(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
2 July 2009 (02.07.2009)

PCT

(10) International Publication Number
WO 2009/082164 A1

(51) International Patent Classification:
A43B 7/32 (2006.01) *A43B 21/26* (2006.01)
A43B 13/18 (2006.01) *A43B 21/30* (2006.01)

(21) International Application Number:
PCT/KR2008/007641

(22) International Filing Date:
24 December 2008 (24.12.2008)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:
10-2007-0136160
24 December 2007 (24.12.2007) KR
10-2007-0137104
26 December 2007 (26.12.2007) KR
10-2007-0137105
26 December 2007 (26.12.2007) KR
10-2007-0137107
26 December 2007 (26.12.2007) KR
10-2008-0021388 7 March 2008 (07.03.2008) KR

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(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(54) **Title:** HIGH-HEELED SHOES FOR WOMEN

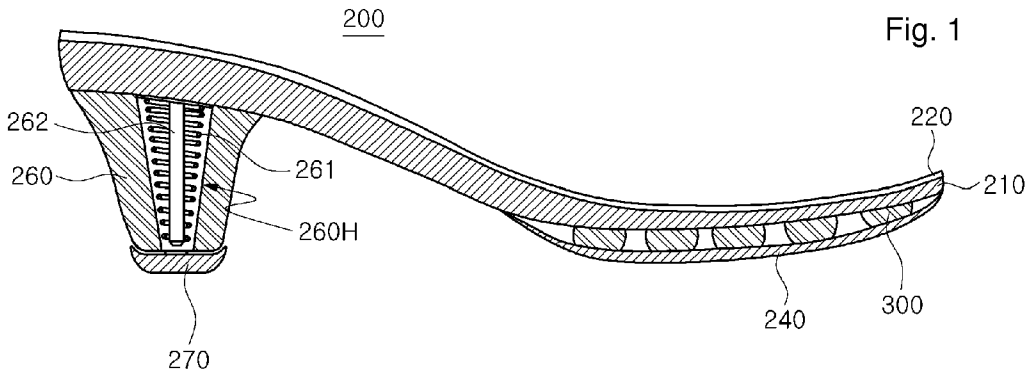


Fig. 1

(57) **Abstract:** The present invention provides a high-heeled shoe for women. The high-heeled shoe includes a midsole (210) which has a convex curved surface from the front portion thereof to the rear portion thereof, an insole (220) which is attached to the entire area of the upper surface of the midsole, an outsole (240) which is attached to the entire area of the lower surface of the midsole, and a heel (260) which is attached to the lower surface of the rear portion of the midsole. Shock absorption units are respectively provided on the lower surface of the front portion of the midsole and in the heel.

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Description

HIGH-HEELED SHOES FOR WOMEN

Technical Field

[1] The present invention relates, in general, to high-heeled shoes for women and, more particularly, to a high-heeled shoe for women which has shock absorption units.

Background Art

[2] Generally, footwear is classified into various kinds of footwear depending on the intended purpose. Typically, as footwear having no special purposes, there are shoes suitable for formal dress, sports shoes, sandals, etc. Of these shoes, high-heeled shoes of interest to women are shoes having high heels. Many women use high-heeled shoes regardless of the user's height. Most high-heeled shoes have no separate shock absorption unit, because the heels are reliably fixed to the shoes, unlike typical sports shoes. If separate shock absorption units are mounted to the high-heeled shoes, the thicknesses of midsoles of the shoes must be varied. In this case, because of variation in the shape of the midsoles, the external appearance of the shoes becomes crude. Thereby, the marketability of the shoes will be reduced.

[3] Furthermore, due to structural characteristics of high-heeled shoes, the interiors of the shoes, particularly, heel portions, are made of a hard material having little elasticity, thus increasing the fatigue of users. In addition, in the case of users who wear the high-heeled shoes for a long period of time, specific portions of the user's feet may become deformed.

Disclosure of Invention

Technical Problem

[4] To date, among various kinds of footwear, women have preferred high-heeled shoes, and many women use high-heeled shoes regardless of a user's height.

[5] However, due to structural characteristics of high-heeled shoes, heel portions of the shoes are made of hard material having little elasticity, thus increasing the fatigue of users. In addition, in the case of users who wear the high-heeled shoes for a long period of time, specific portions of the user's feet may become undesirably deformed.

[6] Therefore, required are high-heeled shoes for women which can markedly mitigate impact transmitted to the soles of a user who wears the shoes, thus reducing the fatigue of the user.

Technical Solution

[7] In order to achieve the above purposes, the inventors of the present invention provide a high-heeled shoe for women in which shock absorption units are installed on a lower surface of a front portion of a midsole and in a heel without deteriorating the external

design of the shoe, thus absorbing impact when the user walks.

Brief Description of Drawings

[8] FIG. 1 is a sectional view illustrating a high-heeled shoe for women having shock absorption units, according to a first embodiment of the present invention;

[9] FIGS. 2 through 4 are sectional views illustrating the construction of the high-heeled shoe having the shock absorption units according to the first embodiment of the present invention;

[10] FIG. 5 is a sectional view illustrating a high-heeled shoe for women having shock absorption units, according to a second embodiment of the present invention;

[11] FIGS. 6 through 8 are sectional views illustrating the construction of the high-heeled shoe having the shock absorption units according to the second embodiment of the present invention;

[12] FIG. 9 is a sectional view illustrating a high-heeled shoe for women having shock absorption units, according to a third embodiment of the present invention;

[13] FIGS. 10 through 12 are sectional views illustrating the construction of the high-heeled shoe having the shock absorption units according to the third embodiment of the present invention;

[14] FIG. 13 is a sectional view illustrating a high-heeled shoe for women having shock absorption units, according to a fourth embodiment of the present invention;

[15] FIGS. 14 through 16 are sectional views illustrating the construction of the high-heeled shoe having the shock absorption units according to the fourth embodiment of the present invention;

[16] FIG. 17 is a sectional view illustrating a high-heeled shoe for women having shock absorption units, according to a fifth embodiment of the present invention;

[17] FIGS. 18 through 20 are sectional views illustrating the construction of the high-heeled shoe having the shock absorption units according to the fifth embodiment of the present invention;

[18] FIG. 21 is a sectional view illustrating a high-heeled shoe for women having shock absorption units, according to a sixth embodiment of the present invention; and

[19] FIGS. 22 through 24 are sectional views illustrating the construction of the high-heeled shoe having the shock absorption units according to the sixth embodiment of the present invention.

Best Mode for Carrying out the Invention

[20] The present invention provides a high-heeled shoe for women having shock absorption units.

Mode for the Invention

[21] The present invention provides a high-heeled shoe for women in which shock

absorption units are respectively provided under a front portion of a midsole and in a heel. Preferably, the shock absorption unit that is provided under the front portion of the midsole includes one selected from a plurality of protrusions, a spring provided in a depression, and a soft cushioning member. The shock absorption unit that is provided in the heel includes a compression spring which has a T-shaped support along the center axis thereof, or two or more magnets which are placed on top of one another at regular intervals such that the same poles thereof face each other.

[22] Hereinafter, embodiments of the present invention will be described. The embodiments are provided for the sake of facilitating understanding of the present invention, therefore the present invention is not limited to these.

[23] FIG. 1 is a view showing a high-heeled shoe for women, according to a first embodiment of the present invention. As shown in the drawing, the high-heeled shoe 200 includes a midsole 210, an insole 220, an outsole 240, a heel 260 and a top lift 270. A plurality of protrusions 300 are attached to a lower surface of a front portion of the midsole 210. The heel 260 has a hole 260H therein. A compression spring 261 which is oriented downwards is installed in the hole 260H. A T-shaped spring support 262 is provided in the compression spring 261 along the center axis thereof.

[24] The construction of the high-heeled shoe according to the first embodiment of the present invention will be described in detail herein below with reference to FIGS. 2 through 4.

[25] Referring to FIG. 2, the midsole 210 is prepared, which has a convex curved surface from the front end of the high-heeled shoe to the rear end thereof. The midsole 210 is made of polyester or polyurethane. Furthermore, the midsole 210 has a hardness ranging from 40 to 60. The insole 220 is attached to the entire upper surface of the midsole 210. The insole 220 is made of nonwoven fabric and has a hardness ranging from 25 to 30.

[26] Referring to FIG. 3, the protrusions 300 are integrally attached to the lower surface of the front portion of the midsole 210. The protrusions 300 are integrally provided with the midsole 210 and form a cushion in upward and downward directions. Impact attributable to pressure applied to the shoe is reduced by the cushion formed in the front portion of the sole of the shoe. The outsole 240 is attached to the front portion of the midsole 210 such that the outsole 240 covers the entire lower surface of the front portion of the midsole 210 on which the protrusions 300 are provided. The outsole 240 is made of polyester or polyurethane and has a hardness ranging from 25 to 30.

[27] Referring to FIG. 4, the heel 250 is attached to a lower surface of a rear portion of the midsole 210. The heel 250 has the hole 260H therein and includes the compression spring 261 which is installed in the hole 260H, and the T-shaped spring support 262 which is provided in the compression spring 261 along the center axis thereof. The top

lift 270 is attached to the lower surface of the heel 260.

[28] The compression spring 261 which is installed in the heel 260 absorbs direct compressive force transmitted from the sole of the user's foot to the heel 260. Impact attributable to pressure applied to the shoe can be reduced by compression of the compression spring. When the user who wears the high-heeled shoes according to the present invention walks, vertical cushioning operation of the compression spring can mitigate impact applied to the heel of the user, thus reducing the fatigue of the user, and it can effectively reduce impact transmitted from the sole of the user's foot.

[29] FIG. 5 is a view illustrating a high-heeled shoe for women, according to a second embodiment of the present invention. As shown in the drawing, the high-heeled shoe 200 according to the second embodiment includes a midsole 210, an insole 220, an outsole 240, a heel 260 and a top lift 270. A plurality of protrusions 300 are attached to a lower surface of a front portion of the midsole 210. The heel 260 has a hole 260H therein. Two or more magnets 264 are installed in the hole 260H, which are placed on top of one another at regular intervals such that the same poles thereof face each other.

[30] The construction of the high-heeled shoe according to the second embodiment of the present invention will be described in detail herein below with reference to FIGS. 6 through 8.

[31] Referring to FIGS. 6 and 7, the high-heeled shoe includes the midsole 210, the insole 220, the protrusions 300 and the outsole 240.

[32] The construction of the midsole 210, the insole 220, the protrusions 300 and the outsole 240 is the same as those of the high-heeled shoe illustrated in FIGS. 2 and 3, therefore further explanation is deemed unnecessary, and the same terms and reference numerals are used to designate the same or similar components.

[33] Referring to FIG. 8, the heel 260 is attached to a lower surface of a rear portion of the midsole 210. The heel 260 has the hole 260H therein. Two or more magnets 264 are installed in the hole 260H and are placed on top of one another at regular intervals such that the same poles thereof face each other. The top lift 270 is attached to the lower surface of the heel 260.

[34] In detail, the magnet 264 comprises a first magnet 262 and a second magnet 263 which is placed above the first magnet 262 at a position spaced apart from the first magnet 262 by a predetermined distance. The same poles of the first and second magnets 262 and 263 face each other. Preferably, the second magnet 263 comprises at least two magnets which are placed on top of one another at regular intervals.

[35] The two or more magnets which are installed in the hole 260H generate cushioning force in the vertical direction. Furthermore, this cushioning force, along with cushioning force generated in the front portion of the sole of the shoe, mitigates impact attributable to pressure applied to the shoe.

[36] FIG. 9 is a view illustrating a high-heeled shoe for women, according to a third embodiment of the present invention. As shown in the drawing, the high-heeled shoe 200 according to the third embodiment includes a midsole 210, an insole 220, an outsole 240, a heel 260 and a top lift 270. Depressions 300H are formed in a lower surface of a front portion of the midsole 210. A spring 400 is installed in each depression 300H. The heel 260 has a hole 260H therein and is provided with a compression spring 261 and a T-shaped spring support 262 which are installed in the hole 260H.

[37] The construction of the high-heeled shoe according to the third embodiment of the present invention will be described in detail herein below with reference to FIGS. 10 through 12.

[38] Referring to FIG. 10, the midsole 210 is prepared, which has a convex curved surface from the front end of the high-heeled shoe to the rear end thereof. Furthermore, the midsole 210 has the depressions 300H in the lower surface of the front portion thereof. The insole 220 is attached to the entire upper surface of the midsole 210.

[39] Referring to FIG. 11, the springs 400 are installed in the respective depressions 300H which are formed in the front portion of the midsole 210. The springs 400 generate cushioning force with respect to the vertical direction. The cushioning force that is generated in the front portion of the sole of the shoe mitigates impact attributable to pressure applied to the shoe. The outsole 240 is attached to the front portion of the midsole 210 having the springs 400 such that the outsole 240 covers the entire lower surface of the front portion of the midsole 210.

[40] Referring to FIG. 12, the heel 250 which has the compression spring 261 and the T-shaped spring support 262 therein is attached to a lower surface of a rear portion of the midsole 210. The top lift 270 is attached to the lower surface of the heel 260.

[41] In the third embodiment, the heel 260 having the compression spring 261 and the T-shaped spring support 262 therein and the top lift 270 have the same construction as those of the high-heeled shoe illustrated in FIG. 4, therefore further explanation is deemed unnecessary, and the same terms and reference numerals are used to designate the same or similar components.

[42] FIG. 13 is a view illustrating a high-heeled shoe for women, according to a fourth embodiment of the present invention. As shown in the drawing, the high-heeled shoe 200 according to the fourth embodiment includes a midsole 210, an insole 220, an outsole 240, a heel 260 and a top lift 270. Depressions 300H are formed in a lower surface of a front portion of the midsole 210. A spring 400 is installed in each depression 300H. The heel 260 has a hole 260H therein and is provided with two or more magnets 264 which are installed in the hole 260H and which are placed on top of one another at regular intervals such that the same poles thereof face each other.

[43] The construction of the high-heeled shoe according to the fourth embodiment of the present invention will be described in detail herein below with reference to FIGS. 14 through 16.

[44] Referring to FIGS. 14 and 15, the high-heeled shoe includes the midsole 210 having the depressions 300H therein, the insole 220, the springs 400 and the outsole 240.

[45] In the fourth embodiment, the midsole 210 having the depressions 300H therein, the insole 220, the springs 400 and the outsole 240 have the same construction as those of the high-heeled shoe illustrated in FIGS. 10 and 11, therefore further explanation is deemed unnecessary, and the same terms and reference numerals are used to designate the same or similar components.

[46] Referring to FIG. 16, the heel 260 which has therein the two or more magnets 264 that are placed on top of one another at regular intervals is attached to a lower surface of a rear portion of the midsole 210. The top lift 270 is attached to the lower surface of the heel 260.

[47] The heel 260 having the two or more magnets 264 according to the fourth embodiment has the same construction as that of the high-heeled shoe illustrated in FIG. 8, therefore further explanation is deemed unnecessary, and the same terms and reference numerals are used to designate the same or similar components.

[48] FIG. 17 is a view illustrating a high-heeled shoe for women, according to a fifth embodiment of the present invention. As shown in the drawing, the high-heeled shoe 200 according to the fifth embodiment includes a midsole 210, an insole 220, an outsole 240, a heel 260 and a top lift 270. A soft cushioning member 500 is attached to a lower surface of a front portion of the midsole 210. The heel 260 has a hole 260H therein and is provided with a compression spring 261 and a T-shaped spring support 262 which are installed in the hole 260H.

[49] The construction of the high-heeled shoe according to the fifth embodiment of the present invention will be described in detail herein below with reference to FIGS. 18 through 20.

[50] Referring to FIG. 18, the high-heeled shoe includes the midsole 210 and the insole 220.

[51] The midsole 210 and the insole 220 according to the fifth embodiment have the same construction as those of the high-heeled shoe illustrated in FIG. 2, therefore further explanation is deemed unnecessary, and the same terms and reference numerals are used to designate the same or similar components.

[52] Referring to FIG. 19, the soft cushioning member 500 is attached to the lower surface of the front portion of the midsole 210. The soft cushioning member 500 is made of polyester or polyurethane and has a hardness ranging from 15 to 30. The soft cushioning member 500 generates cushioning force with respect to the vertical

direction, thus reducing impact attributable to pressure applied to the front portion of the sole of the shoe. The outsole 240 is attached to the entire lower surface of the front portion of the midsole 210 that has the soft cushioning member 500.

[53] Referring to FIG. 20, the heel 260 which has the compression spring 261 and the T-shaped spring support 262 therein is attached to a lower surface of a rear portion of the midsole 210. The top lift 270 is attached to the lower surface of the heel 260.

[54] In the fifth embodiment, the heel 260 having the compression spring 261 and the T-shaped spring support 262 therein and the top lift 270 have the same construction as those of the high-heeled shoe illustrated in FIG. 4, therefore further explanation is deemed unnecessary, and the same terms and reference numerals are used to designate the same or similar components.

[55] FIG. 21 is a view illustrating a high-heeled shoe for women, according to a sixth embodiment of the present invention. As shown in the drawing, the high-heeled shoe 200 according to the sixth embodiment includes a midsole 210, an insole 220, an outsole 240, a heel 260 and a top lift 270. A soft cushioning member 500 is attached to a lower surface of a front portion of the midsole 210. The heel 260 has a hole 260H therein and is provided with two or more magnets 264 which are installed in the hole 260H and placed on top of one another at regular intervals such that the same poles thereof face each other.

[56] The construction of the high-heeled shoe according to the sixth embodiment of the present invention will be described in detail herein below with reference to FIGS. 22 through 24.

[57] Referring to FIGS. 22 and 23, the high-heeled shoe includes the midsole 210, the insole 220, the soft cushioning member 500 and the outsole 240.

[58] The midsole 210, the insole 220, the soft cushioning member 500 and the outsole 240 according to the sixth embodiment have the same construction as those of the high-heeled shoe illustrated in FIGS. 18 and 19, therefore further explanation is deemed unnecessary, and the same terms and reference numerals are used to designate the same or similar components.

[59] Referring to FIG. 24, the heel 260 which has therein the two or more magnets 264 that are placed on top of one another at regular intervals is attached to a lower surface of a rear portion of the midsole 210. The top lift 270 is attached to the lower surface of the heel 260.

[60] The heel 260 having the two or more magnets 264 according to the sixth embodiment has the same construction as that of the high-heeled shoe illustrated in FIG. 8, therefore further explanation is deemed unnecessary, and the same terms and reference numerals are used to designate the same or similar components.

Industrial Applicability

[61] As described above, the present invention provides a high-heeled shoe for women which can mitigate impact applied to the heel of a user, thus reducing fatigue of the user. Therefore, the present invention can be applied to the development of high-heeled shoes having high reliability.

Claims

[1] A high-heeled shoe for women, comprising:
a midsole having a convex curved surface from a front portion thereof to a rear portion thereof;
an insole attached to an entire area of an upper surface of the midsole;
an outsole attached to an entire area of a lower surface of the midsole; and
a heel attached to the lower surface of the rear portion of the midsole,
wherein shock absorption units are respectively provided on the lower surface of the front portion of the midsole and in the heel.

[2] The high-heeled shoe according to claim 1, wherein the shock absorption unit that is provided on the lower surface of the front portion of the midsole comprises one selected from a plurality of protrusions, a spring provided in a depression, and a soft cushioning member.

[3] The high-heeled shoe according to claim 2, wherein the soft cushioning member comprises polyester or polyurethane.

[4] The high-heeled shoe according to claim 2, wherein the soft cushioning member has a hardness ranging from 15 to 30.

[5] The high-heeled shoe according to claim 1, wherein the shock absorption unit that is provided in the heel comprises a compression spring having a T-shaped support along the center axis thereof, or two or more magnets placed on top of one another at regular intervals such that same poles thereof face each other.

[6] The high-heeled shoe according to claim 1, further comprising:
a top lift attached to a lower surface of the heel.

[7] A high-heeled shoe for women, comprising:
a midsole having a convex curved surface from a front portion thereof to a rear portion thereof;
an insole attached to an entire area of an upper surface of the midsole;
a plurality of protrusions attached to a lower surface of the front portion of the midsole, the protrusions being integrated with the midsole;
an outsole attached to an entire area of the lower surface of the front portion of the midsole provided with the protrusions;
a heel attached to the rear portion of the midsole, the heel having a hole therein, with a compression spring provided in the hole and oriented downwards, and a T-shaped spring support provided in the compression spring along a center axis thereof; and
a top lift attached to a lower surface of the heel.

[8] The high-heeled shoe according to claim 7, wherein the midsole comprises

polyester or polyurethane.

[9] The high-heeled shoe according to claim 7, wherein the insole comprises nonwoven fabric.

[10] The high-heeled shoe according to claim 7, wherein the outsole comprises polyester or polyurethane.

[11] A high-heeled shoe for women, comprising:
a midsole having a convex curved surface from a front portion thereof to a rear portion thereof;
an insole attached to an entire area of an upper surface of the midsole;
a plurality of protrusions attached to a lower surface of the front portion of the midsole, the protrusions being integrated with the midsole;
an outsole attached to an entire area of the lower surface of the front portion of the midsole provided with the protrusions;
a heel attached to the rear portion of the midsole, the heel having a hole therein, with a first magnet and a second magnet provided in the hole, wherein the second magnet is placed above the first magnet by a predetermined distance; and
a top lift attached to a lower surface of the heel.

[12] The high-heeled shoe according to claim 11, wherein the midsole comprises polyester or polyurethane.

[13] The high-heeled shoe according to claim 11, wherein the insole comprises nonwoven fabric.

[14] The high-heeled shoe according to claim 11, wherein the outsole comprises polyester or polyurethane.

[15] The high-heeled shoe according to claim 11, wherein the first magnet and the second magnet are oriented such that same poles thereof face each other.

[16] The high-heeled shoe according to claim 15, wherein the second magnet comprises at least two magnets placed on top of one another at regular intervals.

[17] A high-heeled shoe for women, comprising:
a midsole having a convex curved surface from a front portion thereof to a rear portion thereof, with a plurality of depressions formed in a lower surface of the front portion of the midsole;
an insole attached to an entire area of an upper surface of the midsole;
springs provided in the respective depressions of the midsole;
an outsole attached to an entire area of the lower surface of the front portion of the midsole provided with the springs;
a heel attached to the rear portion of the midsole, the heel having a hole therein, with a compression spring provided in the hole and oriented downwards, and a T-shaped spring support provided in the compression spring along a center axis

thereof; and

a top lift attached to a lower surface of the heel.

[18] The high-heeled shoe according to claim 17, wherein the midsole comprises polyester or polyurethane.

[19] The high-heeled shoe according to claim 17, wherein the insole comprises nonwoven fabric.

[20] The high-heeled shoe according to claim 17, wherein the outsole comprises polyester or polyurethane.

[21] A high-heeled shoe for women, comprising:

a midsole having a convex curved surface from a front portion thereof to a rear portion thereof, with a plurality of depressions formed in a lower surface of the front portion of the midsole;

an insole attached to an entire area of an upper surface of the midsole;

springs provided in the respective depressions of the midsole;

an outsole attached to an entire area of the lower surface of the front portion of the midsole provided with the springs;

a heel attached to the rear portion of the midsole, the heel having a hole therein, with a first magnet and a second magnet provided in the hole, wherein the second magnet is placed above the first magnet by a predetermined distance; and

a top lift attached to a lower surface of the heel.

[22] The high-heeled shoe according to claim 21, wherein the midsole comprises polyester or polyurethane.

[23] The high-heeled shoe according to claim 21, wherein the insole comprises nonwoven fabric.

[24] The high-heeled shoe according to claim 21, wherein the outsole comprises polyester or polyurethane.

[25] The high-heeled shoe according to claim 21, wherein the first magnet and the second magnet are oriented such that same poles thereof face each other.

[26] The high-heeled shoe according to claim 25, wherein the second magnet comprises at least two magnets placed on top of one another at regular intervals.

[27] A high-heeled shoe for women, comprising:

a midsole having a convex curved surface from a front portion thereof to a rear portion thereof;

an insole attached to an entire area of an upper surface of the midsole;

a soft cushioning member attached to an entire area of a lower surface of the front portion of the midsole;

an outsole attached to the entire area of the lower surface of the front portion of the midsole provided with the soft cushioning member;

a heel attached to the rear portion of the midsole, the heel having a hole therein, with a compression spring provided in the hole and oriented downwards, and a T-shaped spring support provided in the compression spring along a center axis thereof; and

a top lift attached to a lower surface of the heel.

[28] The high-heeled shoe according to claim 27, wherein the midsole comprises polyester or polyurethane.

[29] The high-heeled shoe according to claim 27, wherein the soft cushioning member comprises polyester or polyurethane.

[30] The high-heeled shoe according to claim 27, wherein the insole comprises nonwoven fabric and has a hardness ranging from 25 to 30.

[31] The high-heeled shoe according to claim 27, wherein the outsole comprises polyester or polyurethane.

[32] A high-heeled shoe for women, comprising:

a midsole having a convex curved surface from a front portion thereof to a rear portion thereof;

an insole attached to an entire area of an upper surface of the midsole;

a soft cushioning member attached to an entire area of a lower surface of the front portion of the midsole;

an outsole attached to the entire area of the lower surface of the front portion of the midsole provided with the soft cushioning member;

a heel attached to the rear portion of the midsole, the heel having a hole therein, with a first magnet and a second magnet provided in the hole, wherein the second magnet is placed above the first magnet by a predetermined distance; and

a top lift attached to a lower surface of the heel.

[33] The high-heeled shoe according to claim 32, wherein the midsole comprises polyester or polyurethane.

[34] The high-heeled shoe according to claim 32, wherein the soft cushioning member comprises polyester or polyurethane.

[35] The high-heeled shoe according to claim 32, wherein the soft cushioning member has a hardness ranging from 15 to 30.

[36] The high-heeled shoe according to claim 32, wherein insole comprises nonwoven fabric.

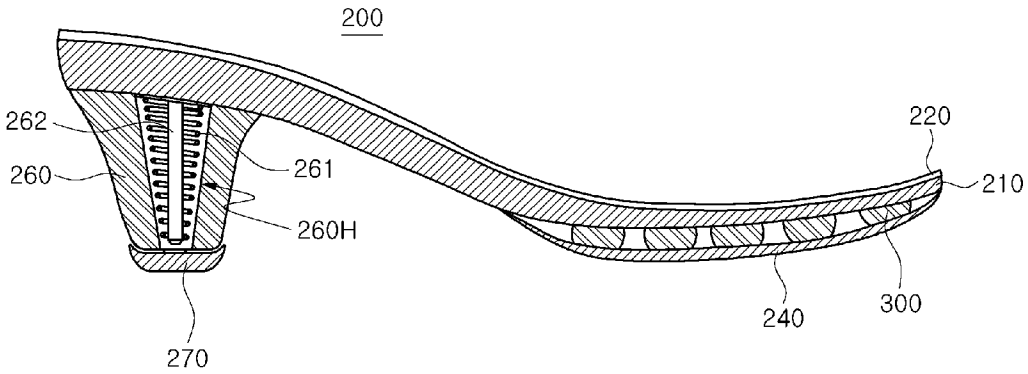
[37] The high-heeled shoe according to claim 32, wherein the outsole comprises polyester or polyurethane.

[38] The high-heeled shoe according to claim 32, wherein the first magnet and the second magnet are oriented such that same poles thereof face each other.

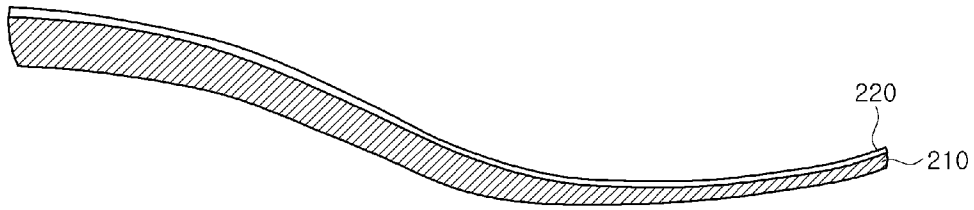
[39] The high-heeled shoe according to claim 38, wherein the second magnet

comprises at least two magnets placed on top of one another at regular intervals.

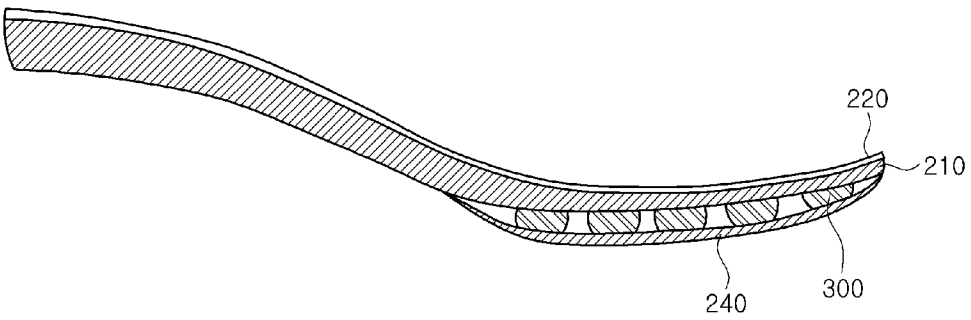
[Fig. 1]



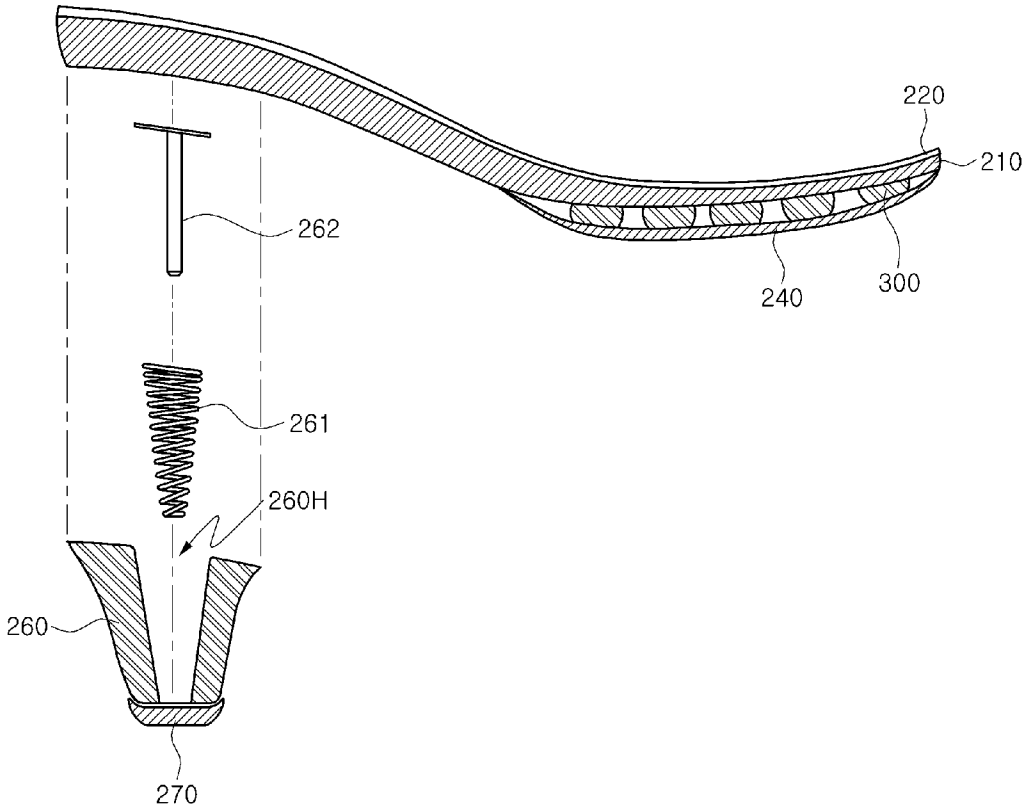
[Fig. 2]



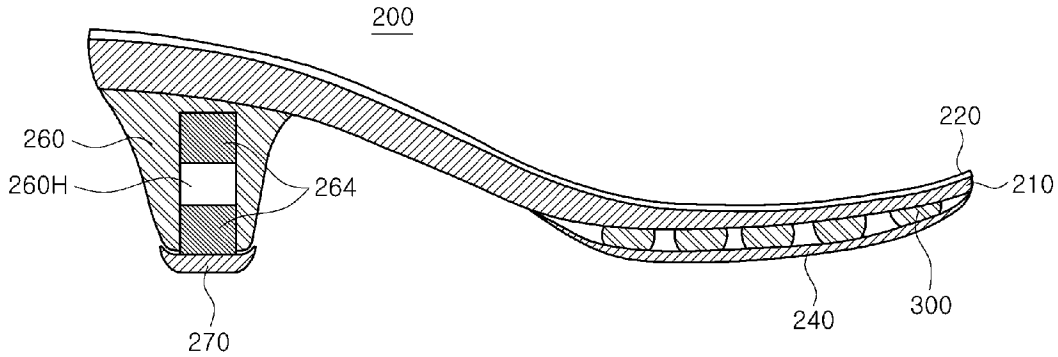
[Fig. 3]



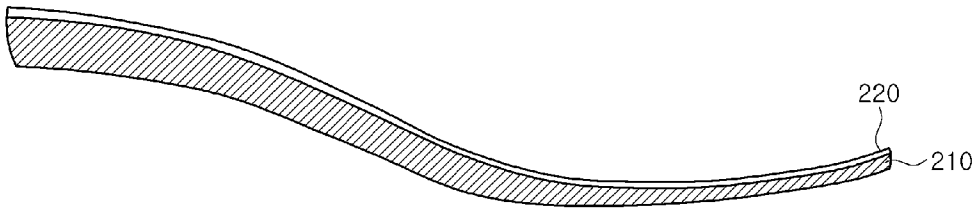
[Fig. 4]



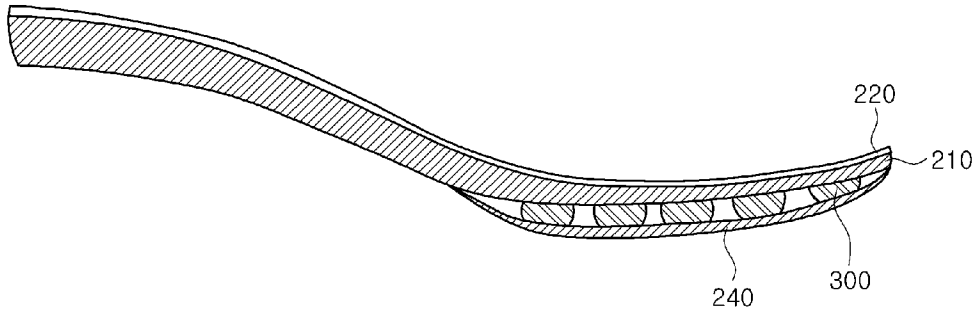
[Fig. 5]



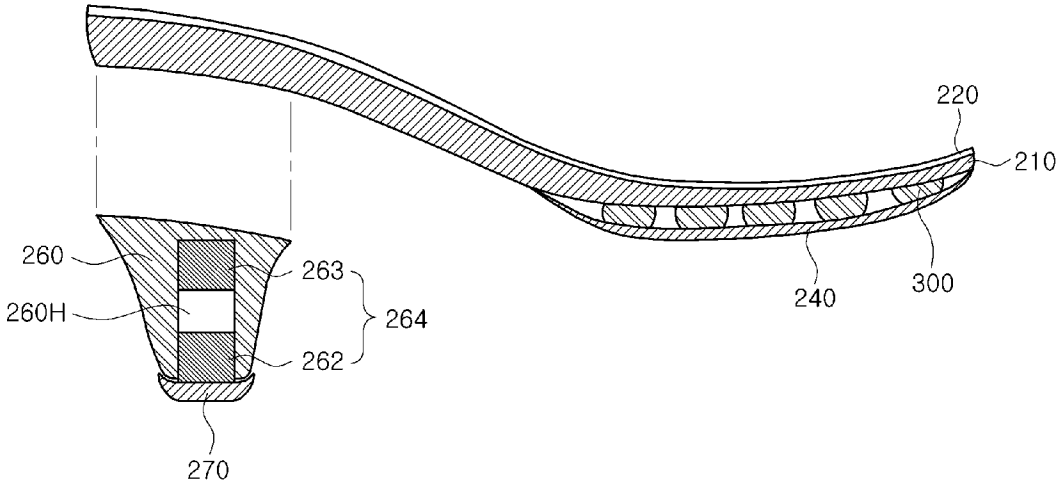
[Fig. 6]



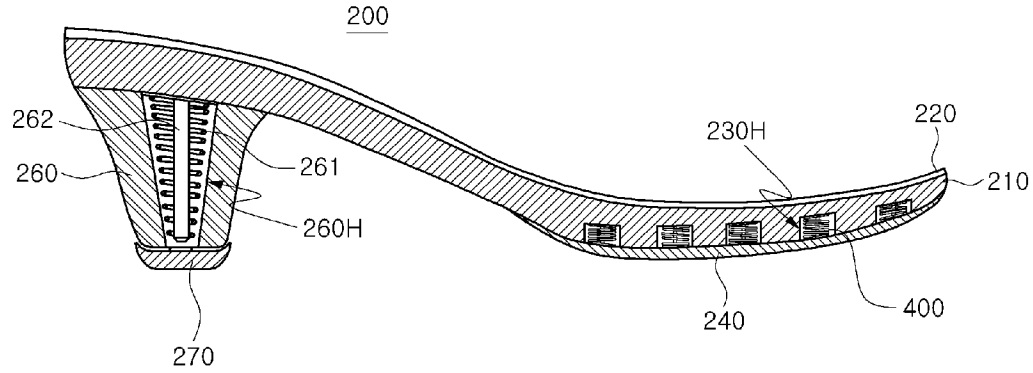
[Fig. 7]



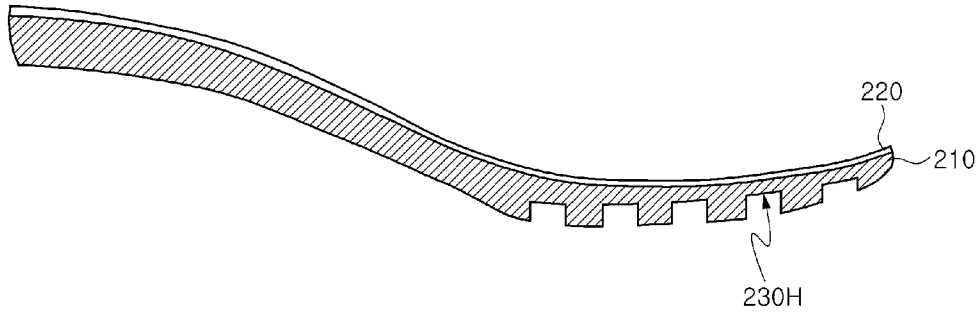
[Fig. 8]



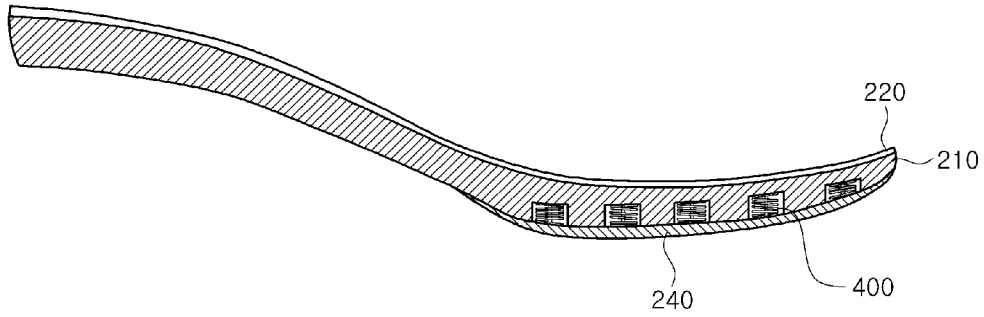
[Fig. 9]



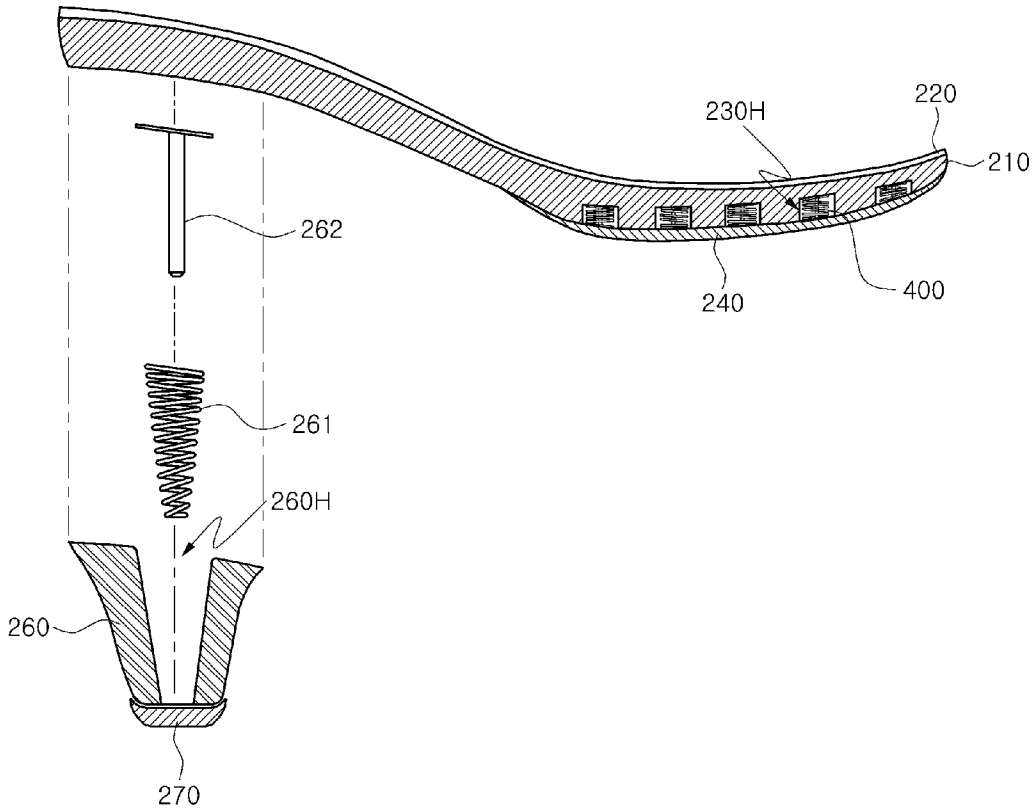
[Fig. 10]



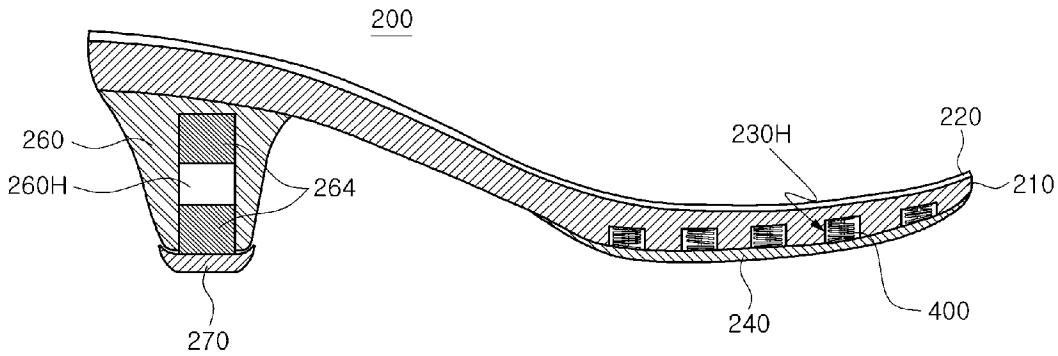
[Fig. 11]



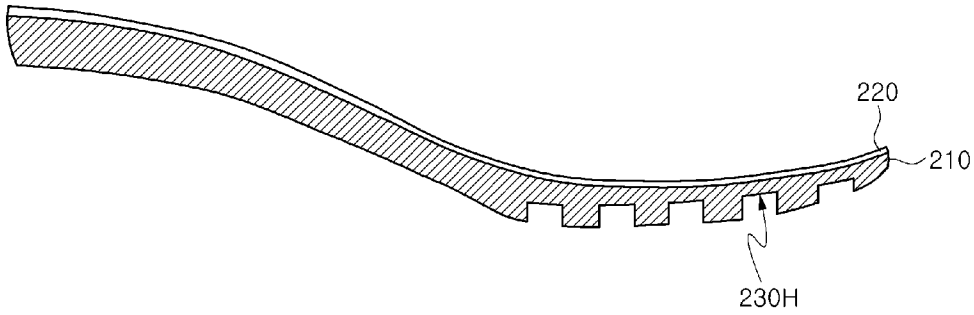
[Fig. 12]



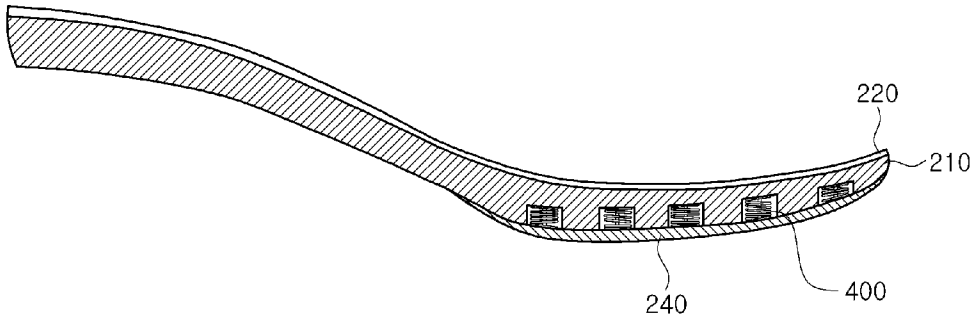
[Fig. 13]



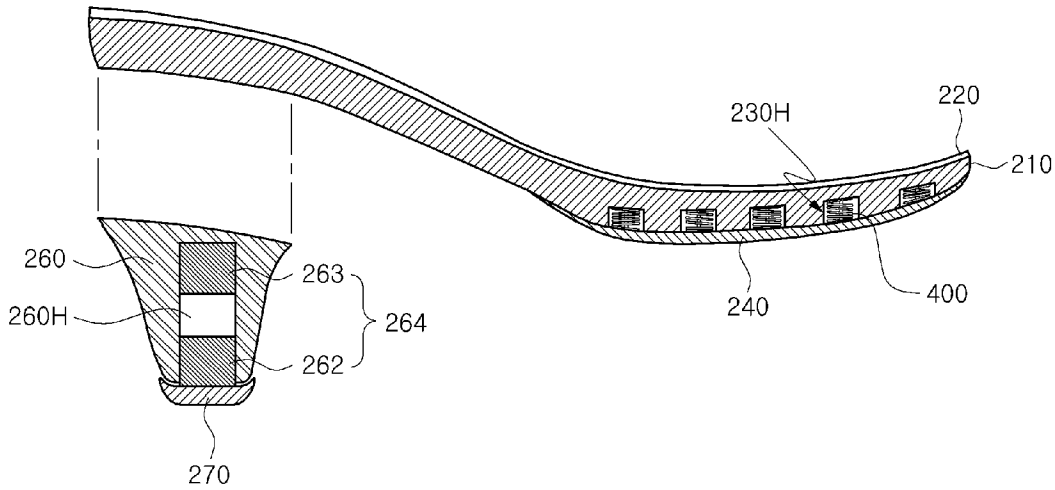
[Fig. 14]



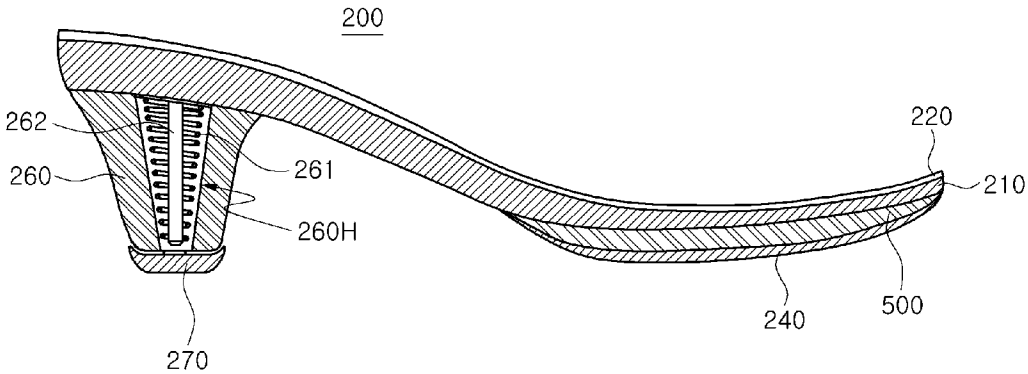
[Fig. 15]



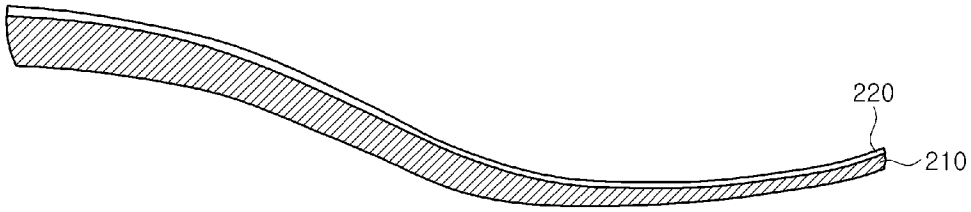
[Fig. 16]



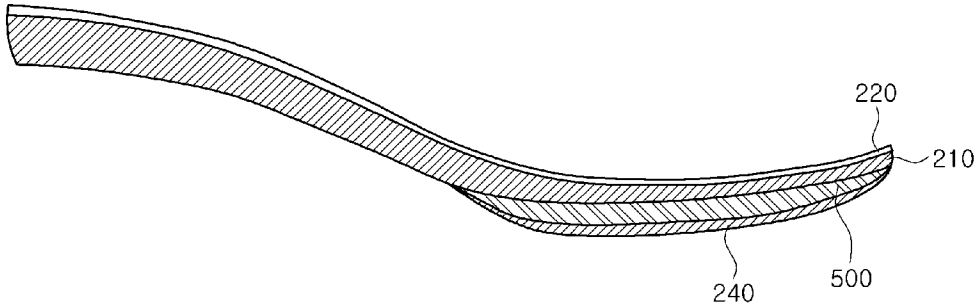
[Fig. 17]



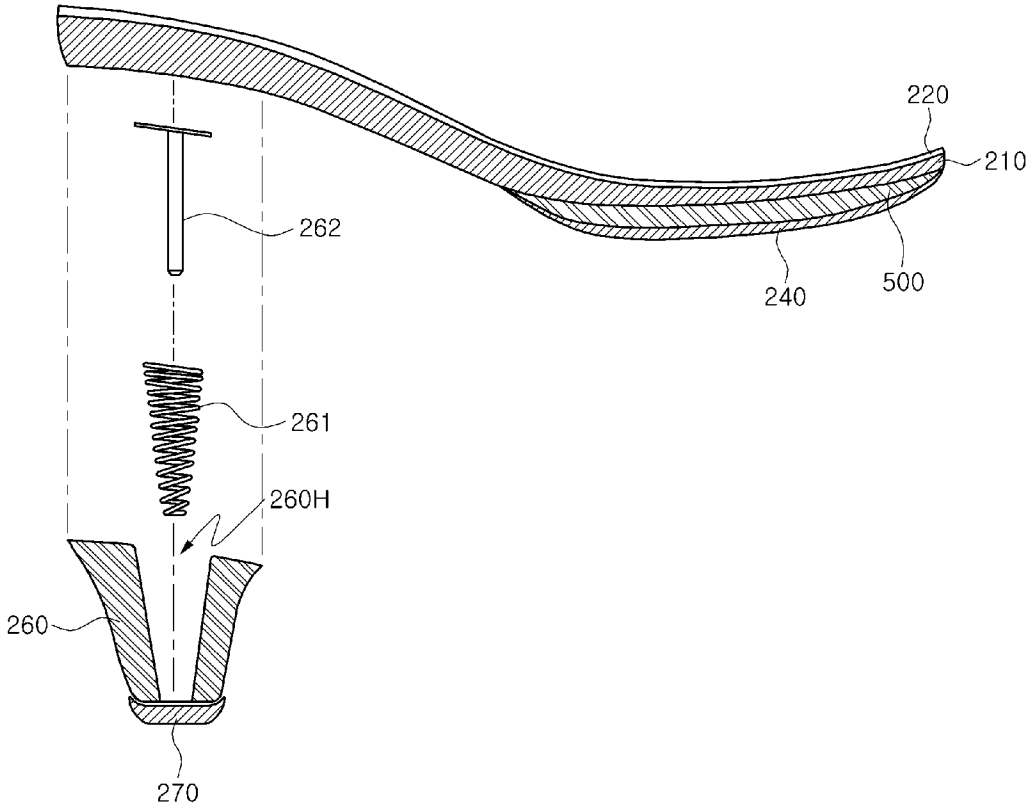
[Fig. 18]



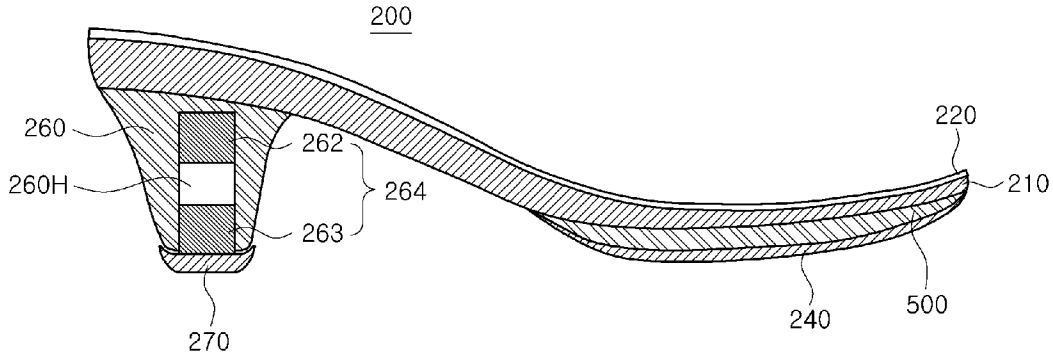
[Fig. 19]



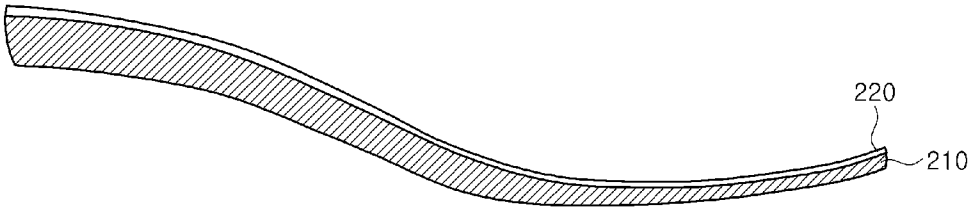
[Fig. 20]



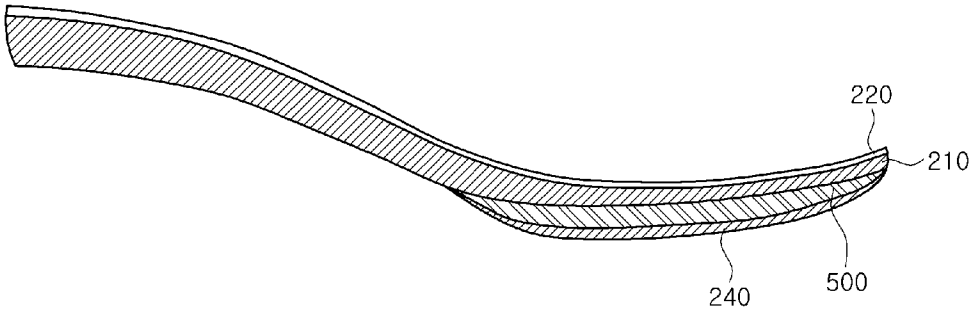
[Fig. 21]



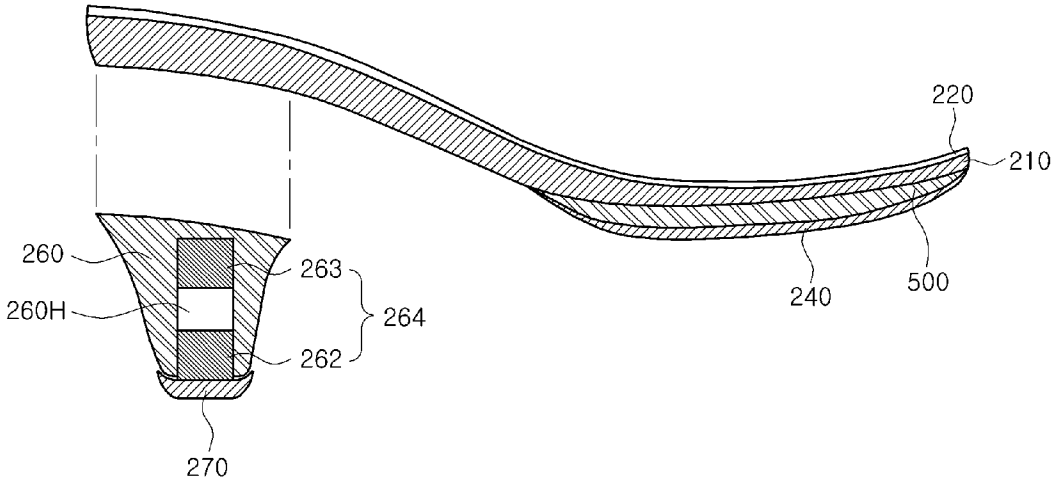
[Fig. 22]



[Fig. 23]



[Fig. 24]



INTERNATIONAL SEARCH REPORT

International application No.
PCT/KR2008/007641

A. CLASSIFICATION OF SUBJECT MATTER

A43B 7/32(2006.01)i, A43B 13/18(2006.01)i, A43B 21/26(2006.01)i, A43B 21/30(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC A43B 7/32

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
KOREAN UTILITY MODELS AND APPLICATIONS FOR UTILITY MODELS SINCE 1975
JAPANESE UTILITY MODELS AND APPLICATIONS FOR UTILITY MODELS SINCE 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKIPASS, PAJ "Keyword:

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	KR 10-0786556 B1 (Lee, H.H.) 21 December 2007 See abstract and figures	1-6, 21-39
Y	KR 20-0169388 Y1 (Ilsung Int. Co. Ltd.) 15 February 2000 See figures	1- 6, 11-16, 21-26, 32-39
Y	KR 10-0584527 B1 (Lee, H.H.) 30 May 2006 See abstract and figures	2, 7-20
Y	KR 20-0374381 Y1 (Seo, J.D.) 29 January 2005 See figures	1-10, 17-20, 27-31

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
26 MAY 2009 (26.05.2009)	**02 JUNE 2009 (02.06.2009)**
Name and mailing address of the ISA/KR Korean Intellectual Property Office Government Complex-Daejeon, 139 Seonsa-ro, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer PARK Hamyong Telephone No. 82-42-481-8409

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2008/007641

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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KR 20-0169388 Y1	19.11.1999	None	
KR 10-0584527 B1	23.05.2006	EP 1824353 A1	29.08.2007
		JP 2008-523882	10.07.2008
		US 2009-0056165 A1	05.03.2009
		WO 2006-065047 A1	22.06.2006
KR 20-0374381 Y1	29.01.2005	None	