



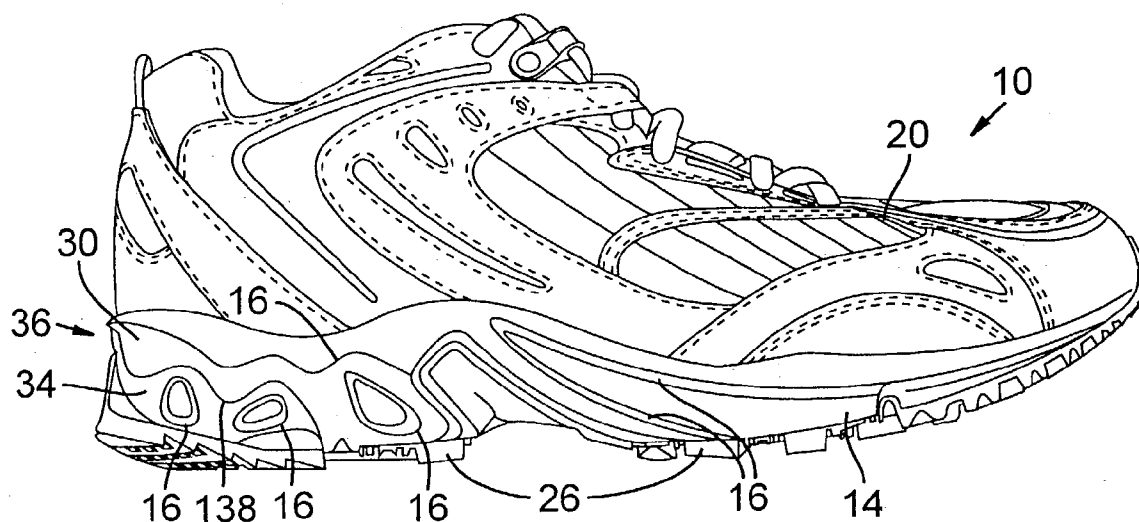
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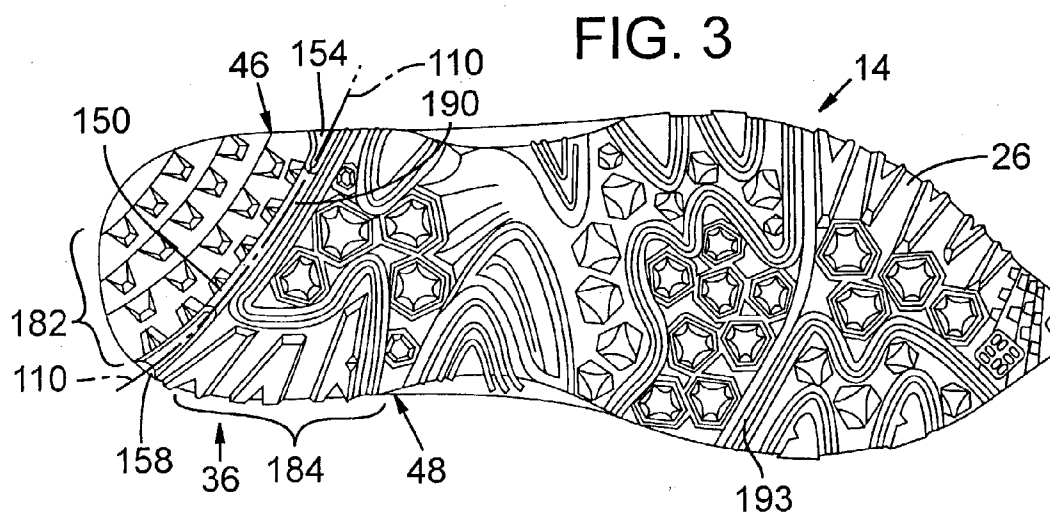
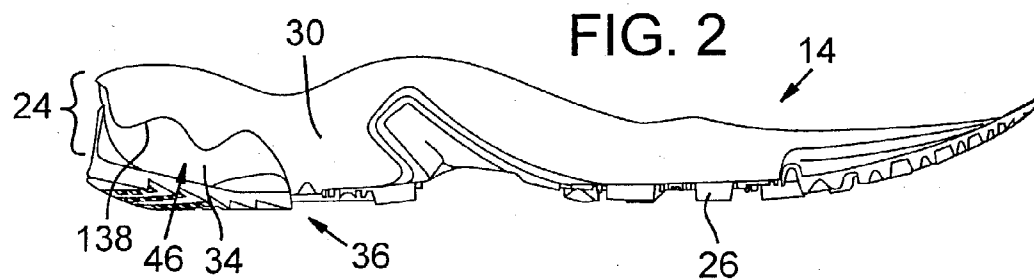
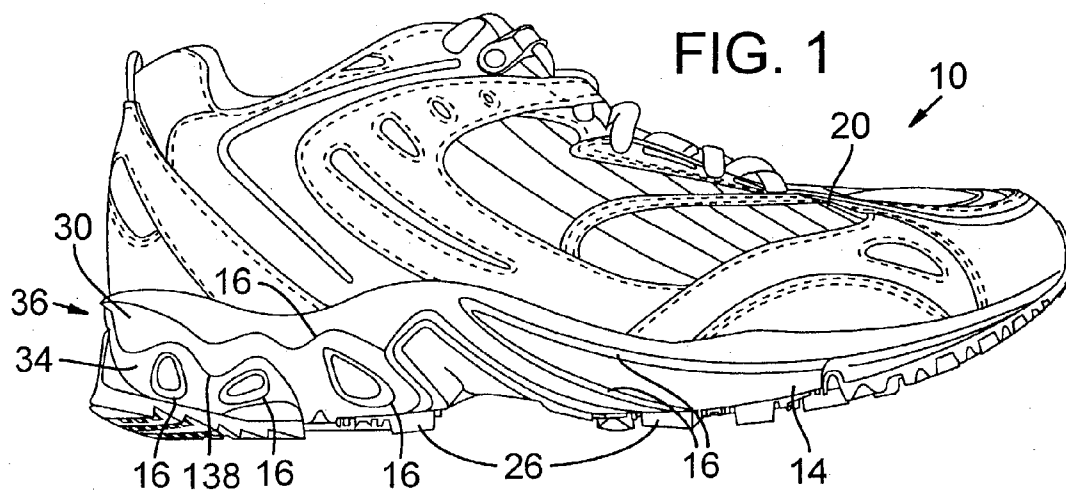
(19) **United States**(12) **Patent Application Publication**
Laska(10) **Pub. No.: US 2004/0154188 A1**(43) **Pub. Date: Aug. 12, 2004**(54) **FOOTWEAR WITH DUAL-DENSITY
MIDSOLE AND DECELERATION ZONES**(52) **U.S. Cl. 36/25 R; 36/31**(75) **Inventor: Daniel S. Laska, Portland, OR (US)**(57) **ABSTRACT**

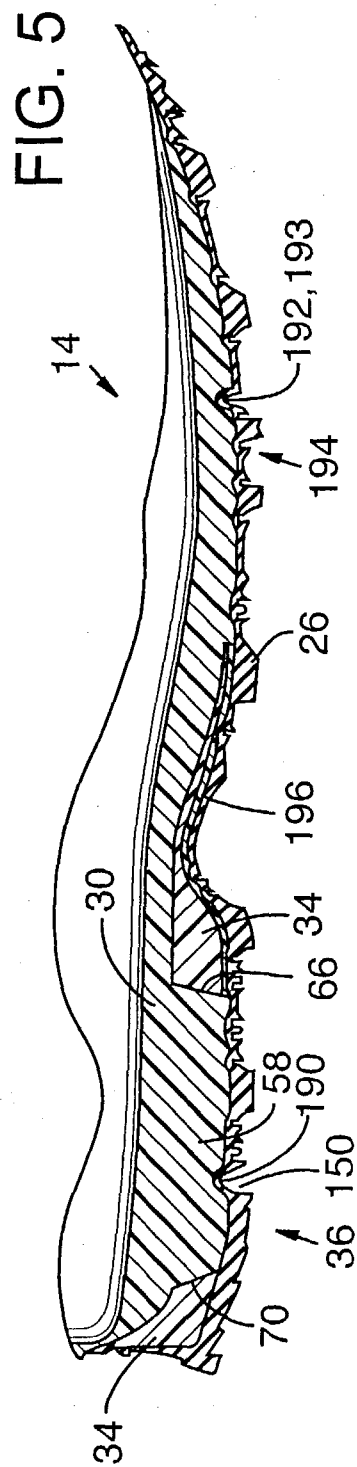
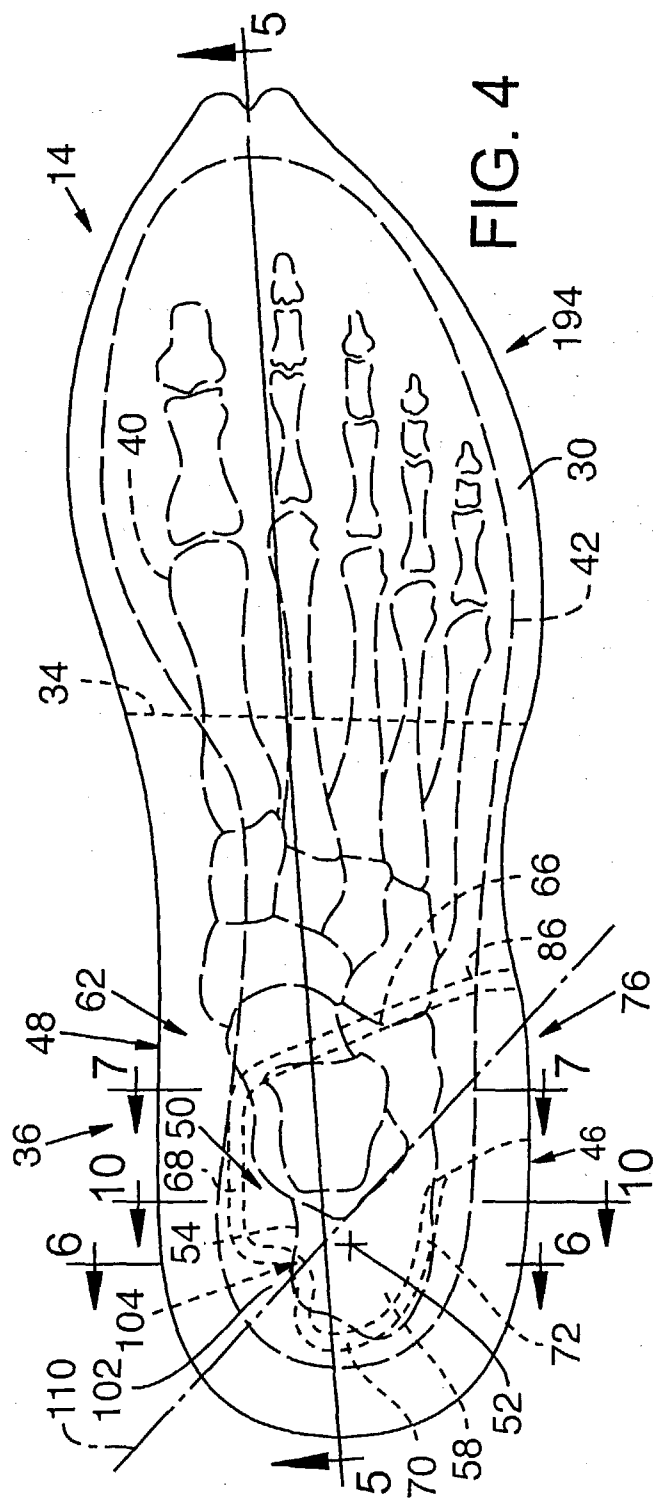
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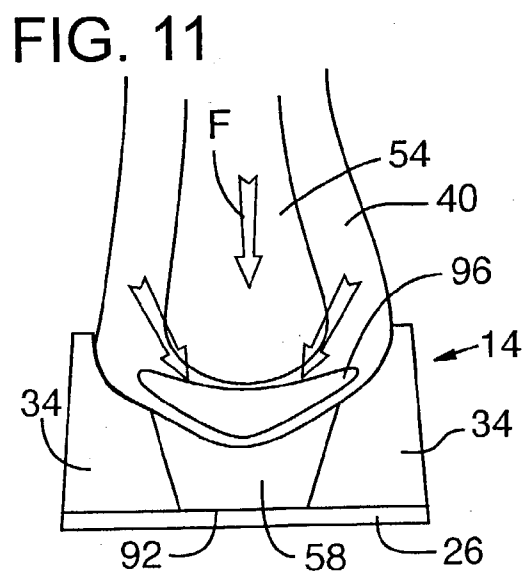
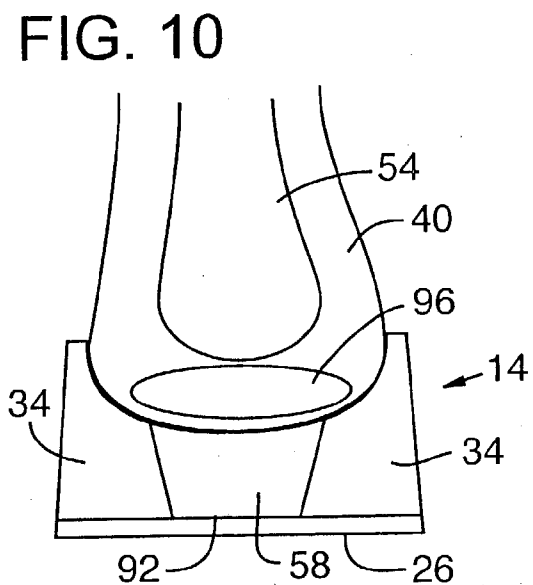
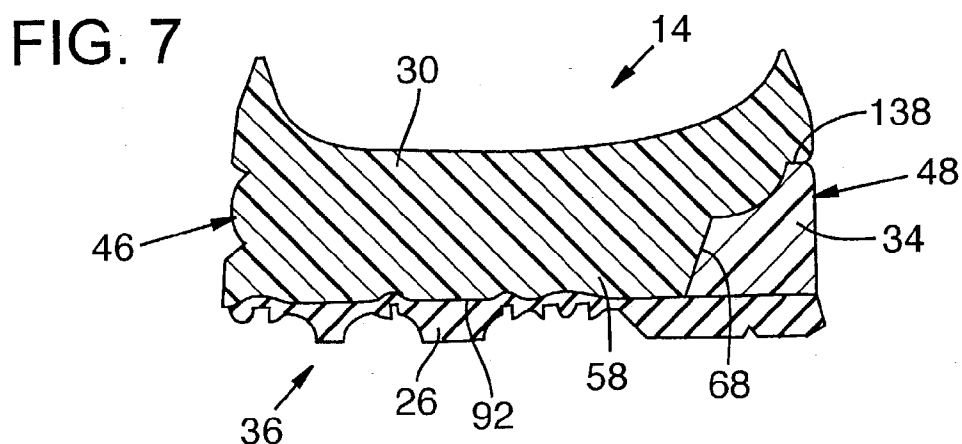
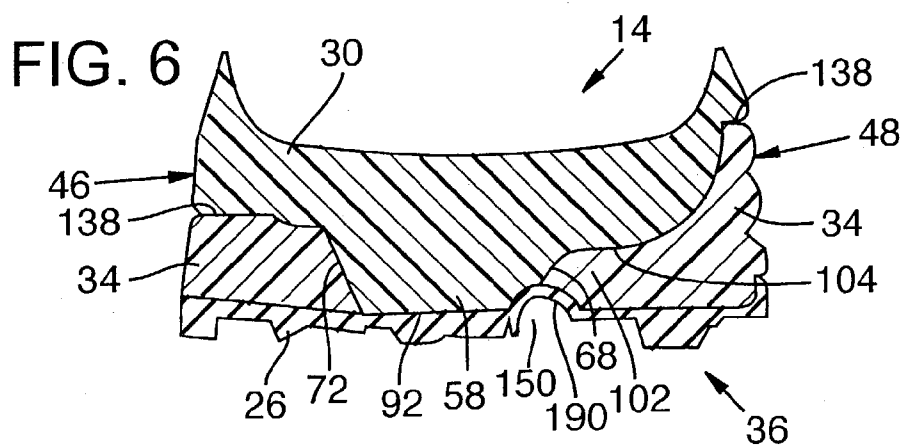
(73) **Assignee: Columbia Sportswear North America,
Inc., Portland, OR**(21) **Appl. No.: 10/361,103**(22) **Filed: Feb. 7, 2003****Publication Classification**(51) **Int. Cl.⁷ A43B 13/00; A43B 13/14**

An athletic shoe midsole includes a hard elastic stabilizing member that extends generally around a central opening through which a relatively soft elastic cushioning layer extends downwardly from a heel center beneath a wearer's calcaneus bone to thereby form a heel-cushioning pillar. The stabilizing member extends along lateral and medial sides of the pillar to prevent pronation and supination, and preferably includes a protrusion that extends into a depression in the heel-cushioning pillar in alignment with a line of flexure of the heel region to thereby affect flexure characteristics of a heel region of the shoe. The midsole may also include flex grooves, channels, and/or notches aligned with the line of flexure for promoting the desired flexure characteristics in the heel region of the sole and for helping decelerate the wearer's heel-toe gait during the stance phase of the wearer's gait cycle.









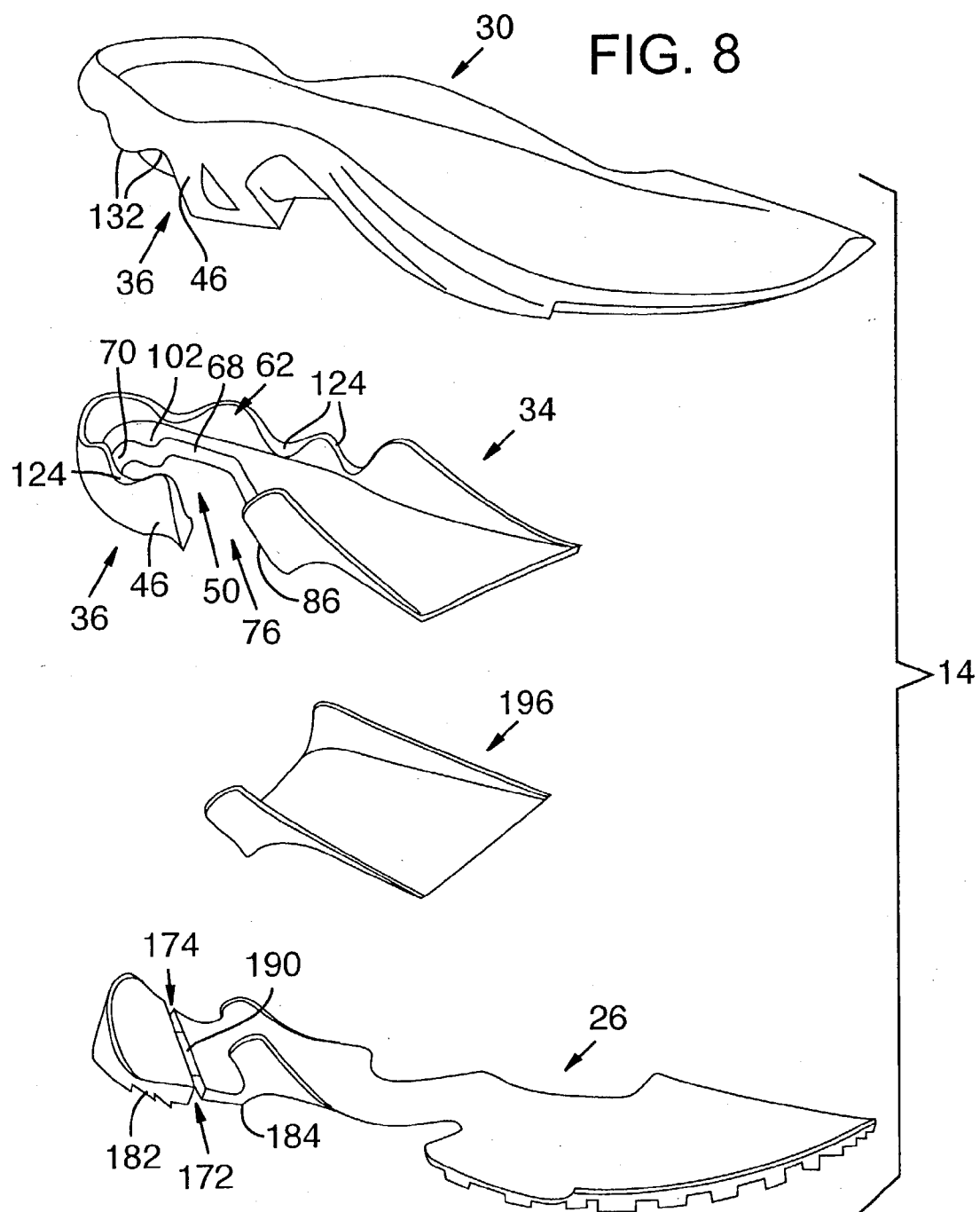
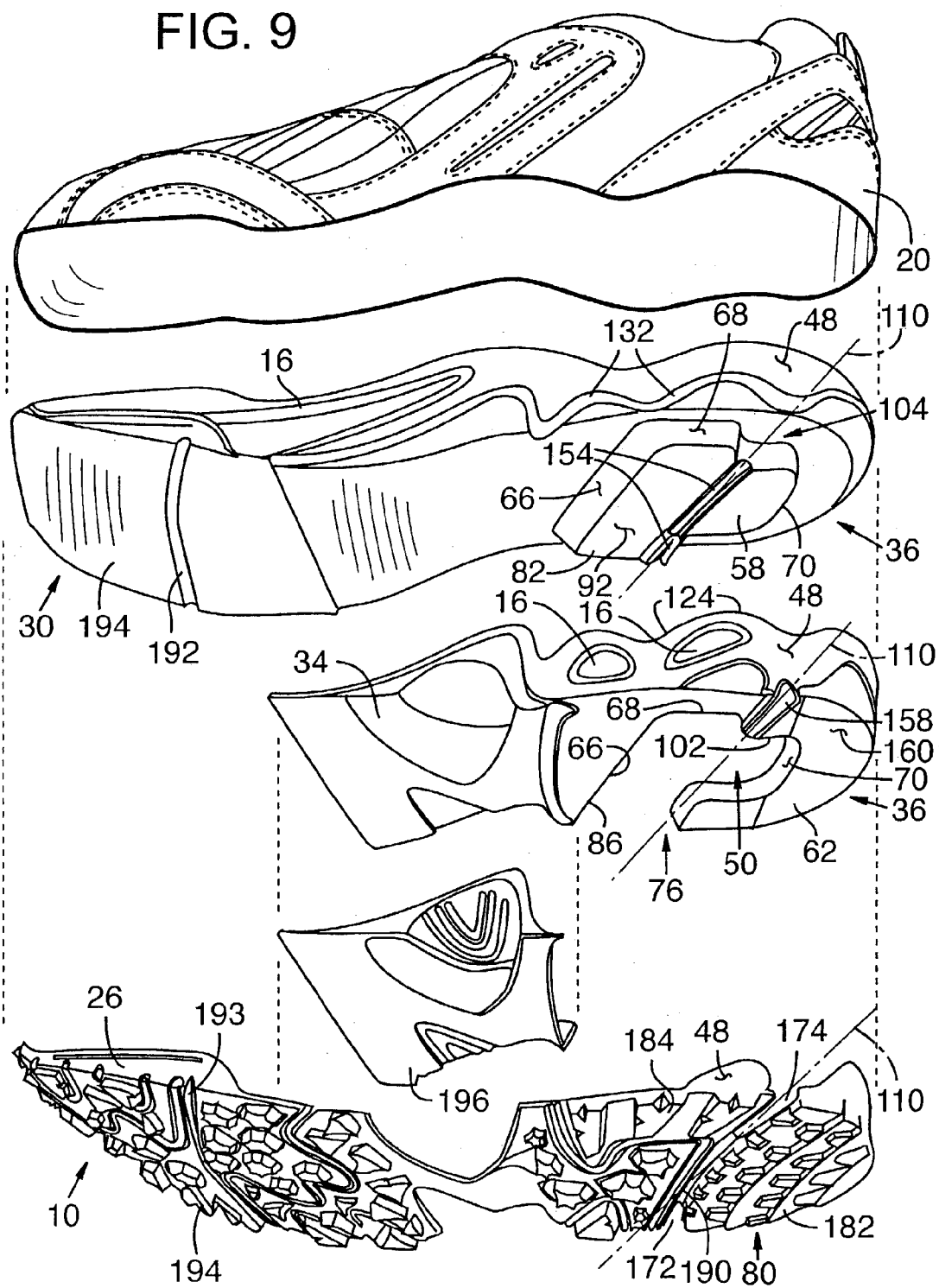


FIG. 9



FOOTWEAR WITH DUAL-DENSITY MIDSOLE AND DECELERATION ZONES

RELATED APPLICATIONS

[0001] This application is related to a U.S. design patent application titled "Athletic Shoe Sole," filed concurrently (Attorney Docket No. 50053/3:2).

TECHNICAL FIELD

[0002] The present invention relates to soles for footwear and, in particular, to an improved dual-density midsole including deceleration features desirable for increased stability and injury prevention during jogging and running.

BACKGROUND OF THE INVENTION

[0003] The soles of athletic shoes commonly include a soft cushioning layer and a so-called medial post. The medial post is located along the medial side of the sole's heel region and is made firmer and more resilient than the cushioning layer in order to prevent an undesirable inward pivoting of the foot called "pronation" (also known as "overpronation").

[0004] U.S. Pat. No. 4,614,046 of Dassler describes a multilayer midsole for an athletic shoe that includes a softly elastic inner layer and a hard spring-elastic polyurethane stabilizer extending under a heel portion of the inner layer in the shape of a horizontal C. The stabilizer is oriented to leave a vacant space centered under the wearer's heel and an opening along the lateral side of the midsole, which are filled by a cushioning piece of softly elastic plastic material such as polyurethane. The '046 patent describes how this configuration helps prevent pronation while also preventing the heel bone from "stepping through" the cushioning piece, which can otherwise cause heel bruises.

[0005] U.S. Pat. No. 4,766,679 of Bender attempts to improve on the midsole of the '046 patent by providing a stabilizing member including a U-shaped part that extends around the entire heel edge and a bar part that closes the U-shaped part at the middle of the foot to create a window into which an island of the full thickness of the midsole engages. The stated purpose of the midsole of Bender is to prevent supination (undesirable outward pivoting of the foot) while also preventing pronation and heel bruising.

[0006] While known heel stabilizing elements address issues of heel cushioning, pronation, and supination, they may also tend to increase the overall stiffness of the sole in the heel region. Excess stiffness in the heel region of the sole can cause an undesirable rate of pronation, which can result in undesirable distribution of weight during the stance phase of a wearer's gait cycle, i.e., from heel strike, to mid-stance, to toe off, leaving the wearer susceptible to injury. Thus the inventors have recognized a need for an improved sole that not only prevents supination, pronation, and heel impact injuries, but that also includes features for improved flexibility in the heel region to decelerate a wearer's heel-toe gait during the stance phase of the wearer's gait cycle.

SUMMARY OF THE INVENTION

[0007] In accordance with the present invention, an athletic shoe sole includes a midsole comprising a soft elastic cushioning layer extending under a shoe upper and a relatively hard elastic stabilizing member positioned beneath at

least a portion of the cushioning layer for preventing pronation and supination. The stabilizing member extends generally around a central opening through which the cushioning layer extends downwardly from a heel center beneath a wearer's calcaneus bone to thereby form a heel-cushioning pillar. The pillar is preferably tapered to provide gradually increasing cushioning resistance as heel impact forces increase.

[0008] In one embodiment, the stabilizing member includes a protrusion that extends into a depression in the heel-cushioning pillar to affect flexure characteristics of the heel region. The protrusion and the depression are preferably aligned with a line of flexure of the heel region that extends diagonally from a point on the medial side of the sole aft of the heel center toward the lateral side of the sole forward of the heel center.

[0009] To help achieve desired flexure characteristics, the stabilizing member is preferably C-shaped to include a gap along a lateral side margin of the heel region of the sole, which gap is filled by a portion of the soft cushioning layer. In other embodiments, one or more of the cushioning layer, the stabilizing member, and an outsole of the sole may include flex grooves, channels, and/or notches aligned with the line of flexure for promoting the desired flexure characteristics in the heel region of the sole and, in particular, for helping decelerate the wearer's heel-toe gait during the stance phase of the wearer's gait cycle.

[0010] To further facilitate the desired flexure characteristics and to simplify manufacturing, the outsole may include along the line of flexure a concave thin section that nests in and complements a corresponding flex groove of the midsole. The thin section connects an aft crash pad portion of the outsole to a forward main heel portion of the outsole, which serves to reduce the number of parts that must be handled and assembled during the manufacturing process, potentially reducing waste and manufacturing costs.

[0011] Additional aspects and advantages will be apparent from the following detailed description of preferred embodiments, which proceeds with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] **FIG. 1** is a lateral side pictorial view of an athletic shoe in accordance with a preferred embodiment;

[0013] **FIG. 2** is a lateral side elevation of a sole of the athletic shoe of **FIG. 1**, with surface contours omitted for clarity;

[0014] **FIG. 3** is a bottom view of the sole of **FIG. 2** showing detail of an outsole of the sole;

[0015] **FIG. 4** is an enlarged top view of the sole of **FIGS. 2 and 3**, including a superimposed illustration of the skeletal structure of a wearer's foot;

[0016] **FIG. 5** is a cross section view taken along line 5-5 of **FIG. 4**;

[0017] **FIG. 6** is a cross section view taken along line 6-6 of **FIG. 4**;

[0018] **FIG. 7** is a cross section view taken along line 7-7 of **FIG. 4**;

[0019] FIG. 8 is an exploded assembly view of the sole of FIGS. 2-7 taken from an upper vantage point on the lateral side of the sole;

[0020] FIG. 9 is an exploded assembly view of the sole of FIGS. 2-8 taken from a lower vantage point on the medial side of the sole;

[0021] FIG. 10 is a schematic cross section view of the sole of FIGS. 2-9 taken along line 10-10 of FIG. 4, including detail of a calcaneus bone and fleshy pad of a wearer's foot in a resting position; and

[0022] FIG. 11 is a view of the schematic cross section of FIG. 10 that illustrates how a stabilizing member of the sole controls the position and movement of the fleshy pad of the foot during impact, to utilize the foot's natural cushioning mechanism.

[0023] In the figures, like reference numerals refer to the same or similar parts.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0024] FIG. 1 is a lateral side pictorial view of an athletic shoe 10 in accordance with a preferred embodiment. FIGS. 2 and 3 are respective lateral side elevation and bottom plan views of a sole 14 of shoe 10 of FIG. 1. Surface contours 16 of sole 14 shown in FIG. 1 are omitted in FIG. 2 to simplify the drawing. With reference to FIGS. 1-3, shoe 10 includes a shoe upper 20 attached to sole 14 in a conventional manner, such as by molding or stitching. Sole 14 includes a midsole 24 interposed between shoe upper 20 and an outsole 26 of sole 14. For athletic shoes intended for running and trail running, midsole 24 is preferably made of a soft elastic material such as foamed polyurethane or ethylvinylacetate (EVA). With reference to FIGS. 1 and 2, midsole 24 preferably includes at least two components made of different densities of elastic material. A soft elastic cushioning layer 30 extends under shoe upper 20 and serves as the primary cushioning component of sole 14. Cushioning layer 30 is preferably formed of EVA material having a hardness in the range of approximately 50 to approximately 54 Asker C durometer scale. A relatively hard elastic stabilizing member 34 is positioned under a heel region 36 of cushioning layer 30 and is preferably formed of an EVA material having a hardness in the range of approximately 54 to approximately 58 Asker C. Outsole 26 may be formed of a wear-resistant elastic material such as rubber. Cushioning layer 30, stabilizing member 34, and outsole 26 are bonded together with adhesive or by molding, comolding, or thermal fusing.

[0025] FIG. 4 is an enlarged top view of sole 14, including a superimposed illustration of the skeletal structure of a wearer's foot 40 shown in broken lines. A perimeter of a foot bed 42 of shoe 10 is also illustrated in broken lines in FIG. 4, for reference only and without limiting the scope of the invention. FIGS. 5, 6, and 7 are cross section views of sole 14 taken along respective lines 5-5, 6-6, and 7-7 of FIG. 4. FIGS. 8 and 9 are exploded assembly views of sole 14 shown from respective upper and lower vantages. FIG. 8 shows a lateral side margin 46 of sole 14, and FIG. 9 shows a medial side margin 48 of sole 14. In FIG. 9, shoe upper 20 is also illustrated. With reference to FIGS. 4-9, stabilizing member 34 extends generally around a central opening 50

(FIGS. 8 and 9) through which cushioning layer 30 extends downwardly beneath a heel center 52 corresponding to a calcaneus bone 54 of foot 40 (FIG. 4) to form a heel-cushioning pillar 58. Stabilizing member 34 preferably includes a C-shaped portion 62 extending along respective forward, medial, and aft sides 66, 68, and 70 of opening 50 and pillar 58. C-shaped portion 62 of stabilizing member 34 preferably also extends from aft side 70 along at least part of a lateral side 72 of opening 50 and pillar 58. Advantageously, the relatively hard and more dense stabilizing member 34 and, in particular, C-shaped portion 62 may prevent both pronation and supination of a wearer's foot 40 by providing support along both lateral and medial side margins 46 and 48 in heel region 36. Preferably, stabilizing member 34 does not form a closed loop around opening 50, but is instead C-shaped to include a gap 76 along lateral side margin 46 in heel region 36. Gap 76 is filled by a lateral tab portion 82 of the relatively soft cushioning layer 30 for increased flexibility in heel region 36. Preferably, gap 76 is large enough to facilitate flexure in heel region 36 but small enough so that stabilizing member 34 extends along a substantial portion of lateral side margin 46 of sole 14 to prevent supination. For example, gap 76 may have a width in the range of approximately 10 mm to approximately 30 mm. In the preferred embodiment, gap 76 is positioned generally in alignment with forward side 66 of opening 50 so that a leading edge 86 of gap 76 is contiguous with forward side 66 of opening 50. However, gap 76 may, in alternative embodiments (not shown), be positioned at any location along lateral side margin 46. In still other embodiments (not shown), gap 76 is omitted altogether, so that stabilizing member 34 forms a closed loop or ring around opening 50.

[0026] Pillar 58 extends downwardly from the wearer's foot 40 to terminate at a bottom end 92. Sides 66, 68, 70, and 72 of pillar 58 are tapered so that pillar 58 is narrowest at bottom end 92. Corresponding sides 66, 68, 70, and 72 of opening 50 are also tapered from a top portion of opening 50 to a bottom portion of opening 50, so that opening 50 is narrower at the bottom portion than at the top portion. The tapered shape of opening 50 and pillar 58 provides gradually increasing cushioning resistance as heel impact forces increase. FIG. 10 is a schematic cross section view of sole 14 taken along line 10-10 of FIG. 4, including detail of calcaneus bone 54 and a fleshy pad 96 of foot 40 when in a resting position. FIG. 11 is a view of foot 40 and sole 14 that illustrates how stabilizing member 34 directs the forces of impact and controls the position and movement of fleshy pad 96 during heel impact. FIG. 11 illustrates how the tapered sides of pillar 58 provide cup-like support beneath foot 40 to direct fleshy pad 96 centrally under heel center 52 (FIG. 4) and calcaneus bone 54, thereby creating a "sweet spot" that improves the natural cushioning capabilities of foot 40 and fleshy pad 96. As impact forces "F" increase, tapering of pillar 58 and stabilizing member 34 provides gradually increasing cushioning resistance to prevent the wearer's heel from "stepping through" pillar 58, thereby avoiding bruising of calcaneus bone 54. Heel strike energy is funneled during deceleration then redirected to the acceleration phase of the heel-toe gait, by storing the energy of impact and releasing it gradually during mid-stance and toe off.

[0027] Revisiting FIGS. 4, 6, 8, and 9, stabilizing member 34 includes a protrusion 102 that extends into a corresponding depression 104 in pillar 58. Protrusion 102 and depres-

sion 104 are preferably closely mated and securely adhered together. Protrusion 102 and depression 104 are also preferably aligned with a line of flexure 110 that represents a bending axis for heel region 36. Line of flexure 110 extends diagonally from a point on medial side margin 48 of sole 14 aft of heel center 52 toward lateral side margin 46 of sole 14 forward of heel center 52. Line of flexure 110 may be a straight line, as shown in FIG. 4, or a curved line, as shown in FIG. 3. Skilled persons will understand that line of flexure 110 need not have a fixed position relative to sole 14 and represents an approximate bending axis for heel region 36 of sole 14. Positioning of protrusion 102 and depression 104 along line of flexure 110 affects a flexure characteristic of sole 14 and increases a medial support characteristic of sole 14. The size and shape of protrusion 102 also allows outsole 26 to overlap and protect the seam between protrusion 102 and pillar 58, which can help prevent delamination of stabilizing member 34 and cushioning layer 30 at the seam.

[0028] Preferably, stabilizing member 34 includes an upper joint surface 124 extending along at least a portion of lateral and medial side margins 46 and 48 of sole 14. A corresponding lower joint surface 132 of cushioning layer 30 abuts and interlocks with upper joint surface 124 along interlocking wave joints 138 that extend along at least part of lateral and medial side margins 46 and 48, respectively, as best shown in FIGS. 2, 8, and 9. Interlocking wave joints 138 help prevent cushioning layer 30 from slipping horizontally relative to stabilizing member 34 and outsole 26 upon heel impact and during a deceleration phase of the wearer's gait cycle.

[0029] To help achieve desired flexure characteristics, one or more of cushioning layer 30, stabilizing member 34, and outsole 26 may include one or more flex grooves, channels, notches, or other structures, typically aligned with line of flexure 110, which promote flexibility in heel region 36. The flexibility-enhancing structures counteract the stiffening effect of stabilizing member 34, thereby promoting deceleration of a wearer's heel-toe gait during the stance phase of the wearer's gait cycle. Controlled deceleration reduces the shock of impact on the wearer's foot, ankle, knee, and hip joints.

[0030] With reference to FIG. 3, in a preferred embodiment, sole 14 includes a flex groove 150 preferably extending across sole 14 in alignment with line of flexure 110. With reference to FIGS. 3 and 9, flex groove 150 includes a first midsole flex channel 154 extending diagonally across bottom end 92 of pillar 58 and a second midsole flex channel 158 extending along a bottom side 160 of stabilizing member 34 in alignment with first midsole flex channel 154. Flex groove 150 and first and second midsole flex channels 154 and 158 preferably have a width in the range of approximately 3 mm to approximately 5 mm, for example, but could be larger or smaller in alternative embodiments. First and second notches 172 and 174 are provided in outsole 26 along respective lateral and medial side margins 46 and 48. First and second notches 172 and 174 increase the flexibility of outsole 26 along line of flexure 110 and accommodate respective first and second midsole flex channels 154 and 158 (or portions thereof), which may extend through first and second notches 172 and 174 to thereby also promote flexibility and to serve as ground-contacting elements of sole 14. Second notch 174 is preferably positioned beneath at least a portion of protrusion 102 and depression 104 and

more preferably ends at a location outwardly of a seam where protrusion 102 contacts pillar 58, so that the seam is hidden by outsole 26 and protected from damage. Outsole 26 preferably includes an aft crash pad portion 182 and a forward main heel portion 184 that are connected by a thin section 190 extending generally along line of flexure 110 between first and second notches 172 and 174. Thin section 190 may be adhered to a portion of first midsole flex channel 154 (overlapping the seam between protrusion 102 and pillar 58) and may be formed or molded in a concave shape to thereby form an outsole flex channel that promotes flexibility along line of flexure 110. Thin section 190 and first and second notches 172 and 174, reduce the weight of sole 14 and help the heel region of outsole 26 to perform as a hinge for improved deceleration effect. Thin section 190 also serves to reduce the number of parts that must be handled and assembled during manufacture of sole 14 and shoe 10, which can reduce waste and manufacturing cost.

[0031] Sole 14 may include additional flexibility-enhancing structures such as anterior flex grooves 192 and 193 (FIGS. 3, 5, and 9) in anterior sections 194 of respective cushioning layer 30 and outsole 26, for example. The position and size of flex grooves 150, 192, and 193 and flex channels 154 and 158 are selected based on an activity for which the shoe 10 is designed, such as basketball, running, or trail running, for example.

[0032] Sole 14 preferably includes a shank stiffener 196 positioned forward of flex groove 150 and line of flexure 110. Shank stiffener 196 may be made of a hard plastic resin and adhered to stabilizing member 34, cushioning layer 30, or outsole 26. Shank stiffener 196 provides stiffness in the shank region of shoe 10 and prevents injury when stepping on hard objects such as rocks and tree roots, for example, as will be readily understood by those of skill in the art.

[0033] It will be obvious to those having skill in the art that many changes may be made to the details of the above-described embodiments without departing from the underlying principles of the invention. Furthermore, the described features, structures, or characteristics may be combined in any suitable manner in one or more embodiments. Those skilled in the art will recognize that the invention can be practiced without one or more of the specific details, or with other methods, components, materials, etc. In some instances, well-known structures, materials, or operations are not shown or not described in detail above, to avoid obscuring aspects of the embodiments. The scope of the present invention should, therefore, be determined only by the following claims.

1. In an athletic shoe having a shoe upper and a sole, the sole including a heel region having lateral and medial side margins, and the sole including an outsole and a midsole interposed between the outsole and the shoe upper, an improved sole, comprising:

a soft elastic cushioning layer extending under the shoe upper, the cushioning layer including a heel-cushioning pillar positioned under a heel center of the shoe upper corresponding to a wearer's calcaneus bone, the pillar including lateral, medial, and aft sides, and further including a depression in one of the sides of the pillar; and

a hard elastic stabilizing member for preventing pronation and supination, the stabilizing member having a hardness greater than the cushioning layer and extending from the medial side of the pillar and around the aft side and at least part of the lateral side of the pillar, the stabilizing member including a protrusion extending into the depression of the pillar, the protrusion and the depression positioned in alignment with a line of flexure of the heel region that extends diagonally from a point on the medial side margin of the sole aft of the heel center toward the lateral side margin of the sole forward of the heel center, thereby affecting flexure characteristics of the heel region and enhancing a medial support characteristic of the sole.

2. The athletic shoe sole of claim 1 in which the protrusion of the stabilizing member is sized to mate with the depression in the pillar for securely adhering thereto.

3. The athletic shoe sole of claim 1 in which:

the pillar extends downwardly from the wearer's foot to terminate at a bottom end; and

the pillar is tapered along its sides so that it is narrowest at its bottom end.

4. The athletic shoe sole of claim 1 in which the cushioning layer and the stabilizing member include a flex groove that extends across the sole in alignment with the line of flexure.

5. The athletic shoe sole of claim 1 in which the outsole includes an aft crash pad portion, a main heel portion positioned forward of the crash pad portion, and a thin section that extends diagonally across the heel region in alignment with the line of flexure to connect the crash pad portion to the main heel portion, the thin section facilitating manufacture of the athletic shoe and complementing the flexure characteristics of the midsole.

6. The athletic shoe sole of claim 5 in which the outsole includes a notch positioned under at least a portion of the protrusion of the stabilizing member and the depression of the pillar, the notch interposed between the crash pad portion and the main heel portion of the outsole.

7. The athletic shoe sole of claim 5 in which the thin section of the outsole includes an outsole flex channel in alignment with the line of flexure to promote flexing in the heel region along the line of flexure.

8. The athletic shoe sole of claim 7 in which the cushioning layer and the stabilizing member include respective first and second midsole flex channels corresponding to the outsole flex channel.

9. The athletic shoe sole of claim 1 in which the sole further comprises a shank stiffener positioned beneath the arch of the wearer's foot.

10. The athletic shoe sole of claim 9 in which the shank stiffener is bonded to the stabilizing member.

11. The athletic shoe sole of claim 1 in which the stabilizing member includes an upper joint surface, the cushioning layer includes a lower joint surface abutting the upper joint surface of the stabilizing member, and the upper and lower joint surfaces include interlocking wave surfaces extending along at least part of the lateral and medial sides of the sole.

12. The athletic shoe sole of claim 1 in which the cushioning layer is formed of an ethylvinylacetate (EVA) material having a hardness between approximately 50 and approximately 54 Asker C.

13. The athletic shoe sole of claim 1 in which the stabilizing member is formed of an ethylvinylacetate (EVA) material having a hardness between approximately 54 and approximately 58 Asker C.

14. In an athletic shoe having a shoe upper and a sole, the sole including a heel region having lateral and medial sides, an improved sole comprising:

a soft elastic cushioning layer extending under the shoe upper; and

a hard elastic stabilizing member positioned beneath at least a portion of the cushioning layer for preventing pronation and supination, the stabilizing member having a hardness greater than the cushioning layer and extending generally around a central opening through which the cushioning layer extends downwardly from a heel center of the wearer beneath a calcaneus bone of the wearer, the stabilizing member including a protrusion extending into the opening in alignment with a line of flexure of the heel region that extends diagonally from a point on the medial side of the sole aft of the heel center toward the lateral side of the sole forward of the heel center, thereby affecting flexure characteristics of the heel region.

15. The athletic shoe sole of claim 14 in which:

the central opening in the stabilizing member extends in a generally vertical direction so that the central opening includes a top portion nearest the wearer's foot and a bottom portion opposite the top portion; and

the central opening tapers so that it is narrower at its bottom portion than at its top portion.

16. The athletic shoe sole of claim 14 in which:

the central opening in the stabilizing member extends in a generally vertical direction so that the central opening includes a top portion nearest the wearer's foot and a bottom portion opposite the top portion; and

the cushioning layer tapers where it extends through the central opening so that the cushioning layer is narrower at the bottom portion of the central opening than at the top portion of the central opening.

17. The athletic shoe sole of claim 14, further comprising a flex groove extending across the cushioning layer and the stabilizing member in alignment with the line of flexure.

18. The athletic shoe sole of claim 14, further comprising an outsole positioned under the cushioning layer and the stabilizing member, the outsole including an aft crash pad portion, a main heel portion positioned forward of the crash pad portion, and a thin section that extends diagonally across the heel region in alignment with the line of flexure to connect the crash pad portion to the main heel portion, the thin section facilitating manufacture of the athletic shoe and complementing the flexure characteristics of the sole.

19. The athletic shoe sole of claim 18 in which the outsole includes a notch positioned under at least a portion of the protrusion of the stabilizing member, the notch interposed between the crash pad portion and the main heel portion of the outsole.

20. The athletic shoe sole of claim 18 in which the thin section of the outsole includes an outsole flex channel in alignment with the line of flexure to promote flexing in the heel region along the line of flexure.

21. The athletic shoe sole of claim 20 in which the cushioning layer and the stabilizing member include respective first and second midsole flex channels corresponding to the outsole flex channel.

22. The athletic shoe sole of claim 14 in which the sole further comprises a shank stiffener positioned beneath the arch of the wearer's foot.

23. The athletic shoe sole of claim 22 in which the shank stiffener is bonded to the stabilizing member.

24. The athletic shoe sole of claim 14 in which the stabilizing member includes an upper joint surface, the cushioning layer includes a lower joint surface abutting the upper joint surface of the stabilizing member, and the upper

and lower joint surfaces include interlocking wave surfaces extending along at least part of the lateral and medial sides of the sole.

25. The athletic shoe sole of claim 14 in which the cushioning layer is formed of an ethylvinylacetate (EVA) material having a hardness between approximately 50 and approximately 54 Asker C.

26. The athletic shoe sole of claim 14 in which the stabilizing member is formed of an ethylvinylacetate (EVA) material having a hardness between approximately 54 and approximately 58 Asker C.

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