holding portion **220** are continuous to each other at the second boundary position P2. In other words, in the shoe sole **10***d* according to the present modification, the heel holding portion **200** covers the entire upper surface **102** of the body portion **100** at the second boundary position P2.

FIG. **14** is a cross-sectional view of a shoe sole according to a fifth modification of one embodiment of the present invention, when seen from the front at the second boundary position. As shown in FIG. **14**, in a shoe sole **10***e* according to the fifth modification of one embodiment of the present invention, the lateral foot side holding portion **220** includes only the lateral foot side lower wall portion **221** but does not include a lateral foot side upper wall portion.

FIG. **15** is a cross-sectional view of a shoe sole according to a sixth modification of one embodiment of the present invention, when seen from the front at the second boundary position. As shown in FIG. **15**, in a shoe sole **10***f* according to the sixth modification of one embodiment of the present invention, the heel holding portion **200** includes only the medial foot side holding portion **210**, but does not include a lateral foot side holding portion.

FIG. **16** is a cross-sectional view of a shoe sole according to a seventh modification of one embodiment of the present invention, when seen from the front at the second boundary position. As shown in FIG. **16**, in a shoe sole **10***g* according to a seventh modification of one embodiment of the present invention, the high hardness portion **120** is disposed in place of the lower portion **110**B of the low hardness portion **110** in the shoe sole **10** according to one embodiment of the present invention. In other words, in the present modification, also on the lateral foot side S**2**, the high hardness portion **120** is located opposite to the heel holding portion **200** when viewed from the low hardness portion **110**.

FIG. **17** is a cross-sectional view of a shoe sole according to an eighth modification of one embodiment of the present invention, when seen from the front at the second boundary position. As shown in FIG. **17**, in a shoe sole **10***h* according to the eighth modification of one embodiment of the present invention, the upper surface **121** of the high hardness portion **120** is bent at a corner portion **124** when viewed in the foot length direction Y. When viewed in the foot length direction Y, at the second boundary position P**2**, the corner portion **124** is located closer to the center of the shoe sole **10** than the medial foot side upper wall portion **215** of the medial foot side holding portion **210** in the foot width direction X. A portion of the upper surface **121** that is located opposite to the center side of the shoe sole **10** when viewed from corner the portion **124** extends in the foot width direction X.

FIG. **18** is a cross-sectional view of a shoe sole according to a ninth modification of one embodiment of the present invention, when seen from the front at the second boundary position. As shown in FIG. **18**, in a shoe sole **10***i* according to the ninth modification of one embodiment of the present invention, at the second boundary position P**2**, the dimension of the lateral foot side holding portion **220** in the up-down direction Z is substantially the same as the dimension of the medial foot side holding portion **210** in the up-down direction Z.

FIG. **19** is a plan view of a shoe sole according to a tenth modification of one embodiment of the present invention, when seen from above. As shown in FIG. **19**, in a shoe sole **10***j* according to the tenth modification of one embodiment of the present invention, also in the foot length direction Y, the front end portion **210**C of the medial foot side holding portion **210** is located forward of the front end portion **220**C of the lateral foot side holding portion **220**. Further, in the foot length direction Y, the front end portion **220**C of the lateral foot side holding portion **220** is located forward of the center of the middle foot portion **10**M.

FIG. **20** is a plan view of a shoe sole according to an eleventh modification of one embodiment of the present invention, when seen from above. As shown in FIG. **20**, also in a shoe sole **10***k* according to the eleventh modification of one embodiment of the present invention, in the foot length direction Y, the front end portion **210**C of the medial foot side holding portion **210** is located forward of the front end portion **220**C of the lateral foot side holding portion **220**. Further, in the foot length direction Y, the front end portion **210**C of the medial foot side holding portion **210** is located rearward of the center of the middle foot portion **10**M.

FIG. **21** is a cross-sectional view of a shoe sole according to a twelfth modification of one embodiment of the present invention, when seen from the front at the second boundary position. FIG. **22** is a plan view of a shoe sole according to the twelfth modification of one embodiment of the present invention, when seen from above. As shown in FIGS. **21** and **22**, in a shoe sole **10***m* according to the twelfth modification of one embodiment of the present invention, at the second boundary position P**2**, the lateral foot side lower wall portion **221** is located only below the lateral foot side upper wall portion **225**, but does not extend from the outer end portion **222** in the foot width direction X. More specifically, in the entire middle foot portion **10**M, the lateral foot side lower wall portion **221** is located only below the lateral foot side upper wall portion **225**, but does not extend from the outer end portion **222** in the foot width direction X. In the present modification, the lateral foot side upper wall portion **225** facilitates tension to act on the upper portion **20**, thereby allowing an improved fit on the foot of the wearer. Further, since the lateral foot side lower wall portion **221** is located in the middle foot portion **10**M as described above, overpronation of the wearer can be further suppressed.

The following further describes the mechanism by which overpronation can be further suppressed in embodiments of the present modification. FIG. **23** is a rear view of the shoe sole according to the twelfth modification of one embodiment of the present invention, showing a first stage in which the shoe sole hits the ground when seen from a rear end side. As shown in FIG. **23**, in the first stage in which a wearer wearing the shoe **1** having the shoe sole **10***m* hits the ground with the shoe sole **10***m*, the shoe sole **10***m* contacts the ground in the state where the shoe sole **10***m* collapses toward the lateral foot side S**2** together with the wearer's foot. Immediately after such a contact with the ground, the wearer's foot (not shown) collapses toward the medial foot side S**1** as indicated by a white arrow in FIG. **23**. At this time, if the lateral foot side lower wall portion **221** extends in the foot width direction X from the outer end portion **222** in the middle foot portion **10**M, the lateral foot side lower wall portion **221** is pressed downward by the wearer's foot that is collapsing toward the medial foot side S**1**. When the lateral foot side lower wall portion **221** is pressed downward, a moment acts to cause the lateral foot side holding portion **220** to entirely collapse toward the medial foot side S**1**. Due to this moment, the lateral foot side upper wall portion **225** presses the wearer's foot toward the medial foot side S**1**. The lateral foot side upper wall portion **225** presses the wearer's foot, thereby accelerating the collapse of the wearer's foot toward the medial foot side S**1**. When the shoe sole on the medial foot side S**1** hits the ground in the state where the collapse of the wearer's foot toward the medial foot side S**1** is accelerated, overpronation can occur due to a large inertial force of the foot that is collapsing. However, in the present modification, the lateral foot side lower wall portion **221** is located only below the lateral foot side upper wall portion **225** in the entire middle foot portion **10**M. Thus, the wearer's foot that is collapsing toward the medial foot side S**1** suppresses the lateral foot side lower wall portion **221** from being pressed downward. Accordingly, the above-mentioned moment is less likely to occur in the lateral foot side holding portion **220**, thereby also suppressing the acceleration of the collapse of the wearer's foot toward the medial foot side S**1**. This reduces the inertial force that occurs when the wearer's foot collapses toward the medial foot side S**1**, so that overpronation can be further suppressed.

As shown in FIGS. **22** and **23**, in a part of the lateral foot side holding portion **220** that is connected to the medial foot side holding portion **210** at the rear end of the shoe sole **10***m*, the lateral foot side lower wall portion **221** can extend from the outer end portion **222** in the foot width direction X. In this embodiment, the lateral foot side lower wall portion **221** is disposed so as to be continuous to the medial foot side lower wall portion **211** at the rear end of the shoe sole **10***m*. Further, when viewed in the up-down direction Z, the lateral foot side lower wall portion **221** can be located at a position even slightly closer to the region on the lateral foot side S**2** than the position at which the heel holding portion **200** intersects with the center line SC or the heel center HC. More specifically, when viewed in the up-down direction Z, a part of the lateral foot side lower wall portion **221** that is continuous to the medial foot side lower wall portion **211** at the rear end of the shoe sole **10***m* is located in a rearward region of two regions defined by the heel center HC and an imaginary line XC, but is not located in a forward region of the two regions. The imaginary line XC is an imaginary straight line that extends rearward on the lateral foot side S**2** from an intersection point between the second boundary position P**2** and the heel center HC, when viewed in the up-down direction Z. The angle formed between the heel center HC and the imaginary line XC is less than ½ of the angle formed between the heel center HC and the second boundary position P**2**.

In each of the above-described modifications, the low hardness portion **110** is made of a foam material. The high hardness portion **120** is located opposite to the heel holding portion **200** when viewed from the low hardness portion **110**. The high hardness portion **120** is made of a foam material that is harder than the foam material of the low hardness portion **110**. The heel holding portion **200** is made of a resin harder than each of the foam material of the low hardness portion **110** and the foam material of the high hardness portion **120**. On the medial foot side S**1** in the rear foot portion **10**R, the low hardness portion **110** is located between the heel holding portion **200** and the high hardness portion **120** in the up-down direction Z. Thus, when the shoe sole hits the ground, overpronation can be suppressed by the high hardness portion **120** and the heel holding portion **200** to thereby improve the stability of the foot, and also, local impact transmitted to the heel portion of the wearer of the shoe through the high hardness portion **120** can be mitigated by the low hardness portion **110**.

Although embodiments of the present invention have been described and illustrated in detail, it is clearly understood that the same is by way of illustration and example only and is not to be taken by way of limitation, the scope of the present invention being interpreted by the terms of the appended claims.

What is claimed is:

1. A shoe sole comprising:

a front foot portion configured to support a toe portion and a ball portion of a foot;

a middle foot portion configured to support an arch portion of the foot;

a rear foot portion configured to support a heel portion of the foot,

the front foot portion, the middle foot portion, and the rear foot portion being connected in a foot length direction;

a body portion having a ground contact surface; and

a heel holding portion located opposite to the ground contact surface of the body portion and configured to hold the heel portion of the foot at least from a medial foot side,

the body portion including

a first low hardness portion being a foam material,

a second low hardness portion,

a third low hardness portion, and

a high hardness portion being a foam material harder than the foam material of the first low hardness portion,

the heel holding portion being a resin that is harder than both the foam material of the first low hardness portion and the foam material of the high hardness portion,

on the medial foot side in the rear foot portion, the first low hardness portion being disposed between the heel holding portion and the high hardness portion in an up-down direction,

at the rear foot portion, the heel holding portion is spaced apart in a vertical direction from the high hardness portion with the first low hardness portion being disposed therebetween,

the second low hardness portion being disposed laterally adjacent the high hardness portion and below the first low hardness portion,

the third low hardness portion being disposed laterally adjacent and spaced from the second low hardness portion so as to form a gap between the second low hardness portion and the third low hardness portion, and

the high hardness portion protrudes laterally further outward than the heel holding portion on the medial foot side of the rear foot portion and forms an outer surface of the body portion that extends in the foot length direction from the middle foot portion into contact with the second low hardness portion at a rear end face that is exposed on the medial foot side and is located at the rear foot portion, with the high hardness portion located further outward on the medial foot side than the second low hardness portion, and with the second low hardness portion located further rearward in the foot length direction than the rear end face of the high hardness portion.

2. The shoe sole according to claim **1**, wherein

the high hardness portion is in direct contact with the first low hardness portion, and

at the rear foot portion, the first low hardness portion, the high hardness portion, and the heel holding portion are aligned in the vertical direction and a dimension of the first low hardness portion in the vertical direction is between 20% to 50% of a dimension of the high hardness portion in the vertical direction.

3. The shoe sole according to claim **1**, wherein

the heel holding portion includes a medial foot side holding portion configured to face a portion of a peripheral side surface of the heel portion of the foot, the portion being located on the medial foot side, and

the medial foot side holding portion has

a medial foot side lower wall portion joined to a part of an upper surface of the body portion, the part of the upper surface of the body portion being located on the medial foot side, and

a medial foot side upper wall portion extending from an outer end portion of the medial foot side lower wall portion in a foot width direction to be spaced from the body portion.

4. The shoe sole according to claim **3**, wherein

the heel holding portion further includes a lateral foot side holding portion configured to face a portion of the peripheral side surface of the heel portion of the foot, the portion being disposed on a lateral foot side, and

the lateral foot side holding portion has

a lateral foot side lower wall portion joined to a part of the upper surface of the body portion, the part being disposed on the lateral foot side, and

a lateral foot side upper wall portion extending from an outer end portion of the lateral foot side lower wall portion in the foot width direction to be spaced from the body portion.

5. The shoe sole according to claim **4**, wherein, at the rear foot portion, the medial foot side holding portion is larger in the foot width direction than the lateral foot side holding portion.

6. The shoe sole according to claim **4**, wherein an average thickness of the medial foot side holding portion from an inner side surface to an outer side surface is larger than an average thickness of the lateral foot side holding portion from an inner side surface to an outer side surface.

7. The shoe sole according to claim **4**, wherein, in the middle foot portion, the medial foot side holding portion has a larger maximum dimension in the up-down direction than the lateral foot side holding portion.

8. The shoe sole according to claim **4**, wherein a front end portion of the medial foot side holding portion is disposed forward of a front end portion of the lateral foot side holding portion in a front-rear direction.

9. The shoe sole according to claim **4**, wherein, when viewed in the foot length direction, a length in which the medial foot side lower wall portion is joined to the body portion is longer than a length in which the lateral foot side lower wall portion is joined to the body portion.

10. The shoe sole according to claim **3**, wherein

an outer side surface of the medial foot side lower wall portion is inclined downward from the outer end portion of the medial foot side lower wall portion in the foot width direction toward a center position of the shoe sole in the foot width direction, and

in a region of the rear foot portion on the medial foot side where the medial foot side holding portion and the high hardness portion are aligned in the vertical direction, an upper surface of the high hardness portion is inclined downward toward the center position of the shoe sole in the foot width direction.

11. The shoe sole according to claim **3**, wherein at the rear foot portion, the heel holding portion is spaced apart at a distance from a center position of the shoe sole in the foot width direction.

12. The shoe sole according to claim **3**, wherein at the rear foot portion, the high hardness portion is spaced apart at a distance from a center position of the shoe sole in the foot width direction.

13. The shoe sole according to claim **3**, wherein, in a region of the rear foot portion on the medial foot side where the medial foot side holding portion and the high hardness portion are aligned in the up-down direction, an upper surface of the high hardness portion is located along an outer side surface of the medial foot side lower wall portion.

14. A shoe comprising:

the shoe sole according to claim **1**; and

an upper portion located above the shoe sole.

15. The shoe sole according to claim **1**, wherein the first low hardness portion and the second low hardness portion are formed from different materials.

16. The shoe sole according to claim **15**, wherein the first low hardness portion and the third low hardness portion are formed from different materials.

17. The shoe sole according to claim **1**, wherein the body portion includes a shock absorber disposed between the first low hardness portion and the third low hardness portion in the vertical direction.

18. A shoe sole comprising:

a front foot portion configured to support a toe portion and a ball portion of a foot;

a middle foot portion configured to support an arch portion of the foot;

a rear foot portion configured to support a heel portion of the foot,

the front foot portion, the middle foot portion, and the rear foot portion being connected in a foot length direction;

a body portion having a ground contact surface; and

a heel holding portion located opposite to the ground contact surface of the body portion and configured to hold the heel portion of the foot at least from a medial foot side,

the body portion including

a low hardness portion being a foam material, and

a high hardness portion being a foam material harder than the foam material of the low hardness portion,

the heel holding portion being a resin that is harder than both the foam material of the low hardness portion and the foam material of the high hardness portion, and having an Asker D hardness between 55 degrees and 70 degrees,

on the medial foot side in the rear foot portion, the low hardness portion being disposed between the heel holding portion and the high hardness portion in an up-down direction,

the heel holding portion including an inner end portion in the foot width direction,

at the rear foot portion, the inner end portion is spaced apart in a vertical direction from the high hardness portion with the low hardness portion being disposed therebetween, and

the high hardness portion contacts the low hardness portion at a rear end face that is inclined downward in the rearward direction and exposed when viewed from the medial foot side, wherein

the low hardness portion has an Asker C hardness of between 20 degrees and 70 degrees and is located further rearward in the foot length direction than the high hardness portion,

the high hardness portion has an Asker C hardness of between 55 degrees and 80 degrees, and

the high hardness portion has an Asker C hardness that is at least 8 degrees higher than an Asker C hardness of the low hardness portion.

19. The shoe sole according to claim **18**, wherein the heel holding portion has Asker D hardness between 60 degrees and 70 degrees.

20. The shoe sole according to claim **18**, wherein the low hardness portion has an Asker C hardness of between 40 degrees and 60 degrees, and

the high hardness portion has an Asker C hardness that is at least 10 degrees higher than an Asker C hardness of the low hardness portion.

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